Schedule of Sessions

SYMP: Symposia should consist of focused, integrated presentations assessing current understanding regarding a particular research problem, concept, application, or educational theme. Generally, symposia should have broad appeal within the ecological community or involve integration across sub-disciplines. Symposia focused within particular areas of ecology may be considered if these are areas of particularly active research, or if the symposia offer important new insights. Symposia may integrate historical perspectives explicitly, but this should generally be in the context of understanding current research and research questions. Presentations should offer new results and syntheses; speakers should not simply review previous work and results. No more than 24 symposia can be accepted for an Annual Meeting.

OOS: Organized oral sessions allow a wider range of thematic and conceptual options than symposia. Presentations included in an OOS must be topically coherent, but explicit synthetic overview is not required, and sessions need not have broad disciplinary or cross-disciplinary appeal. OOS's are particularly well suited for sets of related case studies, for specialized themes, or for presenting new work that does not yet admit of the synthesis called for in a symposium. Sessions may focus, for example, on a particular conceptual question, management problem, ecological process, or other unifying theme. A strong OOS proposal will provide a broad sampling of research in the topical area. OOS's may generate ideas for subsequent symposia. Up to (but no more than) eight speakers should be invited by session organizers and listed in the proposal; at least two speakers will be added subsequently by the Program Chair from the contributed abstracts. There is no limit on the number of OOS's that may be accepted each year.

OPS: Organized poster sessions are thematically and conceptually equivalent to organized oral sessions. Each OPS consists of a set of posters in multiples of 5. A strong OPS proposal will provide a broad sampling of research in the topical area. OPS's may generate ideas for subsequent symposia. There is no limit on the number of OPS's that may be accepted each year. Organized poster sessions are scheduled concurrently with the regular poster sessions on specially marked boards.

COS: Contributed oral sessions are collections of submitted abstracts each organized around a common study taxon, ecosystem, sub-discipline, concept/process, or tool/application. Contributed abstracts are reviewed and organized by the Program Chairs and Program Coordinator.

IGN: Ignite ESA is a session format where participants are given five minutes to speak accompanied by 20 slides. Each slide is displayed for 15 seconds, and slides are automatically advanced. The presentations are meant to "ignite" the audience on a subject, i.e. to generate awareness and to stimulate thought and action on the subjects presented.

PS: Poster sessions are collections of submitted abstracts each organized around a common study taxon, ecosystem, sub-discipline, concept/process, or tool/application. Contributed abstracts are reviewed and organized by the Program Chairs and Program Coordinator.

WK: Workshops are intended to convey specific knowledge or skills; they are not intended for the presentation of research papers. Workshops are frequently more interactive and informal than sessions within the formal scientific program, and are not scheduled concurrently with symposia, organized oral, contributed oral, or poster sessions. Workshops may involve one or several teachers/presenters, and may include computer-based or other 'hands-on' training. Weekend workshops may be linked with a scientific field trip. Workshop proposals should make clear what participants might expect to gain. Limits of space and time may make it impossible to accommodate all worthy submissions.

SS: The ESA Annual Meetings include a wide range of events that do not conform to the criteria for the scientific sessions, workshops, or field trips. These 'special sessions' have included, for example, panel discussions, open discussions, lectures, and film screenings. Special sessions can permit extended dialogue, and may be vehicles for planning future events or organizations. Whatever its format, a special session should have some bearing on ecological science or education, broadly construed. Special sessions are open to all meeting registrants, although a ticket may be required for food or beverages.

Saturday, August 3

Field Trips, Workshops, and Business Meetings

8:30 am-5 pm

ESA Governing Board Meeting

Rochester, Hilton Minneapolis

5 pm-8 pm

ESA SEEDS Student Orientation (SEEDS Students Only)

Carlson School of Management Private Dining Rm, University of Minnesota

6:30 am-3:30 pm

FT 1 - An Extreme Fire Event in the Border Lakes Region of Northern Minnesota: Ecosystem Impacts and Management Implications of the 2011 Pagami Creek Fire On the Superior National Forest (OVERNIGHT TRIP) - CANCELLED

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

Organized by: KA Rusterholz (kurt.rusterholz@state.mn.us)

7 am-6 pm

FT 2 - University of Notre Dame Environmental Research Center, Land O'Lakes, WI (OVERNIGHT TRIP)

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center **CANCELLED**

Organized by: D Tazik (dtazik@neoninc.org), D Hoekman (dhoekman@neoninc.org), S Newman

7:30 am-8 pm

7:30 am-6 pm

FT 3 - Forestville/Mystery Cave State Park: Rare Bluffland Plant Communities of the Paleozoic Plateau

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

Organized by: H Texler (hannah.texler@state.mn.us)

8 am-11:30 am

WK 1 - Learning to e-Volve: Networking, Collaboration, Education and Outreach in the Age of Facebook and Twitter

101A, Minneapolis Convention Center

Organized by: C Wilcox (nerdychristie@gmail.com)

We live in a digital age. Whether we like it or not, social media is an integral part of conducting and disseminating science in today's world. This workshop will explain the complex digital ecosystem, revealing how new media platforms can transform collaboration, education and outreach.

8 am-5 pm

WK 2 - Python for Ecologists

101B, Minneapolis Convention Center

Organized by: T Purucker (purucker.tom@epa.gov), T Hong

Python is a high-level scripting language that is becoming increasingly popular for scientific computing. This all-day workshop is designed to introduce the basics of Python programming to ecologists.

WK 3 - Structural Equation Modeling: An Introduction

101C, Minneapolis Convention Center

Organized by: JB Grace (gracej@usgs.gov), DR Schoolmaster Jr.

This workshop provides a basic introduction to structural equation modeling, summarizes the fundamental principles of the methodology, and exposes participants to basic modeling methods and issues; demonstrations and exercises will use the lavaan package in R.

Speakers:
JB Grace, US Geological Survey

8:30 am-5 pm

ESA Governing Board Meeting

Rochester, Hilton Minneapolis

12 pm-5 pm

WK 4 - NASA MODIS Remote-Sensing Data Acquisiton and Analysis Tools for Ecology Research

101A, Minneapolis Convention Center

Organized by: T Beaty, D Meyer

ORNL and LP DAACS will provide workshop participants with training on NASA's MODIS data products and tools enabling them to find, access, manipulate, subset, and download MODIS data without special knowledge or software experience; as well as how to obtain and work with HDF-EOS data formats.

Speakers:
R Cook, Oak Ridge National Laboratory
SS Vannan, Oak Ridge National Laboratory
WC Lenhardt, Oak Ridge National Laboratory
T Sohre, LP DAAC
C Doescher, LP DAAC

5 pm-8 pm

ESA SEEDS Student Orientation (SEEDS Students Only)

Carlson School of Management Private Dinning Rm, University of Minnesota

Sunday, August 4

Field Trips, Workshops, Business Meetings and Receptions

8:30 am-12 pm

ESA Governing Board Meeting
Rochester, Hilton Minneapolis

1 pm-2 pm

ESA Buell/Braun Judges Meeting

101I, Minneapolis Convention Center

2 pm-5 pm

ESA Governing Council Orientation and Reception
Duluth, Hilton Minneapolis

3 pm-4 pm

ESA Presider/AV Training Session
101D, Minneapolis Convention Center

3 pm-5 pm

ESA SEEDS Mentor Orientation
Carlson School of Management Private Dinning Rm, University of Minnesota

5 pm-6:30 pm

PL 1 - ESA Opening Plenary Session
Auditorium, Minneapolis Convention Center

6:30 pm-7:30 pm

ESA Welcome Reception
Auditorium Lobby, Minneapolis Convention Center

7 pm-9 pm

ESA SEEDS Welcome Dinner (By Invitation Only)
Carlson School of Management Private Dinning Rm, University of Minnesota

7:45 am-5 pm

FT 4 - SEEDS Education and Outreach Initiative (SEOI) Field Trip
Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

Organized by: F Abbott (fred@esa.org)

8 am-11:30 am

WK 5 - Data Visualization Using R
101B, Minneapolis Convention Center

Organized by: N Zimmerman (naupaka@stanford.edu), A Tredennick, K Ram

In addition to the large suite of analytical tools available in R, it can also produce high-quality figures for publications, presentations, and lab notebooks. This workshop will focus on R's powerful tools for data visualization, with emphasis on the ggplot2 library (and associated packages for data formatting, plyr and reshape2).

Speakers:
N Zimmerman, Stanford University

WK 6 - Developing Research Protocols to Prevent the Spread of Invasive Species
101C, Minneapolis Convention Center

Organized by: DA Jensen (djensen1@umn.edu), R Kinnunen

Researchers and instructors pose risks for spreading potentially terrestrial and aquatic invasive species while conducting work in the field. By attending this training workshop, participants will create protocols that will prevent the spread of invasive species. Participants will receive certification, a training manual, companion video, and CD.

WK 7 - Get the Job! Early-Career Professional Development in Networking, Accessing Hidden Career/Job Opportunities, Managing Your Research Reputation, and Partnering with Mentors
101D, Minneapolis Convention Center

Organized by: AG Levine

Most jobs are not advertised, and even if they are, there is usually a short-list of candidates already in mind. How do you find out about and access the 90% of jobs that are "hidden"? Through networking, including social media, reputation management and mentoring. Strategies and tactics will be explored.

WK 8 - Managing Ecological Data for Effective Use and Re-use: A Workshop for Early Career Scientists
101A, Minneapolis Convention Center

Organized by: A Budden (aebudden@dataone.unm.edu), V Hutchison

This workshop will provide information and tools for data management that are useful over all stages of the research cycle, from data collection to data re-use, and is aimed at early-career scientists.

Speakers:
W Michener, University of New Mexico
C Strasser, University of California Office of the President
T Beaty, Oak Ridge National Laboratory
M Schildhauer, University of California Santa Barbara
J Regetz, National Center for Ecological Analysis and Synthesis, University of California - Santa Barbara
M Jones, National Center for Ecological Analysis and Synthesis

8 am-5 pm

WK 9 - Teach Ecological Concepts Through Data Exploration Using Science Pipes

101E, Minneapolis Convention Center

Organized by: KM Klemow (kenneth.klemow@wilkes.edu), P Allen, A McMillen, T Mourad

Are you interested in having your students learn ecological concepts through data exploration? Does the steep learning curve associated with data analysis packages hamper student progress? Come and learn how Science Pipes can help students visualize data to learn ecological concepts.

Speakers:
P Weihe, Central College
SL Brosi, Frostburg State University

8 am-5 pm

FT 5 - Walking in Two Worlds: Combining Traditional Knowledge and Use With Science to Fulfill the Needs of a Tribal Community CANCELLED

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

Organized by: RL Trosper (rltrosper@email.arizona.edu)

WK 10 - A Brief Introduction to Bayesian and Hierarchical Bayesian Modeling in Ecology

101F, Minneapolis Convention Center

Organized by: M Dietze (dietze@bu.edu)

This workshop provides a brief introduction to Bayesian and hierarchical Bayesian modeling. It includes presentation and discussion of basic concepts, including important elements of Bayesian statistics and hierarchical Bayesian modeling. Participants will have the opportunity to develop and implement a Bayesian model in OpenBUGS.

WK 11 - Developing Research and Teaching Capacity in the Ecological Sciences at Minority-Serving Institutions (MSIs) (by invitation only)

Director's 3, Hilton Minneapolis

Organized by: D Bowie (dbowie@sea2.org), T Mourad

SEA and ESA will assemble faculty and scientists from Minority-Serving Institutions (MSIs) to explore how the technical and informational expertise and structures available in a large science project such as NEON may be utilized to increase the capacity of ecological research and education at their respective institutions.

WK 12 - Software Carpentry for Ecologists

101G, Minneapolis Convention Center

Organized by: EM Hart (ehart@zoology.ubc.ca), G Wilson

The modern ecologist relies heavily on computational tools, but formal training is often absent. This can lead to inefficient research practices and slow the research process. Our one day workshop will help spend less time doing more on their analysis.

WK 13 - Structural Equation Modeling: Advanced Techniques

101H, Minneapolis Convention Center

Organized by: JB Grace (gracej@usgs.gov), DR Schoolmaster Jr.

This workshop covers recently developed advanced techniques for use in structural equation modeling and is designed for those already familiar with SEM; demonstrations and exercises will be in R.

Speakers:
JB Grace, US Geological Survey

WK 14 - Vegetation Databases and the Development of the National Vegetation Classification

University of Minnesota, Coffey Hall

Organized by: D Roberts (droberts@montana.edu), DS Wovcha, NE Aaseng, M Lee, T Philippi, SR Abella

Workshop participants will learn the skills necessary to query vegetation data from multiple sources, reconcile the synonymy of species, combine data from multiple strata, standardize environmental data, and prepare the data for analysis in support of the development of the National Vegetation Classification using R or PC-Ord.

8:15 am-5 pm

FT 6 - Native Prairie Communities and Conservation At Minnesota's Ordway Prairie

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

Organized by: F Harris (fred.harris@state.mn.us)

8:30 am-12 pm

ESA Governing Board Meeting

Rochester, Hilton Minneapolis

8:30 am-4:45 pm

FT 7 - Waste Not, Want Not: Fueling Our Future With Biomass CANCELLED

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

Organized by: S Stai (sarah@dovetailinc.org)

8:30 am-5 pm

FT 8 - Urban Bioblitz in a Riverside Redevelopment Area CANCELLED

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

Organized by: H Balbach (Hal.E.Balbach@usace.army.mil), G Bowser

8:45 am-4:30 pm

FT 9 - Biodiversity, Environmental Change and Ecosystem Functioning at the Prairie-Forest Border: The Cedar Creek Ecosystem Science Reserve

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

Organized by: JR Corney (jcorney@umn.edu)

9:15 am-3:30 pm

FT 10 - Ecology and Stewardship of the Eloise Butler Wildflower Garden and Greater Theodore Wirth Park

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center **CANCELLED**

Organized by: SL Wilkins (swilkins@minneapolisparks.org), J Proctor

9:30 am-3 pm

FT 11 - Metro Old-Growth

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

Organized by: L Frelich (freli001@umn.edu)

12 pm-5 pm

WK 15 - Conducting Open Science Using R and DataONE: A Hands-on Primer (Open Format)

101B, Minneapolis Convention Center

Organized by: MB Jones (jones@nceas.ucsb.edu)

Through hands-on activities, participants will explore open science practices by using the R statistical system and libraries for data access from DataONE and rOpenSci to build analytical scripts to access data, learn basic data manipulation, and publish derived data and results in a manner that is open and citable.

Speakers:
C Boettiger, UC Santa Cruz
K Ram, University of California Berkeley
J Regetz, University of California Santa Barbara
M Schildhauer, University of California Santa Barbara

WK 16 - Demography in a Continuous World: New Advances in Integral Projection Models (IPMs)

101A, Minneapolis Convention Center

Organized by: R Salguero-Gómez (salguero@demogr.mpg.de), J Metcalf, S McMahon, E Jongejans, C Merow

This workshop will cover basic topics on model selection and construction for integral projection models (IPMs) as well as some advanced features such as transient dynamics, perturbation analyses, stochastic metrics and life table response experiment analyses for individual-based demographic datasets

WK 17 - Exploring Diverse Career Pathways in Ecology

Director's 2, Hilton Minneapolis

Organized by: RV Pouyat (rpouyat@fs.fed.us), D Goldberg

This workshop will provide students and early career ecologists with activities and knowledge to help articulate their life and career values, to interact with ecologists who have taken diverse career pathways, and participate in discussions that will address various challenges of pursuing a non-traditional career in ecology.

WK 18 - Monitoring the Nation's Frogs and Toads: Join a Community of FrogWatch USA Volunteers and Chapter Coordinators

101C, Minneapolis Convention Center

Organized by: R Gauza (frogwatch@aza.org), S Grow

FrogWatch USA is a national frog and toad monitoring program seeking volunteers and chapter coordinators. Workshop participants will learn about the goals of this citizen science program and be encouraged to establish a local chapter; receive training on amphibian and wetland ecology and frog identification; and explore effective volunteer management.

WK 19 - Next Generation Ecologists in Global Change Research: Current Status and Future Directions

Board Rm 3, Hilton Minneapolis

Organized by: S Goswami (goswamis@ornl.gov), X Xu, DJ Hayes

Our workshop brings together established ecologists with next generation of ecologists to stimulate discussion about the current and future trends in global change research. The overarching goal of the workshop is to foster collaboration among the next generation of ecologists in global change research for future research and education.

Speakers:
RJ Norby, Oak Ridge National Laboratory
CS Weiler, Whitman College
H Tian, Auburn University
SD Wullschleger, Oak Ridge National Laboratory
DJ Hayes, Oak Ridge National Laboratory
NG McDowell, Los Alamos National Laboratory
R Vargas, University of California Berkeley
X Wen, Chinese Academy of Sciences
C Xu, Los Alamos National Laboratory
N Davi, Lamont-Doherty Earth Observatory of Columbia University
S Goswami, Climate Change Science Institute, Oak Ridge National Laboratory
X Xu, Oak Ridge National Laboratory

WK 20 - Participating in Public Policy

Board Rm 2, Hilton Minneapolis

Organized by: N Lymn (nadine@esa.org), T Houston

This hands-on session will supply attendees with tools to participate in public policy and will highlight opportunities to become involved. Interactive mock congressional meetings will follow several mini-lectures and all participants will receive a copy of An Ecologist's Guide to Policy Engagement.

2 pm-9 pm

WK 21 - Social Media for Scientists (Open Format)

101E, Minneapolis Convention Center

Organized by: S Chung, JL Gill

Social media are gaining popularity as powerful tools to streamline scientific collaboration and improve the quality of research and communication. Through examples and coached practice with Twitter, blogs, and science social networks, this workshop will give participants everything they need to engage with the online science community.

WK 22 - TIEE Author Workshop

Board Rm 1, Hilton Minneapolis

Organized by: C D'Avanzo (cdavanzo@hampshire.edu), C Beck

This workshop is designed to help potential authors submit an Experiment or Issue to Teaching Issues and Experiments in Ecology (TIEE), a peer-reviewed ESA publication.

1 pm-2 pm

ESA Buell/Braun Judges Meeting

101I, Minneapolis Convention Center

1:45 pm-6 pm

FT 12 - Bike Trails of Minneapolis (#1 Most Bikeable City in the USA)

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

Organized by: T Ocheltree (ochel005@umn.edu), TJS Whitfeld (whitf015@umn.edu)

2 pm-5 pm

ESA Governing Council Orientation and Reception

Duluth, Hilton Minneapolis

3 pm-4 pm

ESA Presider/AV Training Session

101D, Minneapolis Convention Center

3 pm-5 pm

ESA SEEDS Mentor Orientation

Carlson School of Management Private Dinning Rm, University of Minnesota

5 pm-6:30 pm

PL 1 - ESA Opening Plenary Session

Auditorium, Minneapolis Convention Center

6:30 pm-7:30 pm

ESA Welcome Reception

Auditorium Lobby, Minneapolis Convention Center

7 pm-9 pm

ESA SEEDS Welcome Dinner (By Invitation Only)

Carlson School of Management Private Dinning Rm, University of Minnesota

Monday, August 5

Business Meetings and Receptions

7 am-8 am

ESA SEEDS Breakfast (SEEDS Students and Mentors only)
200D, Minneapolis Convention Center

7 am-9 am

ESA Ecology Editorial Board Meeting
Director's 4, Hilton Minneapolis

8 am-10 am

PL-2 - ESA Scientific Plenary & Awards Session
Auditorium, Minneapolis Convention Center

11:30 am-12 pm

ESA Presider/AV Training Session
101C, Minneapolis Convention Center

11:30 am-1:15 pm

ESA Certification Board Meeting
Director's 4, Hilton Minneapolis

ESA Joint Editorial Board Luncheon
Duluth, Hilton Minneapolis

ESA Past Presidents' Forum (by invitation only)
Board Rm 2, Hilton Minneapolis

ESA Rocky Mountain Chapter and Special Session
101A, Minneapolis Convention Center

ESA Science Committee Meeting
Rochester, Hilton Minneapolis

ESA Undergraduate Student Orientation
Seasons, 2nd Fl, Minneapolis Convention Center

11:45 am-1 pm

ESA Rangeland Ecology Section and ESA Southwest Chapter Symposium Development and Business Meeting
200G, Minneapolis Convention Center

ESA Southwest Chapter and ESA Rangeland Ecology Sections Symposium Development and Meeting
200J, Minneapolis Convention Center

12 pm-1 pm

ESA Mexican Chapter Annual Business Meeting
M100A, Minneapolis Convention Center

5 pm-5:45 pm

ESA Awards Recipients' Reception (by invitation only)
Rochester, Hilton Minneapolis

6:30 pm-8 pm

Celebrating 30 Years of ESA Public Affairs
200C, Minneapolis Convention Center

Christian Ecologists Social
200J, Minneapolis Convention Center

ESA Aquatic Ecology Section Mixer
200A, Minneapolis Convention Center

ESA Theoretical Ecology Section Mixer
200I, Minneapolis Convention Center

ESA Vegetation Section and IAVS-NA Business Meeting and Mixer
200G, Minneapolis Convention Center

Utah State University Ecologists Mixer
200H, Minneapolis Convention Center

TK 1 - ESA Student Mixer
Main Dinning Rm Downstairs, Hell's Kitchen

7 am-8 am; 7 am-9 am; 8 am-10 am; 10:15 am-11:30 am

Monday Sessions

7 am-8 am

ESA SEEDS Breakfast (SEEDS Students and Mentors only)

200E, Minneapolis Convention Center

7 am-9 am

ESA Ecology Editorial Board Meeting

Director's 4, Hilton Minneapolis

8 am-10 am

PL-2 - ESA Scientific Plenary & Awards Session

Auditorium, Minneapolis Convention Center

10:15 am-11:30 am

SS 1 - Climate Science Centers: Now Supporting Resource Management With Science at a Location Near You!

101A, Minneapolis Convention Center

Organized by: GW Chong (geneva_chong@usgs.gov), ST Gray, J Baron, S McNeeley, JT Morisette, DS Ojima, R Sojda

The Climate Science Center special session will introduce participants to the Department of Interior Climate Science Centers (CSCs) and their unique position to unite federal and academic researchers with cultural and natural resource managers to facilitate a full-cycle approach to the use of research in support of management decisions.

SS 2 - Creating Effective Data Management Plans for Ecological Research

101B, Minneapolis Convention Center

Organized by: W Michener (wmichener@lternet.edu), A Budden
Moderator: V Hutchison

Learn how to create a data management plan that is tailored to your specific proposal or project, see examples of good data management plans, and discuss best practices with your colleagues.

Speakers:
C Strasser, University of California Office of the President
P Cruse, University of California - California Digital Library

SS 3 - Engaging with Business and Industry to Advance Earth Stewardship

200DE, Minneapolis Convention Center

Organized by: SL Collins, STA Pickett, J Baron, C Duke, T Mourad

This session will outline ways that ESA can engage the ecological science community to take an active part in business and set priorities for ecologists and ESA to build sustainability partnerships with the business community, such as through business schools, and business networks.

SS 4 - Generating a Historical Time Line of 'Earth Stewards' to Inspire Our Future

101E, Minneapolis Convention Center

Organized by: RA Dyball (rob.dyball@anu.edu.au), LM Jablonski, ME Lam

This practical session will highlight past ESA and other ecologists' contributions to the understanding of human agency in ecological change processes – or 'Earth Stewardship' - and provide basic skills for participants to be part of generating an historical record to recognize 'Earth Stewards' in preparation for ESA's Centennial celebrations.

SS 5 - Managing the World's Forests as Complex Adaptive Systems - Sustainable Pathways for a Changing World

101C, Minneapolis Convention Center

Organized by: C Messier (messier.christian@uqam.ca), KJ Puettmann, MW Cornett

The session will explore: 1) What are the benefits of applying a complexity science framework to understanding and sustaining the function of forests around the world?; and 2) How can we apply emerging forest management and restoration practices to the problem of creating and sustaining complexity in the world's forests?

SS 6 - Resources for Ecology Education: Fair & Share (REEFS)

200F, Minneapolis Convention Center

Organized by: JR Corney (jcorney@umn.edu), CL Thomas, A McMillen

Share your favorite classroom activity with your colleagues and learn about what they are doing to engage undergraduate students in a small group setting. Groups will offer feedback and suggestions. Digital publishing options will be discussed. Those who wish to share their activities should fill out this form: https://www.surveymonkey.com/s/REEFS2013.

SS 7 - Sense of Place: Bdote: Mni Sota Makoce (the Minnesota River landscape) as seen by Dakota and Ojibwe artists, elders, and activists

101D, Minneapolis Convention Center

Organized by: S Herron (herrons@ferris.edu), J Ford, E Allen
Moderator: RL Trosper

Annual session hosted by the Traditional Ecological Knowledge Section to provide opportunities to (1) hear ecological perspectives on the meeting location from indigenous leaders from tribes that call the this area part of their traditional homelands, and (2) potentially begin to forge relationships relevant to research, teaching, and outreach.

SS 8 - The Current and Future Role of Ecologists as it Relates to Marcellus and Utica Shale Hydraulic Fracturing Research, Policy, and Advocacy.

101F, Minneapolis Convention Center

Organized by: WE Auch III (auch@fractracker.org, W.AUCH@csu.edu), DJ Murphy, DG Argent, KF Korfmacher

Hydraulic fracturing has proven its viability as an energy industry revenue generator and as a short-term job creator but its long-term environmental, social, and economic cost-to-benefit and Energy

Return On Investment (EROI) ratios have yet to be quantified with the role of ecologists as scientists and/or advocates of crucial importance.

11:30 am-12 pm

ESA Presider/AV Training Session
101C, Minneapolis Convention Center

11:30 am-1:15 pm

ESA Certification Board Meeting
Director's 4, Hilton Minneapolis

ESA Joint Editorial Board Luncheon
Duluth, Hilton Minneapolis

ESA Past Presidents' Forum (by invitation only)
Board Rm 2, Hilton Minneapolis

ESA Rocky Mountain Chapter and Special Session
101A, Minneapolis Convention Center

ESA Science Committee Meeting
Rochester, Hilton Minneapolis

ESA Undergraduate Student Orientation
Seasons, 2nd Fl, Minneapolis Convention Center

WK 23 - At the Hub: Lessons Learned by Early-career Ecologists in Grassroots Research Networks
101F, Minneapolis Convention Center

Organized by: EM Lind (elind@umn.edu), CC Carey

Grassroots research networks hold promise for pursuing truly global ecological research. Yet, these networks present their own challenges, including communication, data management, social interactions, and authorship. Here, early career ecologists in distributed networks present their innovations in these areas, with the goal of improving existing networks and inspiring new ones.

Speakers:
EM Lind, University of Minnesota
CC Carey, University of Wisconsin-Madison
PL Reynolds, Virginia Institute of Marine Science
S McMahon, Smithsonian Tropical Research Institute
L Barnett, USA National Phenology Network

WK 24 - Engaging Ecologists in Public Policy: Revisiting ESA Recommendations
101B, Minneapolis Convention Center

Organized by: KM Klemow (kenneth.klemow@wilkes.edu), SK Collinge, N Lymn

Moderator: KM Klemow

This special session will explore recommendations provided in ESA's 2011 policy guidebook for ecologists. Panelists and participants will discuss successes and pitfalls encountered while engaging in policy issues with decision-makers and other stakeholders.

Speakers:
EM Bennett, McGill University
MW Brunson, Utah State University
AC Erwin, Cornell University
RB Jackson, Duke University
F Kearns, Center for Science, Policy and Outcomes
J Powell, University of Alaska Fairbanks

WK 25 - Reproducible Research and Collaboration (Open Format)
101D, Minneapolis Convention Center

Organized by: EM Hart (ehart@zoology.ubc.ca), SA Chamberlain

This workshop introduces three tools for reproducible ecological research: R software, Markdown syntax, and versioning. We show how these three tools used together allow for reproducible writing including executable code for analyses and results. This process works for individuals as well as collaborative groups.

WK 26 - Teaching Ecology Using Case Studies
Board Rm 1, Hilton Minneapolis

Organized by: DJ Grisé (david.grise@tamucc.edu), MJ Hansen

The goal of this workshop is to create a network of instructors who use or are interested in using case studies when teaching ecology. The network will allow instructors to share case studies and give feedback. Participants are asked to bring their case studies or ideas to share.

WK 27 - Tools for Creating Ecological Metadata: Introduction to Morpho and DataUp
Director's 3, Hilton Minneapolis

Organized by: C Strasser (carly.strasser@ucop.edu), S Hampton

This workshop will provide information and tools (DataUp and Morpho) for creating quality ecological metadata (EML), which in turn enables data sharing and archiving.

WK 28 - Writing a 'Teaching Philosophy' Statement: Models and Suggestions
Board Rm 3, Hilton Minneapolis

Organized by: C D'Avanzo (cdavanzo@hampshire.edu), J Moore

This workshop is designed to help graduate students and others write an effective teaching philosophy statement when they apply for academic positions.

11:45 am-1 pm

ESA Rangeland Ecology Section and ESA Southwest Chapter Symposium Development and Business Meeting
200G, Minneapolis Convention Center

ESA Southwest Chapter and ESA Rangeland Ecology Sections Symposium Development and Meeting
200J, Minneapolis Convention Center

12 pm-1 pm; 1:30 pm-5 pm

12 pm-1 pm

ESA Mexican Chapter Annual Business Meeting

M100A, Minneapolis Convention Center

1:30 pm-5 pm

SYMP 1 - A Guide to Ecology's Past, Current and Future History: Reflections On a Theme By Robert Mcintosh

M100EF, Minneapolis Convention Center

Organized by: JA MacMahon

Moderator: KL Gross

Using Robert MacIntosh's wry style, speakers will connect recent ecological history to the tyranny of the present, and imagine what may lie ahead.

1:30 PM SYMP 1-1 Kingsland, S, Johns Hopkins University. *Post-war ecology as big science and international science: variations on a theme by R. P. McIntosh*.

1:50 PM SYMP 1-2 Jackson, ST, U.S. Geological Survey. *Time as an ecological dimension: the historical threads in ecological thinking in the 19th and 20th centuries*.

2:10 PM SYMP 1-3 Tracy, CR, University of Nevada, Reno. *Physiological ecology: past present, and future*.

2:30 PM SYMP 1-4 Roberts, D, Montana State University. *The continuum of elegance: Insight and ecological judgement in the development of quantitative ecology*.

2:50 PM Discussion

3:10 PM Break

3:20 PM SYMP 1-5 Goldberg, DE and JH Vandermeer, University of Michigan. *The evolution of population ecology*.

3:40 PM SYMP 1-6 Mittelbach, GG, Michigan State University. *The many lives of community ecology*.

4:00 PM SYMP 1-7 Scheiner, SM, National Science Foundation. *Ecology's uneasy relationship with theory*.

4:20 PM SYMP 1-8 Chambers, JC[1] and BA Bradley[2], (1)USDA Forest Service, (2)University of Massachusetts. *Applied ecology in an era of accelerating global change*.

4:40 PM Discussion

SYMP 2 - Disease Ecology in Human-Altered Landscapes

205AB, Minneapolis Convention Center

Organized by: C Coon (ccoon@mail.usf.edu), JS Adelman

Moderator: C Coon

Based on in the importance of understanding and predicting the dynamics and consequences of zoonotic diseases, this symposium will focus on: 1) how susceptibility and transmission potential of hosts and vectors change in human-dominated landscapes, and 2) what role alterations to the environment play in mediating these changes.

1:30 PM SYMP 2-1 Hosseini, PR[1], KA Murray[1], E Loh[1], CM Zambrana-Torrelio[1], KVK Gilardi[2], T Goldstein[2], CK Johnson[3], JAK Mazet[2] and P Daszak[1], (1)EcoHealth Alliance, (2) University of California, Davis, (3)University of California. *Land-use change and pathogen emergence: Differential implication of factors driving emergence across land-use gradients*.

2:00 PM SYMP 2-2 Ferrari, M, Penn State University. *Demographic transition and the dynamics of measles*.

2:30 PM SYMP 2-3 Kilpatrick, AM[1], RJ Peters[1], MJ Jones[2], P Daszak[3], P Marra[4] and LD Kramer[5], (1)University of California, Santa Cruz, (2)New York State Department of Health, (3)EcoHealth Alliance, (4)Smithsonian Migratory Bird Center, (5)Wadsworth Center, New York State Dept Health and SUNY Albany. *Urbanization and disease transmission*.

3:00 PM Break

3:10 PM SYMP 2-4 Plowright, RK[1], HI McCallum[2] and PJ Hudson[3], (1)Pennsylvania State University, (2)Griffith University, (3)Penn State University. *A multi-scale approach to understanding and predicting spillover of an emerging infectious disease of bat origin*.

3:40 PM SYMP 2-5 Altizer, S, DJ Becker, RJ Hall, SM Hernandez and DG Streicker, University of Georgia. *Resource provisioning and infectious disease dynamics in urban environments*.

4:10 PM SYMP 2-6 Lawson, B, Zoological Society of London. *Using Citizen Science as a tool to investigate wild bird disease in peri-domestic habitats: patterns of endemic and emergent disease in Great Britain*.

4:40 PM Discussion

SYMP 3 - The Ecology-Policy Interface: Perspectives on Student Engagement

Auditorium, Rm 3, Minneapolis Convention Center

Organized by: AC Erwin (ace24@cornell.edu), DEK Stander, JR Bernhardt

Endorsed by: Policy Section, Student Section, Public Affairs Committee

Moderator: JR Bernhardt

This symposium explores the opportunities and challenges of working at the science-policy interface at early career stages. The session will highlight experiences of graduate students engaging in science-policy issues and offer reflections from more senior scientists.

1:30 PM SYMP 3-1 Chan, KMA[1], GG Singh[1], J Tam[1], T Sisk[2], SC Klain[1], M Mach[1] and RG Martone[1], (1)University of British Columbia, (2)Northern Arizona University. *A more social science: Barriers and incentives for scientists to engage in policy*.

2:00 PM SYMP 3-2 Erwin, AC, JS Cohen, WW Fetzer and JM Watkins, Cornell University. *Local integration of ecological research, community values, and management goals: the case of a New York Finger Lake*.

2:30 PM SYMP 3-3 Shirey, PD, University of Notre Dame. *Merging ecology, history, and law to inform environmental policy at the federal level: Challenges and rewards of interdisciplinary research*.

3:00 PM Break

3:10 PM SYMP 3-4 Simonin, PW[1], D Exton[2], J Rice[2], T Coles[2] and D Smith[3], (1)Cornell University, (2)Operation Wallacea, (3) University of Essex. *Governance, ecological knowledge, and small-scale marine fisheries sustainability in the Indo-Pacific*.

3:40 PM SYMP 3-5 Petes, DLE, National Oceanic and Atmospheric Administration. *Challenges and opportunities for early-career ecologists interested in connecting science and policy*.

4:10 PM SYMP 3-6 Nadelhoffer, KJ, University of Michigan. *Perspectives on engaging decision makers to support protection and restoration of ecosystems in the Great Lakes Basin*.

4:40 PM Discussion

OOS 1 - How Does Plasticity In Root Morphology and Physiology Buffer Responses To Changes In Resource Availability?

101A, Minneapolis Convention Center

Organized by: JB Nippert, RM Holdo, TW Ocheltree

Moderator: JB Nippert

Linking the physiological and morphological plasticity of root responses to changes in resource availability may provide a framework for linking root function to niche differentiation and ecosystem dynamics.

1:30 PM OOS 1-1 Holdo, RM, University of Missouri. *Interspecific variation in savanna tree rooting profiles and response to competition from grasses: evidence from modeling and empirical studies*.

1:50 PM OOS 1-2 Bhattachan, A[1], P D'Odorico[1], M Tatlhego[2], K Dintwe[3], FC O'Donnell[4], KK Caylor[4], G Okin[3], D Perrot[5] and S Ringrose[6], (1)University of Virginia, (2)Okavango Research Institute, University of Botswana, (3)UCLA, (4) Princeton University, (5)University of Colorado, (6)Gobabeb Research and Training Centre. *Evaluating the patterns of below ground woody biomass along the Kalahari rainfall gradient*.

2:10 PM OOS 1-3 BassiriRad, H, University of Illinois at Chicago. *Plasticity in kinetics of organic and inorganic root uptake in conifer seedlings experiencing high nitrate input*.

2:30 PM OOS 1-4 Ocheltree, TW, PB Reich and KE Mueller, University of Minnesota. *Changes in root traits explain patterns of biomass allocation in response to N, CO_2, and diversity*.

2:50 PM OOS 1-5 Hendriks, M[1], EJW Visser[1], WH Van der Putten[2], H de Kroon[1] and L Mommer[3], (1)Radboud University, (2)Netherlands Institute of Ecology, (3)Wageningen University. *Roots at work: Root responses to heterogeneity of soil biota*.

3:10 PM Break

3:20 PM OOS 1-6 Eissenstat, DM, Pennsylvania State University. *Root morphology and root foraging in temperate trees*.

3:40 PM OOS 1-7 O'Donnell, FC[1], KK Caylor[1], A Bhattachan[2], K Dintwe[3], P D'Odorico[2] and G Okin[3], (1)Princeton University, (2)University of Virginia, (3)UCLA. *Root structure and water-use diversity of Kalahari savanna woody plant communities*.

4:00 PM OOS 1-8 Chen, W[1], D Guo[2], DM Eissenstat[1] and H Zeng[3], (1)Pennsylvania State University, (2)Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, (3)Peking University Shenzhen Graduate School. *Variation of first-order root traits across climatic gradients and evolutionary trends in geological time*.

4:20 PM OOS 1-9 Ravenek, JM[1], H Beßler[2], C Engels[2], M Scherer-Lorenzen[3], A Gessler[4], A Gockele[3], E de Luca[5], WW Weisser[6], H de Kroon[1], A Weigelt[7] and L Mommer[8], (1) Radboud University Nijmegen, (2)Humboldt-University zu Berlin, (3)University of Freiburg, (4)Leibniz Centre for Agricultural Landscape Research (ZALF), (5)University of Zurich, (6)Technische Universität München, (7)University of Leipzig, (8)Wageningen University. *Long-term root standing biomass development in a biodiversity experiment does not show evidence for vertical niche differentiation belowground*.

4:40 PM OOS 1-10 Keuper, F[1], E Dorrepaal[1], P van Bodegom[2] and R Aerts[3], (1)Umeå University, (2)Vrije Universiteit, (3)Vrije University. *Foraging the frozen feast: Uptake of nitrogen from thawing permafrost in subarctic peatlands*.

OOS 2 - Plant Functional Types in Dynamic Vegetation Models for Arctic Ecosystems: Past Experiences, Future Directions

101B, Minneapolis Convention Center

Organized by: SD Wullschleger, HE Epstein

Moderator: X Xu

Speakers in this session will examine the early definition of plant functional types (PFTs), their importance in climate predictions, and progress and plans to improve the representation of vegetation dynamics for Arctic ecosystems as critical land surface components of Earth Systems Models.

1:30 PM OOS 2-1 Box, EO, University of Georgia. *Classification of plant functional types*.

1:50 PM OOS 2-2 Xu, C[1], SD Wullschleger[2], RA Fisher[3] and N McDowell[1], (1)Los Alamos National Laboratory, (2)Oak Ridge National Laboratory, (3)National Center for Atmospheric Research. *Sensitivity of PFT definitions to carbon cycle simulations in DGVMs*.

2:10 PM OOS 2-3 Kattge, J[1], LM Verheijen[2], R Aerts[2], V Brovkin[3], G Bönisch[1], HJC Cornelissen[2], PB Reich[4], IJ Wright[5] and PMV Bodegom[2], (1)Max Planck Institute for Biogeochemistry, (2)VU University, (3)Max Planck Institute for Meteorology, (4)University of Minnesota, (5)Macquarie University. *New concepts for trait-based classification of plant functional types*.

2:30 PM OOS 2-4 Iversen, CM, Oak Ridge National Laboratory. *Belowground considerations in defining plant functional types: Can we characterize and represent root functional types?*.

2:50 PM OOS 2-5 Epstein, HE[1], GV Frost[1], Q Yu[1] and DA Walker[2], (1)University of Virginia, (2)University of Alaska. *Dynamics of plant functional types at the forest-tundra ecotone*.

3:10 PM Break

3:20 PM OOS 2-6 Euskirchen, E[1], TB Carman[1] and AD McGuire[2], (1)University of Alaska-Fairbanks, (2)U.S. Geological Survey. *Vegetation dynamics in a changing Arctic: Improved biogeochemistry response to a warming climate through a detailed representation of leaf phenology*.

3:40 PM OOS 2-7 Goswami, S[1], KF Huemmrich[2], JA Gamon[3] and CE Tweedie[4], (1)Oak Ridge National Laboratory, (2)

1:30 pm-5 pm

NASA Goddard Space Flight Center, (3)University of Alberta, (4)University of Texas at El Paso. *Remote Sensing of Tundra Plant Functional Types* .

4:00 PM OOS 2-8 Wullschleger, SD[1], X Xu[1] and HE Epstein[2], (1) Oak Ridge National Laboratory, (2)University of Virginia. *Plant functional types in Earth System Models: Progress, plans, and future directions*.

4:20 PM OOS 2-9 Kleier, C, Regis University. *Raoulia australis is a pioneer cushion plant, but not a facilitator, in the Old Man Mountains of New Zealand*.

4:40 PM OOS 2-10 Norby, RJ, VL Sloan, CM Iversen and J Childs, Oak Ridge National Laboratory. *Plant and soil nitrogen relationships across polygonal ground at Barrow, Alaska*.

OOS 3 - Plugging Into NEON – A Foundation for Ecological Research At the Continental Scale and Beyond

101C, Minneapolis Convention Center

Organized by: D Tazik (dtazik@neoninc.org), AS Thorpe

Moderator: S Berukoff

This session will highlight current and future opportunities for research and scientific observation across the National Ecological Observatory Network, and foster dialogue on how the scientific community can leverage NEON data and infrastructure to investigate the causes and consequences of ecological change at the continental scale.

1:30 PM OOS 3-1 Ollinger, S[1], D Tazik[2], S Berukoff[3], WK Gram[2], T Kampe[2], K Laursen[3], HW Loescher[2], L Pitelka[4], H Powell[2], J Taylor[2] and AS Thorpe[2], (1)University of New Hampshire, (2)National Ecological Observatory Network (NEON, Inc.), (3)National Ecological Observatory Network, (4) NEON Inc.. *State of NEON: Where are we and what challenges and opportunities lie ahead?*.

1:50 PM OOS 3-2 Kampe, T[1], N Leisso[1] and K Krause[2], (1)National Ecological Observatory Network (NEON, Inc.), (2) National Ecological Observatory Network (NEON). *Supporting Targets of Opportunity in Ecological Research: Case of the High Park Fire, 2012*.

2:10 PM OOS 3-3 Karan, M[1], M Liddell[2] and S Phinn[3], (1)James Cook University, (2)Australian Supersite Network, Terrestrial Ecosystem Research Network, Australia, (3)Terrestrial Ecosystem Research Network, Australia. *International partnership for ecological observations at the continental scale: TERN-Australian Supersite Network/NEON partnership*.

2:30 PM OOS 3-4 Monson, RK, University of Arizona. *The North American monsoon macrosystem: A case study in the exploration of new ecological scales*.

2:50 PM OOS 3-5 Gilbert, JA[1], P Larsen[2], J Parnel[3], N Fierer[4], R Knight[5], JK Jansson[6], B Drewniak[2] and R Jacob[2], (1)University of Chicago, Argonne National Laboratories, (2)Argonne National Laboratory, (3)National Earth Observation Network, (4)University of Colorado-Boulder, (5)University of Colorado, (6)Lawrence Berkeley National Laboratory. *Generating a continental scale, systems model to explore scalar interactions within and between NEON terrestrial observation sites*.

3:10 PM Break

3:20 PM OOS 3-6 Schneider, DC, Memorial University of Newfoundland. *Engaging academia: Using NEON data to improve the design of ecological experiments and surveys.* .

3:40 PM OOS 3-7 Thomas, CL, Ferrum College. *A collaboration with the Ecological Research and Education Network: How does it work?*.

4:00 PM OOS 3-8 White, EP[1], X Xiao[1], KM Thibault[2], DJ McGlinn[1] and JA Kitzes[3], (1)Utah State University, (2)National Ecological Observatory Network (NEON, Inc.), (3)University of California, Berkeley. *Evaluating a general theory of macroecology using big data*.

4:20 PM OOS 3-9 Leasure, DR, University of Arkansas. *Geodata Crawler: A centralized national geodatabase and automated multi-scale data crawler to overcome GIS bottlenecks in data analysis workflows*.

OOS 4 - Seeing Ecology In Forest Inventories: What National Forest Inventories Can Tell Us About Forest Ecology

101D, Minneapolis Convention Center

Organized by: DJ Johnson (dj4@indiana.edu), K Zhu, CW Woodall

Moderator: CH Perry

The US Forest Service's Forest Inventory and Analysis database provides a unique opportunity to examine forest dynamics across unprecedented spatial scales. We will explore recent advances in ecological knowledge and predictions of future forest conditions derived from this extensive data set.

1:30 PM OOS 4-1 Woodall, CW, USDA Forest Service, Northern Research Station. *Accidental modern ecology: How a national forest inventory gave rise to new avenues in ecological research*.

1:50 PM OOS 4-2 Bell, DM[1], JB Bradford[2] and WK Lauenroth[1], (1)University of Wyoming, (2)US Geological Survey. *Western North American landscapes offer few opportunities for high elevation tree species migration*.

2:10 PM OOS 4-3 Oberle, B[1], K Ogle[2], A Zanne[3] and CW Woodall[4], (1)George Washington University, (2)Arizona State University, (3)The George Washington University, (4)USDA Forest Service. *When a tree falls: forest inventories illustrate how wood mechanical properties influence standing to down transitions in US forests*.

2:30 PM OOS 4-4 Johnson, DJ and K Clay, Indiana University. *Intraspecific patterns of conspecific negative density dependence in tree species across the eastern United States*.

2:50 PM OOS 4-5 Vanderwel, MC[1], V Lyutsarev[2] and DW Purves[2], (1)University of Florida, (2)Microsoft Research. *Predicting the dynamics of US forest distributions through data-constrained, individual-based demographic modelling*.

3:10 PM Break

3:20 PM OOS 4-6 Zhu, K[1], CW Woodall[2], S Ghosh[1], AE Gelfand[1] and JS Clark[1], (1)Duke University, (2)USDA Forest Service, Northern Research Station. *Using forest inventory to understand climate change impact on tree populations*.

3:40 PM OOS 4-7 Dietze, M, BS Hardiman, JA Mantooth and T Viskari, Boston University. *The role of community dynamics in constraining regional-scale carbon cycle estimates: Assimilating forest inverntory data into the Ecosystem Demography model*.

4:00 PM OOS 4-8 Peters, MP[1], SN Matthews[2], L Iverson[1] and A Prasad[1], (1)Northern Research Station, USDA Forest Service, (2)The Ohio State University. *FIA and environmental data to model tree range boundaries and potential changes in suitable habitats under climate change*.

4:20 PM OOS 4-9 Baudena, M[1], A Sánchez[2], CP Georg[3], P Ruiz-Benito[4], MA Zavala[5], M Rodriguez[5] and M Rietkerk[1], (1) Utrecht University, (2)Universidad Carlos III, (3)Oxford University, (4)Center of Forest Research (CIFOR-INIA), (5)University of Alcalá. *Network analysis unravels patterns of species richness along a climatic gradient in Spanish forests*.

4:40 PM OOS 4-10 Miller, K, F Dieffenbach and BR Mitchell, National Park Service. *Comparing metrics of forest health between national parks and surrounding forestlands using data collected by the Northeast Temperate Network and the U.S. Forest Service Forest Inventory and Analysis program*.

OOS 5 - Uncertainty Analysis: A Critical Step in Ecological Synthesis

101E, Minneapolis Convention Center

Organized by: RD Yanai, J Taylor, ME Harmon

Moderator: JJ Battles

Approaches to uncertainty analysis in various ecological applications will be described to address a critical need for reliable estimates of uncertainty required for determining the significance of differences, detecting trends, making predictions, and designing efficient monitoring programs.

1:30 PM OOS 5-1 Harmon, ME, Oregon State University. *Uncertainty analysis: An evaluation metric for synthesis science*.

1:50 PM OOS 5-2 Campbell, JL[1], RD Yanai[2] and MB Green[3], (1) United States Department of Agriculture Forest Service, (2)SUNY College of Environmental Science and Forestry, (3)Plymouth State University. *Quantifying uncertainty in ecology: Examples from small watershed studies*.

2:10 PM OOS 5-3 Hobbs, NT, Colorado State University. *Better ignorant than misled: Including uncertainty in forecasts supporting management and policy*.

2:30 PM OOS 5-4 Aiello-Lammens, M and HR Akcakaya, Stony Brook University. *Global Sensitivity Analysis for Impact Assessments*.

2:50 PM OOS 5-5 Levine, CR[1], RD Yanai[2], G Lampman[3], DA Burns[4], CT Driscoll[5], GB Lawrence[6], JA Lynch[7] and N Schoch[8], (1)UC Berkeley, (2)SUNY College of Environmental Science and Forestry, (3)NYSERDA, (4)US Geologic Survey, (5)Syracuse University, (6)U.S. Geological Survey, (7)US Environmental Protection Agency, (8)Biodiversity Research Institute. *Optimizing environmental monitoring designs*.

3:10 PM Break

3:20 PM OOS 5-6 See, CR[1], RD Yanai[1], MB Green[2] and DI Moore[3], (1)SUNY College of Environmental Science and Forestry, (2)Plymouth State University, (3)University of New Mexico. *Uncertainty due to gap-filling in long-term hydrologic datasets*.

3:40 PM OOS 5-7 Csavina, JL, J Taylor and JA Roberti, National Ecological Observatory Network (NEON, Inc.). *Uncertainty in an uncertain world: Using scientific judgment for evaluating uncertainty in measurement results*.

4:00 PM OOS 5-8 Roberti, JA, JR Taylor, HW Loescher, JL Csavina and DE Smith, National Ecological Observatory Network (NEON, Inc.). *NEON's approach to uncertainty estimation for sensor-based measurements*.

4:20 PM OOS 5-9 Taylor, J[1], J Roberti[2], D Smith[1], S Berukoff[3] and HW Loescher[1], (1)National Ecological Observatory Network (NEON, Inc.), (2)NEON, Inc., (3)National Ecological Observatory Network. *Estimating uncertainty for continental scale measurements*.

4:40 PM OOS 5-10 LeBauer, DS[1], M Dietze[2], D Jaiswal[1], R Kooper[1], SP Long[3], SP Serbin[4] and D Wang[1], (1)University of Illinois, (2)Boston University, (3)University of Illinois at Urbana-Champaign, (4)University of Wisconsin - Madison. *Reducing uncertainty through data-driven model development*.

COS 1 - Agriculture I

L100I, Minneapolis Convention Center

1:30 PM COS 1-1 Taylor, JE, Florida Agricultural & Mechanical University. *Capacity building for a sustainable development*.

1:50 PM COS 1-2 Wright, CK and MC Wimberly, South Dakota State University. *Recent land use change in the Western Corn Belt threatens grasslands and wetlands*.

2:10 PM COS 1-3 Marín, L[1], A Iverson[1], DJ Gonthier[2] and G Ibarra-Nuñez[3], (1)University of Mchigan, (2)University of Michigan, (3)ECOSUR. *The effect of tree identity and aggressive ants on arboreal spider diversity in coffee agroecosystems*.

2:30 PM COS 1-4 Oberhofer, M, SH Faeth and N Cech, University of North Carolina Greensboro. *Understanding endophyte communities of Echinacea purpurea to resolve plant medicinal efficacy*.

2:50 PM COS 1-5 Larsen, AE, University of California. *Not so simple: landscape simplification does not consistently drive insecticide use*.

3:10 PM Break

3:20 PM COS 1-6 Birthisel, SK, ER Gallandt, R Jabbour and FA Drummond, University of Maine. *Comparing sources of variability in agronomic weed seed predation: Time, space, and habitat*.

3:40 PM COS 1-7 Ray, D[1] and J Foley[2], (1)University of Minnesota-Twin Cities, (2)University of Minnesota. *Can we feed the world and not destroy the environment?*.

4:00 PM COS 1-8 Blank, PJ[1], MG Turner[1] and DW Sample[2], (1) University of Wisconsin, (2)Wisconsin Department of Natural Resources. *Grassland bird communities in potential bioenergy crop fields in southern Wisconsin*.

4:20 PM COS 1-9 Roley, SS[1], JL Tank[1], M Lipscomb[2] and JD Witter[3], (1)University of Notre Dame, (2)University of Virginia, (3)The Ohio State University. *How cost-effective are nitrogen-removal best management practices in agricultural landscapes?*.

4:40 PM COS 1-10 McDaniel, MD and AS Grandy, University of New Hampshire. *Cropping biodiversity effects on decomposition of dual-labeled (^{13}C and ^{15}N) wheat residue*.

1:30 pm-5 pm

COS 2 - Aquatic-Terrestrial Linkages

L100J, Minneapolis Convention Center

1:30 PM COS 2-1 Song, K, MA Xenopoulos and PC Frost, Trent University. *A changing urban phosphorus fingerprint: Internal P dynamics alter phosphorus speciation in urban aquatic systems*.

1:50 PM COS 2-2 Strauch, AM[1], R MacKenzie[2], G Bruland[3], R Tingley III[4] and CP Giardina[5], (1)University of Hawaii at Manoa, (2)USDA Forest Service,, (3)Principia College, (4) Michigan State University, (5)USDA Forest Service. *Drivers of surface water quality in tropical rivers: The influence of mean annual rainfall and land-use/land-cover change on fecal indicator bacteria load*.

2:10 PM COS 2-3 Hobbie, SE[1], JC Finlay[1], LA Baker[1], B Janke[1], P Kalinosky[1], M Bauer[1], J O'Neil-Dunne[2], DA Nidzgorski[1] and CR Buyarski[1], (1)University of Minnesota, (2)University of Vermont. *The role of trees in mediating land-water nutrient flows in urban landscapes*.

2:30 PM COS 2-4 Batt, RD[1], SR Carpenter[1], JJ Cole[2], ML Pace[3], RA Johnson[3], J Kurtzweil[1] and GM Wilkinson[3], (1)University of Wisconsin - Madison, (2)Cary Institute of Ecosystem Studies, (3)University of Virginia. *Changes in ecosystem metabolism and consumer diet in a lake with experimentally darkened water*.

2:50 PM COS 2-5 Fey, SB[1], AN Mertens[1], L Beversdorf[2], KD McMahon[2] and KL Cottingham[1], (1)Dartmouth College, (2) University of Wisconsin - Madison. *Climate change consequences cross ecosystem boundaries: increases in soil temperature impact lake plankton communities through modifying terrestrial vegetation subsidies*.

3:10 PM Break

3:20 PM COS 2-6 Honig, SE, B Mahoney, DA Croll and BR Tershy, University of California, Santa Cruz. *Evidence of nutrient enrichment by seabirds on coral reefs in Oahu, Hawaii*.

3:40 PM COS 2-7 Showalter, AM, EC VanTine, RL Ferrenberg and MJ González, Miami University. *Evidence of behavioral growth compensation and reduced body condition in an aquatic predator exposed to low nutrient inputs*.

4:00 PM COS 2-8 Moreno Mateos, D[1] and ME Power[2], (1) Stanford University, (2)University of California, Berkeley. *Boundary effects between aquatic and terrestrial ecosystems in a Mediterranean landscape*.

4:20 PM COS 2-9 Thomforde, S, Great River Greening. *Canvasback ducks (Aythya valisineria), wild celery (Vallisneria americana), and phosphorus regulation in large shallow water lakes*.

4:40 PM COS 2-10 Jarrell, MS and JW Feminella, Auburn University. *Effects of contrasting stream geomorphology on riparian habitat structure and prey subsidies for web-weaving spider assemblages in southeastern Piedmont streams*.

COS 3 - Arid And Semi-Arid Systems

M100GD, Minneapolis Convention Center

1:30 PM COS 3-1 Kagima, B, University of Nebraska-Lincoln. *Remote sensing of plant community succession in a semi-arid grassland*.

1:50 PM COS 3-2 Ksiksi, TS and AA Hamza, UAEU. *Acridocarpus orientalis: A Rare species With Potentials*.

2:10 PM COS 3-3 Alhajeri, BH, JJ Schenk and SJ Steppan, Florida State University. *Ecological correlates of morphological variation in the tympanic bulla of desert rodents: phylogeny, adaptation, and drift*.

2:30 PM COS 3-4 Svoray, T[1], R Shafran-Nathan[2] and A Perevolotsky[3], (1)Ben Gurion University of the Negev, (2)Ben-Gurion University of the Negev, (3)The Volcani Center. *The resilience of annual vegetation primary production subjected to different climate change scenarios*.

2:50 PM COS 3-5 McKenna, OP and OE Sala, Arizona State University. *Geomorphic controls over Nitrogen and Carbon Stocks in Desert Playas*.

3:10 PM Break

3:20 PM COS 3-6 Griffis-Kyle, KL, Texas Tech University. *Amphibians and odonates in Sonoran Desert wildlife waters: issues of habitat quality*.

3:40 PM COS 3-7 Kramer, DW[1], CA Taylor[1], GE Sorensen[1], RD Cox[1], PS Gipson[1] and JW Cain III[2], (1)Texas Tech University, (2)U.S. Geological Survey, New Mexico Cooperative Fish and Wildlife Research Unit. *The Effects of Thinning and Ungulate Exclusion on Conifer Understory Vegetation and Key Mule Deer Forage Species in Northeastern New Mexico, USA*.

4:00 PM COS 3-8 Crum, SM and GD Jenerette, University of California. *Scaling soil respiration dynamics across regional land-use and climate gradients in southern California, USA* .

4:20 PM COS 3-9 Levi, EM[1], SR Archer[1] and HL Throop[2], (1) University of Arizona, (2)New Mexico State University. *Woody detritus decomposition in a shrub-invaded grassland: interactions among soil deposition, termites and radiant energy*.

4:40 PM COS 3-10 Homyak, PM[1], JP Schimel[1] and JO Sickman[2], (1)University of California, Santa Barbara, (2)UC Riverside. *Rapid production of nitric oxide in seasonally-dry catchments*.

COS 4 - Biodiversity: Effects Of Global Change

M100HC, Minneapolis Convention Center

1:30 PM COS 4-1 Limberger, R, E Low-Décarie and GF Fussmann, McGill University. *Response of an algal model community to gradual and abrupt environmental change in isolated versus connected habitats*.

1:50 PM COS 4-2 Jones, NT and B Gilbert, University of Toronto. *Zooplankton community responses to climate change vary across a latitudinal gradient*.

2:10 PM COS 4-3 Winegardner, AK[1], BE Beisner[2] and I Gregory-Eaves[1], (1)McGill University, (2)University of Quebec at Montreal. *Landscape-level drivers of plankton communities using both paleolimnological and contemporary sampling across the United States*.

2:30 PM COS 4-4 Catano, CP and JC Trexler, Florida International University. *Evaluating the impacts of alternative restoration and climate change scenarios on fish productivity in the Everglades*.

2:50 PM COS 4-5 Freund, KF, ET Borer and G May, University of Minnesota. *The effects of a changing environment on fungal symbiont communities*.

3:10 PM Break

3:20 PM COS 4-6 Wright, JP[1], PD Wragg[2], ET Borer[2], DS Gruner[3], H Hillebrand[4], EM Lind[2], EW Seabloom[2], LH Yang[5] and N Network[6], (1)Duke University, (2)University of Minnesota, (3)University of Maryland, (4)Carl von Ossietzky University of Oldenburg, (5)University of California, Davis, (6)Multiple Institutions. *Predicting patterns of species turnover in response to nutrient addition and herbivory*.

3:40 PM COS 4-7 LeBrun, JJ[1], JE Schneiderman[1], FR Thompson III[2], WE Thogmartin[3], WD Dijak[2], HS He[1] and JJ Millspaugh[1], (1)University of Missouri, (2)University of Missouri-Columbia, (3)United States Geological Survey. *How does forest management focused on mitigating climate change affect avian species?*.

4:00 PM COS 4-8 Yeakel, JD[1], MM Pires[2], NJ Dominy[3], PL Koch[3], P Guimarães Jr.[2], L Rudolf[4] and T Gross[4], (1)Simon Fraser University, (2)Universidade de São Paulo, (3)University of California, Santa Cruz, (4)University of Bristol. *Unraveling an ecological network: 6000 years of anthropogenic and climatic impacts on an Egyptian food web* .

4:20 PM COS 4-9 Urquhart, GR, CA Jordan and DB Kramer, Michigan State University. *Influence of human activity on the distribution of mammals in rainforests on the Caribbean coast of Nicaragua*.

4:40 PM COS 4-10 Dickson, TL[1], GG Mittelbach[1], HL Reynolds[2] and KL Gross[1], (1)Michigan State University, (2)Indiana University. *How do plant traits interact to determine fertilization effects on plant diversity in grasslands?*.

COS 5 - Biogeochemistry: New Paradigms In Biogeochem Cycling I

M100IB, Minneapolis Convention Center

1:30 PM COS 5-1 Dauer, JM[1], TD Bullen[2] and S Perakis[3], (1) Michigan State University, (2)U.S. Geological Survey, (3) US Geological Survey. *Role of Ca-ox in controlling Ca/Sr discrimination and $^{44}Ca/^{40}Ca$ fractionation of calcium*.

1:50 PM COS 5-2 Schlesinger, W, Cary Institute of Ecosystem Studies. *The sink for nitrous oxide in soils*.

2:10 PM COS 5-3 Pardo, LH[1], MB Green[2] and SW Bailey[3], (1) USDA Forest Service, (2)Plymouth State University, (3) USFS. *Using soil physical properties to predict C and N cycling in a northern hardwood forest*.

2:30 PM COS 5-4 Vitousek, PM[1] and OA Chadwick[2], (1)Stanford University, (2)University of California. *Changes in pedogenic thresholds and soil process domains in long-term soil development*.

2:50 PM COS 5-5 Stark, JM, Utah State University. *Differential temperature and moisture sensitivities of N mineralization and immobilization regulate seasonal dynamics of net N mineralization in a semi-arid ecosystem*.

3:10 PM Break

3:20 PM COS 5-6 Luo, Y[1], T Keeman[2] and M Smith[3], (1)University of Oklahoma, (2)Harvard University, (3)Microsoft Research. *Predictability of the terrestrial carbon cycle*.

3:40 PM COS 5-7 Heffernan, J and A Appling, Duke University. *Time scales of coupled and de-coupled biogeochemical cycles*.

4:00 PM COS 5-8 Hynicka, J[1], J Pett-Ridge[1] and S Perakis[2], (1) Oregon State University, (2)US Geological Survey. *Long-term controls on ecosystem calcium: Nitrogen accumulation versus bedrock weathering*.

4:20 PM COS 5-9 Sullivan, BW[1], MK Nasto[1], SC Reed[2], RL Chazdon[3] and CC Cleveland[1], (1)University of Montana, (2) USGS, (3)University of Connecticut. *Patterns and rates of biological nitrogen fixation during secondary succession in a lowland tropical rain forest*.

4:40 PM COS 5-10 Brewer, PE and JC von Fischer, Colorado State University. *Anoxic microsites in soils: regulating factors, impacts on greenhouse gas fluxes and role in nitrogen cycling*.

COS 6 - Cimate Change

101G, Minneapolis Convention Center

1:30 PM COS 6-1 Aspinwall, M[1], S Taylor[2], DB Lowry[3], A Khasanova[3], J Bonnette[3], B Whitaker[3], N Johnson[3], C Hawkes[3], T Juenger[3] and PA Fay[4], (1)Hawkesbury Institute for the Environment, University of Western Sydney, (2)Bowdoin College, (3)University of Texas, (4)USDA, Agricultural Research Service. *Growth and physiological plasticity among differentially adapted genotypes of a widespread C_4 grass under altered precipitation*.

1:50 PM COS 6-2 DeLong, JP, University of Nebraska. *Understanding the temperature-size rule with the supply-demand model of body size evolution*.

2:10 PM COS 6-3 Schneiderman, JE[1], HS He[1], FR Thompson III[2], WD Dijak[2] and JJ LeBrun[1], (1)University of Missouri, (2)University of Missouri-Columbia. *Forest management plans for mitigating projected future climate change in the Missouri Ozark Highlands*.

2:30 PM COS 6-4 Hoffman, FM[1], J Kumar[1], RT Mills[1] and W Hargrove[2], (1)Oak Ridge National Laboratory, (2)USDA Forest Service, Eastern Forest Environmental Threat Assessment Center. *Representativeness-based sampling network design for the Arctic*.

2:50 PM COS 6-5 Srygley, R[1], R Dudley[2], EG Oliveira[3] and AJ Riveros[4], (1)USDA-ARS-NPARL, (2)U.C. Berkeley, (3)Centro Universitário Una - Campus Guajajaras, (4)Smithsonian Tropical Research Institute. *El Niño Events, Host Plant Growth, and Migratory Butterfly Abundance in a Changing Climate*.

3:10 PM Break

3:20 PM COS 6-6 Farrer, EC[1], IW Ashton[2] and KN Suding[3], (1) University of California, Berkeley, (2)National Park Service, (3)University of California at Berkeley. *Indirect effects of global change on the alpine tundra: Linking plant community and ecosystem responses*.

3:40 PM COS 6-7 Hawkins, CP, JJ Vander Laan, RA Hill, J Jin, D Tarboton and S Dhungel, Utah State University. *Response of stream ecosystems to climate change (I): Linking invertebrate biodiversity to hydrologic and thermal alteration*.

4:00 PM COS 6-8 Jin, J, CP Hawkins and D Tarboton, Utah State

1:30 pm-5 pm

University. *Response of stream ecosystems to climate change (II): An improved climate dynamical downscaling for the conterminous United States*.

4:20 PM COS 6-9 Tarboton, D, S Dhungel, CP Hawkins, JJ Vander Laan, RA Hill and J Jin, Utah State University. *Response of stream ecosystems to climate change (III): Characterizing and predicting ecologically relevant flow regimes*.

4:40 PM COS 6-10 Hill, RA, CP Hawkins, J Jin and D Tarboton, Utah State University. *Response of stream ecosystems to climate change (IV): Stream temperature modeling*.

COS 7 - Community Assembly And Neutral Theory I

101H, Minneapolis Convention Center

1:30 PM COS 7-1 Meadow, JF[1], A Bateman[1], K Herkert[2], TK O'Connor[3] and JL Green[1], (1)University of Oregon, (2)Oregon Health and Science University, (3)University of Arizona. *Significant changes in the skin microbiome mediated by the sport of roller derby*.

1:50 PM COS 7-2 Russo, SE[1], AE Kochsiek[1] and S Tan[2], (1)University of Nebraska-Lincoln, (2)Center for Tropical Forest Science and Arnold Arboretum of Harvard University. *Trade-offs in Carbohydrate Allocation and the Distributions of Bornean Tree Species along a Soil Gradient*.

2:10 PM COS 7-3 Kraichak, E, University of California, Berkeley. *Beta diversity of epiphyllous bryophyte communities increases with microclimate fluctuation*.

2:30 PM COS 7-4 Leopold, DR[1], AJ Tanentzap[2], WG Lee[3], P Heenan[3] and T Fukami[1], (1)Stanford University, (2)York University, (3)Landcare Research. *Chasing the ghost of competition past: Interactions between immigration history and environmental gradients influence modern plant community assembly*.

2:50 PM COS 7-5 Rael, RC, AM Ostling, G Barabás and R D'Andrea, University of Michigan. *Detecting differences in species abundance patterns in niche and neutral communities*.

3:10 PM Break

3:20 PM COS 7-6 Renne, IJ[1], BT Sinn[2], GW Shook Jr.[1], DM Sedlacko[1], JR Dull[1], D Villarreal[3] and JL Hierro[4], (1) Youngstown State University, (2)The Ohio State University, (3)Universidad Nacional de La Pampa, Argentina, (4) CONICET and Universidad Nacional de La Pampa. *Eavesdropping in plants: Delayed germination via biochemical recognition*.

3:40 PM COS 7-7 Adler, FR[1], RA Lankau[2] and PB Adler[3], (1) University of Utah, (2)University of Georgia, (3)Utah State University. *Why are some species rare? Mathematical models of plant-soil feedbacks in diverse communities*.

4:00 PM COS 7-8 Foldi, SE and ML Rosenzweig, University of Arizona. *Internal mesquite-seed predators: nine species exploiting one resource*.

4:20 PM COS 7-9 Williams, BM and GR Houseman, Wichita State University. *Plant species richness increases with soil heterogeneity: Evidence from a field experiment*.

4:40 PM COS 7-10 Riley, D and AM Ostling, University of Michigan. *The influence of the metacommunity state on neutral theory predictions for the local community*.

COS 8 - Competition

101I, Minneapolis Convention Center

1:30 PM COS 8-1 Brandt, AJ, GA del Pino and JH Burns, Case Western Reserve University. *Does environmental heterogeneity affect the ability of plastic trait expression to mediate plant competition?*.

1:50 PM COS 8-2 Thomas, MK, E Litchman and CA Klausmeier, Michigan State University. *Resource competition in seasonal environments: The early bird gets the worm*.

2:10 PM COS 8-3 Eppinga, MB[1], J Molofsky[2] and BM Bernik[3], (1)Utrecht University, (2)The University of Vermont, (3) Tulane University. *Competition dynamics can be inferred from a single 'snapshot' of plant communities' spatial distribution*.

2:30 PM COS 8-4 Blowes, SA[1], MS Pratchett[2] and SR Connolly[1], (1)ARC Centre of Excellence for Coral Reef Studies, James Cook University, (2)ARC Centre of Excellence for Coral Reef Studies. *Heterospecific aggression and dominance in a guild of coral-feeding reef fishes: The roles of dietary ecology and phylogeny*.

2:50 PM COS 8-5 Porter, J[1] and LA Turnbull[2], (1)Institute of Evolutionary Biology and Environmental Studies, University of Zürich, (2)University of Zürich. *From individuals to ecosystems: Integrating the effects of competition and disturbance on coexistence in annual plant communities*.

3:10 PM Break

3:20 PM COS 8-6 Van Allen, BG and VHW Rudolf, Rice University. *Environmental carry-over effects drive context dependent competitive dynamics*.

3:40 PM COS 8-7 Yu, Z, J Tang and X Chen, Zhejiang University. *Effects of arbuscular mycorrhizal fungi on plant-plant interactions under water and salt stress*.

4:00 PM COS 8-8 Boynton, PJ, CU Baden and D Greig, Max Planck Institute for Evolutionary Biology. *Microbial competitive outcomes depend on interactions between insect vectors and the abiotic environment*.

4:20 PM COS 8-9 Wieczynski, DJ and DA Vasseur, Yale University. *Intraspecific competition in temporally autocorrelated environments*.

4:40 PM COS 8-10 Turtora, M[1], DL DeAngelis[2], SY Teh[3] and J Jiang[4], (1)USGS, (2)United States Geological Survey, (3) Universiti Sains Malaysia, (4)University of Tennessee. *Ecotone resilience in a coastal system of mangroves and hardwood hammocks*.

COS 9 - Ecosystem Services Assessment I

101J, Minneapolis Convention Center

1:30 PM COS 9-1 Grossman, JJ, University of Minnesota. *Ecosystem service tradeoffs and land-use among smallholder farmers in Eastern Paraguay*.

1:50 PM COS 9-2 Bragg, DC[1], JM Guldin[2] and KM McElligott[3], (1)USDA Forest Service, (2)Southern Research Station, (3) University of Arkansas-Monticello. *Carbon sequestration patterns and forest product yield of two southern pine stands over 75 years of uneven-aged management*.

2:10 PM COS 9-3 Wasser, LA[1] and L Chasmer[2], (1)National Ecological Observatory Network (NEON), (2)Wilfrid Laurier

University. *How Data Methods Effect Broadscale Forested Riparian Buffer Ecosystem Service Assessment*.

2:30 PM COS 9-4 Ziv, G[1], S Ma[2], J Duggan[2], B Eichelberger[2] and G Daily[2], (1)Natural Capital Project, (2)Stanford University. *Enlisting Ecosystem Services: A Trade-Offs Analysis on Military Training Land*.

2:50 PM COS 9-5 Fleming, B, J Rivera, A Miller and M Piccarello, University of New Mexico. *Ecosystem Services of the Rio Arriba Bioregion*.

3:10 PM Break

3:20 PM COS 9-6 Sutton-Grier, A, A Moore, P Wiley and P Edwards, National Oceanic and Atmospheric Administration. *Operationalizing ecosystem services into existing U.S. natural resource management policies: The case for carbon sequestration and storage*.

3:40 PM COS 9-7 Bayles, BR and KA Brauman, University of Minnesota. *Healthy ecosystems, healthy people: Using ecosystem services to link ecosystem processes to human health impacts*.

4:00 PM COS 9-8 Keeler, BL[1], J Hill[2] and S Polasky[2], (1)Institute on the Environment, (2)University of Minnesota. *Land use change and water quality-related ecosystem services*.

4:20 PM COS 9-9 Chan, KMA and T Satterfield, University of British Columbia. *Biodiversity and Ecosystem Services: Whither the Promised Biophysically and Socially Informed Valuation?*.

COS 10 - Education And Outreach I

L100A, Minneapolis Convention Center

1:30 PM COS 10-1 McCormack, MB[1], SJ Cech[2] and E Yourd[3], (1)Cleveland State University, (2)Nature Center at Shaker Lakes, (3)John Carroll University. *How Collaborative Partnerships Can Teach and Foster Ecological Restoration*.

1:50 PM COS 10-2 Petersen, JE, CM Frantz and MR Shammin, Oberlin College. *"Environmental Dashboard": The efficacy of using real-time multi-scale feedback on resource consumption and environmental quality to promote systems thinking and motivate behavior change*.

2:10 PM COS 10-3 Doll, JE[1], J Letto[2], D Poulson[3], A Hinterhuer[4] and B Parke[2], (1)Michigan State University, (2)Society of Environmental Journalists, (3)Michigan State University Knight Center for Environmental Journalism, (4)Institutes for Journalism and Natural Resources. *Enhancing climate change communication by fostering collaborations between scientists and journalists*.

2:30 PM COS 10-4 Thompson, SK[1] and JB Cotner[2], (1)University of Minnesota- Twin Cities, (2)University of Minnesota - Twin Cities. *Turning K-12 environmental education InSciEd Out : Using prescription education to engage young students in the environmental sciences*.

2:50 PM COS 10-5 Landsbergen, KJ, Columbus College of Art and Design. *Design and Science partnerships: Intersections of science literacy, service learning, and climate change communications*.

3:10 PM Break

3:20 PM COS 10-6 Roon, D[1], L Waits[1], J Rachlow[1], F Wilhelm[1], D Tank[1], S Pinel[1], R Cisneros[2], F Lopez[2], V Iniguez-Gallardo[2], C Espinoza[2] and C Iñiguez Armijos[2], (1)University of Idaho, (2)Universidad Tecnica Particular de Loja. *A student-driven research partnership for building neotropical conservation capacity, centered on the Podocarpus region of Southern Ecuador*.

3:40 PM COS 10-7 Woolery, LA, University of Missouri. *Explore science, enter through the arts: Art-Based Perceptual Ecology, a novel research method used in collaboration with scientific inquiry*.

COS 11 - GPS And Telemetry

L100B, Minneapolis Convention Center

1:30 PM COS 11-1 Merino, S[1], J Carter[2], TR Sheffels[3] and MD Sytsma[3], (1)Fiver Rivers Services, LLC,, (2)US Geological Survey, (3)Portland State University. *Comparison of Activity Patterns of Nutria (Myocastor coypus) Between Urban Pond Complexes in Lafayette, Louisiana, USA and Portland, Oregon, USA*.

1:50 PM COS 11-2 Carter, J[1], TR Sheffels[2], S Merino[3] and MD Sytsma[2], (1)US Geological Survey, (2)Portland State University, (3)IAP. *A Comparison of use of tail-mount and collar attachment methods for nutria (Myocastor coypus) telemetry*.

2:10 PM COS 11-3 Rota, CT and JJ Millspaugh, University of Missouri. *A Bayesian kernel density estimator for evaluating animal home range*.

2:30 PM COS 11-4 Auger-Méthé, M[1], AE Derocher[1], MJ Plank[2], EA Codling[3], CA DeMars[1] and MA Lewis[1], (1)University of Alberta, (2)University of Canterbury, (3)University of Essex. *Simple search strategies fail to explain the movement data of grizzly bears, polar bears, and caribou*.

2:50 PM COS 11-5 Davidson, SC[1], G Bohrer[2], S Dodge[2], R Weinzierl[1], RW Kays[3] and M Wikelski[4], (1)Max Planck Institute for Ornithology, (2)Ohio State University, (3)North Carolina Museum of Natural Sciences, (4)Max Plank Institute for Ornithology. *Incorporating remote sensing and environmental data in animal movement research using the Env-DATA system and Movebank*.

3:10 PM Break

3:20 PM COS 11-6 Mosser, AA[1], T Avgar[1], AR Rodgers[2], JM Fryxell[1] and ID Thompson[3], (1)University of Guelph, (2) Ontario Ministry of Natural Resources, (3)Canadian Forest Service. *The view from a caribou: a collar + GPS + accelerometer + on-board video = extensive data on an elusive species*.

3:40 PM COS 11-7 Ward, DC, RM Smith and WF Bien, Drexel University. *Estimating Population Densities from Radiotelemetry Data for the Northern Pine Snake in New Jersey*.

4:00 PM COS 11-8 Calabrese, JM[1], CH Fleming[1], T Mueller[2], KA Olson[1], P Leimgruber[1] and WF Fagan[2], (1)Smithsonian Conservation Biology Institute, (2)University of Maryland. *A novel semi-variance approach to extracting multiple movement modes from animal relocation data*.

4:20 PM COS 11-9 Fleming, CH[1], JM Calabrese[1], T Mueller[2], KA Olson[1], P Leimgruber[1] and WF Fagan[2], (1)Smithsonian Conservation Biology Institute, (2)University of Maryland. *Linking statistics of movement to resource dynamics*.

1:30 pm-5 pm

COS 12 - Herbivory I

L100C, Minneapolis Convention Center

1:30 PM COS 12-1 Chang, GC, CL Powers, CP Collins, J Kunthara and N Fischer, Gonzaga University. *Resource dilution increases the effectiveness of a biological control weevil*.

1:50 PM COS 12-2 Lee, CT, Florida State University. *Plant population responses to fluctuating herbivory: An approach for obtaining stochastic elasticities to the mean and variance of species interactions*.

2:10 PM COS 12-3 Anstett, DN, I Naujokaitis-Lewis and M Johnson, University of Toronto. *Contrasting latitudinal herbivory patterns in Oenothera biennis (Onagraceae)*.

2:30 PM COS 12-4 Turley, NE[1], TJ Davies[2], MJ Crawley[3] and H Schaefer[4], (1)University of Toronto, (2)McGill University, (3)Imperial College, London, (4)Technische Universitaet Muenchen. *Effects of long-term experimental manipulation of biotic and abiotic factors on the phylogenetic structure of plant communities*.

2:50 PM COS 12-5 Lemoine, NP[1], WA Drews[2], DE Burkepile[1] and J Parker[3], (1)Florida International University, (2)Wabash College, (3)Smithsonian Environmental Research Center. *Increased temperature alters feeding behavior of a generalist herbivore*.

3:10 PM Break

3:20 PM COS 12-6 Augustine, DJ[1] and JD Derner[2], (1)USDA-ARS, (2)USDA ARS, High Plains Grasslands Research Station. *On the strength and timing of fire-grazing interactions in grassland ecosystems*.

3:40 PM COS 12-7 Bergman, BG and J Bump, Michigan Technological University. *Large mammals in subsidies' dark side: contaminant ecology of mammal-mediated aquatic-terrestrial linkages*.

4:00 PM COS 12-8 Wan, HY, A Rhodes and SB St Clair, Brigham Young University. *High severity burn increases post-fire resistance and resilience of aspen forest against ungulate herbivory*.

4:20 PM COS 12-9 Hahn, PG and JL Orrock, University of Wisconsin - Madison. *Habitat quality and herbivory interact to have species-specific effects on plant growth*.

4:40 PM COS 12-10 Moorhead, LC[1], JJ Call[2] and A Classen[2], (1) University of Tennessee, (2)University of Tennessee, Knoxville. *Small mammals have a legacy effect on an ecosystem that persists following a major disturbance*.

COS 13 - Invasion I

L100D, Minneapolis Convention Center

1:30 PM COS 13-1 Craig, ME[1], SM Pearson[2] and JM Fraterrigo[1], (1)University of Illinois at Urbana-Champaign, (2)Mars Hill College. *Grass invasion differentially affects carbon cycling across an urban-rural gradient in Southern Appalachian forests*.

1:50 PM COS 13-2 Brantley, S[1], CF Miniat[1], SN Laseter[1], KJ Elliott[1], JD Knoepp[1] and JM Vose[2], (1)USDA Forest Service Southern Research Station, (2)US Forest Service Southern Research Station. *Hemlock loss affects nitrate fluxes and stormflow in southern Appalachian headwater streams*.

2:10 PM COS 13-3 Volesky, LA[1] and P Geddes[2], (1)Northside College Preparatory High School, (2)Northeastern Illinois University. *Relationships of native and exotic strains of Phragmites australis to wetland ecosystem properties*.

2:30 PM COS 13-4 Caldeira, MC[1], TS David[2], X Lecomte[3], C Werner[4], JS David[3] and RJ Ryel[5], (1)Technical University of Lisbon, (2)INIAV, (3)Technical University of Lisbon, Instituto Superior de Agronomia, (4)University of Bayreuth, (5)Utah State University. *Shrub encroachment effect on tree C assimilation and water use in a Mediterranean oak woodland*.

2:50 PM COS 13-5 Lee, MR, ES Bernhardt and JP Wright, Duke University. *Do plant traits and preexisting ecosystem attributes predict the severity of invader impacts on nitrogen cycling?*.

3:10 PM Break

3:20 PM COS 13-6 Martin, LB and AL Leibl, University of South Florida. *Plasticity in physiological plasticity in an avian range expansion*.

3:40 PM COS 13-7 Walling, RL and TR Horton, State University of New York - College of Environmental Science and Forestry. *The effects of invasive earthworms on soil properties and ectomycorrhizal fungi*.

4:00 PM COS 13-8 Hull-Sanders, HM[1], AE Baker[2], D Lance[2] and V Mastro[2], (1)Pennsylvania State University, (2)USDA APHIS PPQ CPHST. *Invasion dynamics and host tree preference of the Asian Longhorned beetle, Anoplophora glabripennis, in Massachusetts*.

4:20 PM COS 13-9 Pierce, AD[1], S McDaniel[2], M Wasser[2], CM Litton[3], S Cordell[4] and CP Giardina[4], (1)University of Hawai'i, (2)National Park Service, (3)University of Hawaii at Manoa, (4)USDA Forest Service. *Using observed fire behavior to compare custom and standard fire behavior fuel models: A case study of grass-invaded shrublands at Hawai'i Volcanoes National Park*.

4:40 PM COS 13-10 Lurie, MH[1], JL Bufford[1], MKM Rathjen[1], SK Walsh[1], CC Daehler[1] and Inderjit[2], (1)University of Hawaii, (2)University of Delhi. *Do plant soil feedbacks impact Ardisia elliptica invasion in Hawaii?*.

COS 14 - Modeling: Communities, Disturbance, Succession

L100E, Minneapolis Convention Center

1:30 PM COS 14-1 Tanner, CJ[1], H Maschner[2] and NJ Huntly[1], (1) Utah State University, (2)Idaho State University. *Reconstructing past human populations: archaeological data and uncertainty*.

1:50 PM COS 14-2 Gustafson, EJ[1], ME Kubiske[2], BR Sturtevant[1] and BR Miranda[1], (1)U.S. Forest Service, (2)Northern Research Station, USDA Forest Service. *Scaling Aspen-FACE experimental results to century and landscape scales*.

2:10 PM COS 14-3 Gouhier, TC[1], F Guichard[2] and BA Menge[3], (1)Northeastern Unviversity, (2)McGill University, (3)Oregon State University. *Designing effective reserve networks for non-equilibrium metacommunities*.

2:30 PM COS 14-4 Burgess, MG, University of Minnesota. *Broadly-inflicted human threats reduce ecological redundancy and resilience by changing the competitive landscape*.

2:50 PM COS 14-5 Wang, WJ[1], HS He[1], MA Spetich[2], SR Shif-

ley[3], FR Thompson III[4] and JS Fraser[1], (1)University of Missouri, (2)USDA Forest Service, (3)Forest Service Northern Research Station, (4)University of Missouri-Columbia. *Evaluating effects of forest harvesting on mitigating oak decline on a Central Hardwood Forest landscape*.

3:10 PM Break

3:20 PM COS 14-6 Lavender, TM[1], EG Lamb[2] and BS Schamp[3], (1)University Of Saskatchewab, (2)University of Saskatchewan, (3)Algoma University. *Minimum dimensions required for co-occurrence and limiting similarity null models*.

3:40 PM COS 14-7 Broadbent, EN[1], AM Almeyda Zambrano[1], MJ Blumstein[1], E Strombom[1], KF Lambert[2] and JR Thompson[3], (1)Smithsonian Conservation Biology Institute, (2) Harvard Forest (Harvard University), (3)Smithsonian Institution. *Prescient thinking and the future of ecosystem services in New England*.

4:00 PM COS 14-8 Guyette, MQ[1] and CS Loftin[2], (1)University of Maine, (2)U.S. Geological Survey, Maine Cooperative Fish and Wildlife Research Unit. *A Bayesian belief network assessment of vegetation succession and spatial dynamics in response to fire and hydrological conditions in the Okefenokee National Wildlife Refuge, Georgia, USA*.

4:20 PM COS 14-9 Fraser, JS[1], HS He[1], J Yang[2], SR Shifley[3] and FR Thompson III[4], (1)University of Missouri, (2)University of Nevada-Reno, (3)Forest Service Northern Research Station, (4)University of Missouri-Columbia. *Designing a fire module for LANDIS PRO to simulate variable intensity fire regimes on forest landscapes*.

4:40 PM COS 14-10 Jiang, Y[1], EB Rastetter[2], A Rocha[3], A Pearce[4] and G Shaver[1], (1)Marine Biological Laboratory, (2)Marine Biological Lab, (3)University of Notre Dame, (4)University of Vermont. *Modeling the effects of fire disturbance and warming climate on vegetation and carbon dynamics in the arctic tundra ecosystem*.

COS 15 - Niche Relationships And Theory

L100F, Minneapolis Convention Center

1:30 PM COS 15-1 Germain, RM and B Gilbert, University of Toronto. *Phylogeny-coexistence relationships in annual plant communities: disentangling the role of species interactions, environment, and biogeography*.

1:50 PM COS 15-2 Chang, LW[1], ST Chiu[2] and CF Hsieh[3], (1)Taiwan Forestry Research Institute, (2)National Museum of Natural Science, (3)National Taiwan University. *Habitat divergence, reproductive phenology divergence and leaf functional traits divergence among three closely related congeneric plant species, the endemic Helicia rengetiensis and widespread H. formosana and H. cochinchinensis*.

2:10 PM COS 15-3 Godoy, O[1], NJB Kraft[2] and JM Levine[3], (1)University of California, Santa Barbara, (2)University of Maryland, (3)ETH Zurich. *Phylogeny, niche differences, and the outcome of competition*.

2:30 PM COS 15-4 Lamanna, CA[1], BW Blonder[2], C Violle[3] and BJ Enquist[2], (1)University of Maine, (2)University of Arizona, (3)CEFE/CNRS. *The latitudinal gradient in functional diversity: Higher species richness does not arise from larger functional trait space*.

2:50 PM COS 15-5 Shaner, PJL[1] and YC Hsu[2], (1)National Taiwan Normal University, (2)National Dong Hwa University. *Trophic niche width increases with bill size variation in a generalist passerine: a test of niche variation hypothesis*.

3:10 PM Break

3:20 PM COS 15-6 Edwards, KF[1], CA Klausmeier[2] and E Litchman[2], (1)Kellogg Biological Station, Michigan State University, (2) Michigan State University. *A three-way tradeoff maintains functional diversity under variable resource supply*.

3:40 PM COS 15-7 Kremer, CT and CA Klausmeier, Michigan State University. *Traveling between extremes: the shape of temporal variation alters competition and evolution in fluctuating environments*.

4:00 PM COS 15-8 Hille Ris Lambers, J[1] and JM Levine[2], (1)University of Washington, (2)ETH Zurich. *Niche differences and fitness differences drive competitive coexistence and exclusion in a serpentine annual community*.

4:20 PM COS 15-9 Lacher, I, University of California, Davis. *Testing assumptions of the climatic envelope for narrow and broadly distributed species using empirical methods*.

4:40 PM COS 15-10 Holt, GP and P Chesson, University of Arizona. *Species coexistence and environmental variation: Not all variation is created equal*.

COS 16 - Plant-Insect Interactions I

L100G, Minneapolis Convention Center

1:30 PM COS 16-1 Mohl, EK[1], E Santa-Martinez[2] and GE Heimpel[1], (1)University of Minnesota, (2)University of Wisconsin-Madison. *Interspecific variation in plants alters the strength of trophic cascades*.

1:50 PM COS 16-2 Hastings, SA, Kent State University. *Visual attraction to infected plants by aphid vectors and their predators affects disease dynamics: a simulation study*.

2:10 PM COS 16-3 Shimola, JD, J Sublett and HJ Michaels, Bowling Green State University. *Predation and pigments: examining alydid seed predation on Lupinus perennis*.

2:30 PM COS 16-4 Muller, KE[1] and S Wagenius[2], (1)Northwestern University, (2)Chicago Botanic Garden. *Exploring top-down and bottom-up interactions between Echinacea angustifolia and its specialist ant-tended aphid*.

2:50 PM COS 16-5 Huntly, NJ[1], M Takahashi[2], M Germino[3] and B Finney[2], (1)Utah State University, (2)Idaho State University, (3)US Geological Survey. *Effects of invertebrate herbivory on big sagebrush (Artemisia tridentata) depend on climate*.

3:10 PM Break

3:20 PM COS 16-6 Breed, GA[1], PM Severns[2], ARM James[3] and EE Crone[1], (1)Harvard University, (2)Washington State University-Vancouver, (3)Iowa State University. *Demographic consequences to the specialist herbivore (Euphydryas phaeton) following the adoption of the weedy exotic host plant Plantago lanceolata*.

3:40 PM COS 16-7 Zemenick, K and J Rosenheim, University of California, Davis. *The sweet tooth of parasitoids: a meta-analysis exploring the floral resources of hymenopteran parasitoids*.

1:30 pm-5 pm; 4:30 pm-6:30 pm

4:00 PM COS 16-8 Singer, MS[1], RE Clark[1], ER Johnson[1], I Lichter-Marck[1] and KA Mooney[2], (1)Wesleyan University, (2)University of California at Irvine. *Herbivore dietary specialization increases ant predation on temperate forest caterpillars*.

4:20 PM COS 16-9 Lenhart, PA, ST Behmer and MD Eubanks, Texas A&M University. *Diet breadth and macronutrient regulation in coexisting generalist herbivores*.

4:40 PM COS 16-10 Landosky, JM and DN Karowe, Western Michigan University. *Elevated CO_2 Affects Bottom-Up and Top-Down Driver Impacts in Plant-Insect Interaction*.

COS 17 - Theoretical Ecology

L100H, Minneapolis Convention Center

1:30 PM COS 17-1 Potts, JR[1], G Bastille-Rousseau[2], D Murray[2], JA Schaefer[2] and MA Lewis[1], (1)University of Alberta, (2) Trent University. *Predicting local and non-local effects of resources on animal space use using a mechanistic step-selection model*.

1:50 PM COS 17-2 Messier, J[1], MJ Lechowicz[2] and BJ McGill[3], (1) University of Arizona, (2)McGill University, (3)University of Maine. *Contrasting patterns of variance partitioning across scales in six leaf functional traits*.

2:10 PM COS 17-3 Tuominen, LK, SJ Whipple and BC Patten, University of Georgia. *A throughflow perspective on network utility in simplified ecosystem models*.

2:30 PM COS 17-4 Shoemaker, LG and BA Melbourne, University of Colorado at Boulder. *Coexistence and spatial heterogeneity: A theoretical analysis of metacommunity paradigms*.

2:50 PM COS 17-5 Chesson, P[1], YJ Wu[2] and PJ Yang[3], (1)University of Arizona, (2)National Chung Hsing University, (3) Georgia Institute of Technology. *Populations and communities as fluid on a landscape under nonstationary environmental change*.

3:10 PM Break

3:20 PM COS 17-6 Golubski, AJ[1], KL Gross[2] and GG Mittelbach[2], (1)Kennesaw State University, (2)Michigan State University. *Plant feedbacks on small-scale nutrient heterogeneity when resources recycle at different rates*.

3:40 PM COS 17-7 O'Regan, SM and JM Drake, University of Georgia. *Early warning signals of disease emergence and leading indicators of elimination*.

4:00 PM COS 17-8 Shevtsov, J, UCLA. *Killing the Atto-Fox: A New Algorithm for Deterministic Simulation in Discrete State Space*.

4:20 PM COS 17-9 Brummer, AB[1], VM Savage[2], LP Bentley[1] and BJ Enquist[1], (1)University of Arizona, (2)UCLA. *Testing and extending metabolic theory: Asymmetric branching and the scaling of resource distribution networks of trees*.

4:40 PM COS 17-10 Klausmeier, CA, Michigan State University. *Trait-based approaches to species abundance distributions*.

4:30 pm-6:30 pm

OPS 1 - Collaborative Natural Resource Management on Military Lands: Joint Base Elmendorf-Richardson, Alaska

Organized by: N Troyer-Jacobsen

This organized poster session has been prepared to inform the membership of ESA of the truly collaborative natural resources management on military lands, and specifically at Joint Base Elmendorf-Richardson, Alaska.

OPS 1-1 Marshall, JC[1] and N Troyer-Jacobsen[2], (1)MWH Global, Inc., (2)Joint Base Elmendorf-Richardson. *Natural resources management for military mission support*.

OPS 1-2 Walker, A and R Dial, Alaska Pacific University. *Land cover change at JBER: Learning from the past and shaping the future*.

OPS 1-3 Battle, D and T Carnahan, Alaska Department of Fish and Game. *Regional collaboration in wildlife monitoring and management*.

OPS 1-4 Johnson, J, Joint Base Elmendorf-Richardson. *Cook inlet beluga whale and the management of anadromous systems*.

OPS 1-5 Robinson, T, Joint Base Elmendorf-Richardson. *Collaborative management of vegetation on withdrawn lands*.

PS 1 - Climate Change

Exhibit Hall B, Minneapolis Convention Center

PS 1-6 Peters, DPC[1], J Yao[1], DM Browning[2], MC Duniway[3], FC Pillsbury[1], J Anderson[4] and KM Havstad[1], (1)USDA Agricultural Research Service, (2)USDA Agriculture Research Service, (3)USGS, (4)New Mexico State University. *Climatic modoki and biotic contingency: drivers of ecosystem response to extreme events*.

PS 1-7 Peters, S[1], DC Peters[1], KM Havstad[1], C Monger[2], DM Blumenthal[3], JD Derner[4], SL Kronberg[5], BK Northup[3], GS Okin[6], MA Sanderson[3] and J Steiner[3], (1)USDA Agricultural Research Service, (2)New Mexico State University, (3)USDA-ARS, (4)USDA ARS, High Plains Grasslands Research Station, (5)USDA, ARS, Northern Great Plains Research Laboratory, (6)UCLA. *Ecological catastrophes: threshold responses to climate, soil, and land use drivers of the Dust Bowl*.

PS 1-8 Ladwig, LM[1], Z Ratajczak[2], K Hafich[3], T Ocheltree[4], AC Churchill[3], CB Fuss[5], CE Kazanski[4], JD Munoz[6], MD Petrie[1] and JG Smith[7], (1)University of New Mexico, (2)Kansas State University, (3)University of Colorado at Boulder, (4)University of Minnesota, (5)Syracuse University, (6) Michigan State University, (7)New Mexico State University. *The surprising sensitivity of ecosystem structure and function to winter climate anomalies*.

PS 1-9 Wang, M and TR Moore, McGill University. *Plant stoichiometry and its temporal variation in an ombrotrophic peatland*.

PS 1-10 Rich, RL, A Stefanski, RA Montgomery, SE Hobbie and PB Reich, University of Minnesota. *B4WarmED forest warming experiment: Design and implementation of four years of concurrent above- and below-ground warming at the temperate-boreal ecotone*.

PS 1-11 Belote, RT[1], D Davíd[2], M Dietz[1] and GH Aplet[1], (1)The Wilderness Society, (2)Montana State University. *Current*

and future distributions of four tree species in the Northern Rocky Mountains (USA): Geographic shifts with respect to geology, soils, and land management status.

PS 1-12 Wheeler, TA, MS Blair and AM Solecki, McGill University. *Phenotypic responses to climate change: Reduced body size on a 60-year time scale in arctic insects*.

PS 1-13 Klinger, CR[1], DJ Weese[2], BTM Dentinger[3], JA Lau[4] and KD Heath[5], (1)University of Illinois at Urbana-Champaign, (2) St. Ambrose University, (3)Jodrell Laboratory Royal Botanic Gardens, Kew, (4)Michigan State University, (5)University of Illinois, Urbana-Champaign. *N-Deposition and the Rhizobium-legume mutualism: how do rhizobia become less cooperative in N-rich environments?*.

PS 1-14 Blumenthal, DM[1], JA Kray[1], JA Morgan[1], W Ortmans[2], DR LeCain[1], E Pendall[3] and DG Williams[3], (1)USDA-ARS, (2) University of Liege, (3)University of Wyoming. *Warming promotes cheatgrass invasion in mixed-grass prairie*.

PS 1-15 Kenney, M[1], A Janetos[2], R Chen[3], D Arndt[1] and RV Pouyat[4], (1)National Oceanic and Atmospheric Administration, (2)PNNL/UMD, (3)Columbia University and NASA Socioeconomic Data Center, (4)United States Forest Service. *Developing a System of National Climate Assessment Indicators to Track Climate Change Impacts, Vulnerabilities, and Preparedness*.

PS 1-16 Liu, M[1], JC Adam[1], J Stephens[2], K Rajagopalan[1], SH Chung[1], X Jiang[3], T Nergui[4], JA Harrison[5], A Guenther[6], CL Tague[7] and JJ Reyes[1], (1)Washington State University, (2)Clark University, (3)NCAR, (4)LAR, WSU, (5)Washington State University Vancouver, (6)National Center for Atmospheric Research, (7)University of Calfornia, Santa Barbara. *Uncertainties in impact studies of future climate change on natural and agricultural ecosystems by using modeled climate data with bias-correction*.

PS 2 - Climate Change: Communities

Exhibit Hall B, Minneapolis Convention Center

PS 2-17 Loik, ME, University of California. *Snow depth impacts on photosynthesis, recruitment, and mortality at the Great Basin Desert – Sierra Nevada ecotone*.

PS 2-18 Vargas, M and VL Lougheed, University of Texas at El Paso. *Warming temperatures and its effects on lower trophic levels in Arctic tundra ponds*.

PS 2-19 Smith, NG, MJ Schuster and JS Dukes, Purdue University. *Contrasting effects of extreme precipitation and nitrogen addition on prairie community composition and invasion*.

PS 2-20 Jones, SK[1], SL Collins[1], AK Knapp[2], JM Blair[3] and MD Smith[2], (1)University of New Mexico, (2)Colorado State University, (3)Kansas State University. *More extreme rainfall patterns and plant community structure in native tallgrass prairie*.

PS 2-21 Montgomery, RA, R Rich, A Stefansky, K Rice, SE Hobbie and PB Reich, University of Minnesota. *B4WarmED forest warming experiment: effects of warming on seedling growth of co-ocurring temperate and boreal species*.

PS 2-22 Tellez, A, M Vargas and VL Lougheed, University of Texas at El Paso. *An experiment to examine the effects of nutrient enrichment and warming on Arctic tundra pond communities*.

PS 2-23 Bettinelli, J, KW Wright and DL Marshall, University of New Mexico. *How does an extreme cold event affect the bee community in a Creosote shrubland?*.

PS 3 - Climate Change: Plants

Exhibit Hall B, Minneapolis Convention Center

PS 3-24 Nakao, K[1], M Higa[2], I Tsuyama[1], T Matsui[1] and N Tanaka[1], (1)Forestry and Forest Products Research Institute, (2) Hokkaido University. *Spatial conservation planning under climate change: toward identifying optimal adaptive management for Fagus crenata in Japan*.

PS 3-25 Bartkowiak, SM IV and LJ Samuelson, Auburn University. *Effects of a 30% reduction in precipitation on transpiration and hydraulic properties of 7-year-old loblolly pine*.

PS 3-26 Elliott, KJ[1], CF Miniat[1], N Pederson[2] and SN Laseter[1], (1) USDA Forest Service Southern Research Station, (2)Lamont-Doherty Earth Observatory. *Southern Appalachian forest growth responds most strongly to precipitation variability*.

PS 3-27 Noormets, A[1], JS King[1], G Sun[2], SG McNulty[3], G Miao[1], A Radecki[1], D Zietlow[1], EJ Ward[1] and JC Domec[4], (1)North Carolina State University, (2)US Forest Service Southern Research Station, (3)USDA Forest Service, (4)North Carolina State University / Bordeaux Sciences Agro. *Can reduced root hydraulic functioning and redistribution due to climate variability impact carbon and water cycling in trees: establishing a direct link between plant root functioning and carbon fluxes*.

PS 3-28 Hupperts, SF, J Shepard, KM Sendall, K Rice, A Stefanski, RL Rich, RA Montgomery and PB Reich, University of Minnesota. *B4WarmED forest warming experiment: The effects of increased temperature and drought on boreal tree species leaf size and shape.* .

PS 3-29 O'Keefe, K[1], SS Kittrell[2] and JB Nippert[1], (1)Kansas State University, (2)Oklahoma State University. *Local adaptation, plasticity and physiological stress tolerance among five perennial grasses*.

PS 3-30 Jarvi, MP and AJ Burton, Michigan Technological University. *Reduced non-structural carbohydrate concentration and temperature acclimation in sugar maple roots following experimental warming*.

PS 3-31 Beach, JA and P Stiling, University of South Florida. *Using transplants and salt addition to test the effects of sea-level rise on salt marsh communities*.

PS 3-32 Tuttle, GM[1], L Perry[2], D Blumenthal[3], PB Shafroth[2], A Norton[1] and DR LeCain[3], (1)Colorado State University, (2) U.S. Geological Survey, (3)USDA-ARS. *Plains cottonwood and Russian olive response to elevated CO_2, root nodulation and nitrogen fertilization*.

PS 3-33 Gallinat, AS, C Polgar, C McDonough MacKenzie and RB Primack, Boston University. *Lower winter chilling requirements could give woody invasive species an edge in warmer springs*.

PS 3-34 Collins, AR and MA Cavaleri, Michigan Technological University. *The interspecific differences in growth and water use efficiency between trembling aspen (Populus tremuloides) and red maple (Acer rubrum) as a result of interannual climate variation in Northern Minnesota*.

4:30 pm-6:30 pm

PS 3-35 Winkler, KJ and JR Etterson, University of Minnesota. *Plasticity, genetic diversity, and natural selection: A native polyploid under simulated climate change*.

PS 3-36 Albertine, JM[1], WJ Manning[1], M DaCosta[1], KA Stinson[2], CA Rogers[3] and ML Muilenberg[3], (1)University of Massachusetts- Amherst, (2)Harvard University, (3) University of Massachusetts-Amherst. *Changes in Timothy grass (Phleum pratense L.) pollen production and Phl p 5 allergen content in response to future projected concentrations of carbon dioxide and ozone*.

PS 4 - Climate Change: Ranges And Phenology

Exhibit Hall B, Minneapolis Convention Center

PS 4-37 Buyarski, CR, RA Montgomery, C Nanninga and AM Pretorius, University of Minnesota. *The potential for abnormal leafing phenology under climate change: differences in sensitivity of spring budburst to winter chilling in six North America deciduous tree species*.

PS 4-38 Rosenberger, DW[1], RC Venette[2] and BH Aukema[1], (1) University of Minnesota, (2)USDA Forest Service. *Climatic viability for the persistence of mountain pine beetle in pine forests of the western Great Lakes region*.

PS 4-39 Chen, WL, SM Waters and J Hille Ris Lambers, University of Washington. *First encounters in a warming world: Floral constancy, generalist pollinators, and shifting plant phenology*.

PS 4-40 Johnson, AM and DJ Grisé, Texas A&M-Corpus Christi. *Growth and photosynthetic characteristics of progeny from winter and summer-active Helianthus in the Corpus Christi, TX area*.

PS 4-41 Burns, KM, J HilleRisLambers, AK Ettinger, KR Ford, A Wilson and LDL Anderegg, University of Washington. *Impact of Climate and Biotic Interactions on Growth of Abies lasiocarpa at Altitudinal Range Limits*.

PS 4-42 Rice, K[1], RA Montgomery[1], R Rich[1], N Fisichelli[2], MH Jacques[3], A Stefanski[1] and PB Reich[1], (1)University of Minnesota, (2)National Park Service, (3)Université Laval. *B4WarmED forest warming experiment: Increased temperature effects on herbaceous plant phenology*.

PS 5 - Paleoecology

Exhibit Hall B, Minneapolis Convention Center

PS 5-43 Wang, Y[1], JL Gill[2], D Alhambra[3], S Hernandez[1], JP Marsicek[4] and JW Williams[5], (1)University of Wisconsin-Madison, (2)Brown University, (3)University of Iowa, (4) University of Wyoming, (5)University of Wisconsin – Madison. *Vegetation, climate and environment variability at Spicer Lake, Indiana, during the Holocene*.

PS 5-44 Card, VM and R Wagstrom, Metropolitan State University. *Diatom life-cycle and demography: Mathematical models and a paleolimnological record*.

PS 5-45 Dunnette, PV, PE Higuera and KM Derr, University of Idaho. *Biogeochemical response to fire over six millennia in a Rocky Mountain subalpine forest*.

PS 5-46 LeBlanc, AR[1], LM Kennedy[1], M Burn[2], A Bain[3], AM Faucher[3] and S Perdikaris[4], (1)Virginia Tech, (2)The University of the West Indies, (3)Université Laval, (4)Brooklyn College. *A late-Holocene sedimentary record of vegetation, fire, and environmental history from Barbuda, Lesser Antilles*.

PS 5-47 Durow, MC[1], JE Schmitz[1], SC Hotchkiss[2] and R Calcote[3], (1)University of Wisconsin - Madison, (2)University of Wisconsin, (3)University of Minnesota. *Analyzing charcoal particles in lake sediments to reconstruct historical fires: Fallison Lake, Northern Wisconsin*.

PS 5-48 Urban, MA[1], DM Nelson[2], P Kershaw[3] and FS Hu[4], (1) University of Illinois Urbana-Champaign, (2)University of Maryland Center for Environmental Science, (3)Monash University, (4)University of Illinois, Urbana-Champaign. *Long term controls of fire, climate and pCO_2 on C_4 grass abundance in southeastern Australian grasslands*.

PS 5-49 Stefanova, V[1], J Atanassova[2], M Lazarova[3], M Delcheva[3], V Bozukov[3] and H Wright Jr.[1], (1)University of Minnesota, (2) Sofia University, (3)Institute of Biodiversity and ecosystem research, Bulgaria Academy of Sciences. *Long-term variable distribution of Pinus peuce Griseb. (Macedonian pine) in SW Bulgaria: implications for its future*.

PS 5-50 Siewert, J[1], SC Hotchkiss[2], MA Tweiten[1], EA Lynch[3] and R Calcote[4], (1)University of Wisconsin - Madison, (2) University of Wisconsin, (3)Luther College, (4)University of Minnesota. *Sensitivity of fire regimes to landscape context and climatic variation over the past 13,000 years in northwestern Wisconsin*.

PS 5-51 Woods, PS[1], R Calcote[1], MB Edlund[2], SC Hotchkiss[3] and EA Lynch[4], (1)University of Minnesota, (2)St. Croix Watershed Research Station, Science Museum of Minnesota, (3) University of Wisconsin, (4)Luther College. *Diatom based climate reconstruction for the western Great Lakes region*.

PS 5-52 Calcote, R[1], SC Hotchkiss[2], EA Lynch[3] and G Schuurman[4], (1)University of Minnesota, (2)University of Wisconsin, (3)Luther College, (4)Wisconsin Department of Natural Resources. *Variable responses to climate change: Drought, recovery, and vegetation shifts 1500 years ago*.

PS 6 - Effects Of Multiple Global Changes On Communities And Ecosystems

Exhibit Hall B, Minneapolis Convention Center

PS 6-53 Rypel, AL, J Lyons and JD Griffin, Wisconsin Department of Natural Resources. *Long-term decline in bluegill size structure and growth rates in Wisconsin: evidence of genetic parental effects?*.

PS 6-54 Xu, X, University of Oklahoma. *Net primary productivity and rain use efficiency as affected by warming, altered precipitation and clipping in a mixed grass prairie*.

PS 6-55 Vinton, MA[1], C Smalley[2] and E Hines[1], (1)Creighton University, (2)ENVIRON International Corporation. *The understory tree species, Ostrya virginiana (eastern hophornbeam): A "poster child" for shifting forest composition at the prairie-forest boundary in the central United States*.

PS 6-56 Cook, EM[1], P Padgett[2] and SJ Hall[1], (1)Arizona State University, (2)USDA Forest Service. *Native desert herbaceous species are more sensitive than non-native species to urban air quality*.

PS 6-57 Smith, SDP, JD Allan and CA Joseph, University of Michigan.

Understanding the effects of anthropogenic stress on the provisioning of ecosystem services in the Laurentian Great Lakes.

PS 6-58 Dev, LL[1], DM Blumenthal[2], CS Brown[3], NT Hobbs[3] and JA Klein[3], (1)University of California, Berkeley, (2)USDA-ARS, (3)Colorado State University. *The seasonal timing of precipitation and temperature mediate rangeland vegetation response to grazing*.

PS 7 - Biogeochemistry

Exhibit Hall B, Minneapolis Convention Center

PS 7-59 Pritchard, SG, BN Taylor, KV Beidler, AE Strand and ER Cooper, College of Charleston. *Production and architecture of fine root systems of loblolly pine after 15 years of FACE: Synthesis of minirhizotron and soil monolith studies*.

PS 7-60 Imfeld, TS[1], D Chaput[2] and CM Santelli[2], (1)Xavier University, (2)Smithsonian Institution. *The effect of nutrients on the growth and manganese oxidation of fungi and bacteria*.

PS 7-61 Bryant, JAM[1], WM Post[2] and AT Classen[3], (1)The University of Tennessee, (2)Oak Ridge National Laboratory, (3) University of Tennessee. *Decomposition by ectomycorrhizal fungi alters soil carbon storage and efflux*.

PS 7-62 Esch, E[1], E Cleland[2] and D Lipson[3], (1)University of California - San Diego, (2)University of California – San Diego, (3)San Diego State University. *Climate change effects on soil microbial communities: Altered precipitation and invasion in a chaparral system*.

PS 7-63 Marvin, DC[1], E Morrison[2], A Quebbeman[3], BL Turner[3] and K Winter[3], (1)University of Michigan, (2)University of Florida, (3)Smithsonian Tropical Research Institute. *Growth and physiological response of tropical lianas and trees to elevated CO_2 and soil nutrient availability*.

PS 7-64 Weiss, M, L Drinkwater and B Emmett, Cornell University. *The Effect of Management History on Plant Uptake of Nitrogen from a Legume Cover Crop: A ^{15}N Tracer Study*.

PS 7-65 Sheffer, E, SA Batterman, LO Hedin and SA Levin, Princeton University. *The role of life-history traits and regeneration strategies in the emergence, distribution and timing of nitrogen fixation in tropical vs. temperate forests*.

PS 7-66 Prihodko, L[1], Y Desyaterik[2], A Ba[3] and O Maiga[3], (1)South Dakota State University, (2)Colorado State University, (3) University of Bamako. *Nutrient subsidies in a West African savanna: Assessing teleconnections through fire and dust contributions*.

PS 7-67 Atkinson, E and E Marín-Spiotta, University of Wisconsin-Madison. *Linking above- and belowground dynamics in tropical urban forests*.

PS 7-68 Rottler, CM, ML Mobley, IC Burke and WK Lauenroth, University of Wyoming. *Distribution of 15N in plants and soils across a Pinus contorta/Artemisia tridentata ecotone*.

PS 7-69 Cohen, DB and A Kent, University of Illinois at Urbana-Champaign. *Environmental variability shapes microbial community response to altered hydrology in an Illinois wetland*.

PS 7-70 Bennett, KF, Harvard University, Harvard Forest. *K-12 Phenology Lessons for the Phenocam Project*.

PS 8 - Biogeochemistry: Atmospheric N Deposition Effects

Exhibit Hall B, Minneapolis Convention Center

PS 8-71 Lu, X[1], SC Reed[2] and X Han[3], (1)Insitute of Applied Ecology, Chinese Academy of Sciences, (2)USGS, (3) Chinese Academy of Sciences. *Convergent responses of nitrogen and phosphorus resorption to nitrogen inputs in a semi-arid grassland*.

PS 8-72 Melaschenko, N[1], N Melong[2], S Berryman[1], A McDonough[2], J Straker[1] and S Watmough[2], (1)Integral Ecology Group Ltd., (2)Trent University. *Establishing nitrogen critical loads in Alberta's Oil Sands: early responses of non-vascular plants*.

PS 8-73 Bui, VN[1], T Larmola[1], JL Bubier[1], M Wang[2] and TR Moore[2], (1)Mount Holyoke College, (2)McGill University. *Stress responses of Chamadaphne calyculata (leatherleaf) to twelve years of nutrient addition at Mer Bleue bog, Canada*.

PS 8-74 Wu, N[1], TR Filley[2] and E Bai[3], (1)Chinese Academy of Sciences, (2)Purdue University, (3)Institute of Applied Ecology, Chinese Academy of Sciences. *Altered biochemical composition of organic matter under N addition in temperate forest ecosystems*.

PS 8-75 Hentz, CS[1] and GL Vourlitis[2], (1)California State University San Marcos, (2)California State University. *The effects of added nitrogen deposition on net nitrogen mineralization and microbial biomass in semi-arid shurblands*.

PS 8-76 Lawrence, S and GL Vourlitis, California State University. *Effects of Nitrogen on Carbon Chemistry in Chaparral and Coastal Sage Scrub Leaf Tissue*.

PS 8-77 Bae, K[1], RD Yanai[2], MC Fisk[3] and TJ Fahey[4], (1)SUNY-ESF, (2)SUNY College of Environmental Science and Forestry, (3)Miami University of Ohio, (4)Cornell University. *N and P fertilization effects on soil respiration and microbial respiration in northern hardwood forests of New Hampshire*.

PS 8-78 Neal, SM[1] and GL Vourlitis[2], (1)California State University, San Marcos, (2)California State University. *The effects of added nitrogen deposition on light-saturated photosynthesis and respiration in a semi-arid environment*.

PS 8-79 Lyons, BJ and AJ Burton, Michigan Technological University. *Forest stand dynamics and accumulating down dead wood under chronic simulated nitrogen deposition in Michigan*.

PS 8-80 Walter, CA[1], MB Burnham[1], LZ Hill[1], DT Raiff[1], JC Lego[1], FS Gilliam[2], MB Adams[3] and WT Peterjohn[1], (1)West Virginia University, (2)Marshall University, (3)USDA Forest Service. *A pie lover's paradise: forest canopy openings and nitrogen fertilization cause a differential increase in wild blackberry (Rubus spp.) cover*.

PS 8-81 Zhang, W[1], X Zhu[1], L Liu[1], S Fu[2], H Chen[1], J Huang[1], X Lu[3], Z Liu[1] and J Mo[4], (1)South China Botanical Garden, Chinese Academy of Sciences, (2)South China Botanical Garden, (3)Chinese Academy of Science, (4)Chinese Academy of Sciences. *Large difference of inhibitive effect of nitrogen deposition on soil methane oxidation between plantations with N-fixing tree species and non-N-fixing tree species*.

4:30 pm-6:30 pm

PS 9 - Biogeochemistry: Biogeo Patterns Along Environmental Gradients

Exhibit Hall B, Minneapolis Convention Center

PS 9-82 Shi, Z[1], Y Luo[1], AK Knapp[2], MD Smith[2], SL Collins[3] and W Pockman[3], (1)University of Oklahoma, (2)Colorado State University, (3)University of New Mexico. *More reduction in plant productivity than respiration under extreme drought across grassland types along a rainfall gradient: A modeling analysis*.

PS 9-83 Ficken, CD[1], G Ames[1], S Anderson[1], MG Hohmann[2] and J Wright[1], (1)Duke University, (2)US Army Corps of Engineers ERDC - CERL. *Environmental controls on nutrient dynamics in a longleaf pine forest: How do soil moisture and fire interval affect plant-available nutrients?*.

PS 9-84 Atkins, J[1], HE Epstein[2] and DL Welsch[3], (1)University of Virginia Dept. of Environmental Sciences, (2)University of Virginia, (3)Canaan Valley Institute. *Inter-annual variation in precipitation affects the spatial heterogeneity of soil CO_2 efflux in a West Virginia watershed*.

PS 9-85 Goswami, S[1], MC Fisk[2], TJ Ratliff[1] and RD Yanai[3], (1) Miami University, (2)Miami University of Ohio, (3)SUNY College of Environmental Science and Forestry. *Synergistic soil response to nitrogen plus phosphorus fertilization in hardwood forests*.

PS 9-86 Bratt, AR[1], JC Finlay[1], JR Welter[2] and JB Goldschmidt[2], (1)University of Minnesota, (2)St. Catherine University. *Biological controls of aquatic nitrogen fixation rates in a northern california stream ecosystem*.

PS 9-87 Owen, JJ[1] and WL Silver[2], (1)University of California Berkeley, (2)University of California, Berkeley. *When the manure hits the land: Carbon sequestration potential of organic matter amendments to California annual grasslands*.

PS 9-88 Dunker, SL, HE Epstein and AL Mills, University of Virginia. *Changes in physical and chemical soil characteristics and their impact on soil CO_2 efflux during secondary succession*.

PS 9-89 Gill, AL and AC Finzi, Boston University. *The influence of water table position on soil microbial processes and carbon mineralization in a mid latitude spruce peatland*.

PS 9-90 Almaraz, M[1], KL Tully[2], C Palm[3], S Porder[1] and C Neill[4], (1) Brown University, (2)Columbia University, (3)Earth Institute at Columbia University, (4)Marine Biological Laboratory. *Soil texture mediates nitrogen losses from intensifying agriculture in Sub-Saharan Africa*.

PS 9-91 Mathias, JM, KR Smith, BE McNeil, WT Peterjohn and RB Thomas, West Virginia University. *Do increased N inputs influence rates of soil N cycling in high-elevation red spruce (Picea rubens Sarg.) forests along a gradient of atmospheric deposition?*.

PS 10 - Biogeochemistry: C And N Cycling In Response To Global Change

Exhibit Hall B, Minneapolis Convention Center

PS 10-92 Moore, TR[1], A Alfonso[1] and BR Clarkson[2], (1)McGill University, (2)Landcare Research NZ. *Can peatland plants take up organic nitrogen?*.

PS 10-93 Maier, CA, D McInnis and KH Johnsen, USDA Forest Service. *Partitioning root and heterotrophic respiration from soil CO_2 efflux in clonal loblolly pine plantations that differ in growth efficiency and carbon allocation*.

PS 10-94 Weng, E and SW Pacala, Princeton University. *Can current forest biomass accumulation lead to long-term carbon storage?*.

PS 10-95 Entwistle, EM and DR Zak, University of Michigan. *Long-term experimental nitrogen deposition alters the composition of the active fungal community in the forest floor*.

PS 10-96 Schafer, KV[1], KL Clark[2], DM Medvigy[3] and HJ Renninger[4], (1)Rutgers University Newark, (2)USDA Forest Service, (3) Princeton University, (4)Rutgers University. *Hydrological response of an upland oak/pine forest on the Atlantic Coastal Plain to drought and disturbance*.

PS 10-97 Kazanski, CE and SE Hobbie, University of Minnesota. *Soil carbon cycling response to long-term nitrogen addition varies across ecosystem types on nutrient-poor soils*.

PS 10-98 Bouskill, NJ, J Tang, WJ Riley and EL Brodie, Lawrence Berkeley National Laboratory. *Developing a high-latitude soil carbon cycle model with a focus on trait-based representation of decomposition*.

PS 10-99 Riggs, CE[1], EM Bach[2], SE Hobbie[1], KS Hofmockel[2] and N Network[3], (1)University of Minnesota, (2)Iowa State University, (3)Multiple Institutions. *Effects of nutrient enrichment on size and cycling of multiple soil organic matter pools*.

PS 10-100 Ederer, SL[1] and SC Hotchkiss[2], (1)University of Wisconsin at Madison, (2)University of Wisconsin. *Plant-Microbial Associations and N Fixation: Sensitivity to Changing Moisture Levels in a Lake Michigan Beach-Ridge System*.

PS 10-101 Liang, J and Y Luo, University of Oklahoma. *Less increase in apparent than intrinsic Q10 of soil carbon release*.

PS 11 - Ecosystem Function

Exhibit Hall B, Minneapolis Convention Center

PS 11-102 ArchMiller, AA and LJ Samuelson, Auburn University. *Spatial heterogeneity of soil respiration in a 64-year-old longleaf pine forest at Fort Benning, Georgia*.

PS 11-103 Santelmann, MV[1], SA Highland[2], SM Taylor[3] and R Schwindt[1], (1)Oregon State University, (2)National Research Council, (3)California Native Plant Society. *Species-area relationships in wet prairie remnants and restorations of the Willamette Valley, OR*.

PS 11-104 Yao, J and DPC Peters, USDA Agricultural Research Service. *Critical soil water period for primary production in Chihuahuan Desert ecosystems*.

PS 11-105 Olson, ZH, JC Beasley and OE Rhodes Jr., Purdue University. *Carcass type not patterns of patch connectivity affect scavenging of medium-sized carcasses*.

PS 11-106 Smith, RG[1] and KL Schulz[2], (1)SUNY College of Environmental Science and Forestry, (2)State University of New York College of Environmental Science and Forestry. *Factors Affecting Primary Production and Respiration in Small Forested Pools*.

PS 11-107 Parnell, J[1] and JA Gilbert[2], (1)National Ecological Observatory Network (NEON, Inc.), (2)University of Chicago, Argonne National Laboratories. *Microbial functional diversity in Harvard Forest soils*.

PS 11-108 Kellerhals, D, University of Illinois at Springfield. *Three year study of plankton community response to changing water quality in a newly restored floodplain lake*.

PS 11-109 Bradford, JB[1], AW D'Amato[2], PA Klockow[2], VJ Kurth[2], BJ Palik[3], RK Kolka[3] and S Fraver[2], (1)US Geological Survey, (2) University of Minnesota, (3)USDA Forest Service. *Nutrient balance and availability following woody bioenergy feedstocking in Populus tremuloides forests*.

PS 11-110 Huber-Sannwald, E[1], LE Sánchez Higueredo[2], T Arredondo Moreno[2], J Carrera Hernández[3], V Reyes Gómez[4] and M Luna Luna[5], (1)Instituto Potosino de Investigación Científica y Tecnológica, A. C. (IPICYT), (2)Instituto Potosino de Investigación Científica y Tecnológica A. C. (IPICYT), (3)Universidad Nacional Autonoma de Mexico (UNAM), (4)Instituto de Ecologia (INECOL), (5)Instituto Nacional de Investigacion Forestal, Agricola y Pecuaria (INIFAP). *Grazing, fire and grass-species composition shape ecohydrological processes in a semiarid grassland landscape in Central Mexico*.

PS 12 - Invasion

Exhibit Hall B, Minneapolis Convention Center

PS 12-111 Tarasi, DD and RK Peet, University of North Carolina. *A test of community saturation: Comparing vegetated plot data and null communities at multiple spatial scales in Southeastern U.S. forests*.

PS 12-112 Whitfeld, TJS[1], AM Roth[1], AG Lodge[1], N Eisenhauer[2], LE Frelich[1] and PB Reich[1], (1)University of Minnesota, (2) Friedrich-Schiller-University Jena. *Native plant diversity and introduced earthworms have contrasting effects on the success of invasive plants*.

PS 12-113 Griffith, CD[1] and EH Boughton[2], (1)Brigham Young University - Idaho, (2)Archbold Biological Station. *Colonization strategies by Lachnanthes caroliana in Feral Swine Disturbed Soils*.

PS 12-114 Atkinson, SY and CS Brown, Colorado State University. *Bromus tectorum and its relatives: Using a database to examine patterns of invasiveness and invasion in brome grasses*.

PS 12-115 Jo, IS, J Fridley and DA Frank, Syracuse University. *Alternative strategies of carbon-nitrogen use for native and invasive forest shrubs of the Eastern United States*.

PS 12-116 Erickson, R, A Wipf and PH Wyckoff, University of Minnesota, Morris. *Invasive earthworm community composition linked to overstory vegetation across a climate gradient in western Minnesota*.

PS 12-117 Ruppel, PR and LJ Anderson, Ohio Wesleyan University. *A multi-site comparison of invasion success in Alliaria petiolata (garlic mustard) in urban and rural environments*.

PS 12-118 Cunard, CE and R Lankau, University of Georgia. *Feedbacks through time for Microstegium vimineum: invasion persistence or community integration?*.

PS 12-119 Mattingly, WB and NA Mills, Eastern Connecticut State University. *Agricultural land-use legacies shape plant-soil interactions: Mechanisms underlying invasive plant performance in human-modified landscapes*.

PS 13 - Invasion: Community Effects

Exhibit Hall B, Minneapolis Convention Center

PS 13-120 Lynn-Bell, N, E Czerwinski and P Kourtev, Central Michigan University. *Soil parameters associated with the invasive nitrogen fixing shrub autumn olive (Elaeagnus umbellata)*.

PS 13-121 García-Cancel, JG, University of Puerto Rico at Mayagüez. *Effects of native and non-native grasses on woody species regeneration in a subtropical dry forest*.

PS 13-122 Lauko, D, M Anderson and S Boyer, Macalester College. *Effects of European Buckthorn (Rhamnus cathartica) on Soils and Leaf Litter Communities in a Minnesota Oak Woodland*.

PS 13-123 Hobmeier, MM[1], JK Hirsch[2], WC Kerfoot[1], F Yousef[1], JF LeDuc[1], RP Maki[3] and B Moraska Lafrancois[3], (1)Michigan Technological University, (2)Minnesota Department of Natural Resources, (3)National Park Service. *Spiny water flea (Bythotrephes longimanus) impacts on zooplankton communities of Voyageurs National Park*.

PS 13-124 Perzley, JA and C Holzapfel, Rutgers University. *Comparing brownfield and old-field floras of New Jersey: Do non-native plants make up a higher proportion of brownfield floras?*.

PS 13-125 Brown, ME[1] and DL Miller[2], (1)University of Florida, (2)University of Florida/Milton Campus. *Long-term monitoring of feral hog (Sus scrofa) disturbance in seepage slope wetlands*.

PS 13-126 Hanna, C[1], I Naughton[1], B Edgar[1] and D Holway[2], (1) University of California at Berkeley, (2)University of California, San Diego. *Effects of Argentine ant invasions on the diversity and composition of arthropod assemblages on Santa Cruz Island, California*.

PS 13-127 O'Connor, RC, S St.Clair and RA Gill, Brigham Young University. *Top-down effects of small mammals on the invasive plant Halogeton glomeratus post-fire*.

PS 13-128 Sommers, P and P Chesson, University of Arizona. *Spatial variability in the mechanism by which an invasive plant affects native seedlings*.

PS 14 - Invasion: Dynamics, Population Processes

Exhibit Hall B, Minneapolis Convention Center

PS 14-129 Wyckoff, PH and J Aday, University of Minnesota, Morris. *Periodic wet years and deer herbivory are tied to success of invasive Rhamnus cathartica (European buckthorn) in western Minnesota*.

PS 14-130 Moore, JE[1], D Stewart[1] and SB Franklin[2], (1)Christian Brothers University, (2)University of Northern Colorado. *Facilitative interactions of two co-occurring invasive trees in the Southeastern U.S*.

PS 14-131 Henkanaththegedara, SM and CA Stockwell, North Dakota State University. *Intraguild predation mediates co-existence between native and non-native fish*.

PS 14-132 Levri, EP[1], TJ Clark[2], B Smith[1], E Colledge[1], F Menequale[1], S Landis[1], E Metz[1] and M Radyk[1], (1)Penn State Altoona, (2)Ohio Wesleyan University. *Clonal variation in behavior in the invasive New Zealand mud snail (Potamopyrgus antipodarum)*.

PS 14-133 Griffith, AB[1], CH Pao[2], J Fant[3], C Flowe[2] and K Andonian[4],

4:30 pm-6:30 pm

(1)Wellesley College, (2)Trinity International University, (3) Northwestern University & Chicago Botanic Garden, (4)De Anza College. *Phenotypic and genetic variation of Bromus tectorum in native and invasive populations*.

PS 14-134 Pretorius, AM and RA Montgomery, University of Minnesota. *Role of phenology in the colonization success of Rhamnus cathartica in forested ecosystems*.

PS 14-135 Readinger, M, B Giacopelli, M Wyles, A Lugo and JA Morrison, The College of New Jersey. *Comparison of genetic variation in native and non-native populations of the grass Andropogon virginicus*.

PS 14-136 Hall, DR[1], BL Foster[1], GR Houseman[2], CC Freeman[3] and J M Delisle[4], (1)University of Kansas, (2)Wichita State University, (3)R. L. McGregor Herbarium & Kansas Biological Survey, (4)Kansas Biological Survey. *Past agricultural activity and current vegetation cover are consistent predictors of invasion and spread of Sericea at local and landscape scales*.

PS 15 - Invasion: Ecosystem Processes

Exhibit Hall B, Minneapolis Convention Center

PS 15-137 Yavitt, JB, Cornell University. *Atmospheric methane consumption and non-native earthworms in northern forest soils*.

PS 15-138 Rueth, HM[1] and JA Evans[2], (1)Grand Valley State University, (2)Dartmouth College. *Impact of garlic mustard (Alliaria petiolata) on forest floor decomposition rates*.

PS 15-139 Stokdyk, JP and KS Herrman, University of Wisconsin - Stevens Point. *Short-term impacts of Frangula alnus litter on forest soil properties*.

PS 15-140 Cavaleri, MA[1], L Sack[2], S Cordell[3], R Ostertag[4] and JD Michaud[4], (1)Michigan Technological University, (2)UCLA, (3)USDA Forest Service, (4)University of Hawaii at Hilo. *Water use of native and invasive trees in a lowland tropical rainforest in Hawaii*.

PS 15-141 Zhang, L[1], J Zou[1] and E Siemann[2], (1)Nanjing Agricultural University, (2)Rice University. *Perennial forb invasions of annual grassland vary in their enhancement of soil carbon flux and carbon pools*.

PS 16 - Invasion: Prevention And Management

Exhibit Hall B, Minneapolis Convention Center

PS 16-142 Havel, JE[1] and S Knight[2], (1)Missouri State University, (2) University of Wisconsin. *A multi-lake field experiment to test the effectiveness of milfoil weevil for control of Eurasian watermilfoil*.

PS 16-143 Bruckerhoff, LA[1], JE Havel[1] and S Knight[2], (1)Missouri State University, (2)University of Wisconsin. *Survival of invasive aquatic plants after air exposure and implications for dispersal by recreational boats*.

PS 16-144 Rayamajhi, MB[1], PD Pratt[1] and TD Center[2], (1)United States Department of Agriculture, (2)United States Department of Agriculture: Retired. *Growth phenology, biomass, and vine recruitment potential of the invasive plant Dioscorea bulbifera in Florida*.

PS 16-145 Jernigan, MB[1], J Fehmi[1], MP McClaran[1] and SH Biedenbender[2], (1)University of Arizona, (2)Coronado National Forest. *Use of uprooted invasive buffelgrass (Pennisetum ciliare) parent plants as thatch to reduce progeny seedling emergence*.

PS 16-146 Merriman, M[1], M Thomsen[2] and DT Gerber[2], (1)University of WI-La Crosse, (2)University of Wisconsin, La Crosse. *Breaking the Cycle: can glyphosate and willow cuttings disrupt positive feedbacks that sustain reed canarygrass monocultures?*.

PS 16-147 Van Riper, LC[1], A Gassmann[2] and L Skinner[1], (1)Minnesota Department of Natural Resources, (2)CABI Europe-Switzerland. *Conclusions from 11 years of buckthorn biocontrol research*.

PS 16-148 Fahrner, SJ[1], JP Lelito[2] and BH Aukema[1], (1)University of Minnesota, (2)USDA APHIS PPQ. *Flight capacity of Tetrastichus planipennisi, an introduced parasitoid of emerald ash borer Agrilus planipennis*.

PS 16-149 Davis, C[1], CS Brown[1] and SM Esser[2], (1)Colorado State University, (2)Rocky Mountain National Park. *Effects of selective imazapic application on Bromus tectorum and non-target species in Rocky Mountain National Park*.

PS 16-150 Tylczak, LA, University of Minnesota. *Woodlands in Peril: Evaluating Natural Resource Volunteerism as a Weapon Against Invasive Pests*.

PS 16-151 Hefty, AR[1], RC Venette[2], SJ Seybold[2] and BH Aukema[1], (1) University of Minnesota, (2)USDA Forest Service. *Variation of supercooling points in a northern California population of walnut twig beetle (Pityophthorus juglandis Blackman)*.

PS 16-152 Lee, TD, AL Perkins, AS Campbell, JS Passero, NA Roe, CM Shaw and RG Congalton, University of New Hampshire. *First-stage invasion of urban and forest habitats by the exotic tree Kalopanax septemlobus (Araliaceae)*.

PS 16-153 Bauer, JT, WA Rutherford, RE Stoops and HL Reynolds, Indiana University. *Euonymus fortunei: Back-seat driver of environmental change?*.

PS 16-154 Liu, G[1], E Siemann[2] and S Peng[1], (1)Sun Yat-sen University, (2)Rice University. *Nutrient addition amplifies salinity-dependent differences in competitive ability of invasive and native vines*.

PS 17 - Invasion: Species Interactions

Exhibit Hall B, Minneapolis Convention Center

PS 17-155 Waquiu, VA[1], JN Brokaw[2], EL Preisser[3] and DA Orwig[4], (1)New Mexico State University, (2)Cornell University, (3) University of Rhode Island, (4)Harvard Forest. *The impact of co-occurring invasive insects on eastern hemlock health and chemistry*.

PS 17-156 Knight, KS[1], DA Herms[2], J Cardina[3], RP Long[1], R Ford[4], WS Klooster[3], JP Brown[1], CE Flower[5], A Smith[4], KJK Gandhi[6] and CP Herms[7], (1)USDA Forest Service, (2)The Ohio State University / OARDC, (3)The Ohio State University/ OARDC, (4)Ohio State University, (5)University of Illinois at Chicago, (6)University of Georgia, (7)Ohio State University/ OARDC. *Temporal and spatial patterns of ash mortality and emerald ash borer populations*.

PS 17-157 Portales, C, The University of Texas at Austin. *Allelopathic effects of Alliaria petiolata on rhizobia and its implications for native legume performance*.

PS 17-158 Spellman, KV[1], C Mulder[1] and ML Carlson[2], (1)University of Alaska Fairbanks, (2)University of Alaska Anchorage. *Effects*

of white sweetclover invasion on the pollination and berry production of Vaccinium sp. in Alaska.

PS 17-159 Schultheis, EH and JA Lau, Michigan State University. *Meta-analysis: Altered biotic interactions do not explain invasive species success*.

PS 18 - Reptiles And Amphibians

Exhibit Hall B, Minneapolis Convention Center

PS 18-160 Ousterhout, BH and RD Semlitsch, University of Missouri. *Evidence of compensatory density dependence in a larval amphibian*.

PS 18-161 Kuhns, AR[1], JA Crawford[2], CA Phillips[1], EJ Kessler[1] and EM Wright[1], (1)University of Illinois, (2)Lindenwood University. *Efficacy of created wetlands for amphibian conservation in Illinois*.

PS 18-162 Phillips, CA[1], JA Crawford[2], AR Kuhns[1], EJ Kessler[1] and EM Wright[1], (1)University of Illinois, (2)Lindenwood University. *Assessment of rapid sampling methodologies for pond-breeding amphibian assemblages*.

PS 18-163 Crawford, JA[1] and WE Peterman[2], (1)Lindenwood University, (2)University of Missouri. *Biomass and habitat partitioning of salamanders on wet rock faces in the southern Appalachian Mountains*.

PS 18-164 Bowne, DR[1], CP Bloch[2], RM Chambers[3], DL Druckenbrod[4], JJ Dosch[5], TS Fredericksen[6], DE Garneau[7], KS Genet[8], PA Kish[9], MB Kolozsvary[10], F Kuserk[11], ES Lindquist[12], C Mankiewicz[13], JG March[14], TJ Muir[15], KG Murray[16], JA Simmons[17], RA Urban[18] and CR Zimmermann[19], (1) Elizabethtown College, (2)Bridgewater State College, (3)College of William and Mary, (4)Rider University, (5)Macalester College, (6)Ferrum College, (7)SUNY Plattsburgh, (8)Anoka Ramsey Community College, (9) Moravian Academy, (10)Siena College, (11)Moravian College, (12)Meredith College, (13)Beloit College, (14) Washington and Jefferson College, (15)Augustana College (IL), (16)Hope College, (17)Mount St. Mary's University, (18)Lebanon Valley College, (19)Rogers State University. *Population structure of freshwater turtles across North America: An Ecological Research as Education Network (EREN) collaborative project*.

PS 18-165 Noss, CF and BB Rothermel, Archbold Biological Station. *Effect of time since fire on larval performance and recruitment in Oak Toads (Anaxyrus quercicus)*.

5 pm-5:45 pm

ESA Awards Recipients' Reception (by invitation only)

Rochester, Hilton Minneapolis

5:30 pm-7:45 pm

FT 13 - Plant and Animal Phenology Monitoring on the Mississippi River

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

Organized by: TM Crimmins (theresa@usanpn.org)

6:30 pm-8 pm

Celebrating 30 Years of ESA Public Affairs

200C, Minneapolis Convention Center

Christian Ecologists Social

200J, Minneapolis Convention Center

ESA Aquatic Ecology Section Mixer

200A, Minneapolis Convention Center

ESA Theoretical Ecology Section Mixer

200I, Minneapolis Convention Center

ESA Vegetation Section and IAVS-NA Business Meeting and Mixer

200G, Minneapolis Convention Center

Utah State University Ecologists Mixer

200H, Minneapolis Convention Center

TK 1 - ESA Student Mixer

Main Dinning Rm Downstairs, Hell's Kitchen

8 pm-10 pm

SS 9 - An Evening of Art and Music

101F, Minneapolis Convention Center

Organized by: N Gotelli, J Shade

The theme and purpose of this symposium is to bring together ESA musicians, artists, and members for an evening of live music and art presentations. Open-mic live music performances will be interwoven with displays of paintings, photographs, and video shorts created by ESA members.

SS 10 - Building a More Sustainable Upper Mississippi River Social-Ecological System

Director's Room 2, Hilton Minneapolis

Organized by: MD Reisner (michaelreisner@augustana.edu)

Discuss the role that sustainability science can serve in solving sustainability challenges facing the Upper Mississippi River system by: (1) Having participants discuss ongoing research projects; (2) Begin building a network of scientists and stakeholders working on these issues; (3) Brainstorm ways to facilitate sustainability science endeavors in the system.

SS 12 - Organismal Sampling on a Continental Scale: A Town Hall Discussion of the Terrestrial Soil, Biogeochemical, and Organismal Protocols of the National Ecological Observatory Network.

101I, Minneapolis Convention Center

Organized by: AS Thorpe (athorpe@neoninc.org), KM Thibault, DT Barnett, ELS Hinckley, D Hoekman, CL Meier, J Parnell

In this session, scientists from the National Ecological Observatory Network (NEON) will introduce the protocols that have been developed

4:30 pm-6:30 pm

to consistently sample soils, biogeochemistry, and sentinel taxa at the observatory's 60 sites distributed through the United States and lead discussions about methodology, rationale, and potential uses of the collected data.

SS 13 - Research Opportunities with the US Department of Energy-Office of Biological and Environmental Research

101G, Minneapolis Convention Center

Organized by: DB Stover (Daniel.Stover@science.doe.gov), PJ Hanson

This Town Hall meeting will engage the community by discussing the Department of Energy's Terrestrial Ecosystem Science program, highlighting new program efforts such as the Next Generation Ecosystem Experiments in the Arctic and Tropics, AmeriFlux, Community Land Model, and relevant DOE scientific user facilities.

SS 14 - Roundtable: Joint Management of Grazing Ungulates and Forest Ecosystems--Advances, Insights, and Future Directions

Board Rm 3, Hilton Minneapolis

Organized by: TP Rooney (thomas.rooney@wright.edu)

Join members of the Forest Ungulate Research Network in a roundtable discussion to learn about initiatives and projects that aim to sustainably manage ungulate populations and forest ecosystems.

WK 29 - Scientists' Got Talent: America's Next Top Science Communicator

101A, Minneapolis Convention Center

Organized by: P Ireland

Scientists who are leaders in the field of science communication will share successful techniques such as messaging, live storytelling, video, and design thinking. Workshop attendants will then have the opportunity to give practice presentations to the panel of "judges", who will give constructive feedback and tips for improving presentations.

WK 30 - Your Teaching Resource & ESA's EcoEd Digital Library

Board Rm 1, Hilton Minneapolis

Organized by: T Mourad (teresa@esa.org), KM Klemow, KL Shea, JR Ward, A McMillen

Want to publish your teaching resources? This hands-on workshop will address development of teaching resources and the EcoEd Digital Library submission process. Bring your laptop as well as resources and ideas to share. The ESA Staff & EcoEd Editors will provide an orientation to publish resources on EcoEd Digital Library.

Tuesday, August 6

Business Meetings and Receptions

6:30 am-9 am

ESA *Frontiers* Editorial Board Meeting
Director's 4, Hilton Minneapolis

7 am-8 am

ESA Awards Committee Business Meeting
Director's 2, Hilton Minneapolis

TK 2 - ESA Graduate Students, Post Docs, and Mentor/Mentee Breakfast with ESA Leadership (Mentees/Mentors)
200DE, Minneapolis Convention Center

7 am-9 am

ESA Meetings Committee Business Meeting
M100A, Minneapolis Convention Center

8 am-5 pm

ESA Panel on Vegetation Classification
Board Rm 2, Hilton Minneapolis

11:30 am-1:15 pm

Ecological Research as Education Network (EREN) Lunch and Social (EREN Members and Their Guests Only)
200F, Minneapolis Convention Center

ESA *Ecosphere* Editorial Board Meeting
Rochester, Hilton Minneapolis

ESA *Issues in Ecology* Editorial Board Meeting
Duluth, Hilton Minneapolis

ESA Centennial Implementation Committee Meeting
200I, Minneapolis Convention Center

ESA Human Ecology Section Business Meeting and Brown Bag Lunch
200G, Minneapolis Convention Center

GLBT Ecologists Brown Bag Lunch
Director's 4, Hilton Minneapolis

11:45 am-1:15 pm

***Ecology Letters* Editorial Board Meeting**
200B, Minneapolis Convention Center

12 pm-1:15 pm

ESA Traditional Ecological Knowledge Section Business Meeting
M100A, Minneapolis Convention Center

12 pm-1:30 pm

ESA Paleoecology Section Business Meeting
200H, Minneapolis Convention Center

ESA Statistical Ecology Business Meeting and Mixer
200A, Minneapolis Convention Center

4 pm-6 pm

ESA Ecological Applications Editorial Board Meeting
Duluth, Hilton Minneapolis

6:30 pm-8 pm

***Ecology Letters* Drinks Reception**
200H, Minneapolis Convention Center

***Oecologia* Editorial Board Reception**
Rochester, Hilton Minneapolis

Bringing the Eugene P. Odum School of Ecology to Minneapolis
M101C, Minneapolis Convention Center

ESA Applied Ecology, Agroecology, Urban Ecosystems, Human Ecology, and Environmental Justice Join Mixer
200D, Minneapolis Convention Center

ESA Asian Ecology Section Business Meeting and Mixer
200F, Minneapolis Convention Center

ESA Biogeosciences, Microbial Ecology, and Soil Ecology Sections Joint Mixer
Blrm EF, Hilton Minneapolis

ESA Certification Mixer
200J, Minneapolis Convention Center

ESA Education Section Mixer
200G, Minneapolis Convention Center

ESA Fund for the Future Donor Reception *(by invitation only)*
The Gallery, Hilton Minneapolis

ESA Student Section Business Meeting and Awards Ceremony
L100E, Minneapolis Convention Center

NEON Meet and Greet
Blrm C, Hilton Minneapolis

Tropical Mixer Sponsored by the Organization for Tropical Studies
200C, Minneapolis Convention Center

6:30 am-9 am; 7 am-8 am; 8 am-10 am

Tuesday Sessions

6:30 am-9 am

ESA *Frontiers* Editorial Board Meeting

Director's 4, Hilton Minneapolis

7 am-8 am

ESA Awards Committee Business Meeting

Director's 2, Hilton Minneapolis

TK 2 - ESA Graduate Students, Post Docs, and Mentor/Mentee Breakfast with ESA Leadership (Mentees/Mentors)

200DE, Minneapolis Convention Center

7 am-9 am

ESA Meetings Committee Business Meeting

M100A, Minneapolis Convention Center

8 am-10 am

IGN 1 - Realizing a Resilient Food System

101E, Minneapolis Convention Center

Organized by: ME Schipanski (mes52@psu.edu), GK MacDonald

Moderator: GK MacDonald

How would you propose that we build a more resilient food system? Emphasizing solutions, speakers will ignite new ideas for how to work across disciplines, regions, and scales to get ecological knowledge about food systems onto the policy table, into the fields, and onto our dinner plates.

IGN 1-1 Drinkwater, LE, Cornell University. *Realizing resilient food systems from rhizosphere to watershed scales*.

IGN 1-2 Crews, TE, The Land Institute. *Realizing resilient food systems: Developing perennial cropping systems*.

IGN 1-3 Lundgren, J, USDA-ARS. *Realizing resilient food systems through managing multi-trophic interactions in cropping systems*.

IGN 1-4 Blesh, J, Cornell University. *Realizing resilient community food systems in Mato Grosso, Brazil*.

IGN 1-5 Bennett, EM[1], S Carpenter[2], N Ramankutty[1] and L Gordon[3], (1)McGill University, (2)University of Wisconsin, (3)Stockholm University and Stockholm Environment Institute. *Building resilient food systems at the regional scale: North America*.

IGN 1-6 Palm, C, Earth Institute at Columbia University. *Building resilient food systems at the regional scale: Sub-Saharan Africa*.

IGN 1-7 Chappell, MJ, Washington State University Vancouver. *Realizing just food systems: How much biodiversity does gender equality cost?*.

IGN 1-8 Foley, J, University of Minnesota. *Realizing resilient food systems at the global scale*.

IGN 1-9 Tilman, D, University of Minnesota. *Ecological dimensions of agricultural intensification and extensification across regions*.

IGN 1-10 Salvador, R, Union of Concerned Scientists. *Policy priorities for realizing resilient food systems*.

IGN 2 - Sharing Makes Science Better

M100IB, Minneapolis Convention Center

Organized by: S Chung

Moderator: JL Gill

Ecological science takes a page from the Information Age and taps the collective genius and passion of the research and online communities with open-source and social tools that broaden research possibilities and make existing research faster, more cost-effective and more collaborative.

IGN 2-1 White, EP, Utah State University. *Big Data in Ecology*.

IGN 2-2 Morris, B, University of North Carolina. *EcoData Retriever - automates the tasks of fetching, cleaning up, and storing available data sets*.

IGN 2-3 Budden, A, DataONE, University of New Mexico. *ONEMercury - Ecological Meta(data) Search and Rescue*.

IGN 2-4 Jones, MB[1], D Vieglais[2], R Dahl[3], R Kroiss[4] and C Brumgard[5], (1)National Center for Ecological Analysis and Synthesis, (2) University of Kansas, (3)University of New Mexico, (4)US Geological Survey, (5)University of Tennessee. *The virtual, expanding world of data provided by ONEDrive*.

IGN 2-5 Hart, EM, University of British Columbia. *Using GitHub to collaborate in scientific programming*.

IGN 2-6 Chamberlain, SA, Rice University. *R-based tools for open and collaborative science*.

IGN 2-7 Chung, S, NEON Inc.. *Social media for scientific collaboration*.

IGN 2-8 Regetz, J, National Center for Ecological Analysis and Synthesis, University of California - Santa Barbara. *Publishing useful data with Morpho*.

IGN 2-9 Lortie, C, York University. *The power of preprints: the open publication project for ecologists*.

IGN 3 - Modeling Successful Broader Impacts Programs in Ecology

101H, Minneapolis Convention Center

Organized by: JK Abraham (jkabraham@fullerton.edu), A Macrae-Crerar, EH Schultheis

Moderator: EH Schultheis

Presenters will discuss details and lessons learned about their Broader Impacts programs to serve as a starting point for discussion and collaboration among ESA members; the session will be followed by an optional workshop.

IGN 3-1 Blood, E and H Gholz, National Science Foundation. *Planning great Broader Impacts projects*.

IGN 3-2 Hanson, PC[1] and KC Weathers[2], (1)University of Wisconsin, (2)Cary Institute of Ecosystem Studies. *Broader Impacts of the Global Lake Ecological Observatory Network (GLEON)*.

IGN 3-3 Forrester, T[1], RW Kays[2], WJ McShea[1] and R Costello[3], (1) Smithsonian Institution - National Zoological Park, (2)North Carolina Museum of Natural Sciences, (3)Smithsonian Institution - National Museum of Natural History. *eMammal*

– Museum based citizen science camera trapping as a solution for wildlife monitoring.

IGN 3-4 Mead, L, Michigan State University. *Bringing Evolution Education into Action*.

IGN 3-5 Tonsor, SJ and N Settles, University of Pittsburgh. *Artist-in-Residence in an Ecology Lab*.

IGN 3-6 Malloy, M, Fairmount Water Works Interpretive Center. *Environmental Education in Philadelphia, PA*.

IGN 3-7 Landsbergen, KJ, Columbus College of Art and Design. *Design hipsters helping geeks with climate change communications*.

IGN 3-8 MacRae-Crerar, A[1], N Nadkarni[2] and A Stasch[3], (1) University of Pennsylvania, (2)University of Utah, (3)Scotts Bluff National Monument. *Research Ambassador Program*.

IGN 3-9 Suwa, T[1] and KL Gross[2], (1)Michigan State University and W.K. Kellogg Biological Station, (2)Michigan State University. *Beyond the screen: Hands-on learning for computer-based classrooms*.

8 am-11:30 am

SYMP 4 - Integrating Soil Biodiversity Into Discussions of Global Sustainability: The Time Is Now

M100EF, Minneapolis Convention Center

Organized by: KS Ramirez (kelly.ramirez@colorado.edu), DH Wall

Endorsed by: Soil Ecology Section, Microbial Ecology Section, Agroecology Section

Moderator: KS Ramirez

The goal of this symposium is to facilitate a discussion on the rapidly accumulating knowledge of soil biodiversity, from gene sequences to ecosystem processes, and highlight ways to integrate research developments into sustainable policy and management practices of all global soils.

8:00 AM SYMP 4-1 Fierer, N, University of Colorado-Boulder. *Predicting soil microbial diversity and function in a rapidly changing world*.

8:30 AM SYMP 4-2 Lennon, JT[1], C terHorst[2] and JA Lau[2], (1) Indiana University, (2)Michigan State University. *Soil microorganisms improve plant fitness in the face of global change*.

9:00 AM SYMP 4-3 Lindo, Z[1] and A Gonzalez[2], (1)University of Western Ontario, (2)McGill University. *Interactive effects and feedbacks between soil biodiversity and global change*.

9:30 AM Break

9:40 AM SYMP 4-4 de Vries, FT[1], P Manning[2] and RD Bardgett[1], (1)University of Manchester, (2)Newcastle University. *Harnessing soil communities for N retention*.

10:10 AM SYMP 4-5 Nielsen, UN, University of Western Sydney. *Are we underestimating the potential role of soil fauna in global sustainabiliy?*.

10:40 AM SYMP 4-6 Herrick, JE, USDA Agricultural Research Service. *Challenges and opportunities for increasing the impact of soil biodiversity science on global sustainability*.

11:10 AM Discussion

SYMP 5 - Understanding the Past to Shape the Future: A Symposium Honoring the Contribution of Minnesota Ecologists Margaret Davis, Eville Gorham, and Herb Wright

205AB, Minneapolis Convention Center

Organized by: MW Schwartz, MV Santelmann, DR Foster

Endorsed by: Biogeosciences Section, Vegetation Section, Paleoecology Section

Moderator: MV Santelmann

This symposium will frame the use of paleoecology and systems ecology to better understand the future through the lens of the careers of Drs. Davis, Wright and Gorham, eminent Minnesota ecologists, contemporaries and leaders in the field.

8:00 AM SYMP 5-1 Williams, JW[1] and JS McLachlan[2], (1)University of Wisconsin, Madison, (2)University of Notre Dame. *Large-scale data-model syntheses in paleoecology and paleoclimatology: The children of COHMAP*.

8:30 AM SYMP 5-2 Munger, JW, Harvard University. *Beyond acid rain: A biogeochemical perspective on ecosystem/atmosphere exchange*.

9:00 AM SYMP 5-3 Schimel, DS and C Miller, Jet Propulsion Lab, California Institute of Technology. *Peatlands and the global carbon cycle*.

9:30 AM Break

9:40 AM SYMP 5-4 Whitlock, C, Montana State University. *Why fire history matters: Understanding the linkages between vegetation, climate and people on multiple time scales*.

10:10 AM SYMP 5-5 Hu, FS[1], DG Gavin[2], A Hampe[3] and F Rodríguez-Sánchez[4], (1)University of Illinois, Urbana-Champaign, (2)University of Oregon, (3)INRA, (4)University of Cambridge. *Understanding climate refugia and quaternary biome development: From palynology to paleomics*.

10:40 AM SYMP 5-6 Booth, RK[1] and ST Jackson[2], (1)Lehigh University, (2)DOI Southwest Climate Science Center. *Perspectives from the peatland archive on ecosystem development and vegetation dynamics: building on the Minnesota legacy*.

11:10 AM Discussion

SYMP 6 - Will Educational Technology Fundamentally Transform the Way We Teach Ecology?

Auditorium, Rm 3, Minneapolis Convention Center

Organized by: GR Goldsmith, AM Kamarainen, JK Abraham

Endorsed by: Education Section, Student Section

Moderator: JK Abraham

This symposium will address the past, present and future application of educational technology for teaching the science of ecology, with a focus on the potential for new tools to transform education by engaging new audiences, providing personalized instruction, and improving assessment practices.

8:00 AM SYMP 6-1 Meir, E, SimBiotic Software. *The history and evolution of educational technology platforms for teaching ecology*.

8:30 AM SYMP 6-2 Edelson, DC, National Geographic Society. *Re-connecting students and the public to nature: Tools for citizen science fieldwork and analysis*.

8 am-11:30 am

9:00 AM SYMP 6-3 Kamarainen, AM, Harvard University. *Learning ecologies and learning ecology – ecology education in a connected world*.

9:30 AM Break

9:40 AM SYMP 6-4 Baker, R, Columbia University Teacher's College. *Towards using educational data mining to improve the assessment of student understanding of ecology*.

10:10 AM SYMP 6-5 Herrera, J, National Science Foundation. *Using contemporary science and technology to transform how we teach ecological topics: a funding agency's perspective*.

10:40 AM SYMP 6-6 Klopfer, E, Massachusetts Institute of Technology. *Towards a unified agenda for the next generation of engagement in educational technology*.

11:10 AM Discussion

OOS 6 - Climate Change, Drought and Tree Mortality: Pattern, Process, and Prediction

101A, Minneapolis Convention Center

Organized by: HD Adams (adamshd@lanl.gov), A Macalady, AP Williams

Moderator: WRL Anderegg

This session will bring together researchers who study pattern, process, and prediction of tree drought mortality, advancing efforts to anticipate and understand the causes and consequences of this emerging ecological disturbance associated with global change.

8:00 AM OOS 6-1 O'Grady, A, P Mitchell, L Pinkard, J Bruce and M Battaglia, CSIRO. *Towards a consistent approach for assessing drought risk to terrestrial carbon stores*.

8:20 AM OOS 6-2 Zeppel, M[1], HD Adams[2], DT Tissue[3], BE Medlyn[1], A West[4] and NG McDowell[2], (1)Macquarie University, (2)Los Alamos National Laboratory, (3)Hawkesbury Institute for the Environment, University of Western Sydney, Richmond NSW 2753, Australia, (4)University of Cape Town. *Pre-disposing factors leading to drought-induced mortality in broad-leaved evergreens*.

8:40 AM OOS 6-3 Sevanto, S[1], NG McDowell[1], LT Dickman[1], T Holtta[2], RE Pangle[3] and WT Pockman[3], (1)Los Alamos National Laboratory, (2)University of Helsinki, (3)University of New Mexico. *The role of phloem failure in tree mortality during drought*.

9:00 AM OOS 6-4 Litvak, ME[1], T Hilton[1], DJ Krofcheck[1], AM Fox[2], R Sinsabaugh[1], N McDowell[3], T Rahn[3] and A Neuenschwander[4], (1)University of New Mexico, (2)National Ecological Observatory Network, (3)Los Alamos National Laboratory, (4)Universit of Texas. *Carbon and energy balance consequences of widespread mortality in piñon-juniper woodlands*.

9:20 AM OOS 6-5 Ewers, BE[1], DS Mackay[2], SD Peckham[1], E Pendall[1], D Reed[1], JM Frank[3], WJ Massman[3], U Norton[1], B Borkhuu[1], FN Whitehouse[1], N Brown[1], A King[1], CR Guadagno[1], J Biederman[4] and PD Brooks[4], (1)University of Wyoming, (2)SUNY-Buffalo, (3)Rocky Mountain Research Station, U.S. Forest Service, (4)University of Arizona. *Causes and consequences of bark beetle-induced mortality on water, carbon, and nitrogen cycling*.

9:40 AM Break

9:50 AM OOS 6-6 Williams, AP, Los Alamos National Laboratory. *A forest is not a pan of water: Temperature and vapor-pressure deficit as potent drivers of regional forest drought stress and tree mortality*.

10:10 AM OOS 6-7 Macalady, A[1], M Kläy[2], H Bugmann[2], ML Gaylord[3], N English[4], CD Allen[5], TW Swetnam[1] and NG McDowell[6], (1)University of Arizona, (2)ETH Zurich, (3) Northern Arizona University, (4)James Cook University, (5) Jemez Mountains Field Station, (6)Los Alamos National Laboratory. *Predicting mortality of Pinus edulis during drought using growth and resin duct anatomy*.

10:30 AM OOS 6-8 Xu, C[1], HD Adams[1], RA Fisher[2] and NG McDowell[1], (1)Los Alamos National Laboratory, (2)National Center for Atmospheric Research. *Uncertainty and sensitivity analysis of process-based tree mortality models*.

10:50 AM OOS 6-9 Law, BE[1], TW Hudiburg[2], S Luyssaert[3] and N Coops[4], (1)Oregon State University, (2)University of Illinois - UC, (3)University of Antwerp, (4)University of British Columbia. *Current and Future Effects of Drought, Fire and Mitigation Options on Pacific Northwest Forests*.

11:10 AM OOS 6-10 Berdanier, AB[1], JS Clark[1], CF Miniat[2] and J Vose[2], (1)Duke University, (2)USDA Forest Service Southern Research Station. *Trees maintain broad hydraulic safety margins in their trunks during drought in a temperate forest*.

OOS 7 - Doing Justice Through Your Research: Following Your Passion and Creating a Just Society as an Ecologist

101B, Minneapolis Convention Center

Organized by: LM Jablonski (ljablonski1@udayton.edu), CR Cid, MM Gregory

Moderator: MM Gregory

Diverse ecologists will share personal stories of research directions and educational approaches - including risks taken and issues addressed - that bettered community well-being. Practical tips, challenges faced and success stories will inspire ecologists to address justice concerns through community-engaged research on environmental issues that impact quality of life.

8:00 AM OOS 7-1 Peters, SJ, Imagining America / Syracuse University. *Cultivating democracy and sustainability through collaborative ecological research, education, and action*.

8:20 AM OOS 7-2 Cid, CR, Eastern Connecticut State University. *Maximizing exposure of minority youths and communities to the wonders of ecological research*.

8:40 AM OOS 7-3 Middendorf, GA, Howard University. *On privilege: Being, recognizing and expanding - MSIs, HBCUs, EJ, and ESA*.

9:00 AM OOS 7-4 Pohlad, BR and CL Thomas, Ferrum College. *Title: Synergistic benefits to environmental justice in a couple's ecological careers at a primarily undergraduate institution*.

9:20 AM OOS 7-5 Nadkarni, NM, University of Utah. *Beyond broader impacts: Finding venues and values that synergistically link academia and community*.

9:40 AM Break

9:50 AM OOS 7-6 Perfecto, I, University of Michigan. *The re-*

sponsibilities of ecologists: Reflections on my 30 years experience with the New World Agriculture and Ecology Group [NWAEG].

10:10 AM OOS 7-7 Jablonski, LM, Marianist Environmental Education Center. *Transforming cultural clashes to justice-science symbioses*.

10:30 AM OOS 7-8 Gregory, MM[1] and SJ Peters[2], (1)Cornell University, (2)Imagining America / Syracuse University. *Designing collaborative inquiry for educational, environmental & social benefits: A case study of cover crop research with Brooklyn gardeners*.

10:50 AM OOS 7-9 Kummerow, MF[1] and VJ Watson[2], (1)Curtin University, (2)University of Montana. *Implementing K*: Choosing an optimum global carrying capacity for humans*.

OOS 8 - Legacies From Long-Term Ecological Studies: Using The (Recent) Past To Inform Future Research

101D, Minneapolis Convention Center

Organized by: DW Inouye (inouye@umd.edu)

Moderator: S Twombly

Long-term ecological studies reveal novel insights into the dynamics of natural communities and ecosystems, as will be demonstrated for a variety of ecosystems and species by the participating speakers.

8:00 AM OOS 8-1 Ernest, SKM, Utah State University. *Biotic responses to shifting ecological drivers in a desert community*.

8:20 AM OOS 8-2 Pringle, CM[1], GE Small[2], B Bixby[3], A Ramírez[4], JH Duff[5], M Ardon[6], AP Jackman[7], M Snyder[8], CN Ganong[1], P Guttierez[4] and FJ Triska[5], (1)University of Georgia, (2)University of Minnesota, (3)University of New Mexico, (4)University of Puerto Rico, Rio Piedras, (5)U.S. Geological Survey, (6)East Carolina University, (7)University of California, Davis, (8)Environmental Protection Agency. *Climate-driven acidification in lowland Neotropical streams: Insights from a 25-year dataset on ground water - surface water interactions*.

8:40 AM OOS 8-3 Kaplan, NE[1] and H Karasti[2], (1)Colorado State University, (2)University of Oulu. *From cows to carbon to curation: The biography of the Shortgrass Steppe LTER*.

9:00 AM OOS 8-4 Wagenius, S, Chicago Botanic Garden. *Dynamic responses to habitat fragmentation in a prairie plant*.

9:20 AM OOS 8-5 Bestelmeyer, BT[1], KM Havstad[1], LN Svejcar[1], MC Duniway[2], GS Okin[3] and DPC Peters[1], (1)USDA Agricultural Research Service, (2)USGS, (3)UCLA. *Critical thresholds and recovery of Chihuahuan Desert grasslands: Insights from long-term data*.

9:40 AM Break

9:50 AM OOS 8-6 Kratz, TK[1], JW Gaeta[2], G Hansen[1], NR Lottig[1], JS Read[3], EH Stanley[1], JF Walker[4] and CJ Watras[5], (1)University of Wisconsin, (2)University of Wisconsin Madison, (3)University of Wisconsin-Madison, (4)USGS, (5)Wisconsin Department of Natural Resources. *Long-term studies as frameworks for peering into the future: Climate forcing and ecological response in a set of Wisconsin lakes*.

10:10 AM OOS 8-7 Iler, A[1], TEX Miller[2], DW Inouye[1] and JL Williams[3], (1)University of Maryland, (2)Rice University, (3)University of British Columbia. *Negative and positive effects of climate change on the demography of a subalpine perennial plant*.

10:30 AM OOS 8-8 Stouffer, PC[1], RO Bierregaard[2] and TE Lovejoy[3], (1)Louisiana State University, (2)University of North Carolina, Charlotte, (3)George Mason University & Heinz Center for Science, Economics and the Environment. *Avian community and population processes in a dynamic Amazonian landscape: Lessons from 30 years at the Biological Dynamics of Forest Fragments Project*.

10:50 AM OOS 8-9 Sousa, RG, CBMA – Centre of Molecular and Environmental Biology. *Reconfiguration of a benthic assemblage after drought: outcomes from a long term study where native species lose and invasive species win*.

11:10 AM OOS 8-10 Gross, K[1] and PJ Edmunds[2], (1)North Carolina State University, (2)California State University - Northridge. *Stability of Caribbean coral-reef communities quantified by long-term monitoring and autoregressive models*.

OOS 9 - Sex-Structured Population Dynamics: Theoretical and Empirical Approaches

101F, Minneapolis Convention Center

Organized by: MG Neubert (mneubert@whoi.edu), TEX Miller, H Caswell, AK Shaw

Moderator: H Caswell

Speakers will present recent work that addresses the evolution of population sex structure and the effects that sex-structure can have on population dynamics.

8:00 AM OOS 9-1 Shyu, E[1] and H Caswell[2], (1)Woods Hole Oceanographic Institute, (2)Woods Hole Oceanographic Institution. *An adaptive dynamics approach to sex ratio evolution in demographic two-sex models*.

8:20 AM OOS 9-2 Shaw, AK and H Kokko, The Australian National University. *Mate finding, Allee effects, and selection for sex-biased dispersal*.

8:40 AM OOS 9-3 Neubert, MG and H Caswell, Woods Hole Oceanographic Institution. *Pair formation mechanisms and their effect on invasion dynamics*.

9:00 AM OOS 9-4 Miller, TEX, Rice University. *Slowing down a sex-structured invasion*.

9:20 AM OOS 9-5 Holman, L and H Kokko, Australian National University. *The many consequences of polyandry for population dynamics*.

9:40 AM Break

9:50 AM OOS 9-6 Barthold, JA[1], S Schindler[2], C Packer[3] and T Coulson[2], (1)Max Planck Institute for Demographic Research & University of Oxford, (2)University of Oxford, (3)University of Minnesota. *When males matter: The circumstances when males generate a large eco-evolutionary dynamical signature*.

10:10 AM OOS 9-7 Tyre, AJ[1], JE McFadden[2] and TL Hiller[2], (1)University of Nebraska-Lincoln, (2)Oregon Department of Fish and Wildlife. *Estimating cougar population trends in Oregon with integrated population models*.

10:30 AM OOS 9-8 Berg, SS, JL Berini and JD Forester, University

of Minnesota. *Correcting mortality rates of asocial animals with prolonged periods of maternal dependence in demographic modeling*.

OOS 10 - Terrestrial-Aquatic Linkages I: Changing Patterns of Sediment Delivery From Agricultural Watersheds

101G, Minneapolis Convention Center

Organized by: RD Dietz (dietz070@umn.edu), SP Schottler, JE Almendinger

Moderator: DR Engstrom

This session addresses relationships between land use and water quality in agricultural regions, with special emphasis on watershed-scale studies of sediment fluxes across the terrestrial-aquatic interface, including monitoring efforts and/or paleoenvironmental reconstructions that describe the influences of conservation, cultivation, and climate on sediment transport.

8:00 AM OOS 10-1 Schottler, SP[1], J Ulrich[2], P Belmont[3], R Moore[4], JW Lauer[5], DR Engstrom[1] and JE Almendinger[1], (1)St. Croix Watershed Research Station, Science Museum of Minnesota, (2)University of Minnesota, (3)Utah State University, (4)Minnesota State University, Mankato, (5)Seattle University. *Historic changes in sediment loading and sediment sources in a large agricultural river system*.

8:20 AM OOS 10-2 Gran, KB[1], P Belmont[2] and N Finnegan[3], (1) University of Minnesota-Duluth, (2)Utah State University, (3)University of California Santa Cruz. *Changing patterns in sediment delivery in incising agricultural watersheds*.

8:40 AM OOS 10-3 Johnson, LT, RP Richards, DB Baker, JW Kramer, DE Ewing and BJ Merryfield, Heidelberg University. *Long-term trends in total suspended sediments from agricultural tributaries to Lake Erie*.

9:00 AM OOS 10-4 Christensen, VG[1] and EH Mohring[2], (1)United States Geological Survey, (2)Minnesota Board of Water and Soil Resources. *Comparison of sediment in watersheds with varying amounts of conservation lands*.

9:20 AM OOS 10-5 Almendinger, JE[1], SP Schottler[1], JM Ramstack Hobbs[1], AC Jenks[2], DR Engstrom[1], RD Dietz[2] and P Bolstad[2], (1)St. Croix Watershed Research Station, Science Museum of Minnesota, (2)University of Minnesota. *Use of lake-sediment accumulation to assess how conversion of cropland to grassland affects watershed-scale erosion in the corn belt of Minnesota*.

9:40 AM Break

9:50 AM OOS 10-6 Heathcote, AJ, CT Filstrup and JA Downing, Iowa State University. *Watershed sediment losses to lakes accelerating despite agricultural soil conservation efforts*.

10:10 AM OOS 10-7 Dietz, RD[1], SP Schottler[2], JE Almendinger[2] and DR Engstrom[2], (1)University of Minnesota, (2)St. Croix Watershed Research Station, Science Museum of Minnesota. *Relationships between land use and sediment accumulation in 116 Minnesota lakes, from pre-settlement to present*.

COS 18 - Agriculture II

101C, Minneapolis Convention Center

8:00 AM COS 18-1 Van Meter, RJ, DA Glinski and T Purucker, US Environmental Protection Agency. *Amphibians and agrochemicals: Dermal contact and pesticide uptake from irrigated croplands in SW Georgia*.

8:20 AM COS 18-2 Duflot, R[1], S Aviron[2] and F Burel[1], (1)CNRS UMR 6553 ECOBIO, Université de Rennes 1, (2)INRA UR 980, SAD-Paysage. *Effects of farmland landscape heterogeneity on biodiversity: is there a spatio-temporal complementation between crop fields?*.

8:40 AM COS 18-3 Ruelle, M, Cornell University. *Plant diversity for food sovereignty: Identifying conservation priorities for food system functionality in the Ethiopian highlands*.

9:00 AM COS 18-4 Hayden, ZD, M Ngouajio and DC Brainard, Michigan State University. *Planting date and staggered seeding affect biomass production and winter survival in a cereal-legume cover crop mixture*.

9:20 AM COS 18-5 Otero-Jiménez, B, P Tucker and J Vandermeer, University of Michigan. *The effect of matrix composition in agroecosystems: assessing population structure in Heteromys mice.*

9:40 AM Break

9:50 AM COS 18-6 Jabbour, R[1], E Gallandt[1], KD Gibson[2], D Doohan[3], M Riemens[4] and R Smith[5], (1)University of Maine, (2)Purdue University, (3)Ohio State University, (4)Plant Research International, (5)University of California. *Weed seedbank communities of organic farms: A comparison of New England, the Midwestern United States, California, and the Netherlands*.

10:10 AM COS 18-7 Edwards, CB[1], JA Rosenheim[2] and MM Segoli[3], (1)Cornell University, (2)University of California, Davis, (3)Ben-Gurion University of the Negev. *Geometry for herbivore colonization of crop fields*.

10:30 AM COS 18-9 Ngo Bieng, MA[1] and C Gidoin[2], (1)CIRAD, (2) SupAgro. *Spatial organization of individuals and ecosystems services in tropical agroecosystems*.

COS 19 - Aquatic Ecology: Lakes And Ponds

101I, Minneapolis Convention Center

8:00 AM COS 19-1 Pitcher, T and R Kumar, University of British Columbia. *A dynamic ecosystem simulation model of Mille Lacs Lake, Minnesota: Ecosystem-based management learns from the past to shape the future*.

8:20 AM COS 19-2 Gertzen, EL[1], SE Doka[1], J MacEachern[1] and CK Minns[2], (1)Fisheries and Oceans Canada, (2)University of Toronto. *Assessing the recovery of fish habitat in a Great Lakes Area of Concern using spatial and temporal benchmarks*.

8:40 AM COS 19-3 Zimmer, KD[1], DT Probst[2], AT Goding[2], LM Domine[2], BR Herwig[3], WO Hobbs[4] and JB Cotner[5], (1) University of St.Thomas, (2)University of St Thomas, (3) Minnesota Department of Natural Resources, (4)Science Museum of Minnesota, (5)University of Minnesota - Twin Cities. *Carbon flux rates in shallow lakes: A comparison of detritivorous fish, lake metabolism, and sediment sequestration*.

9:00 AM COS 19-4 Chezik, KA[1], NP Lester[2] and PA Venturelli[1], (1)University of Minnesota, (2)Ontario Ministry of Natural Resources. *The first step towards a standardized approach for using degree-days in fisheries science*.

9:20 AM COS 19-5 Fetzer, WW, JR Jackson and LG Rudstam, Cornell University. *Alternative prey species lead to prey buffering not apparent competition*.

9:40 AM Break

9:50 AM COS 19-6 Miller, NA and VL Lougheed, University of Texas at El Paso. *Changes in algal net ecosystem production over the past 40 years in Arctic tundra ponds near Barrow, Alaska*.

10:10 AM COS 19-7 Cardille, J[1] and PA del Giorgio[2], (1)McGill University, (2)University of Quebec at Montreal. *Prospects and progress in understanding carbon stocks in northern lakes with the new Landsat 8 platform*.

10:30 AM COS 19-8 Kumar, R, T Pitcher and S Martell, University of British Columbia. *Temperature and fisheries drive a decline of cisco in Mille Lacs Lake, Minnesota: Learning from the past to shape the future*.

10:50 AM COS 19-9 Gittens, A and WA Nelson, Queen's University. *Differences in hemoglobin up-regulation in zooplankton are strongly correlated with differences in diel vertical migration patterns of zooplankton genotypes*.

11:10 AM COS 19-10 Papenfuss, JT[1], T Cross[2] and PA Venturelli[1], (1)University of Minnesota, (2)Minnesota Department of Natural Resources. *Measuring critical spawning habitat for walleye on selected lakes in the Namakan Reservoir and assessing how this habitat has been affected by water level management practices*.

COS 20 - Biodiversity I

101J, Minneapolis Convention Center

8:00 AM COS 20-1 Gosnell, JS and JE Caselle, University of California, Santa Barbara. *Easing our way to change: Changes in functional diversity in the decade following protection of marine areas*.

8:20 AM COS 20-2 Lefevre, E[1], K Arendt[2], B Ball[1], J Miadlikowska[1], K Picard[1], JM U'Ren[2], E Arnold[2] and F Lutzoni[1], (1) Duke University, (2)University of Arizona. *Understanding the spatial scaling of boreal endophytic fungal communities using environmental cloning and Ion Torrent targeted amplicon sequencing*.

8:40 AM COS 20-3 Schmid, B, D Zuppinger-Dingley, V Yadav and DFB Flynn, University of Zurich. *Eight years of selection in a biodiversity experiment leads to differentiation into monoculture and mixture types in 12 grassland species*.

9:00 AM COS 20-4 Potts, MD[1] and B Ramage[2], (1)University of California, Berkeley, (2)University of California--Berkeley. *Tropical forest beta diversity across multiple taxa and scales*.

9:20 AM COS 20-5 Yurkonis, KA and TP McKenna, University of North Dakota. *Fine-scale species pattern affects grassland diversity-invasion relationships*.

9:40 AM Break

9:50 AM COS 20-6 Supp, SR, DN Koons and SKM Ernest, Utah State University. *Life-history trade-offs among core and transient species regulate local diversity and community structure*.

10:10 AM COS 20-7 Johnson, AL[1], E Tauzer[2] and CM Swan[3], (1) University of Maryland Baltimore County, (2)SUNY-ESF, (3) University of Maryland, Baltimore County. *Human legacies differentially organize functional and phylogenetic diversity of urban herbaceous plant communities at multiple spatial scales*.

10:30 AM COS 20-8 Mueller, KE[1], N Eisenhauer[2], PB Reich[1], T Dobies[3], C Hale[4], SE Hobbie[1], AM Jagodzinksi[5], I Kalucka[6], M Kasprowicz[7], L Sobczyk[8], M Stasińska[9], LK Trocha[5], J Weiner[8] and J Oleksyn[10], (1)University of Minnesota, (2) Friedrich-Schiller-University Jena, (3)Poznań University of Life Sciences, (4)University of Minnesota Duluth, (5)Polish Academy of Sciences, (6)University of Łódź (7)9Adam Mickiewicz University, (8)Jagiellonian University, (9)University of Szczecin, (10)Polish Academy of Sciences, Institute of Dendrology. *Demystifying the enigma of soil biodiversity: long-term effects of 14 tree species and underlying mechanisms*.

10:50 AM COS 20-9 Janowicz, ME[1], H Harris[2] and W Zalachowski[3], (1)Concordia University College of Alberta, (2)University of Alberta, (3)West Pomeranian University of Technology. *Comparison of fitness-related life history traits of pure westslope cutthroat trout (Oncorhynchus clarkii lewisi) and hybrids with rainbow trout (O. mykiss).*

11:10 AM COS 20-10 Tan, J[1], MR Slattery[2] and L Jiang[1], (1)Georgia Institute of Technology, (2)Western Washington University. *Interspecific competition suppresses adaptive radiation*.

COS 21 - Biogeochemistry: New Paradigms In Biogeochem Cycling II

L100A, Minneapolis Convention Center

8:00 AM COS 21-1 Gei, MG and JS Powers, University of Minnesota. *Estimating nitrogen fixation rates and controls in a tropical dry forest*.

8:20 AM COS 21-2 Perakis, S[1], ER Sinkhorn[2], C Catricala[1], TD Bullen[3], J Fitzpatrick[3], J Hynicka[2] and K Cromack Jr.[2], (1)US Geological Survey, (2)Oregon State University, (3)U.S. Geological Survey. *Forest calcium depletion and biotic retention along a natural gradient of soil nitrogen*.

8:40 AM COS 21-3 Loecke, TD[1] and AJ Burgin[2], (1)University of Nebraska-Lincoln, (2)University of Nebraska - Lincoln. *Variation in soil oxygen across an aquatic-terrestrial interface*.

9:00 AM COS 21-4 Hall, SJ[1] and WL Silver[2], (1)University of California-Berkeley, (2)University of California, Berkeley. *An ecosystem approach to understanding soil C in humid tropical forests: influences of minerals, microbes, and roots*.

9:20 AM COS 21-5 Morse, JL[1], F Beall[2], IF Creed[3], E Enanga[3], IJ Fernandez[4] and PM Groffman[1], (1)Cary Institute of Ecosystem Studies, (2)Canadian Forest Service, (3)University of Western Ontario, (4)Univerity of Maine. *Soil denitrification fluxes and oxygen dynamics in three contrasting northeastern North American forests*.

9:40 AM Break

9:50 AM COS 21-6 Brookshire, J[1] and S Gerber[2], (1)Montana State University, (2)University of Florida IFAS. *Scaling of physical constraints at the root-soil interface to macroscopic patterns of nutrient retention in ecosystems and landscapes*.

10:10 AM COS 21-7 Chou, CB, LO Hedin and SW Pacala, Princeton University. *The role of ndividual tree nutrient demand and tree functional types in tropical rainforest nutrient limitation*.

8 am-11:30 am

10:30 AM COS 21-8 Morford, SL, BZ Houlton and RA Dahlgren, University of California, Davis. *Widespread and ecologically meaningful rock nitrogen contributions to terrestrial ecosystems*.

10:50 AM COS 21-9 Marczewski, SA[1] and JB Cotner[2], (1)University of Minnesota, (2)University of Minnesota - Twin Cities. *Extraction of dissolved organic carbon from carbonate-rich lake sediments*.

11:10 AM COS 21-10 Batterman, SA, DNL Menge and LO Hedin, Princeton University. *Biogeochemical controls of symbiotic N_2 fixation across broad spatial scales: An evaluation of four hypotheses*.

COS 22 - Climate Change: Biogeochem Cycles

L100B, Minneapolis Convention Center

8:00 AM COS 22-1 Carpenter, SR and RC Lathrop, University of Wisconsin - Madison. *Scenarios of water quality: projected effects of phosphorus management in a changing climate*.

8:20 AM COS 22-2 Dorkoski, R and JL DeForest, Ohio University. *The consequences of acid rain on fine-root carbon allocation in a hardwood forest*.

8:40 AM COS 22-3 Gliksman, D and JM Gruenzweig, Hebrew University of Jerusalem. *Mechanisms underlying litter decomposition in dry seasons*.

9:00 AM COS 22-4 Jackson, RB[1], N Phillips[2], R Ackley[3], K Zhao[1], A Down[1] and CW Cook[1], (1)Duke University, (2)Boston University, (3)Gas Safety Inc.. *Natural gas leaks across Washington, D.C: Their number, source, and relevance to greenhouse gas emissions*.

9:20 AM COS 22-5 Townsend, AR[1], PG Taylor[1], H Fancher[1], TM Legg[1], SR Weintraub[1], WR Wieder[2], CC Cleveland[3] and DR Nemergut[1], (1)University of Colorado, (2)National Center for Atmospheric Research, (3)University of Montana. *An avoidable methane hotspot: pan-tropical estimates of greenhouse gas emissions and energy potential in tropical palm oil plantations*.

9:40 AM Break

9:50 AM COS 22-6 Trierweiler, A[1], K Winter[2], N Wurzburger[3] and L Hedin[1], (1)Princeton University, (2)Smithsonian Tropical Research Institute, (3)University of Georgia. *Will Tropical symbiotic nitrogen fixers face increasing P and Mo limitation with CO_2 fertilization?*.

10:10 AM COS 22-7 Reinmann, AB and PH Templer, Boston University. *Effects of winter climate on growing season fluxes of CO_2 from tree stems in a mixed hardwood forest: Implications for carbon storage*.

10:30 AM COS 22-8 Lutz, BD[1] and E Bernhardt[2], (1)Kent State University, (2)Duke University. *Terrestrial and Aquatic Controls on Watershed Biogeochemistry Respond Differently to Climate Change: Walker Branch, TN*.

10:50 AM COS 22-9 Eddy, WC III, SE Hobbie, A Stefanski, K Rice, RL Rich and PB Reich, University of Minnesota. *B4WarmED forest warming experiment: Effects of soil moisture on soil organic matter decomposition*.

11:10 AM COS 22-10 Hobbie, JE[1], G Shaver[1] and G Kling[2], (1)Marine Biological Laboratory, (2)University of Michigan. *The integrated effects of warming are obvious in the physics, chemistry, and ecology of tundra at the arctic Alaska LTER site despite no significant warming trend since climate measurements began in 1989*.

COS 23 - Climate Change: Communities I

L100C, Minneapolis Convention Center

8:00 AM COS 23-1 Wiechmann, ML[1], KL Martin[1], MP North[2] and MD Hurteau[1], (1)Pennsylvania State University, (2) USFS Pacific Southwest Research Station. *Carbon recovered following different fuel reduction treatments in a Sierra Nevada mixed-conifer forest*.

8:20 AM COS 23-2 Martin, KL[1], BA Hungate[2], GW Koch[2], MP North[3] and MD Hurteau[4], (1)The Pennsylvania State University, (2)Northern Arizona University, (3)USFS Pacific Southwest Research Station, (4)Pennsylvania State University. *Tradeoffs in forest carbon dynamics, fire management, and red-cockaded woodpecker habitat in longleaf pine ecosystems*.

8:40 AM COS 23-3 King, DA[1], DM Bachelet[2] and AJ Symstad[3], (1)Oregon State University, (2)Conservation Biology Institute and Oregon State University, (3)USGS. *Modeling drought stress and tree mortality with dynamic global vegetation models*.

9:00 AM COS 23-4 Travers, SE[1], BI Cook[2] and EM Wolkovich[3], (1)North Dakota State University, (2)NASA Goddard Institute for Space Studies, (3)University of British Columbia. *The relative importance of changing temperatures versus precipitation for flowering phenologies in a northern tallgrass prairie*.

9:20 AM COS 23-5 Meza-Lopez, MM and E Siemann, Rice University. *Climate warming and nutrient enrichment increases invasive plant competitive ability and invasive apple snail reproduction (Pomacea maculata) in native wetland communities*.

9:40 AM Break

9:50 AM COS 23-6 Kneitel, JM, California State University, Sacramento. *The effects of hydroperiod duration and timing on California vernal pool communities*.

10:10 AM COS 23-7 Smith, DP[1], PB Reich[2], SE Hobbie[2], A Stefanski[2] and KG Peay[1], (1)Stanford University, (2)University of Minnesota. *B4WarmED forest warming experiment: Effects on diversity, community structure and function of soil fungi and bacteria*.

10:30 AM COS 23-8 Koltz, AM[1], TT Hoye[2] and JP Wright[1], (1)Duke University, (2)Aarhus University. *Warming over the last 15 years has altered the functional composition of high-arctic arthropod communities*.

10:50 AM COS 23-9 Aicher, RJ[1], J Ebersole[2] and MJ Todd[3], (1) Hosted by the US EPA, (2)US EPA NHEERL, (3)US EPA NCEA. *Are Bristol Bay sockeye salmon responses to climate change predictable?*.

11:10 AM COS 23-10 Cottingham, KL[1], CC Carey[2], KC Weathers[3], HA Ewing[4] and ML Greer[4], (1)Dartmouth, (2)University of Wisconsin-Madison, (3)Cary Institute of Ecosystem Studies, (4)Bates College. *Spatial and temporal variability in the recruitment of the cyanobacterium Gloeotrichia echinulata in an oligotrophic lake*.

COS 24 - Community Assembly And Neutral Theory II

L100D, Minneapolis Convention Center

8:00 AM COS 24-1 Jiang, L and N Johnston, Georgia Institute of Technology. *Predator diet breadth influences prey metacommunity assembly*.

8:20 AM COS 24-2 Clements, CF[1], PH Warren[2], B Collen[3], T Blackburn[3] and OL Petchey[4], (1)The University of Sheffield, (2)University of Sheffield, (3)Zoological Society of London, (4)University of Zurich. *What influences community composition – assembly history, environmental change or both?*.

8:40 AM COS 24-3 Rasmussen, NL, VHW Rudolf and BG Van Allen, Rice University. *Consequences of phenological shifts for species interactions: Testing the importance of size-mediated priority effects*.

9:00 AM COS 24-4 Steiner, CF and L Shaman, Wayne State University. *Sequential dispersal and productictivty drive beta diversity in space and time*.

9:20 AM COS 24-5 Chang, C and J Hille Ris Lambers, University of Washington. *Trait, phylogenetic, and β-diversity patterns reveal community assembly mechanisms on Mount St. Helens*.

9:40 AM Break

9:50 AM COS 24-6 Vander Laan, JJ and CP Hawkins, Utah State University. *Habitat connectivity drives regional differences in assemblage predictability and beta diversity of stream macroinvertebrate assemblages*.

10:10 AM COS 24-7 Ostling, AM[1], C Weinberger[2] and D Riley[1], (1)University of Michigan, (2)University of Michigan, University of Chicago. *Tests of neutral theory predictions for the Barro Colorado Island tree community informed by regional abundance data*.

10:30 AM COS 24-8 Brown, BL[1], CM Swan[2] and C Wahl[2], (1)Virginia Tech, (2)University of Maryland, Baltimore County. *Metacommunities in river networks: Elucidating mechanisms that structure communities through surveys and experimentation*.

10:50 AM COS 24-9 Palmquist, KA[1], RK Peet[1] and AS Weakley[2], (1)University of North Carolina, (2)University of North Carolina at Chapel Hill. *Species diversity patterns are shaped by multiple ecological processes across the range of the longleaf pine (Pinus palustris Mill.) ecosystem*.

11:10 AM COS 24-10 Dong, X and R Muneepeerakul, Arizona State University. *Neutral Metacommunity Model of Biodiversity in Dryland Aquatic Ecosystems with Strong Seasonality*.

COS 25 - Ecosystem Services Assessment II

L100E, Minneapolis Convention Center

8:00 AM COS 25-1 Doherty, JM[1], JF Miller[2], SG Prellwitz[1], AM Thompson[1], SP Loheide[2] and JB Zedler[1], (1)University of Wisconsin-Madison, (2)University of Wisconsin - Madison. *Productivity was a poor indicator of five ecosystem services in experimental wetlands*.

8:20 AM COS 25-2 Robles, MD[1], J Haney[1], S Masek Lopez[2], R Marshall[1], E Smith[1] and D Gori[1], (1)The Nature Conservancy, (2)Northern Arizona University. *Potential gains in water yield from watershed-scale treatments of ponderosa pine forests in the Salt and Verde Watersheds, Arizona*.

8:40 AM COS 25-3 Kong, I and D Lee, Seoul National University. *Quantifying Ecosystem Services Change in Northern Vietnam*.

9:00 AM COS 25-4 Anadón, JD[1], OE Sala[1], BL Turner II[1] and EM Bennett[2], (1)Arizona State University, (2)McGill University. *Impact of woody-plant encroachment on animal production in U.S. grasslands*.

9:20 AM COS 25-5 Bernhardt, JR[1], KK Arkema[2] and SA Wood[3], (1)University of British Columbia, (2)Stanford University, (3) The Natural Capital Project, Stanford University. *Ecological risk assessment to support marine spatial planning*.

9:40 AM Break

9:50 AM COS 25-6 Bowker, M[1], ME Miller[2] and RT Belote[3], (1) Northern Arizona University, (2)National Park Service, (3) The Wilderness Society. *Assessing the provisioning of multiple ecosystem services in semi-arid rangelands*.

10:10 AM COS 25-7 Mitchell, MGE, EM Bennett and A Gonzalez, McGill University. *Links between agricultural landscape structure, insect diversity, and ecosystem service provision*.

10:30 AM COS 25-8 Johnsen, PB, Great Salmon Tour. *Cultural Diversity and Social Stability – An Alternative Approach To conserve Biodiversity*.

COS 26 - Forest And Rangeland Management

L100F, Minneapolis Convention Center

8:00 AM COS 26-1 Purahong, W[1], D Krüger[1], T Arnstadt[2], T Kahl[3], M Schloter[4], F Buscot[1] and J Bauhus[3], (1)UFZ-Helmholtz Centre for Environmental Research, (2)International Graduate School Zittau – IHI Zittau, (3)University of Freiburg, (4)Helmholtz Zentrum München. *Changes within a single land-use category, forests: threat to biodiversity of saproxylic organisms in terrestrial ecosystems?*.

8:20 AM COS 26-2 Nelson, M[1] and CL Roy[2], (1)USDA Forest Service, (2)Minnesota Department of Natural Resources. *Abundance of tree cavities in forests of the Upper Midwest, USA*.

8:40 AM COS 26-3 Snyder, SA[1], KA Miller[2] and MA Kilgore[2], (1) USDA Forest Service, (2)University of Minnesota. *Forest carbon management and offsets: Are private forest landowners interested?*.

9:00 AM COS 26-4 Kumar, J[1], W Hargrove[2], FM Hoffman[1] and K Potter[3], (1)Oak Ridge National Laboratory, (2)USDA Forest Service, Eastern Forest Environmental Threat Assessment Center, (3)North Carolina State University. *Imputation of continuous tree suitability over the Continental United States from sparse measurements*.

9:20 AM COS 26-5 Borgman, EM[1], AW Schoettle[2] and AL Angert[3], (1)Colorado State University, (2)Rocky Mountain Research Station, (3)University of British Columbia. *Understanding maternal effects in long-lived plant species to improve genotype selection for conservation*.

9:40 AM Break

9:50 AM COS 26-6 Premer, MI, RE Froese and LM Nagel, Michigan Technological University. *Logging residue harvest effects on plant community dynamics in commercial Populus stands of the Great Lakes region*.

10:10 AM COS 26-7 Kurth, VJ[1], AW D'Amato[1], JB Bradford[2] and

BJ Palik[3], (1)University of Minnesota, (2)US Geological Survey, (3)USDA Forest Service, Northern Research Station. *Fifteen-year patterns of soil carbon and nitrogen following organic matter removal in upper Great Lakes forests*.

10:30 AM COS 26-8 Williamson, MA[1], RT Belote[2] and M Bowker[3], (1)Grand Canyon Trust, (2)The Wilderness Society, (3) Northern Arizona University. *Quantifying resilience on western rangelands: New techniques with legacy data*.

10:50 AM COS 26-9 White, MA[1], PT Wolter[2] and MW Cornett[1], (1)The Nature Conservancy, (2)Iowa State University. *Using remote sensing and field data to assess forest condition and conservation strategy effectiveness in a large multi-owner landscape in northern Minnesota*.

11:10 AM COS 26-10 Dolanc, CR, University of California, Davis. *Seven decades of forest change in the Sierra Nevada, CA, USA*.

COS 27 - Herbivory II

L100G, Minneapolis Convention Center

8:00 AM COS 27-1 Le Gall, M and ST Behmer, Texas A&M University. *The effects of food macronutrient content on an insect herbivore: a fitness landscape approach*.

8:20 AM COS 27-2 Hoque, S and G Avila Sakar, University of Winnipeg. *Plant ontogeny and the tradeoff between resistance and tolerance to herbivory in Arabidopsis*.

8:40 AM COS 27-3 Moise, ERD and HAL Henry, University of Western Ontario. *Do opposing components of plant quality interact to influence feeding dynamics in the true armyworm, Pseudaletia unipuncta? A case for nitrogen and silicon*.

9:00 AM COS 27-4 Wetzel, WC and DR Strong, University of California, Davis. *Population-level patterns and host-plant scale processes in a gall-making insect herbivore: density-dependent reproduction, host-plant preferences, and plant chemistry*.

9:20 AM COS 27-5 Katz, O[1], S Lev-Yadun[2] and P Bar (Kutiel)[1], (1) Ben-Gurion University of the Negev, (2)University of Haifa – Oranim. *Variation in phytolith formation in Asteraceae species in Israel: The effects of rain and grazing*.

9:40 AM Break

9:50 AM COS 27-6 Orrock, JL[1] and S Gilroy[2], (1)University of Wisconsin - Madison, (2)University of Wisconsin. *Eavesdropping plants prepare to be attacked: seeds exposed to herbivore kairomones become seedlings that are less palatable to herbivores*.

10:10 AM COS 27-7 Trowbridge, AM[1], P Poopat[2], RK Monson[3] and DM Bowers[4], (1)Montana State University, (2)University of Colorado, (3)University of Arizona, (4)University of Colorado at Boulder. *The ups and "downs" of conifer defense: Linking aboveground herbivory and belowground induced root defenses*.

10:30 AM COS 27-8 Helms, AM, CM De Moraes, JF Tooker and MC Mescher, The Pennsylvania State University. *Exposure to a putative insect pheromone enhances the anti-herbivore defenses of its host plant*.

10:50 AM COS 27-9 Rehill, B and HB Hickey, U.S. Naval Academy. *Developmentally-Based Changes in Resistance to Insect Herbivory in the Foliage of Sweetgum (Liquidambar styraciflua)*.

11:10 AM COS 27-10 Godschalx, AL[1], JA Trisel[1], S Kautz[2] and DJ Ballhorn[1], (1)Portland State University, (2)Field Museum of Natural History. *Root to shoot defense: Indirect plant defenses are affected by rhizobia*.

COS 28 - Invasion II

L100H, Minneapolis Convention Center

8:00 AM COS 28-1 Harrison, E, JC Trexler and TM Collins, Florida International University. *Introduction sources and population genetics of Cichlasoma urophthalmus (Mayan cichlids) in South Florida*.

8:20 AM COS 28-2 Turner, KG[1], RA Hufbauer[2] and LH Rieseberg[1], (1)University of British Columbia, (2)Colorado State University. *Evidence for evolution in the novel range of an invasive weed in multiple common gardens*.

8:40 AM COS 28-3 Sargent, LW, AM Deines and DM Lodge, University of Notre Dame. *Evolution of invasive traits in non-indigenous species: Increased survival and faster growth in invasive populations of rusty crayfish (Orconectes rusticus)*.

9:00 AM COS 28-4 Bhattarai, GP and JT Cronin, Louisiana State University. *Role of storm activities on the spread of an invasive plant, Phragmites australis, in North America*.

9:20 AM COS 28-5 Smith, LM and HL Reynolds, Indiana University. *Inter-population variation in garlic mustard response to light*.

9:40 AM Break

9:50 AM COS 28-6 Flores-Moreno, H[1], FJ Thomson[2], DI Warton[1] and AT Moles[3], (1)UNSW, (2)Landcare Research, (3)University of New South Wales. *Dispersal distance and recruitment survival comparison of introduced and native species on a broad scale under natural conditions*.

10:10 AM COS 28-7 Reed, AJ[1], JB Badgley[2], JB Welch[1], CM Sloan[1], MJ Sadowsky[3] and RE Hicks[1], (1)University of Minnesota Duluth, (2)Virginia Polytechnic Institute and State University, (3)University of Minnesota. *Molecular detection of potentially harmful bacteria discharged into the Duluth-Superior Harbor in the ballast water of commercial ships*.

10:30 AM COS 28-8 Holzapfel, C[1], HA Parag[1], M Schat[1], JL Schafer[1], CE Haines[1], EL Mudrak[2], A Fuentes Ramirez[2] and KA Moloney[2], (1)Rutgers University Newark, (2)Iowa State University. *Invasion by non-native annuals in the Mojave and Sonoran Desert: the role of fire, disturbance, and precipitation*.

10:50 AM COS 28-9 Acharya, KP[1], J Brunet[2], O Chabrerie[3], SAO Cousins[4], M Diekmann[5], PD Frenne[6], M Hermy[7], A Kolb[5], I Lemke[5], J Plue[4], K Verheyen[6], C Pélabon[1] and BJ Graae[1], (1)Norwegian University of Science and Technology, (2) Swedish University of Agricultural Sciences, (3)Université de Picardie Jules Verne, (4)Stockholm University, (5)University of Bremen, (6)Ghent University, (7)University of Leuven, Division Forest, Nature and Landscape. *Effect of latitude, temperature and nitrogen in traits of native and invasive Impatiens species*.

11:10 AM COS 28-10 Haider, S[1] and H Meimberg[2], (1)Institute of Biology, Geobotany, Martin Luther University Halle Wittenberg, (2)Restoration Ecology, Technische Universität München. *Polyploidization as driver for plant invasions into mountains*.

COS 29 - Invasion: Dynamics, Population Processes

L100I, Minneapolis Convention Center

8:00 AM COS 29-1 Brenneis, VEF, Portland State University. *Ebb and flow of an aquatic invader: Density of the invasive New Zealand mud snail (Potamopyrgus antipodarum) over time and across diverse types of aquatic systems*.

8:20 AM COS 29-2 Lacerda, AEB and B Kellermann, Embrapa Forestry. *When native species become invasive: The case of bamboos in fragmented forests of Southern Brazil*.

8:40 AM COS 29-3 Dennhardt, LA, North Dakota State University. *The population genetics of an important invasive species in the Prairie Pothole Region; Kentucky bluegrass (Poa pratensis)*.

9:00 AM COS 29-4 Bois, ST[1], C Merow[2] and JA Silander[3], (1)Institute for Applied Ecology, (2)Smithsonian Environmental Research Center, (3)University of Connecticut. *Experimental demography of a woody invasive plant and its native analog; building life histories from short-term datasets using integral projection models*.

9:20 AM COS 29-5 Cuddington, K, W Lee and R Gooding-Townsend, University of Waterloo. *Using a model system to test for effects of environmental variance and autocorrelation on population establishment:. C.elegans and temperature stochasticity*.

9:40 AM Break

9:50 AM COS 29-6 Aagaard, K[1] and JL Lockwood[2], (1)Rutgers, The State University of Jersey, (2)Rutgers University. *Exotic birds show lags in population growth*.

10:10 AM COS 29-7 Schwartz, LM[1], DJ Gibson[2] and BG Young[1], (1)Southern Illinois University, (2)Southern Illinois University Carbondale. *A comparison of survivorship and fecundity of four Amaranthaceae species*.

10:30 AM COS 29-8 Douhovnikoff, V[1] and E Hazelton[2], (1)Bowdoin College, (2)Utah State University. *Reproductive dynamics and clonal structure in native and invasive subspecies of Phragmites australis*.

10:50 AM COS 29-9 Lachmuth, S[1], J Pagel[2], W Durka[3], C Ristok[1] and FM Schurr[2], (1)Martin Luther University of Halle Wittenberg, (2)University of Montpellier II, (3)Helmholtz-Centre for Environmental Research (UFZ). *Ecological and evolutionary determinants of continental-scale variation in demography and population growth rates of a rapid European plant invader*.

11:10 AM COS 29-10 Stokes, DL, ED Church, DM Cronkright and S Lopez, University of Washington, Bothell. *An invasion's progress: English holly (Ilex aquifolium) in a semi-natural Pacific Northwest forest*.

COS 30 - Modeling I

L100J, Minneapolis Convention Center

8:00 AM COS 30-1 Reid, JP[1], KA Brauman[2] and S Polasky[2], (1) University of Minnesota - Twin Cities, (2)University of Minnesota. *Making it Fit: The water quality consequences of providing the world with food, fuel and stuff to consume in 2050*.

8:20 AM COS 30-2 Yuan, C and P Chesson, University of Arizona. *Continuous size structured lottery model for studying coexistence of forest trees in a variable environment*.

8:40 AM COS 30-3 Bobryk, CW, S Jose and HS He, University of Missouri. *Predicting aboveground forest biomass potential within the Missouri River corridor*.

9:00 AM COS 30-4 Barnes, R[1], C Lehman[1], M Kantar[1], L DeHaan[2] and D Wyse[1], (1)University of Minnesota, (2)Land Institute. *Perennial possibilities: a theory for yield differences between annual and perennial grains*.

9:20 AM COS 30-5 Abdul-Aziz, OI[1], BN Wilson[2] and KS Ishtiaq[1], (1)Florida International University, (2)University of Minnesota. *Application of scaling in ecological engineering*.

9:40 AM Break

9:50 AM COS 30-6 Torrubia, S[1], JJ Lawler[1], B McRae[2] and SA Hall[2], (1)University of Washington, (2)The Nature Conservancy. *Restoring connectivity: A holistic approach for multiple species*.

10:10 AM COS 30-7 Burkhalter, JC and JL Lockwood, Rutgers University. *Search strategies are a critical aspect of settlement decisions within a variable landscape*.

10:30 AM COS 30-8 Moorhead, DL[1], G Lashermes[2], RL Sinsabaugh[3] and MN Weintraub[1], (1)University of Toledo, (2) Institut National de la Recherche Agronomique, (3)University of New Mexico. *A cost:benefit analysis of lignocellulose decomposition based on energetic tradeoffs*.

10:50 AM COS 30-9 Jin, W, HS He, FR Thompson III and SR Shifley, University of Missouri. *Comparing predictions of forest aboveground biomass of LINKAGES v2.2, PnET-II, and ED2 with long-term field data in temperate forests of the United States*.

11:10 AM COS 30-10 Kiger, S[1], WS Currie[1], DG Brown[1] and D Robinson[2], (1)University of Michigan, (2)University of Waterloo. *Modeling ecosystem processes in the human-dominated exurban landscape*.

COS 31 - Mutualism And Facilitation

M100GD, Minneapolis Convention Center

8:00 AM COS 31-1 Fabina, NS[1], HM Putnam[2], EC Franklin[2], M Stat[3] and RD Gates[2], (1)Center for Population Biology, University of California, Davis, (2)Hawaii Institute of Marine Biology, University of Hawaii, (3)Oceans Institute and Centre for Microscopy, Characterisation and Analysis, University of Western Australia. *Coral-Symbiodinium association patterns limit community responses to climate change*.

8:20 AM COS 31-2 Pillai, P, TC Gouhier and S Vollmer, Northeastern Unviversity. *Evolution of mutualism and diversity in microbial-host (holobiont) systems*.

8:40 AM COS 31-3 Bell-Dereske, L and JA Rudgers, University of New Mexico. *How do microbial symbionts alter competition in the Great Lakes dune plant community?*.

9:00 AM COS 31-4 Neuschulz, EL and K Böhning-Gaese, Biodiversity and Climate Research Centre (BiK-F), Frankfurt.

Seed dispersal interactions across elevational gradients: Does microclimate at deposition sites match with plant regeneration requirements?.

9:20 AM COS 31-5 Beaulieu, WT[1], MC McKee[1], CS Hazekamp[2], KL Ryan[2], DG Panaccione[2] and K Clay[1], (1)Indiana University, (2)West Virginia University. *Differential allocation of seed-loaded fungal ergot alkaloids and de novo synthesis during early ontogeny of morning glories (Convolvulaceae)*.

9:40 AM Break

9:50 AM COS 31-6 Keller, KR, Michigan State University. *Rhizobia mutualists alter competitive dynamics*.

10:10 AM COS 31-7 Nettles, RM, JR Buck and SB St. Clair, Brigham Young University. *Patterns and mechanisms of facilitation in aspen-conifer forests*.

10:30 AM COS 31-8 Skelton, J[1], BL Brown[1] and RP Creed Jr.[2], (1) Virginia Tech, (2)Appalachian State University. *Slipping past the doorman: Host control shapes succession-like patterns in ectosymbiont assemblages*.

10:50 AM COS 31-9 Petipas, R[1] and AK Brody[2], (1)Cornell University, (2)University of Vermont. *The impact of arbuscular mycorrhizal fungal communities on drought tolerance of a native Kenyan grass*.

11:10 AM COS 31-10 Creed, RP Jr.[1] and BL Brown[2], (1)Appalachian State University, (2)Virginia Tech. *Multiple mechanisms of partner regulation may maintain symbiont densities at beneficial levels in a cleaning symbiosis*.

COS 32 - Plant-Insect Interactions II

M100HC, Minneapolis Convention Center

8:00 AM COS 32-1 McMunn, M, University of California - Davis. *The dark side of plant defense: Comparing nocturnal and diurnal defensive induction in big sagebrush*.

8:20 AM COS 32-2 Deans, CA, JG Fiene, GA Sword and ST Behmer, Texas A&M University. *Macronutrient content of cotton (Gossypium hirsutum) tissues across genotypes and environments: an indicator of resource quality for insect herbivores*.

8:40 AM COS 32-3 James, ARM[1], GA Breed[2] and EE Crone[2], (1) Iowa State University, (2)Harvard University. *You are what you eat: the effect of Euphydryas phaeton's novel host plant use on its morphology*.

9:00 AM COS 32-4 Moffat, CE[1], RG Lalonde[2], J Pither[2], G Grosskopf-Lachat[3] and KD Floate[4], (1)University of New Brunswick, (2)University of British Columbia Okanagan, (3) CABI Europe-Switzerland, (4)Agriculture and Agri-Food Canada. *Is cryptic diversity in the Pilosella leaf gall wasp associated with geography, host plant, or Wolbachia?*.

9:20 AM COS 32-5 Barber, NA[1], NJ Milano[2], ET Kiers[3], N Theis[4], RV Hazzard[5] and LS Adler[6], (1)Northern Illinois University, (2)University of Massachusetts, Amherst, (3)Vrije Universiteit, (4)Elms College, (5)University of Massachusetts Amherst, (6)University of Massachusetts. *Consequences of root herbivory for aboveground plant interactions with herbivores, pollinators, and a fungal pathogen*.

9:40 AM Break

9:50 AM COS 32-6 Avanesyan, A and TM Culley, University of Cincinnati. *Interaction of native and invasive grasses with a generalist herbivore insect*.

10:10 AM COS 32-7 La Pierre, KJ[1] and MD Smith[2], (1)Yale University, (2)Colorado State University. *Drivers of Grassland Invertebrate Communities: Effects of Soil Nutrient Availability on Invertebrate Resource Limitation*.

10:30 AM COS 32-8 Poveda, K[1] and MF Diaz[2], (1)Cornell University, (2)Universidad Nacional de Colombia. *Landscape simplification and plant tolerance responses to herbivory affect the outcome of plant-herbivore interactions*.

10:50 AM COS 32-9 Stieha, CR[1], KC Abbott[2] and K Poveda[1], (1) Cornell University, (2)Iowa State University. *Plant responses to herbivores and their effects on pest outbreaks*.

11:10 AM COS 32-10 Stelzner, EM and CM Malmstrom, Michigan State University. *Nectar plant abundance and richness are not primary drivers of monarch ovipositing patterns at a local scale*.

COS 33 - Statistics

M101A, Minneapolis Convention Center

8:00 AM COS 33-1 Harris, DJ, UC Davis. *From quadrats to continents: predicting species composition with a multiscale model*.

8:20 AM COS 33-2 Stenglein, JL, J Zhu and TR Van Deelen, University of Wisconsin - Madison. *An integrated population model to uncover informative discrepancies in population growth*.

8:40 AM COS 33-3 Caughlin, TT[1], JW Lichstein[1], JM Ferguson[1] and DJ Levey[2], (1)University of Florida, (2)National Science Foundation. *Inferring long distance seed dispersal from seedling count data: a hierarchical Bayesian approach*.

9:00 AM COS 33-4 Minchin, PR[1] and J Oksanen[2], (1)Southern Illinois University Edwardsville, (2)University of Oulu. *An evaluation of flexible shortest path adjustment in the ordination of community data with high beta diversity*.

9:20 AM COS 33-5 Grace, JB[1] and DR Schoolmaster Jr.[2], (1)US Geological Survey, (2)Five Rivers Services at US Geological Survey. *Transitioning from descriptive statistical models to structural equation models*.

9:40 AM Break

9:50 AM COS 33-6 Clough, B and E Green, Rutgers University. *Stochastic variable selection methods for ecological data*.

10:10 AM COS 33-7 Joseph, MB, DL Preston and PTJ Johnson, University of Colorado. *Uniting dynamic occupancy and generalized latent variable models to understand the effects of cattle grazing on amphibian communities*.

10:30 AM COS 33-8 Anthony, MM and JH Knouft, Saint Louis University. *Failure to account for spatial autocorrelation artificially inflates the performance of introduced species distribution models*.

10:50 AM COS 33-9 Yackulic, CB, US Geological Survey. *Disentangling residency and migration in a partial migratory system where detection is much less than one*.

11:10 AM COS 33-10 Jin, LS, University of Toronto. *Assessing statistical tests of phylogenetic beta diversity*.

8 am-5 pm

ESA Panel on Vegetation Classification
Board Rm 2, Hilton Minneapolis

11:30 am-1:15 pm

Ecological Research as Education Network (EREN) Lunch and Social (EREN Members and Their Guests Only)
200F, Minneapolis Convention Center

ESA *Ecosphere* Editorial Board Meeting
Rochester, Hilton Minneapolis

ESA *Issues in Ecology* Editorial Board Meeting
Duluth, Hilton Minneapolis

ESA Centennial Implementation Committee Meeting
200I, Minneapolis Convention Center

ESA Human Ecology Section Business Meeting and Brown Bag Lunch
200G, Minneapolis Convention Center

GLBT Ecologists Brown Bag Lunch
Director's 4, Hilton Minneapolis

WK 31 - Beyond Academia (Open Format)
101B, Minneapolis Convention Center

Organized by: S Chamberlain, S Chung

Many opportunities exist for ecologists beyond academia. Panelists in this session will share their experiences and perspectives on a variety of non-academic career paths, including scientific writing, consulting, and the non-profit sector. Our goal is to provide insight and guidance to ecologists considering a transition to the non-academic world.

WK 32 - Broadening Ecologists' Impact on the Nation Through NSF Grants
Board Rm 1, Hilton Minneapolis

Organized by: EH Schultheis (schulth5@msu.edu), JK Abraham, A Macrae-Crerar

Participants will discuss recent clarifications to the NSF Broader Impacts criterion, share and plan potential Broader Impacts projects with peers, and receive feedback on any projects in development. The workshop will be led by Dr. Nadkarni of Evergreen College and Dr. Blood, a program officer at NSF.

Speakers:
N Nadkarni, University of Utah
E Blood, National Science Foundation

WK 33 - Career Hour: The Interview: What You Need to Do Before, During, and After to Get the Job
101C, Minneapolis Convention Center

Organized by: AG Levine

Interviewing strategy and tactics: What you need to know and do to get the job, from the first moment of contact to after you leave the interview.

WK 34 - ESA-SEEDS Chapter Presentation Workshop
101A, Minneapolis Convention Center

Organized by: F Abbott (fred@esa.org), N Mojumder

This workshop will provide an opportunity for student representatives of SEEDS Chapters to share their accomplishments and for ESA members to learn more about the SEEDS program.

WK 35 - Funding for Ecology from the National Science Foundation: A Discussion with Program Officers
101D, Minneapolis Convention Center

Organized by: AJ Tessier, H Gholz, DJ Levey, SM Scheiner, S Twombly

The purposes of this panel discussion are to inform the ecological research community about current opportunities and processes for funding at NSF and to receive suggestions on how the Foundation can best serve the discipline. Participants from NSF will include program officers from the two clusters most centered on ecology.

WK 36 - Got data? Visualizing and Manipulating Ecological Data Sets to Support Undergraduate Learning
Board Rm 3, Hilton Minneapolis

Organized by: JL Momsen (jennifer.momsen@ndsu.edu), J Dauer, ESJ Rauschert, A Sutton-Grier, JM Dauer

Workshop participants will explore methods to help their undergraduate students build quantitative literacy by developing one or more classroom activities using existing datasets, including data visualization, manipulation, and interpretation.

WK 37 - How to Use Teaching Issues and Experiments in Ecology (TIEE) in Your Teaching and to Publish in TIEE.
Board Rm 3, Hilton Minneapolis

Organized by: C D'Avanzo (cdavanzo@hampshire.edu), A Maskiewicz

This workshop is an introduction to how to use ESA's peer reviewed publication, Teaching Issues and Experiments in Ecology (TIEE; tiee.esa.org) in ecology and biology teaching and how to submit an Experiment, Issue or education research paper.

WK 38 - Improv 101: Get Comfortable with Public Speaking
101F, Minneapolis Convention Center

Organized by: N Lymn (nadine@esa.org), A McMillen, T Houston

Start the Annual Meeting off right and join us for a fun and truly interactive session that will help you relax and get the most out of the meeting. Organizers will provide tips on public speaking while using improv comedy techniques to ease public speaking jitters.

WK 39 - Managing and Innovating the Lifecycle of Your Data
101G, Minneapolis Convention Center

Organized by: DA Agarwal (daagarwal@lbl.gov), MS Torn

11:30 am-1:15 pm; 11:45 am-1:15 pm; 12 pm-1:15 pm; 12 pm-1:30 pm; 1:30 pm-3:30 pm

This workshop will discuss data management concepts and practices. We will discuss data formats, standardization, data curation, archiving best practices, and methods for collecting and storing metadata. We will also discuss databases, web portals, ftp sites, and data sharing policies. Join the AmeriFlux Network Management team for this workshop.

WK 40 - CANCELLED - NEON's Mobile Deployment Platform: Seeking Input on a Community Resource

Organized by: MD SanClements, HW Loescher

Here, we present our current ideas and provide a unique opportunity to provide input on NEON's Mobile Deployment Platform (MDP), a PI or/agency requestable resource capable of observing a diverse range of ecological quantities, change and gradients that cannot be reliably captured with fixed location sampling.

Speakers:
MD SanClements, National Ecological Observatory Network
HW Loescher, National Ecological Observatory Network (NEON, Inc.)

11:45 am-1:15 pm

Ecology Letters Editorial Board Meeting

200B, Minneapolis Convention Center

12 pm-1:15 pm

ESA Traditional Ecological Knowledge Section Business Meeting

M100A, Minneapolis Convention Center

12 pm-1:30 pm

ESA Paleoecology Section Business Meeting

200H, Minneapolis Convention Center

ESA Statistical Ecology Business Meeting and Mixer

200A, Minneapolis Convention Center

FT 14 - Greening in Downtown Minneapolis: A Walking Tour of the Loring Greenway and Loring Park

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

Organized by: L Frelich (freli001@umn.edu)

1:30 pm-3:30 pm

IGN 4 - Bridging the Gap between Basic and Applied Science: How Scientists Can Advance Ecology and Solve Environmental Problems at the Same Time

101C, Minneapolis Convention Center

Organized by: V Matzek (vmatzek@scu.edu), SM Swope

Moderator: V Matzek

How can ecologists have an impact? Speakers from a wide range of disciplines will share personal viewpoints and advice from careers that have combined cutting-edge research in ecology with applications of science to real-world environmental problems, along with perspectives on how to tie research to policy, outreach, and ecosystem management.

IGN 4-1 Malmstrom, CM, Michigan State University. *Dogma is deadly*.

IGN 4-2 Nadkarni, N, University of Utah. *Ecologists in prisons: scientists, inmates, and other underserved audiences create synergistic public engagement*.

IGN 4-3 Perfecto, I[1] and L García-Barrios[2], (1)University of Michigan, (2)El Colegio de la Frontera Sur. *Playing with Ecological Complexity*.

IGN 4-4 Matson, P, Stanford University. *Partnerships and pipelines for linking knowledge to action: an example from the Yaqui Valley*.

IGN 4-5 Pouyat, RV, United States Forest Service. *Communicating Science to Policy Makers—a Case for Embedded Ecologists*.

IGN 4-6 Zedler, JB, University of Wisconsin-Madison. *Adaptive restoration: A recipe for making a difference*.

IGN 4-8 Drinkwater, LE, Cornell University. *Using the mass balance concept to promote sustainable nutrient management*.

IGN 4-9 Menninger, H, North Carolina State University. *Make it personal*.

IGN 5 - Complementarity Considers Ecological Principles to Create Sustainable Pathways

101E, Minneapolis Convention Center

Organized by: S Williams (will1366@umn.edu), CL Lehman

Moderator: S Williams

Applying complementarity in ecosystem services is applying ecological principles to design sustainable uses for our limited resources. We consider the fate of wastes and excesses from anthropogenic systems to understand where they might be beneficial instead---whether this be fine-scale adjustments within an ecosystem or landscape-scale flows between whole ecosystems.

IGN 5-1 Jungers, J, University of Minnesota. *Complementarity: Applying ecological theory to landscape management*.

IGN 5-2 Clark, AT, University of Minnesota. *Succeeding with succession: Using ecological community dynamics to build low-impact biofuels*.

IGN 5-3 Graham, JB, University of Michigan. *Temperate Perennial Agriculture: Combining Restoration with Local Production of Food, Fiber, and Fuel*.

IGN 5-4 Lehman, C, R Barnes, D Mulla, J Nelson, J Galzki and H Wan, University of Minnesota. *Decoupling our natural and artificial watersheds---an example of whole ecosystem complementarity*.

IGN 5-5 Denison, RF, University of Minnesota. *Darwinian Agriculture*.

IGN 5-6 Eckberg, JO, GA Johnson, D Mulla and D Wyse, University of Minnesota. *Designing and Valuing Future Farm Landscapes*.

IGN 5-7 Schulte, LA[1], MJ Helmers[1], JG Arbuckle[1], P Drobney[2], MA Harris[1], RK Kolka[3], M Liebman[1], ME O'Neal[1] and JC Tyndall[1], (1)Iowa State University, (2)U.S. Fish and Wildlife Service, (3)USDA Forest Service. *Ecosystem Complementarity through STRIPs*.

IGN 5-8 Burgess, MG, University of Minnesota. *Fleet diversity and fisheries impacts: The ecology of fishermen*.

IGN 5-9 Sutton-Grier, A, National Oceanic and Atmospheric Administration. *Environmental markets: Innovative conservation opportunities to manage human excess?*.

IGN 5-10 Reid, JP[1] and CE Riggs[2], (1)University of Minnesota - Twin Cities, (2)University of Minnesota. *Finding win-win in less than three days*.

IGN 6 - Crossing the Line - An Interdisciplinary Trip Through Climate Change Research at the Treeline Ecotone

101H, Minneapolis Convention Center

Organized by: MA Harsch (harsch.melanie@gmail.com)

Moderator: S Mamet

This session will review major recent advances in treeline ecotone research across five disciplines (ecology, ecophysiology, ecosystem sciences, geography, and hydrology) and discuss how integrative research can provide a means for further advances.

IGN 6-1 Harsch, MA, University of Washington. *Treeline research - what's in it for me?*.

IGN 6-2 Kummel, M, C Dickson and M Taber, Colorado College. *What allows diffuse treelines to respond to regional warming? The role of boundary layer micrometeorology*.

IGN 6-3 Kueppers, L[1] and M Germino[2], (1)University of California Merced, (2)US Geological Survey. *What experiments can (and can't) tell us about climate change impacts at treeline*.

IGN 6-4 Elliott, G, University of Missouri. *Ecology of treeline advance from a holistic perspective*.

IGN 6-5 Hille Ris Lambers, J, KR Ford and MA Harsch, University of Washington. *The role of biotic interactions at alpine treeline*.

IGN 6-6 Germino, M[1], K Reinhardt[2], L Kueppers[3] and AB Moyes[4], (1)US Geological Survey, (2)Idaho State University, (3) University of California Merced, (4)University of California, Merced. *Can ecophysiology link pattern to process or molecules to landscapes for the study of treeline responses to climate?*.

IGN 6-7 Brown, CD, Memorial University. *Ways forward: A globally-distributed treeline collaboration*.

IGN 6-8 Cairns, DM[1], LM Kueppers[2] and CI Millar[3], (1)Texas A&M University, (2)University of California, Merced, (3)USDA Forest Service, Pacific Southwest Research Station. *Moving forward - North American Treeline Network*.

1:30 pm-5 pm

SYMP 7 - Defining Which Microbial Properties Matter Most to Ecosystem Function and How to Measure Them

M100EF, Minneapolis Convention Center

Organized by: EK Hall

Endorsed by: Microbial Ecology, Agroecology Section, Biogeosciences, Soil Ecology Section

Moderator: JT Lennon

The symposia will begin with a 20 minute tutorial describing the integrative framework to address when, where, and which kinds of microbial data are likely to bring additional insight into ecosystem dynamics and will be followed by 5, 15-minute presentations working at various scales of resolution within the defined framework.

1:30 PM SYMP 7-1 Hall, EK, United States Geological Survey. *Tutorial: Defining which microbial properties matter most for which ecosystem process and how to measure them*.

2:00 PM SYMP 7-2 Bernhardt, ES, RL Bier, BP Colman and A Helton, Duke University. *Incorporating chemical stressors and microbial stress responses into biogeochemical understanding*.

2:30 PM SYMP 7-3 Bradford, MA, Yale University. *How do microbial communities influence the formation rate, stability, and chemistry of soil organic matter?* .

3:00 PM Break

3:10 PM SYMP 7-4 Evans, S[1], C Kaiser[2] and MD Wallenstein[3], (1) University of California Irvine, (2)International Institute for Applied Systems Analysis, (3)Colorado State University. *Microbial community responses to changes in rainfall: moving from pattern to process*.

3:40 PM SYMP 7-5 Jones, SE, University of Notre Dame. *Genomic signatures of microbial lifestyles*.

4:10 PM SYMP 7-6 Denef, VJ, University of Michigan. *Population and community genomics-based insights into eco-evolutionary microbial dynamics*.

4:40 PM Discussion

SYMP 8 - Eco-Epidemiology: A Multi-Disciplinary Approach to Addressing Public Health Problems

205AB, Minneapolis Convention Center

Organized by: RJ Brinkerhoff, M Diuk-Wasser

Moderator: RJ Brinkerhoff

The purpose of this symposium is 1) to identify and promote ecological methods, approaches, and concepts that are relevant to human health and may be integrated into epidemiological research and training, and 2) to facilitate cross-talk between ecologists and epidemiologists addressing public health problems

1:30 PM SYMP 8-1 Diuk-Wasser, M, Yale School of Public Health. *Ecological approaches to public health research*.

2:00 PM SYMP 8-2 Salkeld, DJ, Colorado State University. *What can ecologists learn from epidemiology*.

2:30 PM SYMP 8-3 Wilson, ML, University of Michigan. *Methods, models and meanings in ecoepidemiology: Some examples and applications*.

3:00 PM Break

3:10 PM SYMP 8-4 Jones, JH, Stanford University. *Networks, mobility and mixing: Understanding the spillover and dissemination of emerging infectious disease*.

3:40 PM SYMP 8-5 Padmanabha, H[1], J Mendez[2], F Correa[2], C Rubio[2], G Rey[2], L Quintero[3], S Osorio[2] and M Diuk-Wasser[4], (1)National Center for Socio-Environmental Synthesis (SESYNC), (2)Instituto Nacional de Salud de Colombia, (3)Secretaria de Salud Municipal de Armenia, (4)Yale School of Public Health. *Can large scale human processes explain fine-scale heterogeneities in endemic dengue transmission?*.

4:10 PM SYMP 8-6 Tsao, JI[1], L Beati[2], RL Burke[3], H Ginsberg[4], G

Hickling[5] and N Ogden[6], (1)Michigan State University, (2)Georgia Southern University, (3)Hofstra University, (4) USGS Patuxent Wildlife Research Center Coastal Field Station, (5)University of Tennessee, Knoxville, (6)University of Montreal. *Eco-epidemiology of a complex system: unraveling the link between Lyme disease and biodiversity*.

4:40 PM Discussion

SYMP 9 - Resilience, Disturbance, and Long-Term Environmental Change: Integrating Paleoecology Into Conservation and Management in the Anthropocene

Auditorium, Rm 3, Minneapolis Convention Center

Organized by: AW Ireland (aui12@psu.edu), PE Higuera

Endorsed by: Paleoecology Section, Vegetation Section

Moderator: AW Ireland

This symposium aims to facilitate dialogue between paleoecologists and applied ecologists with the goal of developing a framework for incorporating paleoecological perspectives on ecosystem resilience and vulnerability into management and conservations decisions in the current era of rapid, human-driven global change.

1:30 PM SYMP 9-1 Hotchkiss, SC[1], EA Lynch[2], R Calcote[3], MA Tweiten[4] and G Schuurmann[5], (1)University of Wisconsin, (2)Luther College, (3)University of Minnesota, (4)University of Wisconsin - Madison, (5)Wisconsin Department of Natural Resources. *A landscape perspective on stability and change over 4000 years in northern Wisconsin*.

2:00 PM SYMP 9-2 Shuman, BN, WJ Calder, JP Marsicek and T Minckley, University of Wyoming. *The role of disturbances in mediating ecosystem responses to climate changes: lessons from a diversity of landscapes*.

2:30 PM SYMP 9-3 Rowland, EL, Wildlife Conservation Society. *Using paleoecology to practice conservation: Mixed perspectives from the field*.

3:00 PM Break

3:10 PM SYMP 9-4 Smithwick, EA and EA Crisfield, The Pennsylvania State University. *Bridging paleo- and neo- perspectives in conservation management: a tale of two mountain landscapes*.

3:40 PM SYMP 9-5 Kelly, R[1], H Genet[2], AD McGuire[2] and FS Hu[1], (1)University of Illinois, Urbana-Champaign, (2)University of Alaska Fairbanks. *Model simulations driven by paleoforcing data reveal large and rapid responses of carbon storage to boreal fire-regime shifts*.

4:10 PM SYMP 9-6 Fargione, JE[1], JL McGuire[2] and BH McRae[1], (1)The Nature Conservancy, (2)University of Washington. *Conservation planning for resilience to climate change: Putting paleobiology into practice*.

4:40 PM Discussion

OOS 11 - Communities, Places, and American Ecology: Case Studies

101A, Minneapolis Convention Center

Organized by: A Anastasio (aea@uchicago.edu)

Moderator: DH Knight

This session is a series of case studies that focus on the role of geographical, ephemeral, and virtual places in the formation of intellectual communities and ecological innovation.

1:30 PM OOS 11-1 Kingsland, S, Johns Hopkins University. *How are place-based research communities created? Insights from two historical cases.*.

1:50 PM OOS 11-2 Rumore, G, University of Minnesota. *Carving out a Place for Ecology: Long-Term Ecological Studies in Glacier Bay, Alaska*.

2:10 PM OOS 11-3 Mulroy, JC, Denison University. *Communities of early ecologists: The use of internet and archival resources to reconstruct ecologist communities at the founding of the Ecological Society of America*.

2:30 PM OOS 11-4 Inouye, DW, University of Maryland. *Long-term place-based contributions to ecology: The Rocky Mountain Biological Laboratory*.

2:50 PM OOS 11-5 Song, DS, University of Pennsylvania. *Ruth Patrick in the intellectual community at the Academy of Natural Sciences in Philadelphia*.

3:10 PM Break

3:20 PM OOS 11-6 Anastasio, A, University of Chicago. *Chicago as incubator for early 20th century ecological ideas, networks, and collaborations*.

3:40 PM OOS 11-7 Ford, J, Oregon State University. *Numbers, values, and epistemologies: The evolution of cultural filters in the Ecological Society of America*.

4:00 PM OOS 11-8 Weis, JS[1] and DW Inouye[2], (1)Rutgers University, (2)University of Maryland. *The value of ECOLOG-L and how it has brought people from far and wide to one intellectual place*.

4:20 PM OOS 11-9 Reiners, WA[1], A Bowen[1], DS Reiners[2] and JA Lockwood[1], (1)University of Wyoming, (2)California Polytechnic State University. *Ecological "camps": How preferences and professional traits shape our field*.

OOS 12 - Enhancing Linkages between Forest Management and Ecological Theory

101B, Minneapolis Convention Center

Organized by: B Ramage (bsramage@berkeley.edu), MD Potts

Moderator: MD Potts

This Organized Oral Session will facilitate and encourage the integration of applied forest management and emerging ecological theory; enhancing such linkages is important for improving immediate conservation outcomes as well as re-focusing theoretical inquiries on issues with greater applied relevance.

1:30 PM OOS 12-1 Puettmann, KJ[1] and C Messier[2], (1)Oregon State University, (2)Université du Québec à Montréal. *From complexity science to forest management*.

1:50 PM OOS 12-2 Fortin, MJ[1] and BR Sturtevant[2], (1)University of Toronto, (2)U.S. Forest Service. *Spatially explicit forest management planning: Putting theory into practice*.

2:10 PM OOS 12-3 Ramage, B and MD Potts, University of California--Berkeley. *The perils of ignoring beta diversity when conducting applied research and developing management plans*.

2:30 PM OOS 12-4 Lasky, JR[1], M Uriarte[1], VKS Boukili[2], DL Erickson[3], WJ Kress[3] and RL Chazdon[2], (1)Columbia University, (2)University of Connecticut, (3)Smithsonian Institution.

The relationship between phylogenetic diversity, trait diversity, and temporal biomass dynamics in tropical successional forests.

2:50 PM OOS 12-5 Thomas, SC, University of Toronto. *Ecology meets practice: The case of uneven-aged silviculture and 'emulation' of gap-phase dynamics*.

3:10 PM Break

3:20 PM OOS 12-6 Nydick, K[1], MW Schwartz[2] and JH Thorne[2], (1)Sequoia & Kings Canyon National Parks, National Park Service, (2)University of California, Davis. *Applying conservation decision tools to forests: Fire management in the Sierra Nevada*.

3:40 PM OOS 12-7 Holl, KD[1], RA Zahawi[2] and JL Reid[1], (1)University of California, Santa Cruz, (2)Organization for Tropical Studies. *Applied nucleation as a forest restoration strategy*.

4:00 PM OOS 12-8 Battles, JJ[1] and RA York[2], (1)University of California, Berkeley, (2)Blodgett Forest. *Can a general theory of forest structure and dynamics based on metabolic scaling laws provide insights to forest managers?*.

4:20 PM OOS 12-9 Brown, LM and CH Graham, Stony Brook University. *Invoking life history theory to understand species' responses to human disturbance*.

4:40 PM OOS 12-10 Dimov, L, Alabama A&M University. *Needed modifications to the hundred-year old silvicultural treatments: managing for diverse and resilient forests*.

OOS 13 - Terrestrial-Aquatic Linkages II: Movement of Nutrients and Carbon

101D, Minneapolis Convention Center

Organized by: WO Hobbs, KD Zimmer, JB Cotner

Moderator: KD Zimmer

Measuring the movement of nutrients and carbon from terrestrial to aquatic ecosystems through time and space is an important feature in catchment management and our understanding of allochthony in lakes.

1:30 PM OOS 13-1 Soranno, PA[1], KS Cheruvelil[1], E Bissell[1], MT Bremigan[1], JA Downing[2], CE Fergus[1], CT Filstrup[2], NR Lottig[3], EN Henry[1], EH Stanley[3], C Stow[4], PN Tan[1], T Wagner[5] and K Webster[6], (1)Michigan State University, (2)Iowa State University, (3)University of Wisconsin, (4) NOAA, (5)Pennsylvania State University, (6)Trinity College Dublin. *A conceptual framework for understanding multi-scaled cause-effect relationships between terrestrial and aquatic ecosystems*.

1:50 PM OOS 13-2 Cotner, JB[1], KD Zimmer[2], WO Hobbs[3], K Theissen[4] and LM Domine[5], (1)University of Minnesota - Twin Cities, (2)University of St.Thomas, (3)Science Museum of Minnesota, (4)University of St. Thomas, (5)University of St Thomas. *Terrestrial-aquatic linkages in Prairie Pothole lakes in alternative stable states*.

2:10 PM OOS 13-3 Wilkinson, GM[1], S Carpenter[2], JJ Cole[3] and ML Pace[1], (1)University of Virginia, (2)University of Wisconsin, (3)Cary Institute of Ecosystem Studies. *Terrestrial support of pelagic consumers in lakes: Results of a multi-lake study*.

2:30 PM OOS 13-4 Knoll, LB[1], MJ Vanni[2], EM Mette[2] and WH Renwick[2], (1)Miami University / Lacawac Sanctuary, (2)Miami University. *Weather and land use mediate the C:N:P stoichiometry of watershed exports*.

2:50 PM OOS 13-5 Finlay, JC, University of Minnesota. *Human and natural controls over ecosystem nitrogen retention in lakes*.

3:10 PM Break

3:20 PM OOS 13-6 Burgin, AJ[1], CA Davis[2], TD Loecke[3], D Riveros-Irequi[3], D Schnoebelen[2], M St. Clair[4], SA Thomas[3], AS Ward[5] and LJ Weber[5], (1)University of Nebraska - Lincoln, (2)Lucille A. Carver Mississippi Riverside Environmental Research Station, (3)University of Nebraska-Lincoln, (4) Coe College, (5)University of Iowa. *Flood and drought-enhanced variations in streamwater nitrate flux in an agricultural watershed, Clear Creek, Iowa*.

3:40 PM OOS 13-7 Chu, H[1], J Chen[2] and JF Gottgens[1], (1)University of Toledo, (2)University of Toledo, Toledo, OH 43606. *Contribution of methane and lateral carbon fluxes in a temperate marsh carbon budget*.

4:00 PM OOS 13-8 Gallo, EL[1], KA Lohse[2], PD Brooks[3], M Pavao-Zuckerman[3] and T Meixner[3], (1)The University of Arizona., (2)Idaho State University, (3)University of Arizona. *Inorganic nitrogen cycling in ephemeral urban waterways of the semi-arid Southwest*.

4:20 PM OOS 13-9 Engstrom, DR, St. Croix Watershed Research Station, Science Museum of Minnesota. *Integrating the effects of nutrient and DOC loading on lakes over millennial timescales*.

4:40 PM OOS 13-10 Hobbs, WO[1], KD Zimmer[2], MA Hanson[3], LM Domine[4], JM Ramstack Hobbs[5], K Theissen[6] and JB Cotner[7], (1)Science Museum of Minnesota, (2)University of St.Thomas, (3)Minnesota Department of Natural Resources, (4)University of St Thomas, (5)St. Croix Watershed Research Station, Science Museum of Minnesota, (6)University of St. Thomas, (7)University of Minnesota - Twin Cities. *Trajectories of long-term ecological change in shallow lakes: allochthonous drivers and autochthonous stability*.

OOS 14 - The Effects of Climate Change on Community and Ecosystem Processes: Lessons Learned from the Long-Term Ecological Research (LTER) Network

101F, Minneapolis Convention Center

Organized by: KJ La Pierre (kimberly.lapierre@yale.edu)

Moderator: KJ La Pierre

We aim to synthesize the broad body of knowledge gained from climate change experiments across the Long Term Ecological Research network in order to determine whether climate change will have consistent impacts across a broad range of ecosystems, including grasslands, tundra, rivers, lakes, and salt marshes.

1:30 PM OOS 14-1 Christenson, LM[1], PM Groffman[2] and MJ Mitchell[3], (1)Vassar College, (2)Cary Institute of Ecosystem Studies, (3)SUNY ESF. *The role of animals in stabilizing ecosystem process under changing climate regimes*.

1:50 PM OOS 14-2 Gorman, KB[1], KE Ruck[2], TD Williams[1] and W Fraser[3], (1)Simon Fraser University, (2)William & Mary,

1:30 pm-5 pm

(3)Polar Oceans Research Group. *Climate-induced divergence in breeding population dynamics among Pygoscelis penguins: Nutritional-physiological mechanisms and evolutionary consequences*.

2:10 PM OOS 14-3 Gaeta, JW[1], GG Sass[2] and SR Carpenter[3], (1) University of Wisconsin Madison, (2)Wisconsin Department of Natural Resources, (3)University of Wisconsin - Madison. *Effects of climate-driven lake level decline on coarse woody habitat and fishes*.

2:30 PM OOS 14-4 Schmitz, JE[1] and SC Hotchkiss[2], (1)University of Wisconsin - Madison, (2)University of Wisconsin. *Sensitivity of north temperate lakes to past climatic variability and terrestrial disturbances over the past ca. 200 years*.

2:50 PM OOS 14-5 Pennino, M[1], SS Kaushal[2], P Mayer[3], C Welty[1] and AJ Miller[1], (1)University of Maryland, Baltimore County, (2)University of Maryland, (3)United States Environmental Protection Agency. *Effects of watershed management on sources and fluxes of water, carbon, and nitrogen in streams: Climate implications*.

3:10 PM Break

3:20 PM OOS 14-6 Pockman, WT[1], AL Boutz[1], PJ Hudson[1], JM Limousin[1], RE Pangle[1], JA Plaut[1], ML Thomey[1], SL Collins[1], ME Litvak[1], NG McDowell[2] and EE Small[3], (1)University of New Mexico, (2)Los Alamos National Laboratory, (3)University of Colorado. *Community and ecosystem scale responses to precipitation variability and extremes in semiarid grasslands, shrublands and woodlands*.

3:40 PM OOS 14-7 Wilcox, KR[1], JC von Fischer[1], J Muscha[2], M Petersen[2] and AK Knapp[1], (1)Colorado State University, (2)Fort Keogh Livestock and Range Research Laboratory. *Altering rainfall amount and pattern affects above- and belowground productivity differently among three US grassland types*.

4:00 PM OOS 14-8 Steinauer, K[1], D Tilman[2], PD Wragg[2], S Cesarz[3], JM Cowles[2], K Pritsch[4], WW Weisser[1] and N Eisenhauer[3], (1)Technische Universität München, (2)University of Minnesota, (3)Friedrich-Schiller-University Jena, (4) Helmholtz Zentrum München, German Research Center for Environmental Health. *Plant diversity enhances soil microbial biomass and functions irrespective of warming scenarios*.

4:20 PM OOS 14-9 Kosmala, M and D Tilman, University of Minnesota. *Effects of experimental warming on a grassland insect and spider community*.

4:40 PM OOS 14-10 Kleynhans, EJ[1], SP Otto[1], PB Reich[2] and M Vellend[3], (1)University of British Colombia, (2)University of Minnesota, (3)Université de Sherbrooke. *Evolutionary change depends on community context in BioCON, a long-term field study*.

COS 34 - Behavior I

101G, Minneapolis Convention Center

1:30 PM COS 34-1 Servidio, KM[1], GJ Brown[1] and JC Maerz[2], (1) University of Georgia, (2)The University of Georgia. *Diet of the Southern Appalachian Salamander, Plethodon teyahalee, and Red-legged Salamander, Plethodon shermani, across their hybrid zone in the Southern Appalachians*.

1:50 PM COS 34-2 Hensz, CM, Biodiversity Institute, University of Kansas. *Estimating migration resistance: A case study on Greenlandic Arctic Terns (Sterna paridiseae)*.

2:10 PM COS 34-3 Merkle, JA[1], D Fortin[1] and JM Morales[2], (1) Université Laval, (2)Universidad Nacional del Comahue. *Memory-based patch selection reveals a mechanism for home range formation*.

2:30 PM COS 34-4 Angeli, N[1], K Lips[2], GV DiRenzo[2] and A Cunha[3], (1)Texas A&M University, (2)University of Maryland, (3)Harvard University. *Effects of density on spacing patterns and habitat associations in the Neotropical Glassfrog Espadarana Prosoblepon*.

2:50 PM COS 34-5 Johnson, B, C De Moraes and M Mescher, The Pennsylvania State University. *Temperature effects on circumnutation, host location and host acquisition by the parasitic plant Cuscuta campestris (Convolvulaceae)*.

3:10 PM Break

3:20 PM COS 34-6 Clay, NA, R Lehrter and M Kaspari, University of Oklahoma. *The biogeography of omnivory: Do omnivores increase prey consumption relative to plants in sodium-poor environments?*.

3:40 PM COS 34-7 Cramer, MJ, University of Notre Dame. *Seeds of Doubt: Feeding Preferences of Peromyscus leucopus and Peromyscus maniculatus gracilis on Acer Seeds*.

4:00 PM COS 34-8 Kendall, BE[1], JP Stover[2] and GA Fox[3], (1)University of California Santa Barbara, (2)University of California, (3)University of South Florida. *Behavioral syndromes and population dynamics: Lessons from demographic heterogeneity* .

4:20 PM COS 34-9 Greives, TJ, North Dakota State University. *Effect of melatonin manipulation on circadian behavior and reproductive success in the great tit (Parus major)*.

4:40 PM COS 34-10 Smith, KPW and WF Bien, Drexel University. *Radio telemetry and the neonate ecology of the Northern Pinesnake (Pituophis melanoleucus)*.

COS 35 - Biodiversity II

101I, Minneapolis Convention Center

1:30 PM COS 35-1 Damron, B and TP Rooney, Wright State University. *Partitioning beta diversity in a Neotropical forest Opiliones assemblage (Cusuco National Park, Honduras.)*.

1:50 PM COS 35-2 Fernandez-Going, BM[1], S Harrison[2], BL Anacker[3] and H Safford[4], (1)University of California, Santa Barbara, (2)University of California - Davis, (3)University of California, Davis, (4)USDA Forest Service. *Climate interacts with soil to produce beta diversity in Californian plant communities*.

2:10 PM COS 35-3 Berendse, F and J van Ruijven, Wageningen University. *Plant species diversity promotes erosion resistance on sea dikes* .

2:30 PM COS 35-4 Chamagne, J[1], CET Paine[2], M Svátek[3], R Matula[3], DC Frank[4], LA Turnbull[1] and A Hector[1], (1)University of Zürich, (2)University of Stirling, (3)Mendel Univesity, (4) Swiss Federal Research Institute WSL. *Tree species diversity enhances individual growth in a temperate forest of central Europe*.

2:50 PM COS 35-5 Wagg, C and MGA van der Heijden, Agroscope Reckenholz Research Station. *Biodiversity loss be-*

lowground has multiple ecosystem consequences.

3:10 PM Break

3:20 PM COS 35-6 Li, Y[1], W Härdtle[1], H Bruelheide[2], K Nadrowski[3], T Scholten[4], H von Wehrden[1] and G von Oheimb[1], (1) Leuphana University Lüneburg, (2)Martin Luther University Halle-Wittenberg, (3)University Leipzig, (4)Eberhard Karls University of Tübingen. *The effect of neighbourhood competition and species richness on individual-tree growth under heterogeneous environmental conditions*.

3:40 PM COS 35-7 Woods, CL, Clemson University. *Functional traits explain vascular epiphyte distributional patterns along environmental gradients in tropical canopies*.

4:00 PM COS 35-8 Ames, G[1], J Wright[1] and MG Hohmann[2], (1) Duke University, (2)US Army Corps of Engineers ERDC - CERL. *Intraspecific variation matters: the forces that explain it and its impact on community weighted means in the Sandhills region of North Carolina*.

4:20 PM COS 35-9 Rosson, JF Jr. and AK Rose, USDA Forest Service, Southern Research Station. *Temporal trends in tree species richness in harvested stands over a landscape scale*.

4:40 PM COS 35-10 Kabay, E[1], NM Caruso[2] and K Lips[3], (1)East Chapel Hill High School, (2)University of Alabama, (3)University of Maryland. *Timber Rattlesnakes may reduce incidence of Lyme disease in the Northeastern United States*.

COS 36 - Biogeochemistry: Linking Community Structure And Ecosystem Function I

101J, Minneapolis Convention Center

1:30 PM COS 36-1 Geyer, KM[1], AE Altrichter[1], DJ Van Horn[2], C Takacs-Vesbach[2], MN Gooseff[3] and JE Barrett[1], (1)Virginia Tech, (2)University of New Mexico, (3)Pennsylvania State University. *Environmental controls over bacterial communities in polar desert soils*.

1:50 PM COS 36-2 Williams, RJ[1], KS Hofmockel[1], F Yang[1], SK Hargreaves[1], EM Bach[1], AC Howe[2], K Keegan[2] and F Meyer[2], (1)Iowa State University, (2)Argonne National Laboratory. *Soil structure and agricultural management drives niche differentiation among soil microbial communities*.

2:10 PM COS 36-3 Grantham, AM, JP Kaye, MH Hall and D Schrenker, Pennsylvania State University. *Market, policy and climate changes as drivers of ecological and biogeochemical shifts in dairy ecosystems*.

2:30 PM COS 36-4 Reed, SC[1], RA Fisher[2], KK Coe[3], TM Wertin[4], JP Sparks[3] and J Belnap[1], (1)USGS, (2)National Center for Atmospheric Research, (3)Cornell University, (4)University of Illinois. *Climate change effects on biological soil crusts: What should we expect for future biocrust structure and function?*.

2:50 PM COS 36-5 Whipple, SJ[1], BC Patten[1] and SR Borrett[2], (1)University of Georgia, (2)University of North Carolina Wilmington. *Evaluation of model size, topology, and currency in systems analysis: comparative network environ analysis of carbon and nitrogen model time series for the Neuse River estuary, USA*.

3:10 PM Break

3:20 PM COS 36-6 Ortiz, AC[1], VL Lougheed[1] and C Tweedie[2], (1) University of Texas at El Paso, (2)The University of Texas at El Paso. *Environmental Controls on Soil Respiration in the Northern Chihuahuan Desert*.

3:40 PM COS 36-7 Norman, JS and JE Barrett, Virginia Tech. *Environmental controls on the diversity of ammonia-oxidizing microorganisms in temperate forest soils*.

4:00 PM COS 36-8 Sato, T[1], R El-Sabaawi[2], K Campbell[3], T Ohta[4] and JS Richardson[5], (1)Kyoto University, (2)University of Victoria, (3)The University of British Columbia, (4)Tomakomai Research Station, (5)University of British Columbia. *The importance of resource pulse timing to the response of stream ecosystems*.

4:20 PM COS 36-9 Barto, K[1], S Hempel[2], T Caruso[2], F Alt[3], F Buscot[4], N Hoelzel[5], V Klaus[5], T Kleinbecker[5], Y Oelmann[3], D Prati[6], W Wilcke[7], T Wubet[4] and MC Rillig[2], (1)Xavier University, (2)Freie Universitaet Berlin, (3)University of Tuebingen, (4)Helmholtz Centre for Environmental Research, (5)University of Muenster, (6)University of Bern, (7)Universität Bern. *Arbuscular mycorrhizal fungal P provision to plants not dependent on fungal sensitivity to soil P*.

4:40 PM COS 36-10 Kivlin, SN and CV Hawkes, University of Texas at Austin. *Tropical forest trees differ in belowground carbon allocation to fungi*.

COS 37 - Climate Change: Communities II

L100A, Minneapolis Convention Center

1:30 PM COS 37-1 Ryan, GD, University of Guelph. *Can phloem sap amino acid composition explain enhanced performance of the aphid Rhopalosiphum padi feeding on barley (Hordeum vulgare) under elevated CO_2?*.

1:50 PM COS 37-2 de Boer, MK[1], H Moor[2], P de Vries[1], F Werner[3], SL Eggers[3], AMT Piquet[4], B Matthiessen[3] and BK Eriksson[1], (1)Centre for Ecological and Evolutionary Studies, University of Groningen, (2)Natural Resource Management, Stockholm University, (3)Helmholtz-Zentrum für Ozeanforschung, (4)Energy and Sustainability Research Institute Groningen, University of Groningen. *The effect of a short realistic heat wave on algal-bacterial interaction*.

2:10 PM COS 37-3 Ruthrof, KX[1], G Matusick[2] and GESJ Hardy[1], (1)Murdoch University, (2)The Nature Conservancy. *Canopy recovery and regeneration following drought-induced collapse in a Mediterranean-type eucalypt forest in southwestern Australia*.

2:30 PM COS 37-4 Pratt, JD[1] and KA Mooney[2], (1)University of California, (2)University of California at Irvine. *Clinal adaptation and adaptive plasticity in Artemisia californica: Implications for the response of a foundation species and its arthropod community to predicted climate change*.

2:50 PM COS 37-5 Rollinson, CR[1], MW Kaye[2] and LP Leites[2], (1) The Pennsylvania State University, (2)Pennsylvania State University. *Experimental Warming and Increased Precipitation Alter Early Successional Forest Community Assembly*.

3:10 PM Break

3:20 PM COS 37-6 Zarnetske, PL[1], S Zonneveld[1], AM Wilson[1], DK Skelly[1], MC Urban[2] and W Jetz[1], (1)Yale University, (2)University of Connecticut. *Integrating species interac-*

tions, climate, and spatial effects into species distribution models with breeding birds across the United States.

3:40 PM COS 37-7 McWhirter, BD and HAL Henry, University of Western Ontario. *Tree seedling establishment in response to climate warming and increased nitrogen deposition*.

4:00 PM COS 37-8 Battaglia, LL[1], MJ Abbott[2], AD Chupp[1], J Fruchter[3] and D Harshbarger[4], (1)Southern Illinois University, (2)University of Mississippi, (3)The Avanti Corporation, (4)Southern Illinois University Carbondale. *Effects of hurricane storm surge and sediment deposition on coastal plant communities*.

4:20 PM COS 37-9 Antoninka, A[1], T Wojtowicz[1], K Gibson[1], NC Johnson[1] and PB Reich[2], (1)Northern Arizona University, (2)University of Minnesota. *Long-term CO_2 and N enrichment impacts the structure and function of components of the soil food web*.

4:40 PM COS 37-10 Barton, BT[1] and OJ Schmitz[2], (1)University of Wisconsin-Madison, (2)Yale University. *Timing of warming matters: Opposite effects of day and night warming on top-down control of plant diversity*.

COS 38 - Community Assembly And Neutral Theory III

L100B, Minneapolis Convention Center

1:30 PM COS 38-1 Cline, LC and DR Zak, University of Michigan. *Fungal community assembly in a long-term glacial chronosequence*.

1:50 PM COS 38-2 Burns, JH and AJ Brandt, Case Western Reserve University. *Does environmental variation structured by plant-soil feedbacks interact with species life history to influence invasibility?*.

2:10 PM COS 38-3 Grman, E, T Bassett and LA Brudvig, Michigan State University. *Confronting contingency in restoration: Management and site history determine outcomes of assembling prairies*.

2:30 PM COS 38-4 David, AS, G May and EW Seabloom, University of Minnesota. *Roles of environmental gradients and host identity in structuring fungal endophyte communities*.

2:50 PM COS 38-5 Muscarella, B[1], M Uriarte[1], DL Erickson[2], WJ Kress[2], N Swenson[3] and JK Zimmerman[4], (1)Columbia University, (2)Smithsonian Institution, (3)Michigan State University, (4)University of Puerto Rico. *Spatial turnover of taxonomic, functional, and phylogenetic tree diversity across broad environmental gradients in Puerto Rico*.

3:10 PM Break

3:20 PM COS 38-6 Sokol, ER[1], JE Barrett[1], BL Brown[1] and JC Trexler[2], (1)Virginia Tech, (2)Florida International University. *Linking local and regional metacommunity dynamics to diversity outcomes*.

3:40 PM COS 38-7 Boukili, VKS[1], N Norden[2] and RL Chazdon[1], (1)University of Connecticut, (2)Pontificia Universidad Javeriana. *Community Assembly in Naturally Regenerating Wet Tropical Forests*.

4:00 PM COS 38-8 Bittel, AT[1], BL Foster[1] and GR Houseman[2], (1) University of Kansas, (2)Wichita State University. *Influence of stochastic and deterministic community assembly on beta-diversity in a long-term grassland experiment*.

4:20 PM COS 38-9 Vannette, RL and T Fukami, Stanford University. *Multiple niche components predict the strength of priority effects*.

4:40 PM COS 38-10 Johnston, CA and DS Gruner, University of Maryland. *Using multiple spatial scales to understand community responses to spatially and structurally shifting ecological landscapes*.

COS 39 - Community Pattern And Dynamics I

L100C, Minneapolis Convention Center

1:30 PM COS 39-1 Clausing, RJ[1], SJ Bittick[1], C Fong[2] and P Fong[1], (1)UCLA, (2)UC Santa Barbara. *Context-dependent effects of sedimentation on top-down and bottom-up control of tropical algae*.

1:50 PM COS 39-2 Schat, M[1], JL Schafer[2], EL Mudrak[3], HA Parag[1], KA Moloney[3] and C Holzapfel[1], (1)Rutgers University, (2)North Carolina State University, (3)Iowa State University. *Influence of soil disturbance, seed pressure, aridity, and burn history on community structure of winter annuals in North American deserts*.

2:10 PM COS 39-3 Close, SL and BA Menge, Oregon State University. *An exception to the rule? Light, not species interactions, sets the lower limit to the high intertidal seaweed, Fucus distichus.*.

2:30 PM COS 39-4 Van Appledorn, M and ME Baker, University of Maryland Baltimore County. *A comparison of functional trait distributions among riparian floodplain landforms*.

2:50 PM COS 39-5 Cisneros, LM and MR Willig, University of Connecticut. *Partitioning the effects of spatial and environmental variation on phylogenetic structure of a bat metacommunity in a human-modified landscape*.

3:10 PM Break

3:20 PM COS 39-6 Pratt, RT[1], K Treseder[2], JC Burger[3], K Preston[4] and KA Mooney[5], (1)University of California, Irvine, (2) University of California Irvine, (3)Irvine Ranch Conservancy, (4)US Geological Survey, (5)University of California at Irvine. *Assessing the importance of arthropod abundance, community composition, and habitat structure as determinants of habitat quality for Cactus Wren (Campylorhynchus brunneicapillus)* .

3:40 PM COS 39-7 Latty, EF, A Arnett, AJ Remsburg and K Dunckel, Unity College. *Effects of hemlock logging on forest properties in hemlock-dominated stands free of hemlock woolly adelgid*.

4:00 PM COS 39-8 Zimmerman, N and PM Vitousek, Stanford University. *Environmental factors are more effective at explaining differences in tropical fungal endophyte communities than distance*.

4:20 PM COS 39-9 Hart, SP and JM Levine, ETH Zurich. *Positive, negative, or neutral effects of individual variation on coexistence?*.

4:40 PM COS 39-10 Crumsey, J, J LeMoine, CS Vogel and KJ Nadelhoffer, University of Michigan. *Temporal and spatial variation of exotic earthworm communities established across a north temperate forest undergoing secondary succession*.

COS 40 - Dispersal And Colonization

L100D, Minneapolis Convention Center

1:30 PM COS 40-1 Vargas-Timchenko, MI[1], HC Muller-Landau[2], K Saltonstall[1], E Moran[3] and FA Jones[4], (1)Smithsonian Tropical Research Institute, (2)Smithsonian Tropical Research Institution, (3)ETH Zurich, (4)Oregon State University. *Estimating seed dispersal distances with incomplete genetic data: new methods, power analyses and a case study of the tropical tree Tabebuia rosea*.

1:50 PM COS 40-2 Harvey, E and AS MacDougall, University of Guelph. *Initial colonization constraints on food web assembly*.

2:10 PM COS 40-3 Davenport, JM and WH Lowe, University of Montana. *A metacommunity of one: dispersal structures intraspecific competition in headwater streams*.

2:30 PM COS 40-4 Jha, S[1] and C Kremen[2], (1)University of Texas, (2)University of California, Berkeley. *Urban land use limits regional bumble bee gene flow*.

2:50 PM COS 40-5 Beaudrot, L[1], K Reed[2] and JM Kamilar[3], (1) University of California-Davis, (2)Arizona State University, (3)Arizona College of Osteopathic Medicine. *Latitudinal gradients in African mammal dispersal limitation*.

3:10 PM Break

3:20 PM COS 40-6 Hein, CL, HR Khan and K Stenroth, Umeå University. *Lateral dispersal of benthic invertebrates from subarctic lakes to land*.

3:40 PM COS 40-7 Houseman, GR, Wichita State University. *Seed aggregation increases plant diversity in grassland communities*.

4:00 PM COS 40-8 Moore, CM and SB Vander Wall, University of Nevada, Reno. *Ecogeographic patterns of seed size in two fire-adapted genera accross the California Floristic Province*.

4:20 PM COS 40-9 McCarthy, LC and DR Chalcraft, East Carolina University. *The interaction between space and time travel on the assembly of zooplankton communities*.

4:40 PM COS 40-10 Conley, AK[1] and AR Templeton[2], (1)Washington University in Saint Louis, (2)Washington University. *Influence of local social-structure on inter-deme dispersal and landscape genetic patterns in a metapopulation of collared lizards*.

COS 41 - Education: Research And Assessment

L100E, Minneapolis Convention Center

1:30 PM COS 41-1 Harsh, JA[1] and M Schmitt-Harsh[2], (1)Indiana University, (2)Carleton College. *Developing introductory college science students' data analysis skills through a short-term ecology-based sampling and graphing unit*.

1:50 PM COS 41-2 Burks, RL[1], EJ Sterling[2], AL Porzecanski[2], N Bynum[2], A Bravo[2], DS Fernandez[3], TA Langen[4] and J Linder[5], (1)Southwestern University, (2)American Museum of Natural History, (3)University of Puerto Rico at Humacao, (4)Clarkson University, (5)James Madison University. *Practice does not make quite perfect but does build student confidence in oral communication Skills*.

2:10 PM COS 41-3 Strasser, C[1] and S Hampton[2], (1)University of California Office of the President, (2)National Center for Ecological Analysis and Synthesis. *The fractured lab notebook: Undergraduates are not learning ecological data management at top US institutions*.

2:30 PM COS 41-4 Spellman, KV, University of Alaska Fairbanks. *Metacognitive learning in the ecology classroom: a tool for preparing problem solvers in a time of rapid ecological change?*.

2:50 PM COS 41-5 Aloisio, JM[1], K Tingley[2], JD Lewis[1] and AR Tuininga[1], (1)Fordham University, (2)Wildlife Conservation Society. *Project TRUE – Teens Researching Urban Ecology: invertebrate biodiversity of the Prospect Park Zoo, NYC*.

3:10 PM Break

3:20 PM COS 41-6 Dauer, JM and CW Anderson, Michigan State University. *Carbon-transforming Processes Inquiry Learning Progression*.

3:40 PM COS 41-7 Hansen, MJ and G Birol, University of British Columbia. *Longitudinal Study on the Change in Student Attitudes in a Biology Program*.

4:00 PM COS 41-8 Williams, KS and BS Allen, San Diego State University. *Managing the load and maximizing the gains for all: Project PLURIS (Purposeful Learning in Undergraduate Research and Independent Studies)*.

COS 42 - Habitat Structure, Fragmentation, Connectivity

L100F, Minneapolis Convention Center

1:30 PM COS 42-1 Arnillas, CA[1], C Tovar[2], W Buytaert[3] and MW Cadotte[4], (1)University of Toronto, Scarborough, (2)La Molina National Agrarian University, (3)Imperial College, (4)University of Toronto - Scarborough. *From patches to richness: assessing the potential impact of landscape transformation on biodiversity*.

1:50 PM COS 42-2 Mallinger, RE[1] and C Gratton[2], (1)University of Wisconsin-Madison, (2)University of Wisconsin - Madison. *Habitat diversity and floral density at different spatial scales influence wild bee pollinators of orchards in a multi-year study*.

2:10 PM COS 42-3 Alstad, AO[1], EI Damschen[2] and JA Harrington[3], (1)University of Wisconsin - Madison, (2)University of Wisconsin-Madison, (3)University of Wisconsin Madison. *Effect of connectivity and habitat loss in remnant prairie plant communities*.

2:30 PM COS 42-4 Ziter, C, EM Bennett and A Gonzalez, McGill University. *Functional diversity and management mediate carbon storage in small forest fragments*.

2:50 PM COS 42-5 Gaddis, KD[1] and VL Sork[2], (1)UCLA, (2)University of California, Los Angeles. *Dry washes direct movement of pollinators of the desert shrub, Acacia greggii A Gray*.

3:10 PM Break

3:20 PM COS 42-6 Smeti, E[1], S Spatharis[1] and DL Roelke[2], (1) University of the Aegean, (2)Texas A&M University. *Spatial averaging sustains increased productivity at high ecosystem connectivity*.

3:40 PM COS 42-7 Boström Einarsson, L, MC Bonin, PL Munday and GP Jones, James Cook University. *Habitat degradation affects the strength of interspecific competition in coral dwelling damselfishes*.

1:30 pm-5 pm

4:00 PM COS 42-8 Ribon, R[1], M Guttery[2], C Ribic[3], D Donner[4], A Beck[2] and M Marini[1], (1)Universidade Federal de Viçosa, (2)University of Wisconsin, (3)U.S. Geological Survey Cooperative Wildlife Research Unit, (4)USDA Forest Service, Northern Research Station. *Effects of habitat conversion on the semi-deciduous forest bird community in Brazil*.

4:20 PM COS 42-9 Zambrano, J, University of Illinois at Chicago. *Tales from the crypt: the curse of an old growth tree in a fragmented forest*.

COS 43 - Invasion: Community Effects

L100G, Minneapolis Convention Center

1:30 PM COS 43-1 Heckman, RW[1], J Fridley[2] and CE Mitchell[1], (1)University of North Carolina, (2)Syracuse University. *Provenance, not leaf physiological traits, explains enemy damage to deciduous understory shrubs*.

1:50 PM COS 43-2 Haines, DF[1], LL Kinkel[1] and DL Larson[2], (1) University of Minnesota, (2)US Geological Survey. *Exotic and native plant root exudates modify the effects of soilborne fungal pathogens on native plant establishment*.

2:10 PM COS 43-3 Martin, LM and BJ Wilsey, Iowa State University. *Novel, exotic-dominated grasslands exhibit altered patterns of beta diversity relative to native grasslands*.

2:30 PM COS 43-4 Waters, SM and J Hille Ris Lambers, University of Washington. *Community phenological mismatch through invasion: no climate change required*.

2:50 PM COS 43-5 Anicito, KR[1], RL Brown[1] and BK Reynecke[2], (1)Eastern Washington University, (2)Adams Conservation District. *Ventenata dubia invasion within a Mima mound prairie in Eastern Washington*.

3:10 PM Break

3:20 PM COS 43-6 Phillips-Mao, L[1], DL Larson[2] and NR Jordan[1], (1)University of Minnesota, (2)US Geological Survey. *The legacy of invasion: Effects of garlic mustard (Alliaria petiolata) and its removal on native woodland herb restoration*.

3:40 PM COS 43-7 DeVore, JL[1], JE Byers[1], EE Sotka[2] and J Wright[3], (1)University of Georgia, (2)College of Charleston, (3)University of Tasmania. *Structural engineering by an invasive macroalga alters habitat usage, low tide retention, and survival of native mudflat fauna*.

4:00 PM COS 43-8 Metcalf, JL and SM Emery, University of Louisville. *Changes in arthropod community structure associated with invasion by Microstegium vimineum*.

4:20 PM COS 43-9 Wigginton, RD[1], J Pearson[2] and CR Whitcraft[2], (1)University of California Davis, (2)CSU Long Beach. *Invasion in a brackish marsh: Lepidium latifolium impacts invertebrate community structure and function*.

4:40 PM COS 43-10 Utter, J and DL Moorhead, University of Toledo. *Changes in abundances of American crows, blue jays and robins in Northwest Ohio following arrival of West Nile Virus*.

COS 44 - Modeling II

L100H, Minneapolis Convention Center

1:30 PM COS 44-1 Barabás, G[1], L Pásztor[2] and AM Ostling[1], (1) University of Michigan, (2)Eötvös University. *Applications of community-wide sensitivity calculations to ecological theory, model analysis, and assessment of extinction risk*.

1:50 PM COS 44-2 Schrodt, F[1], J Kattge[1], H Shan[2], F Fazayeli[2], A Karpatne[2], A Banerjee[2] and PB Reich[2], (1)Max Planck Institute for Biogeochemistry, (2)University of Minnesota. *Towards a spatially explicit trait-based plant ecology – approaches to extrapolate from point measurements to regional scales*.

2:10 PM COS 44-3 Reichmann, LG, KD Behrman, JR Kiniry, HW Polley and PA Fay, USDA-ARS. *Soil modulates the effect of precipitation seasonality on bioenergy crop production*.

2:30 PM COS 44-4 Weiss-Lehman, CP, BA Melbourne and KF Davies, University of Colorado at Boulder. *Estimating extinction rate in the presence of observation uncertainty: Occupancy modeling of a long-term, large-scale fragmentation experiment at Wog Wog, Australia*.

2:50 PM COS 44-5 Drake, JM, University of Georgia. *New computational methods for modeling species potential distributions*.

3:10 PM Break

3:20 PM COS 44-6 Kjelland, ME[1], TM Swannack[1], C Forster[2] and WE Grant[3], (1)U.S. Army Engineer Research and Development Center, USACE, (2)University of Utah, (3)Texas A&M University. *Simulating the Effects of Policy-Driven Hydrodynamics in the Salton Sea Watershed*.

3:40 PM COS 44-7 Marchand, P and IH Chapela, University of California, Berkeley. *Floristic mapping through bee pollen: an individual-based modelling approach linking the composition of bee pollen loads and the space-time distribution of floral resources*.

4:00 PM COS 44-8 Snyder, M[1] and ST Purucker[2], (1)Environmental Protection Agency, (2)U.S. Environmental Protection Agency. *Honey bee colony time series analysis: The influence of stationarity assumptions*.

4:20 PM COS 44-9 Berryman, S[1], J Straker[1], A Garibaldi[1], J Nishi[2] and B Stelfox[2], (1)Integral Ecology Group Ltd., (2) ALCES Landscape and Land-Use Ltd.. *A community-led approach for landscape planning*.

COS 45 - Paleoecology

L100I, Minneapolis Convention Center

1:30 PM COS 45-1 Samartin, S, O Heiri and W Tinner, University of Bern. *Two chironomid records provide new evidence from the Apennines (Italy) to assess the Holocene climate evolution of southern Europe*.

1:50 PM COS 45-2 Clifford, MJ, KA LeBoeuf and RK Booth, Lehigh University. *Drought and fire drove rapid changes in forest community composition in the northeastern United States*.

2:10 PM COS 45-3 Chipman, M[1] and FS Hu[2], (1)University of Illinois, (2)University of Illinois, Urbana-Champaign. *A 6000-year record of permafrost melt events from the Alaskan North Slope*.

2:30 PM COS 45-4 Morris, JL III[1], PC le Roux[2] and A Brunelle[3], (1) University of Idaho, (2)University of Helsinki, (3)University of Utah. *Using pollen and geochemical data from lake sediments to reconstruct spruce beetle disturbances*.

2:50 PM COS 45-5 Frenck, G, G Jones, M Rees and CP Osborne, University of Sheffield. *Did the post-glacial increase in at-*

mospheric CO_2 level provide a selective productivity advantage to crop progenitor species?.

3:10 PM Break

3:20 PM COS 45-6 Liu, Y[1], ST Jackson[2], K Ogle[3] and JW Lichstein[4], (1)University of Wyoming, (2)USGS / Southwest Climate Science Center, (3)Arizona State University, (4)University of Florida. *Modeling the pollen and vegetation relationships for comparing simulated vegetation with fossil pollen data*.

3:40 PM COS 45-7 Lumibao, CY[1], J McLachlan[1], M Kuch[2], SJ Emrich[1], ST Jackson[3] and H Poinar[2], (1)University of Notre Dame, (2)McMaster University, (3)DOI Southwest Climate Science Center. *Unlocking the past: Genetic clues of historical shifts in forest community composition from ancient DNA in lake sediments*.

4:00 PM COS 45-8 Ramstack Hobbs, JM[1], WO Hobbs[2], K Theissen[3], MB Edlund[1], KD Zimmer[4], LM Domine[3] and JB Cotner[5], (1)St. Croix Watershed Research Station, Science Museum of Minnesota, (2)Science Museum of Minnesota, (3)University of St. Thomas, (4)University of St.Thomas, (5)University of Minnesota - Twin Cities. *A 150-year perspective on stable state theory in shallow lakes from the Prairie Pothole Region*.

4:20 PM COS 45-9 Blois, JL[1], C Li[2] and EA Hadly[2], (1)University of California, Merced, (2)Stanford University. *Hindcasting the late Quaternary climatic influence on species distribution, abundance, and genetic diversity of northern California pocket gophers*.

4:40 PM COS 45-10 Calder, WJ, DL Parker, CJ Stopka and BN Shuman, University of Wyoming. *The influence of spatial scale on detecting climatic controls of wildfire in subalpine forests for the last 2000 years in northern Colorado*.

COS 46 - Restoration Ecology I

L100J, Minneapolis Convention Center

1:30 PM COS 46-1 Johnson, LR and SN Handel, Rutgers University. *A "possibility-based" approach to ecological restoration of urban forests: incorporating biophysical and social constraints*.

1:50 PM COS 46-2 Martin, KM[1], B Von Holle[1], E Steinauer[2], PW Dunwiddie[3], R Buchsbaum[2] and C Neill[4], (1)University of Central Florida, (2)Mass Audubon, (3)University of Washington, (4)Marine Biological Laboratory. *Disturbance-based management and changing species composition in sandplain heathlands*.

2:10 PM COS 46-3 Krueger, LM[1], JE Possley[2], JM Maschinski[2] and JG Dozier[3], (1)University of Tennessee Martin, (2) Fairchild Tropical Botanic Garden, (3)Miami-Dade County Park and Recreation, Natural Areas Management Division. *Effectiveness of herbicide, mechanical scraping, and native seed sowing as restoration tools in a disturbed pine rockland*.

2:30 PM COS 46-4 Middleton, EL[1], Z Yermakov[2], CE Palmer[3], SC Richardson[4], I Cole[4], E Koziol[5], K Zaiger[5], JA Henning[6], KD Jones[7], PA Schultz[8] and JD Bever[5], (1)Missouri Department of Conservation, (2)Chicago Parks Department, (3) Northwestern University, (4)DePaul University, (5)Indiana University, (6)University of Tennessee, Knoxville, (7)V3 Companies, (8)University of Indiana. *Arbuscular mycorrhizal inoculum source influences plant survival and growth in an urban prairie restoration*.

2:50 PM COS 46-5 Flint, S, RG Shaw and NR Jordan, University of Minnesota. *Source-population characteristics affect switchgrass biomass but not community biodiversity or productivity in establishing prairies*.

3:10 PM Break

3:20 PM COS 46-6 Peterson, SD and HH Whiteman, Murray State University. *Gauging macroinvertebrate response to restoration-induced disturbance using recolonization traps in a western Colorado stream*.

3:40 PM COS 46-7 Bakker, JD[1], EG Delvin[2] and PW Dunwiddie[1], (1)University of Washington, (2)The Nature Conservancy. *Evaluating the importance of spatiotemporal variation in plant establishment*.

4:00 PM COS 46-8 Howe, HF[1], M de la Pena-Domene[1] and C Martínez-Garza[2], (1)University of Illinois-Chicago, (2)Universidad Autónoma del Estado de Morelos. *First reproduction and tropical tree restoration*.

4:20 PM COS 46-9 Richardson, PJ and SD Murphy, University of Waterloo. *Determining the timespan and ecological conditions necessary for afforested farmlands to function like old-growth forests: A view from the understorey*.

4:40 PM COS 46-10 Kettenring, KM[1], KL Mercer[2], CR Adams[3] and J Hines[4], (1)Utah State University, (2)The Ohio State University, (3)University of Florida, (4)EAWAG. *Integrating recent advances in genetic diversity-ecosystem function research to improve ecological restoration*.

COS 47 - Species Interactions I

M100HC, Minneapolis Convention Center

1:30 PM COS 47-1 Vasconcelos, FR[1], S Diehl[1] and C Jäger[2], (1) Umeå University, (2)Helmholtz Centre for Environmental Research – UFZ. *Asymmetric competition for nutrients and light between benthic and pelagic algae: Theory, field data, and an experimental test system*.

1:50 PM COS 47-2 Jusino, MA[1], DL Lindner[2], MT Banik[2] and JR Walters[1], (1)Virginia Tech, (2)USDA Forest Service, NRS, Center for Forest Mycology Research. *Pining for fungi: red-cockaded woodpeckers and their fungal associates*.

2:10 PM COS 47-3 Uszko, W and S Diehl, Umeå University. *Nutrient use and coexistence criteria of phytoplankton in absence and presence of grazers*.

2:30 PM COS 47-4 Hall, SR[1], KM Boatman[1], ZA Brown[1], DJ Civitello[1], RM Penczykowski[2], MS Shocket[1], MA Duffy[3] and CE Cáceres[4], (1)Indiana University, (2)Georgia Institute of Technology, (3)University of Michigan, (4)University of Illinois. *Parasites can stabilize consumer-resource dynamics, but do they? An evaluation using models, an experiment, and field data*.

2:50 PM COS 47-5 Barner, AK[1], SD Hacker[1], BA Menge[1], KJ Nielsen[2] and F Chan[1], (1)Oregon State University, (2) Sonoma State University. *Positive or negative canopy-understory interactions? A test using the comparative-experimental approach*.

3:10 PM Break

1:30 pm-5 pm

3:20 PM COS 47-6 Epps, MJ, North Carolina State University. *Community structure and interaction breadth in beetle-macrofungus associations*.

3:40 PM COS 47-7 MacDonald, AAM and DS Srivastava, University of British Columbia. *The relative importance of competition and predation along a habitat size gradient in bromeliad mesocosms*.

4:00 PM COS 47-8 Lerdau, MT[1] and C Cannon[2], (1)University of Virginia, (2)Texas Tech university. *Fuzzy Mating Behavior Enhances Species Coexistence and Delays Extinction in Diverse Communities*.

4:20 PM COS 47-9 Deo, JE, Rutgers University, Graduate Program in Ecology and Evolution. *Welcome to the neighborhood: Nest locations of heterospecific songbirds influence Wood Thrush (Hylocichla mustelina) nest placement*.

4:40 PM COS 47-10 Grof-Tisza, P[1], M Holyoak[1] and R Karban[2], (1)University of California, Davis, (2)University of California at Davis. *Top-down control of an acrtiid moth varies spatially*.

COS 48 - Trophic Dynamics And Interactions

M100IB, Minneapolis Convention Center

1:30 PM COS 48-1 Albeny Simões, D[1], E Murrell[2], EF Vilela[3] and SA Juliano[4], (1)Federal University of Santa Catarina, (2) University of Wisconsin-Madison, (3)Federal University of Viçosa, (4)Illinois State University. *A trophic cascade effect of the predatory mosquitoToxorhynchites rutilus on aquatic bacteria*.

1:50 PM COS 48-2 Attard, MRG, S Wroe and TL Rogers, University of New South Wales. *The risks of being big - The ecological and evolutionary significance of the thylacine's body size and diet*.

2:10 PM COS 48-3 Menge, BA[1], G Rilov[2], MM Foley[3] and F Chan[1], (1)Oregon State University, (2)National Institute of Oceanography, (3)University of California Santa Cruz. *Ecological subsidies drive the dynamics of keystone predation in a rocky intertidal meta-ecosystem: insights from a comparative-experimental approach*.

2:30 PM COS 48-4 Ferlian, O, B Eitzinger, B Günther and S Scheu, University of Goettingen. *Trophic interactions in centipedes as indicated by fatty acid, molecular gut content and stable isotope analysis*.

2:50 PM COS 48-5 Bhatti, L and DE Burkepile, Florida International University. *Variation in the trophic ecology of reef herbivores in protected and unprotected areas of the Florida Keys National Marine Sanctuary*.

3:10 PM Break

3:20 PM COS 48-6 Otto, SA[1], G Kornilovs[2], M Llope[3] and C Möllmann[4], (1)Stockholm Resilience Centre, Stockholm University, (2)Institute of Food Safety, Animal Health and Environment, (3)Instituto Español de Oceanografía (IEO), (4)Institute for Hydrobiology and Fisheries Science. *Life cycle dynamics of a key copepod over long time scales: A complex and non-stationary interplay of internal and external driver*.

3:40 PM COS 48-7 Chislock, MF[1], O Sarnelle[2], BK Olsen[1], E Doster[1] and AE Wilson[1], (1)Auburn University, (2)Michigan State University. *Large effects of consumer offense on ecosystem structure and function*.

4:00 PM COS 48-8 Moellmann, C, R Diekmann, A Temming and J Floeter, Hamburg University. *Multi-level oscillating trophodynamic control causes regime shifts in large marine ecosystem*.

4:20 PM COS 48-9 Chubaty, AM[1], BO Ma[2], RW Stein[1], DR Gillespie[3], LM Henry[4], C Phelan[1], E Palsson[1], FW Simon[1] and BD Roitberg[1], (1)Simon Fraser University, (2)ESSA Technologies Ltd., (3)Agriculture and Agri-Food Canada, (4) University of Oxford. *On the evolution of omnivory in a community context*.

4:40 PM COS 48-10 Stephens, JP, KA Berven, JR Bartkus, M Golembieski, SD Tiegs and TR Raffel, Oakland University. *Resource specialization by tadpoles determines their developmental responses to leaf litter quality and shade*.

COS 49 - Urban Ecosystems I

M101A, Minneapolis Convention Center

1:30 PM COS 49-1 Munshi-South, J, Baruch College, City University of New York. *Landscape genomics of white-footed mice along an urban-to-rural gradient*.

1:50 PM COS 49-2 Dahle, G[1], FJ Gallagher[2], D Gershenson[3], K Schäfer[2] and J Grabosky[2], (1)West Virginia University, (2) Rutgers University, (3)University of California, Berkeley. *Allometric and Mass Relationships of Betula populifolia Marsh. in a Naturally Assembled Urban Brownfield: Implications for Carbon Modeling*.

2:10 PM COS 49-3 Stracey, CM[1] and SK Robinson[2], (1)Westminster College, (2)University of Florida. *Resource matching or mismatching: Does food limit breeding success of a native urban songbird?*.

2:30 PM COS 49-4 Pearse, WD[1], J Cavender-Bares[1], SE Hobbie[1], ND Bettez[2], RR Chowdhury[3], L Darling[4], PM Groffman[2], M Grove[5], SJ Hall[6], J Heffernan[7], KL Larson[6], JL Morse[2], C Neil[8], KC Nelson[1], L Ogden[9], J O'Neil-Dunne[10], DE Pataki[11], C Polsky[12] and MK Steele[7], (1)University of Minnesota, (2)Cary Institute of Ecosystem Studies, (3)Indiana University, (4)Northwestern University, (5)U.S. Forest Service, (6)Arizona State University, (7)Duke University, (8) Marine Biological Laboratory, (9)Florida International University, (10)University of Vermont, (11)University of Utah, (12)Clark University. *Plant diversity and community composition in six major USA cities*.

2:50 PM COS 49-5 Steele, MK and J Heffernan, Duke University. *The character of urban water bodies in the United States*.

3:10 PM Break

3:20 PM COS 49-6 Taylor, JR and ST Lovell, University of Illinois. *The social-ecological dynamics of urban food production in the Global North: A mixed methods study of ethnic and migrant home gardens in Chicago, IL*.

3:40 PM COS 49-7 Sullivan, JC[1], E Gardiner[2], P Bolstad[3], D Leigh[4], M Scott[5], EF Benfield[6], B Bixby[7], T Gragson[4] and CM Pringle[4], (1)Odum School of Ecology, University of Georgia, (2)Capitalize Climate Program Office, (3)University of Minnesota, (4)University of Georgia, (5)S.C. Dept. of Natural Resources, (6)Virginia Tech, (7)University of New Mexico. *Investigating stream ecosystem response to landscape change at environmentally meaningful time-*

scales: the Coweeta-LTER Hazard Site project.

4:00 PM COS 49-8 Avolio, ML[1], DE Pataki[1], S Pincetl[2], TW Gillespie[3], GD Jenerette[4] and HR McCarthy[5], (1)University of Utah, (2)UCLA, (3)University of California, Los Angeles, (4) University of California, (5)University of Oklahoma. *Understanding drivers of urban tree biodiversity in Los Angeles*.

4:20 PM COS 49-9 Becker, R, AR Tuininga, B Rubin and JD Lewis, Fordham University. *Spatial partitioning of soil fungi along an urban to rural gradient*.

4:40 PM COS 49-10 Richardson, AA, QA Wrenholt and AD Kay, University of St. Thomas. *The University of St. Thomas Stewardship Garden: combining biodiversity research and community service in an urban agriculture setting*.

COS 50 - Wetlands

M101B, Minneapolis Convention Center

1:30 PM COS 50-1 Holzer, KA[1], RP Bayers[1] and TT Nguyen[2], (1) University of California, Davis, (2)Vietnam National Museum of Nature. *Frog use of urban and agricultural landscapes in lowland Vietnam*.

1:50 PM COS 50-2 Bernik, BM and MJ Blum, Tulane University. *Extended phenotype of an ecosystem engineer: Variation across cultivated and wildtype clones influences processes of erosion*.

2:10 PM COS 50-3 Power, JH[1], CL Folger[1], D Beugli[2] and K Marko[3], (1)U.S. EPA, (2)Dynamac Corporation, (3)U.S. EPA, Western Ecology Division, Pacific Coastal Ecology Branch. *Pacific Northwest tide channel utilization by fish as an ecosystem service*.

2:30 PM COS 50-4 Childers, DL, J Hannan, CA Sanchez, L Turnbull and NA Weller, Arizona State University. *A constructed treatment wetland provides key urban ecosystem services even in a hot, dry climate*.

2:50 PM COS 50-5 Fisher, JDL[1], KM Purcell[2] and CA Stockwell[1], (1)North Dakota State University, (2)Duke University & NOAA: Southeast Fisheries Science Center. *Landscape Influences on Northern Leopard Frog Genetic Diversity and Effective Population Size in North Dakota*.

3:10 PM Break

3:20 PM COS 50-6 Johnston, CA, South Dakota State University. *Wetland Losses Due to Row Crop Expansion in the Prairie Pothole Region*.

3:40 PM COS 50-7 Yang, WH[1] and WL Silver[2], (1)University of Illinois, Urbana-Champaign, (2)University of California, Berkeley. *Gross N_2O production drives net N_2O fluxes along a salt marsh redox gradient*.

4:00 PM COS 50-8 Rietl, AJ[1], JA Nyman[1], CW Lindau[1] and CR Jackson[2], (1)Louisiana State University, (2)University of Mississippi. *Interacting effects of nutrient enrichment and simulated herbivory on methane emissions and methane associated microbial communities from four freshwater wetland plant species*.

4:20 PM COS 50-9 McCauley, LA[1], MJ Anteau[2], M Post van der Burg[2] and MT Wiltermuth[2], (1)South Dakota State University/ US Geological Survey, (2)US Geological Survey. *Land use and climate affects wetland dynamics and productivity*.

4:40 PM COS 50-10 McNicol, G and WL Silver, University of California, Berkeley. *Methane production efficiency and production pathway in restored and natural wetlands of the Sacramento-San Joaquin Delta*.

4 pm-6 pm

ESA Ecological Applications Editorial Board Meeting

Duluth, Hilton Minneapolis

4:30 pm-6:30 pm

OPS 2 - The National Ecological Observatory Network (NEON): Building a Community-Infused, Community-Driven Resource For Ecological Science

Organized by: S Berukoff (sberukoff@neoninc.org)

The National Ecological Observatory Network, currently under construction, is building a community-driven resource for ecological science

OPS 2-1 SanClements, MD, National Ecological Observatory Network. *The NEON mobile deployment platform: Designing a requestable community research tool*.

OPS 2-2 Goodman, K[1], RO Hall Jr.[2], CV Baxter[3], AM Marcarelli[4], BJ Roberts[5], JL Tank[6], CK Lunch[1], S Berukoff[1] and H Powell[1], (1)National Ecological Observatory Network (NEON, Inc.), (2)University of Wyoming, (3)Idaho State University, (4) Michigan Technological University, (5)Louisiana Universities Marine Consortium, (6)University of Notre Dame. *Challenges and opportunities of long-term continuous metabolism*.

OPS 2-3 Henderson, S, LA Wasser, D Ward and S Newman, Education and Public Engagement, National Ecological Observatory Network (NEON),. *NEON citizen science academy: Online professional development opportunities for educators*.

OPS 2-4 Goehring, L, Y Hill-Nnaji and W Gram, NEON, Inc.. *The NEON Undergraduate Internship Program: Mentoring the next generation of science and engineering professionals*.

OPS 2-5 Lunch, CK[1], S Elmendorf[2], AM Fox[1], S Petroy[3] and S Berukoff[1], (1)National Ecological Observatory Network, (2) National Ecological Observatory Network (NEON, Inc.), (3) NEON, Inc.. *NEON data products: Enabling continental-scale ecology*.

OPS 2-6 Fox, AM[1] and TJ Hoar[2], (1)National Ecological Observatory Network, (2)National Center for Atmospheric Research. *Estimating continental scaling of ecological driver-response feedbacks through model-data fusion*.

OPS 2-7 Toomey, M[1], AD Richardson[1], JF Weltzin[2], S Berukoff[3], S Elmendorf[4], H Loescher[3], M Friedl[5], M Jones[6], H Luo[7] and DJP Moore[8], (1)Harvard University, (2)USA National Phenology Network, National Coordinating Office, (3)NEON Inc., (4)NEON, Inc., (5)Boston University, (6)University of Montana, (7)National Ecological Observatory Network (NEON, Inc.), (8)University of Arizona. *Integrating Phenocam and USA National Phenology Network continental-scale approaches into NEON phenology data products*.

4:30 pm-6:30 pm

OPS 2-8 Smith, MD[1], SL Collins[2], AK Knapp[1] and E Planning Committee[1], (1)Colorado State University, (2)University of New Mexico. *The Ecosystem Sensitivity to Rainfall Experiment (EcoSeRE): An International Experimental Network*.

OPS 2-9 Baldwin, T, NEON, Inc.. *Implementing organismal sampling at NEON: Early experiences*.

OPS 2-10 Nelson, R and K Ruiz, NEON, Inc.. *Supporting NEON observatory maintenance through field operations*.

OPS 2-11 Everhart, JC[1], ELS Hinckley[2] and KM Thibault[2], (1)National Ecological Observatory Network (NEON, Inc.), Boulder, CO, (2)National Ecological Observatory Network (NEON, Inc.). *Use of stable isotopes in the continental-scale ecology of small mammals*.

OPS 2-12 Li, Z[1], A Strahler[1], E Douglas[1], J Martel[2], S Chakrabarti[2], T Cook[2], G Howe[2], C Schaaf[3], Z Wang[3], E Saenz[3], I Paynter[3], X Yang[3], J Kim[1], S Rouhani[3], N Pahlevan[3], Y Yang[3], Y Liu[3], DLB Jupp[4], DS Culvenor[4], GJ Newnham[4], JL Lovell[4], C Meier[5], K Krause[6], N Leisso[5] and T Kampe[5], (1)Boston University, (2)University of Massachusetts Lowell, (3) University of Massachusetts Boston, (4)CSIRO, (5)National Ecological Observatory Network (NEON, Inc.), (6)National Ecological Observatory Network (NEON). *Forest structure and separation of leafy and woody material using terrestrial full waveform lidar: Results from the 2012 NEON Harvard Forest campaign*.

OPS 2-13 Wee, B and HW Loescher, National Ecological Observatory Network (NEON, Inc.). *LTAR-NEON integration: A conceptual architecture*.

OPS 2-14 Taylor, J[1], B Wee[1] and JP Poinsatte[2], (1)National Ecological Observatory Network (NEON, Inc.), (2)Washington State University. *Connecting LTAR-NEON data to science policy*.

OPS 2-15 Leisso, N[1], T Kampe[1] and K Krause[2], (1)National Ecological Observatory Network (NEON, Inc.), (2)National Ecological Observatory Network (NEON). *Assessment of the High Park Fire Burn Scar using the NEON Airborne Observatory Platform*.

OPS 2-16 Kampe, T[1], K Krause[2] and N Leisso[1], (1)National Ecological Observatory Network (NEON, Inc.), (2)National Ecological Observatory Network (NEON). *Correlation between airborne and ground-based waveform LiDAR at Harvard Forest*.

OPS 2-17 Rodriguez, W, M Tait, S Filipczak and JL Blanchard, University of Massachusetts. *Microbial ecological process models developed using National Ecological Observatory Network (NEON) metagenomic and metatranscriptomic data*.

OPS 2-18 Schneider, DC[1], D Barnett[2], S Elmendorf[2], ELS Hinckley[2], D Hoekman[2], K Jones[2], C Meier[2], J Parnell[2], Y Springer[2], KM Thibault[2] and AS Thorpe[2], (1)Memorial University of Newfoundland, (2)National Ecological Observatory Network (NEON, Inc.). *From sentinels to avatars? Scaling from ecological data to ecosystem change*.

OPS 2-19 Berukoff, S, National Ecological Observatory Network. *Building complex heterogeneous measurement and data systems: Combining ecology and systems engineering at NEON*.

OPS 2-20 Petroy, S[1], JL Dwyer[2], S Elmendorf[1], EK Melaas[3] and S Berukoff[1], (1)NEON, Inc., (2)U.S. Geological Survey, (3) Boston University. *Enabling continental-scale ecology through multi-decadal Landsat time series data sets*.

OPS 2-21 Elmendorf, S, National Ecological Observatory Network (NEON, Inc.). *Commissioning the National Ecological Observatory Network*.

PS 19 - Biodiversity

Exhibit Hall B, Minneapolis Convention Center

PS 19-22 Ohta, T and T Hiura, Tomakomai Research Station. *Is there a relationship between biodiversity and ecosystem functioning in stream detritivores through its stoichiometry?*.

PS 19-23 Mishra, B and SC Garkoti, Jawaharlal Nehru University. *Species diversity, regeneration status and edaphic characteristics in Sabaiya collaborative forest, Nepal*.

PS 19-24 Hung, KLJ and DA Holway, University of California, San Diego. *Habitat fragmentation reduces bee taxon richness and temporal beta-diversity in a hotspot of bee biodiversity*.

PS 19-25 Halliday, FW, RW Heckman, PA Wilfahrt and CE Mitchell, University of North Carolina. *Effects of host diversity and resource availability on foliar parasite diversity*.

PS 19-26 Schriever, TA[1], MT Bogan[1], KS Boersma[1], M Cañedo-Argüelles[1], JD Olden[2] and DA Lytle[1], (1)Oregon State University, (2)University of Washington. *Does hydrology drive functional trait diversity differences in arid-land stream ecosystems?*.

PS 19-27 Hensley, VR[1], J Heemeyer[1], EG Biro[2], LM Woods[3] and KG Smith[1], (1)Washington University in St. Louis, (2) Washington University in StL, (3)Washington University. *Habitat loss and acidification cause a pattern of selective extinctions in a model system*.

PS 19-28 Schuler, MS, Washington University in St. Louis. *Environmental factors affect diversity through shifts in species abundances*.

PS 20 - Community Assembly And Neutral Theory

Exhibit Hall B, Minneapolis Convention Center

PS 20-29 Habenicht, MN and D Hooper, Western Washington University. *Trajectories of species and functional change during California serpentine grassland assembly*.

PS 20-30 Bestová, H and P Skaloud, Charles University in Prague, Faculty of Science. *Processes structuring desmid communities - phylogenetic approach*.

PS 20-31 Johnson, DJ, E Protos, N Yaussy and FA de Szalay, Kent State University. *Stochastic vs. deterministic assembly of aquatic invertebrate communities in permanently flooded and intermittently dry wetlands*.

PS 20-32 Wei, X[1], JA Savage[2] and JM Cavender-Bares[1], (1)University of Minnesota, (2)Harvard University. *Habitat differentiation among closely-related willow species along a water table gradient*.

PS 20-33 Holmes, CJ[1], KL Schulz[2], S Figary[3] and CE Càceres[1], (1)University of Illinois at Urbana-Champaign, (2) State University of New York College of Environmental Science and Forestry, (3)SUNY-ESF. *Effects of diversity on colonization dynamics in newly formed ponds*.

PS 20-34 Woebbe, E and TP Rooney, Wright State University. *Beta diversity and community structure of a Neotropical anuran assemblage (Pacaya-Samiria Reserve, Peru)*.

PS 20-35 Dufort, MJ, University of Minnesota. *Ecology versus evolution in community trait distributions: Woodpeckers (Aves: Picidae) as a test case*.

PS 20-36 Weiher, E[1], G Nelson[2], B Urhammer[1], I Renner[1], K Spickerman[3], M Quick[3], N Servey[1] and DDG Lonzarich[4], (1)University of Wisconsin - Eau Claire, (2)University of Wisconsin-Eau Claire, (3)UW - Eau Claire, (4)University Wisconsin Eau Claire. *Stress decreases functional beta diversity and increases the relative stochasticity of taxon-based community assembly in contrasting vegetation types*.

PS 20-37 Sides, CB[1], BJ Enquist[1], JJ Ebersole[2], AN Henderson[1], LL Sloat[1] and MN Smith[1], (1)University of Arizona, (2) Colorado College. *Revisiting Darwin's hypothesis: does greater intraspecific variability increase species' ecological breadth?*.

PS 21 - Community Pattern And Dynamics

Exhibit Hall B, Minneapolis Convention Center

PS 21-38 Powers, BF and D Edge, Oregon State University. *Butterfly and nectar community structure among a prairie-oak oak woodland gradient in the Willamette Valley, Oregon*.

PS 21-39 Li, D, T Voigt and A Kent, University of Illinois at Urbana-Champaign. *Plant selection and soil effects shaped diazotrophs associated with Miscanthus × giganteus rhizomes and rhizosphere*.

PS 21-40 Adhikari, S[1], V Bahn[1] and PB McIntyre[2], (1)Wright State University, (2)University of Wisconsin. *Body size distribution patterns and its underlying mechanism for global freshwater fish*.

PS 21-41 McKenna, TP and KA Yurkonis, University of North Dakota. *Plant species pattern plays a role in community structure effects on productivity*.

PS 21-42 Ficenec, SC, AR Osowski, JR Benson, BJ Goodwin and KA Yurkonis, University of North Dakota. *Grassland plant species pattern and evenness affect arthropod communities*.

PS 21-43 Zlatar, I and JMH Knops, University of Nebraska-Lincoln. *Specific leaf area variability along a natural gradient of soil texture and fertility* .

PS 21-44 Woods, LM, Washington University. *The influence of metacommunity size on species diversity scaling in protist communities*.

PS 21-45 Barak, RS[1], ML Bowles[2], J McBride[2] and DJ Larkin[3], (1)Chicago Botanic Garden/Northwestern University, (2)Morton Arboretum, (3)Chicago Botanic Garden. *Surrounding land-use and management, but not size, predict plant species richness of remnant prairies in Illinois*.

PS 21-46 Roccaforte, K[1], BL Foster[1], AT Bittel[1] and GR Houseman[2], (1) University of Kansas, (2)Wichita State University. *Interactive effects of soil fertility and initial community states on small-scale plant species richness*.

PS 21-47 Idjadi, JA and S Salois, Eastern Connecticut State University. *A potential positive feedback loop for algal dominance on coral reefs: Why do fish eat less algae where it's abundant?*.

PS 21-48 Locey, KJ and EP White, Utah State University. *How species richness and total abundance constrain the distribution of abundance*.

PS 21-49 Becklund, KK, LL Kinkel and JS Powers, University of Minnesota. *Disentangling the effects of tree species, soil nutrients, and site on pathogen-suppressive Streptomyces in a tropical dry forest*.

PS 21-50 Kim, TN[1], H Liere[2], BP Werling[3], TD Meehan[4], DA Landis[3] and C Gratton[2], (1)University of Wisconsin-Madison, (2) University of Wisconsin - Madison, (3)Michigan State University, (4)University of Wisconsin, Madison. *Trophic cascades in agricultural landscapes*.

PS 21-51 Negoita, L[1], JD Fridley[1], G Mittelhauser[2] and M Lomolino[3], (1)Syracuse University, (2)Maine Natural History Observatory, (3)State University of New York-College of Environmental Science and Forestry. *Island plant communities: Geographic isolation and community function*.

PS 21-52 Brickley, D[1], JA Perzley[2], S Wang[3], B Boldgiv[4] and PS Petraitis[3], (1)Michigan State University, (2)Rutgers University, (3)University of Pennsylvania, (4)National University of Mongolia. *Characterization of ecotones on north- and south-facing slopes in northern Mongolia*.

PS 21-53 Schnurr, J[1], RS Ostfeld[2] and CD Canham[2], (1)Wells College, (2)Cary Institute of Ecosystem Studies. *Long term exclusion of small mammal seed predators: Effects on seedling recruitment*.

PS 21-54 Lebrija-Trejos, E[1], JS Wright[2], A Hernandez[2] and PB Reich[1], (1)University of Minnesota, (2)Smithsonian Tropical Research Institute. *Heterospecifics matter: Density dependent survival of seedlings in a tropical forest*.

PS 21-55 Feng, X[1] and M Dietze[2], (1)University of Illinois, (2)Boston University. *Linking photosynthesis to community dynamics in a tallgrass prairie*.

PS 21-56 Goodwin, BJ, SC Ficenec, AR Osowski, K Sagen and KA Yurkonis, University of North Dakota. *Katydid (Orchelimum gladiator) movement responses to grassland vegetation structure*.

PS 21-57 Powell, KI and TM Knight, Washington University in St. Louis. *Extirpations caused by plant invasions are explained by resource-use overlap between invasive and common, native species*.

PS 21-58 Cherry, JA and JL Hart, University of Alabama. *Biodiversity and ecosystem function of U.S. Coastal Plain wetlands in different stages of succession*.

PS 21-59 Bartels, SF and HYH Chen, Lakehead University. *Epiphyte species richness increases with tree species richness in boreal forest*.

PS 21-60 Souther, JD[1] and E Marín-Spiotta[2], (1)University of Wisconsin-Madison, (2)University of Wisconsin, Madison. *Trends in tree species composition, structure, and aboveground biomass of tropical secondary forests suggest long recovery time to unconverted forest conditions*.

PS 21-61 Walters, MB, JL Willis, BE Daly and EJ Farinosi, Michigan State University. *Varying harvest gap size may do little to increase tree diversity in northern hardwood forest constrained by low tree seedling diversity*.

4:30 pm-6:30 pm

PS 22 - Community Disturbance And Recovery

Exhibit Hall B, Minneapolis Convention Center

PS 22-62 Reese, AT and J Wright, Duke University. *Manifold drivers of regional variation in successional timing: Modeling the impacts of latitudinal variation in growth rate and herbivory on herbaceous-woody competition*.

PS 22-63 Anderson, SM[1], JP Wright[1], GM Ames[1] and MG Hohmann[2], (1)Duke University, (2)US Army Corps of Engineers ERDC - CERL. *How well do fire-related plant traits predict species pattern and fire behavior along a hydrologic gradient?*.

PS 22-64 Woods, K, Bennington College. *Demographic responses to a severe disturbance in an old-growth northern hardwood forest*.

PS 22-65 Woods, NN[1] and MN Miriti[2], (1)Ohio State University, (2) The Ohio State Univesrsity. *Species-specific facilitation of germination may promote regeneration of a post-drought perennial community*.

PS 22-66 Schiebout, MH[1] and SB Franklin[2], (1)Union University, (2) University of Northern Colorado. *Investigating competitive inhibition for Canada thistle (Cirsium arvense) and cheatgrass (Bromus tectorum) by comparing their response in relation to functionality and nativeness*.

PS 22-67 Turner, MG[1], WH Romme[2], DB Tinker[3] and TG Whitby[1], (1)University of Wisconsin, (2)Colorado State University, (3) University of Wyoming. *Landscape patterns of early postfire lodgepole pine regeneration dominate stand structure and function 24 years after the 1988 Yellowstone Fire*.

PS 22-68 Kaufeld, K[1], JE Moore[2] and SB Franklin[1], (1)University of Northern Colorado, (2)Christian Brothers University. *Community shifts along a disturbance gradient*.

PS 22-69 Case, MF[1], CB Halpern[2] and SA Levin[1], (1)Princeton University, (2)University of Washington. *Gopher-mound and casting disturbances contribute to plant community structure in a Cascade Range meadow complex*.

PS 22-70 Jaime, XA[1], SJ Van Bloem[2], F Koch[1] and SA Nelson[3], (1) North Carolina State University, (2)University of Puerto Rico, (3)NC State University. *Forest understory resilience and soil dynamic response to anthropogenic wildfire in dry semi-deciduous forest in Puerto Rico*.

PS 22-71 Briggs, JS[1], TJ Hawbaker[1] and DR West[2], (1)U.S. Geological Survey, (2)Colorado State University. *Contrasting impacts of mountain pine beetle disturbance in two pine-dominated ecosystems in Colorado*.

PS 22-72 Dietterich, LH and BB Casper, University of Pennsylvania. *Do initial species communities planted affect subsequent succession? Results from a nine-year restoration experiment*.

PS 22-73 Chips, MJ, MR Magliocca, OE Morakinyo and WP Carson, University of Pittsburgh. *Vertebrate disturbances in forest ecosystems: An experimental case study in Pennsylvania and a worldwide review*.

PS 22-74 Wright, LW and RM Muzika, University of Missouri. *Fire effects on community resilience, diversity and function of surface-active arthropods in the Missouri Ozark Highlands*.

PS 22-75 Gray, JB and LG Leff, Kent State University. *Bacterial N_2O production following O_2 exposure*.

PS 22-76 Given, EK and TP Diggins, Youngstown State University. *Evaluating long-term effects of destructive flooding on in-stream riparian characteristics and macroinvertebrate abundance in low order streams*.

PS 23 - Restoration Ecology

Exhibit Hall B, Minneapolis Convention Center

PS 23-77 Shaffer, JD, SK Gleeson, JJ Cox and JM Lhotka, University of Kentucky. *Factors influencing the establishment and survival of native hardwood tree seedlings of the Kentucky Inner Bluegrass blue ash-oak savanna-woodland*.

PS 23-78 Thomsen, MA[1], NR De Jager[2], M Merriman[3] and BJ Cogger[4], (1)University of Wisconsin - La Crosse, (2)United States Geological Survey, (3)University of WI-La Crosse, (4)University of Wisconsin - Superior. *Further battles with the green giant: a comparison of factors critical to reed canarygrass control in herbaceous vs. forested wetlands*.

PS 23-79 Shmagranoff, RN[1], S Kinsman[1], EJ Bird[1], J Garcia[2] and YD Choi[1], (1)Purdue University Calumet, (2)Duke University. *Monitoring of restored vegetation in the wetlands of Wolf Lake, Hammond, Indiana*.

PS 23-80 Russell, FL, Wichita State University. *Native grass establishment through seed addition in a southeast Kansas oak savanna restoration*.

PS 23-81 Bizzari, LE and BC McCarthy, Ohio University. *An experimental assessment of American chestnut growth and survival on reclaimed mine lands across central Appalachia*.

PS 23-82 Fry, JE, University of Kentucky. *Effect functional traits of litter decomposition rates and plant available inorganic N, of nine bunchgrasses native to the Blue Ash-Oak Savanna of the Inner Bluegrass Region of Kentucky*.

PS 23-83 Port, JL and SA Wyse, Bethel University. *The role of vegetation structure in nest site selection by clay-colored sparrows (Spizella pallida)*.

PS 23-84 Kittelson, PM, M Patterson and M Howe, Gustavus Adolphus College. *Ecological assessment of a restored tallgrass prairie in Minnesota*.

PS 23-85 Kinsman, S, R Schmagranoff, EJ Bird and YD Choi, Purdue University Calumet. *Species diversity, primary production, decomposition, and soil carbon sequestration in a restored prairie, a cool-season grass pasture, and an old field*.

PS 23-86 Millikin, A[1], ME Jarchow[1], K Olmstead[2] and M Dixon[1], (1) University of South Dakota, (2)Salisbury University. *Long-term restoration assessment of historic tallgrass prairie at Spirit Mound: Changes in vegetation composition 12 years post-restoration*.

PS 23-87 Koziol, LK[1] and JD Bever[2], (1)Biology, Indiana University, (2) Indiana University. *Mycotrohic Prairie Plants Demonstrate Fungal Specific Growth Responses*.

PS 23-88 Biederman, L and WS Harpole, Iowa State University. *Biochar has mixed effects on prairie restoration*.

PS 23-89 Benson, CE[1], TA Langen[1] and R Welsh[2], (1)Clarkson University, (2)Syracuse University. *Ecological and social value of wetland restoration programs on privately owned land in Northern New York*.

PS 23-90 Yost, J[1], CE Palmer[2] and L Egerton-Warburton[3], (1)Lake Forest College, (2)Northwestern University, (3)Chicago Botanic Garden. *The contribution of soil aggregates to*

carbon sequestration in restored urban grasslands.

PS 23-91 Hevey, RD Jr.[1] and L Egerton-Warburton[2], (1)Northwestern University, (2)Chicago Botanic Garden. *Ectomycorrhizal community recovery following exotic species invasion and restoration in an oak woodland*.

PS 23-92 Brandt, EC[1], JE Petersen[1], JJ Grossman[2], GA Allen[1] and DH Benzing[1], (1)Oberlin College, (2)University of Minnesota. *Relating plant spatial patterning, biodiversity, ecosystem function, and management practices in experimental restored wetlands*.

PS 23-93 Hall, CD[1], PE Cabot[2], MF Quigley[1] and R Sparks[3], (1) University of Denver, (2)Colorado State University, (3) Natural Resources Conservation Service. *The effect of planting date and irrigation on the establishment of an herbaceous community in an arid, post-agricultural system*.

PS 23-94 Olson, JC[1], AM Marcarelli[1], A Timm[2], SL Eggert[2] and RK Kolka[2], (1)Michigan Technological University, (2)USDA Forest Service. *Evaluating the impact of culvert designs on hydrologic connectivity and nutrient uptake in Northern Wisconsin streams*.

PS 23-95 Krutsinger, R and KE Schulz, Southern Illinois University Edwardsville. *An evaluation of Illinois grassland restoration success based on ecosystem function*.

PS 23-96 Clark, J, D Israelitt and KE Schulz, Southern Illinois University Edwardsville. *Seed germination rates of the invasive vine Humulus japonicus*.

PS 23-97 Biro, EG[1], M Yang[2], LM Woods[3] and KG Smith[2], (1) Washington University in StL, (2)Washington University in St. Louis, (3)Washington University. *Loss and recovery of aquatic biodiversity across spatial scales following application of rotenone*.

PS 23-98 Guzman, CA, University of Illinois in Chicago. *Tree Seedling Regeneration in a Degraded Tropical Landscape: Barriers to Tropical Pasture Restoration in Los Tuxtlas, Mexico*.

PS 23-99 Tipton, AG[1] and C Galen[2], (1)University of Missouri, (2) University of Missouri-Columbia. *The ghosts of glades past: mycorrhizal interactions in degraded and restored dolomite glades*.

PS 23-100 Sluis, WJ[1] and ML Bowles[2], (1)Trine University, (2)The Morton Arboretum. *A Comparison of Diversity Metrics in Grasslands*.

PS 23-101 Hermann, SM, JS Kush, JC Gilbert and C Guyer, Auburn University. *Quantified approach for habitat assessment to improve prescribed fire in longleaf pine and related restoration efforts for gopher tortoises*.

PS 23-102 Bassett, T, Michigan State University. *Adaptation to a broad soil moisture gradient in a dominant prairie grass: applications for restoration*.

PS 23-103 El Waer, H, AA Sher, RM Anderson and K Merewether, University of Denver. *Plant community response to exotic tree removal in western watersheds*.

PS 24 - Environmental Impact And Risk Assessment

Exhibit Hall B, Minneapolis Convention Center

PS 24-104 Randle, AC, B Barlow, JC Gilbert, JS Kush, A Gunnoe, L Teeter and C Bailey, Auburn University. *Mapping ownership changes in Southwest Alabama timberlands*.

PS 24-105 Howe, RW[1], NG Walton[1], EEG Giese[1], GJ Niemi[2], NP Danz[3], VJ Brady[2], TN Brown[2], JJH Ciborowski[4], JP Gathman[5], GE Host[2], LB Johnson[2] and ED Reavie[2], (1)University of Wisconsin-Green Bay, (2)University of Minnesota-Duluth, (3)University of Wisconsin-Superior, (4)University of Windsor, (5)University of Wisconsin-River Falls. *How do different taxa respond to landscape stressors in Great Lakes coastal wetlands?*.

PS 24-106 Dooley, JM, KC Reiss and MT Brown, University of Florida. *Emerging soundscape patterns across a gradient of land use intensity*.

PS 24-107 Flaishans, J, Environmental Protection Agency. *übertool: Web applications for ecological risk assessment*.

PS 25 - Ecosystem Management

Exhibit Hall B, Minneapolis Convention Center

PS 25-108 Narog, M[1] and JL Beyers[2], (1)USDA Forest Service, (2)Pacific Southwest Research Station. *Post-fire population dynamics of Penstemon californicus*.

PS 25-109 Yin, J[1] and X Lu[2], (1)Liaoning University, (2)Insitute of Applied Ecology, Chinese Academy of Sciences. *Opposite responses in leaf N and P concentrations and resorption of two dominant grass species along a 30-yr temperate steppe restoration chronosequence*.

PS 25-110 Samuelson, LJ[1], TA Stokes[1], L Ferrari[1], KH Johnsen[2], JR Butnor[2], CA González Benecke[3], J Jackson[2], P Anderson[2], TA Martin[3] and WP Cropper Jr.[3], (1)Auburn University, (2) USDA Forest Service, (3)University of Florida. *Distribution of carbon in longleaf pine ecosystems*.

PS 25-111 Aref, I, King Saud University. *Rainwater harvesting as a tool to recover the declining Juniper ecosystem*.

PS 25-112 Omari, K and DA MacLean, University of New Brunswick. *Dead wood dynamics in white spruce plantations following alternative commercial thinning*.

PS 25-113 Zeng, H, JP Caspersen, KS Thebeau, M Cecil-Cockwell and J Cleary, University of Toronto. *The effects of forest management on carbon storage in uneven-aged forests and wood products*.

PS 25-114 Giencke, LM, LK Kirkman, SB Jack and RJ Mitchell, Joseph W. Jones Ecological Research Center. *Disturbance and recovery of ground cover in a longleaf pine forest following silvicultural treatments*.

PS 25-115 Patterson, JL[1], J Maki[2] and EH Boughton[2], (1)Brigham Young University - Idaho, (2)Archbold Biological Station. *The effects of a prescribed summer burn on the native grass Andropogon virginicus on a subtropical ranchland*.

PS 26 - Conservation Ecology

Exhibit Hall B, Minneapolis Convention Center

PS 26-116 Kuntz, AR and KV Root, Bowling Green State University. *Assessing the spatial distribution and habitat associations of three focal species in a mixed disturbance landscape*.

PS 26-117 Hakkenberg, C, University of North Carolina. *Village Sacred Forests as Refugia and Source Populations for Reforestation Efforts in SW China*.

PS 26-118 Langton, AM and EW Schupp, Utah State University. *Reproductive strategy of Phacelia submutica (Boraginaceae;*

4:30 pm-6:30 pm

formerly in Hydrophyllaceae), a threatened plant species in western Colorado.

PS 26-119 Kamnyev, AL and V Bahn, Wright State University. *The influence of habitat patch size, isolation, and condition on Pileated Woodpecker occupancy in southwestern Ohio*.

PS 26-120 Cipollini, K[1], P Lavretsky[2], D Cipollini[2] and JL Peters[2], (1) Wilmington College, (2)Wright State University. *Using SNPs to examine population structure and identify units for conservation of endangered northeastern bulrush, Scirpus ancistrochaetus, across its range*.

PS 26-121 Clarke, D, JL Horton, JR Ward and AJ Watson, University of North Carolina at Asheville. *Modeling responses of American ginseng (Panax quinquefolius L.) populations to different levels of simulated harvest*.

PS 26-122 Forrester, T[1], WJ McShea[1], RW Kays[2], R Costello[3], M Baker[1] and A Parsons[2], (1)Smithsonian Institution - National Zoological Park, (2)North Carolina Museum of Natural Sciences, (3)Smithsonian Institution - National Museum of Natural History. *eMammal - citizen science camera trapping as a solution for broad-scale, long-term monitoring of wildlife populations*.

PS 27 - Conservation Management

Exhibit Hall B, Minneapolis Convention Center

PS 27-123 Gopal, NS and J Witsen, Montgomery Township Upper Middle School. *The Effect of Roadside Mowing and Fertilizer Use on Milkweed (Asclepias syriaca) Populations in Central New Jersey*.

PS 27-124 Schrotenboer, AC[1] and J McBride[2], (1)Trinity Christian College, (2)Morton Arboretum. *Land cover change around Chicago-area prairies*.

PS 27-125 Planas, AO, Florida Atlantic University. *Analysis of Cuban Treefrog (Osteopilus septentrionalis) Predation on Native Florida Treefrog Species*.

PS 27-126 Aldosari, S, King Saud University. *Comparison of pheromone lures with ethyl acetate and trap design for their attraction to red palm weevil, Rhynchophorus ferrugineus Olivier*.

PS 27-127 Quinn, JE, Furman University. *Identifying conservation opportunities for species of conservation concern in managed ecosystems*.

PS 27-128 Jungers, J[1], JE Fargione[2], C Lehman[1] and C Sheaffer[1], (1)University of Minnesota, (2)The Nature Conservancy. *Linking plant community composition to bioenergy potential in conservation grasslands*.

PS 28 - Soil Ecology

Exhibit Hall B, Minneapolis Convention Center

PS 28-129 Radtke, TM and E Bremer, Western Ag Innovations. *Determining the effects of soil moisture on ion bioavailability using PRS™-probes*.

PS 28-130 Boettinger, JL, JB Baker and LJ Kelly, Utah State University. *Soil biogeochemistry of Hesperidanthus suffrutescens (shrubby reed-mustard) habitat in the Uinta Basin, Utah*.

PS 28-131 Post, KH[1], M Dam[2] and DH Wall[1], (1)Colorado State University, (2)University of Copenhagen. *Soil animal community responses to grasshopper defoliation under severe drought*.

PS 28-132 Narváez Rivera, GM, EM Bach and KS Hofmockel, Iowa State University. *Comparing arbuscular mycorrhizal fungi vesicle and hyphal colonization of perennial prairie and annual corn bioenergy systems*.

PS 28-133 Galante, TE[1], DJ Mladenoff[1] and JA Forrester[2], (1)University of Wisconsin-Madison, (2)University of Wisconsin - Madison. *Effects of intensive biomass harvesting on the soil microbial community in a northern hardwood forest*.

PS 28-134 D'Acunto, L, M Semmartin and CM Ghersa, IFEVA, School of Agronomy University of Buenos Aires, Conicet. *Uncultivated margins in agricultural landscapes: effects on soil functioning*.

PS 28-135 Ayres, E and HW Loescher, National Ecological Observatory Network (NEON, Inc.). *Characterizing soils at NEON sites to inform sensor-based sampling strategies*.

PS 28-136 Shange, R[1], R Ankumah[1], Y Maiga[2], M Scott[1] and N Egiebor[1], (1)Tuskegee University, (2)International Institute for Water and Environmental Engineering. *Assessing impacts of cyanide treatments on soil microbial community composition and structure*.

PS 28-137 Hicks Pries, CE[1], MS Torn[1], JA Bird[2] and PJ Hatton[2], (1) Lawrence Berkeley National Laboratory, (2)Queens College, The City University of New York. *Tracing the fate of plant and fine root litter over 10 years in a coniferous forest soil*.

PS 28-138 Dress, WJ[1], P Kelly[2] and A McDonald[1], (1)Robert Morris University, (2)Indiana University of Pennsylvania. *Microsite differences in nitrogen transformations and soil enzyme activity after partial tree harvest in a mixed deciduous forest*.

PS 28-139 Ewing, PM[1], NR Jordan[1], SC Huerd[1], Y Lou[2] and AC Yannarell[2], (1)University of Minnesota, (2)University of Illinois at Urbana-Champaign. *Heterogeneous Row-Crop Soil Environments to Harbor Diverse, System-Stabilizing Mycorrhizal Fungi*.

PS 28-140 Pieri, DS and RM Miller, Argonne National Laboratory. *The effects of perennial grasses grown in interspecific and intraspecific combinations on the growth of their arbuscular mycorrhizal symbionts*.

PS 29 - Agriculture

Exhibit Hall B, Minneapolis Convention Center

PS 29-141 Wortman, SE and ST Lovell, University of Illinois. *Environmental challenges threatening the continued growth of urban agriculture in the United States*.

PS 29-142 Hunter, MC, ME Schipanski and DA Mortensen, The Pennsylvania State University. *Organic weed suppression using diverse cover crop mixtures*.

PS 29-143 Vallejo, LA[1], RE Bilsborrow[2] and CL Gray[2], (1)Universidad Tecnica Estatal de Quevedo, (2)University of North Carolina at Chapel Hill. *Ecuatorian rural migration and agriculture*.

PS 29-144 Atwood, LW and RG Smith, University of New Hampshire. *Zonal tillage boosts crop yields, but has little effect on above-ground litter decomposition*.

PS 29-145 Warren, ND, RG Smith and RG Sideman, University of New Hampshire. *Exploring the functional role of diversity in a broccoli - living mulch agroecosystem*.

PS 29-146 Channell, R[1] and SM Dunn[2], (1)Fort Hays State University,

(2)Nebraska Game & Parks Commission. *Carabid beetle assemblages of rangeland and Conservation Reserve Program fields in western Kansas*.

PS 29-147 Koehler-Cole, K, J Shi and JR Brandle, University of Nebraska-Lincoln. *Organic wheat-clover intercrop effects on soil nitrate levels and subsequent corn yields*.

PS 29-148 Hartmann, EDL, RJ Asheim, PG Johnson, RD McGlynn, SJ Redmond, LC Schmaltz and L Aldrich-Wolfe, Concordia College. *Soil fertility in organically and conventionally-grown coffee: Nutrient availability and mycorrhizas*.

PS 29-149 Franco, JG, DD Briske and A Volder, Texas A&M University. *The role of plant functional diversity in an organic intercropping system: Evaluating its effects on soil moisture and temperature dynamics and soil health*.

PS 29-150 Walsh, CL[1], J Johnson-Maynard[1], I Leslie[1], J Abatzoglou[1] and C Stöckle[2], (1)University of Idaho, (2)Washington State University. *Climate and soil variables driving the distribution of invasive earthworms in cropping systems of the Inland Pacific Northwest*.

PS 29-151 Jani, AD[1], J Grossman[2], S Hu[1] and TJ Smyth[1], (1) North Carolina State University, (2)NCSU. *Effect of root Morphology and termination approach on legume cover crop root decomposition*.

PS 29-152 Haramoto, ER, DC Brainard, S Snapp and K Kahmark, Michigan State University. *Can strip tillage with deep fertilizer banding improve agronomic nitrogen use efficiency?*.

PS 29-153 Lou, Y and AC Yannarell, University of Illinois at Urbana-Champaign. *Effects of zonal tillage on the spatial variability of soil microbial communities*.

PS 29-154 Wang, B[1], JR Seiler[1] and C Mei[2], (1)Virginia Tech, (2) Institute for sustainable and Renewable Resources, Institute of Advanced Learning and Research. *PsJN advanced the development and improved drought tolerance of Switchgrass*.

PS 29-155 Mc Hugh, NM[1], S Hughes[2], S Leather[3] and JM Holland[4], (1)Imperial College London, (2)Bournemouth University, (3)Harper Adams University, (4)Game and Wildlife Conservation Trust. *Yellowhammer Emberzia citronella breeding distribution in relation to field boundary habitat and summer foraging resources*.

PS 29-156 Warnke, AH and CT Ruhland, Minnesota State University. *The effects of harvest regime, irrigation, and salinity on stem lignocellulosic concentrations in alfalfa (Medicago sativa L.)*.

PS 29-157 Kam, YC[1], JL Hsu[1] and GM Fellers[2], (1)Tunghai University, (2)USGS. *Loss of fitness correlates in overwintering tadpoles that use artificial poolls in a lowland agroecosystem*.

PS 29-158 Ruhland, CT and AH Warnke, Minnesota State University. *The effects of salinity, irrigation and harvest regime on stem water potentials and leaf chlorophyll fluorescence parameters in Medicago sativa L.*.

PS 29-159 Schipanski, ME[1], RG Smith[2], T Pisani-Gareau[3], R Jabbour[4], DB Lewis[5], ME Barbercheck[1], DA Mortensen[1] and JP Kaye[6], (1)The Pennsylvania State University, (2)University of New Hampshire, (3)Boston College, (4)University of Maine, (5) University of South Florida, (6)Pennsylvania State University. *The structure of multivariate relationships influencing crop yields during the transition to organic management*.

PS 30 - Sustainability: Agriculture/Forestry

Exhibit Hall B, Minneapolis Convention Center

PS 30-160 LeDuc, SD, PE Morefield and CM Clark, US EPA. *The fate of CRP lands after contract expiration: 2010-2012*.

PS 30-161 Dwomoh, FK and MC Wimberly, South Dakota State University. *Historical patterns of forest cover loss in West African tropical rainforest: Has the tipping point been reached?*.

PS 30-162 Cornwell, ER[1], HC Flom[1], CM Johnson[2], KA Maier[1] and KL Shea[1], (1)St. Olaf College, (2)Arizona State University. *The effects of different nitrogen fertilizer treatments on soil characteristics, plant properties and economic returns in southeastern Minnesota cornfields*.

PS 30-163 Olszyk, DM[1], MA Bollman[1], EH Lee[1], JR Reichman[1], BM Smith[1], MG Johnson[1], MJ Storm[2], GA King[2], MD Plocher[2] and LS Watrud[1], (1)US Environmental Protection Agency/ NHEERL, (2)Dynamac Inc.. *Effects of elevated temperature on growth and reproduction of biofuels crops*.

PS 30-164 Chen, X and J Tang, Zhejiang University. *Ecological legacy in the agricultural heritage rice-fish co-culture system*.

PS 30-165 Wilhelm, JA and RG Smith, University of New Hampshire. *Shifts in weed community composition and abundance along an intercropping and soil disturbance intensity gradient*.

PS 30-166 Fang, L and D Neher, University of Vermont. *Designing compost to suppress soil pathogens*.

PS 30-167 Kuchenreuther, MA[1], LB Ranelli[1], AE Toll[1] and SL Weyers[2], (1)University of Minnesota, Morris, (2)USDA Agricultural Research Service NCSCRL. *Development of sustainable, native grass-based bioenergy production systems in the prairie region of Minnesota: Biomass production and plant community response to fertilizer and harvest treatments*.

PS 30-168 Weyers, SL[1], MA Kuchenreuther[2] and AR Wilts[1], (1)USDA Agricultural Research Service, (2)University of Minnesota, Morris. *Development of sustainable, native grass-based bioenergy production systems in the prairie region of Minnesota: Soil nutrient response to fertilizer and harvest treatments*.

PS 30-169 Fertitta, CN[1], PA Oikawa[2], GD Jenerette[3] and DA Grantz[1], (1)University of California Riverside, (2)University of California, Riverside, (3)University of California. *Assesing the sustainability of Sorghum bicolor as a biofuel crop grown in a low desert environment: Constraints on productivity and water use efficiency*.

PS 30-170 Kahl, KB, J Johnson-Maynard, K Painter and I Leslie, University of Idaho. *Soil quality indicators and economic feasibility of two organic, reduced tillage crop rotations in the Palouse region*.

PS 30-171 Smith, LC[1], AD Miller[1], RM Amasino[1], MD Casler[2], JC Sedbrook[3] and RD Jackson[1], (1)University of Wisconsin-Madison, (2)USDA - Agricultural Research Service, (3) Illinois State University. *Genetic × environmental effects on N resorption in perennial grasses for bioenergy*.

4:30 pm-6:30 pm; 5 pm-11 pm; 6:30 pm-8 pm; 8 pm-10 pm

PS 31 - Sustainability

Exhibit Hall B, Minneapolis Convention Center

PS 31-172 Ackley, JW, J Wu, MJ Angilletta, D Denardo and BK Sullivan, Arizona State University. *Heat islands, landscaping, and the thermal ecology of urban lizards*.

PS 31-173 Phillips, DL[1], CA Burdick[1], R Merja[2] and N Brown[3], (1)U.S. Environmental Protection Agency, (2)City of Corvallis, (3) Oregon State University. *Urban forest ecosystem services: A case study in Corvallis, Oregon*.

PS 31-174 Moses, KP[1], N Noell[2], D Casado[3], R Rijal[1], Y Medina[4], LR Lewis[5], M Mendez[6], PP Caballero[7], V Morales[8], AM Wilson[9], P Vezzani[10], F Massardo[11], L Sancho[12], S Russell[13], LA Cavieres[14], B Goffinet[5] and R Rozzi[15], (1) University of North Texas, (2)The Evergreen State College, (3)Chewonki Foundation, (4)Universidad de Magallanes Programa de Conservación Biocultural Subantártica - Parque Etnobotánico Omora, (5)University of Connecticut, (6)University of Concepción, Chile, (7)Instituto de Ecología y Biodiversidad (IEB) , and Universidad de Magallanes, (8)Omora Ethnobotanical Park, (9)Yale University, (10) Universidad de Magallanes, (11)University of Magallanes and Omora Ethnobotanical Park, (12)Dept. Biología Vegetal II, Fac. Farmacia, Universidad Complutense, 28040 Madrid, Spain., (13)CAZS Natural Resources, University of Wales, (14)Universidad de Concepcion, IEB Chile, (15)University of North Texas and University of Magallanes - Institute of Ecology and Biodiversity, Chile. *Ecotourism with a Hand Lens in the Miniature Forests of Cape Horn: A sustainable pathway for bryophyte conservation*.

PS 31-175 Grossman, YL and D Fang, Beloit College. *The Beloit College Sustainability Fellows Summer Program enhanced student understanding, confidence, skills, and future plans*.

5 pm-11 pm

FT 15 - Bdote Mni Sota: Environment and Culture At the Confluence of the Minnesota and Mississippi Rivers

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

Organized by: J Ford (jesse.ford@oregonstate.edu)

6:30 pm-8 pm

Ecology Letters Drinks Reception

200H, Minneapolis Convention Center

Oecologia Editorial Board Reception

Rochester, Hilton Minneapolis

Bringing the Eugene P. Odum School of Ecology to Minneapolis

M101C, Minneapolis Convention Center

ESA Applied Ecology, Agroecology, Urban Ecosystems, Human Ecology, and Environmental Justice Join Mixer

200D, Minneapolis Convention Center

ESA Asian Ecology Section Business Meeting and Mixer

200F, Minneapolis Convention Center

ESA Biogeosciences, Microbial Ecology, and Soil Ecology Sections Joint Mixer

Blrm EF, Hilton Minneapolis

ESA Certification Mixer

200J, Minneapolis Convention Center

ESA Education Section Mixer

200G, Minneapolis Convention Center

ESA Fund for the Future Donor Reception *(by invitation only)*

The Gallery, Hilton Minneapolis

ESA Student Section Business Meeting and Awards Ceremony

L100E, Minneapolis Convention Center

NEON Meet and Greet

Blrm C, Hilton Minneapolis

Tropical Mixer Sponsored by the Organization for Tropical Studies

200C, Minneapolis Convention Center

8 pm-10 pm

SS 15 - DataNet: Demonstrations of Data Discovery, Access, and Sharing Tools

101B, Minneapolis Convention Center

Organized by: TA Kugler (takugler@umn.edu)

This session will include demonstrations of tools developed by projects in NSF's DataNet initiative that form the basis of scientific data infrastructure, making it easier for researchers to identify, access, and work with existing data and to share their data and results with others.

Speakers:
A Budden, DataONE, University of New Mexico
TA Kugler, University of Minnesota
R Moore, University of North Carolina at Chapel Hill
RH McDonald, Indiana University
S Choudhury, Johns Hopkins University
M Jones, National Center for Ecological Analysis and Synthesis

SS 16 - Ecological Footprint

L100A, Minneapolis Convention Center

Organized by: S Shakir hanna (safwat_shakir@yahoo.com)

Discussion of Ecological Footprint Issue and Impacts of Human Activities on the Ecosystems

SS 17 - Ecological Theory in Microbial Ecology

101A, Minneapolis Convention Center

Organized by: K Xue

Session speakers will present their opinions and/or experiences in applying or testing ecological theories from plant community into micro-ecology to improve our understanding of the earth's systems.

SS 18 - Incorporating Ecology into Green Roof Research

L100C, Minneapolis Convention Center

Organized by: L Blaustein (leon@research.haifa.ac.il), G Kadas

Green roof research has been largely advanced by architects, urban planners and engineers. Ecological input into creating green roof systems to mitigate lost biodiversity on urban lands is lagging. We will explore the use ecological principles to guide future green roofs research and opportunities to develop and test ecological theories.

L Blaustein, University of Haifa–*Incorporating ecology into green roof research: introductory remarks*
S Tran and J Lundholm, Saint Mary's University–*Plant leaf traits predict green roof ecosystem services*
J Lundholm, Saint Mary's University–*Not all plant species mixtures are created equal on green roofs: Additive partitioning reveals complementary groups of species and growth forms*
A Heim and J Lundholm, Saint Mary's University–*The effects of soil depth, competition, and facilitation on plant growth on a green roof*
G Grant, Green Roof Consultancy Ltd–*Creating biodiverse extensive green roofs by planting native species in natural associations*
K Ksiazek[1], RK Tonietto[2] and K Skogen[3], (1)Northwestern University/ Chicago Botanic Garden, (2)Northwestern Universtiy & Chicago Botanic Garden, (3)Chicago Botanic Garden–*Green roofs provide resources for native forbs and bees in Chicago*
L Blank[1], G Kadas[2] and L Blaustein[1], (1)University of Haifa, (2)University of East London–*Horizontal and vertical island biogeography on green roofs*
TJ Slabe[1] and J Bousselot[2], (1)Environmental Protection Agency, (2) Centenial–*A photovoltaic array on a green roof in Denver, Colorado, improves resilience of green roof plants by expanding habitat heterogeneit*

SS 19 - Open Science and Ecology (Open Format)

L100D, Minneapolis Convention Center

Organized by: C Strasser (carly.strasser@ucop.edu), K Ram

The future of ecology is intertwined with the open science movement; we will provide an overview of all things open, how open science benefits research, and explain how researchers can participate in and benefit from engaging in open science.

Speakers:
C Boettiger, UC Santa Cruz
E Feinstein, Dryad Repository
R Neches, UC Davis
SA Chamberlain, Rice University

SS 20 - Biodiversity and Ecosystem Services on the Global Stage: IPBES and You

L100F, Minneapolis Convention Center

Organized by: E Sztein, PH Raven

Moderator: PH Raven

The U.S. needs to fully engage its scientific community in the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES). Speakers will discuss the changing landscape in global environmental science initiatives and the latest IPBES updates, share input opportunities, and discuss ways to broadly engage U.S scientists and other stakeholders.

Speakers:
H Mooney, Stanford University
TD Beard Jr., USGS
H Tallis, The Nature Conservancy

WK 41 - Developing Action Plans for Incorporating Environmental Justice (EJ) in Ecological Research and Education: Learning from Diverse EJ Practitioners How to Shape Future Community Sustainability

L100B, Minneapolis Convention Center

Organized by: CR Cid (cid@easternct.edu), LM Jablonski, MM Gregory, JL Shirk, TS Carey

Moderator: SJ Peters

Through an interactive guided process, participants will develop action plans to integrate environmental justice (EJ) in their research and education projects and institutional culture. The workshop will feature ESA EJ resources and discussion with EJ practitioners, and build upon insights from the Doing Justice Through Your Research OOS.

Speakers:
HL Ballard, University of California, Davis

WK 42 - Ecological Inquiry in a Virtual World

Board Rm 3, Hilton Minneapolis

Organized by: XB Wu, S Knight, A Webb

Enable your students to explore patterns of vegetation distribution and influencing factors in Wolong Nature Reserve through field-based ecological inquiries in the "Virtual Ecological Inquiry" (VEI) environment in Second Life. Examine pedagogies and assessment for student learning through virtual inquiry. Explore possible adoption of VEI and potential multi-institutional research collaboration.

Wednesday, August 7

Business Meetings and Receptions

5:30 am-7 am

TK 3 - ESA Sunrise 5K Fun Run/ Walk in Minneapolis
Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

7 am-8:30 am

ESA Historical Records Committee Business Meeting
Director's 2, Hilton Minneapolis

7 am-9 am

***Ecosystems* Editorial Board Meeting**
Rochester, Hilton Minneapolis

ESA Development Committee Business Meeting
Board Rm 1, Hilton Minneapolis

ESA Meetings Committee Business Meeting
M100A, Minneapolis Convention Center

ESA Publications Committee Business Meeting
Director's 3, Hilton Minneapolis

7:30 am-9:30 am

Committee on Diversity and Education Business Meeting
Director's 4, Hilton Minneapolis

11:30 am-12 pm

ESA Presider/AV Training Session
101D, Minneapolis Convention Center

11:30 am-1:15 pm

Carleton College Alumni and Friends Brown Bag Lunch
200J, Minneapolis Convention Center

ESA Environmental Justice Business Meeting
Director's 4, Hilton Minneapolis

ESA Tutorial for ESA Website Updates: All Section/Chapter Chair Invited
M100HC, Minneapolis Convention Center

Theoretical Ecology Journal Editorial Board Meeting
Director's 2, Hilton Minneapolis

Urban Ecosystem Ecology Section Business Meeting
200G, Minneapolis Convention Center

12:15 pm-1:15 pm

PL-3 - ESA Recent Advances Lecture
Auditorium, Rm 3, Minneapolis Convention Center

6:30 pm-8 pm

Colorado State University Ecologists Mixer Sponsored by the Graduate Degree Program in Ecology and the School of Global Environmental Sustainability
200A, Minneapolis Convention Center

ESA Natural History Section
Rochester, Hilton Minneapolis

ESA Physiological Ecology Section Mixer and Business Meeting
200I, Minneapolis Convention Center

ESA Plant Population Ecology Section Mixer and Business Meeting
200H, Minneapolis Convention Center

TK 4 - ESA SEEDS Diversity Celebration
Hubert H Humphrey School of Public Affairs Atrium, University of Minnesota

Wednesday Sessions

5:30 am-7 am

TK 3 - ESA Sunrise 5K Fun Run/Walk in Minneapolis

Level One, Reg Area, 3rd Ave South Lobby, Minneapolis Convention Center

7 am-8:30 am

ESA Historical Records Committee Business Meeting

Director's 2, Hilton Minneapolis

7 am-9 am

Ecosystems Editorial Board Meeting

Rochester, Hilton Minneapolis

ESA Development Committee Business Meeting

Board Rm 1, Hilton Minneapolis

ESA Meetings Committee Business Meeting

M100A, Minneapolis Convention Center

ESA Publications Committee Business Meeting

Director's 3, Hilton Minneapolis

7:30 am-9:30 am

Committee on Diversity and Education Business Meeting

Director's 4, Hilton Minneapolis

8 am-10 am

IGN 7 - Demystifying Science Communication, Policy, and Decision-making: Experiences of Scientist-practitioners

101C, Minneapolis Convention Center

Organized by: MVV Johnson (mjohnson@brc.tamus.edu), F Kearns

Moderator: A Bartuska

The skills needed to be a successful scientist outside of academia are often surprising. This venue will enhance communication between scientist practitioners and research scientists and serve as a resource for those interested in non-academic careers and/or improving the impact of their work in the policy making arena.

IGN 7-1 Kearns, FR, University of California, Agriculture and Natural Resources. *Another kind of knowledge: Understanding how relationships drive science communication and policy while keeping them from driving you crazy*.

IGN 7-2 Johnson, MVV, USDA-NRCS. *Why does some research collect dust while other work changes the world?*.

IGN 7-3 Hidinger, LA, Arizona State University. *The Usefulness of Use-Inspired Research for Researchers and Practitioners*.

IGN 7-4 Fallon, S, Natural Resources Defense Council. *How to use science (and scientists!) to empower policy*.

IGN 7-5 Cloyd, ET, US Global Change Research Program. *Building bridges and crossing boundaries - public participation and the role of the scientist-practitioner*.

IGN 7-6 Novy, AE, U.S. Botanic Garden. *Communicating science in a highly politicized environment*.

IGN 7-7 Wee, B, National Ecological Observatory Network (NEON, Inc.). *Communications: how do you write code for the mind?*.

IGN 7-8 Herrick, JE, USDA Agricultural Research Service. *Becoming a scientist-practitioner or practitioner-scientist – advice to students and people that care about them*.

IGN 7-9 Thuesen, K, City of Austin/Wildland Conservation Division. *Pursue Your Passion, Make it Your Profession*.

IGN 7-10 Lymn, N, Ecological Society of America. *It's (not always) academic: leveraging the strength of ESA's multi-faceted membership to make real world differences*.

IGN 8 - Is the Interaction of Evolutionary and Ecological Dynamics Widespread or a Special Case?

101E, Minneapolis Convention Center

Organized by: CE Brassil (cbrassil@unl.edu), DM Post

Moderator: CT Kremer

This session will be an exploded panel discussion on whether recent theoretical and empirical work showcasing the potential for interplay between evolutionary and ecological dynamics is representative of broad phenomena or specialized, contrived scenarios?

IGN 8-1 Brassil, CE, University of Nebraska. *An overview of outstanding questions in eco-evolutionary dynamics*.

IGN 8-2 Abrams, PA, University of Toronto. *Evolutionary effects on population densities in a consumer-resource context; some basic theory*.

IGN 8-3 Fussmann, GF, McGill University. *Eco-evolutionary dynamics in vitro*.

IGN 8-4 Koelle, K and S Luo, Duke University. *Navigating the Devious Course of Evolution with Mechanistic Models: Lessons Learned from Infectious Diseases*.

IGN 8-5 Bassar, RD[1], DN Reznick[2] and J Travis[3], (1)University of Massachusetts, (2)University of California, Riverside, (3) Florida State University. *How can we empirically study eco-evo feedbacks?*.

IGN 8-6 Travis, J[1] and DN Reznick[2], (1)Florida State University, (2) University of California, Riverside. *What's A Meaningful Eco-Evo Interaction?*.

IGN 8-7 Gomulkiewicz, R, Washington State University. *Classifying species interactions for community and coevolutionary dynamics*.

IGN 8-8 Miller, TEX, Rice University. *Dynamics of range expansion*.

IGN 8-9 Schweitzer, JA, University of Tennessee - Knoxville. *Above- and belowground interactions link ecology and evolution*.

IGN 8-10 Post, DM, Yale University. *Closing Summary and Final Empirical Examples*.

8 am-10 am; 8 am-11:30 am

IGN 9 - Urban Ecology: From Biophysics to Society

101H, Minneapolis Convention Center

Organized by: CJ Tanner, FR Adler

Moderator: CJ Tanner

Ecological processes are amplified and tightly connected in urban areas, with nutrients, resources, energy and biomass packed densely into environments that change rapidly in space and time. This Ignite session will focus on these connections from the complementary perspectives of ecological theory and interactions between policy and ecology.

IGN 9-1 Adler, FR, University of Utah. *How classic ecological principles apply to urban ecology: Linking across scales and disciplines*.

IGN 9-2 Grimm, NB, Arizona State University. *Urban stormwater and the new normal*.

IGN 9-3 Groffman, PM, Cary Institute of Ecosystem Studies. *Ecological homogenization of urban America*.

IGN 9-4 Munshi-South, J, Baruch College, City University of New York. *Evolutionary forces in urban landscapes*.

IGN 9-5 Pataki, DE[1], S Pincetl[2] and SJ Hinners[3], (1)University of Utah, (2)UCLA, (3)Metropolitan Research Center. *The Science of Middle Nature: An Alternative to Urban Ecosystem Services*.

IGN 9-6 Pavao-Zuckerman, M, University of Arizona. *Green and brown infrastructure for urban transitions*.

IGN 9-7 Wilson, WG, Duke University. *Urban Climate and Social Inequities*.

IGN 9-8 Levin, S, Princeton University. *Public goods, common pool resources and the city*.

8 am-11:30 am

SYMP 10 - Monitoring Ecosystem Services: Standardizing Metrics and Serving Policy

M100EF, Minneapolis Convention Center

Organized by: H Tallis, R Chaplin-Kramer

Moderator: H Tallis

Bringing together international policy and science perspectives, this symposium will highlight efforts to define and use ecosystem service metrics in the service of deeper socio-ecological understanding and more sustainable management.

8:00 AM SYMP 10-1 Ash, N[1] and A Larigauderie[2], (1)UNEP, (2)Executive Director, DIVERSITAS. *The demand for ecosystem service metrics on the international stage*.

8:30 AM SYMP 10-2 Reyers, B[1], H Tallis[2], J Nel[1], R Chaplin-Kramer[2], S Polasky[3], P Balvanera[4], P O' Farrell[1], JP Castaneda[5], O Selomane[1] and DS Karp[2], (1)CSIR, (2)Stanford University, (3)University of Minnesota, (4)Universidad Nacional Autónoma de México, (5)Instituto Centroamericano de Estudios Fiscales (ICEFI). *Ecosystem service indicators: Moving beyond supply to assessing the consequences for human wellbeing*.

9:00 AM SYMP 10-3 Guerry, A[1], JR Bernhardt[2], SA Wood[3] and J Spencer[4], (1)The Natural Capital Project & Stanford University, (2)University of British Columbia, (3)The Natural Capital Project, Stanford University, (4)West Coast Aquatic. *What local marine managers want to know about ecosystem service change*.

9:30 AM Break

9:40 AM SYMP 10-4 Balvanera, P[1], DS Karp[2], H Tallis[2], R Chaplin-Kramer[2], S Wolny[2], S Polasky[3], BL Keeler[4], D Cameron[5], J Goldstein[6], C Pacheco[7], S Quijas[1], P West[3], N Bhagabati[8], KA Brauman[3], P Engstrom[4], JS Gerber[4] and K Kovacs[3], (1)Universidad Nacional Autónoma de México, (2)Stanford University, (3)University of Minnesota, (4)Institute on the Environment, (5)The Nature Conservancy - California, (6)Colorado State University, (7)Universidad de Guadalajara, (8)World Wildlife Fund. *Metrics for assessing ecosystem service tradeoffs and bundles*.

10:10 AM SYMP 10-5 Chaplin-Kramer, R[1], JL Nelson[2] and L Bremer[3], (1)Stanford University, (2)University of California, Santa Cruz, (3)San Diego State University - University of California, Santa Barbara. *Standardizing in-situ observations of ecosystem services*.

10:40 AM Discussion

SYMP 11 - The Ecology of Enzymes in the Environment: New Insights into Controls on Enzyme Production, *in situ* Activity, and Turnover and Their Roles in Ecosystem Responses to Environmental Change

205AB, Minneapolis Convention Center

Organized by: MD Wallenstein, MN Weintraub, C Bell

Endorsed by: Biogeosciences Section, Microbial Ecology Section

Moderator: C Bell

This session will highlight recent advances in our understanding of the ecology of enzymes, and applications to understanding ecosystem response to environmental change.

8:00 AM SYMP 11-1 Wallenstein, MD, Colorado State University. *Enzymes in the environment: What do we really know?*.

8:30 AM SYMP 11-2 Weintraub, MN, University of Toledo. *Extracellular enzymes in the rhizosphere: Who is producing them and why*.

9:00 AM SYMP 11-3 Waring, BG[1], SR Weintraub[2] and R Sinsabaugh[3], (1)University of Texas at Austin, (2)University of Colorado, (3)University of New Mexico. *Relationships among climate, soil nutrients, and enzyme stoichiometry in low-latitude ecosystems: A pan-tropical analysis*.

9:30 AM Break

9:40 AM SYMP 11-4 Allison, SD[1], C Alster[2], Y Lu[3] and DP German[3], (1)University of California, (2)Carleton College, (3)University of California, Irvine. *Resilience of extracellular enzymes to environmental change*.

10:10 AM SYMP 11-5 Fontaine, S, INRA. *EXOMET: An extracellular oxidative metabolism that substantially contributes to soil CO_2 emissions*.

10:40 AM SYMP 11-6 Davidson, EA, The Woods Hole Research Center, Massachusetts. *Re-bugging biogeochemical models: Parsimoniously representing microbial enzymatic processes in models of soil organic matter decomposition*.

11:10 AM Discussion

SYMP 12 - Using Education Theory: Learning From the Past to Shape the Future of Ecology Teaching

Auditorium, Rm 3, Minneapolis Convention Center

Organized by: C D'Avanzo (cdavanzo@hampshire.edu)

Endorsed by: Education Section

Moderator: C D'Avanzo

This symposium focuses on two especially promising theoretical frameworks for ecology and biology teaching transformations - Learning Progressions and Modeling To Learn - and is designed to promote more widespread application of education and pedagogical theory to ecology teaching reform.

8:00 AM SYMP 12-1 Maskiewicz, A, Point Loma Nazarene University. *Applying education theory to ecology teaching: What does that mean?*.

8:30 AM SYMP 12-2 Anderson, CW, JM Dauer and JH Doherty, Michigan State University. *Learning progression theory: Background and application to ecology teaching and learning*.

9:00 AM SYMP 12-3 Doherty, JH[1], LM Hartley[2], C Harris[3], CW Anderson[1], AR Berkowitz[3] and JC Moore[4], (1)Michigan State University, (2)University of Colorado Denver, (3)Cary Institute of Ecosystem Studies, (4)Colorado State University. *Using learning progressions to describe how students develop increasingly sophisticated understandings of biodiversity*.

9:30 AM Break

9:40 AM SYMP 12-4 Long, TM[1], J Dauer[1], SW Hunt[1], JL Momsen[2], E Bray Speth[3] and SA Wyse[4], (1)Michigan State University, (2)North Dakota State University, (3)Saint Louis University, (4)Bethel University. *Modeling as a way to promote and reveal learning about biological systems*.

10:10 AM SYMP 12-5 Momsen, JL, North Dakota State University. *Student-constructed models reveal biogeochemical understanding*.

10:40 AM SYMP 12-6 Dauer, J, T Long, KM Kostelnik and E Usoro, Michigan State University. *Long-term knowledge and skill retention in undergraduate biology students*.

11:10 AM Discussion

OOS 15 - Evaluating The Dynamics Of Tree Species Range Limits Under Climate Change For Sustaining Biodiversity

101A, Minneapolis Convention Center

Organized by: A Prasad

Moderator: L Iverson

Evaluates the historical, evolutionary and ecological dynamics of tree species range limits under climate change. Uses newer data and multiple modelling techniques to predict distributional changes and, manage and sustain biodiversity.

8:00 AM OOS 15-1 McLachlan, J and CY Lumibao, University of Notre Dame. *Combined impacts of rarity and anthropogenic habitat fragmentation on genetic diversity at species range-limits*.

8:20 AM OOS 15-2 Schwartz, MW, University of California, Davis. *Spatial projections of past and future distributions to inform managing tree diversity under climate change*.

8:40 AM OOS 15-3 Potter, KM[1], W Hargrove[2], VD Hipkins[3], RE Means[4] and RM Jetton[1], (1)North Carolina State University, (2)USDA Forest Service, Eastern Forest Environmental Threat Assessment Center, (3)USDA Forest Service, (4)Bureau of Land Management. *Looking back to see ahead: Considering genetic divergence within tree species to anticipate responses to climate change*.

9:00 AM OOS 15-4 Katz, DW and I Ibanez, University of Michigan. *The impact of biotic interactions on seedling recruitment during tree range expansion*.

9:20 AM OOS 15-5 Bahn, V[1], SN Matthews[2] and X Morin[3], (1) Wright State University, (2)The Ohio State University, (3) CNRS. *Processes at work on North American tree species range edges have implications for the predictability of their movements under climate change*.

9:40 AM Break

9:50 AM OOS 15-6 Matthews, SN[1], L Iverson[2], A Prasad[2] and MP Peters[2], (1)The Ohio State University, (2)Northern Research Station, USDA Forest Service. *Incorporating range position and temporal stability of projected changes in tree species habitats to assess regional climate change vulnerability*.

10:10 AM OOS 15-7 Prasad, A, Northern Research Station, USDA Forest Service. *Tree suitable habitats and colonization potential dynamics at range boundaries under climate change - an integrated modelling perspective*.

10:30 AM OOS 15-8 Hamann, A, University of Alberta. *Accounting for adaptive potential and migration capacity in species distribution models: conservation and management applications*.

10:50 AM OOS 15-9 Merow, C[1], AM Latimer[2], AM Wilson[3], S McMahon[4] and JA Silander[5], (1)Smithsonian Environmental Research Center, (2)University of California Davis, (3)Yale University, (4)Smithsonian Tropical Research Institute, (5) University of Connecticut. *Demographically driven distribution models; Advantages of using integral projection models to incorporate demography into species distribution models*.

11:10 AM OOS 15-10 Ordonez, A[1] and JW Williams[2], (1)Nelson Institute Center for Climatic Research (CCR), University of Wisconsin – Madison, (2)University of Wisconsin – Madison. *Climatic and biotic velocities for woody taxa distributions over the last 16,000 years in eastern North America*.

OOS 16 - Informing and Evaluating Climate Change Adaptation Approaches Using Historic Ecological Data Records

101B, Minneapolis Convention Center

Organized by: AW D'Amato, JB Bradford

Moderator: JB Bradford

Session explores the application of historical ecological methods to inform climate change adaptation strategies.

8:00 AM OOS 16-1 McKenzie, DA[1], AW D'Amato[1], BJ Palik[2], S Fraver[3], JB Bradford[4] and JC Brissette[5], (1)University of Minnesota, (2)USDA Forest Service, Northern Research Station, (3)USDA Forest Service, (4)US Geological Survey, (5)Northern Research Station, USDA Forest Service. *Long-term silviculture experiments impact stand-level weather sensitivity, resistance, and resilience*.

8:20 AM OOS 16-2 Foster, JR[1], AW D'Amato[1] and JB Bradford[2], (1)University of Minnesota, (2)US Geological Survey. *Characterizing the differential sensitivity of tree species and*

forest types to past weather variability using dendrochronological techniques.

8:40 AM OOS 16-3 Battaglia, M, L Asherin and RT Graham, USFS Rocky Mountain Research Station. *The tradeoff of maximizing forest carbon storage and resiliency to disturbance: An assessment using long-term ponderosa pine density management growth data*.

9:00 AM OOS 16-4 Munson, SM[1], J Belnap[2] and RH Webb[2], (1) USGS - Southwest Biological Science Center, (2)USGS. *Regional signatures of plant response to climate across North American deserts: Forecasts for management and planning*.

9:20 AM OOS 16-5 Duniway, MC[1], HC Monger[2], JE Herrick[3] and J Anderson[2], (1)US Geological Survey, (2)New Mexico State University, (3)USDA Agricultural Research Service. *Climate change insights from long-term soil-moisture data collected across a desert basin*.

9:40 AM Break

9:50 AM OOS 16-6 Adler, PB[1], KM Byrne[2] and J Leiker[3], (1)Utah State University, (2)Colorado State University, (3)Sternberg Museum of Natural History. *Can the past predict the future? Experimental tests of historically-based population models*.

10:10 AM OOS 16-7 Eggert, SL[1], JB Wallace[1], JR Webster[2], JL Meyer[1], AD Rosemond[1], WF Cross[3] and JM Davis[1], (1)University of Georgia, (2)Virginia Polytechnic Institute and State University, (3)Montana State University. *Using long-term datasets to examine effects of disturbance and climate change on ecosystem function in forested headwater streams*.

10:30 AM OOS 16-8 Petry, WK[1], TEX Miller[2], JD Soule[3] and KA Mooney[1], (1)University of California at Irvine, (2)Rice University, (3)Rocky Mountain Biological Laboratory. *Historical demography along a climatic gradient: Generating predictions of population responses to climate change in the montane dioecious herb Valeriana edulis*.

10:50 AM OOS 16-9 Yospin, GI[1], RE Keane[2] and C Whitlock[1], (1) Montana State University, (2)USDA Forest Service, Rocky Mountain Research Station. *Simulations of historic and future vegetation and fire dynamics in sub-alpine Tasmania, Australia, using FireBGCv2: insights from aligning simulation results with historical proxy records*.

11:10 AM OOS 16-10 Beller, EE[1], RM Grossinger[1], MN Salomon[1], P Downs[2] and BK Orr[3], (1)San Francisco Estuary Institute, (2)Plymouth University, (3)Stillwater Sciences. *Restoring riverine resilience: Using historical ecology to reconstruct eco-geomorphic complexity on an intermittent river, lower Santa Clara River, Ventura County, CA*.

OOS 17 - The Development of Regional Plot-Based Vegetation Classifications: How Classifications Based on Large Sets of Plot Data Further Our Understanding of Vegetation Ecology and Conservation

101D, Minneapolis Convention Center

Organized by: DS Wovcha (daniel.wovcha@state.mn.us), S Menard, KA Rusterholz

Moderator: KA Rusterholz

This session will examine classifications developed using analysis of large sets of vegetation plot data and the role of these classifications and of large vegetation datasets in furthering our understanding of vegetation ecology and in guiding biodiversity conservation and resource management.

8:00 AM OOS 17-1 Byers, EA, JP Vanderhorst and BP Streets, West Virginia Division of Natural Resources. *Wild and wonderful West Virginia wetlands: First iteration of a plot-based vegetation classification*.

8:20 AM OOS 17-2 Edinger, G, New York State Department of Environmental Conservation. *Developing vegetation classifications for federal lands in New York using analysis of plot data*.

8:40 AM OOS 17-3 Keeler-Wolf, T, California Department of Fish and Wildlife. *Twenty years of sampling and classifying vegetation in California*.

9:00 AM OOS 17-4 Wovcha, DS, NE Aaseng, JC Almendinger, RP Dana, DS Hanson, MD Lee, ER Rowe and KA Rusterholz, Minnesota Department of Natural Resources. *Minnesota's native plant community classification: From a set of vegetation plot data to a statewide classification*.

9:20 AM OOS 17-5 Perleberg, DJ and PJ Radomski, Minnesota Department of Natural Resources. *Classifying lake plant communities: Challenges and approaches*.

9:40 AM Break

9:50 AM OOS 17-6 Peet, RK and KA Palmquist, University of North Carolina. *The challenges and consequences of use of a large plot database to improve the USNVC classification of Pinus palustris savannas of the southeastern Coastal Plain*.

10:10 AM OOS 17-7 Menard, S[1] and KA Rusterholz[2], (1)NatureServe, (2)Minnesota Department of Natural Resources. *The influence of Minnesota's quantitative native plant community classification on the development of the U.S. National Vegetation Classification*.

10:30 AM OOS 17-8 Uhlig, P[1], K Baldwin[2], KA Chapman[2] and MC Wester[1], (1)Ontario Ministry of Natural Resources, (2)Natural Resources Canada, Canadian Forest Service. *Compilation of a national plot database for the Canadian National Vegetation Classification and its contribution to the development of Ontario's Ecological Land Classification treed vegetation types*.

10:50 AM OOS 17-9 Faber-Langendoen, D, NatureServe. *Working towards a Distributed Model of Vegetation Plot Databases to support Vegetation ecology in North America*.

11:10 AM OOS 17-10 Almendinger, JC, Minnesota Department of Natural Resources. *Silvicultural interpretation of vegetation plot data*.

OOS 18 - What Is The Fate Of a Forest Without Vertebrate Frugivores? Merging Case Studies With Theory

101F, Minneapolis Convention Center

Organized by: HS Rogers (haldre@rice.edu), CE Aslan

Moderator: JJ Tewksbury

We aim to combine case studies of vertebrate seed dispersal loss with theoretical views on the importance of dispersal to develop a comprehensive view of the importance of seed dispersal to forest diversity and community structure.

8:00 AM OOS 18-1 Aslan, CE, Arizona-Sonora Desert Museum. *Vertebrate frugivore loss: High-risk geographic areas and hypothesized community-level impacts*.

8:20 AM OOS 18-2 Schleuning, M[1], JS Markl[1], PM Forget[2], P Jordano[3], JE Lambert[4], A Traveset[5], SJ Wright[6] and K Böhning-Gaese[1], (1)Biodiversity and Climate Research Centre (BiK-F), (2)Museum National d'Histoire Naturelle, (3)Estación Biológica de Doñana, CSIC, (4)The University of Texas at San Antonio, (5)IMEDEA (CSIC-UIB), (6)Smithsonian Tropical Research Institute. *Size matters: Meta-analysis of the effects of human disturbance on seed dispersal by animals*.

8:40 AM OOS 18-3 Stoner, KE[1], OM Chavez[2], V Arroyo-Rodriguez[3] and M Martinez-Ramos[3], (1)Texas A&M University - Kingsville, (2)a Pontifícia Universidade Católica do Rio Grande do Sul, (3)Universidad Nacional Autonoma de Mexico. *Does primate disappearnace influcence the advanced regeneration assemblage in rainforest fragments*.

9:00 AM OOS 18-4 Beckman, NG, The Ohio State University. *Theory: Impact of disperser loss on forest communities, plant spatial patterns, and plant diversity*.

9:20 AM OOS 18-5 Frechette, JL[1] and DJ Levey[2], (1)University of Florida, (2)National Science Foundation. *An experimental test of gibbon and bird seed dispersal patterns*.

9:40 AM Break

9:50 AM OOS 18-6 Detto, M[1] and HC Muller-Landau[2], (1)Smithsonian Tropical Research Institute, (2)Smithsonian Tropical Research Institution. *The study of spatiotemporal ecological point processes*.

10:10 AM OOS 18-7 Reid, JL[1], CD Mendenhall[2], JA Rosales[3], R Gómez[3], RA Zahawi[3] and KD Holl[1], (1)University of California Santa Cruz, (2)Stanford University, (3)Organization for Tropical Studies. *Frugivore communities and seed rain in regenerating pastures in Costa Rica*.

10:30 AM OOS 18-8 Drake, DR[1] and KR McConkey[2], (1)University of Hawai'i at Manoa, (2)A. V. Rama Rao Research Foundation. *How might Pacific Island forests be affected by the loss of native seed dispersers and their replacement by novel species?*.

10:50 AM OOS 18-9 Loayza, AP, DE Carvajal, PA García-Guzman, JR Gutiérrez and FA Squeo, Universidad de La Serena. *Predators and dispersers: Rodents leave viable seed fragments of a threatened Atacama Desert plant in suitable sites for recruitment*.

11:10 AM OOS 18-10 Rogers, HS[1], J HilleRisLambers[2] and JJ Tewksbury[3], (1)Rice University, (2)University of Washington, (3) WWF International. *Case study: The impact of complete frugivore loss on the island of Guam*.

OOS 19 - White-Tailed Deer: Ecology, Management and Social Consequences Of An Overabundant Wildlife Species

101G, Minneapolis Convention Center

Organized by: LM Christenson (lychristenson@vassar.edu), KL VanCamp, ML Ronsheim

Moderator: LM Christenson

White-tailed deer impact ecological and social systems and finding practical management options is difficult when science and society collide.

8:00 AM OOS 19-1 Weldy, T, CL Zimmerman and RR Shirer, The Nature Conservancy of New York. *Deer and The Nature Conservancy: What organizations can do to limit impacts of deer on our forests*.

8:20 AM OOS 19-2 Eschtruth, AK, University of California, Berkeley. *Compounded disturbances in forest invasion: The importance of interactions between an exotic insect pest and deer herbivory*.

8:40 AM OOS 19-3 Fisichelli, N[1], N Eisenhauer[2], L Frelich[3] and PB Reich[4], (1)National Park Service, (2)Friedrich-Schiller-University Jena, (3)University of Minnesota - Twin Cities, (4)University of Minnesota. *Deer and earthworms modify forest responses to climate change*.

9:00 AM OOS 19-4 Ronsheim, ML, LM Christenson and KL VanCamp, Vassar College. *What twenty years of deer exclusion can do to an ecosystem*.

9:20 AM OOS 19-5 VanCamp, KL, Vassar College. *Managing white-tailed deer in an urban area: The consequences of responding to local impacts at a small liberal arts college*.

9:40 AM Break

9:50 AM OOS 19-6 Rutberg, AT, Tufts-Cummings School of Veterinary Medicine. *Why kill deer? Contraception and conflict in wildlife management*.

10:10 AM OOS 19-7 Vantassel, S, University of Nebraska-Lincoln. *Understanding suburbia's opposition to lethal control of wildlife*.

10:30 AM OOS 19-8 Flagel, DG and GE Belovsky, University of Notre Dame. *Great Lakes forest restoration through gray wolf recolonization*.

10:50 AM OOS 19-9 Rhodes, A, S St.Clair and HY Wan, Brigham Young University. *Herbivory by mule deer and cattle suppress aspen basal shoot height; threatening aspen stand resilience across three National Forests*.

11:10 AM OOS 19-10 Murray, BD, CR Webster, BE Tahtinen, CS Tarasoff, JK Bump and AJ Burton, Michigan Technological University. *Conditional migration and foraging patch selection by a generalist herbivore results in a spatial resource subsidy in relict eastern hemlock forest*.

COS 51 - Aquatic Ecology: Streams And Rivers

101I, Minneapolis Convention Center

8:00 AM COS 51-1 Grider, NT[1], R Hilsabeck[2] and MJ Lemke[3], (1) University of Illinois, Springfield, (2)Illinois Department of Natural Resources, (3)University of Illinois at Springfield. *Monitoring an apex predator: Alligator gar (Atractosteus spatula) reintroduced into Merwin Preserve, Illinois*.

8:20 AM COS 51-2 Maier, MA, TD Peterson and JA Needoba, Oregon Health and Science University. *Dynamics of chytrid infections on diatoms in a turbulent river system*.

8:40 AM COS 51-3 Niu, SQ and JH Knouft, Saint Louis University. *Streamflow, trophic interactions, and stream fish assemblages*.

9:00 AM COS 51-4 Childress, ES and PB McIntyre, University of Wisconsin. *Gametes and excretion from iteroparous migratory suckers subsidize spawning streams*.

9:20 AM COS 51-5 Orlofske, JM[1], WA Monk[2] and DJ Baird[2], (1) University of New Brunswick & Canadian Rivers Institute,

(2)Environment Canada @ Canadian Rivers Institute & University of New Brunswick. *Monitoring ecological flows in the Miramichi River, NB using the Canadian Ecological Flow Index (CEFI) and aquatic insect traits*.

9:40 AM Break

9:50 AM COS 51-6 Smiley, PC Jr., KW King and NR Fausey, USDA-ARS. *Spatial and temporal trends in pesticide mixtures within channelized agricultural headwater streams in central Ohio*.

10:10 AM COS 51-7 Malloy, EM, S Grubbs and AJ Meier, Western Kentucky University. *Trophic dynamic interactions in a temperate river: a comparison between high and lower karst flow reaches*.

10:30 AM COS 51-8 Lisi, PJ and DE Schindler, University of Washington. *Watershed filtering of climate produces heterogeneity in stream thermal regimes*.

10:50 AM COS 51-9 Johnston, GP and LG Leff, Kent State University. *Microbial community composition in polycyclic aromatic hydrocarbon- contaminated sediments*.

COS 52 - Biogeochemistry: Linking Community Structure And Ecosystem Function II

101J, Minneapolis Convention Center

8:00 AM COS 52-1 Gough, L[1], ND Bettez[2] and KA Slavik[3], (1) University of Texas at Arlington, (2)Cary Institute of Ecosystem Studies, (3)University of Michigan. *Effects of long-term resource additions in arctic lake, stream, and tundra environments: Beyond NPP*.

8:20 AM COS 52-2 Averill, C[1], AC Finzi[2] and CV Hawkes[1], (1)University of Texas at Austin, (2)Boston University. *Quantifying competition between ectomycorrhizal and saprotrophic fungi, and implications for soil carbon and nitrogen cycling*.

8:40 AM COS 52-3 Isbell, F, PB Reich, D Tilman, SE Hobbie, S Polasky and S Binder, University of Minnesota. *Non-random species losses diminish productivity under chronic nutrient enrichment*.

9:00 AM COS 52-4 Tyrrell, CD[1], PA Chambers[2] and JM Culp[2], (1) University of New Brunswick, (2)Environment Canada. *Do traits or species have a greater influence on nutrient cycling among aquatic plants?*.

9:20 AM COS 52-5 Hough, M, D Chan, C Scott, BJ Enquist and M Pavao-Zuckerman, University of Arizona. *Trait-based mechanisms for predicting resilience of ecosystem service provision in an arid riparian corridor*.

9:40 AM Break

9:50 AM COS 52-6 Eviner, VT[1], JM Heraty[1], CM Malmstrom[2] and K Rice[3], (1)University of California Davis, (2)Michigan State University, (3)University of California, Davis. *Species composition in California's grasslands impacts the magnitude and timing of ecosystem services*.

10:10 AM COS 52-7 Prather, CM[1], DH Branson[2] and AN Laws[3], (1)University of Houston, (2)USDA-Agricultural Research Service, (3)Kansas State University. *The effect of herbivore diversity on plants: A test at multiple grassland sites*.

10:30 AM COS 52-8 Domine, LM[1], JB Cotner[2] and KD Zimmer[3], (1)University of St Thomas, (2)University of Minnesota - Twin Cities, (3)University of St.Thomas. *Annual metabolism of prairie pothole shallow lakes under alternative stable states*.

10:50 AM COS 52-9 Smith, AP[1], MA de Graaff[2], E Marín-Spiotta[3] and TC Balser[4], (1)University of Wisconsin-Madison, (2) Boise State University, (3)University of Wisconsin, Madison, (4)University of Florida-Gainesville. *Testing the significance of microbial ecology for soil carbon stabilization with tropical land cover change*.

11:10 AM COS 52-10 Cusack, DF[1] and TL McCleery[2], (1)UC - Los Angeles, (2)UCLA. *Understory Woody Diversity in Native- and Exotic-Dominated Forest Stands Along a Subtropical Urban-Rural Gradient*.

COS 53 - Climate Change: Plants I

L100A, Minneapolis Convention Center

8:00 AM COS 53-1 Emery, NC and CM D'Antonio, University of California Santa Barbara. *Fog water use in coastal California shrublands*.

8:20 AM COS 53-2 Renard, SM[1], EJB McIntire[2] and A Fajardo[3], (1)Laval University, (2)Natural Resources Canada & Laval University, (3)Centro de Investigacioxn en Ecosistemas de la Patagonia. *A natural experiment to measure the effect of multiple drivers on survival of tree seedlings in the alpine treeline ecotone*.

8:40 AM COS 53-3 Farrior, CE, I Rodriguez-Iturbe and SW Pacala, Princeton University. *The complexity of temporal distribution of rainfall, plant allocation, and carbon sinks*.

9:00 AM COS 53-4 Lubetkin, KC[1], A Westerling[2] and L Kueppers[3], (1)Univeristy of California at Merced, (2)University of California, Merced, (3)University of California Merced. *Spatial and temporal patterns of conifer encroachment into subalpine meadows in the central Sierra Nevada, California*.

9:20 AM COS 53-5 Kwit, M[1], JS Clark[1], JM Melillo[2] and JE Mohan[3], (1)Duke University, (2)Marine Biological Laboratory, (3)University of Georgia. *Warming interacts with environmental conditions to alter seedling carbon assimilation*.

9:40 AM Break

9:50 AM COS 53-6 Compagnoni, A and PB Adler, Utah State University. *Do the indirect effects of climate change decrease with species abundance?*.

10:10 AM COS 53-7 Gentile, RM, MBM Figueiredo and JS McLachlan, University of Notre Dame. *Back to the Future: Ancestral plants test assumptions in future growth trajectories*.

10:30 AM COS 53-8 Jensen, AM, JM Warren, PJ Hanson, J Childs, C Gunderson, DJ Weston and SD Wullschleger, Oak Ridge National Laboratory. *Seasonal and spatial carbon assimilation patterns in black spruce; assessing temperature impacts at canopy level*.

10:50 AM COS 53-9 KIM, Y[1], D Lee[1] and C Park[2], (1)Seoul National University, (2)National Institute of Environmental Research. *Predicting climate change impacts on urban plant's present probability using Bayesian model* .

11:10 AM COS 53-10 Velasco, LM[1], J Hooper[2] and GD Jenerette[3],

(1)University of California, Riverside, (2)U.S. Forest Service, (3)University of California. *Variation in city tree ecophysiological characteristics under changing temperatures*.

COS 54 - Community Disturbance And Recovery I

L100B, Minneapolis Convention Center

8:00 AM COS 54-1 Boughton, EH and RK Boughton, Archbold Biological Station. *Environmental modification by feral swine (Sus scrofa) shifts a diverse wet prairie to a monoculture of Lachnanthes caroliana*.

8:20 AM COS 54-2 Berga, M, AJ Szekely and S Langenheder, Uppsala University. *A whole ecosystem manipulation approach to study the effect of disturbances on bacterial metacommunities*.

8:40 AM COS 54-3 Hughes, MJ[1] and DJ Hayes[2], (1)University of Tennessee, (2)Oak Ridge National Laboratory. *Disturbance Type Identification in Eastern Forests*.

9:00 AM COS 54-4 LI, L and P Chesson, University of Arizona. *Responses to changing environment: nonstationary environments could promote coexistence*.

9:20 AM COS 54-5 Andruk, CM and NL Fowler, University of Texas at Austin. *Dispersal, legacy effects, and deer directly and indirectly affect community trajectories after clearing and burning*.

9:40 AM Break

9:50 AM COS 54-6 McNicoll, MB[1] and CK Augspurger[2], (1)Luther College, (2)University of Illinois. *Microsite and seed limitation in two communities dominated by contrasting grasses*.

10:10 AM COS 54-7 Carrington, ME[1], MS Ross[2] and AF Basit[1], (1) Governors State University, (2)Florida International University. *Forest succession in tropical hardwood hammocks of the Florida Keys: Post-hurricane seedlings*.

10:30 AM COS 54-8 Wilfahrt, PA[1] and PS White[2], (1)University of North Carolina, (2)University of North Carolina at Chapel Hill. *Multi-scale response of a North Carolina piedmont forest 15 years after Hurricane Fran*.

10:50 AM COS 54-9 Sáyago, R[1], M Lopezaraiza-Mikel[2], M Quesada[2], MY Alvarez-Añorve[2] and A Cascante-Marin[3], (1) Universidad Autonoma de Guerrero, (2)Universidad Nacional Autónoma de México, (3)Universidad de Costa Rica. *The conservation of epiphyte-phorophyte networks in a changing world*.

11:10 AM COS 54-10 Diggins, TP, Youngstown State University. *Exploring habitat, community, and meta-community assembly in temperate wooded headwater streams after destructive flooding*.

COS 55 - Community Pattern And Dynamics II

L100C, Minneapolis Convention Center

8:00 AM COS 55-1 McGlinn, DJ and EP White, Utah State University. *Connecting the environment to a maximum entropy prediction of the species-abundance distribution across continents and taxa*.

8:20 AM COS 55-2 Larson, DM, Kansas State University. *Fire and grazing regulate the reptile and amphibian community patch dynamics in tallgrass prairie*.

8:40 AM COS 55-3 Little, A[1], GR Guntenspergen[2] and HA Neckles[3], (1)University of Wisconsin-Stout, (2)US Geological Survey, (3)USGS Patuxent Wildlife Research Center. *Beaver and human activity affect Sphagnum communities in isolated wetlands in coastal Maine, USA*.

9:00 AM COS 55-4 Van Bael, SA[1], E Rojas[2], L Mejia[2], K Kitajima[3], G Samuels[4] and EA Herre[2], (1)Tulane University, (2)Smithsonian Tropical Research Institute, (3)University of Florida, (4)ARS-USDA. *Leaf traits and host plant-fungal endophyte associations in a tropical forest*.

9:20 AM COS 55-5 Bragion, EFA, E van den Berg and GAO Coelho, Federal University of Lavras. *Non-stable natural edges and functional groups in gallery forests in Brazil*.

9:40 AM Break

9:50 AM COS 55-6 Miller, JED[1] and EI Damschen[2], (1)University of Wisconsin, (2)University of Wisconsin-Madison. *Relationships among biological soil crusts, environment, and vascular plants in Ozark sandstone glades*.

10:10 AM COS 55-7 Larkin, DJ[1], AL Hipp[2], RK Tonietto[3] and ML Bowles[2], (1)Chicago Botanic Garden, (2)The Morton Arboretum, (3)Northwestern Universtiy. *Twenty-five years of community phylogenetic change in tallgrass-prairie remnants*.

10:30 AM COS 55-8 Kennedy, TA[1], CB Yackulic[2], WF Cross[3], PE Grams[2], MD Yard[1] and AJ Copp[2], (1)U.S. Geological Survey, Grand Canyon Monitoring and Research Center, (2)US Geological Survey, (3)Montana State University. *Characterizing the functional relationship between invertebrate drift and two primary controls—flow regime and benthic density*.

10:50 AM COS 55-9 Muletz, CR[1], S Yarwood[1], R Fleischer[2], EH Campbell Grant[3] and K Lips[1], (1)University of Maryland, (2)National Zoological Park, (3)USGS. *Cutaneous bacterial community diversity of Plethodon salamanders along an elevational gradient in Shenandoah National Park, VA*.

11:10 AM COS 55-10 Zhang, T and JW Lichstein, University of Florida. *Quantifying the roles of shade tolerance and successional niches in tree species coexistence*.

COS 56 - Conservation Planning, Policy, And Theory

L100D, Minneapolis Convention Center

8:00 AM COS 56-1 Donahoe, SB, Marstel-Day, LLC. *Future benefits achieved through cooperative and sustainable forest management practices designed in a landscape context using multi-scale scenario modeling*.

8:20 AM COS 56-2 Dockry, MJ[1] and N Langston[2], (1)US Forest Service, (2)Michigan Technological University. *Menominee oral history: Using historical perspectives to inform contemporary sustainable forest management*.

8:40 AM COS 56-3 Sorice, MG[1], CO Oh[2], T Gartner[3], M Snieckus[4], R Johnson[5] and CJ Donlan[6], (1)Virginia Tech, (2) Michigan State University, (3)World Resources Institute, (4)American Forest Foundation, (5)The Longleaf Alliance, (6)Advanced Conservation Strategies & Cornell University. *Increasing participation in incentive programs for biodiversity conservation*.

9:00 AM COS 56-4 Galperin, JU, Yale Center for Environmental Law and Policy. *The Environmental Performance Index: translating science for policy*.

9:20 AM COS 56-5 Baumflek, M, Cornell University. *Scale Complementarity for Plant Conservation: An Example of Indigenous Plant Stewardship from Maine, USA*.

9:40 AM Break

9:50 AM COS 56-6 Mo, Y, D Lee and H Kim, Seoul National University. *Biodiversity conservation under climate change considering the expansion of protected areas and the increasing occurrence of landslide - Pyoungchang (The host of the 2018 Winter Olympics), South Korea*.

10:10 AM COS 56-7 Kirby, K[1], D Diaz[2] and SE Gergel[3], (1)University of Toronto, (2)Panama City, (3)University of British Columbia. *Cultural diversity underpins tropical agricultural biodiversity at multiple scales*.

10:30 AM COS 56-8 Peters, VE, Miami University. *Sowing shrub species with a steady-state flowering phenology as a more spatially compact approach for biodiversity conservation in tropical agroecosystems*.

10:50 AM COS 56-9 Ryan, SJ[1] and J Hartter[2], (1)SUNY College of Environmental Science and Forestry, (2)University of New Hampshire. *Beyond Ecological Success of Corridors: Integrating Land Use History and Demographic Change to Provide a Whole Landscape Perspective*.

11:10 AM COS 56-10 Smith, AB and MA Albrecht, Missouri Botanical Garden. *Botanical gardens as networks for "chaperoned" assisted migration of the world's flora*.

COS 57 - Disease And Epidemiology I

L100E, Minneapolis Convention Center

8:00 AM COS 57-1 Springer, JC and AM Jarosz, Michigan State University. *Do mycoviruses alter population structure of the chestnut blight pathogen?*.

8:20 AM COS 57-2 Johnson, BJ[1], D Fonseca[2] and MG Robson[2], (1)Rutgers, The State University, (2)Rutgers University. *Urban Wetlands and West Nile Virus: The effects of edge and degree of isolation on mosquito species richness, vector presence, and disease risk*.

8:40 AM COS 57-3 Dibble, CJ and VHW Rudolf, Rice University. *Interactive effects of dispersal "type" and amount affect population dynamics, disease epidemics, and trait change in a zooplankton metapopulation*.

9:00 AM COS 57-4 Grippi, DC[1], SKJR Auld[2] and MA Duffy[1], (1) University of Michigan, (2)University of Stirling. *Variation in host resistance and tolerance towards parasites with different exploitation strategies*.

9:20 AM COS 57-5 Tunstall, TS, K Lips, GV DiRenzo and PF Langhammer, University of Maryland. *Do certain species intensify chytridiomycosis outbreaks? Modeling transmission in the genus Atelopus*.

9:40 AM Break

9:50 AM COS 57-6 Kendig, AE[1], EW Seabloom[1], ET Borer[1], CE Mitchell[2] and AG Power[3], (1)University of Minnesota, (2) University of North Carolina, (3)Cornell University. *Using spatial patterns to infer disease processes in a multi-host, multi-pathogen system*.

10:10 AM COS 57-7 Strauss, AT[1], SR Hall[1] and CE Cáceres[2], (1)Indiana University, (2)University of Illinois at Urbana-Champaign. *Trait-based mechanisms for friendly competition and the dilution effect*.

10:30 AM COS 57-8 Robinson, SJ[1], R Moen[2], D Neitzel[3] and K Pelican[1], (1)University of Minnesota, (2)University of Minnesota - Duluth, (3)Minnesota Department of Health. *Tick-Borne Diseases in Minnesota: Increased Incidence and Projected Change in Geographic Distribution*.

10:50 AM COS 57-9 Talley, BL[1], FE Anderson[1] and K Lips[2], (1) Southern Illinois University, (2)University of Maryland. *Modeling Infection Risk of Chytridiomycosis among Illinois Amphibians*.

11:10 AM COS 57-10 Buhnerkempe, MG[1], KC Prager[1], FMD Gulland[2] and JO Lloyd-Smith[1], (1)University of California, Los Angeles, (2)The Marine Mammal Center. *Maximizing the potential of serology data: a model of Leptospira antibody dynamics in California sea lions*.

COS 58 - Education: Pedagogy

L100F, Minneapolis Convention Center

8:00 AM COS 58-1 Young, SL[1] and L Sandall[2], (1)University of Nebraska-Lincoln, (2)University of Nebraska. *Development of an undergraduate course on invasive plants and ecosystems using distance education*.

8:20 AM COS 58-2 Swisher, R, Oregon Institute of Technology. *An organic chemistry course for biology and environmental science majors*.

8:40 AM COS 58-3 Kineman, JJ[1] and K Bawa[2], (1)University of Colorado, Boulder, (2)University of Massachusetts Boston. *Ecological literacy leadership: into the mind of nature*.

9:00 AM COS 58-4 Langen, TA[1], T Mourad[2], BW Grant[3], WK Gram[4], BJ Abraham[5], DS Fernandez[6], MK Carroll[7], A Nuding[8] and S Hampton[8], (1)Clarkson University, (2)Ecological Society of America, (3)Widener University, (4)National Ecological Observatory Network (NEON, Inc.), (5)Hampton University, (6)University of Puerto Rico at Humacao, (7)Diné College, (8)National Center for Ecological Analysis and Synthesis. *Engaging undergraduate students in ecological investigations using large, public datasets: lessons-learned by a 'teaching with big-data' working group*.

9:20 AM COS 58-5 Stehlik, I, University of Toronto at Scarborough. *The writing of a simulated scientific paper using a peer-review approach*.

9:40 AM Break

9:50 AM COS 58-6 Beck, C[1] and L Blumer[2], (1)Emory University, (2)Morehouse College. *Alternative views of reality: Instructional practices and how they are perceived by faculty and students*.

10:10 AM COS 58-7 Card, VM, Metropolitan State University. *Facilitating the development of reasoning skills in undergraduate ecology classes*.

10:30 AM COS 58-8 Zhu, B, University of Hartford. *Engaging Undergraduate Student Learning in Ecology through Outdoor Teaching*.

10:50 AM COS 58-9 Berkowitz, AR, A Alvarado-Santos, C Harris and S Root, Cary Institute of Ecosystem Studies. *Data Explorations in Ecology: Students' understanding of variability and use of data in environmental citizenship*.

COS 59 - Food Webs I

L100G, Minneapolis Convention Center

8:00 AM COS 59-1 Gilarranz, LJ[1], C Mora[2] and J Bascompte[1], (1) Estación Biológica de Doñana, CSIC, (2)University of Hawaii. *The persistence of Caribbean-reef-fish communities*.

8:20 AM COS 59-2 Steffan, SA[1], Y Chikaraishi[2], DR Horton[1] and N Ohkouchi[3], (1)USDA-ARS, (2)Japan Agency of Marine-Earth Science & Technology, (3)Japan Agency for Marine-Earth Science and Technology. *Trophic hierarchies revealed via amino acid isotopic analysis*.

8:40 AM COS 59-3 Chikaraishi, Y[1], SA Steffan[2] and N Ohkouchi[1], (1)Japan Agency for Marine-Earth Science and Technology, (2)USDA-ARS. *Grazing food web view from compound-specific stable isotope analysis of amino acids*.

9:00 AM COS 59-4 Johnston, TA[1], PA Cott[2], HK Swanson[3], AD Stasko[4], RWK Tang[4] and JM Gunn[4], (1)Ontario Ministry of Natural Resources, (2)Fisheries and Oceans Canada, (3) University of Waterloo, (4)Laurentian University. *Ontogenetic patterns in isotopic composition of northern fishes*.

9:20 AM COS 59-5 Wimp, GM[1], SM Murphy[2], D Lewis[1] and L Ries[3], (1)Georgetown University, (2)University of Denver, (3)University of Maryland. *Do generalists always like edges? Habitat structure influences generalist predator responses to habitat edges in a salt marsh system*.

9:40 AM Break

9:50 AM COS 59-6 Demi, LM[1], JP Benstead[1], AD Rosemond[2] and JC Maerz[3], (1)University of Alabama, (2)University of Georgia, (3)The University of Georgia. *Consumer biomass and production in five detritus-based stream ecosystems: Response to xperimental gradients in dissolved N:P ratios*.

10:10 AM COS 59-7 Mocker, DM, OC Friesen and JD Roth, University of Manitoba. *You are what you eat: mapping gray wolf diet and parasites across three regions in Manitoba, Canada*.

10:30 AM COS 59-8 Piovia-Scott, J[1], DA Spiller[1], G Takimoto[2], LH Yang[1], AN Wright[1] and TW Schoener[1], (1)University of California, Davis, (2)Toho University. *The effect of chronic seaweed subsidies on herbivory: plant-mediated fertilization pathway overshadows lizard-mediated predator pathways*.

10:50 AM COS 59-9 Pabian, SE[1], CM Beier[2], CT Webb[1] and CT Driscoll[3], (1)Colorado State University, (2)SUNY College of Environmental Science and Forestry, (3)Syracuse University. *Mercury and calcium in forest food webs: Potential for synergistic effects on avian reproduction*.

11:10 AM COS 59-10 Spier, C[1], WT Stringfellow[1], J Hanlon[1], MS Brunell[1], M Estiandan[1], T Koski[2] and J Kääriä[2], (1)University of the Pacific, (2)Turku University of Applied Sciences. *Microcystin in the Southern San Francisco Bay-Delta Estuary and Possible Negative Impact on the Food Web*.

COS 60 - Forest Habitats: Temperate

L100H, Minneapolis Convention Center

8:00 AM COS 60-1 Gaines, KP[1], DM Eissenstat[1] and H Lin[2], (1) Pennsylvania State University, (2)Penn State University. *Patterns in tree water extraction depth at the Susquehanna Shale Hills Critical Zone Observatory in central Pennsylvania*.

8:20 AM COS 60-2 Renner, S and B Lüdtke, Ulm University. *Effects of parasites and forest attributes on Chaffinches*.

8:40 AM COS 60-3 Nock, CA[1], DF Greene[2], S Delagrange[3], M Follett[1], R Fournier[4] and C Messier[5], (1)University of Quebec at Montreal, (2)Concordia University, (3)UQO, (4)Centre d'Applications et de Recherches en Télédétection, (5) Université du Québec à Montréal. *In situ quantification of experimental ice accretion on tree crowns using terrestrial laser scanning*.

9:00 AM COS 60-4 China, SS, MP Hammond and J Kolasa, McMaster University. *Most forest ecosystem variables in Yellowstone NP are more stable than in adjacent logged forests*.

9:20 AM COS 60-5 Mantooth, JA and M Dietze, Boston University. *A hierarchical analysis of tree growth across eastern US forests*.

9:40 AM Break

9:50 AM COS 60-6 Maerz, JC[1], TJ Fahey[2], MC Fisk[3], PM Groffman[4], PJ Bohlen[5], JB Yavitt[2], JL DeVore[6] and JR Milanovich[7], (1)The University of Georgia, (2)Cornell University, (3)Miami University of Ohio, (4)Cary Institute of Ecosystem Studies, (5)University of Central Florida, (6)University of Georgia, (7)United States Environmental Protection Agency. *A salamander perspective on earthworm invasions of north temperate forest ecosystem*.

10:10 AM COS 60-7 Hardiman, BS[1], SP Serbin[2], JA Mantooth[1], R Kennedy[1] and M Dietze[1], (1)Boston University, (2)University of Wisconsin - Madison. *Assimilating PALSAR remote sensing data to reduce uncertainty in ED2 predictions of forest biomass dynamics following disturbance*.

10:30 AM COS 60-8 Hobbie, EA[1], KS Hofmockel[2] and LTA Van Diepen[1], (1)University of New Hampshire, (2)Iowa State University. *Fungal functioning in a pine forest: evidence from a ^{15}N-labeled and ^{13}C-labeled global change experiment*.

10:50 AM COS 60-9 Herr, JR, Penn State University. *Metagenomic sequencing of South Korean forest soils reveal plant host and spatially mediated microbial structure*.

11:10 AM COS 60-10 Beese, WJ[1], JS Sandford[2] and T McCormick[3], (1)Vancouver Island University, (2)J.S. Sandford and Associates, (3)BC Hydro. *The age of trees in old-growth temperate rainforests on Vancouver Island, British Columbia, Canada*.

COS 61 - Invasion: Models

L100I, Minneapolis Convention Center

8:00 AM COS 61-1 Loppnow, GL[1], PA Venturelli[1] and BJ Shuter[2], (1)University of Minnesota, (2)University of Toronto. *Induced nest failure as a method for controlling invasive bass*.

8:20 AM COS 61-2 Schmidt, JP, University of Georgia. *Invasive angiosperms show consistent patterns in traits and phylogeny*.

8:40 AM COS 61-3 Wagner, SA and JM Fraterrigo, University of Illinois. *Evidence that regional differences in ecological niche space for an invasive plant species are due to macroclimatic variation*.

9:00 AM COS 61-4 Crafton, RE, University of California, Davis. *Modeling invasion risk: Combining environmental suitability and introduction likelihood*.

9:20 AM COS 61-5 Latzka, AW[1], S Van Egeren[2] and MJ Vander Zanden[3], (1)University of Wisconsin - Madison, (2)Wisconsin Department of Natural Resources, (3)University of Wisconsin-Madison. *How invaded are we, really?: Aquatic invasive species occurrence datasets under-represent species distributions and misinform predictive models*.

9:40 AM Break

9:50 AM COS 61-6 West, AM[1], S Kumar[1], T Wakie[1], CS Brown[1], TJ Stohlgren[2], M Laituri[1] and J Bromberg[3], (1)Colorado State University, (2)US Geological Survey, Fort Collins Science Center and Natural Resource Ecology Laboratory, (3) U.S. National Park Service. *Using high-resolution future climate scenarios for predicting climate change effects on biological invasions in Rocky Mountain National Park*.

10:10 AM COS 61-7 Stohlgren, TJ[1], P Evangelista[2], S Kumar[2] and C Jarnevich[3], (1)USGS Fort Collins Science Center, (2)Colorado State University, (3)U.S. Geological Survey. *Mapping invasive hybrid swarms and swarms of hybrids*.

10:30 AM COS 61-8 Holcombe, TR[1], C Jarnevich[1], CL Aldridge[1], CS Brown[2], D Koop[3], S Kumar[2], D Manier[1], JT Morisette[1], C Talbert[1], M Talbert[1] and P Votava[4], (1)U.S. Geological Survey, (2)Colorado State University, (3)NYU-Poly, (4)National Aeronautics and Space Administration. *Combining modeling techniques, large data sets, and streamlined visualization tools to explore background point selection for cheatgrass models: VisTrails and the Software for Assisted Habitat Modeling (SAHM)*.

10:50 AM COS 61-9 Mainali, KP[1], A Nakarmi[2], K Dhileepan[3], D Warren[4], A McConnachie[5], L Strathie[5], MP Moskwik[6], G Hassan[7], I Zuberi[8], D Karki[9], BB Shrestha[9] and C Parmesan[10], (1)University of Texas at Austin, (2)The University of Texas at Austin, (3)Ecosciences Precinct, (4)University of Texas, Austin, (5)Private Bag X6006, (6)University of Texas, (7)NWFP Agricultural University, (8)To be added later, (9) Tribhuvan University, (10)University of Texas; Plymouth University. *Global modeling of invasive Parthenium hysterophorus reveals new areas of potential invasion on multiple continents*.

11:10 AM COS 61-10 Byun, C[1], S de Blois[1] and J Brisson[2], (1)McGill University, (2)Université de Montréal. *Functional group interaction drive negative diversity-invasibility relationship in experimental plant community assembly*.

COS 62 - Restoration Ecology II

L100J, Minneapolis Convention Center

8:00 AM COS 62-1 Willand, JE, SG Baer and DJ Gibson, Southern Illinois University Carbondale. *The influence of population source and species pools on propagule supply in an experimental grassland*.

8:20 AM COS 62-2 Scoggins, M, AM Duncan and A Richter, City of Austin. *Grow Zones: Function over form in restoration of urban Creeks in Austin, TX*.

8:40 AM COS 62-3 Wilson, LR[1], DJ Gibson[2], SG Baer[2] and L Johnson[3], (1)Southern Illinois University-Carbondale, (2) Southern Illinois University Carbondale, (3)Kansas State University. *Plant community response to regional sources of dominant grasses in grasslands restored across a precipitation gradient*.

9:00 AM COS 62-4 Wright, KK, University of Wisconsin-Platteville. *Examining progressive changes in stream habitat and communities following restoration*.

9:20 AM COS 62-5 Debinski, DM[1], RA Moranz[2], J Delaney[1], JR Miller[3] and DM Engle[2], (1)Iowa State University, (2)Oklahoma State University, (3)University of Illinois. *Insect responses to grassland restoration using fire and grazing: Short and longer-term perspectives*.

9:40 AM Break

9:50 AM COS 62-6 Aschehoug, ET[1], NM Haddad[1], WF Morris[2], TM Wepprich[1], FS Sivakoff[1] and H Lessig[1], (1)North Carolina State University, (2)Duke University. *Restoration and recovery: do restoration actions lead to stable populations of rare species?*.

10:10 AM COS 62-7 Rogers, WE[1], D Twidwell[2], CL Wonkka[1], UP Kreuter[1] and CA Taylor Jr.[3], (1)Texas A&M University, (2) Oklahoma State University, (3)Texas A&M AgriLIFE Research Center. *Can novel combinations of prescribed extreme fire and herbicide be used to overcome resprouting woody plant resilience and restore degraded rangelands in the southern Great Plains?*.

10:30 AM COS 62-8 Faist, AM and SK Collinge, University of Colorado. *Constructing alternate states: Invasive seed bank dominance in restored versus reference vernal pools*.

10:50 AM COS 62-9 Berg, J, Biohabitats, Inc.. *Unseating place-based reference systems for generalizing from natural analogs to improve stream restoration practices*.

11:10 AM COS 62-10 Rayburn, AP[1], H Spaulding[1], J Musengezi[2], AT O'Geen[1] and EA Laca[3], (1)University of California, Davis, (2)Defenders of Wildlife, (3)University of California. *Spatial methods for low-cost restoration of rangeland ecosystem services*.

COS 63 - Species Interactions II

M100GD, Minneapolis Convention Center

8:00 AM COS 63-1 Rowbottom, RM[1], SS Carver[1], L Barmuta[1], P Weinstein[2] and G Allen[1], (1)University of Tasmania, (2) University of South Australia. *Vector mosquitoes increase generation times in the presence of competitors owing to resource limitation*.

8:20 AM COS 63-2 Surasinghe, TD and RF Baldwin, Clemson University. *Anthropogenic disturbances in the riparian zone influence exploitative competition between a generalist and a specialist species of stream-dwelling salamander*.

8:40 AM COS 63-3 Vanak, AT[1], D Fortin[2], M Thaker[3] and R Slotow[4], (1)Ashoka Trust for Research in Ecology and the Environment, (2)Université Laval, (3)Indian Institute of Science, (4) University of KwaZulu-Natal. *Staying one-step ahead of the game: Co-existence in an African large carnivore guild*.

9:00 AM COS 63-4 Ellis, RD, Florida State University. *Ecological effects of digging behavior by red grouper (Epinephelus morio) in Florida Bay*.

9:20 AM COS 63-5 Donadi, S[1], T van der Heide[1], EM van der Zee[2], E Weerman[1], J Van de Koppel[3], H Olff[1], T Piersma[1], H van der Veer[2] and BK Eriksson[1], (1)Centre for Ecological and Evolutionary Studies, University of Groningen, (2)Royal Netherlands Institute for Sea Research, (3)Royal

Netherlands Institute for Sea Research (NIOZ). *Engineering networks structure coastal ecosystems*.

9:40 AM Break

9:50 AM COS 63-6 Ojha, SK and L Dimov, Alabama A&M University. *Species characteristics and diversity-productivity relationships in young natural forests of the eastern United States*.

10:10 AM COS 63-7 Usinowicz, J, University of Wisconsin, Madison. *Limited dispersal drives clustering and reduces coexistence by the storage effect in a spatially explicit lottery model* .

10:30 AM COS 63-8 Rhodes, MK[1], K Skogen[2] and J Fant[1], (1)Northwestern University & Chicago Botanic Garden, (2)Chicago Botanic Garden. *Moths vs. bees: linking temporal variation in pollinator community structure to reproductive dynamics and pollen movement in an annual plant*.

10:50 AM COS 63-9 Chamberlain, S[1], RV Cartar[2], AC Worley[3], SJ Semmler[3], JC Vamosi[2] and E Elle[1], (1)Simon Fraser University, (2)University of Calgary, (3)University of Manitoba. *Contribution of traits and phylogenetic history to plant-pollinator network structure*.

11:10 AM COS 63-10 Stein, C and KN Suding, University of California at Berkeley. *Changes in plant soil feedbacks due to grazing management and competition*.

COS 64 - Sustainability: Agriculture/Forestry

M100HC, Minneapolis Convention Center

8:00 AM COS 64-1 Jarchow, ME[1], M Liebman[2], S Dhungel[3], R Dietzel[2], D Sundberg[2], RP Anex[3], ML Thompson[2] and T Chua[2], (1)University of South Dakota, (2)Iowa State University, (3)University of Wisconsin. *Tradeoffs in agronomic, energetic, and environmental performance of prairie and corn bioenergy cropping systems*.

8:20 AM COS 64-2 Maltais-Landry, G[1], KM Scow[2] and PM Vitousek[3], (1)Stanford, (2)University of California-Davis, (3)Stanford University. *Legume cover crops affect rhizosphere properties and soil phosphorus fractions but do not increase phosphorus availability in California plots*.

8:40 AM COS 64-3 Tully, KL[1], J Hickman[2] and C Palm[3], (1)Columbia University, (2)The Earth Institute at Columbia University, (3)Earth Institute at Columbia University. *The effects of African Green Revolution on nitrogen losses from two contrasting soil types in sub-Saharan Africa*.

9:00 AM COS 64-4 Costanza, JK[1], RC Abt[1], TS Earnhardt[1], A McKerrow[2] and JA Collazo[1], (1)North Carolina State University, (2)United States Geological Survey. *Landscape impacts of potential biofuel production scenarios in North Carolina*.

9:20 AM COS 64-5 MacDonald, GK, KA Brauman, ND Mueller, ES Cassidy, S Sun, PC West, JS Gerber, M Johnston, DK Ray and JA Foley, University of Minnesota. *Viewing agricultural trade networks in terms of land and water resource sustainability*.

9:40 AM Break

9:50 AM COS 64-6 Johnson, T[1], PL Kennedy[2], SJ DeBano[2], RV Taylor[3], T DelCurto[2] and R Limb[2], (1)University of Wyoming, (2)Oregon State University, (3)The Nature Conservancy. *Direct and indirect effects of livestock grazing intensity on a grassland food web*.

10:10 AM COS 64-7 Cassidy, ES, University of Minnesota. *Redefining agricultural yields: From tonnes to people nourished per hectare*.

10:30 AM COS 64-8 Leggett, ZH, D Miller, J Nettles, EB Sucre and JA Homyack, Weyerhaeuser Company. *Evaluating environmental effects of managing loblolly pine (Pinus taeda L.) plantations intercropped with switchgrass (Panicum virgatum L.) for biofuel production*.

10:50 AM COS 64-9 Simons-Legaard, E, K Legaard, A Weiskittel and S Sader, University of Maine. *Evaluating the interacting effects of forest management and spruce budworm outbreaks on broad-scale, long-term forest conditions in the Northern Forest of the northeastern U.S*.

11:10 AM COS 64-10 Wainwright, J[1], S Jiang[1], KL Mercer[2] and D Liu[1], (1)Ohio State University, (2)The Ohio State University. *Mapping forest-cultivation transition using spatial-temporal classification of multi-temporal Landsat images: The Maya forest of southern Belize*.

COS 65 - Urban Ecosystems II

M100IB, Minneapolis Convention Center

8:00 AM COS 65-1 Palta, M and N Grimm, Arizona State University. *Pathogen and Nutrient Pulsing and Attenuation in "Accidental" Urban Wetland Networks Along the Salt River in Phoenix, Arizona*.

8:20 AM COS 65-2 Lopez, BE[1], D Urban[2] and PS White[3], (1)University of North Carolina, (2)Duke University, (3)University of North Carolina at Chapel Hill. *Temperature and dispersal play a role in plant community composition along an urban-to-rural gradient*.

8:40 AM COS 65-3 Suarez-Rubio, M[1], S Wilson[2] and T Lookingbill[3], (1)University of Natural Resources and Life Sciences, (2)Canadian Wildlife Service, (3)University of Richmond. *Effects of rural housing growth on forest birds' habitat*.

9:00 AM COS 65-4 Waters, ER[1], JL Morse[2], ND Bettez[2] and PM Groffman[2], (1)Hampshire College, (2)Cary Institute of Ecosystem Studies. *Denitrification in streams and riparian zones along an urban to exurban gradient*.

9:20 AM COS 65-5 Savage, AM, CA Penick and RR Dunn, North Carolina State University. *From Broadway Avenue to Central Park: Ant diversity, invasions and diets across Manhattan's urban habitat mosaic*.

9:40 AM Break

9:50 AM COS 65-6 Vogler, DW[1], K Baciuska[2] and J Watterson[2], (1)SUNY College at Oneonta, (2)Loomacres Wildlife Management. *Planes, Plains and Food Chains—Bottom Up Management of Airport Ecosystems*.

10:10 AM COS 65-7 Herrmann, DL[1] and ML Cadenasso[2], (1)University of California - Davis, (2)University of California, Davis. *Multiple ecosystem services in urban lawns: Nitrogen retention and aesthetics*.

10:30 AM COS 65-8 Zhu, W, R Greenberg and SC Craig, State University of New York - Binghamton. *Using ^{15}N stable isotope to trace the movement of deposited N in a roadside ecosystem*.

10:50 AM COS 65-9 Herrera-Montes, A[1] and N Brokaw[2], (1)University of Puerto Rico-Río Piedras, (2)Institute for Tropical Ecosystem Studies University of Puerto Rico-Río Piedras. *Urban forests and green spaces: Alternatives to maintain herpetofauna biodiversity in highly modified landscapes*.

11:10 AM COS 65-10 Litwhiler, ME[1], FJ Gallagher[2], P Weis[3] and C Holzapfel[2], (1)New Jersey Institute of Technology/Rutgers University, (2)Rutgers University, (3)UMDNJ - New Jersey Medical School. *Urban habitats - attractive, but bad for nature? On fruits, metals, and birds*.

11:30 am-12 pm

ESA Presider/AV Training Session

101C, Minneapolis Convention Center

11:30 am-1:15 pm

Carleton College Alumni and Friends Brown Bag Lunch

200J, Minneapolis Convention Center

ESA Environmental Justice Business Meeting

Director's 4, Hilton Minneapolis

ESA Tutorial for ESA Website Updates: All Section/ Chapter Chair Invited

M100HC, Minneapolis Convention Center

Theoretical Ecology Journal Editorial Board Meeting

Director's 2, Hilton Minneapolis

Urban Ecosystem Ecology Section Business Meeting

200G, Minneapolis Convention Center

WK 43 - Career Hour: Introduction to Negotiation Strategy and Tactics

101A, Minneapolis Convention Center

Organized by: AG Levine

Did you know that the salary of your very first job after graduation or your postdoc determines your salaries for the rest of your life? Learn specific strategies and tactics to create a win-win situation and negotiate right from start to finish in the job decision process.

12:15 pm-1:15 pm

PL-3 - ESA Recent Advances Lecture

Auditorium, Rm 3, Minneapolis Convention Center

1:30 pm-3:30 pm

IGN 10 - Constraints in Ecology

101C, Minneapolis Convention Center

Organized by: E Baldridge (elita.baldridge@weecology.org), EP White

Moderator: E Baldridge

This session will discuss the multiple roles of constraints in ecology, from defining possible states of a distribution with statistical or ecological constraints to using constraints to make informed predictions about how species respond, providing a powerful framework to approach ecological questions.

IGN 10-1 Ernest, SKM, Utah State University. *Why constraint based approaches to ecology?*.

IGN 10-2 Locey, KJ and EP White, Utah State University. *The feasible set: Putting pattern into perspective*.

IGN 10-3 Rominger, AJ, University of California Berkeley. *Evolutionary constraints and information entropy in ecology*.

IGN 10-4 Kaspari, M[1], AD Kay[2] and JS Powers[3], (1)University of Oklahoma, (2)University of St. Thomas, (3)University of Minnesota. *Liebig is dead; long live Liebig*.

IGN 10-5 Lamanna, CA, University of Maine. *Constraints on carbon flux in extreme climates*.

IGN 10-6 McGlinn, DJ and EP White, Utah State University. *Ecological constraints predict the spatial structure of biodiversity*.

IGN 10-7 Buckley, LB, University of North Carolina at Chapel Hill. *Thermal and energetic constraints on biogeography in changing environments*.

IGN 10-8 Diamond, SE, North Carolina State University. *Physiological constraints and predicting responses to climate change*.

IGN 11 - Engineered Ecology: How Ecologists are Informing and Improving Engineered Systems

101E, Minneapolis Convention Center

Organized by: LF Stanish, J Knelman

Moderator: LF Stanish

This session aims at highlighting the potential and realized advances made by ecologists in engineered systems, as well as the benefits of cooperation between ecologists and engineers.

IGN 11-1 Legg, TM[1], PG Taylor[1], H Fancher[1], AR Townsend[2] and DR Nemergut[1], (1)University of Colorado, (2)Institute of Arctic and Alpine Research, University of Colorado at Boulder. *The greening of palm oil mill effluent (POME): Can we turn greenhouse gas emissions into clean energy?*.

IGN 11-2 Smith, VH, University of Kansas. *Applications of ecological principles in algal biofuels production*.

IGN 11-3 Ontl, TA[1], LA Schulte[1] and GD Larsen[2], (1)Iowa State University, (2)Practical Farmers of Iowa. *Bioenergy, biodiversity...or both?*.

IGN 11-4 Altrichter, AE[1], JF Meadow[2], GZ Brown[2], BJM Bohannan[2] and JL Green[2], (1)Biology and the Built Environment Center, Institute of Ecology and Evolution, University of Oregon, (2)University of Oregon. *Mapping the human microbial cloud in the built environment*.

IGN 11-5 Graham, EB, University of Colorado at Boulder. *Contaminated natural wetlands as models for enhancing the mitigation efficiency of constructed wetlands*.

IGN 11-6 Ross, K, University of Colorado at Boulder. *Molecular ecology of drinking water distribution systems*.

IGN 11-7 Khan, AL, University of Colorado. *Water quality management in a changing climate: A case study of 28 drinking water reservoirs and lakes in Colorado*.

IGN 11-8 Childers, DL, J Hannan, J Ramos Jr., CA Sanchez, L Turnbull and NA Weller, Arizona State University. *When plant-mediated water flows increase biogeochemical efficiency in an aridland urban treatment wetland, and pleasantly surprise the engineers*.

IGN 11-9 Starry, O and J Lea-Cox, University of Maryland, College Park. *How collaboration between ecologists and engineers can improve green roof efficiency*.

IGN 12 - The Endangered Species Act Turns 40: Lessons Learned for Conservation of Threatened and Endangered Species in the United States

101H, Minneapolis Convention Center

Organized by: DM Evans (daniel.evans103@gmail.com), T Houston

Moderator: SK Collinge

This series celebrates the 40th anniversary of the Endangered Species Act of 1973. Speakers will explain the legislation and its conservation mandate, review the principal causes and patterns of species endangerment in the United States, and discuss new strategies to improve conservation and recovery of threatened and endangered species.

IGN 12-1 Goble, DD, University of Idaho. *Everything you always wanted to know about the ESA * but were afraid to ask*.

IGN 12-2 Evans, DM, American Association for the Advancement of Science. *The Main Causes of Species Endangerment and Extinction*.

IGN 12-3 Flather, CH[1] and BR Noon[2], (1)USDA, Forest Service, (2) Colorado State University. *Threatened and Endangered Species Geography*.

IGN 12-4 Parmesan, C, University of Texas. *Climate Change and Endangered Species*.

IGN 12-5 Schwartz, MW, University of California, Davis. *The Effectiveness of Endangered Species Recovery Planning*.

IGN 12-6 Neel, MC[1] and JP Che-Castaldo[2], (1)University of Maryland, (2)National Socio-Environmental Synthesis Center (SESYNC). *Improving Endangered Species Recovery Planning*.

IGN 12-7 Rogers, HS, Rice University. *Adaptive Management in Species Recovery Planning*.

IGN 12-8 Male, T, Defenders of Wildlife. *Conservation Banking*.

IGN 12-9 Fallon, S, Natural Resources Defense Council. *Legislative Threats to the Integrity of the Endangered Species Act*.

IGN 12-10 Scott, JM, University of Idaho. *Conservation reliant species: Implications for recovery under the Endangered Species Act*.

1:30 pm-5 pm

SYMP 13 - Can Ethics and Justice Pave a Sustainable Pathway for Human Ecosystems?

M100EF, Minneapolis Convention Center

Organized by: ME Lam (mimibethlam@gmail.com), C Gross, CH Nilon

Endorsed by: Environmental Justice Section, Traditional Ecological Knowledge Section Section, Agroecology Section, Human Ecology Section, Applied Ecology Section

Moderator: STA Pickett

Synthesizing ecological and social science scholarship related to the theory, implementation, and evaluation of ethics and justice in environmental resource allocation and policy, this symposium explores whether human activities that preserve the rights and welfare of both affected human communities and ecosystems can be not only ethical, but also sustainable.

1:30 PM SYMP 13-1 Ehrlich, PR, Stanford University. *Is Ethical Revitalization the Secret of Avoiding Collapse?*.

2:00 PM SYMP 13-2 Nilon, CH[1], GA Middendorf[2] and LM Jablonski[3], (1)University of Missouri, (2)Howard University, (3) University of Dayton. *Is environmental justice the missing link between ecology and sustainability science?*.

2:30 PM SYMP 13-3 Gross, C, Australian National University. *Applying justice frameworks to environmental decision-making*.

3:00 PM Break

3:10 PM SYMP 13-4 Chappell, MJ, Washington State University Vancouver. *The need for action, ethics and values in ecology: Examples from food systems and conservation*.

3:40 PM SYMP 13-5 Anderson, MD, College of the Atlantic. *How can rights-based approaches to the food system contribute to sustainable and just decision-making?*.

4:10 PM SYMP 13-6 Lam, ME[1] and TJ Pitcher[2], (1)University of British Columbia and University of New Mexico, (2)University of British Columbia. *Global fisheries: Can they be both ethical and sustainable?*.

4:40 PM Discussion

SYMP 14 - Ecology Across Borders: International, National, and Cultural Challenges of Managing Species Internationally

205AB, Minneapolis Convention Center

Organized by: G Bowser, H Balbach

Endorsed by: Applied Ecology Section

Moderator: G Bowser

Managing species across international boundaries is complex. We propose a symposium looking at mulitlateral negotiations, treaties and management across international and political boundaries.

1:30 PM SYMP 14-1 Burston, P[1] and R Black[2], (1)ENVIRON International Corporation, (2)ENVIRON International Coroporation. *Offset philosophies across the pond: Differences and commonalities of US and UK environmental mitigation strategies*.

2:00 PM SYMP 14-2 Waddell, K, The National Academies. *Challenges with ecosystem service valuation for the Gulf of Mexico following the Deepwater Horizon oil spill*.

2:30 PM SYMP 14-3 Eberly, C[1] and P Marra[2], (1)Department of Defense Partners in Flight, (2)Smithsonian Migratory Bird Center. *Studying birds in the context of the annual cycle: Carry-over effects and seasonal interactions*.

3:00 PM Break

3:10 PM SYMP 14- Bowser, G, Colorado State University. *Fish Know No Boundaries: International fisheries and impacts on local communities*.

3:40 PM Discussion

1:30 pm-5 pm

SYMP 15 - Evolution, Biodiversity and Ecosystem Functioning

Auditorium, Rm 3, Minneapolis Convention Center

Organized by: A Narwani

Moderator: A Narwani

This symposium with investigate the influence of evolution on ecosystem functioning.

1:30 PM SYMP 15-1 Harmon, L and SL Nuismer, University of Idaho. *The phylogenetic signature of species interactions*.

2:00 PM SYMP 15-2 Kraft, NJB[1], O Godoy[2] and JM Levine[3], (1) University of Maryland, (2)University of California, Santa Barbara, (3)ETH Zurich. *Functional trait differences and species coexistence in an annual plant community*.

2:30 PM SYMP 15-3 Cavender-Bares, J[1], R Rubio de Casas[2], CG Willis[3], CC Baskin[4] and JM Baskin[5], (1)University of Minnesota, (2)Universidad de Granada, (3)Duke University, (4) Univeristy of Kentucky, (5)University of Kentucky. *Evolutionary transitions in seed dormancy in the Legume family: consequences for global scale plant distributions*.

3:00 PM Break

3:10 PM SYMP 15-4 Strauss, SY, University of California, Davis. *The influence of phylogeny in community ecology: Insights and challenges*.

3:40 PM SYMP 15-5 Cadotte, MW, University of Toronto - Scarborough. *Experimental evidence that evolutionary diverse assemblages result in higher ecosystem function through complementarity*.

4:10 PM SYMP 15-6 Srivastava, DS[1], MW Cadotte[2], AAM MacDonald[1], RG Marushia[3] and N Mirotchnick[4], (1)University of British Columbia, (2)University of Toronto - Scarborough, (3)University of Toronto at Scarborough, (4) University of Toronto. *Can phylogenetic diversity predict ecosystem functioning? A synthesis*.

4:40 PM Discussion

OOS 20 - Community-structuring Processes in Fragmented Freshwater Habitats: A Synthesis Across Scales and Systems

101A, Minneapolis Convention Center

Organized by: KS Boersma (kate.boersma@science.oregonstate.edu), MT Bogan

Moderator: MT Bogan

This session will synthesize patterns across three areas of research: 1) small-scale experimental manipulations of the spatial and temporal isolation of aquatic communities, 2) theoretical work modeling community processes in aquatic metacommunities, and 3) large-scale observational studies on communities in fragmented lotic and lentic habitats and their conservation implications.

1:30 PM OOS 20-1 Howeth, JG[1] and MA Leibold[2], (1)University of Alabama, (2)University of Texas at Austin. *The metacommunity concept as a framework for predicting patterns of diversity and stability in fragmented freshwater landscapes*.

1:50 PM OOS 20-2 Peeples, CR and P Kourtev, Central Michigan University. *Bacterial community succession in leaves of the Northern pitcher plant, Sarracenia purpurea*.

2:10 PM OOS 20-3 Simonis, JL, Lincoln Park Zoo. *Resource-dependent dispersal promotes spatial food-web persistence in a rock-pool metacommunity*.

2:30 PM OOS 20-4 Fox, JW[1] and DA Vasseur[2], (1)University of Calgary, (2)Yale University. *Spatial synchrony and persistence in fragmented landscapes: Models and experiments*.

2:50 PM OOS 20-5 Beck, MW[1], B Vondracek[2], B Wilson[1] and LK Hatch[1], (1)University of Minnesota, (2)Minnesota Fish and Wildlife Cooperative Research Unit, US Geological Survey. *Evaluating the utility of a plant-based index of lake condition using neural networks*.

3:10 PM Break

3:20 PM OOS 20-6 Holyoak, M[1] and Q Lum[2], (1)University of California, Davis, (2)University of California. *Integrating space into biodiversity and ecosystem function studies: Spatial averaging vs. spatial dynamics in aquatic microcosms*.

3:40 PM OOS 20-7 Boersma, KS, MT Bogan and DA Lytle, Oregon State University. *Community trajectories in fragmented arid-land streams: Combined effects of extreme environmental conditions and aerial dispersal*.

4:00 PM OOS 20-8 Galatowitsch, M, AR McIntosh and S Goldstien, University of Canterbury. *Trade-offs and dispersal in unpredictable environments: generalist invertebrate persistence across spatially and temporally fragmented pond*.

4:20 PM OOS 20-9 McCauley, S[1] and L Rowe[2], (1)University of Toronto Mississauga, (2)University of Toronto. *Predator induced dispersal can create indirect linkages between habitat patches with different top predator communities*.

4:40 PM OOS 20-10 LeCraw, RM and DS Srivastava, University of British Columbia. *Metacommunity size and functional diversity in a natural mesocosm landscape*.

OOS 21 - Frontiers In Modeling Drought- and Insect-Induced Tree Mortality With Climate Change

101B, Minneapolis Convention Center

Organized by: W Anderegg, JA Powell, M Zeppel

Moderator: M Zeppel

This session explores cutting-edge research on simulating insect and drought impacts on forest ecosystems through tree mortality.

1:30 PM OOS 21-1 Mackay, DS[1], BE Ewers[2], SD Peckham[2], PR Savoy[1], D Reed[2], JM Frank[3] and NG McDowell[4], (1)SUNY-Buffalo, (2)University of Wyoming, (3)Rocky Mountain Research Station, U.S. Forest Service, (4)Los Alamos National Laboratory. *Plant hydraulic controls over the susceptibility of trees to mortality following climate-enhanced disturbances*.

1:50 PM OOS 21-2 Galbraith, D, Leeds University. *Tree mortality, climate change and dynamic global vegetation models*.

2:10 PM OOS 21-3 Holtta, T[1], M Mencuccini[2] and J Martínez-Vilalta[3], (1)University of Helsinki, (2)ICREA - CREAF and University of Edinburgh, (3)CREAF / Autonomous University of Barcelona. *Analysis of drought mortality with a coupled xylem and phloem transport and leaf gas exchange model*.

2:30 PM OOS 21-4 Lichstein, JW, University of Florida. *Quantifying the effects of drought and insect outbreaks on tree mortality rates using imperfect data*.

2:50 PM OOS 21-5 Domec, JC[1], A Schwantes[2], DM Johnson[2], JJ Swenson[2], N McDowell[3], J Ogée[4], HW Polley[5], W Pockman[6] and RB Jackson[2], (1)North Carolina State University / Bordeaux Sciences Agro, (2)Duke University, (3)Los Alamos National Laboratory, (4)INRA, (5)USDA, Agricultural Research Service, (6)University of New Mexico. *Why can't process-based models kill trees when modelling drought-induced mortality? How can we fix that?*.

3:10 PM Break

3:20 PM OOS 21-6 Powell, JA[1] and BJ Bentz[2], (1)Utah State University, (2)USDA Forest Service. *How mechanistic models with landscape resistance, direct temperature effects on life-cycle timing, and the Allee effect explain bark beetle outbreaks*.

3:40 PM OOS 21-7 Martínez-Vilalta, J[1], R Poyatos[2], D Aguadé[1], J Retana[1] and M Mencuccini[3], (1)CREAF / Autonomous University of Barcelona, (2)CREAF, (3)ICREA - CREAF and University of Edinburgh (UK). *A characterization of water transport regulation in plants: implications for drought-induced mortality*.

4:00 PM OOS 21-8 Anderegg, WRL[1], L Anderegg[2], A Flint[3], L Flint[3], J Berry[1] and C Field[4], (1)Stanford University, (2) University of Washington, (3)USGS California Water Science Center, (4)Carnegie Institution for Science. *Linking definitions, mechanisms, and modeling of tree mortality: An example of modeling drought-induced aspen die-off in Colorado*.

4:20 PM OOS 21-9 Huang, T and J Lichstein, University of Florida. *Modeling the response of tree mortality rates to climate anomalies using non-randomly sampled data that targets unusual mortality events*.

OOS 22 - Population, Community and Ecosystem Collapse and Recovery: Lessons Learned and Remaining Challenges For The Future Of Ecosystem Management

101D, Minneapolis Convention Center

Organized by: N Galic (ngalic@gmail.com), AS Downing

Moderator: AS Downing

In this session, we present current findings and examples of population, community and ecosystem key features and processes in preserving or compromising desired system states and in determining their potential for recovery.

1:30 PM OOS 22-1 Baveco, H[1], N Galic[2], A Focks[1] and P van den Brink[1], (1)Alterra, Wageningen University and Research Center, (2)University of Nebraska-Lincoln. *Effects of landscape context and seasonality on time to recovery*.

1:50 PM OOS 22-2 Forbes, V[1] and A Palmqvist[2], (1)University of Nebraska-Lincoln, (2)Roskilde University. *Experimental and modeling approaches for understanding the boom and bust population dynamics of the pollution indicator, Capitella teleta*.

2:10 PM OOS 22-3 Turgeon, K[1] and DL Kramer[2], (1)University of Guelph, (2)McGill University. *Compensatory immigration depends on adjacent population size and habitat quality but not on landscape connectivity*.

2:30 PM OOS 22-4 Galic, N[1], A Focks[2], V Forbes[1], H Baveco[2] and P van den Brink[2], (1)University of Nebraska-Lincoln, (2) Alterra, Wageningen University and Research Center. *Recovery in frequently disturbed landscapes: Recolonization consequences for source areas*.

2:50 PM OOS 22-5 Hefley, T[1], AJ Tyre[1] and EE Blankenship[2], (1) University of Nebraska-Lincoln, (2)University of Nebraska. *Statistical indicators and state-space population models predict extinction in a population of bobwhite quail*.

3:10 PM Break

3:20 PM OOS 22-6 Hoover, DL, AK Knapp and MD Smith, Colorado State University. *Ecological impacts of two years of extreme drought in a mesic grassland: rapid recovery despite an extreme response*.

3:40 PM OOS 22-7 Van de Leemput, I, EH van Nes and M Scheffer, Wageningen University. *Spatial resilience: The role of local positive feedbacks for large-scale collapse and recovery*.

4:00 PM OOS 22-8 Dai, L, K Korolev and J Gore, Massachusetts Institute of Technology. *Slower recovery in space before collapse of connected populations*.

4:20 PM OOS 22-9 Gårdmark, A[1], M Casini[1], M Huss[1], A Van Leeuwen[2], J Hjelm[1], L Persson[3] and AM de Roos[4], (1) Swedish University of Agricultural Sciences, (2)Princeton University, (3)Umeå University, (4)University of Amsterdam. *Alternative stable states in marine food-webs – preventing recovery of overexploited fish stocks?*.

4:40 PM OOS 22-10 Novak, M[1], J Watson[2], M Kenner[3] and JA Estes[3], (1)Oregon State University, (2)Vancouver Island University, (3)University of California. *Early warning indicators fail to forewarn of impending kelp forest regime shifts*.

COS 66 - Behavior II

101F, Minneapolis Convention Center

1:30 PM COS 66-1 Matthys, AD, CJ Huckins and AM Marcarelli, Michigan Technological University. *Embeddedness: A context dependent driver of fish habitat preference*.

1:50 PM COS 66-2 Bastiaans, E, University of Minnesota, Twin Cities. *Female preference for sympatric vs. allopatric male throat color morphs in the mesquite lizard (Sceloporus grammicus) species complex*.

2:10 PM COS 66-3 Simon, FW and BD Roitberg, Simon Fraser University. *Compensatory growth destabilizes adaptive personalities*.

2:30 PM COS 66-4 Hill, JM and KL Heck Jr., Dauphin Island Sea Lab. *Exploiting fear in restoration? The non-consumptive effects of avian predators on fish and seagrass associated fauna*.

2:50 PM COS 66-5 Tuff, T, University of Colorado. *Visualizing migration patterns in 3D helps inform causal mechanisms*.

3:10 PM Break

3:20 PM COS 66-6 Laidre, ME, University of California, Berkeley. *Rapid acquisition of an ecological inheritance: Niche constructed shells in hermit crabs*.

3:40 PM COS 66-7 Norris, DR and D Strickland, University of Guelph. *Juvenile gray jays rely on their parents cached food: an isotope spiking experiment*.

4:00 PM COS 66-8 Swanson, EM[1] and KE Holekamp[2], (1)Universi-

ty of Minnesota, (2)Michigan State University. *Growth rates in spotted hyenas living in a highly seasonal environment: Socio-ecological factors and life history consequences*.

4:20 PM COS 66-9 Bush, MR and JC Trexler, Florida International University. *Variation in movement strategies of small fishes in a dynamic wetland*.

4:40 PM COS 66-10 Spitz, D[1], M Hebblewhite[1] and TR Stephenson[2], (1)University of Montana, (2)California Department of Fish and Game. *Whatever moves you: Choice of migratory strategy shows plasticity in response to individual and environmental covariates in partially migratory bighorn sheep*.

COS 67 - Biogeochemistry: C And N Cycling In Response To Global Change I

101G, Minneapolis Convention Center

1:30 PM COS 67-1 Dukes, JS, DSN Auyeung, SS Hoeppner and V Suseela, Purdue University. *Long-term warming alters the climate sensitivity of plant and microbial processes in the Boston-Area Climate Experiment*.

1:50 PM COS 67-2 Ferrari, A[1], F Hagedorn[2] and PA Niklaus[3], (1) Swiss Federal Institute for Forest, Snow and Landscape Research WSL, (2)Swiss Federal Institute of Forest, Snow and Landscape Research (WSL), (3)University of Zurich. *Cold ecosystems in a warmer world: tracing radiocarbon in plant and soils of high altitudes at different soil temperatures*.

2:10 PM COS 67-3 Li, J[1], Y Luo[2], SM Natali[3], EAG Schuur[3], J Xia[2], B Pak[4], E Kowalczyk[5] and Y Wang[5], (1)The University of Oklahoma, (2)University of Oklahoma, (3)University of Florida, (4)Centre for Australian Weather and Climate Research, (5)CSIRO Marine and Atmospheric Research. *Permafrost thaw and ecosystem carbon cycle under multifactor global change at a tundra site: a modeling approach*.

2:30 PM COS 67-4 Xu, X[1], JP Schimel[2], PE Thornton[1], F Yuan[1], X Song[1] and S Goswami[1], (1)Oak Ridge National Laboratory, (2)University of California, Santa Barbara. *Substrate and environmental controls on microbial assimilation of soil organic carbon: a modeling framework*.

2:50 PM COS 67-5 Martina, JP, WS Currie, DE Goldberg and KJ Elgersma, University of Michigan. *Interactive effects of invasion and hydrology influence C storage along a nitrogen gradient in a simulated clonal wetland ecosystem*.

3:10 PM Break

3:20 PM COS 67-6 Yang, J[1], R Teskey[1] and C Wang[2], (1)University of Georgia, (2)Northeast Forestry University. *Interannual soil CO_2 efflux in six temperate forests in Northeastern China*.

3:40 PM COS 67-7 Carson, MA and JM Blair, Kansas State University. *Effects of long-term nitrogen fertilization and annual burning on belowground nutrient dynamics and microbial community structure in a tallgrass prairie*.

4:00 PM COS 67-8 Groffman, PM[1], HA Ewing[2], TJ Fahey[3], PJ Bohlen[4], MC Fisk[5] and JC Maerz[6], (1)Cary Institute of Ecosystem Studies, (2)Bates College, (3)Cornell University, (4) University of Central Florida, (5)Miami University of Ohio, (6)The University of Georgia. *Earthworms and nitrogen retention in northern hardwood forests*.

4:20 PM COS 67-9 Peckham, SD[1], BE Ewers[1], DS Mackay[2], E Pendall[1], HN Scott[3], JM Frank[4], MG Ryan[5] and WJ Massman[4], (1)University of Wyoming, (2)SUNY-Buffalo, (3)USDA Forest Service, (4)Rocky Mountain Research Station, U.S. Forest Service, (5)Colorado State University. *Bayesian analysis of a carbon cycle model: Implications for parameter estimation, model selection, and simulation of beetle-caused forest mortality*.

4:40 PM COS 67-10 Houlton, BZ, University of California, Davis. *Human-era increases in the global CO_2 burden of new nitrogen creation: An alternative hypothesis*.

COS 68 - Biogeography And Macroecology

101I, Minneapolis Convention Center

1:30 PM COS 68-1 Szewczyk, TM and CM McCain, University of Colorado at Boulder. *Testing diversity hypotheses: A global analysis of ant diversity across elevations*.

1:50 PM COS 68-2 Tucker, MA, TJ Ord and TL Rogers, University of New South Wales. *A marine lifestyle has enabled the expansion of home range size in mammals*.

2:10 PM COS 68-3 Greer, B, Oregon State University. *Climatic niche differentiation in a widely distributed species, trembling aspen (Populus tremuloides)*.

2:30 PM COS 68-4 Halloway, AH, JS Brown and CJ Whelan, University of Illinois at Chicago. *The hummingbird and the hawkmoth: Species diversity, competition and niche partitioning across the United States*.

2:50 PM COS 68-5 Woolley, SNC[1], T O'Hara[2], PK Dunstan[3] and B Wintle[4], (1)The University of Melbourne, (2)Museum Victoria, (3)CSIRO, (4)University of Melbourne. *Deep star shift: Turnover of bathyal brittle stars (Ophiuroidea) across Australia and New Zealand*.

3:10 PM Break

3:20 PM COS 68-6 Robinson, JL, Y Cao, RE DeWalt, T Tweddale and LC Hinz, University of Illinois, Urbana-Champaign. *Reconstructing historic stonefly species distributions across an interglacial suture zone*.

3:40 PM COS 68-7 Harris, N[1] and RR Dunn[2], (1)University of California, Berkeley, (2)North Carolina State University. *Co-extinction of carnivore hosts and parasites pose threats to human health*.

4:00 PM COS 68-8 Peay, K[1], J Talbot[1], DP Smith[1], J Taylor[2], R Vilgalys[3] and TD Bruns[4], (1)Stanford University, (2)University of California, Berkeley, (3)Duke University, (4)University of California. *From the rhizosphere to the biosphere: mapping the form and function of fungal communities across North American pine forests*.

4:20 PM COS 68-9 Ladau, J[1], JL Green[2] and KS Pollard[3], (1)Gladstone Institutes, (2)University of Oregon, (3)University of California. *Universal scaling of beta-diversity across taxa and terrestrial and marine ecosystems*.

4:40 PM COS 68-10 Mayor, SJ, JF Cahill, F He and S Boutin, University of Alberta. *Anatomy of biodiversity and community structure change on a human land use gradient*.

COS 69 - Climate Change: Plants II

101J, Minneapolis Convention Center

1:30 PM COS 69-1 Wilks, J[1], JD Lewis[2], C Lehmann[1] and M Zep-

pel[1], (1)Macquarie University, (2)Fordham University. *The impact of extreme precipitation on plant growth and water relations*.

1:50 PM COS 69-2 Moran, E[1] and ME Kubiske[2], (1)ETH Zurich, (2)USDA Forest Service, Northern Research Station. *Can Elevated CO_2 and Ozone Shift the Genetic Composition of Aspen (Populus tremuloides) Stands?*.

2:10 PM COS 69-3 Winkler, DE and LM Kueppers, University of California, Merced. *Alpine productivity responses to climate change at multiple levels of biological organization*.

2:30 PM COS 69-4 Covey, KR[1], SA Wood[2], RJ Warren II[3], X Lee[1] and MA Bradford[3], (1)Yale School of Forestry and Environmental Studies, (2)Columbia University, (3)Yale University. *Elevated Methane Concentrations in Trees of an Upland Forest*.

2:50 PM COS 69-5 Drake, JE[1], M Aspinwall[2], KY Crous[2], RA Smith[1], DT Tissue[1], PB Reich[3] and MG Tjoelker[1], (1)University of Western Sydney, (2)Hawkesbury Institute for the Environment, University of Western Sydney, (3)University of Minnesota. *Biogeography constrains acclimation to warming in two Australian Eucalypts: a climate shift experiment*.

3:10 PM Break

3:20 PM COS 69-6 Malyshev, AV[1], HAL Henry[2] and J Kreyling[1], (1)University of Bayreuth, (2)University of Western Ontario. *Plant responses to simulated and naturally variable winter temperatures: a within vs. among species comparison*.

3:40 PM COS 69-7 Prevéy, JS and T Seastedt, University of Colorado at Boulder. *Effects of precipitation change on population dynamics of Bromus tectorum and abundance of the pathogen Ustilago bullata*.

4:00 PM COS 69-8 Teskey, R[1], I Bauweraerts[2], M Ameye[2], TM Wertin[3], MA McGuire[1] and K Steppe[2], (1)University of Georgia, (2)Ghent University, (3)University of Illinois. *Effect of repeated heat waves, elevated [CO_2] and low water availability on growth of Quercus rubra and Pinus taeda seedlings*.

4:20 PM COS 69-9 Collins, AD[1], NG McDowell[1] and MG Ryan[2], (1)Los Alamos National Laboratory, (2)Colorado State University. *Response of pinion and juniper respiration to drought and warming*.

4:40 PM COS 69-10 Sendall, KM[1], RA Montgomery[1], RL Rich[1], A Stefanski[1], K Rice[1], H Jihua[2], X Wei[3] and PB Reich[1], (1) University of Minnesota, (2)Beijing Forestry University, (3) Institute of Soil and Water Conservation. *B4WarmED forest warming experiment: Effects on photosynthetic temperature optima of temperate and boreal tree species*.

COS 70 - Community Disturbance And Recovery II

L100A, Minneapolis Convention Center

1:30 PM COS 70-1 Summerville, KS, Drake University. *Are Lepidopteran Communities Resilient to Timber Harvest?*.

1:50 PM COS 70-2 Redmond, MD and NN Barger, University of Colorado. *Tree regeneration following drought and insect-induced mortality in piñon-juniper woodlands*.

2:10 PM COS 70-3 Karst, J[1], R Treu[2], M Randall[1], GJ Pec[1], PW Cigan[1] and JF Cahill Jr.[1], (1)University of Alberta, (2)Athabasca University. *Lack of ectomycorrhizal fungi may hinder forest recovery following mountain pine beetle*.

2:30 PM COS 70-4 Osazuwa-Peters, O[1], C Chapman[2] and A Zanne[3], (1)University of Missouri-Saint Louis, (2)McGill University, (3)The George Washington University. *Species composition and wood density variation: Responses to logging history in Kibale National Park, Uganda*.

2:50 PM COS 70-5 Han, X, R Schmitt, S Holbrook, A Brooks and T Adam, University of California, Santa Barbara. *Response of herbivore functional communities to multiple disturbances in Moorea, French Polynesia*.

3:10 PM Break

3:20 PM COS 70-6 MacDonald, RL[1], HH Chen[1], EE Prepas[1] and BJ Palik[2], (1)Lakehead University, (2)USDA Forest Service, Northern Research Station. *Diversity and compositional stability of riparian understory plant communities following logging in Boreal Plain watersheds*.

3:40 PM COS 70-7 O'Brien, MJ, University of Zurich. *Resistance and recovery of seedling communities to drought in Borneo: examining growth-dieback trade-offs*.

4:00 PM COS 70-8 Wonkka, CL[1], D Twidwell[2], CA Taylor Jr.[3], CB Zou[2], JJ Twidwell[4] and WE Rogers[1], (1)Texas A&M University, (2)Oklahoma State University, (3)Texas A&M AgriLIFE Research Center, (4)Independent. *Patch-specific woody plant mortality following severe drought in a semi-arid Texas savanna*.

4:20 PM COS 70-9 VanderWeide, BL and DC Hartnett, Kansas State University. *A four-year community bud bank record reveals belowground disturbance legacies in tallgrass prairie*.

4:40 PM COS 70-10 Fuentes-Ramirez, A[1], EL Mudrak[1], C Holzapfel[2] and KA Moloney[1], (1)Iowa State University, (2)Rutgers University. *Impact of wildfires on the spatial pattern of Larrea tridentata in the Sonoran and Mojave deserts, southwestern USA*.

COS 71 - Community Pattern And Dynamics III

L100B, Minneapolis Convention Center

1:30 PM COS 71-1 McClellan, ML[1], RA Montgomery[1], JM Becknell[2] and JS Powers[1], (1)University of Minnesota, (2)Carleton College. *Tree composition differs between public and private tropical secondary forests*.

1:50 PM COS 71-2 Veach, AM and WK Dodds, Kansas State University. *Benthic diatom community assembly and factors driving its structure*.

2:10 PM COS 71-3 Best, RJ and JJ Stachowicz, University of California, Davis. *Food vs. habitat and the assembly of grazer communities: Conflicting evidence from traits, phylogenies, experiments, and field surveys*.

2:30 PM COS 71-4 Weirich, CA and TR Miller, University of Wisconsin - Milwaukee. *Covariates of Cyanobacterial Biomass Over 1.5 Decades In A Eutrophic Lake*.

2:50 PM COS 71-5 Bittick, SJ[1], RJ Clausing[1], C Fong[2] and P Fong[1], (1)UCLA, (2)UC Santa Barbara. *Interaction of top-down and bottom-up processes facilitate the rapid range expansion of Turbinaria ornata in the South Pacific*.

3:10 PM Break

3:20 PM COS 71-6 McCarthy-Neumann, S[1] and I Ibanez[2], (1)

Michigan State University, (2)University of Michigan. *Plant-soil feedback and species coexistence: Interactions among pathogens, resources, and species life histories*.

3:40 PM COS 71-7 Tucker, CM[1], RL Vannette[2] and T Fukami[2], (1) University of Toronto, (2)Stanford University. *Environmental variability counteracts priority effects to facilitate species coexistence: evidence from nectar microbes*.

4:00 PM COS 71-8 DiRenzo, GV[1], R Brenes[2], MR Whiles[3], CM Pringle[4], SS Kilham[5] and K Lips[1], (1)University of Maryland, (2)University of Tennessee, (3)Southern Illinois University Carbondale, (4)University of Georgia, (5)Drexel University. *Disease as a homogenizing process: Tropical stream tadpole community dynamics prior to and following a disease epidemic*.

4:20 PM COS 71-9 Janetski, DJ and CR Ruetz III, Grand Valley State University. *Connectivity and metacommunity dynamics: insights from a lake network in Michigan, USA*.

4:40 PM COS 71-10 Bolker, BM[1], A Stier[2] and CW Osenberg[3], (1) McMaster University, (2)University of British Columbia, (3) University of Florida. *Disentangling sampling effects from ecological process in beta diversity analysis*.

COS 72 - Conservation Ecology

L100C, Minneapolis Convention Center

1:30 PM COS 72-1 Carlson, CJ, KR Burgio and KE Block, University of Connecticut. *Reconstructing the extinction of the Carolina Parakeet: historical data reveal that two distinct human activities drove two separate subspecies' declines*.

1:50 PM COS 72-2 Gill, JL and DF Sax, Brown University. *Prevalent known and cryptic extinctions in the Pleistocene have conservation lessons for the next century*.

2:10 PM COS 72-3 Dent, DH[1], R Perez[2], S Aguilar[2] and R Condit[2], (1)University of Stirling, (2)Smithsonian Tropical Research Institute. *Persistence of forest tree species in human-modified landscapes of central Panama*.

2:30 PM COS 72-4 Smith, KG[1] and EG Biro[2], (1)Washington University in St. Louis, (2)Washington University in StL. *Why do species go extinct? An experimental test of the contribution of rarity to extinction risk*.

2:50 PM COS 72-5 Baskett, ML[1], SC Burgess[2] and RS Waples[3], (1)University of California, Davis, (2)University of California Davis, (3)NOAA Fisheries. *Assessing strategies to minimize unintended fitness consequences of aquaculture on wild populations*.

3:10 PM Break

3:20 PM COS 72-6 Gibson, L, National University of Singapore. *Near-complete extinction of native small mammal fauna from forest fragments*.

3:40 PM COS 72-7 Noss, RF[1], WJ Platt[2], BA Sorrie[3], AS Weakley[4], RK Peet[4] and JK Costanza[5], (1)University of Central Florida, (2)Lousiana State University, (3)North Carolina Natural Heritage Program, (4)University of North Carolina, (5)North Carolina State University. *How a global biodiversity hotspot, the North American Coastal Plain, went unrecognized*.

4:00 PM COS 72-8 Peterson, CL and ML Richardson, Bok Tower Gardens. *Influence of community structure on the spatial distribution and pollination of critically endangered Dicerandra immaculata var. immaculata (Lamiaceae)*.

4:20 PM COS 72-9 Newman, G, R Scarpino, NE Kaplan and B Fauver, Colorado State University. *Developing the living atlas of east african flora for participatory conservation*.

4:40 PM COS 72-10 Austin, BC and KS Williams, San Diego State University. *The reproductive biology of the rare shrub Fremontodendron mexicanum*.

COS 73 - Detritus And Decomposition I

L100D, Minneapolis Convention Center

1:30 PM COS 73-1 Garkoti, SC, Jawaharlal Nehru University. *Dynamics of litter fall and nutrient return in paradoxically reestablishing white oak (Quercus leucotrichophora A. Camus) forests in the central Himalaya*.

1:50 PM COS 73-2 Nyanumba, SM, SX Chang and JF Cahill, University of Alberta. *Effects of temperature, precipitation regime, and clipping on root and shoot litter decomposition in three Northern grasslands*.

2:10 PM COS 73-3 Thoman, HM and MN Weintraub, University of Toledo. *A critical temperature threshold for early Acer rubrum leaf litter decomposition*.

2:30 PM COS 73-4 Taura, JD, LG Leff and CB Blackwood, Kent State University. *Moisture and nitrogen effects on enzyme activity and microbial communities during Fagus grandifolia leaf litter decomposition*.

2:50 PM COS 73-5 Fraver, S[1], AM Milo[2], JB Bradford[3], AW D'Amato[1], L Kenefic[4], BJ Palik[5], CW Woodall[6] and JC Brissette[7], (1)University of Minnesota, (2)The George Washington University, (3)US Geological Survey, (4)US Forest Service, (5)USDA Forest Service, Northern Research Station, (6)USDA Forest Service, (7)Northern Research Station, USDA Forest Service. *Woody debris decay rates and biomass loss: New findings from old logs*.

3:10 PM Break

3:20 PM COS 73-6 Weiser, MD, L Shen, J Zhou and M Kaspari, University of Oklahoma. *Climate, biogeochemistry and the thermal performance of decomposition in brown food webs*.

3:40 PM COS 73-7 Morrissey, RC, MA Jenkins and MR Saunders, Purdue University. *Coarse woody debris inputs and spatial arrangement as artifacts of past management practices*.

4:00 PM COS 73-8 Van Diepen, LTA[1], CM Sthultz[2], A Pringle[2], EW Morrison[1] and SD Frey[1], (1)University of New Hampshire, (2)Harvard University. *Functioning of decomposer fungi in a changing climate*.

4:20 PM COS 73-9 Halvorson, HM and MA Evans-White, University of Arkansas. *Detrital nutrient enrichment alters elemental processing by a stream detritivore*.

4:40 PM COS 73-10 Ball, BA[1], Y Carrillo[2] and M Molina[3], (1)Arizona State University at the West Campus, (2)University of Sydney, (3)ERD, EPA. *Litter composition effects on decomposition across the litter-soil interface*.

COS 74 - Disease And Epidemiology II

L100E, Minneapolis Convention Center

1:30 PM COS 74-1 Satterfield, D[1], JC Maerz[2] and S Altizer[1], (1) University of Georgia, (2)The University of Georgia. *"Staycation" monarch butterflies (Danaus plexippus) burdened*

by disease: Effects of altered host migration on parasite transmission.

1:50 PM COS 74-2 Magori, K[1], G Lockaby[1], L Kalin[1], R Kelly[2], W Morse[1], N Noori[1], R Sawant[1] and WC Zipperer[3], (1)Auburn University, (2)Georgia Department of Public Health, (3)USDA Forest Service. *Socio-economic, water quality and land-use land-cover gradients interact to create variable West Nile virus risk across metropolitan Atlanta, GA*.

2:10 PM COS 74-3 Harth, JE[1], M Ferrari[2] and AG Stephenson[1], (1)The Pennsylvania State University, (2)Penn State University. *A multi-year comparison of the fitness of the virus resistant transgene in wild populations of Cucurbita pepo*.

2:30 PM COS 74-4 States, SL[1], RJ Brinkerhoff[2], C Folsom-O'Keefe[3], TK Steeves[1] and M Diuk-Wasser[1], (1)Yale School of Public Health, (2)University of Richmond, (3)Audubon Connecticut. *Similar Borrelia burgdorferi infection prevalence and genotype diversity in two highly contrasting biodiversity settings*.

2:50 PM COS 74-5 Han, BA and JM Drake, University of Georgia. *Rodent reservoirs of future zoonotic pathogens*.

3:10 PM Break

3:20 PM COS 74-6 Kyle, C and G Dwyer, University of Chicago. *Mechanistic models to forecast the response of an insect fungal pathogen to global climate change*.

3:40 PM COS 74-7 Jolles, AE[1] and P Hosseini[2], (1)Oregon State University, (2)EcoHealth Alliance (formerly Wildlife Trust). *Immune strategies as life history traits: a theoretical framework for understanding how animal life histories determine optimal defenses against pathogens*.

4:00 PM COS 74-8 Busby, PE[1], N Zimmerman[2], DJ Weston[3], J Houbraken[4] and G Newcombe[5], (1)University of Washington, (2)Stanford University, (3)Oak Ridge National Laboratory, (4)4CBS-KNAW Fungal Biodiversity Centre, (5) University of Idaho. *Leaf endophytes and host genotype in Populus affect pathogen severity*.

4:20 PM COS 74-9 Budischak, SA[1], K Sakamoto[1], JF Urban[2] and VO Ezenwa[1], (1)University of Georgia, (2)USDA. *Consequences of co-infection for hosts and parasites: importance of host nutrition and parasite species identity*.

4:40 PM COS 74-10 Mata, TM[1], HM Alexander[2], P Trebicki[1] and CM Malmstrom[1], (1)Michigan State University, (2)University of Kansas. *Intraspecies variability in virus interactions with switchgrass*.

COS 75 - Ecosystem Function

L100F, Minneapolis Convention Center

1:30 PM COS 75-1 Zhou, J[1], W Liu[2], Y Deng[1], YH Jiang[1], K Xue[1], Z He[1], JDV Nostrand[1], L Wu[1], Y Yang[3] and A Wang[2], (1) University of Oklahoma, (2)Harbin Institute of Technology, (3)Tsinghua University. *Stochastic assembly leads to alternative communities with distinctFunctions in a bioreactor microbial community*.

1:50 PM COS 75-2 Fay, PA[1], M Aspinwall[2], LG Reichmann[3], HW Polley[1], A Gibson[3], A Khasanova[4], B Whitaker[4], DB Lowry[4], S Taylor[5], CV Hawkes[6] and T Juenger[7], (1)USDA, Agricultural Research Service, (2)Hawkesbury Institute for the Environment, University of Western Sydney, (3)USDA ARS, (4)University of Austin, (5)Bowdoin College, (6)University of Texas at Austin, (7)University of Texas. *Genotypic variation in traits controlling carbon uptake responses to precipitation in switchgrass*.

2:10 PM COS 75-3 Ryan, MG[1], D White[2] and M Battaglia[3], (1) Colorado State University, (2)CSIRO, Australia, (3)CSIRO. *Intrinsic water-use efficiency estimated with 13C discrimination is unrelated to stand-level water use efficiency for Eucalyptus globulus in Western Australia*.

2:30 PM COS 75-4 Schedlbauer, JL, West Chester University. *Carbon dioxide exchange in Mid-Atlantic serpentine barrens managed with prescribed fire*.

2:50 PM COS 75-5 Reynolds, PL[1], JE Duffy[2], KE Boyer[3], C Bostrom[4], J Coyer[5], M Cusson[6], JG Douglass[7], J Eklof[8], A Engelen[9], BK Eriksson[5], L Gamfeldt[10], M Hori[11], KA Hovel[12], S Fredriksen[13], K Iken[14], PO Moksnes[8], M Nakaoka[15], MI O'Connor[16], J Olsen[5], JL Ruesink[17], EE Sotka[18], JJ Stachowicz[19], J Thormar[13] and M Whalen[19], (1) Virginia Institute of Marine Science, (2)The College of William and Mary, (3)Romberg Tiburon Center/San Francisco State University, (4)Åbo Akademi University, (5)University of Groningen, (6)Université du Québec à Chicoutimi, (7) Northeastern University, (8)University of Gothenburg, (9) Centre of Marine Sciences (CCMAR), (10)Göteborg University, (11)Fisheries Research Agency, (12)San Diego State University, (13)University of Oslo, (14)University of Alaska Fairbanks, (15)Hokkaido University, (16)University of British Columbia, (17)University of Washington, (18) College of Charleston, (19)University of California, Davis. *The ZEN of seagrass ecology: Biodiversity, environment, and eelgrass ecosystem functioning on a planetary scale*.

3:10 PM Break

3:20 PM COS 75-6 Seahra, S[1], KA Yurkonis[2] and JA Newman[1], (1)University of Guelph, (2)University of North Dakota. *Evidence that patch size affects productivity and invasion in grassland ecosystems*.

3:40 PM COS 75-7 Asao, S[1], JW Raich[2], AE Russell[2], R Bedoya-Arrieta[3], WJ Parton[1] and MG Ryan[1], (1)Colorado State University, (2)Iowa State University, (3)Organization for Tropical Studies. *Respiration, photosynthesis, and carbon partitioning among four tree species of tropical wet forest*.

4:00 PM COS 75-8 Corman, JR[1], A Poret-Peterson[1], A Glukhova[1], V Souza[2] and JJ Elser[1], (1)Arizona State University, (2)UNAM Instituto de Ecología. *Growing rocks: Implications of lithification to microbial community ecology in a desert stream*.

4:20 PM COS 75-9 Heineman, KD[1], BL Turner[2] and JW Dalling[3], (1)University of Illinois-Urbana Champaign, (2)Smithsonian Tropical Research Institute, (3)University of Illinois. *Variation in wood nutrient stoichiometry along a soil fertility gradient in a Panamanian montane forest*.

4:40 PM COS 75-10 Nemergut, D[1] and EB Graham[2], (1)University of Colorado, (2)University of Colorado at Boulder. *Do we need to understand microbial community structure to predict function?*.

1:30 pm-5 pm

COS 76 - Invasion: Prevention And Management

L100G, Minneapolis Convention Center

1:30 PM COS 76-1 Adams, VM and SA Setterfield, Charles Darwin University. *Spatial prioritization for management of Andropogon gayanus (Gamba grass) invasions: accounting for social, economic and environmental values*.

1:50 PM COS 76-2 Balogianni, VG[1], SD Wilson[1], BM Vaness[2], AS MacDougall[3] and BD Pinno[4], (1)University of Regina, (2)Western Ag Innovations, Inc., (3)University of Guelph, (4)University of Alberta. *Distinct root and shoot responses to simulated mowing and fertility in a grassland invasion*.

2:10 PM COS 76-3 Matzek, V, S Cresci and M Pujalet, Santa Clara University. *What managers want from invasive species research--and what they actually get*.

2:30 PM COS 76-4 Marko, MD[1], JD Madsen[2], R Smith[1] and RM Wersal[2], (1)Concordia College, (2)Mississippi State University. *Using ecological data to determine the best management practices for controlling the invasive aquatic plant, flowering rush*.

2:50 PM COS 76-5 Peltzer, DA[1], RB Allen[1], PJ Bellingham[1], SJ Richardson[1], E Wright[2], P Knightbridge[2] and NWH Mason[3], (1)Landcare Research, (2)Department of Conservation, (3)Landcare Ressearch. *Disentangling drivers of tree population size class distributions*.

3:10 PM Break

3:20 PM COS 76-6 Andow, DA, University of Minnesota. *Reducing geographic spread of invasive earthworms*.

3:40 PM COS 76-7 Jones, RO[1], JC Chambers[2], DW Johnson[3], DI Board[4] and RR Blank[5], (1)University of Nevada-Reno, (2)USDA Forest Service, (3)University of Nevada, Reno, (4)USDA Forest Service Rocky Mountain Research Station, (5)USDA Agricultural Research Service. *Effects of repeated burning on nitrogen budgets and cheatgrass (Bromus tectorum) biomass and reproduction*.

4:00 PM COS 76-8 Munis, M[1], CS Brown[2] and R Roath[2], (1)Colorado State Univeristy, (2)Colorado State University. *Landscape position influences resistance to Bromus tectorum invasion and short-term resilience is limited*.

4:20 PM COS 76-9 Kuhman, TR, Edgewood College. *Effects of prescribed burning and cutting on a non-native invasive liana, Oriental bittersweet (Celastrus orbiculatus Thunb.)*.

4:40 PM COS 76-10 Guzmán-Colón, DK and G Roloff, Michigan State University. *Mongoose in the rainforest: Analyzing population estimates and habitat attributes for a better management strategy in El Yunque National Forest*.

COS 77 - Land-Use And Land-Use History

L100H, Minneapolis Convention Center

1:30 PM COS 77-1 Karbin, S[1], D Hiltbrunner[2] and PA Niklaus[3], (1)Institute of Evolutionary Biology and Environmental Sciences, University of Zurich, (2)Swiss Federal Institute of Forest, Snow and Landscape Research (WSL),, (3)University of Zurich. *Increasing soil methane uptake along 120-year afforestation chronosequence is driven by soil moisture*.

1:50 PM COS 77-2 Cariveau, DP[1], JE Powell[2], R Winfree[1] and NA Moran[2], (1)Rutgers University, (2)Yale University. *Microbial gut symbiont communities of native Bombus differ by species and not by habitat type*.

2:10 PM COS 77-3 Peralta, AL and JT Lennon, Indiana University. *Legacy effects on soil microbial communities in human-dominated ecosystems*.

2:30 PM COS 77-4 Hersacher, NK[1], MM Gossner[1], TM Lewinsohn[2], M Lange[3], E Pasalic[1], M Türke[1], S Boch[4], J Müller[4], S Socher[4], D Prati[4], M Fischer[4] and WW Weisser[1], (1)Technische Universität München, (2)Universidade Estadual de Campinas, (3)Institute of Ecology, Friedrich-Schiller-University, (4)University of Bern. *Land-use intensity in semi-natural grasslands indirectly affects arthropod diversity through changes in resource diversity or abundance*.

2:50 PM COS 77-5 Sánchez-Cuervo, AM and TM Aide, University of Puerto Rico. *Consequences of the armed conflict, forced human displacement, and land abandonment on forest cover change in Colombia: a multi-scaled analysis*.

3:10 PM Break

3:20 PM COS 77-6 Ireland, AW[1], PA Roth[1], MA Marsicano[1] and PJ Drohan[2], (1)The Pennsylvania State University, (2)Penn State. *Developing Ecological Sites and Associated State-&-Transition Models to Anticipate Dynamic Ecosystem Responses to Disturbance in Complex Landscapes of North Central Pennsylvania*.

3:40 PM COS 77-7 Nelson, AE and AA Forbes, University of Iowa. *Spatially explicit ecological consequences of human land-use for specialist herbivores and their parasitoids*.

4:00 PM COS 77-8 Connette, GM and RD Semlitsch, University of Missouri. *Life history predicts recovery rate from past land use in southern Appalachian salamanders*.

4:20 PM COS 77-9 Boucher, DH, Union of Concerned Scientists. *Shifting from beef to other animal products: a important strategy for combating climate change*.

4:40 PM COS 77-10 Kennedy, CM[1], J Oakleaf[1], P West[2], J Gerber[2] and J Kiesecker[1], (1)The Nature Conservancy, (2)University of Minnesota. *Future development risk: Projected global impacts by energy and mining on terrestrial biomes*.

COS 78 - Mycorrhizae

L100I, Minneapolis Convention Center

1:30 PM COS 78-1 Glassman, SI[1] and TD Bruns[2], (1)University of California, Berkeley, (2)University of California. *What lies beneath: A continental survey of ectomycorrhizal fungal spore banks*.

1:50 PM COS 78-2 Valverde, OJ[1], KA Smemo[2], LM Feinstein[1], MW Kershner[1] and CB Blackwood[1], (1)Kent State University, (2)The Holden Arboretum. *Aggregated and complimentary: fine root distribution patterns in a temperate deciduous forest*.

2:10 PM COS 78-3 Bennett, JA and JF Cahill Jr., University of Alberta. *AMF effects on diversity vary with relative nitrogen, water, and light availability, but not phosphorus availability*.

2:30 PM COS 78-4 Cruz, AE, M Schroeder-Moreno and D Watson, North Carolina State University. *The role of arbuscular mycorrhizal fungi diversity on corn response to drought stress*.

2:50 PM COS 78-5 Kittrell, SS, JA Steets and GWT Wilson, Oklahoma State University. *Exploring the role of arbuscular mycorrhizal fungi in freshwater wetlands of the tallgrass prairie*.

3:10 PM Break

3:20 PM COS 78-6 Propster, JR[1], ME Ritchie[2] and NC Johnson[1], (1)Northern Arizona University, (2)Syracuse University. *Uncoupling the effects of phosphorus and precipitation on arbuscular mycorrhizas in the Serengeti*.

3:40 PM COS 78-7 Del Vecchio, K, SL Fliegel, EDL Hartmann, PR Nelson, WG Shivega and L Aldrich-Wolfe, Concordia College. *Diversity of arbuscular mycorrhizal fungi in native prairie, agricultural, and prairie restoration sites in northwestern Minnesota*.

4:00 PM COS 78-8 Cheng, L[1], X Wei[2], TS Adams[1], JL DeForest[3], L Li[4], W Chen[2], RT Koide[5] and DM Eissenstat[2], (1)The Pennsylvania State University, (2)Pennsylvania State University, (3)Ohio University, (4)Peking University, (5)Brigham Young University. *Are roots and mycorrhizal fungi complementary in nutrient foraging of tree species?*.

4:20 PM COS 78-9 Pec, GJ[1], J Karst[1], SW Simard[2] and JF Cahill Jr.[1], (1)University of Alberta, (2)University of British Columbia. *Arbuscular mycorrhizal host plant diversity increases with mountain pine beetle attack severity*.

4:40 PM COS 78-10 Becklin, KM, GWR Mullinix and JK Ward, University of Kansas. *Mycorrhizal functioning in Taraxacum hosts shifts along the mutualism-parasitism continuum in response to glacial through future changes in atmospheric [CO_2]*.

COS 79 - Restoration Ecology III

L100J, Minneapolis Convention Center

1:30 PM COS 79-1 Gonzalez, E[1], L Rochefort[2] and M Poulin[2], (1)Universite Laval, (2)Peatland Ecology Research Group (PERG). *Predicting success in restored bogs shortly after restoration works*.

1:50 PM COS 79-2 Williams, EW[1], J Fant[2], K Havens[1] and M Howard[3], (1)Chicago Botanic Garden, (2)Northwestern University & Chicago Botanic Garden, (3)Bureau of Land Management. *Population genetics and viability of genetic rescue in the restricted endemic Lepidospartum burgessii (Asteraceae)*.

2:10 PM COS 79-3 Veblen, KE[1], MF Holthuijzen[1], TA Wirth[2], NM DeCrappeo[3] and DA Pyke[4], (1)Utah State University, (2) USGS Forest and Rangeland Ecosystem Science Center, (3)U.S. Geological Survey, DOI Northwest Climate Science Center, (4)U.S. Geological Survey. *Plant responses to rainfall and microsite in sagebrush communities: Keys to restoration success in the Great Basin?*.

2:30 PM COS 79-4 Lampert, A and A Hastings, University of California, Davis. *When is active restoration cost effective?*.

2:50 PM COS 79-5 Davenport, T[1] and D Bart[2], (1)University of Wisconsin - Madison, (2)University of Wisconsin. *Investigating relationships between land-use legacies and current vegetation in Southern WI fens*.

3:10 PM Break

3:20 PM COS 79-6 Porensky, LM[1], J Davison[1], WM Miller[1], EM Goergen[2], EK Espeland[3], EC Moore[1] and EA Leger[1], (1) University of Nevada, Reno, (2)St. Petersburg College, (3) USDA ARS PMRU. *A mixed blessing for restoration in arid shrublands: Native perennial grasses reduce erosion and weeds, but also native shrubs*.

3:40 PM COS 79-7 Thompson, MSA[1], SJ Brooks[2], C Sayer[1], G Woodward[3], GL Simpson[4] and V Warren[5], (1)University College London, (2)Natural History Museum, (3)Queen Mary University of London, (4)University of Regina, (5) Queen Mary, University of London. *The effect of large woody debris on stream community structure across an enrichment gradient*.

4:00 PM COS 79-8 Booth, EM[1], NL Fowler[1] and EL Keith[2], (1) University of Texas at Austin, (2)Raven Environmental Services, Inc.. *Effects of wildfire severity and post-wildfire management actions on vegetation recovery trajectories in the Lost Pines of Texas*.

4:20 PM COS 79-9 Chen, Y and RD Cox, Texas Tech University. *Effects of plant-derived smoke products on seed germination*.

4:40 PM COS 79-10 Hourdequin, M[1] and D Havlick[2], (1)Colorado College, (2)University of Colorado-Colorado Springs. *Ecological restoration, continuity, and change: The role of history in the restoration of former U.S. military sites*.

COS 80 - Soil Ecology

M100GD, Minneapolis Convention Center

1:30 PM COS 80-1 Reinhart, KO, USDA-ARS. *Relationships between grassland community characteristics and soil properties along a grazing gradient in mixed-grass prairie*.

1:50 PM COS 80-2 Parr, M[1], J Grossman[1], S Snapp[2], R Bezner-Kerr[3] and L Shumba[4], (1)NCSU, (2)Michigan State University, (3)University of Western Ontario, (4)Ekwendeni Hospital. *Environmental drivers of soybean-nodulating-rhizobia diversity in un-inoculated smallholder farms in Malawi*.

2:10 PM COS 80-3 Resner, KE[1], K Yoo[1], A Lyttle[1], C Hale[2], A Aufdenkampe[3] and SD Sebestyen[4], (1)University of Minnesota, (2)University of Minnesota Duluth, (3)Stroud Water Research Center, (4)USDA Forest Service Research. *Volumetric change and losses of nutrient elements along an earthworm invasion chronosequence in a northern hardwood forest in Minnesota*.

2:30 PM COS 80-4 Darby, BJ[1], TM Todd[2] and MA Herman[2], (1) University of North Dakota, (2)Kansas State University. *High-throughput amplicon sequencing of tallgrass prairie soil nematodes*.

2:50 PM COS 80-5 Wojtowicz, T, ZG Compson, TG Whitham and CA Gehring, Northern Arizona University. *Plant genetic identity influences litter structure with consequences for litter layer moisture retention*.

3:10 PM Break

3:20 PM COS 80-6 Baugher, C[1], G Filippi[2], J Adams[1], J Johnson-Maynard[1] and L Waits[1], (1)University of Idaho, (2)University of Maryland, Baltimore County. *A nondestructive, noninvasive genetic test for the presence/absence of the Giant Palouse earthworm (Driloleirus americanus)*.

3:40 PM COS 80-7 Kratz, CJ[1], AJ Burton[1] and EA Lilleskov[2], (1) Michigan Technological University, (2)US Forest Service, Northern Research Station. *Soil microbial extracellular enzyme activites from a Northern temperate forest with experimental temperature and moisture manipulations*.

4:00 PM COS 80-8 Bach, EM and KS Hofmockel, Iowa State University. *Biological, physical, and temporal constraints on extracellular enzyme activity in prairie and corn bioenergy systems*.

4:20 PM COS 80-9 Dymond, S[1], P Bolstad[1] and RK Kolka[2], (1) University of Minnesota, (2)USDA Forest Service. *Five Decades of Soil Moisture Dynamics in a Northern Forest*.

4:40 PM COS 80-10 He, Z, University of Oklahoma. *Ecosystem-specific responses of soil microbial communities to elevated carbon dioxide*.

COS 81 - Sustainability: Urban Systems

M100HC, Minneapolis Convention Center

1:30 PM COS 81-1 Janke, BD[1], JC Finlay[1], SE Hobbie[1], LA Baker[1], RW Sterner[1], DA Nidzgorski[2] and BN Wilson[1], (1)University of Minnesota, (2)University of Minnesota - Twin Cities. *The importance of storm drain baseflow in nutrient export from urban watersheds*.

1:50 PM COS 81-2 Whittinghill, LJ[1], B Rowe[2], M Ngouajio[2] and B Cregg[2], (1)The Earth Institute at Columbia University, (2) Michigan State University. *Evaluation of nutrient management and mulching strategies for vegetable production on an extensive green roof*.

2:10 PM COS 81-3 Carter, T[1], M Miss[2], S Bossung[3] and A Mras[4], (1)Butler University, (2)Mary Miss Studio, (3)Eli Lilly and Company, (4)City of Indianapolis. *Translational ecology in cities: unconventional dissemination strategies for ecological awareness and action*.

2:30 PM COS 81-4 Nidzgorski, DA[1] and SE Hobbie[2], (1)University of Minnesota - Twin Cities, (2)University of Minnesota. *Plant a tree, save a lake: Urban trees reduce groundwater nutrient pollution*.

2:50 PM COS 81-5 Peterson, HM and LA Baker, University of Minnesota. *Quantifying the upstream flux of phosphorus to Minnesota's Twin Cities urban food-shed*.

3:10 PM Break

3:20 PM COS 81-6 Pavao-Zuckerman, M[1], S Kovachich[2], M Livingston[1], R Stoltz[1] and SE Smith[1], (1)University of Arizona, (2)University of Florida. *The influence of ecological design principles on semi-arid green roof ecosystem services*.

3:40 PM COS 81-7 Shrestha, N, Toronto and Region Conservation Authority. *Road-Valley System Crossings: Balancing Idealism verses Realism in an Urban Context*.

4:00 PM COS 81-8 Wilberding, S[1] and E Smithwick[2], (1)Pennsylvania State University, (2)The Pennsylvania State University. *Modeling municipal level green infrastructure runoff mitigation using EPA SUSTAIN*.

4:20 PM COS 81-9 Overby, MC[1], B Bailey[2], R Stoll[2], P Willemsen[1] and E Pardyjak[2], (1)University of Minnesota Duluth, (2) University of Utah. *A highly scalable modeling framework based on GPU technology for simulating radiative transport in complex urban and plant canopies*.

4:30 pm-6:30 pm

OPS 3 - Current Perspectives On The History Of Ecology

Organized by: DS Song (songdan@sas.upenn.edu)

This poster session is meant to highlight past societal circumstances, scientific events, and people that shaped our current perception of ecology.

OPS 3-1 Dietterich, LH, University of Pennsylvania. *Effects of environmental advocacy on the study of ecology*.

OPS 3-2 Glassman, SI[1] and R Vandegrift[2], (1)University of California, Berkeley, (2)University of Oregon. *Getting freaky with fungi: A historical perspective on the emergence of mycology*.

OPS 3-3 Macrae-Crerar, A, University of Pennsylvania. *Women and their role in ecology*.

OPS 3-4 Fox, C, William Penn High School. *History of Ecology Education in the K-12 System*.

PS 32 - History

Exhibit Hall B, Minneapolis Convention Center

PS 32-5 McDonough MacKenzie, C[1], RB Primack[1] and JC Johnston[2], (1)Boston University, (2)University of Maine Presque Isle. *Science in the attic: Long-term spring phenology of trees, wildflowers and birds in Northern Maine building on a forgotten journal*.

PS 32-6 Balbach, H, US Army ERDC. *When and how was Ecology born, and how did we come to understand it?*.

PS 32-7 Liu, F[1] and DJ Mladenoff[2], (1)Wuhan Botanical Garden, Chinese Academy of Sciences, (2)University of Wisconsin-Madison. *Historical (1800s) vegetation in Wisconsin: Mapping forests and the controlling variables*.

PS 32-8 Groesbeck, A[1], AK Salomon[1], M Puckett[1], D Lepofsky[1] and K Rowell[2], (1)Simon Fraser University, (2)University of Washington. *Ecosystem enhancements? Ancient aquaculture practices in British Columbia provide insights and baselines for today's management*.

PS 33 - Aquatic Ecology: Lakes And Ponds

Exhibit Hall B, Minneapolis Convention Center

PS 33-9 Stephan, LR and MSMC Noll, Unesp São José do Rio Preto. *Influence of floating macrophytes on populations of planktonic microcrustaceans*.

PS 33-10 Colombo, LM[1], SM Steingruber[2] and F Lepori[3], (1) University of Applied Sciences of southern Switzerland, (2)Environmental Protection Agency of Cantone Ticino, (3)University of Applied Sciences and Arts of Southern Switzerland. *Are Swiss Alpine lakes recovering from acidification?*.

PS 33-11 Hembre, LK, A Burks and P Martin, Hamline University. *Patterns of seasonal and spatial variation in the morphology of two species of Daphnia in a Minnesota lake*.

PS 33-12 Contreras, G and VL Lougheed, University of Texas at El Paso. *Environmental Causes of Increasing Dissolved Organic Carbon (DOC) in Arctic Tundra Ponds over the Past 40 years*.

PS 33-13 Kniech, KL, CEH Kissman and JR Hodgson, St. Norbert College. *Reducing algal blooms in Dream Lake: Pre-*

manipulation algal and zooplankton seasonal dynamics indicate weak top-down control by largemouth bass (Micropterus salmoides).

PS 33-14 Maier, DB, Umea University. *Calibration of biological lake sediment records: Tracing Diatom assemblages through the water column into the sediment*.

PS 34 - Aquatic Ecology: Streams And Rivers

Exhibit Hall B, Minneapolis Convention Center

PS 34-15 Zhang, Q and X Tan, Wuhan Botanical Garden, the Chinese Academy of Sciences. *Spatial pattern of benthic diatoms and water quality assessment using diatom indices in a subtropical river, China*.

PS 34-16 Dzurik, MC and CEH Kissman, St. Norbert College. *The effects of dredging to remediate the lower Fox River, WI, EPA Superfund Site on water quality, clarity and invertebrate species diversity*.

PS 34-17 Danhoff, B[1], CJ Huckins[1], NA Auer[1], C Goble[1], S Ogren[2] and M Holtgren[2], (1)Michigan Technological University, (2)Little River Band of Ottawa Indians. *Manistee River Tributaries as Potential Arctic Grayling Habitat*.

PS 34-18 Huckins, CJ[1], AD Matthys[1] and EA Baker[2], (1)Michigan Technological University, (2)Michigan DNR. *Multi-scale variation in abundance and distribution of juvenile salmonids in neighboring Lake Superior tributaries: Potential effects of fine sediment aggradation and species interactions*.

PS 34-19 Quist, DJ, MD Dixon, TC Cowman and DA Soluk, University of South Dakota. *Flooding impacts and status of riverine mesohabitats, channel complexity, and habitat turnover along the Missouri River*.

PS 34-20 Rausch, RE, CF Lenhart and LJ Triplett, University of Minnesota. *Ecohydrological Investigations of Minnesota River Sandbar Vegetation*.

PS 34-21 Rashleigh, B[1], A Richardson[2], M Nimiroski[2] and A Libby[2], (1)U.S. Environmental Protection Agency, (2)Rhode Island Department of Environmental Management. *Freshwater fish assemblage patterns in Rhode Island streams and rivers*.

PS 34-22 Bidez, C, M Anderson, F Black and CA Clay, Westminster College. *Urban stream health: Macroinvertebrates and periphyton as indicators*.

PS 34-23 Fernández Campón, F[1], E Scheibler[1], G Castro Burgos[1], V Bozzo[1], N Roldán[1] and T Wellnitz[2], (1)CCT Mendoza-CONICET, (2)University of Wisconsin - Eau Claire. *Does elevation increase aquatic-terrestrial exchange in arid mountain streams?*.

PS 34-24 Hazellief, B, Y Vadeboncoeur and V Bahn, Wright State University. *Relationship between land use and Ohio stream fish diversity*.

PS 35 - Aquatic-Terrestrial Linkages

Exhibit Hall B, Minneapolis Convention Center

PS 35-25 Crawford, M[1], JB Cotner[1] and SK Thompson[2], (1)University of Minnesota - Twin Cities, (2)University of Minnesota- Twin Cities. *How do invasive earthworms impact biogeochemical cycles: Pairing laboratory experiments with field surveys*.

PS 35-26 Reynolds, HA, CM Stracey and F Black, Westminster College. *An assessment of mercury concentrations in a terrestrial songbird at the Great Salt Lake*.

PS 35-27 Kelly, J[1], JB Cotner[1] and SK Thompson[2], (1)University of Minnesota - Twin Cities, (2)University of Minnesota- Twin Cities. *Measuring water extractable organic matter in North American grassland soils using standarized methods for continental scale comparisons*.

PS 35-28 Devotta, DA[1], JM Fraterrigo[1], P Walsh[2], S Lowe[2], R Kelly[3], DE Schindler[4], T Sands[5] and FS Hu[3], (1)University of Illinois at Urbana-Champaign, (2)US Fish and Wildlife Service, (3)University of Illinois, Urbana-Champaign, (4) University of Washington, (5)Alaska Department of Fish and Game. *Evaluating geomorphic and temporal factors in regulating nutrient availability from alder to streams in southwestern Alaska*.

PS 35-29 Easterday, C[1], JB Cotner[1] and SK Thompson[2], (1)University of Minnesota - Twin Cities, (2)University of Minnesota- Twin Cities. *Mechanisms of decomposition of terrestrial organic matter in natural aquatic ecosystems*.

PS 35-30 Roberto, A and LG Leff, Kent State University. *Effects of urbanization on stream physicochemical and bacterial communities after flooding events*.

PS 36 - Riparian And Floodplain Habitats

Exhibit Hall B, Minneapolis Convention Center

PS 36-31 Krings, B and LL Battaglia, Southern Illinois University. *Contributions of Exotic Floating Macrophytes to Accretion in a Rapidly Subsiding Coastal Floodplain Forest*.

PS 36-32 Volke, MA and WC Johnson, South Dakota State University. *Vegetation dynamics on deltas developing at tributary-reservoir confluences on the Missouri River in South Dakota*.

PS 36-33 Balla, EC, CL Merkord, MD Dixon and DL Swanson, University of South Dakota. *Response of floodplain bird communities to the 2011 Missouri River flood*.

PS 36-34 Cahlander-Mooers, A and MD Dixon, University of South Dakota. *Present and Historic Riparian Vegetation among Ecoregions of the White River, an Unregulated Great Plains River*.

PS 36-35 Israelitt, D, E Walton, RB Brugam and KE Schulz, Southern Illinois University Edwardsville. *Characterization and multivariate analysis of floodplain forest communities in Mississippi River Pool 24*.

PS 36-36 Dott, CE, GL Gianniny and CG Aanes, Fort Lewis College. *Riparian vegetation structure and floodplain hydrology on dammed vs. undammed rivers: Dolores & Animas Rivers, southwest Colorado*.

PS 36-37 Boever, C[1], MD Dixon[1], ML Scott[1] and WC Johnson[2], (1)University of South Dakota, (2)South Dakota State University. *Effects of the 2011 flood on riparian forests along the Missouri River, USA*.

PS 36-38 Perry, L[1], PB Shafroth[2], LE Hay[3] and SL Markstrom[3], (1) U.S. Geological Survey, (2)US Geological Survey, (3)USGS. *Climate change effects on riparian tree seed dispersal phenology, flood timing, and seedling establishment*.

4:30 pm-6:30 pm

PS 37 - Wetlands

Exhibit Hall B, Minneapolis Convention Center

PS 37-39 Wang, X and F Lu, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences. *Methane emissions from China's natural wetlands: measurements, temporal variations and influencing factors*.

PS 37-40 Chapman, E and DL Childers, Arizona State University. *Energy content and greenhouse gas emissions across a chronosequence of boreal peatlands*.

PS 37-41 HAN, G, Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences. *Agricultural reclamation influence on Ecosystem CO_2 Exchange in A Coastal Wetlands in the Yellow River Delta, China*.

PS 37-42 Elgersma, KJ[1], A Wen[1], T Herben[2], WS Currie[1] and DE Goldberg[1], (1)University of Michigan, (2)Institute of Botany. *Estimating dynamic allocation to clonal plant growth using static measurements*.

PS 37-43 Bright, EG and EA Bergey, University of Oklahoma. *Spatial distribution of aestivating aquatic invertebrates in dry playa lakes*.

PS 37-44 Hernandez, EC, KC Reiss and MT Brown, University of Florida. *Cross-walking State and Federal Macrophyte Assessment Methodologies for Determining Wetland Condition*.

PS 37-45 Wright, EM[1], EJ Kessler[1], CA Phillips[1], AR Kuhns[1] and JA Crawford[2], (1)University of Illinois, (2)Lindenwood University. *Occupancy of aquatic macroinvertebrates in seasonal wetlands*.

PS 37-46 Deemy, JB[1], J Hepinstall-Cymerman[1], LK Kirkman[2], NP Nibbelink[1] and TC Rasmussen[1], (1)University of Georgia, (2)Joseph W. Jones Ecological Research Center. *A spatial model of potential hydrologic connectivity between isolated wetlands and jurisdictional surface waters in a karst landscape*.

PS 37-47 Karrick, M, B McGuire and KE Schulz, Southern Illinois University Edwardsville. *Soil disturbance effects on marsh vegetation along the central Mississippi River near St. Louis, MO*.

PS 37-48 Gerla, PJ[1] and KL Gorz[2], (1)University of North Dakota and The Nature Conservancy-Minnesota, North Dakota, & South Dakota Chapter, (2)University of North Dakota. *Space- and time-scale variability of fens and other groundwater-dependent ecosystems in the Northern Prairies*.

PS 37-49 Tetreau, DD, JW Riley, KS Omland and FJ DiBello, Stantec Consulting. *Vernal pool productivity and percent canopy cover after transmission line construction: Does canopy cover minimize the effects of habitat fragmentation?*.

PS 38 - Functional Ecology

Exhibit Hall B, Minneapolis Convention Center

PS 38-50 Meiners, SJ, Eastern Illinois University. *Ecological correlates of allelopathy in a successional system*.

PS 38-51 Dangremond, EM[1] and IC Feller[2], (1)University of California, Berkeley, (2)Smithsonian Environmental Research Center. *Functional traits of fringe and dwarf mangroves in Pacific and Caribbean populations*.

PS 38-52 Li, L[1], D Kong[2], Q Zhang[3], H Zeng[1], X Chen[3] and D Guo[4], (1)Peking University Shenzhen Graduate School, (2)Henan University, (3)East China Normal University, (4)Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences. *Leaf gas-exchange traits are independent of leaf economics traits: Implications for linking leaf functional traits with plant diversity*.

PS 38-53 Ma, C[1], J Guo[2] and D Guo[2], (1)Peking University, (2)Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences. *Does the correlation of chemical traits between leaves and roots drive coordinated variation of decomposition rates?*.

PS 38-54 Alvarez-Yepiz, JC[1], A Cueva[2], M Dovciak[1], MA Teece[1] and EA Yepez[3], (1)SUNY College of Environmental Science and Forestry, (2)Centro de Investigación Científica y Educación Superior de Ensenada, B.C., (3)Instituto Tecnológico de Sonora. *Functional strategies of a rare ancient cycad along an environmental gradient of a tropical dry forest*.

PS 39 - Physiological Ecology

Exhibit Hall B, Minneapolis Convention Center

PS 39-55 Han, Q, D Kabeya and Y Inagaki, Forestry and Forest Products Research Institute. *Does mast seeding rely on stored nitrogen reserves in Fagus crenata trees?*.

PS 39-56 Stucky, TS, NM Rodriguez and SD Davis, Pepperdine University. *Leaf mechanical properties and leaf hydraulics among three life history types in California chaparral*.

PS 39-57 Dillaway, DN, MC Tyree and JK Jackson, Louisiana Tech University. *Effects of light and nutrient limitations on thermal respiratory acclimation and nocturnal dynamics of leaf dark respiration*.

PS 39-58 McGuire, MA[1], J Bloemen[2], DP Aubrey[3], R Teskey[1] and K Steppe[2], (1)University of Georgia, (2)Ghent University, (3)Georgia Southern University. *Assimilation of xylem-transported CO_2: Effects of xylem CO_2 concentration and transpiration rate*.

PS 39-59 Kropp, HA and K Ogle, Arizona State University. *Neighborhood association affects nocturnal and daytime transpiration fluxes of a common desert shrub, Larrea tridentata*.

PS 39-60 Tomimatsu, H and Y Tang, National Institute for Environmental Studies. *CO_2 supply and acclimation effects on photosynthetic induction response under high CO_2 in Populus plants*.

PS 39-61 Pivovaroff, A[1] and L Santiago[2], (1)UC Riverside, (2) University of California, Riverside. *Functional traits better correlate with wet season than dry season water potentials in a Californian chaparral plant community*.

PS 39-62 Murphy, JE[1], JH Burns[2] and RE Drenovsky[1], (1)John Carroll University, (2)Case Western Reserve University. *Functional trait plasticity in globally invasive and non-invasive Rosa sp. in response to different light environments*.

PS 39-63 Tran, HE, DJ Weston, JM Warren, PJ Hanson, RJ Norby, J Childs and SD Wullschleger, Oak Ridge National Laboratory. *Scaling Sphagnum photosynthesis from leaf to plot in an ecosystem level climate change experiment*.

PS 39-64 Germino, M[1], B Lazarus[1], BA Richardson[2] and NL Shaw[3], (1)US Geological Survey, (2)US Forest Service, (3)USDA Forest Service. *Ecophysiological variation of big sagebrush*

in common gardens: local climate adaptation, ploidy effects, and implications for restoration practice.

PS 39-65 Brym, ZT, Utah State University. *Evaluating physiological efficiencies of branching structure in low-intensity tart cherry and high-density apple*.

PS 39-66 Boyce, RL, Northern Kentucky University. *Abiotic factors affecting sapflow rates and chlorophyll fluorescence in Juniperus virginiana, Lonicera maackii, and Pyrus calleryana on a roadcut in Kentucky*.

PS 39-67 Coble, AP and MA Cavaleri, Michigan Technological University. *Comparison of the LMA-height gradient in a canopy gap and closed-canopy in a sugar maple (Acer saccharum) forest*.

PS 39-68 Logan, BA, WC Stafstrom, MJL Walsh, SR Merrill and JS Reblin, Bowdoin College. *Testing the photoprotection hypothesis for foliar anthocyanin accumulation*.

PS 39-69 Hernandez-Espinoza, LH[1] and RS Nowak[2], (1)University of Nevada, Reno, (2)University of Nevada Reno. *Effect of Nitrogen on photosynthetic responses of Bromus tectorum*.

PS 40 - Phenotypic Plasticity

Exhibit Hall B, Minneapolis Convention Center

PS 40-70 Maldonado-Chaparro, AA[1], JGA Martin[1], KB Armitage[2], MK Oli[3] and DT Blumstein[4], (1)University of California Los Angeles, (2)University of Kansas, (3)University of Florida, (4)University of California, Los Angeles. *Environmental and social correlates of yellow-bellied marmot life history and behavioral plasticity*.

PS 40-71 Liu, JW[1], MSB Ku[2], P Chesson[3] and CR Sheue[1], (1)National Chung Hsing University, (2)National Chiayi University, (3) University of Arizona. *Plasticity in chloroplast development in the shade-adapted Selaginella erythropus in response to light* .

PS 40-72 Palacio-López, K[1], B Beckage[1], S Scheiner[2] and J Molofsky[1], (1)The University of Vermont, (2)National Science Foundation. *Assessing the frequency of local adaptation and phenotypic plasticity in plants using a meta-analysis*.

PS 40-73 Moore, MP, T Landberg and HH Whiteman, Murray State University. *The Role of Maternal Effects on Life History Variation in a Polyphenic Salamander*.

PS 40-74 del Pino, GA, AJ Brandt and JH Burns, Case Western Reserve University. *Soil origin and light heterogeneity interact to affect trait expression in perennial plants*.

PS 40-75 Blosser, EM[1] and LP Lounibos[2], (1)University of Florida, (2) University of Florida, Institute for Food and Agricultural Sciences. *Testing life history growth patterns in the aquatic dipteran larvae of Corethrella appendiculata*.

PS 41 - Evolution

Exhibit Hall B, Minneapolis Convention Center

PS 41-76 Porter, RB[1], T Lacourse[2], BJ Hawkins[1] and A Yanchuk[3], (1) Centre for Forest Biology, University of Victoria, (2)University of Victoria, (3)BC Ministry of Forests. *Adaptive variation in growth, phenology, cold tolerance and nitrogen fixation of red alder (Alnus rubra): evidence from common garden experiments in two contrasting climates*.

PS 41-77 Moyer, B, J Eckenrode, MA Levri and EP Levri, Penn State Altoona. *The influence of inflorescence size and number on the following year's inflorescence production in Mountain Laurel (Kalmia latifolia)* .

PS 41-78 Rúa, MA, BJ Piculell and JD Hoeksema, University of Mississippi. *The effect of local adaptation on mycorrhizal fungi-host relationships*.

PS 41-79 Avery, BJ, JG Doherty, AG Roegiers and RR Sheen, Westminster College. *A preliminary investigation of the intrapopulation genetic diversity of the brine shrimp, Artemia franciscana, in Great Salt Lake, Utah, at the mitochondrial COI locus by High Resolution Melting Analysis*.

PS 41-80 Tucci, CF, K Larkin and M Neiman, University of Iowa. *Influences of polyploidy and mating system on life-history variation in a snail model for the maintenance of sex*.

PS 41-81 Hernáiz Hernández, YM, University of Vermont. *Determining abundance and diversity of fungi in the Harvester Ants (Genus: Pogonomyrmex)*.

PS 41-82 Soper Gorden, NL[1], SJ Franks[2], SJ Mazer[3], RG Shaw[1], A Weis[4], M Jahnke[1], K Updegraff[1] and JR Etterson[1], (1) University of Minnesota, (2)Fordham University, (3) University of California, Santa Barbara, (4)University of Toronto. *Project Baseline: A living genome bank to capture evolution in action*.

PS 41-83 Center, AE[1], J Cavender-Bares[1], JR Etterson[1], JP Sparks[2], G Pilz[3] and T Longwell[3], (1)University of Minnesota, (2) Cornell University, (3)Zamorano Agricultural University Latin America. *Differentiation of physiological traits among tropical live oak populations throughout dry forests of Central America*.

PS 41-84 Eckhart, VM[1], K Jennison[1], B Kircher[2] and DM Montgomery[3], (1)Grinnell College, (2)Trinity University, (3)Bioko Biodiversity Protection Program. *Where must niches differ, if differ they must? Spatial scaling of climatic, topographic, and soil control of distribution and performance in closely related annual plants*.

PS 41-85 McLean, KI[1], DA Renton[1], D Mushet[2] and CA Stockwell[1], (1) North Dakota State University, (2)United States Geological Survey. *Characteristics of cannibalistic morph barred tiger salamanders in a prairie pothole lake*.

PS 41-86 Stearns, SL, GA Cordero and FJ Janzen, Iowa State University. *Ontogenetic change in shell morphology associated with an evolutionary transition from an aquatic to a terrestrial niche in box turtles*.

PS 41-87 Ashander, J, University of California, Davis. *Understanding the joint effects of plastic and evolutionary change on demography from time series data*.

PS 41-88 Beulke, AK[1], J Cavender-Bares[1], J Romero-Severson[2] and D Borkowski[2], (1)University of Minnesota, (2)University of Notre Dame. *Selection in candidate genes associated with drought and freezing response in live oaks (Quercus series Virentes) across a latitudinal gradient*.

PS 41-89 Hartfield Kirk, EE, IC Phillipsen and DA Lytle, Oregon State University. *Implications of climate change on genetic connectivity of isolated populations*.

PS 41-90 Itami, J and T Craig, University of Minnesota Duluth. *The coevolutionary arms race between a gall-inducing fly Eurosta solidaginis and the parasitoid Eurytoma gigantea*.

4:30 pm-6:30 pm

PS 42 - Ecological Genetics

Exhibit Hall B, Minneapolis Convention Center

PS 42-91 Barone, JA, RB Futrell and KS Burgess, Columbus State University. *DNA barcoding a complex prairie flora using the rbcL-matK gene regions*.

PS 42-92 Connor, N[1] and A Clauset[2], (1)University of Colorado, (2) University of Colorado, Boulder. *Genome size correlations with ecological traits in bacteria*.

PS 42-93 Sullivan, T[1], TL Bultman[2], J Logan[1], A Cotton[1] and N Mattingly[1], (1)Indiana University Kokomo, (2)Hope College. *Genetic variation in Canada wildrye endophytes as assessed with High-Resolution Melt analysis*.

PS 42-94 Lee, CT and AR Armitage, Texas A&M University at Galveston. *Does ecotypic-based genetic diversity improve productivity? A mesocosm study with Spartina alterniflora*.

PS 42-95 Peterman, WE, RD Semlitsch and LS Eggert, University of Missouri. *Abundance, physiology, and population structure: Fine-scale landscape genetics of a terrestrial salamander*.

PS 42-96 Moore, CT, AM Jarosz and JC Springer, Michigan State University. *Diversity of vegetative incompatibility (vic) genotypes in epidemic and recovering populations of Cryphonectria parasitica in Michigan*.

PS 43 - Urban Ecosystems

Exhibit Hall B, Minneapolis Convention Center

PS 43-97 Weitzell, RE Jr., SM Guinn and AJ Elmore, University of Maryland Center for Environmental Science. *Spatial and temporal patterns of stream burial and its effect on habitat connectivity across headwater stream systems of the Potomac River Basin, USA*.

PS 43-98 Purvis, KG[1], CJ Murren[1], SG Pritchard[1], JM Gramling[2] and K Keenan[1], (1)College of Charleston, (2)The Citadel. *Assessment of beach access paths on dune vegetation and implications for dune path planning and management*.

PS 43-99 Bolenbaugh, KE and GK Brown, University of Wyoming. *Native vegetation on a high altitude green roof: A biodiversity study*.

PS 43-100 Hopkins, KG[1], N Morse[2], R Smith[3], DJ Bain[1], ND Bettez[4], N Grimm[5], JL Morse[4] and M Palta[5], (1)University of Pittsburgh, (2)University of New Hampshire, (3)University of Maryland, (4)Cary Institute of Ecosystem Studies, (5)Arizona State University. *Characterizing hydrologic alterations following urbanization through time and across space among U.S. cities*.

PS 43-101 Weinberger, KR[1] and GS Robinson[2], (1)Mailman School of Public Health, Columbia University, (2)Fordham College at Lincoln Center. *Spatial Variability of Airborne Pollen across New York City*.

PS 43-102 Aronson, MFJ[1], MV Patel[2] and K O'Neill[1], (1)Rutgers University, (2)Harvard University. *Community assembly and connectivity along an urban river system*.

PS 43-103 Reuss, LM[1], GE Small[1], LC Loken[2] and JC Finlay[3], (1)University of St Thomas, (2)University of Wisconsin, (3)University of Minnesota. *Effects of suspended sediment and colored dissolved organic matter on response of phytoplankton to nutrient loading in an urban, freshwater estuary*.

PS 43-104 Ervin, LA and DE Pataki, University of Utah. *Urban leaf nitrogen isotopes are associated with neighborhood age and income in the Los Angeles metropolitan area*.

PS 43-105 Newell, B, J Kunthara and GC Chang, Gonzaga University. *Does urbanization increase nitrogen availability for Dalmatian toadflax?*.

PS 43-106 Murthy, AC, TS Fristoe and JR Burger, The University of New Mexico. *Effects of urbanization on avian diversity across North America*.

PS 43-107 Connor Barrie, BT and I Ibáñez, University of Michigan. *Native tree seedlings exhibit greater mortality in urban forests across an anthropogenic land use gradient*.

PS 44 - Education: Community-Based Learning

Exhibit Hall B, Minneapolis Convention Center

PS 44-108 Kush, JS, JC Gilbert, B Barlow, SM Hermann and DK Lauer, Auburn University. *Why are we cutting longleaf pine to plant longleaf pine? Development of a technical assistance team to stop this madness*.

PS 44-109 Little, A, University of Wisconsin-Stout. *Engaging students in plant ecology with vegetation management plans for local natural areas: Benefits to cognition and community*.

PS 44-110 Knoll, LB[1] and JR Babb[2], (1)Miami University / Lacawac Sanctuary, (2)Miami University. *Bridging the gap between public visitors at Lacawac Sanctuary and lake researchers: Developing outreach materials on advanced environmental sensors*.

PS 44-111 Taylor, CL and BS Steel, Oregon State University. *The NSF Broader Impacts requirement: An opportunity for ecologist engagement in public outreach?*.

PS 44-112 Winter, JD and J Lanza, University of Arkansas at Little Rock. *Lessons learned establishing a science scholars programthrough NSF S-STEM*.

PS 44-113 Blockstein, D[1], J Greenberg[2], S Sullivan[3] and S Temple[4], (1) National Council for Science and Environment, (2)Project Passenger Pigeon, (3)Peggy Notebaert Nature Museum, (4)University of Wisconsin-Madison & Aldo Leopold Foundation. *A Century Later: A Multi-disciplinary Effort to Share the Lessons from the Extinction of the Passenger Pigeon (Ectopistes migratorius)*.

PS 45 - Education: Pedagogy

Exhibit Hall B, Minneapolis Convention Center

PS 45-114 Foster, J, C Klosterman, T Lemma, S Pike, L Prater, L Shaw and S Van Meigham, Wartburg College. *Geese as vectors for zooplankton dispersal: An example of undergraduate research at a small liberal arts college*.

PS 45-115 Grover, JP, HV Kojouharov, LD Mydlarz, L Gough and C Kribs-Zaleta, University of Texas at Arlington. *A model for research-oriented education at the intersection of biology and mathematics: The undergraduate training in theoretical ecology research (UTTER) program*.

PS 45-116 Halpern, SL[1] and N Underwood[2], (1)Pacific University, (2)Florida State University. *Developing ecologists: a professional development seminar for summer undergraduate researchers*.

PS 45-117 Ward, JR, HD Clarke and JL Horton, University of North Carolina at Asheville. *Expanding a research-infused botanical curriculum from a public liberal arts university to a regional sustainability consortium*.

PS 45-118 Grisé, DJ, AM Johnson, C Speights and M Rivera, Texas A&M-Corpus Christi. *Successful mentoring program in an introductory biology course*.

PS 45-119 Wyse, SA[1], TM Long[2] and D Ebert-May[2], (1)Bethel University, (2)Michigan State University. *The influence of professional development on teaching assistant practice and beliefs: A case study*.

PS 45-120 Grant, BW, BT Alvare and JH Serembus, Widener University. *Synthesizing to teach ecology: Using ethnographic, socioeconomic, and environmental science data to teach undergraduates the actionable science and ethical responses to the challenges imposed upon Arctic Nations by climate change*.

PS 45-121 Jiru, M, Coppin State University. *Effectiveness of Socio-Environmental Synthesis (SES) approach in Teaching Earth and Space Science Course*.

PS 45-122 Berkowitz, AR[1], BT Alvare[2], BW Grant[2], K Hall[3], D Hawthorne[3], M Jiru Jr.[4], K Rashid[5], GC Rollwagen-Bollens[6], C Solomon[5] and P Thiers[6], (1)Cary Institute of Ecosystem Studies, (2)Widener University, (3)University of Maryland - College Park, (4)Coppin State University, (5)Gallaudet University, (6)Washington State University Vancouver. *The SESYNC Socio-Environmental Synthesis Teaching Study: Defining, measuring and fostering student learning*.

PS 45-123 Solomon, C[1], K Rashid[1], D Lundberg[1] and AR Berkowitz[2], (1)Gallaudet University, (2)Cary Institute of Ecosystem Studies. *Promoting undergraduate synthetic learning through case studies on the health of the Chesapeake Bay*.

PS 45-124 Rollwagen-Bollens, GC and P Thiers, Washington State University Vancouver. *Teaching socio-environmental synthesis to non-traditional college students by linking natural science and social science courses*.

PS 45-125 Hawthorne, D, KL Hall and LA Cathcart, University of Maryland. *Socio-environmental synthesis: Introducing undergraduates to complex problems through a study of pollinators in local ecosystems*.

PS 46 - Education: Research And Assessment

Exhibit Hall B, Minneapolis Convention Center

PS 46-126 Fetcher, N[1], ME Lam[2], CR Cid[3] and T Mourad[4], (1)Wilkes University, (2)University of British Columbia, (3)Eastern Connecticut State University, (4)Ecological Society of America. *Contingent faculty in ecology: Results of a survey*.

PS 46-127 Vogler, DW[1], E Sterling[2], AL Porzecanski[2], A Bravo[2], N Bynum[3], M Cawthorn[4], L Freeman[5], SR Ketcham[6], TW Leslie[7], JF Mull[8] and T Theodose[9], (1)SUNY College at Oneonta, (2)American Museum of Natural History, (3) Duke University, (4)Georgia Southern University, (5) Fulton Montgomery Community College, (6)University of the Virgin Islands, (7)Long Island University, (8)Weber State University, (9)University of Southern Maine. *Student Interpretation of Conservation Data: Does their Reach Exceed Their Grasp?*.

PS 46-128 Cumming, LF and SA Wyse, Bethel University. *Effects of environmental education on college students' environmental knowledge, concern for the environment and willingness to participate in restorative efforts*.

PS 46-129 Gilbert, JC, B Barlow and JS Kush, Auburn University. *Mapping the way to the future: From education to application*.

PS 46-130 Barlow, RJ, JC Gilbert and JS Kush, Auburn University. *More than just a walk in the woods: Auburn University's War Eagle Woods project is natural resource outreach and education for the 21st century*.

PS 47 - Education: Tools And Technology

Exhibit Hall B, Minneapolis Convention Center

PS 47-131 Nye, DL[1], JM Greenler[1], M Ferris[1], SR Wangen[1], B Shapiro[2], R Russ[1], W Strinz[1], J Dischler[1], C Scherbert[1], A Wood-Doughty[3] and K Arnold[4], (1)University of Wisconsin-Madison, (2)Tufts University, (3)UC-Santa Barbara, (4) Middleton High School. *A multi-player computer game to explore sustainable bioenergy crop production*.

PS 47-132 Kohler, K[1], P Hoagland[2], L Fleming[3], K Rudge[4] and B Kirkpatrick[1], (1)Mote Marine Laboratory, (2)Woods Hole Oceanographic Institution, (3)European Centre for Environment and Human Health,, (4)Riverview High School. *Introduction of a multi-disciplinary CHANS project into a high school classroom*.

PS 47-133 Wu, XB[1], S Knight[2], A Webb[2], M Ziegler[2] and JF Schielack[1], (1)Texas A&M University, (2)Pennsylvania State University. *Virtual and authentic web-based ecological inquiries and their impact on student learning*.

PS 47-134 Klemow, KM[1], P Allen[2], KL Shea[3], P Weihe[4], T Mourad[5] and A McMillen[5], (1)Wilkes University, (2)Cornell University, (3)St. Olaf College, (4)Central College, (5)Ecological Society of America. *Enhancing student learning in undergraduate ecology courses through the EcoEdDL / Science Pipes collaboration*.

PS 47-135 Gartner, TB[1] and CL Thomas[2], (1)Carthage College, (2) Ferrum College. *Decomposition in aquatic and terrestrial invaded systems: A collaboration among ecologists at primarily undergraduate institutions*.

PS 48 - Spatial Analysis And GIS

Exhibit Hall B, Minneapolis Convention Center

PS 48-136 Goswami, S[1], DJ Hayes[1], P Kuhry[2], G Hugelius[2], C Schaedel[3], D Olefeldt[4], G Grosse[5], G Chen[1], A Lewkowicz[6], V Romanovsky[7], S Zubrzycki[8], S Gruber[9], J Vonk[10], AD McGuire[5] and EAG Schuur[3], (1)Oak Ridge National Laboratory, (2)Stockholm University, (3)University of Florida, (4)University of Guelph, (5)University of Alaska Fairbanks, (6)University of Ottawa, (7)University of Alaska, (8)University of Hamburg, (9)University of Zurich, (10)ETH Zurich. *A Regionalization Approach to Study Vulnerability of Pan-arctic Permafrost Carbon Stock to Climate Change*.

PS 48-137 Parikh, NN, LJ Ruiz, LJ Heintzman, SD Collins, SM Starr and NE McIntyre, Texas Tech University. *Using graph theory to quantify dynamic connectivity of temporary wetlands in the southern Great Plains*.

4:30 pm-6:30 pm

PS 48-138 Desprez, JM[1], S Fei[1] and CM Oswalt[2], (1)Purdue University, (2)USDA Forest Service - Souhtern Research Station. *Temporal changes of oak species in the eastern United States*.

PS 48-139 Grula, C, EL Mudrak and KA Moloney, Iowa State University. *Competitive abilities of native and invasive species in the Mojave Desert*.

PS 48-140 Gudex-Cross, DJ, EI Azuaje, RE Krauss and DT Barnett, National Ecological Observatory Network (NEON). *A scalable method for plot allocation and validation in terrestrial ecology studies*.

PS 48-141 Yadav, S and TM Culley, University of Cincinnati. *Predicting the impact of shoreline of the future survival of an endemic Hawaiian plant species, Schiedea globosa*.

PS 49 - Stable Isotope Applications

Exhibit Hall B, Minneapolis Convention Center

PS 49-142 Guiza, BG, University of California, San Diego. *The Effect of Dairy Manure Applications on Nitrogen Fixation by Alfalfa under Mediterranean Climate Conditions*.

PS 49-143 Warren, JM, CM Iversen, J Mao, RJ Norby, DM Ricciuto and PE Thornton, Oak Ridge National Laboratory. *Partitioning in Trees and Soils (PiTS): A field research facility for testing dynamic carbon partitioning representations within global models*.

PS 49-144 Paya, AM[1], TEE Grams[2] and TL Bauerle[1], (1)Cornell University, (2)Technische Universität München. *Seasonal patterns of $\delta^{13}C$ in tree roots: using natural abundance measurements to qualify temporal and spatial carbon allocation by root order*.

PS 49-145 Hofmeister, NR[1], M Welk[2] and S Freedberg[1], (1)St. Olaf College, (2)College of Menominee Nation. *Elevated levels of $\partial^{15}N$ in Riverine Turtles: Trophic enrichment or anthropogenic input?*.

PS 49-146 Nelson, DM[1], T Katzner[2], T Miller[2], AE Duerr[2], J Cooper[3], M Lanzone[4] and M Wheeler[5], (1)University of Maryland Center for Environmental Science, (2)West Virginia University, (3) Virginia Department of Game and Inland Fisheries, (4)Cellular Tracking Technologies, LLC, (5)Duquesne University. *Assessing the movements and diets of golden eagles in eastern North America using stable isotope and telemetry data*.

PS 49-147 Angell, D[1], V Avila[2], A Murphy[3], D Pirtle[1] and S Schubert[1], (1)St. Olaf College, (2)Northern Arizona University, (3)North Carolina State University. *Stable isotope analysis highlights contrasting use of C_3 and C_4 plants resources by prairie small mammals*.

PS 49-148 Haveles, A[1], D Fox[1], K Talmadge[2] and K Fox-Dobbs[3], (1) University of Minnesota, (2)University of California - San Diego, (3)University of Puget Sound. *Characterizing Isotopic Variability of Primary Production and Small Mammals and the Implications for Reconstructing Paleodiets Over the Last 5 Myr*.

PS 50 - Remote Sensing And Image Analysis

Exhibit Hall B, Minneapolis Convention Center

PS 50-149 Zhang, J, T Wang and J Ge, Beijing Normal University. *Vegetation change in the south of China after Grain-for-Green*.

PS 50-150 Helmer, EH[1], TS Ruzycki[2], J Benner[2], SM Voggesser[2], BP Scobie[3], C Park[3], DW Fanning[4] and S Ramnarine[3], (1)USDA Forest Service, (2)Colorado State University, (3)Forestry Division, (4)Fanning Software Consulting. *Detailed maps of tropical forests are within reach: forest tree communities for Trinidad mapped with multiseason Landsat and Google Earth*.

PS 50-151 Warren, SD[1], A Jentsch[2], KD Olson[3] and M Alt[4], (1)US Forest Service, (2)University of Bayreuth, (3)Colorado State University, (4)Universität Koblenz - Landau. *Estimating Plant Diversity from Space*.

PS 50-152 Biudes, MS[1], M Souza[1], NG Machado[2], VHDM Danelichen[1], GL Vourlitis[3] and JDS Nogueira[1], (1)Universidade Federal de Mato Grosso, (2)Instituto Federal de Mato Grosso, (3)California State University. *Modeling gross primary production of a tropical semi-deciduous forest in the southern Amazon Basin*.

PS 50-153 Musselwhite, P and HE Epstein, University of Virginia. *Discerning individual plant species in satellite imagery using field-measured hyper-spectral reflectance data at the Blandy Experimental Farm, north-central Virginia*.

PS 50-154 Gillan, J[1], JW Karl[1], NN Barger[2], MC Duniway[3] and A Elaksher[4], (1)USDA ARS Jornada Experimental Range, (2) University of Colorado, (3)USGS, (4)New Mexico State University. *Using high-resolution aerial photogrammetry to 3-dimensionally model soil erosion in rangeland ecosystems*.

PS 50-155 Wolter, PT[1], EA Berkley[2], SD Peckham[3] and A Singh[4], (1)Iowa State University, (2)United States Fish and Wildlife Service, (3)University of Wyoming, (4)University of Wisconsin - Madison. *Using Landsat sensor data as a management tool for oak woodland and savanna ecosystem restoration*.

PS 50-156 Mudrak, EL[1], A Fuentes Ramirez[1], M Schat[2], C Holzapfel[2] and KA Moloney[1], (1)Iowa State University, (2)Rutgers University. *The ability of high resolution aerial imagery to determine shrub location and size in creosote flats of the Sonoran and Mojave Deserts*.

PS 50-157 Uhrin, AV, University of Wisconsin Madison. *Improved seagrass change detection using linear spectral unmixing*.

PS 50-158 Graves, SJ and SA Bohlman, University of Florida. *Tree cover distribution and above ground carbon stocks of dispersed trees in an agricultural landscape of the dry tropics*.

PS 51 - Statistics

Exhibit Hall B, Minneapolis Convention Center

PS 51-159 Ellison, AM[1], NJ Gotelli[2], N Hsiang[3], AB Maidman[4] and M Lavine[4], (1)Harvard University, (2)University of Vermont, (3)Mount Holyoke College, (4)University of Massachusetts. *k-tree density estimation from sparse nearest-neighbor data*.

PS 51-160 Fieberg, J, Minnesota Department of Natural Resources. *A Bayesian model for identifying mixed migration strategies, while accounting for sample selection bias*.

PS 51-161 Xiao, M[1], JD Reeve[1], D Xu[1] and JT Cronin[2], (1)Southern Illinois University Carbondale, (2)Louisiana State University. *Estimating the parameters for diffusion models of dispersal using mean occupancy time*.

PS 51-162 Aubrey, DP[1], K Love-Myers[2], E Tuglo[2], MJ Drews[1] and RJ Cooper[3], (1)Georgia Southern University, (2)University of Georgia, (3)University of Georgia at Athens. *Prevalence and Ambiguity of Repeated Measures ANOVA in Ecological Literature*.

PS 51-163 Gökkaya, K[1], Y Jiang[2], EB Rastetter[3], GR Shaver[2] and A Rocha[1], (1)University of Notre Dame, (2)Marine Biological Laboratory, (3)Marine Biological Lab. *Vegetation phenology and carbon and energy fluxes in arctic tundra*.

PS 52 - Modeling

Exhibit Hall B, Minneapolis Convention Center

PS 52-164 Nabe-Nielsen, J[1] and R Sibly[2], (1)Aarhus University, (2) University of Reading. *Linking animal population dynamics to alterations in foraging behavior*.

PS 52-165 Gluvna, J and GA Fox, University of South Florida. *Individual heterogeneous growth in longleaf pines: The effect of fire*.

PS 52-166 Hamerlinck, G and AA Forbes, University of Iowa. *Can preexisting trait variation predict the outcomes of parasitoid competition in novel habitats?*.

PS 52-167 Crocker, SJ[1], BH Aukema[2], G Liknes[1], FR McKee[2] and J Albers[3], (1)USDA Forest Service, (2)University of Minnesota, (3)Minnesota Department of Natural Resources. *Regional temperatures associated with tamarack mortality due to eastern larch beetle in Minnesota, USA*.

PS 52-168 Walechka, JM, Bemidji State University. *Ecological niche modeling of Aquatic Macrophytes in Lake Bemidji*.

PS 52-169 Dudley, PN[1], R Bonazza[2] and WP Porter[1], (1)University of Wisconsin - Madison, (2)Wniversity of Wisconsin - Madison. *Computational fluid dynamics in niche modeling of leatherback sea turtles*.

PS 52-170 Dahlin, KM and RA Fisher, National Center for Atmospheric Research. *Seasonal patterns in forest-grassland transition zones predicted by the Community Land Model*.

PS 52-171 Pfeil-McCullough, E[1], DJ Bain[1], D Crumrine[2] and J Bergman[3], (1)University of Pittsburgh, (2)Tree Pittsburgh, (3)Western PA Conservancy. *Changes in landslide susceptibility due to canopy loss scenarios in Pittsburgh, PA*.

PS 52-172 Pendleton, DE[1], J Zhang[2], M Ferguson[3] and E Holmes[4], (1)Northwest Fisheries Science Center, (2)University of Washington, (3)NOAA, (4)National Marine Fisheries Service. *Modeling Habitat Use by Bowhead Whales in Response to Past and Future Arctic Climate Change*.

6:30 pm-8 pm

Colorado State University Ecologists Mixer Sponsored by the Graduate Degree Program in Ecology and the School of Global Environmental Sustainability

200A, Minneapolis Convention Center

ESA Natural History Section

Rochester, Hilton Minneapolis

ESA Physiological Ecology Section Mixer and Business Meeting

200I, Minneapolis Convention Center

ESA Plant Population Ecology Section Mixer and Business Meeting

200H, Minneapolis Convention Center

TK 4 - ESA SEEDS Diversity Celebration

Hubert H Humphrey School of Public Affairs Atrium, University of Minnesota

8 pm-10 pm

WK 44 - International Project Opportunities for Applied Ecologists: Resources and Techniques to Identify and Successfully Compete for Work Abroad

Board Rm 1, Hilton Minneapolis

Organized by: S Crawford (stephan.crawford@trade.gov), J Carter

This workshop provides an overview of global project opportunities for applied ecologists, as well as resources and techniques for identifying, tracking, and securing participation in these projects. It includes a discussion on US government resources that can be leveraged to enhance competitive positioning, thereby increasing the chances of success.

WK 45 - What Editors Want: An Author's Guide to Scientific Publishing

101A, Minneapolis Convention Center

Organized by: S Silver (suesilver@esa.org), JR Bernhardt, N Zimmerman, J Ramos Jr.

Research publications are key to building a successful career in science, yet early-career researchers receive little instruction on how to get papers published. This workshop will provide guidance on how to select an appropriate journal, deal with authorship issues, write an effective cover letter, and avoid common pitfalls during submission.

Thursday, August 8

Business Meetings and Receptions

7:30 am-9 am

ESA Public Affairs Committee Business Meeting
Director's 4, Hilton Minneapolis

11:30 am-1:15 pm

***Ecology and Evolution* Editorial Board Meeting**
M100A, Minneapolis Convention Center

ESA Tutorial for ESA Website Update--All ESA Sections/Chapters Invited (repeat of Wed. session)
M100HC, Minneapolis Convention Center

TK 5 - ESA Diversity Luncheon
M101A, Minneapolis Convention Center

4 pm-6 pm

ESA SEEDS Closing
M100A, Minneapolis Convention Center

7 pm-9 pm

TK 6 - ESA Closing Social: An Evening at the Twins Ballpark
Metropolitan Club, Minnesota Twins Target Field

Thursday Sessions

7:30 am-9 am

ESA Public Affairs Committee Business Meeting
Director's 4, Hilton Minneapolis

8 am-10 am

IGN 13 - Ecological Analysis Using Network Science and Graph Theory

101C, Minneapolis Convention Center

Organized by: SK McKay (kyle.mckay@usace.army.mil), JL Rushmore
Moderator: A Covich

Amidst the rapidly-evolving analytical framework of ecological network analysis, this session will explore a diverse set of applications, ranging from disease transfer to migratory movement, to ignite a discussion on state-of-the-art network-based methodological tools.

IGN 13-1 Patten, BC, University of Georgia. *Environs: a system theory of environmental networks*.

IGN 13-2 Grant, EHC, U.S. Geological Survey. *Save room for the fish*.

IGN 13-3 Gilarranz, LJ and J Bascompte, Estación Biológica de Doñana, CSIC. *Structure, dynamics, and distribution of mutualistic networks*.

IGN 13-4 McKay, SK[1], JR Schramski[2], J Conyngham[3] and C Fischenich[3], (1)U.S. Army Engineer Research and Development Center, (2)College of Engineering, University of Georgia, (3) Environmental Laboratory, U.S. Army Corps of Engineers. *Prioritizing fish passage improvement in river networks*.

IGN 13-5 Craft, M[1], D Caillaud[2], JJ Reynolds[1], BT Hirsch[3] and LA Meyers[2], (1)University of Minnesota, (2)The University of Texas at Austin, (3)New York State Museum. *Network models: applications for wildlife epidemiology*.

IGN 13-6 Rushmore, JL[1], D Caillaud[2], RJ Hall[1], RM Stumpf[3], LA Meyers[2] and S Altizer[1], (1)University of Georgia, (2)The University of Texas at Austin, (3)University of Illinois at Urbana-Champaign. *Predicting patterns of pathogen transmission and control in wild chimpanzees*.

IGN 13-7 Buhnerkempe, MG[1], C Webb[2], M Tildesley[3] and U Wennergren[4], (1)University of California - Los Angeles, (2)Colorado State University, (3)University of Warwick, (4) Linköping University. *Disease spread on transport networks of U.S. cattle*.

IGN 13-8 Lau, MK[1] and SR Borrett[2], (1)Northern Arizona University, (2)University of North Carolina Wilmington. *Free, open-source tools for network analysis: A new R package, enaR*.

IGN 14 - The Value of Philosophy for Ecology

101E, Minneapolis Convention Center

Organized by: CM Prather (chelse.prather@gmail.com), TE Miller
Moderator: TE Miller

Although the natural sciences, including ecology, once arose from philosophy, the two disciplines have become very disjointed. Is philosophy of value to the practicing ecologist? Here, we bring together ecologists from different sub-disciplines at a range of points in their career to give their answer this question.

IGN 14-1 Prather, CM, University of Houston. *Why and how to put the Ph back into the ecology PhD*.

IGN 14-2 Jackson, ST, USGS / Southwest Climate Science Center. *Traffic safety at the intersection of ethics and epistemology*.

IGN 14-3 Strong, DR, University of California, Davis. *Ecology, Environmentalism, and Science*.

IGN 14-4 Tewksbury, JJ[1] and C Martinez del Rio[2], (1)University of Washington, (2)University of Wyoming. *From Natural History to Solution Science – Thinking of our discipline as a right of passage*.

IGN 14-5 Nelson, MP[1], JK Bump[2] and JA Vucetich[2], (1)Oregon State University, (2)Michigan Technological University. *Connecting Philosophy, and Philosophers, to Ecological Research*.

IGN 14-6 Cuddington, K, University of Waterloo. *Philosophy of science: Peering under the hood of our research race car*.

IGN 14-7 Reiners, WA and JA Lockwood, University of Wyoming. *Blind ecologists and the ecological elephant*.

IGN 15 - Where the Shovel Meets the Science: Reciprocal Learning Between Restoration and Ecology.

101H, Minneapolis Convention Center

Organized by: CJ Huckins (cjhuckin@mtu.edu), AM Marcarelli

Moderator: CJ Huckins

This session will bring together ecologists and restoration practitioners to explore and propose solutions to the problem of how we can improve the process and advance ecological understanding while restoring natural systems.

IGN 15-1 Marcarelli, AM[1], SF Collins[2], CV Baxter[2] and CJ Huckins[1], (1)Michigan Technological University, (2)Idaho State University. *How can ecosystem ecology learn from and inform fisheries restoration?*.

IGN 15-2 Ogren, S[1] and CJ Huckins[2], (1)Little River Band of Ottawa Indians, (2)Michigan Technological University. *Resilience of the disturbed condition: Can Bioassessment of River Restoration Give Insight to Restoration Success at Different Temporal and Spatial Scales?*.

IGN 15-3 Neeson, TM[1], PB McIntyre[1], S Januchowski-Hartley[1], SDP Smith[2] and D Allan[2], (1)University of Wisconsin, (2) University of Michigan. *Finding conservation opportunities in multistressor maps using stressor heterogeneity*.

IGN 15-4 Adams, CR[1], PJ Kauth[2] and R Laubhan[3], (1)University of Florida, (2)University of Southern Mississippi, (3)US Fish and Wildlife Service. *Rethinking large-scale restoration experiments to improve ecological learning and on-the-ground application*.

IGN 15-5 Kettenring, KM, C Cranney, AL Long, C Rohal, E Hazelton and KE Mock, Utah State University. *Ecology Informing Restoration and Restoration Informing Ecology: Invasion Mechanisms and Control of Phragmites australis in Great Salt Lake Wetlands*.

IGN 15-6 Lohse, KA[1], JET McLain[2] and RA Lloyd[3], (1)Idaho State University, (2)USDA-ARS, (3)University of Arizona. *Active Road Reclamation Approaches Accelerate Recovery of Soil Ecosystem Properties and Microbial Communities Compared to Road Closure Approaches*.

IGN 15-7 Osenberg, CW, University of Florida. *Marine Protected Areas:Theory and Application*.

IGN 15-8 Veblen, KE[1], TA Monaco[2] and J Johanson[3], (1)Utah State University, (2)USDA-ARS, (3)USDA-NRCS. *Use of the NRCS Ecological Site Framework to Improve Ecological Understanding in Restoration Projects*.

IGN 15-9 Fuller, R[1], GB Lawrence[2], B Baldigo[3], CE Kraft[4], D Josephson[4], HA Bechtold[5], E Rosi-Marshall[5] and CM Beier[6], (1)Colgate University, (2)U.S. Geological Survey, (3) USGS, (4)Cornell University, (5)Cary Institute of Ecosystem Studies, (6)SUNY College of Environmental Science and Forestry. *Why Lime Adirondack Forests and Streams?*.

8 am-11:30 am

SYMP 16 - Ecological Sustainability in a Telecoupled World

M100EF, Minneapolis Convention Center

Organized by: J Liu (liuji@msu.edu), H Mooney

Endorsed by: International Affairs Section , Asian Ecology Section , Human Ecology Section, Applied Ecology Section

Moderator: W McConnell

This symposium presents novel insights and exciting results on the causes and impacts of telecouplings (socioeconomic and environmental interactions over distances) on ecological sustainability at multiple locations, illustrates implications for policy and management, and discusses future research directions for telecouplings and sustainability around the world.

8:00 AM SYMP 16-1 Lubchenco, J, Stanford University. *Ending Over Fishing: Local to Global Efforts*.

8:30 AM SYMP 16-2 Gleick, P, Pacific Institute. *Limits to water transfers in a telecoupled world: Zombie water projects*.

9:00 AM SYMP 16-3 Seto, KC, L Jiang and B Pandey, Yale University. *Urban land teleconnections in China and India*.

9:30 AM Break

9:40 AM SYMP 16-4 Avetisyan, M[1] and T Hertel[2], (1)University of Southern California, (2)Purdue University. *Is local food more environmentally friendly? The global GHG emissions impacts of consuming imported vs. domestically produced food*.

10:10 AM SYMP 16-5 Gaskell, J[1] and C Kremen[2], (1)University of California at Berkeley, (2)University of California, Berkeley. *Supply chain impacts on ecosystem service provision: Comparing oil palm and soy*.

10:40 AM SYMP 16-6 Davis, SJ, University of California, Irvine. *Telecoupled CO_2 emissions: Implications of the growing dependence on internationally traded carbon*.

11:10 AM Discussion

SYMP 17 - There and Back Again: Replication Standards in Long-Term Research, Integrating the Field and Database Perspectives for Future Management

205AB, Minneapolis Convention Center

Organized by: A Shavit (ashavit@telhai.ac.il), AM Ellison

Moderator: AM Ellison

When faced with the global challenge of biodiversity loss, it seems necessary to use data collected at a range of spatial and temporal scales in ways that will reliably aggregate, dis-aggregate and replicate ecological information. This symposium will begin a reflective discussion on explicating such a method.

8:00 AM SYMP 17-1 Boose, ER[1], BS Lerner[2] and LJ Osterweil[3], (1) Harvard University, (2)Mt. Holyoke College, (3)University of Massachusetts. *Retracing our steps in the analysis of data*.

8:30 AM SYMP 17-2 Degrassi, A, University of Vermont. *A mammal's tale: Fine scale trapping events over time*.

9:00 AM SYMP 17-3 Dayan, T[1] and B Galil[2], (1)Tel-Aviv University, (2)Israel Oceanographic and Limnological Research. *Natu-*

ral history collections: Unraveling communites past and a key to the future.

9:30 AM Break

9:40 AM SYMP 17-4 Rowe, RJ, University of New Hampshire. *Pitfalls and possibilities: Aggregating data for coarse scale replicates in time and space*.

10:10 AM SYMP 17-5 Tingley, MW, Princeton University. *Toward a generalized framework for the analysis of historical data used in 'resurvey' studies*.

10:40 AM SYMP 17-6 Shavit, A, Tel Hai College. *Revisiting old locations and records: Experimental and Musial eye-views*.

11:10 AM Discussion

SYMP 18 - Warming Consumers and their Prey: General Principles and Applications for How Temperature Affects Trophic Interactions

Auditorium, Rm 3, Minneapolis Convention Center

Organized by: MI O'Connor, HS Greig

Moderator: HS Greig

This symposium will synthesize recent theoretical and empirical advances to understanding how warming affects consumer-prey interactions in a general framework, and we will identify potential general effects of warming and promsing approaches toward a temperature dependent food web theory.

8:00 AM SYMP 18-1 Savage, VM[1], S Pawar[2] and AI Dell[3], (1)UCLA, (2)University of Chicago, (3)University of Goettingen. *Scaling relationships for the temperature-dependence of species performance*.

8:30 AM SYMP 18-2 Vasseur, DA, Yale University. *Predicting responses to temperature variation: Ecology and Evolution in trophic systems*.

9:00 AM SYMP 18-3 Gilbert, B, University of Toronto. *Trophic interactions and temperature change: using interaction strength to predict stability and productivity*.

9:30 AM Break

9:40 AM SYMP 18-4 O'Connor, MI[1], P Kratina[2], HS Greig[3], DA Vasseur[4], TD Tunney[5], BT Barton[6], HM Kharouba[1], KS McCann[5], CDG Harley[1], M Winder[7], VM Savage[8], B Gilbert[9], J Shurin[10] and JP DeLong[11], (1)University of British Columbia, (2)University of California Davis, (3)University of Canterbury, (4)Yale University, (5)University of Guelph, (6) University of Wisconsin-Madison, (7)Stockholm University, (8)UCLA, (9)University of Toronto, (10)University of California- San Diego, (11)University of Nebraska. *Linking theory and experiments: a meta-analysis of multi-trophic warming experiments*.

10:10 AM SYMP 18-5 Winder, M[1], R Bermudez[2], T Hansen[2], J Brandes[3], S Berger[3], JM Bouquet[4], C Troedsson[4] and E Thompson[4], (1)Stockholm University, Stockholm, Sweden, (2)Helmholtz Centre for Ocean Research Kiel (GEOMAR), Kiel, Germany, (3)Skidaway Institute of Oceanography, Savannah, USA, (4)Department of Biology, University of Bergen, Bergen, Norway. *Warming up food webs: Implications for trophic energy transfer*.

10:40 AM SYMP 18-6 McCann, KS, University of Guelph. *Tipping points in temperature-dependent food webs*.

11:10 AM Discussion

OOS 23 - Bridging The Public-Private Land Divide - Supporting Biodiversity Conservation and Ecosystem Services By Tapping The Ingenuity In Social-Ecological Systems

101A, Minneapolis Convention Center

Organized by: P Heglund (patricia_heglund@fws.gov), P Charland, CL Williams

Moderator: C Woodson

This symposium provides an overview of social-ecological system development in the Midwest, highlighting key issues revolving around market-based conservation solutions, their consequences, and the need for additional advances to support conservation.

8:00 AM OOS 23-1 Williams, CL[1] and P Charland[2], (1)University of Wisconsin, (2)U.S. Fish and Wildlife Service. *Bioeconomy transitions: Cross-sector collaboration at the conservation-economy nexus*.

8:20 AM OOS 23-2 Lehman, CL, University of Minnesota. *Bioenergy from reserve native grasslands: Measuring harvest and monitoring wildlife*.

8:40 AM OOS 23-3 Shibu, J, University of Missouri. *Developing an integrated biomass/biofuel production system using the Mississippi/Missouri River corridor*.

9:00 AM OOS 23-4 Harris, MA[1], LA Schulte[1], MJ Helmers[1], JG Arbuckle[1], P Drobney[2], RK Kolka[3], M Liebman[1], ME O'Neal[1] and JC Tyndall[1], (1)Iowa State University, (2)U.S. Fish and Wildlife Service, (3)USDA Forest Service. *Bridging the conservation lands – working lands divide with a cost-effective strategy to enhance ecosystem services*.

9:20 AM OOS 23-5 Roeslein, R, Roeslein Alternative Energy. *Nature in balance: Achieving landscape scale prairie conservation through value innovation*.

9:40 AM Break

9:50 AM OOS 23-6 Lonsdorf, E[1], T Ricketts[2], C Kremen[3] and NM Williams[4], (1)Chicago Botanic Garden, (2)University of Vermont, (3)University of California, Berkeley, (4)University of California, Davis. *Knowing the "shed" of one another's ecosystem service –shared consequences of individual land management decisions*.

10:10 AM OOS 23-7 Rissman, A, University of Wisconsin, Madison. *Governing public and private rights and responsibilities in multifunctional landscapes*.

10:30 AM OOS 23-8 Miller, JR[1], LW Morton[2], DM Engle[3], DM Debinski[2], RN Harr[4] and SR Rusk[2], (1)University of Illinois, (2)Iowa State University, (3)Oklahoma State University, (4)Iowa Department of Natural Resources. *Both sides now: Forging links between grassland conservation on protected areas and private lands*.

10:50 AM OOS 23-9 Galbraith, SM[1], NA Bosque Pérez[2] and J Ordoñez[3], (1)University of Idaho, (2)Plant, Soil, and Entomological Sciences, (3)Centro Agronómico Tropical de Investigación y Enseñanza (CATIE). *Pollination services in a social-ecological system: Understanding the impact of land cover on bee populations in a seasonally dry tropical landscape to inform ecosystem service incentive schemes*.

11:10 AM OOS 23-10 Ryals, R[1], WL Silver[2], VT Eviner[3] and C Stein[4], (1)Brown University, (2)University of California, Berkeley,

(3)University of California Davis, (4)University of California at Berkeley. *Are there tradeoffs in plant dynamics in grasslands managed for carbon sequestration?*.

OOS 24 - Managing Belowground Processes In Agroecosystems

101B, Minneapolis Convention Center

Organized by: SK Hargreaves, LA Schulte

Moderator: LA Schulte

By contrasting belowground processes of past, current, and alternative agroecosystems, this session will explore the question: how do we manage agroecosystems for belowground processes that support multiple ecosystem goods and services?

8:00 AM OOS 24-1 Jackson, RD, University of Wisconsin-Madison. *Why are belowground responses to management and their feedbacks to crops so difficult to predict?*.

8:20 AM OOS 24-2 Sprunger, C[1], S Snapp[2] and S Culman[3], (1) Michigan State University and Kellogg Biological Station, (2)Michigan State University, (3)University of California, Davis. *Management impacts on soil carbon sequestration: A case study evaluating perennial and annual cereal production systems*.

8:40 AM OOS 24-3 Ontl, TA[1], CA Cambardella[2], KS Hofmockel[1], LA Schulte[1] and RK Kolka[3], (1)Iowa State University, (2) USDA-Agricultural Research Service, (3)USDA Forest Service. *Spatial variability of soil carbon storage and root production in conventional and perennial agroecosystems*.

9:00 AM OOS 24-4 Hargreaves, SK[1], AE Milne[2] and KS Hofmockel[1], (1)Iowa State University, (2)Rothamsted Research. *Scale-dependent patterns of soil microbial abundance, diversity and function in an agricultural landscape*.

9:20 AM OOS 24-5 Duncan, DS[1], KA Jewell[1], DA Williams[2], G Suen[1] and RD Jackson[1], (1)University of Wisconsin-Madison, (2)Great Lakes Bioenergy Research Center. *Linking microbial community composition to management-relevant agroecosystem functions*.

9:40 AM Break

9:50 AM OOS 24-6 Kluber, LA[1] and JR Herr[2], (1)USDA ARS Coastal Plains Soil, Water, and Plant Research Center, (2)Penn State University. *Managing for fungi in agroecosystems: What we know and where we will go*.

10:10 AM OOS 24-7 Crews, TE[1] and PC Brookes[2], (1)The Land Institute, (2)Rothamsted Research. *Perennial crops reduce inorganic recalcitrant P pools and increase reliance on active organic P relative to annual crops in long-term experiments at Rothamsted, U.K*.

10:30 AM OOS 24-8 Murrell, E and EM Cullen, University of Wisconsin-Madison. *Bottom-up effects of conventional and organic soil fertility management on Ostrinia nubilalis development and resistance of corn plants to herbivory*.

10:50 AM OOS 24-9 Wickings, K and AS Grandy, University of New Hampshire. *Consequences of agricultural management intensity for litter-inhabiting arthropods and their role in decomposition*.

11:10 AM OOS 24-10 Twine, TE[1], J Sun[1], A VanLoocke[2], CJ Bernacchi[3] and CJ Kucharik[4], (1)University of Minnesota, (2) University of Illinois, (3)University of Illinois/USDA-ARS, (4)University of Wisconsin-Madison. *Representing belowground processes in land surface models: Applications at the regional scale and remaining challenges*.

OOS 25 - Plant Reintroductions As Sustained Ecological Experiments: Results and Feedbacks To Restoration and Theory

101D, Minneapolis Convention Center

Organized by: TN Kaye, ES Menges, TJ Bell

Moderator: ML Bowles

Reintroductions of endangered plants are becoming more frequent and important for conservation and this session will contribute to the development of reintroduction ecology by covering demographic approaches, genetics and feedbacks to theory.

8:00 AM OOS 25-1 Kaye, TN, Institute for Applied Ecology. *Using plant traits to predict reintroduction success of endangered species*.

8:20 AM OOS 25-2 Menges, ES[1], TJ Bell[2], TN Kaye[3], IA Pfingsten[3], M Bowles[4], K McEachern[5] and CW Weekley[1], (1)Archbold Biological Station, (2)Chicago State University, (3)Institute for Applied Ecology, (4)The Morton Arboretum, (5)US-Geological Survey - Western Ecological Research Center. *Comparative demography of reintroductions and wild populations to evaluate restorations and test ecological hypotheses*.

8:40 AM OOS 25-3 Bell, TJ[1], ML Bowles[2] and TN Kaye[3], (1)Chicago State University, (2)The Morton Arboretum, (3)Institute for Applied Ecology. *Where you've been and where you're going: Seed source and reintroduction success*.

9:00 AM OOS 25-4 Maschinski, J[1] and MA Albrecht[2], (1)Fairchild Tropical Botanic Garden, (2)Missouri Botanical Garden. *Sustainable rare plant populations: factors influencing probability and timing of next generation recruitment*.

9:20 AM OOS 25-5 Oostermeijer, JGB[1], M Mijnders[1], L Bakker[1], PG Meirmans[1] and SH Luijten[2], (1)University of Amsterdam, (2)Science4Nature. *Plant reintroductions as demographic-genetic experiments*.

9:40 AM Break

9:50 AM OOS 25-6 Dalrymple, SE, Liverpool John Moores University. *Translocations as bioassays of recent environmental change*.

10:10 AM OOS 25-7 Monks, L, DJ Coates and R Dillon, Department of Environment and Conservation. *Two decades of plant translocations in Western Australia: Assessing success and recovery of threatened species*.

10:30 AM OOS 25-8 Krauss, SL, Kings Park and Botanic Garden. *Measuring and managing genetic erosion in plant reintroductions*.

10:50 AM OOS 25-9 Halsey, SJ[1], TJ Bell[1] and K McEachern[2], (1)Chicago State University, (2)USGeological Survey - Western Ecological Research Center. *A Metapopulation Approach to Examining the Effect of Restorations on Population Viability in the Indiana Dunes*.

OOS 26 - Sustaining Forest Goods and Services In a Time Of Change: The Role Of Harvest Gaps In Northern Temperate Forest Regeneration and Diversity

101F, Minneapolis Convention Center

Organized by: CC Kern (cckern@fs.fed.us), JI Burton, P Raymond
Moderator: MB Walters

This session examines the role of harvest gaps in tree regeneration and plant diversity and its efficacy as a mechanism to sustain the goods and services of managed forests.

8:00 AM OOS 26-1 Kern, CC[1], AW D'Amato[2] and TF Strong[3], (1)USDA Forest Service; University of Minnesota, (2)University of Minnesota, (3)USDA Forest Service, Retired. *Diversifying the composition and structure of managed, late-successional forests with harvest gaps: What is the optimal gap size?* .

8:20 AM OOS 26-2 Willis, JL[1], MB Walters[1] and KW Gottschalk[2], (1)Michigan State University, (2)USDA Forest Service Northern Research Station. *Young seedling dynamics depend on harvest gap size and surface disturbance*.

8:40 AM OOS 26-3 Webster, CR, S Klingsporn Poznanovic and J Bump, Michigan Technological University. *Influence of legacy-tree retention on regeneration dynamics and harvest opening persistence in northern hardwoods*.

9:00 AM OOS 26-4 D'Amato, AW[1], L Reuling[1], BJ Palik[2] and KJ Martin[3], (1)University of Minnesota, (2)USDA Forest Service, Northern Research Station, (3)Wisconsin Department of Natural Resources. *Assessing the efficacy of natural disturbance-based harvest gaps at restoring old-growth composition and structure*.

9:20 AM OOS 26-5 Keeton, WS[1], SE Ford[1], NC Dove[1], KJ Smith[1] and HC McKenny[2], (1)University of Vermont, (2)Yosemite National Park. *Experimental gaps in the Vermont Forest Ecosystem Management Demonstration Project: Effects on stand dynamics, salamanders, understory plants, and fungi*.

9:40 AM Break

9:50 AM OOS 26-6 Rutenbeck, NE and RS Seymour, University of Maine. *Influence of retention trees on regeneration dynamics in expanding-gap shelterwood treatments in the Acadian forest*.

10:10 AM OOS 26-7 Raymond, P and M Prévost, Ministère des Ressources naturelles du Québec. *Microclimate and regeneration discordance in harvest gaps of mixed-species stands*.

10:30 AM OOS 26-8 Royo, AA[1], TJ Nuttle[2], MB Adams[3] and WP Carson[4], (1)USDA Forest Service, (2)Civil & Environmental Consultants, Inc., (3)USDA FS Timber and Watershed Laboratory, (4)University of Pittsburgh. *Sustaining forest diversity amidst the interacting forces of northern temperate forests*.

10:50 AM OOS 26-9 Gilliam, FS[1], R Hédl[2], M Chudomelová[2], RL McCulley[3] and JA Nelson[3], (1)Marshall University, (2)Institute of Botany, (3)University of Kentucky. *Variation in biotic linkages with slope aspect in a temperate hardwood forest*.

11:10 AM OOS 26-10 Burton, JI, LM Ganio and KJ Puettmann, Oregon State University. *Pattern of forest overstory retention, broad-scale environmental variation and species traits influence spatial patterning of understory vegetation after thinning*.

COS 82 - Biogeochemistry: C And N Cycling In Response To Global Change II

101G, Minneapolis Convention Center

8:00 AM COS 82-1 Lu, M[1], X Zhou[2], Y Luo[2] and B Li[3], (1)The Institute of Biodiversity Science, Fudan University, Shanghai, China, (2)University of Oklahoma, (3)Fudan University. *Responses of ecosystem carbon cycle to experimental warming:a meta-analysis*.

8:20 AM COS 82-2 Steinweg, JM[1], JE Kostka[2], PJ Hanson[1] and CW Schadt[1], (1)Oak Ridge National Laboratory, (2)Georgia Institute of Technology. *Spatial and temporal heterogeneity in bog enzymes and their temperature responses*.

8:40 AM COS 82-3 DeForest, JL[1], KA Smemo[2], MN Weintraub[3], DJ Burke[2], SR Carrino-Kyker[2], CR Hewins[2] and LA Kluber[4], (1)Ohio University, (2)The Holden Arboretum, (3)University of Toledo, (4)USDA ARS Coastal Plains Soil, Water, and Plant Research Center. *Shifts in forest soil enzyme stoichiometry due to season, pH, and phosphorus availability*.

9:00 AM COS 82-4 Gelfand, I[1], M Cui[2], J Tang[3] and GP Robertson[1], (1)Michigan State University, (2)Brown University, (3)Marine Biological Laboratory. *Effect of rewetting following drought on nitrous oxide and carbon dioxide emissions from temperate agricultural soils: the response to nitrogen is mediated by carbon availability*.

9:20 AM COS 82-5 Mobley, ML[1], RL McCulley[2], IC Burke[1], GA Peterson[3], DS Schimel[4], CV Cole[3], ET Elliott[3] and DG Westfall[3], (1)University of Wyoming, (2)University of Kentucky, (3)Colorado State University, (4)Jet Propulsion Lab, California Institute of Technology. *Perennial plant cover controls soil nitrogen retention in managed current and former grasslands of the semi-arid western Great Plains*.

9:40 AM Break

9:50 AM COS 82-6 Ali, AA[1], BE Medlyn[2], PD Smith[2], KY Crous[3] and PB Reich[4], (1)Los Alamos National Laboratory, (2) Macquarie University, (3)Hawkesbury Institute for the Environment, University of Western Sydney, (4)University of Minnesota. *Elevated carbon dioxide: favors coexistence for competing species in a trait-based model*.

10:10 AM COS 82-7 Brzostek, ER, D Dragoni, DA Sims, AF Rahman and RP Phillips, Indiana University. *Increasing frequency of drought reduces carbon storage in an Eastern deciduous forest*.

10:30 AM COS 82-8 Midgley, MG and RP Phillips, Indiana University. *Varied nitrogen deposition effects on decomposition are driven by site-specific fungal communities in temperate forests*.

10:50 AM COS 82-9 Dybzinski, R, CE Farrior and SW Pacala, Princeton University. *Additional carbon storage under elevated CO2 is not diminished – and may even be amplified – by nitrogen limitation*.

11:10 AM COS 82-10 Boot, CM[1], EK Hall[2], K Denef[1] and J Baron[3], (1)Colorado State University, (2)United States Geological Survey, (3)Natural Resource Ecology Laboratory, United States Geological Survey. *Nitrogen fertilization alters microbial community composition and reduces the soil organic carbon pool in an old-growth subalpine forest*.

COS 83 - Biological Control

101I, Minneapolis Convention Center

8:00 AM COS 83-1 Raymond, L[1], A Vialatte[2] and M Plantegenest[3], (1)INRA, (2)INP-ENSAT, (3)INRA-Agrocampus Ouest. *No genetic divergence between contrasted overwintering strategies of a major pest predator Episyrphus balteatus (Diptera: Syrphidea): implications for biocontrol*.

8:20 AM COS 83-2 Castillo Lopez, D and G Sword, Texas A&M University. *Fungal Endophytes And Their Role As Protective Agents Against Herbivores*.

8:40 AM COS 83-3 Catton, HA[1], RG Lalonde[1] and RA De Clerck-Floate[2], (1)University of British Columbia Okanagan, (2) Agriculture and Agri-Food Canada. *Spatial utilization patterns by the weed biocontrol weevil Mogulones crucifer differ between target and non-target plants*.

9:00 AM COS 83-4 Lin, SH[1], TJ Tseng[1], S Wu[2], YJ Wang[1] and CK Ho[1], (1)National Taiwan University, (2)Rice University. *Climate warming in a tri-trophic system: effects of experimental warming on soybeans, aphids, and ladybugs*.

9:20 AM COS 83-5 Iverson, A[1], DJ Gonthier[1], KK Ennis[2], D Pak[3], K Fisher[3], J Vandermeer[1] and I Perfecto[1], (1)University of Michigan, (2)University of California-Santa Cruz, (3)University of Mchigan. *Habitat and landscape heterogeneity positively influence biological control and natural enemy community composition in coffee agroecosystems*.

9:40 AM Break

9:50 AM COS 83-6 Quiram, GL[1], J Cavender-Bares[2] and RG Shaw[2], (1)Gustavus Adolphus College, (2)University of Minnesota. *Long-term consequences of biocontrol agents: Demographic variation among Lythrum salicaria populations 16 years after herbivore introduction*.

10:10 AM COS 83-7 Why, AM and WE Walton, University of California, Riverside. *Evaluating a native fish species as an alternative to the western mosquitofish, Gambusia affinis, for the biological control of mosquitoes in southern California*.

10:30 AM COS 83-8 Ong, TWY and JH Vandermeer, University of Michigan. *Navigating the urban matrix: Pest population dynamics in an urban agroecosystem*.

10:50 AM COS 83-9 Leopold, C[1], DL Moorhead[1] and L Mitchell[2], (1)University of Toledo, (2)Toledo Area Sanitary District. *Seasonal replacement of Culex restuans by Culex pipiens in Northwest Ohio: A case study in habitat partitioning between mosquitoes*.

11:10 AM COS 83-10 Peterson, JA, JO Eckberg, JM Kaser, KE Blaedow, GA Johnson and GE Heimpel, University of Minnesota. *Perennial bioenergy plantings enhance an ecosystem service and provide resources for beneficial insects in agricultural fields*.

COS 84 - Climate Change: Ranges And Phenology I

101J, Minneapolis Convention Center

8:00 AM COS 84-1 Von Holle, B[1], S Weber[1], S Igtibien[1], KA Medley[2] and CV Hawkes[3], (1)University of Central Florida, (2) University of Colorado, (3)University of Texas at Austin. *The influence of warming and biotic interactions on the potential for range expansion of native and nonnative species*.

8:20 AM COS 84-2 Moyes, AB[1], B Lazarus[2], M Germino[2] and L Kueppers[3], (1)University of California, Merced, (2)US Geological Survey, (3)University of California Merced. *Warming reduces cold stress but increases moisture stress for establishing limber pine within and above alpine treeline*.

8:40 AM COS 84-3 Hewitt, RE[1], TN Hollingsworth[2], DL Taylor[3] and T Chapin[4], (1)University of Alaska Fairbanks, (2)Pacific Northwest Research Station, (3)Institute of Arctic Biology, (4)University of Alaska. *Do post-fire plant-fungal interactions shape biome shifts?*.

9:00 AM COS 84-4 Harsch, MA and J Hille Ris Lambers, University of Washington. *Local or broad-scale drivers? The role of local climate change and mean climatic conditions that vary over broad spatial scales in determining elevational distribution shifts of 892 plant species across western North America*.

9:20 AM COS 84-5 Rittenhouse, TAG and CD Rittenhouse, University of Connecticut. *Occupancy of breeding sites by wood frogs determined by winter conditions*.

9:40 AM Break

9:50 AM COS 84-6 Braegelman, SD and MG Butler, North Dakota State University. *Thermal controls of insect emergence in some high arctic ponds*.

10:10 AM COS 84-7 Kellermann, JL[1], KL Gerst[1] and CAF Enquist[2], (1)USA National Phenology Network, (2)The Wildlife Society & USA National Phenology Network. *When is the onset of a phenophase? Calculating phenological metrics from status monitoring data in the National Phenology Database*.

10:30 AM COS 84-8 Montgomery, RA, PB Reich, A Stefanski and RL Rich, University of Minnesota. *B4WarmED forest warming experiment: phenological responses of dominant tree species at the temperate-boreal ecotone*.

10:50 AM COS 84-9 Trant, A[1], CD Brown[2], DM Cairns[3], RK Danby[4], AH Lloyd[5], SD Mamet[6], IE Mathisen[7], G Dufour Tremblay[8], X Walker[6], M Wilmking[9], S Boudreau[8], K Harper[10], GHR Henry[11], L Hermanutz[12], D Hik[13], A Hofgaard[7], JF Johnstone[6], P Kershaw[14], C Laroque[15] and J Weir[16], (1) University of Victoria, (2)Université de Sherbrooke, (3)Texas A&M University, (4)Queen's University, (5)Middlebury College, (6)University of Saskatchewan, (7)Norwegian Institute for Nature Research, (8)Université Laval, (9)University Greifwald, (10)Dalhousie University, (11)University of British Columbia, (12)Memorial University, (13)University of Alberta, (14)Monash University, (15)Mount Allison University, (16)Government of Newfoundland and Labrador. *Ecological factors, not climate warming, explain variability in treeline patterns*.

COS 85 - Community Pattern And Dynamics IV

L100A, Minneapolis Convention Center

8:00 AM COS 85-1 Cortez, M and JS Weitz, Georgia Institute of Technology. *The shapes of predator-prey cycles: Examples and theory of how evolution changes the community dynamics of predator-prey systems*.

8:20 AM COS 85-2 Carey, CC[1], PC Hanson[2] and RC Lathrop[3], (1) University of Wisconsin-Madison, (2)University of Wisconsin, (3)University of Wisconsin - Madison. *Altered period-*

icity in long-term phytoplankton dynamics in response to drought.

8:40 AM COS 85-3 Mahoney, B, University of California, Santa Cruz. *Variability in prey communities as a function of algal habitat: linking algal habitat to fish predation*.

9:00 AM COS 85-4 Downing, AS[1], T Blenckner[2], O Hjerne[1], SA Otto[2] and M Winder[3], (1)Stockholm University, (2)Stockholm Resilience Centre, Stockholm University, (3)Department of Ecology, Environment and Plant Sciences, Stockholm University. *Finding niches in the lumps and gaps of community body-size distributions: a multi-method approach*.

9:20 AM COS 85-5 Steck, MK, ET Borer and EW Seabloom, University of Minnesota. *A robust test of the competition-defense tradeoff in a nitrogen-limited grassland*.

9:40 AM Break

9:50 AM COS 85-6 Caskenette, AL and KS McCann, University of Guelph. *Community driven alternative density states in lake ecosystems*.

10:10 AM COS 85-7 Hamman, EA[1], CW Osenberg[1], SA McKinley[1] and A Stier[2], (1)University of Florida, (2)University of British Columbia. *Spatial patterns of symbionts and hosts arising from propagule redirection*.

10:30 AM COS 85-8 Lawson, DM[1], PH Zedler[2] and LA Seiger[3], (1) U.S. Navy, (2)University of Wisconsin-Madison, (3)San Diego Mesa College. *Patterns of recruitment and mortality in mixed coast live oak/ Engelmann oak woodlands in southern California over 34 years*.

10:50 AM COS 85-9 Amatangelo, KL[1], DF Sax[1] and ST Jackson[2], (1)Brown University, (2)DOI Southwest Climate Science Center. *Time lags and disturbance legacies: community transitions over 150 years in an Indiana wetland*.

11:10 AM COS 85-10 Riginos, C[1], KE Veblen[2], LM Porensky[3] and TP Young[4], (1)University of Wyoming, (2)Utah State University, (3)University of Nevada, Reno, (4)University of California, Davis. *Cattle, wild herbivores, and drought interact to drive vegetation change over 17 years in an East African savanna*.

COS 86 - Conservation Management I

L100B, Minneapolis Convention Center

8:00 AM COS 86-1 Mazor, T, University of Queensland. *Collaboration among countries in marine conservation can achieve substantial efficiencies*.

8:20 AM COS 86-2 Coffey, EED[1] and KJ Willis[2], (1)University of Oxford - Long-term Ecology Laboratory, (2)University of Oxford. *Determination of baseline ecological conditions in the humid highlands of Santa Cruz Island, Galápagos, Ecuador*.

8:40 AM COS 86-3 Curry, TR, K Suckling and DN Greenwald, Center for Biological Diversity. *Measuring the success of the Endangered Species Act: examining progress toward recovery*.

9:00 AM COS 86-4 Southwell, DM, MA McCarthy and GW Heard, The University of Melbourne. *Learning about colonization under an adaptive management framework*.

9:20 AM COS 86-5 Kowal, VA[1], DJ Bruggeman[2] and A Schmolke[3], (1)Ecological Services and Markets, Inc., (2)Ecological Services and Markets, Inc, (3)Michigan State University. *Learning from models: Individual-based models inform field data collection priorities for the gopher tortoise*.

9:40 AM Break

9:50 AM COS 86-6 Warchola, N[1], EE Crone[1] and CB Schultz[2], (1) Harvard University, (2)Washington State University Vancouver. *Fire, a threatened plant and an endangered butterfly: A study of Kinkaid's lupine and Fender's blue butterfly in Oregon's Willamette Valley*.

10:10 AM COS 86-7 Reinhardt, JR[1], LM Nagel[1], CW Swanston[2] and H Keough[2], (1)Michigan Technological University, (2) US Forest Service. *Prioritizing land for oak savanna conservation using species distribution models (SDMs) and two umbrella species: Wild lupine (Lupinus perennis) and the Karner Blue butterfly (Lycaeides melissa samuelis)*.

10:30 AM COS 86-8 Henry, EH and NM Haddad, North Carolina State University. *Use of point counts to estimate butterfly densities*.

10:50 AM COS 86-9 Sweatman, J and JW Fourqurean, Florida International University. *Relationship between light availability and benthic community structure in the Florida Keys*.

11:10 AM COS 86-10 Swaty, R, S Hagen, K Blankenship, J Smith and J Patton, The Nature Conservancy. *LANDFIRE: Learning from the past, shaping the future of large scale land management*.

COS 87 - Detritus And Decomposition II

L100C, Minneapolis Convention Center

8:00 AM COS 87-1 Talbot, J and K Peay, Stanford University. *Species identity predicts decomposition capabilities of fungi better than phylogeny or functional type*.

8:20 AM COS 87-2 McLaren, JR[1], M van de Weg[2], L Gough[3] and GR Shaver[4], (1)University of British Columbia, (2)VU University Amsterdam, (3)University of Texas at Arlington, (4)Marine Biological Laboratory. *Effects of increasing shrub abundance on leaf and root litter decomposition in arctic tundra*.

8:40 AM COS 87-3 Kuras, ER[1], SM Murphy[2], D Lewis[3] and GM Wimp[3], (1)Boston University, (2)University of Denver, (3) Georgetown University. *Salt marsh fertilization increases plant decomposition rate and the abundance of a detritivorous snail*.

9:00 AM COS 87-4 McCay, TS, CL Cardelus, SH Vondracek and MA Neatrour, Colgate University. *Litter decay and the role of macroinvertebrate decomposers in limed and unlimed forests of the Adirondack Mountains*.

9:20 AM COS 87-5 Mikola, J[1], U Paaso[1], T Silfver[1], M Autelo[1], K Koikkalainen[1] and M Rousi[2], (1)University of Helsinki, (2)Finnish Forest Research Institute. *Genetic variation of leaf litter quality and spatially varying soil organic matter control soil N dynamics in a silver birch population*.

9:40 AM Break

9:50 AM COS 87-6 Liu, L[1], S Xu[2] and EJ Sayer[3], (1)Institute of Botany, Chinese Academy of Sciences, China, (2)Institute of Botany, Chinese Academy of Sciences, (3)Smithsonian Tropical Research Institute. *Variability of aboveground litter inputs alters soil physicochemical and biological processes*.

10:10 AM COS 87-7 Young, DF[1], AM Milo[1], B Oberle[1], SD Allison[2] and A Zanne[1], (1)The George Washington University, (2)

University of California. *Extracellular enzyme activities link wood traits with decomposition rates*.

10:30 AM COS 87-8 Buckeridge, KM[1], JR McLaren[2], MJ van der Weg[3], L Gough[2], GR Shaver[4] and JP Schimel[1], (1)University of California, Santa Barbara, (2)University of Texas at Arlington, (3)VU University Amsterdam, (4)Marine Biological Laboratory. *The impact of shrub encroachment and litter mixing on microbial exoenzyme activity*.

10:50 AM COS 87-9 Domke, GM[1], CW Woodall[1], ME Harmon[2], AN Gray[3] and B Fasth[2], (1)USDA Forest Service, Northern Research Station, (2)Oregon State University, (3)US Forest Service PNW Research Station. *An examination of dead wood carbon stock estimates to varying estimation procedures using the U.S. national forest inventory*.

11:10 AM COS 87-10 Gutknecht, JL[1], K Seidelmann[2], F Buscot[1] and Z Pei[1], (1)Helmoltz- Centre for Environmental Research- UFZ, (2)Albert-Ludwigs-University Freiburg. *Microbial functional responses to forest litter composition and biodiversity*.

COS 88 - Disease And Epidemiology III

L100D, Minneapolis Convention Center

8:00 AM COS 88-1 Medley, KA[1], MK Reeves[2], AE Pinkney[2] and PTJ Johnson[1], (1)University of Colorado, (2)US Fish and Wildlife Service. *Amphibian abnormalities: understanding relationships between multiple environmental factors and nation-wide patterns of disease*.

8:20 AM COS 88-2 Elderd, BD[1] and JR Reilly[2], (1)Louisiana State University, (2)Rutgers University. *Warmer temperatures increase disease transmission and outbreak intensity in a host-pathogen system*.

8:40 AM COS 88-3 Mordecai, EA, University of North Carolina. *Despite spillover, a shared pathogen promotes native plant persistence in a cheatgrass-invaded grassland*.

9:00 AM COS 88-4 Searle, CL[1], JH Ochs[2], CE Cáceres[3], SR Hall[4], P Lee[3], SA Duple[3], GC Davis[3] and MA Duffy[1], (1)University of Michigan, (2)Georgia Institute of Technology, (3) University of Illinois at Urbana-Champaign, (4)Indiana University. *Host genotype determines the future infection success of a virulent parasite*.

9:20 AM COS 88-5 Penczykowski, RM[1], JH Ochs[1], H Sundar[1], MS Shocket[2], BCP Lemanski[3], SR Hall[2] and MA Duffy[4], (1) Georgia Institute of Technology, (2)Indiana University, (3) Colgate University, (4)University of Michigan. *Does infection alter resource consumption by hosts? Trait-mediated indirect effects of disease on resources in a Daphnia-yeast host-parasite system*.

9:40 AM Break

9:50 AM COS 88-6 Orlofske, SA, SM Flaxman, BA Melbourne and PTJ Johnson, University of Colorado at Boulder. *Beyond frequency and density-dependence: An experimental demonstration of the importance of non-linear transmission dynamics in a host-macroparasite system*.

10:10 AM COS 88-7 Venesky, MD[1], X Liu[2], EL Sauer[1] and JR Rohr[1], (1)University of South Florida, (2)Chinese Academy of Sciences. *Linking manipulative experiments to field data to test the dilution effect*.

10:30 AM COS 88-8 Kraft, CE[1], ER Angert[1], JM Sun[1] and ER Gordon[2], (1)Cornell University, (2)University of California - Riverside. *Thiamine deficiency and reproductive failure in Great Lakes and Baltic Sea fishes: Experimental insights regarding an unsolved mystery*.

10:50 AM COS 88-9 Mauck, KE, CM De Moraes and MC Mescher, The Pennsylvania State University. *Virus effects on plant chemistry and vector behavior vary with host environment and virus genotype*.

11:10 AM COS 88-10 Mihaljevic, JR, MB Joseph, SA Orlofske and SH Paull, University of Colorado at Boulder. *The role of host community abundance-richness relationships in pathogen transmission*.

COS 89 - Ecosystem Stability And Resilience I

L100E, Minneapolis Convention Center

8:00 AM COS 89-1 de Luca, E[1], A Weigelt[2] and B Schmid[1], (1) University of Zurich, (2)University of Leipzig. *Biodiversity–stability relationships: Environmental and biotic effects on community properties*.

8:20 AM COS 89-2 Dakos, V and J Bascompte, Estación Biológica de Doñana, CSIC. *Detecting tipping points in mutualistic communities*.

8:40 AM COS 89-3 Hanan, NP[1], A Tredennick[2], L Prihodko[1], G Bucini[3] and J Dohn[2], (1)South Dakota State University, (2) Colorado State University, (3)University of Vermont. *Detecting bifurcations and alternate stable states in vegetation with remote sensing: when hypotheses and errors align*.

9:00 AM COS 89-4 Taylor, DL, MS Pearson and BH Hill, U.S. EPA, Mid-Continent Ecology Division. *Predicting geomorphic stability in low-order streams of the western Lake Superior basin*.

9:20 AM COS 89-5 Diggs, F, State University of New York College of Environmental Science and Forestry. *Mycorrhizal guilds decline similarly with depth in two northern hardwood forests*.

9:40 AM Break

9:50 AM COS 89-6 Gellner, G and KS McCann, University of Guelph. *Deconstructing Complexity: Towards a Theory of Whole Food Webs*.

10:10 AM COS 89-7 McCann, MJ, Stony Brook University. *Multiple levels of ecological organization determine susceptibility to critical transitions*.

10:30 AM COS 89-8 Muscarella, ME[1], SE Jones[2] and JT Lennon[1], (1)Indiana University, (2)University of Notre Dame. *Species sorting along a subsidy gradient affects community stability*.

10:50 AM COS 89-9 King, EG[1] and T Franz[2], (1)University of Georgia, (2)University of Arizona. *Spatiotemporal variability in landscape function in a semi-arid rangeland in Kenya*.

11:10 AM COS 89-10 Childress, AN[1], DS Ojima[1], J Baron[2] and KA Galvin[1], (1)Colorado State University, (2)Natural Resource Ecology Laboratory, United States Geological Survey. *Construction of a social-ecological framework of elk management in Northern Colorado to understand landscape-scale resource management*.

8 am-11:30 am

COS 90 - Education And Outreach II

L100F, Minneapolis Convention Center

8:00 AM COS 90-1 Barnett, L, USA National Phenology Network. *Making meaning out of science: Using Nature's Notebook to engage citizens in exciting and relevant research*.

8:20 AM COS 90-2 Goodwin, BJ and BJ Darby, University of North Dakota. *Teaching Ecology in a SCALE-UP (Student-Centered Active Learning Environment for Undergraduate Programs) room*.

8:40 AM COS 90-3 Newman, S, LA Wasser, DL Ward, WK Gram and S Henderson, National Ecological Observatory Network (NEON, Inc.) Education and Public Engagement. *Citizen science data: It's not just for scientists*.

9:00 AM COS 90-4 Crimmins, TM[1], AJ Elmore[2], A Huete[3], S Keller[2], E Levetin[4], J Luvall[5], O Myers[6], CD Stylinski[2], PK Van de Water[7] and A Vukovic[8], (1)USA National Phenology Network, (2)University of Maryland Center for Environmental Science, (3)University of Technology, (4)University of Tulsa, (5)NASA, (6)University of New Mexico, (7) CSU Fresno, (8)University of Belgrade. *Researcher-driven campaigns engage Nature's Notebook participants in scientific data collection*.

9:20 AM COS 90-5 Lake, JK, P Cobau-Smith, A Caldwell, J D'Amico, A Quinlan, A Barron and E Bisco, Adrian College. *NASCAR and Ecology: A Remarkably Natural Partnership for Educational Outreach and Undergraduate Research*.

9:40 AM Break

9:50 AM COS 90-6 Wasser, LA[1], WK Gram[2], S Phinn[3], A Held[4], T Kampe[1], S Elmendorf[1], K Krause[1] and S Petroy[1], (1)National Ecological Observatory Network (NEON), (2)National Ecological Observatory Network (NEON, Inc.), (3)Terrestrial Ecosystem Research Network, Australia, (4)CSIRO. *Education Toolkits for 21st Century Ecological Research: Facilitating the Use of Lidar Data in Global Scale Ecology*.

10:10 AM COS 90-7 Hart, C[1], M Thomas[2], JE Doll[3], M Nation[4], KF Lambert[5] and S Dailey[6], (1)Harvard Forest, Harvard University, (2)LTER Network Office, (3)Michigan State University, (4)CAP LTER, Arizona State University, (5)Harvard Forest (Harvard University), (6)Florida International University. *It Takes a Village to Talk Science: Science Communications Tools for Administrators and Educators*.

10:30 AM COS 90-8 White, PJT, MK Heidemann and JJ Smith, Michigan State University. *A Case-based Approach for Integrating Ecology and Evolution Education*.

10:50 AM COS 90-9 Kamarainen, A[1], S Metcalf[2], T Grotzer[2] and C Dede[2], (1)New York Hall of Science, (2)Harvard University. *EcoMOBILE - Can mobile devices support development of ecological observation skills across temporal and spatial scales?*.

COS 91 - Environmental Gradients

L100G, Minneapolis Convention Center

8:00 AM COS 91-1 Botero, CA[1], R Dor[2], CM McCain[2] and RJ Saffran[2], (1)North Carolina State University, (2)University of Colorado at Boulder. *Environmental tolerances, latitudinal gradients and the potential for speciation in mammals and birds*.

8:20 AM COS 91-2 Watt, CA and RA Scrosati, Saint Francis Xavier University. *Bioengineer effects on understory species richness, diversity, and composition change along an environmental stress gradient*.

8:40 AM COS 91-3 St. George, S[1], TR Ault[2] and MCA Torbenson[1], (1)University of Minnesota, (2)University Corporation for Climate Research. *Absent growth rings are rare in Northern Hemisphere forests outside the American Southwest*.

9:00 AM COS 91-4 Schlaepfer, DR[1], WK Lauenroth[1] and JB Bradford[2], (1)University of Wyoming, (2)US Geological Survey. *Biome boundaries across gradients: the sagebrush steppe-temperate forest ecotone*.

9:20 AM COS 91-5 Church, JN, California Geological Survey. *Adaptation of Red and White Fir to elevation across an Ecotone*.

9:40 AM Break

9:50 AM COS 91-6 Rose, JM[1], CA Blanchette[2], E Sanford[3], RC Williams[4], PT Raimondi[4] and BA Menge[1], (1)Oregon State University, (2)University of California, Santa Barbara, (3)University of California Davis, (4)University of California, Santa Cruz. *The relative influence of upwelling-driven ocean acidification on growth of the California mussel, Mytilus californianus, along the California Current Large Marine Ecosystem*.

10:10 AM COS 91-7 Waring, EF and DW Schwilk, Texas Tech University. *Influence of drought on canopy cover and plant dieback on an elevational gradient at Big Bend National Park*.

10:30 AM COS 91-8 Busing, R, NC Botanical Garden. *Forest dynamics along the elevation gradient in the Great Smoky Mountains*.

10:50 AM COS 91-9 Okie, J[1], DR Colman[2], X Jiang[2], E Shock[1], J Zhou[3] and C Takacs-Vesbach[2], (1)Arizona State University, (2)University of New Mexico, (3)University of Oklahoma. *Contrasting diversity-temperature relationships between the three domains of life along extreme thermal gradients*.

11:10 AM COS 91-10 Fresquez, CC, University of California, Santa Cruz. *An abiotic gradient in tidal influence and biotic interactions, competition and herbivory, work in concert and in conflict to set the distributional boundaries of an ecotonal salt marsh community sensitive to climate change*.

COS 92 - Food Webs II

L100H, Minneapolis Convention Center

8:00 AM COS 92-1 LeVan, KE and DA Holway, University of California, San Diego. *Ant-aphid mutualisms in the face of ant invasions: do novel partners affect diversity within mutualist and parasitoid guilds?*.

8:20 AM COS 92-2 Ziegler, JP[1], CT Solomon[1], B Finney[2] and I Gregory-Eaves[1], (1)McGill University & University of Montreal, (2)Idaho State University. *A potential mechanism underlying the ecosystem size food chain length trend: Shallow lakes as model ecosystems for addressing the predator prey interaction hypothesis*.

8:40 AM COS 92-3 Collins, SM[1], SA Thomas[2] and AS Flecker[1], (1)

Cornell University, (2)University of Nebraska-Lincoln. *Examining the role of bacteria in stream food webs using a dual-isotope tracer approach*.

9:00 AM COS 92-4 Ou, C and KO Winemiller, Texas A&M University. *Seasonal Hydrology Drives Shifts in Production Sources Supporting Fishes in the Lower Mekong River Basin*.

9:20 AM COS 92-5 Valdovinos, FS[1] and ND Martinez[2], (1)University of Arizona; Universidad de Chile; Pacific Ecoinformatics and Computational Ecology Lab, (2)University of Arizona; Pacific Ecoinformatics and Computational Ecology Lab. *Adaptive foraging stabilizes pollination networks via apparent altruism*.

9:40 AM Break

9:50 AM COS 92-6 O'Neill, BJ and JH Thorp, University of Kansas. *Stable Isotope Analysis of Food Web Complexity in Playa Wetlands of the High Plains: Effects of Habitat Complexity, Physicochemical State, and Biodiversity*.

10:10 AM COS 92-7 Ward, CL, N Rooney and KS McCann, University of Guelph. *HSS revisited: Bottom-up control in detritus food chains facilitates top-down control in grazing chains and greater omnivory across a productivity gradient*.

10:30 AM COS 92-8 Baiser, B[1], N Whitaker[2] and AM Ellison[3], (1) Harvard Forest, (2)University of Massachusetts, (3)Harvard University. *Foundation species in food webs*.

10:50 AM COS 92-9 Barnum, T[1], JM Drake[1], C Colón-Gaud[2], A Rugenski[3], T Frauendorf[4], SS Kilham[5], MR Whiles[6], K Lips[7] and CM Pringle[1], (1)University of Georgia, (2)Georgia Southern University, (3)Southern Illinois University, (4) University of Hawai'i at Manoa, (5)Drexel University, (6) Southern Illinois University Carbondale, (7)University of Maryland. *Food web properties persist following amphibian extirpations in a Neotropical stream*.

COS 93 - Invasion: Species Interactions I

L100I, Minneapolis Convention Center

8:00 AM COS 93-1 Hanna, C[1], I Naughton[1], KLJ Hung[2] and D Holway[2], (1)University of California at Berkeley, (2)University of California, San Diego. *The effects of pollinator harassment by the Argentine ant in the island morning glory*.

8:20 AM COS 93-2 Plank, K, D Kafkewitz and C Holzapfel, Rutgers University. *A novel defense? Understanding the role of the enzyme polyphenol oxidase in the invasive genus Bromus in plant competition*.

8:40 AM COS 93-3 Moeller, HV[1], IA Dickie[2], DA Peltzer[2] and T Fukami[1], (1)Stanford University, (2)Landcare Research. *Novel fungal partnerships highlight host flexibility in the New Zealand Douglas-fir invasion*.

9:00 AM COS 93-4 Brouwer, N[1] and S Kalisz[2], (1)University of PIttsburgh, (2)University of Pittsburgh. *An allelopathic invasive species increases prolonged dormancy in a forest perennial*.

9:20 AM COS 93-5 Hale, AN and S Kalisz, University of Pittsburgh. *Physiological mechanisms underlying reduced carbon acquisition in a native forest herb during garlic mustard invasion*.

9:40 AM Break

9:50 AM COS 93-6 Kalisz, S[1], RB Spigler[2] and C Horvitz[3], (1)University of Pittsburgh, (2)Temple University, (3)University of Miami. *Overabundant herbivores repress natives, facilitate exotics: Conclusive multi-year experimental results*.

10:10 AM COS 93-7 Bourdeau, PE[1], KL Pangle[2], EM Reed[1] and SD Peacor[1], (1)Michigan State University, (2)The Ohio State University. *Not-so-naïve: A native prey recognizes and responds specifically to a novel predator in a freshwater system*.

10:30 AM COS 93-8 Atwater, DZ[1], RM Callaway[2] and S Xiao[3], (1) University of Nevada, Reno, (2)University of Montana, (3)Lanzhou University. *Is competition among plants like a boxing match or a demolition derby? Why competitor suppression may not matter in plant communities*.

10:50 AM COS 93-9 Bao, Z[1], ET Nilsen[1] and CD Huebner[2], (1)Virginia Polytechnic Institute and State University (Virginia Tech), (2)USDA Forest Service. *The interactions between invasive tree Ailanthus altissima and native Robinia pseudoacacia in eastern deciduous forest of the U.S*.

11:10 AM COS 93-10 Reisner, MD[1], DA Pyke[2] and PS Doescher[3], (1) Augustana College, (2)U.S. Geological Survey, (3)Oregon State University. *Defoliation decreases competitive ability of resident plants, alters outcomes of interactions, and increases invader success*.

COS 94 - Life History Theory And Evolution

L100J, Minneapolis Convention Center

8:00 AM COS 94-1 Boyle, WA[1], BK Sandercock[1] and K Martin[2], (1)Kansas State University, (2)University of British Columbia. *Patterns and drivers of intraspecific variation in avian life history along elevational gradients: a meta-analysis*.

8:20 AM COS 94-2 Kaproth, MA[1] and J Molofsky[2], (1)University of Minnesota, (2)University of Vermont. *Maternal effects of plant competition: Comparing introduced populations to their native counterparts*.

8:40 AM COS 94-3 Cressler, CE and WA Nelson, Queen's University. *Life history (co)variation from an energy budget perspective*.

9:00 AM COS 94-4 Burgess, SC[1], M Bode[2] and DJ Marshall[3], (1) University of California Davis, (2)University of Melbourne, (3)Monash University. *Costs of dispersal and offspring provisioning: insights from a marine bryozoan*.

9:20 AM COS 94-5 Snell-Rood, E, E Swanson, A Espeset and S Jaumann, University of Minnesota. *Nutrient availability constrains life history evolution: a comparative study across butterflies*.

9:40 AM Break

9:50 AM COS 94-6 Crawford, JW[1], M Schrader[2], SR Hall[3] and CE Cáceres[1], (1)University of Illinois, (2)University of Illinois at Urbana-Champaign, (3)Indiana University. *Power and efficiency: trade-offs in resource use and links to dormancy in a facultative parthenogen, Daphnia pulicaria*.

10:10 AM COS 94-7 Bengtson, SP and WA Nelson, Queen's University. *Life history trait correlations within and among genotypes as a function of food quality*.

10:30 AM COS 94-8 Mims, MC[1], JD Olden[1], IC Phillipsen[2] and DA Lytle[2], (1)University of Washington, (2)Oregon State University. *Do life history strategies explain differential population structure of three desert amphibians?*.

10:50 AM COS 94-9 Martinez-Berdeja, A and M Torres, University of California, Riverside. *Morphological variability and divergence in seed characters of a winter desert annual (Chorizanthe rigida) across a precipitation gradient*.

11:10 AM COS 94-10 Gremer, JR and DL Venable, University of Arizona. *Bet hedging in desert winter annual plants: Optimal germination strategies in a variable environment*.

COS 95 - Parasitism And Host-Parasite Interactions

M100GD, Minneapolis Convention Center

8:00 AM COS 95-1 Dallas, TA and JM Drake, University of Georgia. *The influence of nitrate and pathogen dose on infection dynamics and host traits in a Daphnia-microparasite system*.

8:20 AM COS 95-2 Richgels, KLD, B Schneiders and PTJ Johnson, University of Colorado. *Understanding species-poor communities: evaluating drivers of within-host parasite assemblages from freshwater snails*.

8:40 AM COS 95-3 Mischler, JA[1], PTJ Johnson[2], V McKenzie[3] and AR Townsend[4], (1)University of Colorado Boulder, (2)University of Colorado at Boulder, (3)University of Colorado, (4)University of Colorado, Boulder. *Parasitic infection by Cotylurus flabelliformis alters aquatic nitrogen cycling at the ecosystem scale*.

9:00 AM COS 95-4 Marino, JA, University of Michigan. *Susceptibility of eight larval anurans to trematode parasites across ecological contexts*.

9:20 AM COS 95-5 Koprivnikar, J[1], SH Paull[2] and PTJ Johnson[3], (1)Brandon University, (2)University of Colorado, (3)University of Colorado at Boulder. *Climate change and amphibian disease: combined influences of hydroperiod and parasitism on larval development*.

9:40 AM Break

9:50 AM COS 95-6 Boughton, RK, R Bowman and J Bernath-Plaisted, Archbold Biological Station. *Increasing reproductive productivity and population growth rates of the Threatened Florida scrub-jay (Aphelocoma coerulescens) using a parasite removal experiment*.

10:10 AM COS 95-7 Humphrey, PT and NK Whiteman, University of Arizona. *Mediation of plant–insect interactions in the wild by natural phyllosphere bacteria*.

10:30 AM COS 95-8 Narr, C and PC Frost, Trent University. *Parasitism affects consumer-driven nutrient recycling: Disease induced changes in consumer nutrient release*.

10:50 AM COS 95-9 Friesen, OC and JD Roth, University of Manitoba. *Intraspecific variation in diet and behavior affects parasite loads in arctic fox*.

11:10 AM COS 95-10 McMahon, T[1], XE Bernal[2], R Ibanez[3] and JR Rohr[1], (1)University of South Florida, (2)Smithsonian Tropical Research Institute and Texas Tech University, (3) Smithsonian Tropical Research Institute. *Artificial light and sound disrupts feeding behavior of frog biting midges*.

COS 96 - Physiological Ecology I

M100HC, Minneapolis Convention Center

8:00 AM COS 96-1 McCarthy, HR, C Ehardt and A Rodriguez, University of Oklahoma. *Role of a remnant floodplain forest in uptaking urban stormwater runoff*.

8:20 AM COS 96-2 Cornelius, EA[1], AK Davis[1], S Altizer[1], DM Borden[1] and E Pitman[2], (1)University of Georgia, (2)Jekyll Island banding station. *Feather characteristics as indicators of condition and immunity during the migration season*.

8:40 AM COS 96-3 Tarsi, K, C Glidden and KF Davies, University of Colorado. *Smaller space, smaller skinks: Exploring the morphological consequences of habitat fragmentation within the Wog Wog Experiment*.

9:00 AM COS 96-4 Fell, M and K Ogle, Arizona State University. *Variation in mesophyll conductance across local and regional aridity gradients*.

9:20 AM COS 96-5 Barnes, PW[1], MA Tobler[1], SD Flint[2], RJ Ryel[3], KM Keefover-Ring[4] and RL Lindroth[4], (1)Loyola University, (2)University of Idaho, (3)Utah State University, (4)University of Wisconsin. *Diurnal changes in leaf UV-absorbing compounds and epidermal UV-transmittance*.

9:40 AM Break

9:50 AM COS 96-6 Johnsen, KH[1], P Anderson[1], JR Butnor[1], K Hall[2], JM Halman[3], GJ Hawley[3], CA Maier[1], PG Schaberg[1] and JL Stape[2], (1)USDA Forest Service, (2)North Carolina State University, (3)University of Vermont. *Growth, photosynthesis and cold tolerance of Eucalyptus benthamii planted in the Piedmont of North Carolina*.

10:10 AM COS 96-7 Beachum, CE, MJ Michel and JH Knouft, Saint Louis University. *Assessing temperature related variation in routine metabolic rate across the geographic range of the Bluntnose Minnow (Pimephales notatus)*.

10:30 AM COS 96-8 Soper, FM[1], TW Boutton[2] and JP Sparks[1], (1) Cornell University, (2)Texas A&M University. *Seasonal and individual variation in leguminous tree nitrogen fixation in a natural ecosystem*.

10:50 AM COS 96-9 Baguskas, SA[1], CJ Still[2], AR Ramirez[1] and JY King[1], (1)University of California, (2)Oregon State University. *Summertime fog and its impacts on the water relations of adult and sapling trees in a coastal pine forest*.

11:10 AM COS 96-10 Whiteman, JP[1], HJ Harlow[1], M Ben-David[1] and GM Durner[2], (1)University of Wyoming, (2)U.S. Geological Survey. *Polar bear body temperatures and behavior in the changing Arctic summer*.

COS 97 - Population Dynamics And Regulation I

M100IB, Minneapolis Convention Center

8:00 AM COS 97-1 MacNulty, D[1], D Smith[2], D Stahler[2], RO Peterson[3] and JA Vucetich[3], (1)Utah Stah University, (2) Yellowstone Center for Resources, (3)Michigan Technological University. *Mechanisms of population regulation in wolves and their community consequences*.

8:20 AM COS 97-2 West, DC and DM Post, Yale University. *Nutrient enrichment exacerbates the effect of climate driven shifts in early spring population size for temperate lake plankton*.

8:40 AM COS 97-3 Francis, TB[1], DE Schindler[2] and MC Siple[2], (1) University of Washington Tacoma, (2)University of Washington. *Population diversity in Puget Sound, WA, Pacific herring: Is there a "portfolio effect?"*.

9:00 AM COS 97-4 Caruso, NM[1], DC Adams[2], M Sears[3] and K Lips[4], (1)University of Alabama, (2)Iowa State University,

(3)Clemson University, (4)University of Maryland. *Widespread declines in body size in Appalachian Plethodontid salamanders*.

9:20 AM COS 97-5 Betini, GS, CK Griswold and DR Norris, University of Guelph. *Carry-over effects negatively impact per capita breeding output in an experimental seasonal population*.

9:40 AM Break

9:50 AM COS 97-6 Snyder, RE[1], CB Paris-Limouzy[2] and AC Vaz[2], (1)Case Western Reserve University, (2)University of Miami. *Creating a balanced marine portfolio: Relating correlated dispersal fluctuations to oceanographic features to maximize metapopulation growth*.

10:10 AM COS 97-7 Nilsson, KA[1] and L Persson[2], (1)University of Guelph, (2)Umeå university. *Refuge availability and within species differences in cannibalism determine population variability and dynamics*.

10:30 AM COS 97-8 Satterthwaite, WH[1], SM Carlson[2], SV Vincenzi[3] and BK Wells[1], (1)NOAA Fisheries, (2)University of California, Berkeley, (3)University of California Santa Cruz. *Match-mismatch dynamics and the relationship between ocean-entry timing and relative ocean recovery rates of Central Valley fall run Chinook salmon*.

10:50 AM COS 97-9 Sivakoff, FS[1], ET Aschehoug[1], H Lessig[1], WF Morris[2], TM Wepprich[1] and NM Haddad[1], (1)North Carolina State University, (2)Duke University. *Effects of habitat restoration on top-down and bottom-up forces regulating vulnerable populations*.

11:10 AM COS 97-10 Rodríguez-Buriticá, S[1], DL Venable[1] and RH Webb[2], (1)University of Arizona, (2)USGS. *Long-term spatial-temporal trends in saguaro recruitment: local buffering in the response to environmental conditions*.

8 am-5 pm

WK 46 - Using Large Scale Datasets in Education (by invitation only)

Board Rm 1, Hilton Minneapolis

Organized by: T Mourad (teresa@esa.org), A McMillen, D Bowie

This workshop will bring faculty from Minority-Serving Institutions to explore teaching modules using large scale data, discuss the value of big data analysis, potential pitfalls, common misconceptions of key ecological concepts and assessment strategies associated with incorporating large scale data exploration in the classroom.

11:30 am-1:15 pm

Ecology and Evolution Editorial Board Meeting

M100A, Minneapolis Convention Center

ESA Tutorial for ESA Website Update--All ESA Sections/Chapters Invited (repeat of Wed. session)

M100HC, Minneapolis Convention Center

TK 5 - ESA Diversity Luncheon

M101A, Minneapolis Convention Center

8 am-11:30 am; 8 am-5 pm; 11:30 am-1:15 pm

WK 47 - Combining Field Measurements and Ecosystem Models

Board Rm 2, Hilton Minneapolis

Organized by: D LeBauer, M Dietze

This workshop provides a brief introduction to a suite of tools developed that facilitate the integration of ecological trait data into ecosystem models.

WK 48 - Developing Effective Lesson Plans for Sustainability Education which Integrate Historical Human Impacts and Creative Vision for the Future

Board Rm 3, Hilton Minneapolis

Organized by: L Shiels

Participants in this workshop will learn and share innovative teaching strategies and explore useful ideas about human-ecosystem interactions to integrate into sustainability lessons. Then they will collaboratively create lesson plans that they can use with their students. This workshop is being hosted by the Open Science Network in Ethnobiology (www.opensciencenetwork.net).

WK 49 - ESA-SEEDS Chapter Business Workshop

101A, Minneapolis Convention Center

Organized by: F Abbott (fred@esa.org), N Mojumder

This workshop will provide an opportunity for ESA-SEEDS staff to share and network with students about the SEEDS Campus Ecology Chapters. SEEDS staff will provide an overview of the SEEDS program components, with the highlight being SEEDS Campus Ecology Chapters and Chapter management and development.

WK 50 - Getting though the Postdoctoral Phase to an Academic Job

Director's 3, Hilton Minneapolis

Organized by: AK Shaw (allison.shaw@anu.edu.au), DE Stanton, ML Baskett, A Budden, SL Collins, SR Hall, JA Reynolds, R Salguero, J Talbot

This workshop will seek to identify solutions and strategies to increase support for postdocs in ecology.

WK 51 - Launching A Scientists' Speakers Bureau for Outreach to Faith and Justice Communities

Director's 2, Hilton Minneapolis

Organized by: GE Hitzhusen (hitzhusen.3@osu.edu), LM Jablonski, FI Isbell

Organizing session and overview of successful pilot projects as we implement a speakers bureau to provide sound science and timely ecological information to local communities and influential social organizations, including faith and EJ-impacted communities. Contribute to the speakers network as we discuss outreach results, and finalize recommendations for national launch.

Speakers:
M Anderson, National Religious Partnership for the Environment
D Boorse, Gordon College
N Nadkarni, University of Utah
DH Boucher, Union of Concerned Scientists

11:30 am-1:15 pm; 1:30 pm-3:30 pm; 1:30 pm-5 pm

WK 52 - Science Journalism: From 'Little Story on the Prairie' to Worldwide News

101B, Minneapolis Convention Center

Organized by: CL Dybas (cheryl.lyn.dybas@gmail.com)

Participants in this workshop will learn how to present science in an interesting way while retaining factual accuracy — the key to good science communication and science journalism.

WK 53 - Show Me The Money: How To Write Successful Student Grant Proposals

101D, Minneapolis Convention Center

Organized by: J Talbot (jmtalbot@stanford.edu), S Dooley, G Wang

This workshop is designed for graduate students to learn techniques for writing successful research grant proposals in the ecological sciences. The workshop will feature a panel that includes a funding agency representative, proposal reviewers, and awardees who will discuss strategies for preparing an innovative, highly competitive, and complete proposal package.

Speakers:
S Twombly, National Science Foundation
JP Schimel, University of California, Santa Barbara
L Patrick-Bentley, University of Arizona

WK 54 - What the Farm Bill Means to an (Agro) Ecologist

101C, Minneapolis Convention Center

Organized by: A Elles, D Gurian-Sherman

The Union of Concerned Scientists (UCS) works for sustainable agriculture systems, in which farms are understood as ecosystems. In this workshop, we will present the science behind our vision for a "healthy" food and farm system, and examine specific farm policies that either help or hinder application of agroecological practices.

1:30 pm-3:30 pm

IGN 16 - Conversation on the Future of Ecology

101C, Minneapolis Convention Center

Organized by: ME Lam (mimibethlam@gmail.com), BR Pohlad
Moderator: ME Lam

This session aims to ignite a conversation within ESA on the future of ecology and the changing diversity and mandate of the ESA: ESA leadership will engage with the audience, individually and in conversation, to envision and shape the future of ecological leadership, research, and education.

IGN 16-1 Pickett, STA, Cary Institute of Ecosystem Studies. *What is your vision of the future of ecology?*.

IGN 16-2 Collins, SL, University of New Mexico. *What is your vision of ESA's role in shaping the future of ecology?*.

IGN 16-3 Chapin, FS III, University of Alaska Fairbanks. *Stewardship ecology: Research and actions to move the planet toward sustainability*.

IGN 16-4 Baron, J, Natural Resource Ecology Laboratory, United States Geological Survey. *What is your vision of how ESA can help ecological research inform policy and behavioral change?*.

IGN 16-5 Reynolds, JA, Duke University. *How can we enhance ecological literacy?*.

IGN 16-6 Bernhardt, JR, University of British Columbia. *What is your vision of how ESA can help inform public decision-making?*.

IGN 17 - Scaling in Global Change Studies: Representation in Multiple Dimensions

101E, Minneapolis Convention Center

Organized by: SD Wullschleger, X Xu
Moderator: S Goswami

This session brings together a group of ecologists to generate a thoughtful discussion about research exploring various approaches of bottom-up and top-down scaling from plot-scale to global scale, and thus to inspire discussion on current and future directions in scaling approaches in global change research.

IGN 17-1 Liu, M[1], JC Adam[1] and CL Tague[2], (1)Washington State University, (2)University of Calfornia, Santa Barbara. *Zooming out from small patches and watersheds to regions: what are missing out in the modeling world?*.

IGN 17-2 Lee, H, National Center for Atmospheric Research. *Incorporating thermokarst in a global model to enhance predictions of permafrost carbon dynamics*.

IGN 17-3 Tian, H[1], C Lu[1], W Ren[1], B Tao[1], J Yang[1], K Banger[1], S Pan[1], B Zhang[1], Q Yang[1], G Chen[2] and X Xu[2], (1)Auburn University, (2)Oak Ridge National Laboratory. *The balance of greenhouse gases in the terrestrial biosphere: can we predict large-scale and long-term patterns from short-term plot level observations?*.

IGN 17-4 Smith, MD, Colorado State University. *A problem of scale: why species diversity does not matter (as much as we might like it to)*.

IGN 17-5 Hayes, DJ, Oak Ridge National Laboratory. *The Vicious Cycles of a Changing Arctic: Global-scale Ecosystem-Climate Feedbacks*.

IGN 17-6 Hicks Pries, CE and MS Torn, Lawrence Berkeley National Laboratory. *Put Down that ANOVA! Using Regression-Based Designs to Deal With Spatial Heterogeneity*.

IGN 17-7 McCarthy, HR, University of Oklahoma. *People, pavement and trees: challenges in urban forests*.

IGN 17-8 Hellmann, J, University of Notre Dame. *Predicting the future by studying little things in big places and big things in little places*.

IGN 17-9 Wullschleger, SD, Oak Ridge National Laboratory. *Arctic landscapes in a warming climate – Witnessing the big thaw*.

IGN 17-10 Iversen, CM, AP Walker, J Childs and RJ Norby, Oak Ridge National Laboratory. *'From near to far, from here to there, funny things are everywhere'*.

1:30 pm-5 pm

SYMP 19 - Coexistence of Closest Relatives: Synthesis of Ecological and Evolutionary Perspectives

M100EF, Minneapolis Convention Center

Organized by: S Strauss, BL Anacker, D Grossenbacher
Moderator: SY Strauss

Whether closest relatives coexist reflects the often opposing effects of

limiting similarity, mode of speciation, reproductive isolation, niche conservatism, competition and facilitation, which may be strongest in sister taxa; using new phylogenies, niche models, and experimental approaches, we explore coexistence in closest relatives in both plants and animals.

1:30 PM SYMP 19-1 Anacker, BL and S Strauss, University of California, Davis. *Where is my sister?: Habitat use, range overlap, and co-occurrence in the California Floristic Province*.

2:00 PM SYMP 19-2 Graham, CH and B Weinstein, Stony Brook University. *Combining phylogeny, traits and distribution to understand mechanisms shaping hummingbird diversity*.

2:30 PM SYMP 19-3 Grossenbacher, DL[1] and ML Stanton[2], (1) University of Claifornia, Davis, (2)University of California. *Pollinator mediated interactions among sympatric sister species in the plant genus Mimulus*.

3:00 PM Break

3:10 PM SYMP 19-4 McPeek, MA, Dartmouth College. *Neutral theory, co-occurrence and coexistence of sister taxa in damselflies*.

3:40 PM SYMP 19-5 Glor, RE, University of Rochester. *Patterns of Anolis lizard coexistence across a complex island landscape*.

4:10 PM SYMP 19-6 Kozak, KH, University of Minnesota. *Niche conservatism, niche evolution, and species coexistence in lungless salamanders*.

4:40 PM Discussion

SYMP 20 - Integrating Agro-Ecological Research Across Spatial and Temporal Scales

205AB, Minneapolis Convention Center

Organized by: KA Brauman (kbrauman@umn.edu), KM Carlson, GK MacDonald, N Mueller, M Johnston

Endorsed by: Agroecology Section

Moderator: KA Brauman

We address the trajectory of agricultural production and associated environmental impacts through time, exploring how information about agro-ecosystems in the past, the present, the local, and the global, can be effectively integrated to inform a sustainable future.

1:30 PM SYMP 20-1 Foley, J, University of Minnesota. *Take it from the top: Global-scale constraints on our food system and agricultural sustainability challenges*.

2:00 PM SYMP 20-2 Peterson, G, Stockholm Resilience Centre. *Agriculture in the anthropocene: examining social ecological feedbacks, regimes and transformations at multiple scales*.

2:30 PM SYMP 20-3 Nicholas, K, Lund University. *From global land grabs to urban food forestry: Land use decisions and climate impacts in food systems across scales*.

3:00 PM Break

3:10 PM SYMP 20-4 Meyfroidt, P, Université Catholique de Louvain & F.R.S.-FNRS. *Cross-scale and distant interactions among drivers of land change: Local to international land use displacement with expanding commodity crops*.

3:40 PM SYMP 20-5 Kremen, C[1], CM Kennedy[2], AF Miles[1] and L Ponisio[1], (1)University of California, (2)The Nature Conservancy. *Scaling-up agroecological research to investigate tradeoffs in ecosystem services*.

4:10 PM SYMP 20-6 Bennett, EM, McGill University. *Understanding ecosystem service interactions in agricultural landscapes: The importance of land-use legacies*.

4:40 PM Discussion

SYMP 21 - Rapid Climate Change and Species Range Shifts: Observations, Predictions, and Management

Auditorium, Rm 3, Minneapolis Convention Center

Organized by: A Ordonez, JW Williams, JL Gill

Endorsed by: Paleoecology section, Applied Ecology Section

Moderator: JL Gill

This symposium will provide a synthetic overview of how species responded to past and current climatic change, evaluate how these changes are driven by species climatic niche responses, how these changes have affected community composition, and the array of management strategies available to mitigate the impact of climate change impact.

1:30 PM SYMP 21-1 Svenning, JC, Aarhus University. *Persistent diversity-climate disequilibria due to Quaternary and pre-Quaternary climate change*.

2:00 PM SYMP 21-2 Parmesan, C, University of Texas & Plymouth University. *Species range shifts in marine vs. terrestrial systems: More alike than not*.

2:30 PM SYMP 21-3 Urban, MC[1], PL Zarnetske[2], DK Skelly[2] and E Baczyk[3], (1)University of Connecticut, (2)Yale University, (3)Choate High School. *Realizing the niche: Species interactions drive biotic responses to climate change*.

3:00 PM Break

3:10 PM SYMP 21-4 Sax, DF[1], R Early[2] and J Bellemare[3], (1)Brown University, (2)Universidade de Évora, (3)Smith College. *Niche syndromes, species extinction risks and management under climate change*.

3:40 PM SYMP 21-5 Buckley, LB[1], J Kingsolver[1] and CR Nufio[2], (1) University of North Carolina at Chapel Hill, (2)University of Colorado. *What biology matters for forecasting species' response to environmental change?*.

4:10 PM SYMP 21-6 Beard, TD Jr., USGS. *Actionable science in an era of rapid climate change, tying observations and predictions to policies and actions*.

4:40 PM Discussion

OOS 27 - Indigenous Communities, Traditional Ecological Knowledge and Climate Change: Impacts, Mitigation, Adaptation and Education

101A, Minneapolis Convention Center

Organized by: D Blockstein (David@ncseonline.org)

Moderator: RA Trosper

We use case studies, including from the Southwest, upper Midwest and Alaska to show how indigenous communities that are being impacted by climate change are using culturally relevant approaches, including education that incorporates Traditional Ecological Knowledge (TEK) (see at www.CAMELclimatechange.org) to respond and adapting to climate change.

1:30 PM OOS 27-1 Kuslikis, A[1] and D Blockstein[2], (1)American Indian Higher Education Consortium (AIHEC), (2)National Council for Science and Environment. *Bringing climate*

change education into the college classroom and through the internet.

1:50 PM OOS 27-2 Trujillo, OV, Northern Arizona University. *Climate change, water and traditional ecological knowledge in the southwest: Culturally-relevant, transciplinary science curriculum*.

2:10 PM OOS 27-3 Newberry, TL, Tohono O'odham Community College. *Climate change, water and traditional ecological knowledge of the Tohono O'odham: A case study*.

2:30 PM OOS 27-4 Van Lopik, W and L Bosman, College of the Menominee Nation. *The response of one tribal college to the issue of climate change*.

2:50 PM OOS 27-5 Chapin, S[1], P Cochran[2] and C Knapp[3], (1) University of Alaska Fairbanks, (2)Alaska Native Science Commission, (3)University of Alaska, Fairbanks. *Boundary-spanning collaborations to facilitate community-led adaptations for self-reliance and sustainability in Alaska*.

3:10 PM Break

OOS 28 - Long-term Legacies of Invasive Shrubs on Forest Ecosystems

101B, Minneapolis Convention Center

Organized by: RL Boyce (boycer@nku.edu)

Moderator: RL Boyce

Invasive shrubs leave a variety of long-term legacies in forest ecosystems, many of which are subtle. This session will bring together researchers at different stages of their careers to stimulate further research on this important and emerging topic.

1:30 PM OOS 28-1 Iannone, BV III[1], HM Lin[2], L Heneghan[3], AC Yannarell[2] and DH Wise[4], (1)University of Illinois, (2)University of Illinois at Urbana-Champaign, (3)DePaul University, (4)University of Illinois at Chicago. *Using a paired plot design to differentiate between the belowground causes and consequences of Rhamnus cathartica L. invasions* .

1:50 PM OOS 28-2 Caplan, JS[1], KJ Elgersma[2], CA Faillace[1], JC Grabosky[1], P Kourtev[3], KA Ross[4], S Yu[5] and JG Ehrenfeld[1], (1)Rutgers University, (2)University of Michigan, (3)Central Michigan University, (4)University of Illinois at Chicago, (5) Institute of Urban Environment, Chinese Academy of Sciences. *Changes in soil nutrients and microbial communities following understory shrub invasion by Berberis thunbergii*.

2:10 PM OOS 28-3 Kuebbing, SE, University of Tennessee. *How plant-soil interactions affect current and future invasions: Field and greenhouse plant-soil feedback results for three co-occurring southeastern invasive shrubs*.

2:30 PM OOS 28-4 Schuster, MJ and JS Dukes, Purdue University. *Non-additive effects of native-invasive tree litter mixtures enhance invasive species' impacts on nutrient cycling during the growing season*.

2:50 PM OOS 28-5 McEwan, RW, The University of Dayton. *Cross-habitat and cross-kingdom biodiversity effects: Riparian forest invasion by Lonicera maackii regulates aquatic macroinvertebrate and microbial communities*.

3:10 PM Break

3:20 PM OOS 28-6 D'Amico, V III[1] and WG Shriver[2], (1)USDA Forest Service, (2)University of Delaware. *Trophic effects of Rosa multiflora in urban forests*.

3:40 PM OOS 28-7 Stevens, JT[1], R York[2] and AM Latimer[3], (1) University of California, (2)Blodgett Forest, (3)University of California Davis. *Effects of winter snowpack, fire and forest structure on invasive plant establishment*.

4:00 PM OOS 28-8 Lake, JK, A Barron and E Bisco, Adrian College. *Shared strategy or unique niches: Using functional traits of invasive shrubs of Michigan to test competing hypotheses of invasion*.

4:20 PM OOS 28-9 Wilson, CE, University of St. Thomas. *Synergy among introduced plants and earthworms in woodlands of the upper Midwest*.

OOS 29 - Peatland Processes and Environmental Change: Past, Present, and Future

101D, Minneapolis Convention Center

Organized by: JM Steinweg (steinwegjm@ornl.gov), JK Keller

Moderator: JM Steinweg

This session will gather ecologists who work in many types of terrestrial and terrestrial-aquatic interface systems to develop a more comprehensive understanding of the mechanistic controls of peatland nutrient cycling and guide future research to yield empirical data directly applicable to peatland ecosystem models.

1:30 PM OOS 29-1 Kolka, RK[1], PJ Hanson[2] and SD Sebestyen[3], (1)USDA Forest Service, Northern Research Station, (2) Oak Ridge National Laboratory, (3)USDA Forest Service Research. *Marcell Experimental Forest, USDA Forest Service peatland research past and present*.

1:50 PM OOS 29-2 Tfaily, MM[1], X Lin[2], JE Kostka[3], WT Cooper[1] and JP Chanton[1], (1)Florida State University, (2)Georgia Inst. of Technology, (3)Georgia Institute of Technology. *Assessing the quality and the decomposition status of solid phase peat and its porewater dissolved organic matter (DOM) using complementary analytical techniques*.

2:10 PM OOS 29-3 Cadillo-Quiroz, H[1], M Ziv-El[1], J van Haren[2] and E Brodie[3], (1)Arizona State University, (2)University of Arizona, (3)Lawrence Berkeley National Laboratory. *Tropical Peatlands in the Amazon basin: an underestimated CH_4 emission source and their unexplored microbial structure*.

2:30 PM OOS 29-4 Xue, K[1], M Yuan[1], L Cheng[2], J Shi[1], Y Deng[1], L Wu[1], Z He[1], JDV Nostrand[1], EAG Schuur[3], Y Luo[1], K Konstantinidis[4], J Tiedje[5] and J Zhou[1], (1)University of Oklahoma, (2)Institute of Environmental Genomics, (3) University of Florida, (4)Georgia Institute of Technology, (5)Michigan State University. *Soil microbial community determines vulnerability of soil carbon exposed to warming in northern permafrost*.

2:50 PM OOS 29-5 Keller, JK[1], SD Bridgham[2], H Cadillo-Quiroz[3] and Q Zhuang[4], (1)Chapman University, (2)University of Oregon, (3)Arizona State University, (4)Purdue University. *Methane flux from peatland ecosystems in response to environmental change: Insights from the past and opportunities for the future*.

3:10 PM Break

3:20 PM OOS 29-6 Richardson, C, H Wang, N Flanagan and M Ho, Duke University. *Biogeochemical and vegetation controls on carbon storage and GHG losses in southeastern pocosin peatlands: Do drought and drainage really matter?*.

3:40 PM OOS 29-7 Griffiths, NA[1] and SD Sebestyen[2], (1)Oak Ridge National Laboratory, (2)USDA Forest Service Research. *Spatial and temporal variation in peat pore water chemistry of a northern peatland: Reference conditions of a large-scale climate change experiment (SPRUCE)*.

4:00 PM OOS 29-8 Larmola, T[1], JL Bubier[1], CA Kobyljanec[1], N Basiliko[2], S Juutinen[3], E Humphreys[4], M Preston[2] and TR Moore[5], (1)Mount Holyoke College, (2)University of Toronto at Mississauga, (3)University of Helsinki, (4)Carleton University, (5)McGill University. *Nitrogen deposition leads to a weaker carbon sink in a nutrient-limited bog*.

4:20 PM OOS 29-9 Turetsky, MR, University of Guelph. *Implications of climate-disturbance interactions for northern peatland carbon cycling*.

4:40 PM OOS 29-10 Hanson, PJ[1], C Barbier[1], JS Riggs[1], RK Kolka[2], SE Sebestyen[2], NA Griffiths[1], LA Hook[1], CM Iversen[1], JM Warren[1], DJ Weston[1] and RJ Norby[1], (1)Oak Ridge National Laboratory, (2)USDA Forest Service. *Whole-ecosystem warming and CO_2 manipulation to assess ombrotrophic bog responses to hypothetical future environments*.

OOS 30 - The Climate Change Response Framework: Integrating Tools, Partnerships, and Actions to Support Climate-Smart Conservation and Forest Management

101F, Minneapolis Convention Center

Organized by: L Brandt (lbrandt@fs.fed.us), CW Swanston, P Butler, MK Janowiak, S Handler

Moderator: S Handler

Resource managers face the immense challenge of integrating the inherent uncertainties of a changing climate into a variety of management decisions. This session focuses on the Climate Change Response Framework, a collaborative approach among researchers, managers, and landowners to integrate climate change considerations into management in the eastern United States.

1:30 PM OOS 30-1 Swanston, CW[1], L Brandt[1], P Butler[2], S Handler[1], MK Janowiak[1] and D Shannon[2], (1)US Forest Service, (2)Michigan Technological University. *A framework for climate-smart conservation and forest management*.

1:50 PM OOS 30-2 Iverson, L[1], SN Matthews[2], A Prasad[1] and MP Peters[1], (1)Northern Research Station, USDA Forest Service, (2)The Ohio State University. *Using a species distribution model and traits to assess tree species vulnerability and adaptability under climate change in the U.S. Northwoods and Central Hardwoods* .

2:10 PM OOS 30-3 Thompson, FR III[1], HS He[2], WD Dijak[1], BB Haneberry[2], JS Fraser[2] and WJ Wang[2], (1)University of Missouri-Columbia, (2)University of Missouri. *Coupling LINKAGES and LANDIS Pro to predict future tree species distributions in the Central Hardwoods and Appalachian regions*.

2:30 PM OOS 30-4 Duveneck, M[1], R Scheller[1] and MA White[2], (1)Portland State University, (2)The Nature Conservancy. *A multi-landscape comparison of potential climate futures in Minnesota and Michigan*.

2:50 PM OOS 30-5 Xi, W[1], DJ Mladenoff[1], F Liu[2], S Khanal[1] and R Scheller[3], (1)University of Wisconsin-Madison, (2)Wuhan Botanical Garden, Chinese Academy of Sciences, (3)Portland State University. *A broad-scale and high resolution spatial simulation of forest composition and biomass changes under climate change: Northern Wisconsin and Upper Michigan*.

3:10 PM Break

3:20 PM OOS 30-6 Peters, EB[1], K Wythers[1], S Zhang[2], JB Bradford[3] and PB Reich[1], (1)University of Minnesota, (2)Supercomputing Institute, (3)US Geological Survey. *Forest productivity under projected changes in climate and CO_2 in northern Minnesota, Wisconsin, and Michigan using PnET-CN*.

3:40 PM OOS 30-7 Brandt, L[1], CW Swanston[2], P Butler[3], S Handler[1] and MK Janowiak[2], (1)USDA Forest Service, (2)US Forest Service, (3)Michigan Technological University. *An approach to assessing vulnerability of forest communities to climate change using impact models and expert elicitation*.

4:00 PM OOS 30-8 Janowiak, MK[1], CW Swanston[1], S Handler[1], L Brandt[1], P Butler[2] and D Shannon[2], (1)US Forest Service, (2)Michigan Technological University. *Incorporating climate change vulnerability into forest adaptation: Case studies from real-world adaptation projects*.

4:20 PM OOS 30-9 Butler, P, CW Swanston, MK Janowiak, L Brandt and S Handler, Northern Institute of Applied Climate Science. *Adaptation strategies and approaches for forest management*.

4:40 PM OOS 30-10 He, HS[1], WJ Wang[1], JS Fraser[1], SR Shifley[2] and FR Thompson III[2], (1)University of Missouri, (2)Forest Service Northern Research Station. *Designing a Forest Landscape Model That Simulates Density-based Stand Dynamics at Regional Scales*.

COS 98 - Biogeochemistry: Aboveground-Belowground Interactions

101G, Minneapolis Convention Center

1:30 PM COS 98-1 O'Connell, JL[1], KB Byrd[2] and M Kelly[1], (1)University of California, Berkeley, (2)U. S. Geological Survey. *Remotely-sensed indicators of N-related biomass allocation in Schoenoplectus acutus*.

1:50 PM COS 98-2 Kadowaki, K, Kyoto University. *Does Common Mycelial Network Drive the Assembly of Forest Communities? An Immigration Experiment in Mesocosms*.

2:10 PM COS 98-3 Russell, AE, Iowa State University. *Belowground drivers of aboveground cation and phosphorus cycling in fast-growing tropical trees*.

2:30 PM COS 98-4 Dietrich, C, N Eisenhauer and S Cesarz, Friedrich-Schiller-University Jena. *Nitrogen concentration dominates litter quality effects on earthworm performance across species and soils*.

2:50 PM COS 98-5 Pei, Z[1], Y Li[2], C Lachmann[1], F Buscot[1] and JL Gutknecht[1], (1)Helmoltz- Centre for Environmental Research- UFZ, (2)Leuphana University Lüneburg. *Tree-species-specific effects on soil microbial community composition in subtropical southeastern China*.

3:10 PM Break

3:20 PM COS 98-6 Cesarz, S[1], PB Reich[2], S Scheu[3], L Ruess[4], M Schaefer[3] and N Eisenhauer[1], (1)Friedrich-Schiller-Uni-

versity Jena, (2)University of Minnesota, (3)University of Goettingen, (4)Humboldt University Berlin. *Global change agents interactively affect soil organisms with possible impacts on ecosystem functions*.

3:40 PM COS 98-7 Regan, KM[1], N Nunan[2], M Steffens[3], D Prati[4], D Berner[1], RS Boeddinghaus[1], B Schmitt[4], S Boch[4], BHJ Stempfhuber[3], M Schloter[5], E Kandeler[1] and S Marhan[1], (1)University of Hohenheim, (2)CNRS, (3)Technical University of Munich, (4)University of Bern, (5)Helmholtz Zentrum München. *Soil microbial communities in grasslands: Spatial and temporal patterns at the local scale*.

4:00 PM COS 98-8 Marklein, AR[1] and BZ Houlton[2], (1)University of California - Davis, (2)University of California, Davis. *Plant-microbe competition for nitrogen and phosphorus in tropical and temperate forests*.

4:20 PM COS 98-9 Cigan, PW, J Karst, N Erbilgin and JF Cahill, University of Alberta. *Tracking the timing, persistence, and interdependence of stand structural and soil properties in mountain pine beetle-killed forests*.

4:40 PM COS 98-10 Cookingham, JB[1], SW Brewer[2] and BZ Houlton[1], (1)University of California, Davis, (2)Copperhead Environmental Consulting, Inc.. *Free-living nitrogen fixation rates in lowland tropical rainforests in Southern Belize with contrasting parent material*.

COS 99 - Biogeochemistry: Atmospheric N Deposition Effects

101H, Minneapolis Convention Center

1:30 PM COS 99-1 Thorn, AM, J Xiao and S Ollinger, University of New Hampshire. *Generalizing a forest ecosystem model: Using PnET-CN to simulate carbon and water fluxes in grasslands and shrublands*.

1:50 PM COS 99-2 Smith, KR, JM Mathias, BE McNeil, WT Peterjohn and RB Thomas, West Virginia University. *Who is behind the wheel? The drivers of soil N availability in high-elevation red spruce (Picea rubens Sarg.) forests along a gradient of atmospheric N deposition*.

2:10 PM COS 99-3 Vankoughnett, MR[1] and HAL Henry[2], (1) Western University, (2)University of Western Ontario. *The interactive effects of soil freezing and nitrogen deposition on plant productivity, bacterial and fungal biomasses, and soil N losses*.

2:30 PM COS 99-4 Lovett, GM[1], MA Arthur[2], KC Weathers[1], RD Fitzhugh[3] and PH Templer[4], (1)Cary Institute of Ecosystem Studies, (2)University of Kentucky, (3)Unaffiliated, (4)Boston University. *Nitrogen addition increases carbon storage in soils, but not in trees, in an eastern U.S. deciduous forest*.

2:50 PM COS 99-5 Kenkel, JA[1], KR Hultine[2], S Sesnie[1], TD Sisk[1] and NC Johnson[1], (1)Northern Arizona University, (2)Desert Botanical Garden. *Bridging atmospheric and terrestrial indicators of nitrogen deposition from a coal-fired power plant*.

3:10 PM Break

3:20 PM COS 99-6 Bird, EJ and YD Choi, Purdue University Calumet. *Effects of soil nitrogen enrichment on prairie plant communities native to Lake Michigan sand dunes*.

3:40 PM COS 99-7 Harpole, WS[1] and N Network[2], (1)Iowa State University, (2)Multiple Institutions. *Multiple non-linear responses to a gradient of nitrogen addition in grasslands*.

4:00 PM COS 99-8 Lepori, F[1] and J Robin[2], (1)University of Applied Sciences and Arts of Southern Switzerland, (2) ISARA-Lyon. *Nitrogen limitation in Alpine lakes*.

4:20 PM COS 99-9 Peters, AL and JL DeForest, Ohio University. *The effect of acid rain on Acer rubrum flower and seed production in unglaciated hardwood forests*.

4:40 PM COS 99-10 Freedman, ZB[1], SD Eisenlord[1], DR Zak[1], K Xue[2], Z He[2] and J Zhou[2], (1)University of Michigan, (2) University of Oklahoma. *Chronic atmospheric N deposition alters the composition and function of saprotrophic soil bacteria*.

COS 100 - Climate Change: Ranges And Phenology II

101I, Minneapolis Convention Center

1:30 PM COS 100-1 Gotelli, NJ[1], MC Fitzpatrick[2] and AM Ellison[3], (1)University of Vermont, (2)University of Maryland Center for Environmental Science, (3)Harvard University. *MaxEnt vs. MaxLike: Empirical comparisons with ant species distributions*.

1:50 PM COS 100-2 Sher, AA[1], A Bowman[1], R Whitney[1], F Aguirre-Wong[1], E Jackson[2] and R Robinson[3], (1)University of Denver, (2)St. Mary's of California, (3)Denver Botanic Gardens. *Climate change tracking using a century of phenology data in Colorado*.

2:10 PM COS 100-3 Warren, RJ II[1] and LD Chick[2], (1)SUNY Buffalo State, (2)University of Tennessee. *Upward ant distribution shift corresponds with minimum, not maximum, temperature tolerance*.

2:30 PM COS 100-4 LI, X and Y Wang, Institute of Zoology, Chinese Academy of Sciences. *Potential impact of climate change on 63 Galliformes species in China: differences in species with different phylogeny*.

2:50 PM COS 100-5 Ford, KR, I Breckheimer, SJ Kroiss, EJ Theobald and J Hille Ris Lambers, University of Washington. *Size-specific trends in growth across tree species elevational ranges suggest complex range shift dynamics in response to changes in climate*.

3:10 PM Break

3:20 PM COS 100-6 Brown, CD[1] and M Vellend[2], (1)Memorial University, (2)Université de Sherbrooke. *Non-climatic constraints on species' elevational range expansion under climate change*.

3:40 PM COS 100-7 Van Nuland, ME, JA Schweitzer and JK Bailey, University of Tennessee, Knoxville. *Variation in P. angustifolia functional traits and soil conditioning along gradients of latitude and elevation: Implications for feedbacks and range-shifts*.

4:00 PM COS 100-8 Park, IW, University of Wisconsin-Milwaukee. *Examining patterns of spring, summer, and fall flowering phenology using digital herbarium records*.

4:20 PM COS 100-9 Kueppers, LM[1], C Castanha[2], AB Moyes[1], M Germino[3], MS Torn[2], J Harte[4] and J Mitton[5], (1)University of California, Merced, (2)Lawrence Berkeley National Laboratory, (3)US Geological Survey, (4)University of California, Berkeley, (5)University of Colorado. *Responses of subalpine tree recruitment to warming within and above current altitudinal ranges*.

COS 101 - Conservation Management II

101J, Minneapolis Convention Center

1:30 PM COS 101-1 Ahlering, MA, The Nature Conservancy. *The influence of cattle grazing intensity on grassland bird occupancy in southeast North Dakota*.

1:50 PM COS 101-2 Allred, BW[1], S Fuhlendorf[1], TJ Hovick[1], D Elmore[1], DM Engle[1] and A Joern[2], (1)Oklahoma State University, (2)Kansas State University. *Conservation implications of native and introduced ungulates in a changing climate*.

2:10 PM COS 101-3 Hovick, TJ[1], BW Allred[1], D Elmore[1], SD Fuhlendorf[1], DK Dahlgren[2] and D Engle[1], (1)Oklahoma State University, (2)Kansas Department of Wildlife, Parks, and Tourism. *Grassland heterogeneity moderates thermal extremes for imperiled Greater Prairie-Chickens*.

2:30 PM COS 101-4 Mountjoy, NJ[1], E Seekamp[2], MR Whiles[3] and MA Davenport[4], (1)Southern Illinois University, (2)North Carolina State University, (3)Southern Illinois University Carbondale, (4)University of Minnesota. *The effects of community-based group capacity on resource management planning success: Moving implementation outcomes from good to great*.

2:50 PM COS 101-5 Conlisk, EE[1], S Motheral[1], R Chung[1] and BA Endress[2], (1)San Diego Zoo Institute for Conservation Research, (2)Zoological Society of San Diego. *Impact of fire frequency on choosing the optimal site for coastal cactus wren habitat restoration*.

3:10 PM Break

3:20 PM COS 101-6 Hanlon, SM and MJ Parris, University of Memphis. *Beneficial contaminants? Pesticides reduce amphibian pathogen abundance and ameliorate negative pathogen effects on hosts*.

3:40 PM COS 101-7 Oo, WP and F Koike, Yokohama National University. *Conservation prioritization of dry forest communities and species in Myanmar based on conservation preference and local use*.

4:00 PM COS 101-8 Yang, W[1], T Dietz[1], J Luo[1], W Liu[2], Z Ouyang[3] and J Liu[1], (1)Michigan State University, (2)International Institute for Applied Systems Analysis (IIASA), (3)Chinese Academy of Sciences. *Interaction effects of multiple conservation and development policies*.

4:20 PM COS 101-9 Haridas, CV[1], K Keeler[2] and B Tenhumberg[3], (1)University of Nebraska, Lincoln, (2)University of Nebraska - Lincoln, (3)University of Nebraska-Lincoln. *Spatiotemporal variation in the local population dynamics of the short-lived Opuntia macrorhiza (Cactaceae)*.

4:40 PM COS 101-10 Hulton, H[1] and KE Anderson[2], (1)University of California Riverside, (2)University of California, Riverside. *THE INFLUENCE OF HABITAT PATCHES AND HABITAT QUALITIES ON SMALL RODENT OCCUPANCY PATTERNS IN JOSHUA TREE NATIONAL PARK*.

COS 102 - Disease And Epidemiology IV

L100A, Minneapolis Convention Center

1:30 PM COS 102-1 Rushmore, JL[1], D Caillaud[2], RJ Hall[1], RM Stumpf[3], LA Meyers[4] and S Altizer[1], (1)University of Georgia, (2)Dian Fossey Gorilla Fund International, (3)University of Illinois at Urbana-Champaign, (4)The University of Texas at Austin. *Network-based vaccination improves prospects for disease control in wild chimpanzee*.

1:50 PM COS 102-2 Beechler, B[1], VO Ezenwa[2] and AE Jolles[3], (1)OREGON STATE UNIVERSITY, (2)University of Georgia, (3)Oregon State University. *Disease invasion, multi-parasite interactions and conservation: Rift Valley fever and bovine tuberculosis in African buffalo in Kruger National Park, South Africa*.

2:10 PM COS 102-3 Wood, CL[1], SA Sandin[2], BJ Zgliczynski[2], AS Guerra[1] and F Micheli[1], (1)Stanford University, (2)Scripps Institution of Oceanography. *Fishing drives declines in fish parasite diversity and has variable effects on parasite abundance: Evidence from fished and unfished coral atolls of the Northern Line Islands*.

2:30 PM COS 102-4 Perkins, TA[1], AJ Garcia[2], G Vazquez-Prokopec[3], D Bisanzio[3], RC Reiner Jr.[4], ST Stoddard[4], DL Smith[5], T Scott[4] and AJ Tatem[6], (1)Fogarty International Center, NIH, (2)University of Florida, (3)Emory University, (4)University of California, Davis, (5)Johns Hopkins Bloomberg School of Public Health, (6)University of Southampton. *Fine-scale human movement: theory, data, and implications for dengue virus transmission*.

2:50 PM COS 102-5 MacDonald, AJ, University of California, Santa Barbara. *Tick community composition and Lyme infection prevalence of Western Black-Legged Ticks (Ixodes pacificus) in coastal and inland southern California*.

3:10 PM Break

3:20 PM COS 102-6 Rynkiewicz, E, C Hemmerich, DB Rusch and K Clay, Indiana University. *Bacterial communities in ticks and blood from rodent hosts*.

3:40 PM COS 102-7 Welsh, ME[1], JP Cronin[1] and CE Mitchell[2], (1)University of North Carolina at Chapel Hill, (2)University of North Carolina. *Host physiological traits mediate interspecific and plastic variation in reservoir competence*.

4:00 PM COS 102-8 Kinsley, A[1], E Butler[2], R Moon[1], K Johnson[3], M Carstensen[2], D Neitzel[4], L Minicucci[1] and M Craft[1], (1)University of Minnesota, (2)Minnesota Department of Natural Resources, (3)Metropolitan Mosquito Control District, (4)Minnesota Department of Health. *The ecology of eastern equine encephalitis virus in wildlife and mosquitoes in Minnesota*.

4:20 PM COS 102-9 Zeilinger, AR[1] and MP Daugherty[2], (1)University of California Riverside, (2)UC Riverside. *Fear your tolerant neighbors: Host defense and vector preference determine disease spillover in an epidemiology model*.

4:40 PM COS 102-10 Lacroix, C[1], AE Jolles[2], EW Seabloom[3], AG Power[4], CE Mitchell[5] and ET Borer[3], (1)Ecology, Evolution, and Behavior, University of Minnesota, St. Paul, MN, (2)Oregon State University, (3)University of Minnesota, (4)Cornell University, (5)University of North Carolina. *Disease prevalence increases with biodiversity loss through predictable subtraction of host species*.

COS 103 - Ecosystem Function: Biodiversity I

L100B, Minneapolis Convention Center

1:30 PM COS 103-1 Wilson, SJ and OT Coomes, McGill University. *Not all forests are created equal: Tree species composi-*

tion in primary, unplanted secondary, and communally restored cloud forests in Northwest Andean Ecuador.

1:50 PM COS 103-2 Cardinale, BJ[1], K Gross[2], KJ Fritschie[1], P Flombaum[3], JW Fox[4], C Rixen[5], J van Ruijven[6], PB Reich[7], M Scherer-Lorenzen[8] and BJ Wilsey[9], (1)University of Michigan, (2)North Carolina State University, (3)Centro de Investigaciones del Mar y la Atmósfera, (4)University of Calgary, (5)WSL Institute for Forest, Snow and Landscape Research - SLF, (6)Wageningen University, (7)University of Minnesota, (8)University of Freiburg, (9)Iowa State University. *Biodiversity simultaneously enhances the production and stability of community biomass, but the effects are independent*.

2:10 PM COS 103-3 Weis, JJ and DM Post, Yale University. *Predation and resource abundance influence the diversity-productivity relationship in herbivores and primary producers*.

2:30 PM COS 103-4 Cowles, JM and D Tilman, University of Minnesota. *Can plant-soil feedbacks drive biodiversity-productivity relationships in grasslands?*.

2:50 PM COS 103-5 Bartomeus, I, DP Cariveau and R Winfree, Rutgers University. *Pollinator ecological traits mediate the loss of pollination services with agricultural intensification*.

3:10 PM Break

3:20 PM COS 103-6 Curzon, MT[1], AW D'Amato[1] and BJ Palik[2], (1) University of Minnesota, (2)USDA Forest Service, Northern Research Station. *Functional group responses to varying disturbance severities 15 years following biomass harvest in aspen forests*.

3:40 PM COS 103-7 Chalcraft, DR and RA Deans, East Carolina University. *Variation in the susceptibility of species to local extinction alters the effect of predator biodiversity on prey suppression*.

4:00 PM COS 103-8 Cook-Patton, S[1], M LaForgia[1] and JD Parker[2], (1)Smithsonian Environmental Research Center, (2)Smithsonian Institution. *Diversity drives higher tree seedling performance due to associational resistance*.

4:20 PM COS 103-9 Oliver, JP, J Schilling and KA Janni, University of Minnesota. *The role of fungi in biofiltration of livestock emissions: Full-scale and bench-scale observations*.

4:40 PM COS 103-10 Musgrave, EA[1], R O'Malley[1] and DK Letourneau[2], (1)San Jose State University, (2)University of California-Santa Cruz. *An ecological assessment of insect diversity at organic Central Coast vegetable farms on two spatial scales*.

COS 104 - Ecosystem Stability And Resilience II

L100C, Minneapolis Convention Center

1:30 PM COS 104-1 Ratajczak, Z[1], P D'Odorico[2], JB Nippert[1], N Brunsell[3], S Ravi[4] and SL Collins[5], (1)Kansas State University, (2)University of Virginia, (3)University of Kansas, (4) Stanford University, (5)University of New Mexico. *Leading—and misleading—indicators of grassland to shrubland regime shifts*.

1:50 PM COS 104-2 Hautier, Y[1] and N Network[2], (1)University of Minnesota, (2)Multiple Institutions. *Global effects of biodiversity and eutrophication on the stability of natural grassland ecosystems*.

2:10 PM COS 104-3 Wilsey, BJ[1], PP Daneshgar[2] and HW Polley[3], (1)Iowa State University, (2)Monmouth University, (3) USDA, Agricultural Research Service. *Different mechanisms underlie diversity-stability relationships between native- and exotic-dominated communities*.

2:30 PM COS 104-4 Lever, JJ[1], EH van Nes[2], J Bascompte[3] and M Scheffer[2], (1)Wageningen University & Estación Biológica de Doñana, CSIC, (2)Wageningen University, (3)Estación Biológica de Doñana, CSIC. *Patterns of direct and indirect interactions prior to systemic shifts in ecological networks*.

2:50 PM COS 104-5 Tredennick, A[1] and NP Hanan[2], (1)Colorado State University, (2)South Dakota State University. *Tree harvest, fire, and drought can drive state transitions in savannas*.

3:10 PM Break

3:20 PM COS 104-6 Thompson, PL and A Gonzalez, McGill University. *Competition vs. spatial insurance as determinants of community stability and composition in experimentally warmed pond zooplankton metacommunities*.

3:40 PM COS 104-7 Eriksson, BK[1], MK de Boer[1], V Caruso[1], H Moor[2], H Hillebrand[3] and B Matthiessen[2], (1)Centre for Ecological and Evolutionary Studies, University of Groningen, (2)Helmholtz-Zentrum für Ozeanforschung, (3)Carl von Ossietzky University of Oldenburg. *Dispersal generates a trade-off between adaptive capacity to temperature stress and local adaptation to stable conditions*.

4:00 PM COS 104-8 Ruppert, JC and A Linstädter, University of Cologne. *Vegetation Resilience to Precipitation Anomalies in Savanna and Grassland Biomes in arid and semi-arid Africa*.

4:20 PM COS 104-9 Hammond, MP and J Kolasa, McMaster University. *Predicting the consequences for stability of connecting ecosystems: What do spatiotemporal patterns of variables tell us?*.

4:40 PM COS 104-10 Allerton, TAP[1] and SJ Van Bloem[2], (1) AgroParisTech-ENGREF, (2)University of Puerto Rico. *The resilience of a dry tropical forest to single-fire events: A case study in Guánica Forest, southwest Puerto Rico*.

COS 105 - Effects Of Multiple Global Changes On Communities And Ecosystems

L100D, Minneapolis Convention Center

1:30 PM COS 105-1 Egerton, TA, KC Filippino and HG Marshall, Old Dominion University. *Extraordinary algal blooms in Chesapeake Bay following a year of tropical storms and record warm temperatures*.

1:50 PM COS 105-2 Eisenhauer, N[1], T Dobies[2], S Cesarz[1], SE Hobbie[3], R Meyer[3], K Worm[3] and PB Reich[3], (1)Friedrich-Schiller-University Jena, (2)Poznań University of Life Sciences, (3)University of Minnesota. *Plant diversity effects on soil food webs are stronger than those of elevated CO_2 and N deposition in a long-term grassland experiment*.

2:10 PM COS 105-3 Spence, LA[1], P Liancourt[1], B Boldgiv[2], B Helliker[1], PS Petraitis[1] and BB Casper[1], (1)University of Pennsylvania, (2)National University of Mongolia. *Climate change and grazing interact to affect flower production in the Mongolian steppe*.

2:30 PM COS 105-4 Kornis, MS[1], D Breitburg[1], L Davias[1], K Heggie[1], H Soulen[1], DM Bilkovic[2], R Seitz[2], R Balouskus[3], TE Targett[3], RS King[4], S Giordano[5], J Uphoff Jr.[6] and JM Jacobs[7], (1)Smithsonian Environmental Research Center, (2) Virginia Institute of Marine Science, (3)University of Delaware, (4)Baylor University, (5)NOAA Chesapeake Biological Office, (6)Maryland Department of Natural Resources, (7)NOAA. *Linking the abundance of mobile aquatic macrofauna to land cover and shoreline alteration in coastal estuarine habitats*.

2:50 PM COS 105-5 Nippert, JB[1], T Swemmer[2], R Taylor[3] and T O'Connor[2], (1)Kansas State University, (2)South African Ecological Observation Network (SAEON), (3)South African Ecological Observation Network. *Drivers of riparian forest change in Mapungubwe National Park, South Africa*.

3:10 PM Break

3:20 PM COS 105-6 Cleland, E[1], R Abbott[1], ET Borer[2], EJ DeLorenze[3], NM DeCrappeo[4], E Esch[1], S Gressard[1], WS Harpole[5], C Kopp[1], EM Lind[2], EW Seabloom[2] and N Network[6], (1) University of California, San Diego, (2)University of Minnesota, (3)U.S. Geological Survey, (4)U.S. Geological Survey, DOI Northwest Climate Science Center, (5)Iowa State University, (6)Multiple Institutions. *The role of nutrient, light, and soil-moisture limitation on root allocation across global grasslands*.

3:40 PM COS 105-7 Gruenewald, C[1], T Hickler[1], SI Higgins[2], RB O'Hara[1] and K Böhning-Gaese[1], (1)Biodiversity and Climate Research Centre (BiK-F), (2)Goethe University. *Linking climate, biodiversity and wildlife tourism in African national parks – a quantitative approach*.

4:00 PM COS 105-8 Strain, EM and L Airoldi, University of Bologna. *Managing multiple stressors to enhance the resilience in threatened marine habitats*.

4:20 PM COS 105-9 Low-Décarie, E, G Bell and GF Fussmann, McGill University. *Elevated CO_2 magnifies the effect of eutrophication and shifts phytoplankton community composition*.

4:40 PM COS 105-10 Blaser, WJ[1], GK Shanungu[2], C Simukonda[2], PJ Edwards[1] and H Olde venterink[1], (1)ETH Zurich, (2)Zambia Wildlife Authority. *Impact of woody encroachment on soil-plant-herbivore interactions in the Kafue Flats floodplain ecosystem*.

COS 106 - Environmental Impact And Risk Assessment

L100E, Minneapolis Convention Center

1:30 PM COS 106-1 Hong, T and T Purucker, U.S. Environmental Protection Agency. *Global, spatial and temporal sensitivity analysis for a complex pesticide fate and transport model*.

1:50 PM COS 106-2 Hagen, S and R Swaty, The Nature Conservancy. *Nature in Peril: A United States wide assessment of ecosystem conversion, alteration, and risk*.

2:10 PM COS 106-3 Wituszynski, DM[1], S Gebremariam[1], J Martin[2], SA Ludsin[1] and J Lee[1], (1)The Ohio State University, (2)Ohio State University. *Modeling Public Health Effects of Climate Change: Predicting Human Exposure to Microcystin from Lake Erie*.

2:30 PM COS 106-4 Kearns, BV[1], S McDowell[2], J Moon[3] and D Haukos[1], (1)Kansas State University, (2)Stephen F Austin State University, (3)US Fish and Wildlife Service. *Spatial analysis and ecological risk assessment for lead exposure in Gulf Coast waterfowl: Does environmental lead create an ecological trap?*.

2:50 PM COS 106-5 Eckberg, J[1], GA Johnson[1], RG Shaw[1], M Casler[2], C Sheaffer[1], N Jordan[1], N Anderson[1], S Flint[1], R Schafer[3] and D Wyse[1], (1)University of Minnesota, (2) USDA - Agricultural Research Service, (3)Central Lakes College. *Ecological interactions differ for switchgrass cultivars and wild populations*.

3:10 PM Break

3:20 PM COS 106-6 Campos-Herrera, R[1], M Escuer[1], JA Rodríguez[2], MT García-González[1], LW Duncan[3] and C Gutiérrez[1], (1)Instituto de Ciencias Agrarias, Consejo Superior de Investigaciones Científicas, (2)Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA), (3) University of Florida. *Entomopathogenic nematodes and their natural enemies in a soil pollution gradient*.

3:40 PM COS 106-7 Caspersen, JP and J Cleary, University of Toronto. *A life cycle assessment of two bioenergy conversion pathways: Cogeneration versus stand-alone power generation*.

4:00 PM COS 106-8 Bytnerowicz, A[1], M Fenn[1], H Preisler[1], S Schilling[1], J Burley[2], S Ahuja[1], B Zielinska[3] and M McDaniel[3], (1)USDA Forest Service, (2)St. Mary's College of California, (3)Desert Research Institute. *Distribution of ozone, N air pollutants and N deposition and their potential ecological effects in the Lake Tahoe Basin, California*.

4:20 PM COS 106-9 Kost, MA[1], HM Alexander[2], J Emery[3] and KL Mercer[1], (1)The Ohio State University, (2)University of Kansas, (3)Washburn University. *Life history traits and phenotypic selection among Helianthus annuus (sunflower) crop-wild hybrids (BC_w, F_1, and F_2) and their wild counterparts: Implications for introgression*.

COS 107 - Evolution: Selection And Adaptation I

L100F, Minneapolis Convention Center

1:30 PM COS 107-1 Briscoe Runquist, RD and DA Moeller, University of Minnesota. *Floral and mating system divergence in secondary sympatry: A geographic and phylogeographic analysis of Clarkia xantiana ssp. parviflora*.

1:50 PM COS 107-2 Jogesh, T[1], AR Zangerl[1], M Stanley[2] and MR Berenbaum[1], (1)University of Illinois, (2)University of Auckland. *Contemporary evolution in the invasive weed, Pastinaca sativa, after reassociation with its specialist herbivore, Depressaria pastinacella*.

2:10 PM COS 107-3 Chen, A and S Pacala, Princeton University. *Evolutionary trends of leaf traits for angiosperm tree species: a phylogenetic analysis*.

2:30 PM COS 107-4 Heath, KD[1], DJ Weese[2], PV Burke[1] and JA Lau[3], (1)University of Illinois, Urbana-Champaign, (2)St. Ambrose University, (3)Michigan State University. *Mutualism decline scales up to the community and ecosystem*.

2:50 PM COS 107-5 Cordero, GA, Iowa State University. *Shell-*

closing systems likely promoted evolutionary transitions from aquatic to terrestrial ecological niches in turtles.

3:10 PM Break

3:20 PM COS 107-6 Mercer, KL[1], HM Alexander[2], J Emry[2], MA Kost[1], BA Pace[1] and A Snow[3], (1)The Ohio State University, (2)University of Kansas, (3)Ohio State University. *Fitness of crop-wild sunflower hybrids affected by a range of competitive conditions*.

3:40 PM COS 107-7 Craig, T and J Itami, University of Minnesota Duluth. *Experimental measurement of the geographic mosaic of coevolution in a plant-galler-natural enemy interaction*.

COS 108 - Invasion: Species Interactions II

L100G, Minneapolis Convention Center

1:30 PM COS 108-1 Anastácio, PM[1], F Banha[1], M Rachalewski[2], M Águas[1], M Ferreira[1], C Capinha[1], JE Rabaça[3] and M Grabowski[2], (1)IMAR / University of Évora, (2)University of Lodz, (3)ICAAM, University of Évora. *Can birds enhance the dispersal of freshwater macrocrustaceans?*.

1:50 PM COS 108-2 Davis, SL and D Cipollini, Wright State University. *Does the native West Virginia White butterfly (Pieris virginiensis) oviposit on invasive, toxic garlic mustard (Alliaria petiolata)?*.

2:10 PM COS 108-3 Sakata, Y, T Ohgushi, M Yamasaki and Y Isagi, Kyoto University. *Exotic herbivorous insects as selective agents for an exotic perennial herb, Solidago altissima*.

2:30 PM COS 108-4 Cipollini, D, SL Davis, D Lieurance and V Bahn, Wright State University. *Biogeographic variation in resistance of the invasive plant, Alliaria petiolata, to a powdery mildew fungus, and local influences on the prevalence of resistance*.

2:50 PM COS 108-5 McKinney, ST[1] and DF Tomback[2], (1)Maine Cooperative Fish and Wildlife Research Unit, (2)University of Colorado Denver. *Invasive pathogen trumps natural selection thwarting evolutionary rescue*.

3:10 PM Break

3:20 PM COS 108-6 Prior, KM and M Frederickson, University of Toronto. *An invasive ant increases an ecosystem service: The impact of co-introduced partners on seed-dispersal mutualisms*.

3:40 PM COS 108-7 Bargielowski, IE, MC Carrascilla and LP Lounibos, University of Florida. *The consequences of reproductive interference in population displacement and mating behavior of invasive Aedes species*.

4:00 PM COS 108-8 Roth, AM, AG Lodge, TJS Whitfeld, LE Frelich and PB Reich, University of Minnesota. *Co-variation of introduced common buckthorn (Rhamnus cathartica L.) and European earthworms in upland deciduous oak forests*.

4:20 PM COS 108-9 Paredes, F, University of Maine. *Regional and local drivers of marine invasions: identifying key abiotic and biotic factors in the Gulf of Maine*.

4:40 PM COS 108-10 Grove, SE[1], IM Parker[2] and KA Haubensak[3], (1)University of California Santa Cruz, (2)University of California, Santa Cruz, (3)Northern Arizona University. *The effect of time since invasion on soil legacy effects of a widespread invasive shrub*.

COS 109 - Microbial Ecology I

L100H, Minneapolis Convention Center

1:30 PM COS 109-1 Bahnmann, BD[1] and P Baldrian[2], (1)Institute of Microbiology, ASCR, (2)Institute of Microbiology of the ASCR. *Factors affecting the distribution and community structure of fungi in a mixed temperate forest*.

1:50 PM COS 109-2 Curd, EE, TB Smith and H Li, University of California, Los Angeles. *A metagenomic study of soil microbial communities under various vegetation types and soil depths*.

2:10 PM COS 109-3 Stone, MM and AF Plante, University of Pennsylvania. *Changes in extracellular enzyme activities and kinetics with depth across contrasting parent materials in the Luquillo Critical Zone*.

2:30 PM COS 109-4 Kahn, P, L Herfort, TD Peterson and P Zuber, Oregon Health and Science University. *Ecology and genetic analysis of Katablepharis CRE, a heterotrophic flagellate that 'blooms' in the Columbia River estuary during the spring*.

2:50 PM COS 109-5 Neill, JE[1], S Kautz[2] and DJ Ballhorn[1], (1)Portland State University, (2)Field Museum of Natural History. *Endophytic fungi associated with wild lima bean (Phaseolus lunatus L.) and sympatric plant species in Southern Mexico*.

3:10 PM Break

3:20 PM COS 109-6 Ryan, CN, SB Cox and G Mayer, Texas Tech University. *The community recovery dynamics of commensal gut microbiota in fish (Fundulus heteroclitus)*.

3:40 PM COS 109-7 Hofmockel, KS[1], AC Howe[2], RJ Williams[1], F Yang[1], EM Bach[1], SK Hargreaves[1], K Keegan[2] and F Meyer[2], (1)Iowa State University, (2)Argonne National Laboratory. *Linking microbial metagenomes to biogeochemical cycles in biofuel cropping systems*.

4:00 PM COS 109-8 Livermore, JA, University of Notre Dame. *The genomic signature of viral predation in free living bacteria*.

4:20 PM COS 109-9 Weisenhorn, P[1], CS Henry[2], PB Reich[1] and SE Hobbie[1], (1)University of Minnesota, (2)Argonne National Laboratory. *Resource availability effects on prairie soil bacterial richness and diversity*.

4:40 PM COS 109-10 Stanish, LF, Colorado School of Mines. *Opening up the algal biofuels black box: Understanding N and P uptake strategies to enhance biodiesel production*.

COS 110 - Phenology

L100I, Minneapolis Convention Center

1:30 PM COS 110-1 CaraDonna, PJ[1], A Iler[2] and DW Inouye[2], (1)University of Arizona, (2)University of Maryland. *Species-specific shifts in flowering phenology influence community-level patterns: implications for plant-pollinator interactions*.

1:50 PM COS 110-2 Fridley, J, Syracuse University. *Leaf phenology and plant invasions: a role for genome size?*.

2:10 PM COS 110-3 Gullett, PR[1], BJ Hatchwell[1], RA Robinson[2] and KL Evans[1], (1)University of Sheffield, (2)British Trust for Ornithology. *Phenological indices of avian reproduction: Cryptic shifts and prediction across large spatial and temporal scales*.

2:30 PM COS 110-4 Diamond, SE[1], LM Nichols[1], NJ Sanders[2] and RR Dunn[1], (1)North Carolina State University, (2)University of Tennessee. *Phenological inertia versus lability of ant responses to experimental climatic warming*.

2:50 PM COS 110-5 Robertshaw, AA and NC Emery, Purdue University. *Effects of temperature, resources, and plant-pollinator interactions on reproductive success in Claytonia virginica (Montiaceae)*.

3:10 PM Break

3:20 PM COS 110-6 Hovel, RA and TP Quinn, University of Washington. *Environmental and phenological variability: match-mismatch effects of lake conditions and entry timing on sockeye salmon survival and growth*.

3:40 PM COS 110-7 Albert, LP[1], J Wu[1], N Prohaska[1], PB Camargo[2], RC Oliveira[3], TE Huxman[4] and SR Saleska[1], (1)University of Arizona, (2)University of Sao Paulo, (3)Brazilian Agricultural Research Corporation (EMBRAPA), (4)University of California Irvine. *Phenology of an evergreen moist tropical forest: Shifts in leaf demography and physiology during the dry season of the Tapajós National Forest, Brazil*.

4:00 PM COS 110-8 Weltzin, J, US Geological Survey. *The National Phenology Database: A multi-taxa, continental-scale dataset for scientific inquiry*.

4:20 PM COS 110-9 Andresen, CG, University of Texas at El Paso. *Tracking phenology and phytomass using oblique repeat photography and kite aerial photography in Arctic wetlands*.

4:40 PM COS 110-10 Barnett, LAK[1], ML Baskett[2] and LW Botsford[2], (1)University of California Davis, (2)University of California, Davis. *Marine reserves can buffer mismatches caused by climate change and fishing*.

COS 111 - Physiological Ecology II

L100J, Minneapolis Convention Center

1:30 PM COS 111-1 Michaletz, ST[1], BJ Enquist[1], JH Brown[2], VR Buzzard[1], ST Hammond[2], AN Henderson[1], M Kaspari[3], S McMahon[4], L Shen[3], I Simova[5], RB Waide[2], MD Weiser[3] and J Zhou[3], (1)University of Arizona, (2)University of New Mexico, (3)University of Oklahoma, (4)Smithsonian Tropical Research Institute, (5)Charles University, Prague. *Intra- and interspecific tree growth rates across a broad climate gradient: Toward a general metabolic scaling model linking climate, functional traits, and individual plant growth*.

1:50 PM COS 111-2 Ramirez, AR[1] and D Ackerly[2], (1)University of California, (2)University of California, Berkeley. *Wimpy leaves and sturdy stems: Decoupling of drought tolerance at the stem and leaf levels in island chaparral*.

2:10 PM COS 111-3 Powell, T[1], J Wheeler[1], A de Oliveira[2], A da Costa[2], SR Saleska[3], P Meir[4] and PR Moorcroft[1], (1)Harvard University, (2)Federal University of Para, (3)University of Arizona, (4)University of Edinburgh. *Do differences in xylem cavitation resistance and leaf turgor loss point explain differences in drought tolerance among tropical rainforest species?*.

2:30 PM COS 111-4 Belasen, A[1], B Li[1], D Chremou[2], E Valakos[2], P Pafilis[2] and J Foufopoulos[1], (1)University of Michigan, (2)University of Athens. *Thermal ecology in the Aegean Wall Lizard (Podarcis erhardii): Microclimate may be more important than genetic impoverishment*.

2:50 PM COS 111-5 Sheue, CR[1], YH Wu[2], JW Liu[1], TY Guu[2], MSB Ku[2], P Chesson[3], MC Shih[1] and JY Chen[1], (1)National Chung Hsing University, (2)National Chiayi University, (3)University of Arizona. *Adaptation to deep shade environments: novel biophysical and biochemical properties of bizonoplasts, unique epidermal chloroplasts of two Selaginella species*.

3:10 PM Break

3:20 PM COS 111-6 Medeiros, JS[1], R Serbet[2], TN Taylor[2], EL Taylor[2] and JK Ward[2], (1)The Holden Arboretum, (2)University of Kansas. *Evidence for xylem adaptations to drought in ancient cordaites of the Carboniferous*.

3:40 PM COS 111-7 Godwin, CM[1] and JB Cotner[2], (1)Univeristy of Minnesota, (2)University of Minnesota - Twin Cities. *Ecological Stoichiometry of Assemblages: Physiological Tradeoffs Couple Competitive Ability and Homeostasis*.

4:00 PM COS 111-8 Nail, KR and K Oberhauser, University of Minnesota. *Immature monarch temperature tolerance: Measuring cold hardiness through supercooling points and lower lethal temperatures*.

4:20 PM COS 111-9 Savage, JA[1], MA Zwieniecki[2] and NM Holbrook[1], (1)Harvard University, (2)UC Davis. *Heterogeneity in phloem transport within and among plant organs*.

COS 112 - Population Dynamics And Regulation II

M100GD, Minneapolis Convention Center

1:30 PM COS 112-1 Roulston, TH[1], P Repollet[2] and J Nifosi[3], (1) University of Virginia, (2)University of Puerto Rico Mayaguez, (3)Universidad Metropolitana. *Seasonal oophagy by generalist grasshoppers helps regulate the population of a specialist herbivore*.

1:50 PM COS 112-2 Goodell, K and M Miriti, The Ohio State University. *Native solitary bee population dynamics little affected by variation in fecundity or brood parasitism*.

2:10 PM COS 112-3 Reichstein, B[1], L Persson[2] and AM de Roos[3], (1)Umeå University, (2)Umeå university, (3)University of Amsterdam. *Stage-specific biomass overcompensation changes with stage-specific resource productivity*.

2:30 PM COS 112-4 Cronin, JT[1], JD Reeve[2], D Xu[2] and M Xiao[2], (1)Louisiana State University, (2)Southern Illinois University. *Development time and host-parasitoid stability: an experimental test*.

2:50 PM COS 112-5 Chen, L[1], X Wan[1], G Wang[2] and W Liu[1], (1) Institute of Zoology, Chinese Academy of Sciences, (2)Mississippi State University. *Differential effects of climate and densities on survival and recruitment of Daurian pikas*.

3:10 PM Break

3:20 PM COS 112-6 Thibaut, L[1] and SR Connolly[2], (1)James Cook University, (2)ARC Centre of Excellence for Coral Reef Studies, James Cook University. *Testing for density-dependence from population time series in the presence of observation error*.

3:40 PM COS 112-7 Sanchez, A, A Chen and J Gore, MIT. *Feedback between population and evolutionary dynamics determines the ecological fate of social microbial populations*.

4:00 PM COS 112-8 Benard, MF, Case Western Reserve University. *Evaluating the effects of density-dependence and climate at multiple life-stages in an amphibian metapopulation*.

4:20 PM COS 112-9 Newman, RA, University of North Dakota. *Long-term population dynamics of wood frogs (Lithobates sylvaticus) on a dynamic Prairie Pothole landscape on the northern plains*.

4:40 PM COS 112-10 Lin, CH, AD Wolfe and K Goodell, The Ohio State University. *Clonal diversity and distance-dependent mate limitation in the self-incompatible understory herb Dicentra canadensis*.

COS 113 - Predation And Predator-Prey Interactions I

M100HC, Minneapolis Convention Center

1:30 PM COS 113-1 Barkae, E, O Golan, Z Abramsky and O Ovadia, Ben-Gurion University of the Negev. *Dangerous neighbors: Factors influencing cannibalism in antlion larvae*.

1:50 PM COS 113-2 Thaker, M[1], AT Vanak[2] and R Slotow[3], (1)Indian Institute of Science, (2)Ashoka Trust for Research in Ecology and the Environment, (3)University of KwaZulu-Natal. *Surviving in a dangerous world: African ungulates balance strategies to minimize predation risk from multiple predators*.

2:10 PM COS 113-3 Van Langevelde, F[1], A Van Woersem[1], WF De Boer[1], S De Bie[1], R Slotow[2], A Burger[3], J Swart[3] and H Prins[1], (1)Wageningen University, (2)University of KwaZulu-Natal, (3)Welgevonden Game Reserve. *Encounters with predators have a larger influence on the spatial distribution and movement of their prey than expected*.

2:30 PM COS 113-4 Scholl, JP and M Salmon, Florida Atlantic University. *Can Allometric Growth by Juvenile Marine Turtles Thwart Gape-Limited Predators? (A Morphological Test of that Hypothesis)*.

2:50 PM COS 113-5 Messinger, SM, Yale University. *Predator body size variation may be a signature of spatial niche differences*.

3:10 PM Break

3:20 PM COS 113-6 Cruz-Rivera, E[1], RV Parker[2] and M Beeston[3], (1)The American University in Cairo, (2)Scottish Association for Marine Science, (3)Sparsholt College. *What do food choice experiments measure? Differences in prey behavior and traits constrain consumption for a generalist predator*.

3:40 PM COS 113-7 DeWitt, PD and JL Keim, Matrix Solutions Inc.. *Boreal predator-prey dynamics: Evaluating and mitigating the effects of human activities*.

4:00 PM COS 113-8 Ruehl, CB[1], HD Vance-Chalcraft[2] and DR Chalcraft[2], (1)Columbus State University, (2)East Carolina University. *Prey vulnerability determines the lethal and non-lethal effects of a predator*.

4:20 PM COS 113-9 Stier, A[1], KM Hanson[2], S Holbrook[3], R Schmitt[3] and A Brooks[3], (1)University of British Columbia, (2)American Museum of Natural History, (3) University of California, Santa Barbara. *Predation and Landscape Characteristics Independently Affect Reef Fish Community Organization*.

4:40 PM COS 113-10 Kovach-Orr, C[1], GF Fussmann[1] and M Vos[2], (1)McGill University, (2)Universitat Potsdam, Institute for Biochemistry and Biology. *Empirical Evidence for a Stabilizing "Type 1.5" Functional Response*.

4 pm-6 pm

ESA SEEDS Closing

M100A, Minneapolis Convention Center

4:30 pm-6:30 pm

OPS 4 - Forest Inventory and Analysis Data In Ecological Research: Using Permanent Plots To Assess The Past, Examine The Present, and Project The Future Of Forest Ecosystems In The United States

Organized by: GM Domke (gmdomke@fs.fed.us)

The FIA Program reports on the state of the forests in the U.S and provides data for users to address questions in ecology and natural resource sciences and management. The organized poster session will showcase original ecological research utilizing FIA data to address a variety of timely topics in ecology.

OPS 4-1 Walters, BF[1] and GM Domke[2], (1)USDA Forest Service, (2)USDA Forest Service, Northern Research Station. *Overview of the Forest Inventory and Analysis program and applications in ecological research*.

OPS 4-2 Seilheimer, TS[1] and CH Perry[2], (1)Wisconsin Sea Grant, (2) USDA Forest Service. *Current and future applications for forest census data in water resource management*.

OPS 4-3 Liknes, G, SA Goeking, CW Woodall and BF Walters, USDA Forest Service. *Climate variability and forest change*.

OPS 4-4 Zobel, J and AR Ek, University of Minnesota. *Using Forest Inventory and Analysis data and wildlife habitat models for assessing the implications of forest wildlife habitat change over large areas and long time frames*.

OPS 4-5 Perry, CH and MC Amacher, USDA Forest Service. *Linking forests to soils at a national scale – Uses and misuses of FIA's forest soil inventory*.

OPS 4-6 Garner, JD[1], MD Nelson[1] and BG Tavernia[2], (1)USDA Forest Service, (2)US Fish and Wildlife Service. *Leveraging FIA to enhance estimates of potential wildlife habitat and species diversity*.

OPS 4-7 Morin, RS and AM Liebhold, USDA Forest Service. *Integration of FIA data and pest surveys to assess regional tree and forest health*.

OPS 4-8 Gray, A[1] and TR Whittier[2], (1)USDA Forest Service Pacific Northwest Research Station, (2)Oregon State University. *Drivers of change in FIA inventories: effects of land-use change, disturbance, and management on forest carbon flux*.

OPS 4-9 Ek, AR, DC Wilson and J Zobel, University of Minnesota. *Imputation of Statewide FIA and nearby data for developing local forest and ecological inventory detail*.

OPS 4-10 Schulz, BK[1], WK Moser[1] and CM Kurtz[2], (1)USDA Forest Service, (2)U.S. Forest Service. *Using forest vegetation inventory data to examine shifts in species distribution and composition*.

PS 53 - Forest Habitats: Temperate

Exhibit Hall B, Minneapolis Convention Center

PS 53-11 Krüger, D[1], W Purahong[1], T Arnstadt[2], T Kahl[3], M Schloter[4], F Buscot[1] and J Bauhus[3], (1)UFZ-Helmholtz Centre for Environmental Research, (2)IHI-International Graduate School Zittau, (3)University of Freiburg, (4)Helmholtz Zentrum München. *Effects of different forest management types, species of deadwood and geographical regions on wood-inhabiting fungal diversity and community structure*.

PS 53-12 Dallavalle, C, M LeFevre-Levy, N Kriegel, K Li, L Bock-Brownstein, M Anderson, MA Davis and JJ Dosch, Macalester College. *Garlic Mustard (Alliaria petiolata) in a Minnesota oak woodland: a four year study of population dynamics and ecological impacts*.

PS 53-13 Li, K, N Kriegel, L Bock-Brownstein, M LeFevre-Levy, C Dallavalle, M Anderson, JJ Dosch and MA Davis, Macalester College. *Lack of ground nesting birds likely due to high nest predation rates*.

PS 53-14 Spicer, ME and RK Booth, Lehigh University. *A century-long experiment in forest planting: Preliminary results from the Lehigh University Experimental Forest*.

PS 53-15 Holland, MM[1], W Clapham[2] and MG Winkler[1], (1) University of Mississippi, (2)USDA-ARS, retired. *Maturation of forested island vegetation in Lake Winnipesaukee, NH*.

PS 53-16 Burtley, CL[1], AT Wolf[2] and RW Howe[2], (1)University of Wisconsin - Green Bay, (2)University of Wisconsin-Green Bay. *Spatiotemporal variation of tree growth in a northern hardwood forest*.

PS 53-17 Rijal, R[1], JE Jiménez[2] and R Rozzi[2], (1)University of North Texas, (2)University of North Texas, Denton TX, Omora Ethnobotanical Park, Universidad de Magallanes, Puerto Williams, Chile. *Spatial and temporal dynamics of bird assemblages in the sub-Antarctic forests of the Cape Horn Biosphere Reserve, Chile*.

PS 53-18 Shank, EM and TP Rooney, Wright State University. *Distribution of snags in temperate forest stands of different land use history*.

PS 53-19 Woodworth, GR and DE Carr, University of Virginia. *Assessing the direct effects of white-tailed deer (Odocoileus virginianus) on plant invasions in forest communities*.

PS 53-20 Michels, K[1] and W Russell[2], (1)University of Wisconsin-Madison, (2)San Jose State University. *Variation in old-growth Sequoia sempervirens (Cupressaceae) stands in Mendocino County, California*.

PS 53-21 Lowney, CA[1], MA Jenkins[1], MA Spetich[2], SR Shifley[3], BD Graham[1] and MR Saunders[1], (1)Purdue University, (2)USDA Forest Service, (3)Forest Service Northern Research Station. *Old-growth forests of the Central Hardwood Region: Two decades of structural and compositional change across a productivity gradient*.

PS 53-22 Yanai, RD[1], K Bae[1], CR Levine[2], CR See[1], MA Vadeboncoeur[3], SP Hamburg[4], JD Blum[5] and MA Arthur[6], (1)SUNY College of Environmental Science and Forestry, (2)UC Berkeley, (3) University of New Hampshire, (4)Environmental Defense Fund, (5)University of Michigan, (6)University of Kentucky. *Sustainable Forest Harvest Requires Calcium Supply from Soil Pools: Ecosystem Budgets for Second-Growth Northern Hardwoods in New Hampshire*.

PS 53-23 Schlotman, HL[1], TP Rooney[1] and DA Rogers[2], (1)Wright State University, (2)University of Wisconsin - Parkside. *Changes in urban forest plant communities after three decades of fragmentation*.

PS 53-24 Rose, AK and JF Rosson Jr., USDA Forest Service, Southern Research Station. *Status and trends in forests on public land in the Southern Appalachians of Virginia, 2001 – 2011*.

PS 53-25 LaMontagne, JM[1], RJ Kilgour[2], E Anderson[1] and SB Magle[2], (1)DePaul University, (2)Lincoln Park Zoo. *A comparison of tree cavity availability across three habitat types in a highly urban area*.

PS 53-26 Shen, L, University of Oklahoma. *Spatial turnover of soil microbial communities in six forests across latitude gradients*.

PS 53-27 Milo, AM[1], B Oberle[1], JA Myers[2], DF Young[1] and AE Zanne[1], (1)The George Washington University, (2)Washington University. *Patterns of fine scale deadwood distribution in an Ozark Highlands forest*.

PS 53-28 Dalgleish, HJ[1], N Schmedding[1], N Lichti[2] and RK Swihart[2], (1)College of William and Mary, (2)Purdue University. *The potential for plant-animal interactions to limit reintroduction of American chestnut (Castanea dentata)*.

PS 53-29 Vanderklein, D, J Galster, M Guzner and M Segura, Montclair State University. *Japanese knotweed sucks more than you think*.

PS 53-30 Sims, V[1], DR Woodruff[2] and AR Howard[1], (1)Western Oregon University, (2)USDA Forest Service. *Decline in the health and vigor of Oregon white oak*.

PS 54 - Forest And Rangeland Management

Exhibit Hall B, Minneapolis Convention Center

PS 54-31 Van Scoyoc, MW and EW Schupp, Utah State University. *Assessing ecosystem health using the ecological site framework in the absence of ecological site descriptions*.

PS 54-32 Pekas, KM[1] and EW Schupp[2], (1)Idaho Department of Fish and Game, (2)Utah State University. *Effects of Sagebrush Fire and Fire Surrogate Treatments on a Great Basin Seed Bank Community*.

PS 54-33 Schlosser, I, R Lemons, TP McKenna, SC Rossiter, BJ Goodwin and KA Yurkonis, University of North Dakota. *Developing a field-station research and management plan for a non-land-grant research extensive university in the Northern Great Plains*.

PS 54-34 Schulz, AN, LW Wright and RM Muzika, University of Missouri. *The effects of prescribed fire on insect diversity in the Missouri Ozark highlands*.

PS 54-35 VanderSchaaf, C[1], J Albers[2] and M Albers[1], (1)Minnesota DNR, (2)Minnesota Department of Natural Resources. *Estimating impacts of Eastern larch beetle (Dendroctonus simplex LeConte) induced mortality on tamarack (Larix laricina (Du Roi) K. Koch) harvest amounts in Minnesota*.

PS 54-36 van der Knaap, WO[1], JFN van Leeuwen[1], L Fahse[2], M Heurich[3] and W Tinner[1], (1)University of Bern, (2)ETH Zürich, (3)Bayerischer Wald National Park. *Bark beetles kills spruce forests in the Bavarian Forest, Germany: did humans play a role? Evidence from pollen and macrofossils*.

PS 54-37 Simmons, ME, University of Minnesota-Crookston. *The effects of patch-burn grazing on a restored Minnesota tallgrass prairie*.

PS 54-38 Anning, AK, JM Dyer and BC McCarthy, Ohio University. *Growth response of trees to fuel reduction treatments along a topographic moisture gradient in the mixed oak forests of southeastern Ohio*.

PS 55 - Fire

Exhibit Hall B, Minneapolis Convention Center

PS 55-39 Colbert, CT[1], KL Martin[1] and MD Hurteau[2], (1)The Pennsylvania State University, (2)Pennsylvania State University. *Fire management impacts on carbon storage in Southwest ponderosa pine forests*.

PS 55-40 Steinwand, C[1], RM Muzika[1] and A Sokolowski[2], (1) University of Missouri, (2)Ozark National Scenic Riverways. *Effects of prescribed burning regimes and habitat on seedling abundance at the Ozark National Scenic Riverways, Missouri*.

PS 55-41 Trauernicht, C, University of Tasmania. *Cultural legacies, fire ecology, and environmental change in the Stone Country of Arnhem Land and Kakadu National Park, Australia*.

PS 55-42 Liu, Z and MC Wimberly, South Dakota State University. *Landscape and climatic influences on size and severity of large fires on Western United States, 1984 to 2010*.

PS 55-43 Engstrom, EE[1], GJ Nowacki[2] and GG Fredlund[3], (1)U. S. Forest Service, (2)USDA Forest Service, (3)University of Wisconsin-Milwaukee. *Anthropogenic-induced vegetation and fire regime changes in the upper Great Lakes pine ecosystems*.

PS 55-44 Senici, D[1], HH Chen[1], Y Bergeron[2] and AA Ali[3], (1) Lakehead University, (2)University of Quebec in Abitibi-Temiscamingue, (3)Universite Montpellier II. *Long-term fire and vegetation interactions at local and sub-regional scales in the central boreal forest*.

PS 55-45 Vineyard, DL[1], JP Wright[1], G Ames[1], S Anderson[1] and MG Hohmann[2], (1)Duke University, (2)US Army Corps of Engineers ERDC - CERL. *The effects fire history and position along a hydrologic gradient on the yearly growth of Pinus palustris and Pinus serotina in a pine savannah ecosystem*.

PS 55-46 Witt, EL[1], RK Kolka[2], EA Nater[1] and TR Wickman[2], (1) University of Minnesota, (2)USDA Forest Service. *Short-term impacts of forest fire on fish and lake water mercury concentrations from northern Minnesota lakes*.

PS 56 - Arid And Semi-Arid Systems

Exhibit Hall B, Minneapolis Convention Center

PS 56-47 Vaness, BM[1], PJ Drohan[2], SL Collins[3], M Hirsch[4], DJ Merkler[5], JE Fargione[6], BJ Buck[7], CL Crenshaw[3], E Nonaka[3], JR Elliott[3], Y Xia[3], WT Pockman[3] and T Monaco[4], (1)Western Ag Innovations, Inc., (2)Penn State, (3)University of New Mexico, (4)Utah State University, (5)USDA-NRCS, (6)The Nature Conservancy, (7)University of Nevada. *Monitoring belowground processes and responses of bioavailable soil nutrients in arid ecosystems*.

PS 56-48 Stromberg, J and E Allan, Arizona State University. *Riparian ecosystem services: Akimel O'otham ethnomedicine use of plants in the Salt River, Phoenix, AZ*.

PS 56-49 Lan, Z[1], Y Bai[2] and GD Jenerette[3], (1)Institute of Botany, Chinese Academy of Science, (2)Institute of Botany, Chinese Academy of Sciences, (3)University of California. *N-induced biodiversity loss will persist with upscaling as δ diversity decreased by N*.

PS 56-50 Brunson, MW and S Hoffmann, Utah State University. *Production and management of dust from gravel roads: Potential effects on desert roadside plant communities*.

PS 56-51 Luna, NR[1], C Laney[1], A Jaimes[2] and CE Tweedie[1], (1) University of Texas at El Paso, (2)The University of Texas at El Paso. *Relationship between Photosystem Physiology, Phenology, Reflectance and Ecosystem CO2 Flux in a Chihuahuan Desert Shrubland*.

PS 56-52 Eckhardt, AL and KL Griffis-Kyle, Texas Tech University. *Biodiversity of invertebrates in Sonoran Desert wildlife waters*.

PS 57 - Population Biology

Exhibit Hall B, Minneapolis Convention Center

PS 57-53 Kula, AAR and HJ Dalgleish, College of William and Mary. *The interplay of density and insects as drivers of milkweed population dynamics*.

PS 57-54 Feichtinger, EE[1], J Gluvna[1], BE Kendall[2] and GA Fox[1], (1) University of South Florida, (2)University of California Santa Barbara. *Consequences of individual growth rate heterogeneity on population dynamics in plants*.

PS 57-55 Smith, SA[1], SJH Crate[1], JL Schafer[2] and CW Weekley[1], (1)Archbold Biological Station, (2)North Carolina State University. *Recruitment, growth, survival, and fecundity of the threatened Florida endemic annual herb Paronychia chartacea ssp. minima*.

PS 57-56 Green, RF[1], DL Evans[2], FJ Nicoletti[2], KJ Bardon[2] and JC Green[2], (1)University of Minnesota Duluth, (2)Hawk Ridge Bird Observatory. *Goshawk invasions at Hawk Ridge: Indicator of changes in the boreal forest?*.

PS 57-57 Schradick, H[1], M Johnson[1], K Schneider[1], M Rose[1], K Smith[2], JR Dotson[3], E Holbrook[4], SS Boyd[3] and JC Whittaker[1], (1)Concordia College, (2)Virginia Tech, (3)University of Pikeville, (4)University of Kentucky. *Identification of white-footed mice (Peromyscus leucopus) and deer mice (P. maniculatus) through comparison of allozymes for salivary amylase*.

PS 58 - Behavior

Exhibit Hall B, Minneapolis Convention Center

PS 58-58 Martin, AE and L Fahrig, Carleton University. *Does population-level risk from movement in human-altered landscapes depend on the historic landscape structure?*.

PS 58-59 Román, I[1], JE Jiménez[2], PM Vergara[3] and R Rozzi[4], (1) University of North Texas, (2)University of North Texas, Denton, TX. Institute of Ecology and Biodiversity, Universidad de Magallanes, (3)Universidad de Santiago de Chile, (4)University of North Texas and University of Magallanes - Institute of Ecology and Biodiversity, Chile. *Magellanic Woodpecker (Campephilus magellanicus) behavior when approached by humans in the context of ecotourism*.

PS 58-60 Espeset, A and E Snell-Rood, University of Minnesota. *Changing nitrogen availability impacts allocation to ornamentation and dynamics of sexual selection*.

PS 58-61 Smith, BR and DJ Hogan, Texas A&M University - Corpus Christi. *Variation in lionfish behavior in response to depth, group size and time-of-day at Bocas del Toro, Panama*.

PS 58-62 Moses, MM and DW Morris, Lakehead University. *Habitat selection by a unicellular alga: Is it adaptive?*.

PS 58-63 Pylant, CL[1], DM Nelson[2], SR Keller[1], MC Fitzpatrick[2] and JE Gates[2], (1)Appalachian Lab, University of Maryland Center for Environmental Science, (2)University of Maryland Center for Environmental Science. *Assessing regional sources of bat mortality at wind turbine sites using stable isotopes and population genetics*.

PS 58-64 Fritzsche, A, D Satterfield and S Altizer, University of Georgia. *Migratory trade-offs: Do monarch butterflies sacrifice immune defense for lipid storage?*.

PS 58-65 Lizama, ME[1], GE Soto[1], PM Vergara[1], R Rozzi[2] and JE Jiménez[3], (1)Universidad de Santiago de Chile, (2)University of North Texas and University of Magallanes - Institute of Ecology and Biodiversity, Chile, (3)University of North Texas, Institute of Ecology and Biodiversity, Universidad de Magallanes. *Sexual differences in nest attendance by Magellanic woodpeckers (Campephilus magellanicus) in the southernmost forest of the world*.

PS 59 - Behavior: Foraging And Diet

Exhibit Hall B, Minneapolis Convention Center

PS 59-66 Cembrowski, AR, G Reurink and ME Frederickson, University of Toronto. *Pollen consumption in ants: a widespread phenomenon?*.

PS 59-67 Varner, J and MD Dearing, University of Utah. *Too hot to trot? Pika survival in a time of global change*.

PS 59-68 Chudzinska, ME[1], J Nabe-Nielsen[1], BA Nolet[2] and J Madsen[1], (1)Aarhus University, (2)NIOO-KNAW. *Seasonal changes in the daily energy budgets of migratory geese at a spring stopover site estimated from telemetry data*.

PS 59-69 Berini, JL, JD Forester and D Fox, University of Minnesota. *Forage-selection and dietary quality of moose in northeastern Minnesota*.

PS 59-70 Soto, GE[1], ME Lizama[1], PM Vergara[1], R Rozzi[2] and JE Jiménez[3], (1)Universidad de Santiago de Chile, (2)University of North Texas and University of Magallanes - Institute of Ecology and Biodiversity, Chile, (3)University of North Texas, Institute of Ecology and Biodiversity, Universidad de Magallanes. *Identifying tree attributes selected for foraging by Magellanic woodpeckers (Campephilus magellanicus) in the Cape Horn Biosphere Reserve*.

PS 59-71 Galluppi, C, H Bernardo and TM Knight, Washington University in St. Louis. *Rodent seed consumption influences Ozark glade restoration success*.

PS 60 - Herbivory

Exhibit Hall B, Minneapolis Convention Center

PS 60-72 Avila, V[1] and D Angell[2], (1)Northern Arizona University, (2) St. Olaf College. *Patterns of small mammal predation on different seeds in prairies*.

PS 60-73 Sanchez, M[1], M Bitter[2], K Bobier[3], A Meyer[3], E Wakamatsu[4], B Uribe[5] and D Yang[4], (1)University of California, Davis, (2)University of California, Santa Barbara, (3)University of California, Santa Cruz, (4)University of California, Berkeley, (5)University of California, Irvine. *Temperature Dependent Urchin Grazing of Temnopleurus alexandri and Salmacis belli on two algal species of Stradbroke Island, Australia*.

PS 60-74 Bingham, RA and B Waller, Western State Colorado University. *Variation in herbivore resistance traits among populations of Asclepias speciosa (Asclepiadaceae)*.

PS 60-75 Rubert-Nason, KF[1], S McKenzie[2] and RL Lindroth[3], (1) University of Wisconsin - Madison, (2)University of Wisconin - Madison, (3)University of Wisconsin. *Influence of genotype and soil fertility on the susceptibility of Populus tremuloides to deer browsing*.

PS 60-76 Begley, DR[1], TP Rooney[1] and AL Hipp[2], (1)Wright State University, (2)The Morton Arboretum. *The value of evolutionary history: Using phylogenetic diversity to identify the long-term effects of deer browsing on Northern Wisconsin forest understory plant communities*.

PS 60-77 Harris, PT and S Baer, Southern Illinois University. *The Effects of White-tailed Deer Herbivory on Prairie Community Structure and Function during Restoration*.

PS 60-78 Branson, DH, USDA-Agricultural Research Service. *Grasshopper herbivory modifies grass composition in northern mixed prairie*.

PS 60-79 Cassin, CM and PM Kotanen, University of Toronto. *Decreases in herbivore damage approaching northern range limits in native and exotic Asteraceae*.

PS 60-80 Hernandez, DL, MJ McKone and E Rogers, Carleton College. *Deer herbivory affects phenology, seed production, and plant size in three prairie legumes*.

PS 61 - Predation And Predator-Prey Interactions

Exhibit Hall B, Minneapolis Convention Center

PS 61-81 Renteria, JC, Iowa State University. *Effects of habitat and predators on caterpillar predation in a tropical rainforest*.

PS 61-82 Davis, DR[1] and KJ Epp[2], (1)University of South Dakota, (2)Ottawa University. *Effect of fish species and size on the antipredator behavior of the San Marcos salamander (Eurycea nana)*.

PS 61-83 Grandinetti, ME[1] and PW Crumrine[2], (1)Kutztown University, (2)Rowan University. *Does prey availability affect predator-prey interactions in an assemblage of size structured top predators?*.

PS 61-84 Looi, A[1], K Blackley[2] and D Rosenberg[2], (1)SUNY-ESF, (2) Cornell University. *Tuning the strength of predation: effects of an abiotic factor on predator-prey dynamics*.

PS 61-85 Purdom, T, A Schoofs, JR Hodgson and T Maki, St. Norbert College. *A thirty year diet record of largemouth bass from a small north temperate lake*.

PS 61-86 Crumrine, PW[1], KM Norwood[2], ME Grandinetti[3], S Kawecki[4] and LO Diaz[5], (1)Rowan University, (2)Howard University, (3)Kutztown University, (4)Loyola Marymount University, (5)University of Puerto Rico - Bayamon. *Differences in behavior and prey preference influence size-structured predator-prey interactions among top predators*.

PS 61-87 Anderson, TL and RD Semlitsch, University of Missouri. *The effects of predators, habitat complexity and water temperature on detection probability and activity patterns of a larval salamander*.

PS 62 - Food Webs

Exhibit Hall B, Minneapolis Convention Center

PS 62-88 Marchetti, MF and AL Rypstra, Miami University. *Effects of a glyphosate-based herbicide and temperature on foraging of a common arthropod predator*.

PS 62-89 Phillips, JS and JP Gibert, University of Nebraska-Lincoln. *Energy Flux Determines Stability in Generalized Food Web Motifs*.

PS 62-90 Gibert, JP, University of Nebraska-Lincoln. *Species driving food web stability have lower individual variation*.

PS 62-91 Miranda, FH[1], O Rowe[1], R Lefebure[1], A Brutemark[2], J Paczkowska[1], S Traving[3], B Deutsch[4], D Figueroa[1], E Lindehoff[1], C Stedmon[5], U Båmstedt[6], L Riemann[3] and A Andersson[1], (1)Umeå University, (2)Novia University of Applied Sciences, (3)University of Copenhagen, (4) Stockholm University, (5)Technical University of Denmark, (6)Umeå Marine Sciences Centre. *Impact of elevated river inflow on coastal areas of the Baltic Sea*.

PS 62-92 Allums, SE and SW Golladay, Joseph W. Jones Ecological Research Center. *Food webs of geographically isolated wetlands: A comparison across an agricultural disturbance gradient*.

PS 63 - Trophic Dynamics And Interactions

Exhibit Hall B, Minneapolis Convention Center

PS 63-93 Seltzer, CE[1], W Wysocki[2], M Palacios[3] and NJ Cordeiro[3], (1)University of Illinois at Chicago, (2)Northern Illinois University, (3)Roosevelt University. *Analysis of a continent-wide seed dispersal network in Africa at the family level*.

PS 63-94 Sitvarin, MI and AL Rypstra, Miami University. *Density- and trait-mediated impacts of predators on prey and soil properties*.

PS 63-95 Wyant, KA, Y Marusenko, S Hall and JL Sabo, Arizona State University. *Land-use type changes the belowground food-web in an arid, urban ecosystem*.

PS 63-96 Merwin, AC, J Cassara, D Hoover, HF Ralicki, C Saltzberg, B Inouye and TE Miller, Florida State University. *The effects of size structure for a top predator cascade down trophic levels in a pitcher plant community.*.

PS 63-97 Marcarelli, AM[1], CV Baxter[2], JR Benjamin[3] and M Murakami[4], (1)Michigan Technological University, (2) Idaho State University, (3)U. S. Geological Survey, (4)Chiba University. *Does quality trump quantity? Ecosystem-level consequences of subsidies in a forested stream*.

PS 63-98 Kuettel, C[1], MA Hanson[2], BR Herwig[2], KD Zimmer[3] and MR Fulton[1], (1)Bemidji State University, (2)Minnesota Department of Natural Resources, (3)University of St.Thomas. *Zooplankton and regime dynamics in shallow Minnesota lakes: Are they related?*.

PS 64 - Plant-Insect Interactions

Exhibit Hall B, Minneapolis Convention Center

PS 64-99 Hanson, CR, E Murrell and EM Cullen, University of Wisconsin-Madison. *Soil fertility practices, plant nutrient profiles, and mycorrhizal colonization affect oviposition response of Ostrinia nubilalis to corn plants*.

PS 64-100 Low, PA, C McArthur and DF Hochuli, The University of Sydney. *Out on a limb: Are insect herbivores at greater risk of predation on young foliage?*.

PS 64-101 Moorhouse, AL[1] and TH Roulston[2], (1)Minnesota State University Moorhead, (2)University of Virginia. *It's a moth-eat-moth world: Groundcherry moth performs better as a frugivore than a budworm when not eaten by another moth*.

PS 64-102 Krimmel, BA, CR Dillis, K Hughes and M McMunn, UC Davis. *Alteration of host plant quality by an omnivorous mirid bug (Dicyphus hesperus) and its implications for interactions with resident leafhoppers (Empoasca spp.)*.

PS 64-103 Nunes, KAM and PM Kotanen, University of Toronto. *Spatial variation in occurrence of biological control agents of the noxious weed Cirsium arvense*.

PS 64-104 Carney, CL, AJ Lloyd, J Vander Windt, SL Matzner and DR Howard, Augustana College. *Fatal attraction: the influence of prey sensory modality on capture rates in insectivorous plants*.

PS 64-105 Castilla, AR[1], S Jha[1] and A Santos[2], (1)University of Texas at Austin, (2)Universidad de Panamá. *Towards to an improved knowledge of species-specific pollinator movement and efficiency*.

PS 64-106 Richardson, LL[1], LS Adler[2], AS Leonard[3], KA Henry[2], W Anthony[2], RE Irwin[1] and JS Manson[4], (1)Dartmouth College, (2)University of Massachusetts, (3)University of Massachusetts, Amherst/University of Nevada, Reno, (4) University of Alberta. *Plant secondary compounds in floral nectar reduce bumble bee parasite infection*.

PS 64-107 Bustos-Segura, C and WJ Foley, Australian National University. *Effects of Australian tea tree (Melaleuca alternifolia) chemotypes on the performance of two specialist herbivores*.

PS 65 - Pollination

Exhibit Hall B, Minneapolis Convention Center

PS 65-108 Hancock, LMS, A Rotzin, CN Luce and LG Ruane, Christopher Newport University. *Factors limiting the reproductive success of Phlox hirsuta, an endangered species*.

PS 65-109 Bruckman, D[1] and DR Campbell[2], (1)University of California, Irvine, (2)UC Irvine. *The effects of floral neighborhood and an invasive plant on the pollination of Phacelia parryi*.

PS 65-110 Saifuddin, M[1] and S Jha[2], (1)University of Texas at Austin, (2)University of Texas. *Colony-level variation in bumble bee foraging and pollen collection across a human-altered landscape*.

PS 65-111 Richman, S and DL Venable, University of Arizona. *Influence of floral morphology on pollinator visitatation to Allionia incarnata (Nyctaginaceae)*.

PS 65-112 Carson, BD, E Delfosse and DA Landis, Michigan State University. *Bees' use of floral resources in habitats dominated by the exotic plant Centaurea stoebe*.

PS 65-113 Cunningham, J and PJ CaraDonna, University of Arizona. *Resource requirements of wild bees in The Colorado Rocky Mountains and the Tucson Sky Islands*.

PS 65-114 Benjamin, F and R Winfree, Rutgers University. *Lack of pollinators limits fruit production in commercial blueberry*.

PS 65-115 Cusser, S and S Jha, University of Texas. *Agricultural development changes native bee community composition in Central Texas peach orchards*.

PS 65-116 Walsh, RP and HJ Michaels, Bowling Green State University. *The reproductive consequences of deception in the Orchid Cypripedium candidum*.

PS 65-117 Beck, KL[1], K Lukas[2], S Erlandson[2], G Nelson[3] and PD Wragg[2], (1)University of Minnesota and Anoka-Ramsey Community College, (2)University of Minnesota, (3) University of Wisconsin-Eau Claire. *Ants interfere with the reproduction of oval-leaved milkweed (Asclepias ovalifolia)*.

PS 65-118 Larson, DL[1], S Droege[2], PA Rabie[3], J Devalez[4], JL Larson[5], M McDermott-Kubeczko[6] and M Haar[7], (1)US Geological Survey, (2)USGS, (3)WEST, Inc., (4)Aegean University, (5)Polistes Foundation, (6)University of Minnesota, (7) Badlands National Park, National Park Service. *Interaction networks linking rare and invasive plant species – a double-edged sword?*.

PS 66 - Mutualism And Facilitation

Exhibit Hall B, Minneapolis Convention Center

PS 66-119 Dimitri, L[1] and WS Longland[2], (1)University of Nevada, Reno, (2)USDA, Agricultural Research Service. *Is western juniper (Juniperus occidentalis) dispersed through diplochory?*.

PS 66-120 Yellow Hammer, LB, TP McKenna, BJ Darby and KA Yurkonis, University of North Dakota. *Development of a native Pascopyrum smithii (Western wheatgrass) cultivar favored endophyte effects*.

PS 66-121 Ossler, JN[1] and KD Heath[2], (1)University of Illinois at Champaign Urbana, (2)University of Illinois, Urbana-Champaign. *Genetic architecture of tripartite interactions: Legumes, rhizobia, and mycorrhizal fungi*.

PS 66-122 Ness, JH, Skidmore College. *Climatic variability and neighboring plants mediate plant-insect mutualism in the Sonoran Desert*.

PS 66-123 Carrell, A and AC Frank, University of California. *Endophytic bacterial Nitrogen fixers associated with Pinus flexilis*.

PS 66-124 Dohn, J[1] and NP Hanan[2], (1)Colorado State University, (2) South Dakota State University. *Shrub-grass interactions in the Colorado shortgrass steppe*.

PS 67 - Species Interactions

Exhibit Hall B, Minneapolis Convention Center

PS 67-125 Fisher, CK and P Mehta, Boston Univeristy. *Phase transitions in the coexistence of competitive species*.

PS 67-126 Yule, KM[1] and JL Bronstein[2], (1)The University of Arizona, (2)University of Arizona. *Reproductive biology of a mutualist-vectored parasitic plant differs with host species*.

PS 67-127 Long, H[1], J Schweitzer[1], J Bailey[1] and M Genung[2], (1) University of Tennessee, Knoxville, (2)University of Tennessee - Knoxville. *Genetic-based legacy effects of above- and belowground linkages on plant community and fitness*.

PS 67-128 Rodríguez-Flores, CI[1], JF Ornelas[2] and MC Arizmendi[1], (1) Universidad Nacional Autónoma de México, (2)Instituto de Ecología, A.C.. *Exploring the mechanisms that are modeling the interaction between hummingbirds and their nectar resources using network analysis*.

PS 67-129 Franci, LDC[1], J van Melis[2] and FR Martins[1], (1)UNICAMP, (2)Unicamp. *Liana mortality and host-plant specificity in a Neotropical semideciduous forest*.

PS 67-130 Barga, SC, University of Nevada, Reno. *Seed dispersal of wild peony (Paeonia brownii) in western Nevada*.

PS 67-131 Duple, SA[1], GC Davis[2], P Lee[1], Z Rapti[2] and CE Cáceres[1], (1)University of Illinois at Urbana-Champaign, (2)University of Illinois at Urbana - Champaign. *Exploring the effects of genetic variation in host algal resource acquisition traits on disease prevalence in a competitive Daphnia disease system*.

PS 67-132 Dittel, JW and SB Vander Wall, University of Nevada, Reno. *Pilfering ability of four seed-caching rodents in the Sierra Nevada*.

PS 67-133 Desai, S and F Collart, Argonne National laboratory. *The impact of Pseudomonas fluorescens strains on aspen growth during phosphorus and nitrogen limitation*.

PS 68 - Parasitism And Host-Parasite Interactions

Exhibit Hall B, Minneapolis Convention Center

PS 68-134 Farzan, S, University of California-Davis. *Does field dodder (Cuscuta campestris) allow nutrient flow among parasitized host plants?*.

PS 68-135 Whitaker, BK[1], MA Rúa[2] and CE Mitchell[3], (1)University of Austin, (2)University of Mississippi, (3)University of North Carolina. *Viral pathogen production and virus-plant interactions are controlled by nitrogen and phosphorus supply*.

PS 68-136 Mlynarek, JJ, Carleton University. *Testing the enemy release hypothesis in a damselfly with an expanding range*.

PS 68-137 Hsiuan yi, L, National Taiwan Normal University. *Sex-specific effects of parasites on host body mass and survival: a case study of helminth parasites and rodent host Apodemus semotus in Taiwan*.

PS 68-138 Lee, P, GC Davis, SA Duple, Z Rapti and CE Cáceres, University of Illinois at Urbana-Champaign. *Using gut passage time and mathematical models to predict disease prevalence in Daphnia dentifera* .

PS 68-139 Reblin, JS and BA Logan, Bowdoin College. *Impacts of a parasitic dwarf mistletoe on the water relations of two host conifers with different drought tolerances*.

PS 68-140 Krumm, JL, FJ Tweitmann, CH Freed and DM Thomas, Widener University. *Host plant choice affects parasitism rates of the tulip tree beauty moth, Epimecis hortaria*.

PS 68-141 Hanauer, RE and ED Ketterson, Indiana University. *Parasite prevalence differs between an urban and a non-urban population of a songbird, the dark-eyed junco*.

PS 68-142 Pope, NS and S Jha, University of Texas. *The cost of parasitism to bumble bee foraging range*.

4:30 pm-6:30 pm

PS 68-143 Breaux, JA and SA Juliano, Illinois State University. *Lingering effects of childhood: Larval ecology impacts vector-parasite-host interactions*.

PS 68-144 LaFonte, BE[1], I Monk[2], J Capano[3], R Jordan[3], C Gelbaugh[4], PTJ Johnson[1] and TR Raffel[2], (1)University of Colorado at Boulder, (2)Oakland University, (3)Dickinson College, (4) Wofford College. *Variation among tadpole species in their ability to clear encysted trematode parasites*.

PS 69 - Disease And Epidemiology

Exhibit Hall B, Minneapolis Convention Center

PS 69-145 Duke, JE[1], JD Blanton[1], M Ivey[2] and CE Rupprecht[3], (1) CDC, (2)Georgia Department of Public Health, (3)Centers for Disease Control and Prevention. *Modeling Enzootic Raccon Rabies from Land Use Patterns - Georgia (USA) 2006-2010*.

PS 69-146 McTavish, CK, S Stadt, DW Fulbright and AM Jarosz, Michigan State University. *Morphological, genetic, and host range variability in Phomopsis, a pathogen associated with spruce decline in Michigan*.

PS 69-147 Homan, RN[1], JR Bartling[1], RJ Stenger[1] and J Brunner[2], (1)Denison University, (2)Washington State University. *Detection of ranavirus in five amphibian species among three Ohio ponds*.

PS 69-148 Bari, AA[1], JL McGuire[2] and EM Frazier[1], (1)Florida Atlantic University, (2)University of Georgia. *Analyis of the gopher tortoise tick and its distribution in southeastern Florida*.

PS 69-149 Kelly, R and RJ Brinkerhoff, University of Richmond. *Apparent range expansion of Ixodes scapularis in Virginia – inferences from field sampling and vector phylogenetic analysis*.

PS 69-150 Goodman, R[1], FJ Polakiewicz[1] and DL Miller[2], (1) Hampden-Sydney College, (2)Center for Wildlife Health, Dept of Forestry, Wildlife, and Fisheries, Univ Knoxville, TN. *Effects of herbicides and ranavirus on survival and health of juvenile freshwater turtles*.

PS 69-151 Blohm, GM, University of Florida. *Effects of phosphorus limitation on viral population dynamics*.

PS 69-152 Essian, DA and JBK Leonard, Northern Michigan University. *Species composition and size class of prey items found in the gut contents of piscivorous birds that have died of avian botulism*.

PS 69-153 Buller, ID[1], KA Medley[1] and PTJ Johnson[2], (1)University of Colorado, (2)University of Colorado at Boulder. *Nationwide distributional determinants for a wildlife and human parasite*.

PS 69-154 Bergholz, PW[1], GT Ryan[2], LK Strawn[2], S Warchocki[2] and M Wiedmann[2], (1)North Dakota State University, (2) Cornell University. *The potential role of riparian corridors in overland dispersal of bacteria among vegetable farms*.

PS 69-155 Giacopelli, B, M Readinger, M Wyles, A Lugo and J Morrison, The College of New Jersey. *Comparison of genetic variation in healthy and diseased populations of the old-field grass Andropogon virginicus*.

PS 70 - Microbial Ecology

Exhibit Hall B, Minneapolis Convention Center

PS 70-156 Gaglione, ML, DL Bade and LG Leff, Kent State University. *Effect of dissolved organic matter on denitrification in lake sediments*.

PS 70-157 Bergh, K[1], JL Gutknecht[2] and K Docherty[1], (1)Western Michigan University, (2)Helmoltz- Centre for Environmental Research- UFZ. *Long-term nitrogen deposition influences the effects and timing of soil ammonia-oxidizing bacterial responses to fire*.

PS 70-158 Wang, J[1], J Shen Sr.[1], Y Wu[2], C Tu[3], J Soininen[4], JC Stegen[5], J He[6], X Liu[1], L Zhang[1] and E Zhang[1], (1)Nanjing Institute of Geography and Limnology, (2)Institute of Soil Science, Chinese Academy of Sciences, (3)Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences, (4)University of Helsinki, (5)Pacific Northwest National Laboratory, (6) Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences. *Phylogenetic beta diversity in bacterial assemblages across ecosystems: deterministic versus stochastic processes*.

PS 70-159 Robeson, M II[1], Z Yang[1], M Kerley[1], M Podar[1], M Shakya[2], G Bonito[3], G Tuskan[1], R Vilgalys[3] and CW Schadt[1], (1)Oak Ridge National Laboratory, (2)University of Tennessee, (3) Duke University. *Does Populus deltoides select for a unique microbiome?*.

PS 70-160 Colehour, AM, MA Liebert, BJM Bohannan, JJ Snodgrass and LS Sugiyama, University of Oregon. *Microbial ecology of cassava beer with indigenous inoculum*.

PS 70-161 Wen, A[1], U Srinivasan[2], DE Goldberg[1], J Owen[3], CF Marrs[2], D Misra[4], DA Wing[5] and B Foxman[2], (1)University of Michigan, (2)University of Michigan School of Public Health, (3)University of Alabama at Birmingham, (4) Wayne State University School of Medicine, (5)University of California Irvine. *Vaginal microbial community and risk of pre-term birth: an ecological perspective*.

PS 70-162 Kolp, M[1], M Double[2], DW Fulbright[1], W MacDonald[2] and AM Jarosz[1], (1)Michigan State University, (2)West Virginia University. *Do secondary fungal invaders influence disease severity of chestnut blight on American chestnut?*.

PS 70-163 Felice, LJ, SC Huerd, R Dill-Macky, NR Jordan and LL Kinkel, University of Minnesota. *Plant species influence density and inhibitory phenotypes of soil Streptomyces*.

PS 70-164 Clark, N[1], Y Lan[2], G Rosen[2] and CB Blackwood[1], (1)Kent State University, (2)Drexel University. *Relating microbial physiological performance to genome content*.

PS 70-165 Yuan, M[1], J Zhang[1], L Wu[1], K Xue[1], L Cheng[1], Y Deng[1], T Yuan[1], J Van Nostrand[1], Z He[1], EAG Schuur[2], Y Luo[1], J Tiedje[3] and J Zhou[1], (1)University of Oklahoma, (2) University of Florida, (3)Michigan State University. *Climate Warming Induced Permafrost Thaw Changes Soil Microbial Communities*.

PS 70-166 Lisko, DJ and CG Johnston, Youngstown State University. *The effects of yogurt diet on the microbial community of the gastrointestinal tract*.

PS 70-167 Schucker, C and C McNeely, Eastern Washington University. *Microbial stream ecology of Latah Creek watershed, WA*.

7 pm-9 pm

TK 6 - ESA Closing Social: An Evening at the Twins Ballpark

Metropolitan Club, Minnesota Twins Target Field

Friday, August 9

7 am-8 am

ESA International Affairs Section Awards Breakfast
Director's 4, Hilton Minneapolis

8:30 am-10 am

ESA Governing Board Meeting
Red Wing, Hilton Minneapolis

11:30 am-1 pm

ESA Buell/Braun Student Award Committee Meeting
Board Rm 1, Hilton Minneapolis

Friday Sessions

7 am-8 am

ESA International Affairs Section Awards Breakfast
M100HC, Minneapolis Convention Center

8 am-11:30 am

SYMP 22 - Beyond Hypothesis Testing

M100EF, Minneapolis Convention Center

Organized by: J Shevtsov (jane.eco@gmail.com)

Endorsed by: Natural History Section

Moderator: J Shevtsov

In this symposium, ecologists and philosophers will discuss ecology's reliance on hypothesis testing and give examples of other ways of doing research, including natural history observation, systems modeling, data-driven science, and the incorporation of traditional ecological knowledge into research and management.

8:00 AM SYMP 22-1 Haufe, C, Case Western Reserve University. *What makes an exploratory project good?*.

8:30 AM SYMP 22-2 Parrish, J, University of Washington. *Contemplation, pattern, and a sense of place: The role of natural history in grounding science*.

9:00 AM SYMP 22-3 Patten, BC, University of Georgia. *Institutionalized model-making: Mobilizing knowledge resources for complex ecological systems research*.

9:30 AM Break

9:40 AM SYMP 22-4 Kelling, S[1], D Fink[2], M Iliff[2], WM Hochachka[2] and F La Sorte[1], (1)Cornell Lab of Ornithology, (2) Cornell University. *Using data intensive processes to inform biodiversity conservation at multiple spatial and temporal scales*.

10:10 AM SYMP 22-5 Trosper, RL, University of Arizona. *Successful policy as a source of authority in traditional ecological knowledge*.

10:40 AM SYMP 22-6 Odenbaugh, J, Lewis and Clark College. *The Toolbox of Science: A Pragmatic Approach*.

11:10 AM Discussion

SYMP 23 - Global Change and The Long-Term Fragmentation Experiments

205AB, Minneapolis Convention Center

Organized by: NM Haddad (Nick_Haddad@ncsu.edu)

Endorsed by: Applied Ecology Section, Long Term Studies Section

Moderator: NM Haddad

We synthesize results from long-term habitat fragmentation experiments, many that have been running for decades, and looks forward to how fragmentation experiments may be used to address interactions of fragmentation with emerging global changes, including climate change, landuse change, and invasion by exotic species.

8:00 AM SYMP 23-1 Brudvig, LA[1], EI Damschen[2], NM Haddad[3], JD Herrmann[1], DJ Levey[4], JL Orrock[5] and JJ Tewksbury[6], (1) Michigan State University, (2)University of Wisconsin-Madison, (3)North Carolina State University, (4)National Science Foundation, (5)University of Wisconsin - Madison, (6)WWF International. *The SRS Corridor Experiment: How habitat fragmentation, landscape connectivity, and climate change impact plant populations and communities*.

8:30 AM SYMP 23-2 Holt, RD[1], CD Collins[2], BL Foster[3] and WM Cook[4], (1)University of Florida, (2)Colby College, (3)University of Kansas, (4)Saint Cloud State University. *Reflections on the Kansas long-term habitat fragmentation experiment: >30+ years, and counting*.

9:00 AM SYMP 23-3 Davies, KF[1], BA Melbourne[1], S Cunningham[2], M Austin[2], MJ Evans[3], B Farmilo[4], A Hicks[1], AJ King[2], B Mantle[2], CR Margules[2], JL McClenahan[1], JW Morgan[4], N Nicholls[2], K Tarsi[1] and CP Weiss-Lehman[1], (1)University of Colorado, (2)CSIRO, (3)Australian National University, (4) La Trobe University. *The Wog Wog experiment after 29 years: The value of a long-term, large scale fragmentation experiment*.

9:30 AM Break

9:40 AM SYMP 23-4 Lovejoy, T[1] and WF Laurance[2], (1)George Mason University & Heinz Center for Science, Economics and the Environment, (2)Centre for Tropical Environmental and Sustainability Science & School of Marine and Tropical Biology, James Cook University. *The fate of Amazonian forest fragments: A 34-year investigation*.

10:10 AM SYMP 23-5 Gonzalez, A, McGill University. *Lessons from Lilliputian landscapes: the impacts of habitat fragmentation and climate change on biodiversity and ecosystem function*.

10:40 AM SYMP 23-6 Clobert, J, Station d'Ecologie Experimentale du CNRS. *Experimental Ecology in France: The example of the metatron*.

11:10 AM Discussion

8 am-11:30 am

SYMP 24 - Past, Present, and Future Design of Infrastructures for a Resilient Society

Aditorium, Rm 1, Minneapolis Convention Center

Organized by: T Carter (tlcarter@gmail.com), E Ellis, AJ Felson

Endorsed by: Urban Ecosystem Ecology Section, Applied Ecology Section, Human Ecology Section

Moderator: AJ Felson

This symposium seeks to build our understanding of the complexity and dynamic interactions between the ecological, social, and cultural infrastructures that support ecological resiliency presently and into the future.

8:00 AM SYMP 24-1 Ellis, E, University of Maryland, Baltimore County. *Human infrastructure as ecological infrastructure for the Anthropocene*.

8:30 AM SYMP 24-2 Goldsmith, W, Bioengineering Group. *Green infrastructure for climate adapted urban planning and design*.

9:00 AM SYMP 24-3 Rice, JL, University of Georgia. *Social and political infrastructures of resilience: Cities as leaders in climate change governance?*.

9:30 AM Break

9:40 AM SYMP 24-4 Baker, LA, University of Minnesota. *Envisioning resilient futures for urban water and wastes*.

10:10 AM SYMP 24-5 Pickett, STA[1], ML Cadenasso[2], BP McGrath[3] and V Marshall[3], (1)Cary Institute of Ecosystem Studies, (2)University of California, Davis, (3)Parsons The New School for Design. *Resilience in ecology and urban design*.

10:40 AM SYMP 24-6 Belanger, P, Harvard University. *Past, Present, and Future Design of Infrastructures for a Resilient Society*.

11:10 AM Discussion

OOS 31 - Climate Change and Boreal Forests

101A, Minneapolis Convention Center

Organized by: HYH Chen (han.chen@lakeheadu.ca), Y Luo, SF Bartels

Moderator: D Senici

To present current and past evidences that relate to the effects of historical climate change in boreal forests, and to predict trends with regards to future climate change scenarios.

8:00 AM OOS 31-1 Johnson, EA[1], M Macias-Fauria[2] and Y Martin[1], (1)University of Calgary, (2)Oxford University. *What we have learned about wildfires and climate changes*.

8:20 AM OOS 31-2 Chen, HYH and Y Luo, Lakehead University. *Forest productivity decline across region and species composition in western Canadian boreal forests*.

8:40 AM OOS 31-3 Luo, Y and HYH Chen, Lakehead University. *Linking forest productivity decline to demographic attributes in western Canadian boreal forest*.

9:00 AM OOS 31-4 Metsaranta, J[1], W Kurz[2], CH Shaw[1], C Boisvenue[2], G Stinson[2], C Smyth[2] and E Neilson[2], (1)Natural Resources Canada, (2)Canadian Forest Service. *Carbon in Canada's boreal forest: current status and potential climate change effects*.

9:20 AM OOS 31-5 Peng, C, University of Quebec at Montreal. *Impacts of drought-induced forest mortality on Canadian boreal forest carbon sinks*.

9:40 AM Break

9:50 AM OOS 31-6 Hogg, EH and M Michaelian, Canadian Forest Service. *Multi-year impacts of severe drought on mortality losses of trembling aspen biomass in the western Canadian boreal region*.

10:10 AM OOS 31-7 Beck, PSA and S Goetz, Woods Hole Research Center. *Early warning signs of biome shift in boreal forests*.

10:30 AM OOS 31-8 Holden, SR, BM Rogers, JT Randerson and KK Treseder, University of California, Irvine. *Burn severity influences soil microbial responses to wildfire in Alaskan boreal forests*.

10:50 AM OOS 31-9 Thakur, MP[1], PB Reich[2], N Fisichelli[3], A Stefanski[2], S Cesarz[1], T Dobies[4], R Rich[2], SE Hobbie[2] and N Eisenhauer[1], (1)Friedrich-Schiller-University Jena, (2)University of Minnesota, (3)National Park Service, (4)Poznań University of Life Sciences. *B4WarmED forest warming experiment: shifts in nematode community influence plant cover and composition*.

11:10 AM OOS 31-10 Reich, PB[1], R Rich[1], A Stefanski[1], KM Sendall[1], RA Montgomery[1], CM Zhao[2], SE Hobbie[1] and K Rice[1], (1)University of Minnesota, (2)Lanzhou University. *B4WarmED forest warming experiment: Species geographic distributions predict photosynthetic responses of local ecotypes to climate warming*.

OOS 32 - Ecophysiological Effects Of Predation Risk

101B, Minneapolis Convention Center

Organized by: JS Thaler (jst37@cornell.edu), MJ Sheriff, D Hawlena

Moderator: MJ Sheriff

This session will investigate the diverse physiological responses to predation risk (immunological, neurobiological, nutritional) and their consequences for prey behavior and fitness, and community and ecosystem processes.

8:00 AM OOS 32-1 Adamo, S, Dalhousie University. *Making do with less: The effects of chronic predation stress on immune function*.

8:20 AM OOS 32-2 Thaler, JS, Cornell University. *Predicting variation in behavioral, physiological, and developmental responses to predation risk*.

8:40 AM OOS 32-3 Clinchy, M, University of Victoria. *The neurobiological ecology of fear*.

9:00 AM OOS 32-4 Middleton, AD[1], C Martinez del Rio[2] and MJ Kauffman[3], (1)Yale University, (2)University of Wyoming, (3)United States Geological Survey, Wyoming Cooperative Fish and Wildlife Research Unit. *Prey nutritional condition: a common influence of antipredator behavior and the "ecology of fear"?*.

9:20 AM OOS 32-5 Love, OP[1] and MJ Sheriff[2], (1)University of Windsor, (2)University of Alaska, Fairbanks. *The adaptive potential of material stress*.

9:40 AM Break

9:50 AM OOS 32-6 Hawlena, D[1], MS Strickland[2], MA Bradford[3] and OJ Schmitz[3], (1)The Hebrew University of Jerusalem, (2)Virginia Tech, (3)Yale University. *Defense physiology- implications for prey trophic function and nutrient recycling*.

10:10 AM OOS 32-7 Dalton, C and AS Flecker, Cornell University. *Predation risk and the metabolic stoichiometry of Trinidadian guppies (Poecilia reticulata): Consequences for foraging strategies and life history traits*.

10:30 AM OOS 32-8 Zanette, LY, University of Western Ontario. *The dimensions of fear: Can we link genes to ecosystems?*.

10:50 AM OOS 32-9 Swanson, AB[1], T Caro[2], M Borner[3], E Masenga[4] and C Packer[1], (1)University of Minnesota, (2)University of California, Davis, (3)Frankfurt Zoological Society, (4) Tanzania Wildlife Research Institute. *Spatial scale mediates carnivore coexistence in a 'landscape of fear'*.

11:10 AM OOS 32-10 Peacor, SD[1], PE Bourdeau[1] and KL Pangle[2], (1)Michigan State University, (2)Central Michigan University. *Anti-predatory response of Daphnia to an invasive predatory cladoceran and ensuing non-consumptive effects: Influence of seasonally changing environmental variables and predator density*.

OOS 33 - Implications of Climate Change for Ecosystem Processes in the Southwest U.S.

101C, Minneapolis Convention Center

Organized by: DM Browning, CAF Enquist

Moderator: CAF Enquist

Implications of Climate Change for Ecosystem Processes in the Southwest U.S.

8:00 AM OOS 33-1 Grimm, NB, Arizona State University. *Overview of the 2013 US National Climate Assessment, with special reference to impacts of climate change on ecosystems, hydrology, and urban areas of the Southwest*.

8:20 AM OOS 33-2 McCluney, KE and JL Sabo, Arizona State University. *Resistance and resilience of riverine systems in the southwestern U.S. to climate change*.

8:40 AM OOS 33-3 Allen, CD, Jemez Mountains Field Station. *Land cover change in the Southwest: Wildfire risk, drought-induced tree mortality, and the convergence of climate, land management, and disturbance trends in regional forests and woodlands*.

9:00 AM OOS 33-4 Rafferty, NE and JL Bronstein, University of Arizona. *The consequences of delayed flowering phenology in a sky-island plant, pointleaf manzanita*.

9:20 AM OOS 33-5 Roth, D[1], B Bartush[2] and A Roberson[3], (1)US Fish and Wildlife Service, (2)Gulf Coast Prairie Landscape Conservation Cooperative, (3)Desert Landscape Conservation Cooperative. *Building partnerships to deliver applied science to natural resource managers: Case studies from southwestern Landscape Conservation Cooperatives*.

9:40 AM Break

9:50 AM OOS 33-6 Jackson, ST, USGS / Southwest Climate Science Center. *Seeking Leopold's Quadrant: How do we foster research that addresses needs of resource-management decision-makers?*.

10:10 AM OOS 33-7 Garfin, G, Institute of the Environment. *Importance of information transfer and facilitating effective dialogue*.

10:30 AM OOS 33-8 Dhungana, N[1], J Moore-Kucera[1], NC Van Gestel[1], V Acosta-Martinez[2] and JC Zak[1], (1)Texas Tech University, (2)USDA-ARS. *Impact of extreme soil moisture changes and decreased daily temperature fluctuations on microbial community structure*.

10:50 AM OOS 33-9 Petrie, MD, SL Collins and ME Litvak, University of New Mexico. *Water-limited ecohydrology and carbon sink-source dynamics of desert grasslands and shrublands during dry years, Chihuahuan Desert, USA*.

11:10 AM OOS 33-10 Zelikova, TJ[1], E Pendall[1], DG Williams[1], DR LeCain[2], D Blumenthal[2] and JA Morgan[2], (1)University of Wyoming, (2)USDA-ARS. *Semi-arid grassland plant community responses to 7 years of experimental warming, elevated CO_2, and irrigation*.

OOS 34 - Intrapopulation Niche Variation: From Incidence to Relevance

101D, Minneapolis Convention Center

Organized by: TG Crawford

Moderator: TG Crawford

With a multifaceted suite of presentations from ecologists leading our field in intrapopulation niche variation research, this session will examine our understanding of the incidence and ecological significance of this ubiquitous, but often overlooked, natural phenomenon.

8:00 AM OOS 34-1 Araújo, MS[1] and R Costa-Pereira[2], (1)Universidade Estadual Paulista, (2)Universidade Federal do Mato Grosso do Sul. *Latitudinal gradients in individual specialization*.

8:20 AM OOS 34-2 Svanbäck, R, Uppsala University. *Ecological drivers of intrapopulation niche variation*.

8:40 AM OOS 34-3 Lemos-Costa, P[1], MM Pires[1], MS Araújo[2] and PR Guimarães Jr[1], (1)Universidade de São Paulo, (2) Universidade Estadual Paulista. *Using network models to reveal underlying processes leading to the organization of individual variation in resource use*.

9:00 AM OOS 34-4 Cloyed, CS[1], SD Newsome[2] and PK Eason[1], (1)University of Louisville, (2)University of Wyoming. *Populations and communities affect individual dietary patterns of bullfrogs, Lithobates catesbeianus*.

9:20 AM OOS 34-5 Newsome, SD[1], MT Tinker[2], JL Bodkin[3] and V Gill[4], (1)University of New Mexico, (2)Center for Ocean Health, (3)U.S. Geological Survey, (4)U.S. Fish and Wildlife Service. *The importance of context on the prevalence of individual diet specialization: the interaction between intra-specific competition and habitat*.

9:40 AM Break

9:50 AM OOS 34-6 Tinker, MT[1] and M Novak[2], (1)Center for Ocean Health, (2)Oregon State University. *Effects of time-averaged sampling on the inferred strength and temporal consistency of intraspecific diet specialization*.

10:10 AM OOS 34-7 Semmens, BX[1], BC Stock[1], E Ward[2], JW Moore[3], A Parnell[4], AL Jackson[5], DL Phillips[6], S Bearhop[7] and R Inger[8], (1)UC San Diego, (2)Northwest Fisheries Science Center, (3)Simon Fraser University, (4)University College, Dublin, (5)School of Natural Sciences, Trinity College Dublin, Dublin 2, Ireland, (6)U.S. Environmental Protection Agency, (7)University of Exeter Cornwall, (8)Environment and Sustainability Institute. *MixSIAR: A Bayesian*

stable isotope mixing model for characterizing intrapopulation niche variation.

10:30 AM OOS 34-8 Hopkins, JB III[1], P Koch[2], JM Ferguson[3] and ST Kalinowski[4], (1)University of Alberta, (2)University of California, (3)University of Florida, (4)Montana State University. *Use of stable isotopes to estimate the dietary responses of black bears to changing management regimes in Yosemite National Park*.

10:50 AM OOS 34-9 Crawford, TG, University of Georgia. *Individual specialization among generalist predators: Testing the assumptions of selective predator removal programs intended to enhance endangered prey populations*.

11:10 AM OOS 34-10 Clark, JS, M Kwit and K Zhu, Duke University. *Interactions at the individual scale control forest response to climate change*.

COS 114 - Biogeochemistry: Biogeo Patterns Along Environmental Gradients

101E, Minneapolis Convention Center

8:00 AM COS 114-1 Graham, EB[1], DM McKnight[2] and DR Nemergut[2], (1)University of Colorado at Boulder, (2)University of Colorado. *Parsing the influence of geography, vegetation, and bottom water dissolved organic matter fluorescence characteristics on sediment total- and methylmercury concentrations in the St. Louis River Estuary*.

8:20 AM COS 114-2 Weintraub, SR[1], AR Townsend[2] and CC Cleveland[3], (1)University of Colorado, (2)University of Colorado, Boulder, (3)University of Montana. *Multiple indices of nutrient limitation in a topographically dissected wet tropical forest*.

8:40 AM COS 114-3 Loken, LC[1], GE Small[2], JC Finlay[3], RW Sterner[3] and EH Stanley[1], (1)University of Wisconsin, (2)University of St Thomas, (3)University of Minnesota. *Sediment composition and nitrate availability control denitrification rates in the Saint Louis River Estuary*.

9:00 AM COS 114-4 Sadowsky, JJ, LTA Van Diepen and SD Frey, University of New Hampshire. *Chronic nitrogen addition increases carbohydrolase and oxidase production by ectomycorrhizal fungi*.

9:20 AM COS 114-5 Vourlitis, GL[1], FDA Lobo[2], S Lawrence[1], O Borges[2] and JDS Nogueira[2], (1)California State University, (2)Universidade Federal de Mato Grosso. *Variations in ecosystem C storage along a soil fertility gradient in a Brazilian savanna (Cerrado) in southern Mato Grosso*.

9:40 AM Break

9:50 AM COS 114-6 Steinberger, Y[1] and A Oren[2], (1)Bar Ilan University, (2)Bar-Ilan University. *A climate gradient approach elucidates mechanisms in the regulation of soil organic matter turnover in the Eastern Mediterranean*.

10:10 AM COS 114-7 Whelan, M and R Rhew, University of California at Berkeley. *Connecting C and S biogeochemical cycles: mineralization in soil and rainfall events*.

10:30 AM COS 114-8 Orr, CH, J Schwarz, L Moon-Neilsen, CJ Kelley and CK Keller, Washington State University. *Seasonality in flux of nitrogen to streams and atmosphere in a semi-arid and dryland agriculture dominated watershed*.

10:50 AM COS 114-9 Taylor, PG[1], G Asner[2], C Anderson[3], T Kennedy-Bowdoin[3], R Martin[2], J Mascaro[3], RL Chazdon[4], RJ Cole[5] and AR Townsend[6], (1)University of Colorado, (2)Carnegie Institution, (3)Carnegie Institution for Science, (4)University of Connecticut, (5)University of Colorado at Boulder, (6)University of Colorado, Boulder. *Mapping Tropical Forest Carbon on the Osa Peninsula, Costa Rica*.

11:10 AM COS 114-10 Hinckley, ELS[1], K Goodman[2], CL Roehm[1], CL Meier[1], S Elmendorf[3], MD SanClements[2], H Luo[1], E Ayres[1], J Parnell[1], AM Fox[2], CK Lunch[2], KS Krause[1], M Fitzgerald[1], DT Barnett[1], K Jones[1] and HW Loescher[1], (1) National Ecological Observatory Network (NEON, Inc.), (2) National Ecological Observatory Network, (3)NEON, Inc.. *A continental-scale strategy to sample carbon and nutrient dynamics within and across air, land, and water systems*.

COS 115 - Climate Change: Ranges And Phenology III

101F, Minneapolis Convention Center

8:00 AM COS 115-1 Ryan, SF and JJ Hellmann, University of Notre Dame. *Shifts in genetic and morphological clines of a butterfly hybrid zone may be a response to a 30 year period of climate change*.

8:20 AM COS 115-2 Ries, L[1], C Scott[2], TG Howard[3], T Schuster[1], R Reeves[4] and K Oberhauser[5], (1)University of Maryland, (2) NatureServe, (3)New York Natural Heritage Program, (4) Foxgrove Solutions, (5)University of Minnesota. *A mechanistic species distribution model for the monarch butterfly: clues to long distance migration and a platform for understanding large-scale insect distributions*.

8:40 AM COS 115-3 Parker, J and S Cook-Patton, Smithsonian Environmental Research Center. *Role of frost tolerance versus climate change in mangrove range expansion*.

9:00 AM COS 115-4 Lenz, A[1], G Hoch[1], Y Vitasse[1] and C Körner[2], (1)Institute of Botany, University of Basel, (2)University of Basel. *European deciduous trees exhibit similar safety margins against damage by spring freezing along elevational gradients*.

9:20 AM COS 115-5 Kandur, AS, University of Chicago. *A multiscale investigation of distributional limits in the mussel Myitlus Californianus*.

9:40 AM Break

9:50 AM COS 115-6 Sherwood, JA[1], DM Debinski[1], PC Caragea[1], R Fahrenholtz[1] and M Germino[2], (1)Iowa State University, (2)US Geological Survey. *Experimentally simulating climate change in a montane meadow system via reduced snowpack and passive warming: soil and plant responses*.

10:10 AM COS 115-7 Keymer, DP and R Lankau, University of Georgia. *Will parallel or mismatched migration of plants and microbial communities accelerate or impede range shifts and gene flow in response to climate change?*.

10:30 AM COS 115-8 Olson, BT[1], SK Windels[1], MR Fulton[2] and R Moen[3], (1)Voyageurs National Park, (2)Bemidji State University, (3)University of Minnesota - Duluth. *Characteristics of the thermal landscape for moose at Voyageurs National Park*.

10:50 AM COS 115-9 Gornish, ES, Florida State University. *Demographic effects of global change on range shifts in a perennial plant*.

COS 116 - Community Pattern And Dynamics V

101G, Minneapolis Convention Center

8:00 AM COS 116-1 Sullivan, L and WS Harpole, Iowa State University. *Nutrient influences on the life history states of an annual plant community*.

8:20 AM COS 116-2 Whippo, R and MI O'Connor, University of British Columbia. *Metacommunity dynamics of seagrass meadows: Linking local and regional diversity of invertebrate mesograzers*.

8:40 AM COS 116-3 Damschen, EI[1], NM Haddad[2], LA Brudvig[3], JL Orrock[4], DJ Levey[5] and JJ Tewksbury[6], (1)University of Wisconsin-Madison, (2)North Carolina State University, (3)Michigan State University, (4)University of Wisconsin - Madison, (5)National Science Foundation, (6)WWF International. *Long-term effects of connectivity on plant species richness*.

9:00 AM COS 116-4 D'Andrea, R and AM Ostling, University of Michigan. *Challenges in linking trait pattern to competition processes*.

9:20 AM COS 116-5 Miller, E[1], CA Klausmeier[1], E Litchman[1] and KF Edwards[2], (1)Michigan State University, (2)Kellogg Biological Station, Michigan State University. *Trait-based investigation of phytoplankton communities reveals predictable responses to seasonal environmental variation*.

9:40 AM Break

9:50 AM COS 116-6 Blackwood, CB[1], MW Kershner[1], KA Smemo[2], OJ Valverde-Barrantes[1] and LM Feinstein[1], (1)Kent State University, (2)The Holden Arboretum. *An ecotone effect on tree community composition: decoupling from the soil environment and increased spatial structure consistent with mass effects*.

10:10 AM COS 116-7 Spotswood, EN[1], JW Bartolome[1] and B Allen-Diaz[2], (1)University of California at Berkeley, (2)University of California. *Landscape hotspots of rapid change: Temporal dynamics are mediated by environmental filters and biological legacies in a California oak woodland.* .

10:30 AM COS 116-8 Clark, AT and D Tilman, University of Minnesota. *Convergence and divergence in old field succession: Are there predictable trends in long-term dynamics?*.

10:50 AM COS 116-9 Zhang, Y[1], HH Chen[1] and AR Taylor[2], (1)Lakehead University, (2)Natural Resources Canada. *Quantifying the impacts of climate and local conditions on plant richness in natural forests*.

11:10 AM COS 116-10 Strecker, AL, Portland State University. *Contemporary and historical comparisons of chemical and biological characteristics of lakes and ponds on the arid Columbia Plateau, Washington*.

COS 117 - Distributions And Range Limits

101H, Minneapolis Convention Center

8:00 AM COS 117-1 Telemeco, RS[1], EA Addis[2], AM Bronikowski[1], GA Cordero[1] and RL Polich[1], (1)Iowa State University, (2) Gonzaga University. *Here be dragons: Proximate mechanisms mediating temperature and biogeography in alligator lizards*.

8:20 AM COS 117-2 Bateman, BL[1], AM Pidgeon[2], J VanDerWal[3], P Heglund[4], HR Akcakaya[5], WE Thogmartin[6], TP Albright[7], SJ Vavrus[8], CH Flather[9] and VC Radeloff[1], (1)University of Wisconsin-Madison, (2)UW-Madison, (3)James Cook University, (4)US Fish and Wildlife Service, (5)Stony Brook University, (6)United States Geological Survey, (7)University of Nevada, Reno, (8)Center for Climatic Research, (9) USDA, Forest Service. *Assessing the dynamic nature of species distributions using short-term weather rather than long-term climate*.

8:40 AM COS 117-3 Peterson, BJ and WR Graves, Iowa State University. *Climate change and forest phylogeography: glacial refugia, postglacial colonization, and contemporary diversity of Dirca palustris*.

9:00 AM COS 117-4 Hobbs, FC, Indiana University. *Evaluating species distribution models with field experiments: A test-case with eastern hemlock (Tsuga canadensis)*.

9:20 AM COS 117-5 Chi, CH[1], CT Chang[2], CY Zheng[3], Z Yang[4] and TC Lin[1], (1)National Taiwan Normal University, (2)National Taiwan University, (3)Peking Unviersity, (4)Fujian Normal University. *Contrasting elevational patterns of forest structure across the Taiwan Strait in monsoon Asia: the potential role of typhoon disturbance*.

9:40 AM Break

9:50 AM COS 117-6 Lesser, MR and J Fridley, Syracuse University. *Growing here or there? Changes in red maple growth performance along complex environmental and topographic gradients*.

10:10 AM COS 117-7 Emery, NC, L Torres-Martinez and M Madden, Purdue University. *Decoupling the fundamental and realized components of niche conservatism*.

10:30 AM COS 117-8 Troia, MJ and KB Gido, Kansas State University. *Experimental assessment of individual performance currencies reveals mechanistic underpinnings of environmental niche models for prairie stream fishes*.

10:50 AM COS 117-9 Jarnevich, C[1], TR Sheffels[2], J Carter[3], N Young[4] and MD Sytsma[2], (1)U.S. Geological Survey, (2) Portland State University, (3)US Geological Survey, (4) Colorado State University. *Using a combined hydrologic network-climate model of the invasive nutria (Myocastor coypus) to understand current distributions and range expansion potential under climate change scenarios*.

11:10 AM COS 117-10 Case, BS, Lincoln University. *New Zealand's Nothofagus treelines: An analysis of treeline patterns and associations with the abiotic environment*.

COS 118 - Ecosystem Ecology

101I, Minneapolis Convention Center

8:00 AM COS 118-1 Mighell, KL and S Van Bael, Tulane University. *Leaf-cutting ants show species-specific hygienic behavior toward microfungi in their fungal gardens*.

8:20 AM COS 118-2 Mamet, SD and JF Johnstone, University of Saskatchewan. *Tree rings and ecosystem productivity across moisture gradients in the boreal forest of central Saskatchewan*.

8:40 AM COS 118-3 Türke, M[1], WW Weisser[1], E Knop[2], C Fischer[1] and S Boch[2], (1)Technische Universität München, (2) University of Bern. *Gastropodochory 2.0: Slugs and snails disperse plant seeds, ferns, mosses and lichens - recent findings of what began in 1934*.

9:00 AM COS 118-4 Stoy, PC[1], AV Johnson[1], N Brunsell[2] and T Quaife[3], (1)Montana State University, (2)University of Kansas, (3)University of Reading. *Scaling approaches for improving estimates of biogeochemical cycling in spatially heterogeneous ecosystems*.

9:20 AM COS 118-5 Coble, AA, AM Marcarelli and CJ Huckins, Michigan Technological University. *Nitrogen and phosphorus, but not carbon, are quickly taken up in streams: assessing variability in nutrient uptake across six Lake Superior tributaries*.

9:40 AM Break

9:50 AM COS 118-6 Torres, PJ and CM Pringle, University of Georgia. *Evidence for an ecosystem state change at the landscape scale: Loss of top-down control of stream macroconsumers over decades significantly alters stream ecosystem processes across the island of Puerto Rico*.

10:10 AM COS 118-7 Raudenbush, MD[1], RD Jackson[1], P Townsend[2], D Hoekman[3], J Dreyer[2] and C Gratton[2], (1)University of Wisconsin-Madison, (2)University of Wisconsin - Madison, (3)National Ecological Observatory Network (NEON, Inc.). *Aquatic insect deposition onto land promotes grass dominance in subarctic heathlands*.

10:30 AM COS 118-8 Gonzalez, A[1], GQ Romero[2] and DS Srivastava[1], (1)University of British Columbia, (2)State University of Campinas. *Scaling food web stoichiometry: A biogeographical comparison of habitat size constraints*.

10:50 AM COS 118-9 Lucas, JM[1], M Kaspari[2] and AD Kay[1], (1) University of St. Thomas, (2)University of Oklahoma. *The importance of social aggregation in connecting aboveground and belowground processes in a wet tropical forest*.

11:10 AM COS 118-10 Xia, J, University of Oklahoma. *Global Convergence of Phenological and Physiological Controlling on Annual Terrestrial Gross Carbon Dioxide Uptake*.

COS 119 - Ecosystem Function: Biodiversity II

101J, Minneapolis Convention Center

8:00 AM COS 119-1 Wood, SA[1], S Naeem[1], MA Bradford[2], KL McGuire[3], JA Gilbert[4], J Zhou[5], KL Tully[1] and C Palm[6], (1)Columbia University, (2)Yale University, (3)Barnard College, Columbia University, (4)University of Chicago, Argonne National Laboratories, (5)University of Oklahoma, (6)Earth Institute at Columbia University. *African Green Revolution interventions and the functional diversity of soil microbial communities*.

8:20 AM COS 119-2 Zavaleta, ES, AA Wolf and JM Villa, University of California Santa Cruz. *Realistic species losses have greater effects than randomized biodiversity treatments on ecosystem functioning: a meta-analysis*.

8:40 AM COS 119-3 Hulvey, KB[1], RJ Hobbs[1], RJ Standish[1], DB Lindenmayer[2], L Lach[1] and MP Perring[1], (1)University of Western Australia, (2)Australian National University. *Benefits of using tree-mixes rather than monocultures in carbon plantings*.

9:00 AM COS 119-4 Yadav, V, D Flynn and B Schmid, University of Zurich. *Plant and soil community history independently and interactively affect biodiversity–ecosystem functioning relationships*.

9:20 AM COS 119-5 Gherardi, LA and OE Sala, Arizona State University. *Effects of interannual precipitation variability on plant-species diversity in the Chihuahuan Desert*.

9:40 AM Break

9:50 AM COS 119-6 Genung, M[1], JA Schweitzer[1] and JK Bailey[2], (1)University of Tennessee - Knoxville, (2)University of Tennessee, Knoxville. *The role of evolutionary history in a changing climate: Combined effects of phylogenetic dissimilarity, carbon dioxide, and nitrogen*.

10:10 AM COS 119-7 Bugalho, MN[1], X Lecomte[2], MC Caldeira[1] and FC Rego[1], (1)Technical University of Lisbon, (2)Technical University of Lisbon, School of Agriculture. *Long-term effects of grazing on the plant diversity and ecosystem functioning of a Mediterranean grassland*.

10:30 AM COS 119-8 Williams, LJ[1], PB Reich[1], J Cavender-Bares[1], A Paquette[2] and C Messier[2], (1)University of Minnesota, (2) Université du Québec à Montréal. *Intraspecific variation in plant traits mediated by neighborhood composition and its effects on ecosystem properties in a tree functional diversity experiment*.

10:50 AM COS 119-9 Jacob, U, University of Hamburg. *Out of the shadow and into the light: The functional diversity of the Baltic Sea*.

11:10 AM COS 119-10 Crawford, KM[1] and JA Rudgers[2], (1) Washington University in St. Louis, (2)University of New Mexico. *Effects of plant species diversity and genetic diversity on belowground community structure and function*.

COS 120 - Evolution: Selection And Adaptation II

L100A, Minneapolis Convention Center

8:00 AM COS 120-1 Dalrymple, RL[1], J Buswell[2] and AT Moles[1], (1) University of New South Wales, (2)Ministry for the Environment. *Asexual species change just as often and just as fast as do sexual species when introduced to a new range*.

8:20 AM COS 120-2 Getman-Pickering, ZL[1], CP terHorst[2] and JA Lau[2], (1)Hampshire College, (2)Michigan State University. *Evolution of increased biomass does not result in increase competitive ability during invasion*.

8:40 AM COS 120-3 Chambers, ES[1], AD Kay[1], AC Krist[2], K Larkin[3], B Brown[3] and M Neiman[3], (1)University of St. Thomas, (2)University of Wyoming, (3)University of Iowa. *Potential for environmental phosphorus limitation on the maintenance of low-ploidy morphs of the New Zealand freshwater snail, Potamopyrgus antipodarum*.

9:00 AM COS 120-4 Dargent, F, ME Scott, AP Hendry and GF Fussmann, McGill University. *Repeated rapid evolution of increased resistance to parasites after experimental elimination of parasites in natural environments*.

9:20 AM COS 120-5 Thum, RA[1] and EA LaRue[2], (1)Robert B. Annis Water Resources Institute, (2)Purdue University. *Hybridization and the evolution of invasiveness in herbicide-managed lakes*.

9:40 AM Break

9:50 AM COS 120-6 Michel, MJ[1], H Chien[1], CE Beachum[1], MG Bennett[2] and JH Knouft[1], (1)Saint Louis University, (2) Southern Illinois University, Carbondale. *Climate change, hydrology and fish morphology: Predictions using phenotype-environment associations*.

10:10 AM COS 120-7 Lau, JA[1], DJ Weese[2] and CP terHorst[1], (1) Michigan State University, (2)St. Ambrose University. *Evolution during biological invasions: Exotic species experience stronger selection than natives*.

10:30 AM COS 120-8 Phillis, CC[1], JW Moore[1], MM Buoro[2], SA Hayes[3], JC Garza[4] and DE Pearse[5], (1)Simon Fraser University, (2)University of California, Berkeley, (3)NOAA Southwest Fisheries Science Center, (4)NOAA Fisheries, (5) NOAA National Marine Fisheries Service. *Rapid evolution of migratory life histories: From steelhead to trout in 25 generations*.

10:50 AM COS 120-9 Hart, EM[1] and NJ Gotelli[2], (1)University of British Columbia, (2)University of Vermont. *Climate change triggers morphological and life-history evolution in response to predators* .

11:10 AM COS 120-10 Tsao, K[1] and D Fish[2], (1)Colorado State University, (2)Yale School of Public Health and Yale School of Medicine. *Frequency-dependent selection on Borrelia burgdorferi is not supported by a mechanistic model and temporal infection data*.

COS 121 - Evolutionary Ecology

L100B, Minneapolis Convention Center

8:00 AM COS 121-1 Lind, EM, ET Borer, JB Vincent, G Weiblen and J Cavender-Bares, University of Minnesota. *Phylogenetic structure of an arthropod consumer community: specialization, turnover and response to plant diversity manipulation*.

8:20 AM COS 121-2 Ingram, T[1] and AK Salomon[2], (1)Harvard University, (2)Simon Fraser University. *Adaptive radiation in food webs and the reality of trophic levels on macroevolutionary timescales*.

8:40 AM COS 121-3 Simon, TN[1], AJ Binderup[1], MC Marshall[1], RD Bassar[2], SA Thomas[3], AS Flecker[4], JF Gilliam[5], DN Reznick[6] and CM Pringle[1], (1)University of Georgia, (2) USGS, (3)University of Nebraska-Lincoln, (4)Cornell University, (5)North Carolina State University, (6)University of California, Riverside. *Different trait-mediated effects of locally adapted guppies on stream ecosystems: In situ experimental evidence of top-down effects are reflected by ecosystem properties at landscape scales in Trinidad's Northern Range*.

9:00 AM COS 121-4 Des Roches, S, L Harmon and E Rosenblum, University of Idaho. *Ongoing natural selection on morphology of two rapidly evolving lizard species in White Sands*.

9:20 AM COS 121-5 Halámková, L, JA Schulte II and TA Langen, Clarkson University. *Ecological, evolutionary, and allometric patterns of sexual size dimorphism in turtles*.

9:40 AM Break

9:50 AM COS 121-6 Fitzpatrick, CR[1], M Preston[2], N Basiliko[1] and M Johnson[3], (1)University of Toronto at Mississauga, (2) Univrsity of Toronto, (3)University of Toronto. *Effects of herbivory, intraspecific genetic variation, and rapid evolution in plants on ecosystem processes*.

10:10 AM COS 121-7 terHorst, CP[1], JA Lau[1] and JT Lennon[2], (1) Michigan State University, (2)Indiana University. *The relative importance of rapid evolution in plant-soil feedbacks depends on ecological context*.

10:30 AM COS 121-8 Carlson, BE and T Langkilde, Penn State University. *Ecological causes and consequences of variation in tadpole behavior*.

10:50 AM COS 121-9 Jeyasingh, PD and P Roy Chowdhury, Oklahoma State University. *Exploring the ecological consequences of evolutionary change by resurrecting centuries-old Daphnia resting eggs*.

11:10 AM COS 121-10 Vazquez-Miranda, H and MJ Dufort, University of Minnesota. *Effects of competitors and time on the evolution of sexual dimorphism*.

COS 122 - Fire

L100C, Minneapolis Convention Center

8:00 AM COS 122-1 Campbell, KU and TO Crist, Miami University. *Ants as regulators of mite biodiversity in conservation grasslands*.

8:20 AM COS 122-2 Meunier, J[1], PM Brown[2] and WH Romme[1], (1)Colorado State University, (2)Rocky Mountain Tree-ring Research, Inc.. *Tree recruitment in relation to climate and disturbance in northern Mexico*.

8:40 AM COS 122-3 Lohse, KA[1], E Charaska[1], P Brooks[2] and J Chorover[2], (1)Idaho State University, (2)University of Arizona. *Influence of burn intensity and vegetation type on recovery of soil nitrogen cycling*.

9:00 AM COS 122-4 Eskelson, BNI[1], VJ Monleon[2] and DL Azuma[3], (1)Oregon State University, (2)USDA Forest Service, (3) USDA Forest Service Pacific Northwest Research Station. *Forest wildfire effects on coarse woody detritus in the US Pacific coast states*.

9:20 AM COS 122-5 Harvey, BJ[1], DC Donato[1], WH Romme[2] and MG Turner[1], (1)University of Wisconsin, (2)Colorado State University. *Field evidence of recent bark beetle outbreaks affecting fire severity in subalpine forests: the importance of time since outbreak and burning conditions*.

9:40 AM Break

9:50 AM COS 122-6 Higuera, PE[1], J Abatzoglou[1], JS Littell[2] and P Morgan[1], (1)University of Idaho, (2)USGS. *The changing nature of fire-climate relationships in the U.S. Northern Rocky Mountains, 1902-2008*.

10:10 AM COS 122-7 Young, AM[1], PE Higuera[1], PA Duffy[2] and FS Hu[3], (1)University of Idaho, (2)Neptune and Company, Inc., (3)University of Illinois, Urbana-Champaign. *Fire regime responses to climate and vegetation in Alaskan boreal-forest and tundra ecosystems: Using the historic record to predict the 21st century*.

10:30 AM COS 122-8 Badik, KJ and EA Leger, University of Nevada, Reno. *An extension of the Mutch hypothesis: does age influence relative flammability in fire adapted and non-fire adapted pines?*.

10:50 AM COS 122-9 Tepley, AJ[1] and TT Veblen[2], (1)University of Colorado, (2)University of Colorado-Boulder. *Three-hundred-year spatial reconstruction of fire patterns and fire effects in mixed-conifer/aspen forests of the San Juan Mountains, southwestern Colorado*.

11:10 AM COS 122-10 Miesel, JR[1], RK Kolka[2], PA Townsend[3] and WC Hockaday[4], (1)Michigan State University, (2) USDA Forest Service, (3)University of Wisconsin - Madi-

son, (4)Baylor University. *Fire severity effects on forest soil C and N in northern Minnesota, USA*.

COS 123 - Fisheries Management And Models

L100D, Minneapolis Convention Center

8:00 AM COS 123-1 Gephart, JA, ML Pace and P D'Odorico, University of Virginia. *Differential impacts of fisheries loss on national water footprints*.

8:20 AM COS 123-2 Lynch, AJ and WW Taylor, Michigan State University. *Designing a CHANS decision-support tool for harvest management of Great Lakes lake whitefish (Coregonus clupeaformis) in a changing climate*.

8:40 AM COS 123-3 Meek, MH[1], MR Baerwald[1], MR Stephens[1], A Goodbla[1], M Miller[1], KM Tomalty[1] and B May[2], (1)University of California-Davis, (2)University of California- Davis. *Conservation genomics of Central Valley, CA Chinook salmon*.

9:00 AM COS 123-4 Fraker, ME[1], EJ Anderson[2], R Brodnik[1], K DeVanna[1], L Carreon-Martinez[3], BJ Fryer[4], DD Heath[4], JM Reichert[5] and SA Ludsin[6], (1)Ohio State University, (2)NOAA-GLERL, (3)UT-Brownsville, (4)University of Windsor, (5) ORISE, (6)The Ohio State University. *Particle backtracking as a tool to improve stock discrimination capabilities in mixed populations: An example with Lake Erie yellow perch*.

9:20 AM COS 123-5 Fovargue, R[1], PR Armsworth[2] and M Bode[3], (1)University of Tennessee Knoxville, (2)University of Tennessee, (3)University of Melbourne. *Size and spacing rules for marine protected areas: Useful for management?*.

9:40 AM Break

9:50 AM COS 123-6 Neeson, TM[1], PB McIntyre[1], S Januchowski-Hartley[1], MW Diebel[2], PJ Doran[3] and J O'Hanley[4], (1)University of Wisconsin, (2)Wisconsin DNR Bureau of Science Services, (3)The Nature Conservancy, (4)University of Kent. *Prioritizing in-stream barrier removal in Great Lakes tributaries*.

10:10 AM COS 123-7 Gurdak, D[1], C Arantes[2], L Castello[3], H Queiroz[4], MA Villacorta Correa[5] and D Stewart[1], (1)SUNY College for Environmental Science & Forestry, (2)Texas A&M, College of Agriculture & Life Sciences, (3)Woods Hole Research Center, (4)Mamirauá Institute for Sustainable Development, (5)Universidade Federal do Amazonas, Faculdade de Ciências Agrárias. *Effect of Annual Flood and Drought Cycles on Arapaima Growth in the Brazilian Amazon*.

10:30 AM COS 123-8 Venturelli, PA and F Cabrini-Araujo, University of Minnesota. *New and improved degree-days models for predicting when fish eggs will hatch in the field*.

10:50 AM COS 123-9 Valencia, SR, C White and BE Kendall, University of California Santa Barbara. *Balancing Conservation and Harvest Goals: An optimal policy for rebuilding fish populations while maximizing fishery yields*.

11:10 AM COS 123-10 Aalto, EA and ML Baskett, University of California, Davis. *Effects of species interactions on pre- and post-harvest size distribution in size-selective fisheries*.

COS 124 - Invasion: Invasibility, Stability, And Diversity

L100E, Minneapolis Convention Center

8:00 AM COS 124-1 Li, S[1], T Guo[2], MW Cadotte[1], Y Chen[2], Z Hua[2], J Kuang[2], Y Zeng[2], Y Song[2], W Shu[2] and J Li[2], (1) University of Toronto - Scarborough, (2)Sun Yat-sen University. *Phylogenetic relatedness and invader colonization: An experimental approach of Darwin's naturalization conundrum*.

8:20 AM COS 124-2 Lodge, AG, AM Roth, TJS Whitfeld and PB Reich, University of Minnesota. *Propagule pressure is an important predictor of common buckthorn abundance, regardless of disturbance history: Evidence from Minnesota's deciduous forests*.

8:40 AM COS 124-3 Liao, H[1] and S Peng[2], (1)Sun Yat-sen University, (2)Sun Yat-Sen University. *Native allelopathic plants: the potentially overlooked contributors to invasion resistance*.

9:00 AM COS 124-4 Koerner, SE[1], ML Avolio[2], DL Hoover[1] and MD Smith[1], (1)Colorado State University, (2)University of Utah. *Inter- not intra-annual precipitation variability determines invasion of a mesic grassland*.

9:20 AM COS 124-5 Catford, JA[1], WK Morris[2], PA Vesk[2] and BJ Downes[2], (1)The Australian National University, (2)The University of Melbourne. *Changing disturbance regimes drives riparian plant invasion: evidence from trait-based species responses to flow regulation*.

9:40 AM Break

9:50 AM COS 124-6 Brainard, AS and KL Schulz, State University of New York College of Environmental Science and Forestry. *The effect of propagule pressure and disturbance on non-native abundance: A case study in a kettle lake district*.

10:10 AM COS 124-7 Marushia, RG[1] and MW Cadotte[2], (1)University of Toronto at Scarborough, (2)University of Toronto - Scarborough. *Are stressful ecosystems less invasible? Global plant invasion patterns, research gaps and consequences for conservation*.

10:30 AM COS 124-8 LeRoy, J, R Smiechowski and LM Johnson, Chatham University. *Species richness and invasive species presence in interior and exterior plots in a western Pennsylvania deciduous forest*.

10:50 AM COS 124-9 Larios, L[1] and KN Suding[2], (1)University of California Berkeley, (2)University of California at Berkeley. *Unraveling when elevated nitrogen conditions will result in plant invasions*.

11:10 AM COS 124-10 Satterlee, SR, IJ Renne and TP Diggins, Youngstown State University. *The role of native diversity and successional processes on community invasibility in riparian primary forest*.

COS 125 - Microbial Ecology II

L100F, Minneapolis Convention Center

8:00 AM COS 125-1 Song, Z and J Schilling, University of Minnesota. *Temperature and endophytes controlled competition of wood-degrading fungi and patterns of decay*.

8:20 AM COS 125-2 MacRae-Crerar, A[1], P Liancourt[1], LA Spence[1],

B Boldgiv[2], DS Song[1], JA Gilbert[3], SM Owens[3], J Hampton-Marcell[4], PS Petraitis[1] and BB Casper[1], (1)University of Pennsylvania, (2)National University of Mongolia, (3)University of Chicago and Argonne National Laboratory, (4) Argonne National Laboratory. *How do warming and grazing affect bacterial diversity in the Mongolian steppe?*.

8:40 AM COS 125-3 Menning, S, A Magnetta and AC Yannarell, University of Illinois at Urbana-Champaign. *Shrub encroachment on hill prairies alters soil microbial community composition*.

9:00 AM COS 125-4 Evans, JM[1], JA Krumins[1] and FJ Gallagher[2], (1)Montclair State University, (2)Rutgers University. *The relationship between metal contamination, ectomycorrhizal diversity and plant biomass in an urban brownfield*.

9:20 AM COS 125-5 Magnetta, A[1], JO Dawson[2] and AC Yannarell[2], (1)University of Illinois, (2)University of Illinois at Urbana-Champaign. *Alder influences microbial community composition within its rhizosphere*.

9:40 AM Break

9:50 AM COS 125-6 Berthrong, ST, DH Buckley and LE Drinkwater, Cornell University. *Long term changes in organic matter content drive microbial community structure in soils*.

10:10 AM COS 125-7 Walke, JB, MH Becker, SC Loftus, LL House, G Cormier, RV Jensen and LK Belden, Virginia Tech. *Within and between pond variation in symbiotic microbial assemblages on the skin of bullfrogs and eastern newts*.

10:30 AM COS 125-8 Paver, SF and A Kent, University of Illinois at Urbana-Champaign. *Temporal patterns in aquatic bacterial communities: what do phytoplankton have to do with it?*.

10:50 AM COS 125-9 Langenheder, S and AJ Szekely, Uppsala University. *Effect of drought-rewetting cycles on the diversity and functioning of bacterial metacommunities*.

11:10 AM COS 125-10 Hughey, MC, MC Swartwout, MH Becker, JB Walke and LK Belden, Virginia Tech. *Patterns of disease and microbial diversity in an amphibian (Pseudacris crucifer) from the eastern United States*.

COS 126 - Pollination

L100G, Minneapolis Convention Center

8:00 AM COS 126-1 Davis, SE and RL Malfi, University of Virginia. *Gravediggers: Parasitoid flies manipulate bumblebee host behavior and may select for host body size*.

8:20 AM COS 126-2 Song, DS[1], P Liancourt[1], B Boldgiv[2], A Lkhagva[3], LA Spence[1], PS Petraitis[1] and BB Casper[1], (1)University of Pennsylvania, (2)National University of Mongolia, (3)University of Wyoming. *Community-level pollination: Biotic and abiotic determinants and temporal variation*.

8:40 AM COS 126-3 Gaines, HR and C Gratton, University of Wisconsin - Madison. *Biotic and non-biotic factors contribute to cranberry pollination*.

9:00 AM COS 126-4 Haber, AI[1], CM De Moraes[2], MC Mescher[3] and DE Carr[1], (1)University of Virginia, (2)Pennsylvania State University, (3)The Pennsylvania State University. *Effects of inbreeding on floral volatiles in Mimulus guttatus*.

9:20 AM COS 126-5 Young, HJ and E Blair, Middlebury College. *Landscape features affect bumblebee visitation to flowers in old fields and seed set in blueberries*.

9:40 AM Break

9:50 AM COS 126-6 Parker, A, D Merritt and JD Thomson, University of Toronto. *It's complicated: subtle characteristics of communities affect the nature of plant-pollinator relationships*.

10:10 AM COS 126-7 Kephart, S[1], A Kotaich[1], M Sultany[2], J Peters[3] and B Ezray[1], (1)Willamette University, (2)Northwest Academy, (3)Dow AgroSciences. *Spatio-temporal variation in interacting plant-pollinator populations: the role of phenology, species traits, and geography in sympatric populations of spring-flowering Camassia*.

10:30 AM COS 126-8 Briggs, HM[1] and BJ Brosi[2], (1)University of California, Santa Cruz, (2)Emory University. *Trait driven species-specific responses to pollinator losses*.

10:50 AM COS 126-9 Lybbert, AH and SB St. Clair, Brigham Young University. *Post-fire plant reproductive success of generalist vs. specialist pollinated native perennials in the Mojave Desert, USA*.

11:10 AM COS 126-10 Ogilvie, JE[1], JD Thomson[1] and TT Makino[2], (1)University of Toronto, (2)Yamagata University. *Individual bumble bees are locavores in a Rocky Mountain meadow*.

COS 127 - Population Dynamics: Modeling

L100H, Minneapolis Convention Center

8:00 AM COS 127-1 Davison, RJ[1], CL Boggs[2] and A Baudisch[1], (1) Max Planck Institute for Demographic Research, (2)University of South Carolina. *Resource allocation and reproductive tradeoffs as endogenous drivers of senescence*.

8:20 AM COS 127-2 Eager, EA[1], AM Jarosz[2], AD Baines[3] and R Rebarber[4], (1)University of Wisconsin - La Crosse, (2)Michigan State University, (3)University of Wisconsin-LaCrosse, (4)University of Nebraska-Lincoln. *Modeling and analysis of a density-dependent structured population model for American chestnut (Castanea dentata)*.

8:40 AM COS 127-3 Chu, C and PB Adler, Utah State University. *When should plant population models include age structure?*.

9:00 AM COS 127-4 Chung, YA and JA Rudgers, University of New Mexico. *Effects of vertically-transmitted fungal symbionts on rare versus common grass host population dynamics*.

9:20 AM COS 127-5 Klauschies, T[1], RM Coutinho[1], DA Vasseur[2] and U Gaedke[1], (1)University of Potsdam, (2)Yale University. *Phenotypic Plasticity maintains biodiversity*.

9:40 AM Break

9:50 AM COS 127-6 Haridas, CV[1], EA Eager[2], R Rebarber[3] and B Tenhumberg[3], (1)University of Nebraska, Lincoln, (2)University of Wisconsin - La Crosse, (3)University of Nebraska-Lincoln. *Frequency-dependence and elasticity of population growth rate: Implications for two-sex models*.

10:10 AM COS 127-7 Kramer, AM[1], MM Lyons[2], FC Dobbs[2] and JM Drake[1], (1)University of Georgia, (2)Old Dominion University. *Tiny islands: Colonization and extinction of microbial species on marine aggregates*.

10:30 AM COS 127-8 Tye, MR[1], P Quintana-Ascencio[1], ES Menges[2], CW Weekley[2] and R Salguero[3], (1)University of Central Florida, (2)Archbold Biological Station, (3)Max Planck Institute for Demographic Research. *Modeling interactions*

between environmental and demographic factors in a rare endemic plant.

10:50 AM COS 127-9 Purucker, T and M Cyterski, U.S. Environmental Protection Agency. *Nonstationary Time Series Analysis of Surface Water Microbial Pathogen Population Dynamics Using Cointegration Methods*.

11:10 AM COS 127-10 Flockhart, DTT[1], JB Pichancourt[2], TG Martin[2] and DR Norris[1], (1)University of Guelph, (2)CSIRO Ecosystem Sciences. *Using population dynamics of migratory monarch butterflies to inform conservation planning*.

COS 128 - Predation And Predator-Prey Interactions II

L100I, Minneapolis Convention Center

8:00 AM COS 128-1 Jones, AW and DM Post, Yale University. *Can consumer effectiveness limit the diversifying effect of intraspecific competition?*.

8:20 AM COS 128-2 Yamamichi, M[1], T Yoshida[2] and A Sasaki[3], (1)Cornell University, (2)University of Tokyo, (3)Graduate University for Advanced Studies. *Introduction timing of genetic diversity in eco-evolutionary dynamics*.

8:40 AM COS 128-3 Johnson, CA and P Amarasekare, University of California, Los Angeles. *Tension between positive and negative feedback determines the dynamics and long-term persistence of consumer-resource interactions*.

9:00 AM COS 128-4 Verissimo, LM, JK Bump, MJ Falkowski and BG Bergman, Michigan Technological University. *Do wolf kill-sites reflect prey accessibility or abundance in forested landscapes? A LiDAR based assessment of forest and topographic structure at moose mortality sites on Isle Royale National Park*.

9:20 AM COS 128-5 Schneider, SO, R Steeves, S Newmaster and AS MacDougall, University of Guelph. *Interacting Prey and Predator Driven Trophic Instability in a Prairie Grassland*.

9:40 AM Break

9:50 AM COS 128-6 Meadows, AJ, JP Owen and WE Snyder, Washington State University. *Lethal and non-lethal effects of predators on Culex mosquitoes*.

10:10 AM COS 128-7 Prescott, KK and DA Andow, University of Minnesota. *Is intra-guild predation common?*.

10:30 AM COS 128-8 Luttbeg, B[1], JI Hammond[2], T Brodin[3] and A Sih[4], (1)Oklahoma State University, (2)University of New Mexico, (3)Umeå University, (4)UC Davis. *Prey and predator space use: the effects of predator identity and multiple predators*.

10:50 AM COS 128-9 McCoy, M[1], JR Vonesh[2] and BM Bolker[3], (1)East Carolina University, (2)Virginia Commonwealth University, (3)McMaster University. *Predicting effects of predator diversity on shared prey*.

11:10 AM COS 128-10 Forde, AJ[1], IC Feller[2], DS Gruner[1] and JD Parker[3], (1)University of Maryland, (2)Smithsonian Environmental Research Center, (3)Smithsonian Institution. *Structural refuges and connectivity alter herbivory, prey abundance and impacts of top-predators in mangrove canopies*.

COS 129 - Riparian And Floodplain Habitats

L100J, Minneapolis Convention Center

8:00 AM COS 129-1 Young, SL, University of Nebraska-Lincoln. *First-year growth and development of common reed (Phragmites australis) in a long-term common garden study*.

8:20 AM COS 129-2 De Jager, NR[1], MA Thomsen[2], EA Strauss[2], BJ Cogger[2] and W Swanson[2], (1)United States Geological Survey, (2)University of Wisconsin - La Crosse. *Interactive effects of flooding and deer (Odocoileus virginianus) browsing on floodplain vegetation and nitrogen dynamics*.

8:40 AM COS 129-3 Dixon, MD[1], CJ Boever[1], VL Albers[1], EC Balla[1], JR Brown[1], CL Merkord[1], ML Scott[1] and WC Johnson[2], (1)University of South Dakota, (2)South Dakota State University. *Effects of a large infrequent disturbance on a regulated river: Impacts of the 2011 flood on riparian forests on the Missouri River, USA*.

9:00 AM COS 129-4 (PrettyPaint)-Small, VA[1], TJ Stohlgren[2], KG Beck[1], CS Brown[1], P Evangelista[1] and KA Sherman[1], (1) Colorado State University, (2)US Geological Survey, Fort Collins Science Center and Natural Resource Ecology Laboratory. *Climate Change And Invasion: Does A Loss Of Ecological Integrity Affect The Cultural Expression Of An Indigenous Culture?*.

9:20 AM COS 129-5 Collins, SF and CV Baxter, Idaho State University. *Heterogeneity of riparian habitats mediates responses of terrestrial arthropods to a subsidy of Pacific salmon carcasses*.

9:40 AM Break

9:50 AM COS 129-6 Jacobo, JM[1] and J Boudell[2], (1)University Of Alabama - Birmingham, (2)Clayton State University. *Soil properties of urban streams along a restoration gradient in the Southern Piedmont*.

10:10 AM COS 129-7 Merkord, CL[1], MD Dixon[1], DL Swanson[1] and WC Johnson[2], (1)University of South Dakota, (2)South Dakota State University. *Projected changes in land cover, age class, and species composition of forests on non-channelized segments of the Missouri River*.

10:30 AM COS 129-8 Britson, AJ[1], DH Wardrop[2] and EW Boyer[1], (1)The Pennsylvania State University, (2)Pennsylvania State University. *Determining a measure of biogeochemical structure relevant to denitrification in six central Pennsylvania wetland*.

10:50 AM COS 129-9 Goslin, M, University of Oregon. *Modeling the environmental drivers of distribution for a river ecosystem engineer, Carex nudata*.

11:10 AM COS 129-10 Webster, AJ[1], ML Cadenasso[1] and STA Pickett[2], (1)University of California, Davis, (2)Cary Institute of Ecosystem Studies. *Spatial and temporal heterogeneity of inorganic soil nitrogen in a savanna: the role of riparian zone structure, hydrologic seasonality, and parent material*.

8:30 am-10 am

ESA Governing Board Meeting

Red Wing, Hilton Minneapolis

8:30 am-10:30 am

PS 71 - Agriculture

Exhibit Hall B, Minneapolis Convention Center

PS 71-1 Anwar, U[1], LA Schulte-Moore[1], RK Kolka[2] and MJ Helmers[1], (1)Iowa State University, (2)USDA Forest Service. *Impacts of alternative biomass cropping systems and landscape position on soil moisture dynamics*.

PS 71-2 O'Neill, SL, MP Daugherty, AR Zeilinger and T Pinckard, University of California, Riverside. *Striking the right balance: Can insecticidal control of a vineyard insect pest, Homalodisca vitripennis, be optimized to conserve predatory insects?*.

PS 71-3 Butler, EE and PJ Huybers, Harvard University. *Spatial Variation of US Maize Developmental Sensitivity*.

PS 71-4 Bloszies, S[1], J Grossman[2], J Heitman[2], SC Reberg-Horton[1], S Seehaver[2] and S Hu[1], (1)North Carolina State University, (2)NCSU. *Managing for soil organic matter in low input agroecosystems with cover crops and reduced tillage*.

PS 71-5 Ranelli, LB, RS Potter, AE Toll and MA Kuchenreuther, University of Minnesota, Morris. *Development of sustainable, native grass-based bioenergy production systems in the prairie region of Minnesota: Insect response to plant community type and management*.

PS 71-6 Jeselyn, CA[1], S Silander[2], S Padrón[3] and N Lamp[2], (1) Universidad Metropolitana, (2)U. S. Fish & Wildlife Service, (3)U.S. Fish & Wildlife Service. *Establishment of a demonstrative planting site in the Laguna Cartagena Wildlife Refuge for habitat restoration efforts through the Guánica Bay/Río Loco Watershed Partnership in Puerto Rico*.

PS 71-7 Ren, W[1], H Tian[1], J Yang[1], B Tao[1], Q Yang[1], C Lu[1], B Zhang[1], S Pan[1], S Lohrenz[2], WJ Cai[3] and C Hopkinson[3], (1)Auburn University, (2)University of Massachusetts-Dartmouth, (3)University of Georgia. *The dynamics of agricultural production and riverine carbon and nitrogen fluxes in the Mississippi River Basin as influenced by climate change and land use: 1901-2010*.

PS 71-8 Jaiswal, D[1], T Hudiberg[1], M Hartman[2], WJ Parton[2], EH DeLucia[3] and SP Long[3], (1)University of Illinois, (2) Colorado State University, (3)University of Illinois at Urbana-Champaign. *Development and evaluation of a crop specific soil bio-geochemistry model (CropCent) to assess greenhouse gas benefits of growing miscanthus as a second-generation biofuel feedstock*.

PS 72 - Aquatic Ecology

Exhibit Hall B, Minneapolis Convention Center

PS 72-9 Whitaker, EA[1], SK Thompson[2] and JB Cotner[1], (1)University of Minnesota - Twin Cities, (2)University of Minnesota- Twin Cities. *Characterizing water-extractable organic carbon in grassland soils*.

PS 72-10 Matthews, MC[1], EJ Muturi[2], BF Allan[1] and CE Cáceres[3], (1) University of Illinois, (2)Illinois Natural History Survey, (3) University of Illinois at Urbana-Champaign. *Community ecology of container-dwelling invertebrates*.

PS 72-11 Manning, NF, JM Bossenbroek and CM Mayer, University of Toledo. *Connecting fish to the landscape: Land use and climate change effects on yellow perch growth in western Lake Erie*.

PS 72-12 McIntosh, LM, J Sahu Teli and A Fierro, University of Texas at Brownsville. *Decomposition, riparian vegetation and macroinvertebrate community in re-flooded resacas: Looking at potential indicators of system stability*.

PS 72-13 Akins, L and LG Leff, Kent State University. *Effects of Microcystis on heterocyst initiation in Anabaena*.

PS 72-14 Casatti, L[1], FB Teresa[2], GL Brejão[1], JO Zeni[1] and MD Ribeiro[1], (1)Sao Paulo State University, (2)Goiás State University. *Environmental determinants of functional diversity of stream fish assemblages in agroecosystems*.

PS 72-15 Voorhies, KJ[1], SM Kidwell[1] and S Henkel[2], (1)University of Chicago, (2)Oregon State University. *Historical ecological baselines from dead marine molluscs reveal natural and human-related changes in benthic fauna*.

PS 72-16 Thames, JE, LA Berryman, SS Ganguly, BJ Austin, ME Ausbrooks, SG Beeler, DJ Ferguson, KL Blanzy, KD Johnson, ZM Lane, JT McCormick, T Qiu, JA VanWinkle and AV Brown, University of Arkansas. *Invertebrate colonization of live and dead oak (Quercus rubra) and pine (Pinus taeda) logs in an Ozark stream*.

PS 72-17 Scott, CE, DA Jackson, AP Zimmerman and H Cyr, University of Toronto. *Lake benthic algal extracellular material and the influence of the environment*.

PS 72-18 Gerrish, GA[1], CS Belby[2] and CR Perez[3], (1)University of Wisconsin - La Crosse, (2)University of Wisconsin La Crosse, (3)UW- La Crosse (Biology). *Measuring ecosystem recovery to disturbance using zooplankton egg banks*.

PS 72-19 Cheever, BM, PC Frost, D Braun and MA Xenopoulos, Trent University. *Phosphorus availability amplifies negative effects of silver nanoparticles on lake periphyton*.

PS 72-20 Ferrareze, M[1], DA Jackson[2] and L Casatti[3], (1)UNESP, (2) University of Toronto, (3)Sao Paulo State University. *Spatial processes affect community concordance in a Neotropical reservoir*.

PS 72-21 Morgan, BC, F de Szalay, TA Baumiller and OJ Rocha, Kent State University. *Testing effects of detritus input and export on macroinvertebrate communities in tropical headwater streams*.

PS 72-22 Agan, JW and CH Kodani, Clayton State University. *The effects of impervious surface on the health of the stream*.

PS 72-23 Ng, CM and ME Power, University of California, Berkeley. *The importance of riverine algae in organic matter export to the Eel River estuary Northern California*.

PS 72-24 Zúñiga-Céspedes, B[1], MC Zúñiga[2] and J Chará[3], (1) Southern Illinois University at Carbondale, (2)Universidad del Valle, (3)Centro para la Investigación en Sistemas Sostenibles de Producción Agropecuaria, CIPAV. *The role of invertebrates on leaf litter breakdown at two altitudinal levels in neotropical streams*.

8:30 am-10:30 am

PS 73 - Arid And Semi-Arid Systems

Exhibit Hall B, Minneapolis Convention Center

PS 73-25 Spirito, F, Instituto Argentino de Investigaciones de las Zonas Áridas, CCT-CONICET Mendoza. *Boundary detection in an arid grazing landscape from the perspective of plants and small mammals in the Monte central Desert, Argentina*.

PS 73-26 Fallon, B and J Cavender-Bares, University of Minnesota. *Functional differentiation among seven ecologically-stratified oak (Quercus) species in southeastern Arizona*.

PS 73-27 Squeo, FA[1], M Rivera[1], R Aravena[2] and B Warner[2], (1) Universidad de La Serena, (2)University of Waterloo. *Long term productivity and diversity in high altitude peatlands of Northern Chile*.

PS 73-28 Kaptue, AT, NP Hanan, L Prihodko, N Giree and M Sigdel, South Dakota State University. *Socio-Ecohydrological interactions in Sahelian watersheds*.

PS 73-29 Gutierrez, JR[1], DA Kelt[2] and PL Meserve[3], (1)Instituto de Ecología y Biodiversidad, Universidad de La Serena, (2) University of California, (3)Northern Illinois University. *What are the individual effects of small mammals vs. lagomorphs on a semiarid ephemeral plant community?*.

PS 74 - Behavior

Exhibit Hall B, Minneapolis Convention Center

PS 74-30 Chaby, LE and VA Braithwaite, Pennsylvania State University. *Are there sex differences in the way fish learn about their environment?*.

PS 74-31 Bonilla, NO, University of Michigan. *Detection of sap accumulation in the paper birch (Betula papyrifera) by the Yellow-Bellied Sapsucker (Sphyrapicus varius)*.

PS 74-32 Chapin, KJ, University of California, Los Angeles. *Ecology of the cave-surface behavioral syndrome of Puerto Rican whip spiders*.

PS 74-33 Patterson, RR, M Donald, O Ragni and TEX Miller, Rice University. *Elucidating the effects of nectar carbohydrate composition on ant behavior*.

PS 74-34 Galeano, SP and KE Harms, Louisiana State University. *How phenotypic variation in the polymorphic frog Oophaga pumilio influences agonistic behaviors mediating the strength of species interactions?*.

PS 74-35 Baines, C and L Rowe, University of Toronto. *Interactive effects of predation and competition on dispersal rates*.

PS 74-36 Lambert, MS, J Varner and MD Dearing, University of Utah. *Molecular Evidence for Pika Diet Composition in the Columbia River Gorge*.

PS 74-37 Keller, JS, E Rohleder, HC Juntunen and T Polnaszek, University of Minnesota. *Observational learning of foraging strategies in Blue Jays*.

PS 74-38 Henderson, CM[1], NPD Pertiwi[2], NI Hidayat[3] and AP Barber[4], (1)Brown University, (2)Udayana University & Indonesian Biodiversity Research Center, (3)Conservation International, (4)University of California Los Angeles. *Redefining dispersal boundaries of Siganus fuscescens in the Coral Triangle using genetic methods*.

PS 74-39 Sanchez, K, S McKee, T Shepherd and CM Stracey, Westminster College. *Singing on the nest: The occurrence of a paradoxical behavior*.

PS 75 - Biodiversity

Exhibit Hall B, Minneapolis Convention Center

PS 75-40 Silva, RR[1], I Del Toro[2], CRF Brandão[3] and A Ellison[4], (1) Museu de Zoologia da Universidade de São Paulo, (2) University of Massachusetts at Amherst, (3)Museu de Zoologia da Universidade de Sao Paulo, (4)Harvard University. *Ant functional diversity in temperate-zone forests: a comparison with Neotropical ants*.

PS 75-41 Lefcheck, J[1], VAG Bastazini[2], FW Halliday[3], HK Burgess[4], C Robinson[5], RL Sewell Nesteruk[4], CJ Maranto[4] and J Parrish[4], (1)Virginia Institute of Marine Science, (2)Universidade Federal do Rio Grande do Sul, (3)University of North Carolina, (4)University of Washington, (5)University of California, Los Angeles. *BioDiverse Perspectives: Blogging to foster communication among graduate students*.

PS 75-42 Yeboah, D[1] and HYH Chen[2], (1)Lakehead university, (2) Lakehead University. *Diversity response to disturbance in terrestrial landscapes*.

PS 75-43 Dobson, LL, University of California, Irvine. *Does plant productivity really influence the richness of bird assemblages? A re-appraisal of the energy-richness hypothesis for North America*.

PS 75-44 Concilio, AL[1], TR Seastedt[2] and JB Nippert[3], (1)University of Colorado, (2)University of Colorado at Boulder, (3)Kansas State University. *Global change effects on the spread of cool-season exotic plants in the Colorado Front Range*.

PS 75-45 Pardo, I[1], C Roquet[2], P Errea[1], J Olesen[3], D Gomez[1] and MB Garcia[1], (1)Pyrenean Institute of Ecology - CSIC, (2) University of Grenoble - Laboratoire d'Écologie Alpine (CNRS), (3)University of Aarhus. *Prioritizing areas for biodiversity conservation at fine scale: Beyond the number of species*.

PS 75-46 Yi, X and A Dean, University of Minnesota. *Temporality of species coexistence and bounded population size*.

PS 75-47 Whitman, M and SE Russo, University of Nebraska-Lincoln. *Tropical Rhododendron diversity and leaf traits along elevation gradients*.

PS 75-48 Gray, M[1], NC Harris[1] and RR Garshong[2], (1)University of California, Berkeley, (2)University of Ghana. *Variation of small mammal richness with land use: A case study from Digya NP, West Africa*.

PS 76 - Biogeochemistry

Exhibit Hall B, Minneapolis Convention Center

PS 76-50 Yamamoto, K[1], KC Hackley[2], WR Kelly[2], SV Panno[2], Y Sekiguchi[1], RA Sanford[2], WT Liu[2], Y Kamagata[1] and H Tamaki[1], (1)National Institute of Advanced Industrial Science and Technology (AIST), (2)University of Illinois at Urbana-Champaign. *Correlating metabolically active microbial communities with geochemistry in an unexplored terrestrial subsurface ecosystem, glacial deposit*.

PS 76-51 Wang, H, M Ho and C Richardson, Duke University. *Heavy precipitation triggers pulse N_2O emission with high N_2O/N_2 ratios from drained and/or climatic drought-stressed peatlands*.

PS 76-52 Lu, X[1], J Mo[1] and FS Gilliam[2], (1)Chinese Academy of Sciences, (2)Marshall University. *Nitrogen deposition contributes to soil acidification in tropical ecosystems*.

PS 76-53 Zhang, L[1], DC Bowman[2], KO Burkey[2], X Bian[3], W Zhang[4] and S Hu[2], (1)Nanjing Agricutural University/North Carolina State University, (2)North Carolina State University, (3)Nanjing Agricultural University, (4)Chinese Academy of Agricultural Sciences. *Nitrogen species mediates elevated CO_2 effects on plant N utilization*.

PS 76-54 Castillo, AC[1], R Sanders-DeMott[2] and PH Templer[2], (1) Columbia University, (2)Boston University. *Nutrient dynamics in a warmer world: Nitrogen uptake by trees*.

PS 76-55 Bell, C[1], Y Carrillo[2], CM Boot[1], EG Pendall[3] and MD Wallenstein[1], (1)Colorado State University, (2)University of Sydney, (3)University of Wyoming. *Plant species-specific stoichiometry of soil nutrients and extracellular enzymes in a semi-arid grassland ecosystem*.

PS 76-56 Sullivan, TS[1], CW Schadt[1], S Smith[2], N Basta[3] and P Jardine[4], (1)Oak Ridge National Laboratory, (2)Cornell University, (3)The Ohio State University, (4)University of Tennessee. *Soil chemical and microbiological properties mapping at an abandoned small-arms firing range in Oak Ridge, TN*.

PS 76-57 Tremblay, HA, Carleton College. *Soil nitrate production in lawns and adjacent forests in the White Mountains, NH*.

PS 76-58 Laney, C, A Kassin, A Dove, A Jaimes, N Villanueva-Rosales and CE Tweedie, University of Texas at El Paso. *Streamlining data integration and sharing by small ecology labs*.

PS 76-59 Phillips, RP[1], A Quebbeman[1], M Wallenstein[2], C Bell[2], CE Goranson[3] and JS Dukes[4], (1)Indiana University, (2) Colorado State University, (3)University of Massachusetts Boston, (4)Purdue University. *Towards the development of field methods to characterize environmental controls on rhizosphere priming effects*.

PS 77 - Climate Change

Exhibit Hall B, Minneapolis Convention Center

PS 77-60 Gasarch, EI[1] and T Seastedt[2], (1)University of Colorado, (2)University of Colorado at Boulder. *Alpine community response to a long-term factorial nutrient and moisture addition experiment*.

PS 77-61 Loyola, R[1], PA Lemes[1], F Brum[2], DB Provete[1] and LDS Duarte[2], (1)Universidade Federal de Goiás, (2)Universidade Federal do Rio Grande do Sul. *Clade-specific consequences of climate change to amphibians in Atlantic Forest protected areas*.

PS 77-62 Biel, R[1], SD Hacker[1], P Ruggiero[1] and EW Seabloom[2], (1)Oregon State University, (2)University of Minnesota. *Climate change, coastal hazards, and coastal dune habitat restoration in the Pacific Northwest*.

PS 77-63 Cohen, LR[1], BD Newman[1], RE Pangle[2], EA Yepez[2], JA Plaut[2], WT Pockman[2] and NG McDowell[1], (1)Los Alamos National Laboratory, (2)University of New Mexico. *Determining depth of water uptake in piñon-juniper woodlands using stable isotopes in the Sevietta LTER drought experiment*.

PS 77-64 Markle, TM and KH Kozak, University of Minnesota. *Ecophysiological analysis of species variation in geographic range size*.

PS 77-65 Gallagher, MK[1] and DR Campbell[2], (1)University of California, Irvine, (2)UC Irvine. *Global climate change induced shifts in abiotic resources may affect plant-pollinator mutualisms*.

PS 77-66 Duan, H[1], G Huang[1], R Smith[1], B Choat[1], RA Duursma[1], AP O'Grady[2] and DT Tissue[1], (1)Hawkesbury Institute for the Environment, University of Western Sydney, Richmond NSW 2753, Australia, (2)CSIRO. *Lethal drought stress is modified by elevated temperature but not elevated [CO_2] in eucalypt tree seedlings*.

PS 77-67 Pingintha-Durden, N, JA Roberti, DE Smith, S Metzger, H Lou, JR Taylor and HW Loescher, National Ecological Observatory Network (NEON, Inc.). *Minimizing sampling uncertainties associated with NO_y measurements*.

PS 77-68 Adolf, C[1], T Rütti[1], M Stucki[1], R Erler[2], H Behling[3] and W Tinner[1], (1)University of Bern, (2)Colegio Alemán, (3) University of Göttingen. *Past vegetation and land-use of the páramo in southern Ecuador*.

PS 77-69 Higgins, JK, HJ MacLean, LB Buckley and JG Kingsolver, University of North Carolina at Chapel Hill. *Physiological adapation to climate change in larval Colias butterflies*.

PS 77-70 Blank, L, AR Templeton and L Blaustein, University of Haifa. *Predicting climate change effects on distributions of four amphibians at their southern margin and gap analysis for future nature reserve design*.

PS 77-71 Liang, S and MD Hurteau, Pennsylvania State University. *Projected effects of climate change on old-growth forests carbon dynamics in the southern Sierra Nevada mountains*.

PS 77-72 Taylor, TC[1], K Jardine[2], MN Smith[1], C Violle[3], B Boyle[1], J van Haren[1], R Rosolem[4], BJ Enquist[1] and SR Saleska[1], (1)University of Arizona, (2)US Department of Energy, (3)CEFE/CNRS, (4)University of Bristol. *Selection for isoprene-emitting trees in a warmed, artificial tropical forest: implications for climate change and community phylogenetic analyses*.

PS 77-73 Hobbie, EA[1], R Varner[1], K Steele[1] and D Ackerman[2], (1) University of New Hampshire, (2)Carleton College. *Stable isotopes indicate nitrogen sources in Pinguicula vulgaris across contrasting habitat types in sub-arctic Sweden*.

PS 77-74 Ward, DC, CL D'Amelio, RM Smith and WF Bien, Drexel University. *The effect of temperature change on the behavior of the Northern Pine Snake and implications for climate change*.

PS 77-75 Nam, J, HJ Kim, B Devkota, HC Park and H Yi, Seoul Women's University, Seoul, Korea. *The Study for the Community Structures of the Korean Fir (Abies koreana) Dead Wood-dwelling Beetles in Mt. Halla National Park, Jeju Island, Korea*.

PS 77-76 Ward, EJ[1], JC Domec[1], G Sun[2], SG McNulty[2], JS King[1] and A Noormets[1], (1)North Carolina State University, (2)USDA Forest Service. *Transpiration and Canopy Conductance of Loblolly Pine with Fertilization and Throughfall Exclusion: Early Results from PINEMAP*.

8:30 am-10:30 am

PS 78 - Communities

Exhibit Hall B, Minneapolis Convention Center

PS 78-77 Agarwala, M and RS DeFries, Columbia University. *Assessing forest degradation in tropical deciduous forests in Central India*.

PS 78-78 Buchanan, ML[1], JL Hart[2], SL Clark[3] and SJ Torreano[4], (1) University of Minnesota, (2)University of Alabama, (3)USDA Forest Service, Southern Research Station, (4)University of the South. *Climate-growth relationships in oak and maple species: Implications for forest composition and structure in a changing climate*.

PS 78-79 Prado, VHM[1], CFB Haddad[1] and PR Peres-Neto[2], (1) Universidade Estadual Paulista, (2)University of Quebec at Montreal. *Disentangling the importance of body-size, shape and phylogenetic variation in community assembly: the case of Neotropical treefrogs communities*.

PS 78-80 Kirkman, KP[1], SL Collins[2], MD Smith[3], AK Knapp[3], DE Burkepile[4], CE Burns[5], RWS Fynn[6], N Hagenah[1], SE Koerner[3], K Matchett[7], D Thompson[8], K Wilcox[3] and PD Wragg[9], (1)University of Kwazulu-Natal, (2)University of New Mexico, (3)Colorado State University, (4)Florida International University, (5)San Francisco Bay Bird Observatory, (6)University of Botswana, (7)University of KwaZulu-Natal, (8)SAEON, (9)University of Minnesota. *Divergent responses to fire in South African and North American grassland communities*.

PS 78-81 Coulson, AV[1], JD Roth[1] and RK Brook[2], (1)University of Manitoba, (2)University of Saskatchewan. *Does interspecific diet overlap contribute to the spread of chronic wasting disease?*.

PS 78-82 Martin, GK, S Adamowicz and K Cottenie, University of Guelph. *Inverse relationship between taxonomic resolution and explanatory power of metacommunity models*.

PS 78-83 Wright, HK[1], CJ Holmes[1], KL Schulz[2], S Figary[3] and CE Cáceres[1], (1)University of Illinois at Urbana-Champaign, (2)State University of New York College of Environmental Science and Forestry, (3)SUNY-ESF. *Linking intraspecific trait variation to community assembly dynamics in newly formed ponds*.

PS 78-84 Rossa-Feres, DC[1], MX Jordani[2] and DB Provete[3], (1) State University of São Paulo, (2)Animal Biology Post-Graduation Program - University of State of São Paulo - UNESP, (3)Universidade Federal de Goiás. *Niche divergence and environmental filtering regulate the assembly of a Neotropical larval anuran metacommunity*.

PS 78-85 Li, K, I Perfecto and J Vandermeer, University of Michigan. *Protecting coffee: Exogenous and endogenous factors behind spatial patterns of biological control processes in an agroecosystem*.

PS 78-86 Burk, RA[1] and JH Kennedy[2], (1)Arkansas Tech University, (2)University of North Texas. *Recolonization and alterations of aquatic invertebrate communities from perennial and intermittent stream sites following two extreme droughts within 7 years*.

PS 78-87 Mayorga, MA[1], L Casatti[1], GL Brejão[1] and FB Teresa[2], (1) Sao Paulo State University, (2)Goiás State University. *Species composition, alpha and beta diversity of Amazonian stream fishes: influence of environmental and spatial variables*.

PS 78-88 Siwula, PJ[1], N Carmosini[1] and AD Baines[2], (1)University of Wisconsin- La Crosse, (2)University of Wisconsin-LaCrosse. *The effects of storm water runoff on soil microbial communities in an urban wetland*.

PS 78-89 Wellnitz, TA and S Rutter, University of Wisconsin - Eau Claire. *The indirect effects of current velocity on algal abundance through interactions with Ceratopsyche larvae*.

PS 78-90 Zhang, H[1], R John[2] and S Zhou[3], (1)Lanzhou University, (2)Indian Institute of Science Education and Research, (3) Fudan University. *Trait but not species convergence during succession of sub-alpine meadows in the eastern Qinghai-Tibetan Plateau, China*.

PS 78-91 Cook, JE, UW-Stevens Point. *Vegetation dynamics in a 2-yr old restored floodplain during drought conditions*.

PS 79 - Conservation Planning, Policy, And Theory

Exhibit Hall B, Minneapolis Convention Center

PS 79-92 Laflower, D, T Millette and E Marcano, Mount Holyoke College. *Estimating forest biomass using AIMS lidar and aerial high-resolution imagery*.

PS 79-93 Sutton, AE, Duke University. *Evaluating Boma Fortification as a Tool for Reducing Human-Carnivore Conflict in the Western Mara Region, Kenya*.

PS 79-94 Evans, PE, Hubert Humphrey Institute of Public Affairs. *Incorporating ecological awareness while integrating greywater reuse regulations into existing decentralized management and water reuse enhancement plans: Improving user awareness and accountability as well as management capability and adaptability*.

PS 79-95 Fujitani, ML, Arizona State University. *Marine reserve performance when layered on existing institutions*.

PS 79-96 Hall, LS[1], KM Kinney[2], P Bertelmann[1], C Perry[3], M Robinson[4], A Ortiz[1] and M Dudley[1], (1)University of Hawaiń at Hilo, (2)University of Maryland, (3)Institute of Pacific Islands Forestry, USDA Forest Service, (4)East Hawai'i District Office, Department of Hawaiian Home Lands. *Prescribed grazing of sheep helps native ecosystem to recover function and service on Hawaiian Home Lands in Humu'ula Hawai'i?*.

PS 79-97 Yue, D[1], J Guo[1] and C Hui[2], (1)Lanzhou University, (2) Stellenbosch University. *Scale dependency of biocapacity and the fallacy of unsustainable development*.

PS 79-98 Kane, KH[1], DM Debinski[1], CJ Anderson[1], JD Scasta[2], D Engle[2] and JR Miller[3], (1)Iowa State University, (2)Oklahoma State University, (3)University of Illinois. *The projected effects of climate change on plant species distributions in tallgrass prairies of Iowa*.

PS 80 - Ecosystem Services Assessment

Exhibit Hall B, Minneapolis Convention Center

PS 80-99 Wen Rui, Y[1] and L Feng[2], (1)Beijing municipal institute of urban planning and design,China, (2)research center for eco-environmental sciences, Chinese academy of sciences, China. *Ecosystem service efficiency assessment method of urban land use: A case study of Changzhou City, China*.

PS 80-100 Stuyck, C, R Johnson and W Bridges, Clemson University.

Growing degree-days: an innovative method for predicting barn swallow nesting phenology and assessing linkages with invertebrate prey.

PS 80-101 Li, F and R Wang, State Key Laboratory of Urban and Regional Ecology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences. *Impact of Urban Land-Use on Ecosystem Services: A Case Study of Changzhou City, China*.

PS 80-102 Hooper, DU[1] and H MacKay[2], (1)Western Washington University, (2)FHB Consulting Services Inc.. *Models for quantifying ecological benefits for use in a natural resources marketplace: Promise and problems*.

PS 80-103 Fuka, MZ[1], JD Osborne-Gowey[2] and DR Fuka[3], (1) EnPhysica LLC, (2)Feather River Consulting and Oregon State University, (3)Cornell University. *Shifting ranges and changing phenology: A new approach to mining social media for species & ecosystems observations*.

PS 81 - Education

Exhibit Hall B, Minneapolis Convention Center

PS 81-104 Stokes, DL[1], E Sterling[2], AL Porzecanski[2], A Bravo[2], N Bynum[2], BJ Abraham[3], JA Cigliano[4], LM Dàvalos[5], CS Griffiths[6] and MJ Groom[7], (1)University of Washington, Bothell, (2)American Museum of Natural History, (3) Hampton University, (4)Cedar Crest College, (5)State University of New York at Stony Brook, (6)Long Island University, (7)University of Washington. *Cultivating critical thinking skills among conservation biology and ecology students*.

PS 81-105 Comeau, PJ[1], JL Momsen[1], A Wallace[2], L Montplaiser[1] and A Bormann[2], (1)North Dakota State University, (2) Minnesota State University Moorhead. *Do you see what I see? Investigating student accuracy in plant identification*.

PS 81-106 Dolan, BJ[1] and JS Kilgore[2], (1)The University of Findlay, (2)Washington and Jefferson College. *Ecology in the cloud: Undergraduate students driving inter-institutional, collaborative research*.

PS 81-107 Howard, AR and EP Baumgartner, Western Oregon University. *Effects of exam size and frequency on study habits, test perceptions and achievement*.

PS 81-108 De Leon, A, GA Cordero and F Janzen, Iowa State University. *ISU-SEEDS: Student-Coordinated Education, Outreach, and Ecological Research*.

PS 81-109 Dewsbury, BM, I Newman, S Gavassa and S Koptur, Florida International University. *Mixed methods analysis of a unique pedagogical program to improve biology education*.

PS 81-110 Bradley, N, Iowa State University. *Planting a TREE for underrepresented students: immersion at USFWS site Jeramie Strickland1, Lori Neuman-Lee2, Nicole Bradley3, Shannon Thol3, Fredric Janzen3 1U.S. Fish and Wildlife Service, Thomson, IL 61285. 2Utah State University, Depa*.

PS 81-111 Mehling, MG, Chatham University. *The BiodiverCITY Project: Rethinking science education for sustainability with an integrated approach to applied urban ecology research, teaching and community engagement*.

PS 82 - Environmental Monitoring, Impact, Risk Assessment

Exhibit Hall B, Minneapolis Convention Center

PS 82-112 Smith, DE, S Metzger and J Taylor, National Ecological Observatory Network (NEON, Inc.). *Understanding and interpreting data quality of NEON's terrestrial sensor measurements*.

PS 82-113 Firkus, TJ[1], EM Curran[1], RL Goldenstein[1], JS Marchuk[1], TJ Matlon[2], TA Minarik[2], CL Miresse[1], MJ Pazderka[1], HL Schoenfuss[3], MM Schultz[4], EA Smith[1] and D Martinovic-Weigelt[1], (1)University of St. Thomas, (2)Metropolitan Water Reclamation District of Greater Chicago, (3)St. Cloud State University, (4)The College of Wooster. *Contaminants of emerging concern in an urban aquatic ecosystem: Spatial and temporal occurrence of estrogenic activity in effluent-dominated systems*.

PS 82-114 Horwitz, RJ[1], D Keller[2] and J Mead[1], (1)Drexel University, (2)Academy of Natural Sciences of Drexel University. *Effects of Marcellus shale gas drilling on fishes, salamanders and crayfish in streams in north-central Pennsylvania*.

PS 82-115 Halstead, NT[1], PW Crumrine[2], SA Johnson[3], TA McMahon[1], TR Raffel[4], JM Romansic[1] and JR Rohr[1], (1)University of South Florida, (2)Rowan University, (3)University of Florida Institute of Food and Agricultural Sciences, (4)Oakland University. *Food web theory predicts the responses of aquatic communities to agrochemical mixtures*.

PS 82-116 Belby, CS, GA Gerrish, T King-Heiden, R Perroy, S Ryan and T Cyphers, University of Wisconsin - La Crosse. *Lead bioavailability from contaminated wetland sediments at a former shooting range*.

PS 82-117 Olsen, VBK, KL Brubaker, GE Galloway Jr., L Link and B Momen, University of Maryland, College Park. *Sustainable pathways: Using innovative modeling techniques to communicate flood information to communities at risk: Are we reaching all demographics?*.

PS 83 - Evolution

Exhibit Hall B, Minneapolis Convention Center

PS 83-118 Krist, AC[1], AD Kay[2], K Larkin[3] and M Neiman[3], (1)University of Wyoming, (2)University of St. Thomas, (3)University of Iowa. *Across-population variation in phosphorus limitation in triploid asexual freshwater snails (Potamopyrgus antipodarum)*.

PS 83-119 Boria, R[1], M Shcheglovitova[1], A Radosavljevic[1], SA Jansa[2], LE Olson[3] and RP Anderson[1], (1)City College (CUNY), (2) University of Minnesota, (3)University of Alaska Museum. *Assessing niche evolution and population connectivity over glacial cycles for two Malagasy small mammals*.

PS 83-120 Zayas Santiago, CM[1] and WF Gilly[2], (1)Univsity of Puerto Rico Humacao campus, (2)Stanford University. *Comparison of functional anatomy in squid and local hydrographic and biological pressures from two different habitats -- Hawaii Sthenoteuthis oualaniensis and Monterey Bay Doryteuthis opalescens.*

PS 83-121 Narwani, A[1], M Alexandrou[2], TH Oakley[3], B Bentlage[4], C Delwiche[4] and BJ Cardinale[1], (1)University of Michigan, (2)University of California, Santa Barbara, (3)University

of California, (4)University of Maryland. *Experimental evidence that evolutionary relatedness does not affect ecosystem functioning in freshwater algal communities*.

PS 83-122 McNickle, GG[1] and JS Brown[2], (1)Wilfrid Laurier University, (2)University of Illinois at Chicago. *Game on or off? A model of resource pre-emption by plants reveals a novel mechanism of coexistence*.

PS 83-123 Heinen-Kay, JL, HG Noel and RB Langerhans, North Carolina State University. *Has human-mediated habitat fragmentation driven rapid genital divergence in Gambusia spp. inhabiting tidal creeks across The Bahamas?*.

PS 83-124 de Jesus-Villanueva, CN[1], E Mc Cartney-Melstread[2] and G Amato[2], (1)University of Puerto Rico, (2)American Museum of Natural History. *Identification of the Yellow anaconda (Eunectes notaeus) through the use of molecular systematics*.

PS 83-125 Smith, TJ and AH Seshadri, Colorado State University. *Inheritance of stress-mediated floral trait responses in Collinsia heterophylla*.

PS 83-126 Nonaka, E, University of New Mexico. *Phenotypic plasticity can promote sympatric speciation*.

PS 83-127 Lafferty, DJR[1], G Mowat[2], D Paetkau[3] and JL Belant[1], (1) Mississippi State University, (2)Ministry of Forests, Lands, and Natural Resource Operations, (3)Wildlife Genetics International. *Trophic polymorphism and genetic structure in a population of brown bears across a coastal-inland transition zone*.

PS 83-128 Bible, JM and E Sanford, University of California Davis. *Variation in salinity tolerance of Olympia oysters: Implications for restoration in the face of climate change*.

PS 84 - Forests

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PS 84-129 Ganzhorn, SM and JD Lewis, Fordham University. *A spatially explicit comparison of sapling distribution and seed fall of a threatened tropical tree species: Testing the Janzen – Connell hypothesis*.

PS 84-130 Wilson, EC[1] and AC Frank[2], (1)Quantitative and Systems Biology, University of California, (2)University of California. *Characterizing potential growth promoting bacterial endophytes associated with Pinus contorta, Pinus ponderosa and Pinus nigra*.

PS 84-131 Chhin, S[1], K Finley[1] and J O'Brien[2], (1)Michigan State University, (2)U.S. Forest Service. *Dendroecological analysis of the effects of climatic factors, intraspecific competition, and Diplodia shoot blight on the growth of red pine and jack pine forests*.

PS 84-132 Danyagri, G and QL Dang, Lakehead University. *Effects of elevated CO2 and soil temperature on the growth and biomass responses of mountain maple (Acer spicatum L.) seedlings to high light environment*.

PS 84-133 Racke, DM[1] and AJ Meier[2], (1)University of Virginia, (2) Western Kentucky University. *Experimental evidence for dispersal-limitation of multiple vernal herbaceous species in mesic hardwood forests*.

PS 84-134 Dandois, JP and EC Ellis, University of Maryland Baltimore County. *High spatial resolution three-dimensional mapping of vegetation spectral dynamics using computer vision*.

PS 84-135 Pilsbacher, AK[1], TA Zallek[1], LC Wildenborg[1], LJ Johnson[1], JJ Dick[1] and DG Brown[2], (1)College of Saint Benedict|Saint John's University, (2)College of St. Benedict | St. John's University. *Impacts of litter type, soil source, and experience on the growth of earthworms with different foraging strategies*.

PS 84-136 Smith, MN[1], SC Stark[2], SR Saleska[1] and TC Taylor[1], (1) University of Arizona, (2)Michigan State University. *Leaf area phenology at a site in the Brazilian Amazon from a large-scale study using ground-based LiDAR (light detection and ranging) to look at vertical canopy structure*.

PS 84-137 Ristok, C[1], D Eichenberg[1], W Kröber[1] and H Bruelheide[2], (1)Martin Luther University of Halle Wittenberg, (2) German Centre for Integrative Biodiversity Research (iDiv). *Plant polyphenols - assessing trait conservation and litter decomposition of Chinese tree species on a secondary metabolite level*.

PS 84-138 Razafindratsima, OH and AE Dunham, Rice University. *Roles of seed dispersers in structuring plant communities through directed seed dispersal*.

PS 84-139 Bapikee, C and LE Frelich, University of Minnesota. *Sugar maple communities and regeneration in the Upper Great Lakes region*.

PS 84-140 Barrows, EM[1] and DR Smith[2], (1)Georgetown University, (2)Smithsonian Institution. *Symphyta (Sawfly) species richness in an U.S. Mid-Atlantic national park*.

PS 84-141 McIntosh, ACS[1] and SE Macdonald[2], (1)Alberta Biodiversity Monitoring Institute, (2)University of Alberta. *The dynamics of understory and below-ground communities in lodgepole pine forests after simulated mountain pine beetle red attack in a novel landscape*.

PS 84-142 Bahar, NH[1], L Weerasinghe[1], O O'Sullivan[1], R Guerrieri[2], Y Ishida[2], N Salinas[3], E Cosio[3], T Domingues[2], P Meir[2], J Lloyd[4], Y Malhi[5], G Asner[6], R Martin[6], J Evans[1] and O Atkin[1], (1)The Australian National University, (2)University of Edinburgh, (3)Universidad San Antonio Abad del Cusco, (4)The University of Queensland, (5)Oxford University, (6) Carnegie Institution. *The influence of nutrient gradients on the photosynthesis-leaf nitrogen relationship in Peruvian Andes tropical forests*.

PS 84-143 Subedi, S and MS Ross, Florida International University. *The relationship between seed size and establishment conditions in tropical hardwood hammocks of the Florida Keys*.

PS 84-144 Halawani, L, D Vanderklein and JA Krumins, Montclair State University. *The rhizosphere microbial community of adelgid infested eastern hemlock trees*.

PS 84-145 Bhuta, AAR[1] and AM Evans[2], (1)Clemson University, (2) Virginia Tech. *The structure and composition of Carolina hemlock communities in the Blue Ridge and Ridge and Valley of Virginia*.

PS 84-146 Vodde, F[1], K Jõgiste[1], J Engelhart[1], LE Frelich[2], WK Moser[3], A Sims[1] and M Metslaid[1], (1)Estonian University of Life Sciences, (2)University of Minnesota, (3)USDA Forest Service. *Tree seedling mortality in wind-induced microsites in spruce-hardwood mixed forests, Estonia*.

PS 84-147 Fornwalt, PJ[1], ME Rocca[2], MA Battaglia[1] and CC Rhoades[1], (1)USDA Forest Service, (2)Colorado State University.

Understory plant response to mastication treatments in forested ecosystems of Colorado.

PS 84-148 Ewacha, MVA[1], JD Roth[1] and RK Brook[2], (1)University of Manitoba, (2)University of Saskatchewan. *Vegetative structure and composition determine snowshoe hare (Lepus americanus) activity at tree line*.

PS 85 - Habitat Structure, Fragmentation, Connectivity

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PS 85-149 McGuire, JL[1], BH McRae[2], D Kavanagh[3], DM Theobald[4], T Nuñez[5] and JJ Lawler[1], (1)University of Washington, (2)The Nature Conservancy, (3)Adze Informatics, (4)Conservation Science Partners, Inc., (5)University of California- Berkeley. *How far can they go?: A climate corridor model of the United States identifies regional potential for tracking climate change*.

PS 85-150 Wilding, T, S Scott and E Larson, UW-Platteville TREES Lab. *Impacts of fragmentation on boreal forests in a natural landscape, northern Sweden*.

PS 85-151 Resasco, J[1], NM Haddad[2], JL Orrock[3], DD Shoemaker[4], LA Brudvig[5], EI Damschen[6], JJ Tewksbury[7] and DJ Levey[8], (1) University of Florida, (2)North Carolina State University, (3) University of Wisconsin - Madison, (4)USDA-ARS Center for Medical, Agricultural, and Veterinary Entomology, (5) Michigan State University, (6)University of Wisconsin-Madison, (7)University of Washington, (8)National Science Foundation. *Landscape corridors can increase invasion by an exotic species and reduce diversity of native species*.

PS 85-152 Morozova, E, BT Klingbeil and MR Willig, University of Connecticut. *Relationships between two northeastern bats, Myotis lucifugus and Eptesicus fuscus, and landscape structure*.

PS 85-153 Ward, DC, R Marano, J Garcia, C D'Amelio, S Roberts, KPW Smith and WF Bien, Drexel University. *The effects of road substrate on the Northern Pine Snake, Pituophis melanoleucus*.

PS 85-154 Genet, KS[1], D Marsh[2], JJ Apodaca[3], C Bates[4], J Beach[5], KH Beard[6], K Becklin[1], JM Bell[3], BJ Cosentino[7], C Crockett[8], K Curtain[9], G Fawson[6], J Fjelsted[8], EA Forys[10], M Grover[3], J Holmes[11], K Indeck[10], NE Karraker[11], E Kilpatrick[4], TA Langen[5], S Mugel[7], A Molina[8], JR Vonesh[8], R Weaver[8] and A Willey[6], (1)Anoka Ramsey Community College, (2) Washington and Lee University, (3)Warren Wilson College, (4)University of South Carolina, Salkehatchie, (5)Clarkson University, (6)Utah State University, (7)Hobart and William Smith Colleges, (8)Virginia Commonwealth University, (9) George Mason University, (10)Eckerd College, (11)University of Rhode Island. *Toads, roads, and nodes: Collaborative assessment of amphibian diversity in the Eastern and Central U.S.A. reveals pervasive effects of roads and traffic*.

PS 86 - Invasion

Exhibit Hall B, Minneapolis Convention Center

PS 86-155 Crego, RD and JE Jiménez, University of North Texas. *Assessing habitat preference of invasive minks (Neovison vison) using trap-cameras in Navarino Island, Chile*.

PS 86-156 Rowland, MM[1], VA Saab[1], QS Latif[1], T Johnson[2], A Chalfoun[2], S Buskirk[2] and M Dresser[2], (1)U.S. Forest Service, (2)University of Wyoming. *Ecological consequences of mountain pine beetle outbreaks for wildlife in western North American forests*.

PS 86-157 Manderino, R[1], TO Crist[2] and KJ Haynes[1], (1)University of Virginia, (2)Miami University. *Effects of gypsy-moth defoliation and Bacillus thuringiensis var. kurstaki treatments on native forest moth diversity and abundance*.

PS 86-158 Greene, SL and JC Knox, University of Wisconsin-Madison. *Evaluating the invasion of red cedar (Juniperus viriginiana) downstream of Gavins Point Dam, Missouri National Recreational River*.

PS 86-159 Averett, JP[1], B McCune[1], CG Parks[2], BJ Naylor[2], R Limb[1], T DelCurto[1] and R Mata-Gonzalez[1], (1)Oregon State University, (2)USFS Pacific Northwest Research Station. *Evaluation of non-native and native plant species distributions along an elevation gradient in the Wallowa Mountain Range, Oregon*.

PS 86-160 Piya, S[1], MP Nepal[1], JL Butler[2] and GE Larson[1], (1)South Dakota State University, (2)Rocky Mountain Research Station. *Exploring genetic basis of Sickleweed (Falcaria vulgaris) invasion in the United States*.

PS 86-161 Rauschert, ESJ[1], R Pal[2] and Z Botta-Dukát[3], (1)St. Mary's College of Maryland, (2)University of Pécs, (3)Institute of Ecology and Botany, HAS. *Giant goldenrod (Solidago gigantea) population growth and management efficacy*.

PS 86-162 Mikula, J[1], K Mitchell[2] and JA Boudell[1], (1)Clayton State University, (2)Oregon State University. *Impact of soil nitrogen and tree canopy cover on Microstegium vimineum in a restored urban Piedmont stream*.

PS 86-163 Duquain, M and T Wilding, UW-Platteville TREES Lab. *Invasive earthworms effect on northern hardwood forest productivity*.

PS 86-164 Bahlai, CA, M Colunga-Garcia, S Gage and DA Landis, Michigan State University. *Long term community dynamics of aphidophagous coccinellids in response to repeated invasion in a diverse agricultural landscape*.

PS 86-165 Dietz, AK and HJ Michaels, Bowling Green State University. *Management Experiments on Lake Erie Flowering Rush*.

PS 86-166 Ulrich, EG and LB Perkins, South Dakota State University. *Phenotypic plasticity response of Great Plains grasses to environmental stress*.

PS 86-167 Yamanaka, T, A Mochizuki and T Osawa, NIAES. *Quantitative risk-assessment for the potential alien pest insects in Japan using a GIS-based web database of the world pest insects*.

PS 86-168 Hartman, JM and D Obester, Rutgers University. *Seed and seedling performance detritus of with Microstigeum vimineum (Trin.) Camus*.

PS 86-169 Plaza-Muñiz, W, University of Puerto Rico. *Seed germination of the invasive shrub Mimosa pigra is negatively impacted by water level and grass shading*.

PS 86-170 Persons, WE, University of Louisville. *Small mammal movement patterns in an Amur honeysuckle (Lonicera maackii) dominated urban park*.

PS 86-171 Perkins, LB[1] and EK Espeland[2], (1)South Dakota State University, (2)USDA ARS PMRU. *Soil origin influences the potential for plant-soil feedbacks to facilitate plant invasion*.

PS 86-172 Recart, W, JD Ackerman, W Falcón and J Lazcano, University of Puerto Rico, Rio Piedras Campus. *Using species distribution modeling to understand the spread of the naturalized Honduran pine in Puerto Rico*.

PS 86-173 O'Neill, MR[1] and MF Allen[2], (1)University of California, Riverside, (2)University of California. *Who's on first?: Comparisons of above- and belowground phenological variation among native and invasive annuals*.

PS 87 - Modeling

Exhibit Hall B, Minneapolis Convention Center

PS 87-174 Galante, PJ, R Boria and RP Anderson, City College (CUNY). *Comparing species-specific tuning versus AIC_C to select optimally complex ecological niche models*.

PS 87-175 Grear, DA[1], E Schliep[1], JB Kaneene[2], J Averill[3] and C Webb[1], (1)Colorado State University, (2)Michigan State University, (3)Michigan Department of Agriculture and Rural Development. *Disease transmission at the wildlife-livestock interface: multi-species modeling of bovine tuberculosis in Michigan*.

PS 87-176 Yu, F and S Fei, Purdue University. *Evaluation of the quality of species distribution data and the corresponding predictive accuracy*.

PS 87-177 Rueda-Cediel, P[1], KE Anderson[2], J Franklin[3], TJ Regan[4] and HM Regan[5], (1)Univerisity of California at Riverside, (2)University of California, Riverside, (3)Arizona State University, (4)The University of Melbourne, (5)University of California. *How does the quality and quantity of time series data affect extinction risk and population decline estimates in population viability analysis?*.

PS 87-178 Hocking, DJ[1], KJ Babbitt[1] and M Yamasaki[2], (1)University of New Hampshire, (2)USDA Forest Service. *Improved Estimation of Forestry Edge Effects Accounting for Detection Probability*.

PS 87-179 Johnson, MVV[1], VL Jin[2], SL Bartelt-Hunt[3], BW Brooks[4], HM Selim[5], SA Senseman[6], LJ Thibodeaux[5] and JG Arnold[2], (1)USDA-NRCS, (2)USDA-ARS, (3)University of Nebraska - Lincoln, (4)Baylor University, (5)Louisiana State University, (6)Texas A&M University. *Modeling fate and transport of "Contaminants of Emerging Concern" (CECs): is the Soil Water Assessment Tool (SWAT) the appropriate model?*.

PS 87-180 Datta, S, University of Warwick. *Modelling the spread of American Foulbrood in honey bees*.

PS 87-181 Aikens, ML and DA Roach, University of Virginia. *Population dynamics in central and peripheral populations of a narrowly endemic plant*.

PS 87-182 Vasconcelos, TS[1], M Delatorre[2], NL Cunha[2], FI Martins[2], FH Oda[3], C Aoki[2] and P Landgref-Filho[2], (1)Universidade Estadual Paulista, (2)Universidade Federal do Mato Grosso do Sul, (3)Universidade Estadual de Maringá. *Predicting impacts of climate change using ensemble forecasting for the striped treefrog (Hypsiboas caingua) in South America*.

PS 87-183 Alonso, D[1], F Bartumeus[2] and M Pascual[3], (1)Consejo Superior de Investigaciones Cientificas, CEAB-CSIC, (2) Centre d'Estudis Avancats de Blanes (CEAB-CSIC), (3) University of Michigan AND Howard Hughes Medical Institute. *Self-organized patchiness in malaria: a deterministic signal in an ocean of noise*.

PS 87-184 Sebasky, ME[1], SR Keller[2], BK Blackman[1] and DR Taylor[1], (1)University of Virginia, (2)Appalachian Lab, University of Maryland Center for Environmental Science. *Testing the sensitivity of species distribution models*.

PS 87-185 Reynolds, JJH[1], BT Hirsch[2], SD Gehrt[2], S Prange[2], SA Hauver[2] and ME Craft[1], (1)University of Minnesota, (2) The Ohio State University. *Using network modeling to investigate rabies spread through a raccoon population*.

PS 87-186 Cronin, JP[1], MA Rúa[2] and C Mitchell[3], (1)University of North Carolina at Chapel Hill, (2)University of North Carolina, Chapel Hill, (3)University of North Carolina. *Why is living fast dangerous? Disentangling the roles of resistance and tolerance of disease*.

PS 88 - Mycorrhizae

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PS 88-187 Wang, J[1], KR Merrill[2], GB Guedira[2], P Murphy[2], SC Reberg-Horton[2], C Cao[3] and S Hu[2], (1)Huazhong Agricultural University/North Carolina State University, (2)North Carolina State University, (3)Huazhong Agricultural University. *Does domestication and breeding of wheat reduced plant dependence on arbuscular mycorrhizal fungi?*

PS 88-188 Lee, C[1], ME Afkhami[2], GD Reed[1] and SY Strauss[2], (1) University of California Davis, (2)University of California, Davis. *Effects of multiple mutualistic partners in a tripartite mutualism between plants, fungal endophytes, and mycorrhizal fungi*.

PS 88-189 Zhang, Y[1], C Mei[2], B Flinn[3], W Zhang[4] and S Hu[5], (1) Nanjing Agricultural University, (2)Institute for sustainable and Renewable Resources, Institute of Advanced Learning and Research, (3)Institute for Advanced Learning and Research, (4)Chinese Academy of Agricultural Sciences, (5)North Carolina State University. *Effects of endophytic bacteria on plant growth and arbuscular mycorrhizal fungi in switchgrass.* PS 88-190 Cumming, JR[1] and S Desai[2], (1) West Virginia University, (2)Argonne National laboratory. *Mycorrhizae: Role in Aspen Response to Nutrient Stress for Sustainable Biofuels Feedstock Production*.

PS 89 - Parasitism And Host-Parasite Interactions

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PS 89-191 Harris, EV, E Akhirome, BJ Parker and NM Gerardo, Emory University. *Cost of immunity in pea aphids associated with host plant interactions*.

PS 89-192 Ruiz Cortés, JA[1], C Thomason[2] and AB Pedersen[3], (1) University of Puerto Rico, Río Piedras Campus, (2)Texas Tech University, (3)University of Edinburgh. *Getting deep in the gut: novel explorations of parasite gut communities*.

PS 89-193 Snyder, MA, NW Bower, W Lindsay and A Keller, Colorado College. *Interactions between limber pine (Pinus flexilis) and dwarf mistletoe (Arceuthobium cyanocarpum) related to host biochemistry*.

PS 89-194 Jones, CR and JP Owen, Washington State University. *Is defense independent of diet? Testing effects of deer mouse nutrition on resistance to the Rocky Mountain wood tick*.

PS 89-195 Nifosi, J[1], PTJ Johnson[2] and B Hoye[2], (1)Universidad

Metropolitana, (2)University of Colorado at Boulder. *Measuring immune development in larval amphibians to understand age-dependent susceptibility to infection by Ribeiroia ondatrae (class Trematoda)*.

PS 89-196 Luis, AD, Colorado State University. *The network structure of host-virus communities in bats and rodents*.

PS 90 - Physiology

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PS 90-197 Maguire, AJ and RK Kobe, Michigan State University. *Depletion of non-structural carbohydrate reserves in temperate tree seedlings under stress*.

PS 90-198 Carey, TS, University of Michigan, Ann Arbor. *Developing estimators of ragweed pollen production from measurements of inflorescence size*.

PS 90-199 Merry, RA and AS Verhoeven, University of St. Thomas. *Kinetics of recovery from winter stress in eastern white pine (Pinus strobus) and white spruce (Picea glauca)*.

PS 90-200 Osnas, JLD[1], J Lichstein[1], K Kitajima[1], JS Wright[2], S Pacala[3], PB Reich[4] and N Kraft[5], (1)University of Florida, (2)Smithsonian Tropical Research Institute, (3)Princeton University, (4)University of Minnesota, (5)University of Maryland. *Leaf trait area- and mass-proportionality between and within tropical tree species, across and within forest canopies*.

PS 90-201 Post, A[1], MG Mateu [1], A Glickstein[1], K Warpeha[2] and JH Sullivan[1], (1)University of Maryland, (2)University of Illinois at Chicago. *Responses of soybean seedlings to supplemental phenylalanine and its implications for tolerance to UV-B radiation*.

PS 90-202 Wilson, ES, JB West and JG Vogel, Texas A&M University - College Station. *The effects of water stress on variability in mesophyll conductance of loblolly pine (Pinus taeda L.) leaves*.

PS 90-203 Nieves, MA, Universidad de Puerto Rico Recinto de Humacao. *Under stress conditions, anemones that host different species of algae could be choosing which symbiont they expel*.

PS 91 - Population Biology

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PS 91-204 Arias, L[1], JP Sparks[2] and J Whitaker Jr.[1], (1)Indiana State University, (2)Cornell University. *Isotopic characterization of bat populations and evidence of altitudinal migration in Central Peru*.

PS 91-205 Zahner, AC and DC Hartnett, Kansas State University. *Life-History responses of Solidago canadensis to fire and grazing*.

PS 91-206 Scranton, K and DA Vasseur, Yale University. *Temperature-dependent fitness responses in fluctuating environments*.

PS 92 - Predation And Predator-Prey Interactions

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PS 92-207 Brown, CL, North Carolina State University. *Corridors affect spider trophic position*.

PS 92-208 Szumski, CM[1], JD Roth[1], RJ Gau[2] and DL Murray[3], (1) University of Manitoba, (2)Government of the Northwest Territories, (3)Trent University. *Dietary niche expansion and recruitment of a specialist carnivore through a flux in preferred prey availability*.

PS 92-209 Costamagna, AC[1] and NA Schellhorn[2], (1)University of Manitoba, (2)CSIRO. *Landscape-scale pest suppression is mediated by timing of predation*.

PS 92-210 Savage, K, CM Stracey and J D'Andrea, Westminster College. *Parental alarm calls and nestling response of the Northern Mockingbird*.

PS 93 - Restoration Ecology

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PS 93-211 Bell, TH[1], SED Hassan[1], A Lauron-Moreau[1], F Al-Otaibi[1], M Hijri[1], E Yergeau[2] and M St-Arnaud[1], (1)Université de Montréal, (2)National Research Council of Canada. *Divergence of bacterial and fungal communities in hydrocarbon-contaminated soils is related to the phylogeny of introduced willows*.

PS 93-212 Burnett, SA and BA Mealor, University of Wyoming. *Establishment of native perennial grasses in the presence of downy brome and imazapic*.

PS 93-213 Muldavin, EH[1], P Arbetan[2] and R Pendleton[3], (1)Natural Heritage New Mexico, (2)Univ. of New Mexico, (3)USDA Forest Service Rocky Mountain Research Station. *Forb variability over two decades in a Chihuahuan Desert grassland assemblage: local dynamics in a regional context*.

PS 93-214 Fegan, DL, AF Fischer and LA Brudvig, Michigan State University. *Restoration thinning alters seed rain in long-leaf pine woodlands*.

PS 93-215 Zhang, Q, South China Botanical Garden,Chinese Academy of Sciences.. *Sedimentary organic carbon dynamics in a native and an exotic mangrove plantation based on dual carbon isotopic analyses*.

PS 93-216 Damm, MC and MD Bogonovich, Indiana University. *Soils matter: Native and reconstructed tallgrass prairies differ in plant species composition and soil carbon and nutrients*.

PS 93-217 Herrmann, JD[1], LA Brudvig[1], TA Carlo[2], EI Damschen[3], C Forster[4], NM Haddad[5], DJ Levey[6], JL Orrock[7] and JJ Tewksbury[4], (1)Michigan State University, (2)The Pennsylvania State University, (3)University of Wisconsin-Madison, (4)University of Washington, (5)North Carolina State University, (6)National Science Foundation, (7) University of Wisconsin - Madison. *Using stable isotopes to quantify seed dispersal along habitat corridors*.

PS 94 - Soil Ecology

Exhibit Hall B, Minneapolis Convention Center

PS 94-218 Castle, SC[1], Y Lekberg[2] and CC Cleveland[1], (1)University of Montana, (2)MPG Ranch. *Do microbes matter?: Soil biotic versus biogeochemical effects on plant community development during primary succession*.

PS 94-219 Tomé, E, M Tagliavini and F Scandellari, Free University of Bolzano. *Effect of tree age and agronomic treatments on mycorrhizal colonization in apple orchards*.

PS 94-220 Halvorson, JJ[1], KA Nichols[1] and CM Crisafulli[2], (1)USDA, ARS, NGPRL, (2)U.S. Forest Service. *Evidence for formation of glomalin, a recalcitrant pool of soil organic matter, in*

Mount St. Helens pyroclastic substrates.

PS 94-221 Hui, D[1], MA Mayes[2] and G Wang[2], (1)Tennessee State University, (2)Oak Ridge National Laboratory. *Kinetic Parameters of Phosphatase: A Quantitative Synthesis*.

PS 94-222 Ivison-Lane, G[1], CJ Carey[2], VT Eviner[3] and SC Hart[1], (1) University of California, Merced, (2)University of California Merced, (3)University of California Davis. *Seasonal regulation of nitrogen cycling in a California grassland*.

PS 95 - Spatial Analysis And GIS

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PS 95-223 Metzger, S, E Ayres, H Luo, C Meier, D Barnett, MD SanClements and S Elmendorf, National Ecological Observatory Network. *A quantitative strategy for collocating NEON's long-term atmospheric measurements and field observations*.

PS 95-224 Esswein, ST[1], CA Marion[2], MC Scott[2], CJ Post[1] and RF Baldwin[1], (1)Clemson University, (2)South Carolina Department of Natural Resources. *A web-based decision support tool for forecasting the biological condition of South Carolina streams*.

PS 95-225 Ma, PT[1] and R Kirk[2], (1)Clemson University, (2)Elon University. *Effects of parcelization on land cover in Alamance county, North Carolina*.

PS 95-226 Sheehan, KL and ST Esswein, Clemson University. *Landscape Characteristics of Successful Breeding Colonies of the Double-crested Cormorant*.

PS 95-227 Potapov, ER, AF Bryntesson and SL Cooper, Bryn Athyn College. *Perceptual landscape of suburban white-tailed deer (Odocoileus virginianus) in the Philadelphia, Pennsylvania area*.

PS 95-228 Fullman, TJ and BA Child, University of Florida. *Piosphere effects by elephants vary at local and landscape scales in Chobe National Park, Botswana*.

PS 95-229 Ward, DC, SA Roberts and WF Bien, Drexel University. *Spatial Ecology of the Northern Pine Snake (Pituophis melanoleucus melanoleucus) in the Pinelands of New Jersey and Implications for Management*.

PS 96 - Species Interactions

Exhibit Hall B, Minneapolis Convention Center

PS 96-230 Meier, JT[1] and PD Wragg[2], (1)Cedar Creek Ecosystem Science Reserve, (2)University of Minnesota. *Characterizing a rare shift in the pollination mode of cottonsedge, Eriophorum virginicum: Wind to insects*.

PS 96-231 Nelson, P, JM Riddle and G May, University of Minnesota. *Competitive interactions between Ustilago maydis and Fusarium verticillioides* .

PS 96-232 Melen, MK[1], K DeJan[2], JA Herman[2], G Powell[2], JB Whittall[2] and R O'Malley[1], (1)San Jose State University, (2)Santa Clara University. *Effects of genetic and geographic distance on mating success in the rare sandhill endemic, Erysimum teretifolium (Brassicaceae)*.

PS 96-233 Benning, JW, University of Minnesota. *Odd for an ericad: nocturnal visitors to Lyonia lucida*.

PS 97 - Sustainability

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PS 97-234 Maczko, KA[1], UP Kreuter[2], WE Fox[2], JA Tanaka[3], C Duke[4], LA Hidinger[5], JE Mitchell[6] and DW McCollum[7], (1)Sustainable Rangelands Roundtable, (2)Texas A&M University, (3)University of Wyoming, (4)Ecological Society of America, (5)Arizona State University, (6)USDA Forest Service, Rocky Mountain Research Station, (7)USDA Forest Service. *Framework for comparing ecosystem impacts of unconventional energy development on western US rangelands*.

PS 97-235 Nigul, K[1], D Laarmann[1], A Kangur[1], A Kiviste[1], K Jõgiste[1] and LE Frelich[2], (1)Estonian University of Life Sciences, (2) University of Minnesota. *An analysis of forest ecosystem structural variation in Scots pine dominated stands: a methodolocical consideration based on the Estonian Network of Forest Research Plots*.

PS 97-236 Sweet, RK[1], PM Barral[1], IJ Bergstrom[1], TJ Firkus[1], MK Hunt[1], CM Owens[1], LM Reuss[2], AA Richardson[1] and GE Small[2], (1)University of St. Thomas, (2)University of St Thomas. *Community gardens as neighborhood compost sites: A cost-benefit analysis*.

PS 97-237 Baker, KH, AS Mickey, LK Mehalik, JM Felker, DI Harrow, BA Leedy and CL Eckert, Penn State Harrisburg. *Development of a Green Roof Medium Utilizing Recycled Materials*.

PS 97-238 Ferguson, RS and ST Lovell, University of Illinois. *Ecological literacy from below: assessing the impacts of the permaculture movement*.

PS 97-239 Edenborn, SL and LD Monahan, Chatham University. *Effects of microbial communities associated with biochar and compost teas on plant growth and insect herbivory*.

PS 97-240 Graves, RA[1], SM Pearson[2] and MG Turner[1], (1)University of Wisconsin, (2)Mars Hill College. *Landscape consequences of bioenergy and exurban development scenarios in the Southern Appalachian Mountains*.

PS 97-241 Schuweiler, TK[1], N Hoeft[2], CE Wilson[1], K Klingler[2] and AD Kay[1], (1)University of St. Thomas, (2)Minneapolis Health Department. *Research bearing fruit: the Corner Store Procurement Project*.

PS 97-242 Qiu, J[1], EG Booth[2], SR Carpenter[3] and MG Turner[2], (1)University of Wisconsin-Madison, (2)University of Wisconsin, (3)University of Wisconsin - Madison. *Spatially explicit assessment of ecosystem service vulnerability in an agricultural landscape under alternative future scenarios*.

PS 97-243 Bergstrom, IJ[1], PM Barral[1], TJ Firkus[1], MK Hunt[1], CM Owens[1], LM Reuss[2], AA Richardson[1], RK Sweet[1] and GE Small[2], (1)University of St. Thomas, (2)University of St Thomas. *Turning food waste into food: Measuring carbon, nitrogen, and phosphorus efficiency in coupled vermicomposting-aquaponics systems*.

PS 98 - Urban Ecosystems

Exhibit Hall B, Minneapolis Convention Center

PS 98-244 Mireles, A, K Jacobs and S Kirt, Chicago State University. *A Comparison of soil arthropod biodiversity in two urban prairies and turfgrass*.

PS 98-245 Miguelena Bada, JG and PB Baker, University of Arizona. *Ant biodiversity in an arid urban landscape*.

PS 98-246 Law, J, Columbia University. *Bee, wasp, and flower fly diversity of green roofs and urban meadows in New York City*.

PS 98-247 Dixon, EK[1], C Neill[2], EJ Edwards[1], EB Ward[1] and PM Groffman[3], (1)Brown University, (2)Marine Biological Laboratory, (3)Cary Institute of Ecosystem Studies. *Diversity of residential plant communities along an urbanization gradient*.

PS 98-248 Balogh, S, KL Schulz, D Thiele and B van Ee, SUNY College of Environmental Science and Forestry. *Examining the effects of human additions of feed corn on the food web in an urban pond using stable isotope analysis*.

PS 98-249 Hawkins, D and CM Stracey, Westminster College. *Frequency Characteristics of Urban House Finch Songs*.

PS 98-250 Belaire, JA and E Minor, University of Illinois at Chicago. *Groups of gardens: how do yard characteristics influence birds in an urban matrix?*.

PS 98-251 Sword, RM, J Couture and PA Townsend, University of Wisconsin - Madison. *Relationships among remotely sensed canopy data and herbivorous insect abundances in urban forests*.

PS 98-252 Ward, EB[1], C Neill[2], E Dixon[1] and PM Groffman[3], (1) Brown University, (2)Marine Biological Laboratory, (3)Cary Institute of Ecosystem Studies. *The effects of urbanization on aboveground carbon storage and woody species composition in the Boston metropolitan region*.

PS 98-253 Bialecki, MB, RT Fahey, DR Carter and BC Scharenbroch, The Morton Arboretum. *Variation in tree growth and response to drought across an urban land-use gradient in the Chicago metropolitan region*.

PS 99 - Wetlands

Exhibit Hall B, Minneapolis Convention Center

PS 99-254 Liu, X, Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences. *Carbon storage change after marshland conversion to cropland in Northeast China*.

PS 99-255 Belknap, KA, BJ Swanson, KE Nicholson and AS McNaught, Central Michigan University. *Factors influencing Ambystoma spp. breeding pond selection and larval persistence in ephemeral ponds*.

PS 99-256 Reeves, RA[1], CL Pierce[2], E Muths[3], MW Vandever[3], K Smalling[2] and WA Battaglin[2], (1)Iowa Cooperative Fish and Wildlife Research Unit at Iowa State University, (2) U.S. Geological Survey, (3)United States Geological Survey. *Pesticides, nutrients and disease: Do restored wetlands provide quality amphibian habitat in an agricultural landscape?*.

PS 99-257 Felker-Quinn, E[1] and TL Greaver[2], (1)National Center for Envionmental Assessment, US Environmental Protection Agency, (2)US Environmental Protection Agency. *Quantitative review of plant biomass and tissue nutrient concentration shows that response to nitrogen loading varies by wetland type*.

PS 99-258 Drinkard, MK and FA de Szalay, Kent State University. *Zonation of plant communities caused by hydrological stresses in headwater riparian wetlands*.

PS 100 - Woody Plants

Exhibit Hall B, Minneapolis Convention Center

PS 100-259 Stanton, DE, JJG Egerton, V Rolland, HT Nguyen and MC Ball, The Australian National University. *A taste for salt: physiological traits of mangrove species and communities vary non-linearly across a salinity gradient*.

PS 100-260 Ren, H, South China Botanical Garden,Chinese Academy of Sciences.. *Distribution, status and conservation of a Critically Endangered, extremely narrow endemic: Camellia changii Ye (Theaceae) in South China*.

PS 100-261 Fuentes, N[1], A Pauchard[1], P Sanchez[1], J Esquivel[1] and A Marticorena[2], (1)Universidad de Concepción, Instituto de Ecología y Biodiversidad (IEB), (2)Universidad de Concepción. *National inventories of alien plants species in developing countries: advantages and disadvantages of using herbarium records*.

PS 100-262 Wang, D[1], D Jaiswal[1], DS LeBauer[1] and SP Long[2], (1) University of Illinois, (2)University of Illinois at Urbana-Champaign. *Predicting yields of short-rotation coppice willow (Salix spp.) for the contiguous US*.

PS 100-263 Mattox, A[1] and JB West[2], (1)Texas A&M University, (2) Texas A&M University - College Station. *Woody vegetation removal effects on soil moisture depend strongly on soil texture*.

11:30 am-1 pm

ESA Buell/Braun Student Award Committee Meeting

Board Rm 1, Hilton Minneapolis

ECOLOGICAL SOCIETY OF AMERICA

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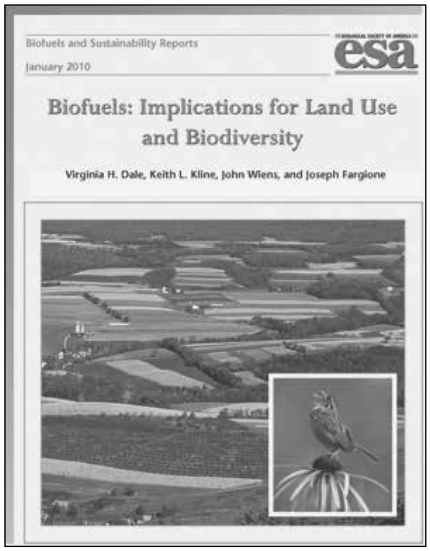
Promoting the development of ecological science and its integration into decision making and education

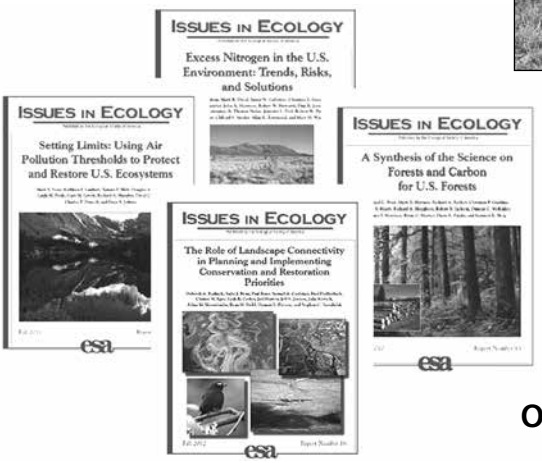
What We Do:

Facilitate science synthesis



Facilitate stakeholder engagement

Communicate with non-scientists



Conduct program and peer reviews

Recent collaborators include:

USDA, USGS, USFS
NatureServe
RTI International
The Wildlife Society

Organize workshops and small conferences

We welcome ideas and project proposals from ESA members!

Clifford S. Duke, Director of Science Programs, csduke@esa.org

ECOLOGICAL SOCIETY OF AMERICA

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SS 3—Engaging with Business and Industry to Advance Earth Stewardship

Monday, August 5, 2013: 10:15 AM-11:30 AM
200DE, Minneapolis Convention Center

Earth Stewardship: Sustaining and Enhancing Earth's Life-Support Systems

Earth stewardship involves shaping trajectories of social-ecological change at local-to-global scales to enhance ecosystem resilience and human well-being. Over the next decade or two, society has a window of opportunity to radically redefine our relationship with the planet to reduce risks of dangerous global changes that could otherwise seriously degrade Earth's life-support systems.

Panelists:
Keith Miller, 3M
Zakiya Leggett, Weyerhaeuser
Rick Black, Environ
Becca Madsen, EPRI

Organizer: Scott L. Collins
Co-organizers: Steward T.A. Pickett, Jill Baron, Katherine S. McCarter, Clifford Duke and Teresa Mourad

Join ESA's presidents in this Special Session to gain insights from industry colleagues on ways to work with the business community on pragmatic strategies that foster a more sustainable global trajectory.

This session seeks to explore:

1. What industry wants/needs from the ecological science community to advance Earth Stewardship
2. What messages will resonate with the business community
3. The most effective ways for the ecological community to connect with the business community at multiple scales

Seeking Broader Impacts Ideas for your Research Projects?

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Develop and Disseminate Educational Materials
Integrate Research and Education Experiences

ESA is a natural partner for your education and diversity strategy with a suite of partnership opportunities through our award-winning SEEDS program and our NSF-funded EcoEd Digital Library.

Please visit **www.esa.org/education_diversity** or contact: Teresa Mourad, Director of Education and Diversity Programs at teresa@esa.org.

Visit the ESA Education and Diversity Programs table in the Exhibit Hall.

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Campus Ecology Chapters

With over 80 Chapters across the US, chapter activities promote ecology on campus through research, education, outreach, and career awareness. SEEDS Chapters are organized by students for students.

Ecology Field Trips

Field trips provide hands-on experience for students to explore their interests in ecology. Students learn about the science of ecology, practical applications, and career options.

Research Fellowships

The fellowship is an 18 month/$12,000 award. Selected students design their own independent research project with their ESA Member mentor and conduct their research during the summer. The students present their research at the ESA Annual Meeting and participate in the SEEDS Leadership Meeting.

ESA Annual Meeting Travel Awards

We offer travel awards for students to present their research and experience the ESA Annual Meeting. The Meeting awards engage students in one of the important facets of doing science – communicating ideas and new knowledge with the science community.

Leadership Meetings

The meeting provides a venue for students to develop project ideas and leadership skills that connect science and society. Students publish a collaborative article, and following the meeting, have organized symposia, outreach fieldtrips and expressed their views on ecological impacts of environmental policy.

To learn more about SEEDS Follow us on:

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Program Participant Index

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