**DRAFT: Full Panel Meeting Minutes**

Full Panel Meeting

April 5, 2018

USGS Powell Center, Fort Collins, CO

**MEETING ATTENDEES:**

**In person:**

Scott Franklin (chaired)

Dave Tart

Chris Lea

James VanKley

Pat Comer

Julie Evens

Todd Keeler-Wolf

Bruce Hoagland

Marion Reid

Jack Triepke

Carol Spurrier

Este Muldavin

Alexa McKerrow

Don Faber-Langendoen

Ayzik Solomeshch

Sky Bristol

Karl Brown

Patrick McIntyre

Cliff Duke (ESA)

Ellie Oldach (ESA)

**Remote:**

Alan Weakly

Bob Peet

Jill Parsons (ESA)

**ACTION ITEMS:**

*Summary of Action Items by Category*

**Budget**

The Panel needs to use remaining funds by September 2018. Top ideas include:

* Set aside $5,000 from budget to pay copy editor
* Develop PR workshop to produce outreach materials
* Pay for Western descriptions to be completed
* Repeat Western Regional Editors meeting at two Natural Heritage conferences this fall (could use next year’s budget instead)

**Outreach**

*Panel Website*

* Ellie will update outdated Calendar/Upcoming Events page.
* Panel members will send backlogged materials (presentations, papers, etc) for Jill for add to “Resources” page.

*Repeating the Western Regional Editors Meeting*

* Todd and Don will research possibilities for one-day workshops on NVC regional review, to piggy-back on this fall’s Natural Heritage meetings.

*PR Development Workshop*

* Todd, Este, Pat, and Alexa will organize/attend a PR workshop to develop outreach materials.
* Pat and Cliff will brainstorm PR professionals who might attend workshop.
* Ellie will schedule a planning conference call.

*Other opportunities*

* On next Panel call, Panel will decide if sending someone to present at ESIP conference is reasonable use of funds.
  + If yes, Alan will develop case study to match ESIP theme, “Realizing the Socioeconomic Value of Earth Science Data”.
* Panel members will think about good topics and audiences for short (3-5 minute) NVC webinars.

**Cyberinfrastructure**

*VegBank*

* Don, Alexa, Ayzik, Bruce, Bob, and Dave T. will form VegBank working group, and will reach out to Dave Roberts and Mike Lee to see if they will also join. This working group will tackle the four points suggested by Bob:
  + Prioritize weaknesses/broken parts of VegBank to fix when funding is available
  + Decide how to identify/cite a static version of VegBank for Proceedings publications
  + Create a “three-table system” to allow a simpler repository: sampling event info, species occurrences, annotations of the plot.
  + Identify partner databases; determine how to have them interact with VegBank.
* Ellie will organize working group conference call.
* Panel will decide: Team-based or Regional Editor-based approach to confirming data-based revisions to NVC, with or without VegBank availability? [discuss this on next Panel call, time permitting]

*Proceedings Peer Review Tool*

* Regional Editors will identify associate editors for their regions and enter them into the tool.
* Don will add NVC associates and partners to the peer review list.

**Mission & Vision**

* Cliff and Jill will draft a mission statement for Panel to review.

**Partnerships**

* Don will add NVC associates and partners to the peer review list [repeat].
* FGDC (Carol) will reach out to agencies (EPA, National F&W, BLM) that haven’t been participating with NVC process in recent years.

**NVC Regions**

*Western Regional Editors Meeting*

* Western editors will submit completed spreadsheets (associations and key literature) to Don within the month.
* Meeting organizers will write up the meeting process and submit as a Tools/Methods paper for Proceedings.
* To extend this process to other regions: Don will share the association spreadsheets with other Regional Editors and ask them to identify associations without descriptions and key literature for their regions. REs will drive gap-filling for their region.

*Alaska/Caribbean/Hawaii*

* Patrick McIntyre will organize post-workshop calls to continue alliance/association description work. NVC will be updated in later spring.
* Panel members will send ideas for Regional Editors covering Central Interior/Midwest, Western Arctic, Eastern Arctic, and Hawaii to Don.

**Crosswalks and Keys**

* PR Workshop planners will include keys as part of the PR conversation.
* Alexa will add a “Keys” tab to the NVC website.

**Current projects and funding examples**

* Panel members will review these examples (and others) when making the case for funding and utilizing NVC in land management and conservation!

**MINUTES:**

* Budgets & Funding
  1. Budget Update:
     1. Timelines for using our current grants vary.
     2. Bottom line is those funds can be expanded: could use through late next fall and early next spring.
     3. No-cost-extension is already in place for USFS funding (avail. through June 30 2019).
     4. USGS funding is fixed-price, so will remain on ESA books.
     5. Must have <75% funds remaining (25% spent down) before USGS can give more money.
     6. Note: This year, ESA is member of Chesapeake Watershed CESU (Coop Ecosystem Studies Unit). Federal agencies can task CESU members. Need to put in an agreement/contract with NPS by end of April in order to be tasked by NPS. Will allow Panel to reach out to other federal agencies. Overhead for CESU is lower than ESA.
  2. Budget Needs for Proceedings
     1. Currently, operational costs for Proceedings is built into individual project budgets

1. Mature business model would include "Our operational cost to run an article through peer review is \_\_\_\_$X.XX\_\_\_\_\_\_". That number not currently known.
   * 1. Copy editor for Proceedings
        1. Will need copy editor by end of the year
        2. Options?
        3. Mary Jo, CA-based (has worked for Veg Panel before)
        4. Este's colleague
2. Consider 508 compliance (ADA regulations) in copy-editing and author instructions
   1. Miscellaneous Funding Notes
      1. Good idea to have NVC proposals in your back pocket, in case funding pockets emerge
         1. For example: Writing description associations. Write up a proposal and easily adjust number of descriptions written for the funds available.
      2. If significant additional funds (~$300,000) become available, VegBank should be a priority.
   2. Decisions on using funds from this year
      1. Set aside $5,000 from budget to pay copy editor
      2. Develop PR workshop to produce outreach materials
      3. Consider using funds to help pay for Western descriptions to be completed
      4. Send Veg Panel members to Natural Heritage conferences this fall (could use next year’s budget instead)

* Outreach
  1. Major Points from Discussion:
     1. Plan workshop to develop PR materials for this year
        1. use funds from this year's USGS budget
        2. Cliff & Pat suggest PR professionals
        3. Action: discuss on next Panel Call
     2. Plan piggyback workshops with Natural Heritage Meetings
        1. Use funds from next year's USGS budget
        2. Western and Northeastern meetings
        3. Action: Todd & Don as key organizers
     3. Start work on webinars
  2. Brainstorm options for outreach
     1. Symposia of relevant societies
     2. Materials for Panel website
        1. **ESA will update Calendar/Upcoming Events**
        2. **Panel members should send materials for website to Jill for upload**
     3. Focused presentation to the FGDC subcommittee
        1. focused examples of ways people are using NVC to inspire FGDC to suggest implementations for others
     4. Webinars
        1. Record meetings, examples, presentations, post to Veg Panel website
        2. Start Veg Panel Youtube account
        3. Advertise webinars at conferences, meetings
        4. Focus on examples of NVC in use
        5. Ex: Marianne gave an NVC webinar to USFS
        6. Audience?
           1. Wildlife Society, Assoc. For Wildlife Mgmt Agencies, Society for Wetland Scientists, Soil & Water Conservation
     5. Issues in Ecology—NVC-devoted issue
        1. ad-hoc publication managed by Science Office of ESA, mission is to report on scientific issues for an audience of non-scientists
        2. Drawbacks
           1. production costs (designer to do layout, hard-copy printing, staff time), wrong target audience
     6. Factsheet (one-pager, four-pager)
        1. To leave with different agencies, offices, etc
        2. Directs audience to website
        3. Emphasizes NVC as helpful for land management work
     7. Meetings & Workshops
        1. Bringing together vegetation databases/holders of quantitative veg data
           1. During workshop, hash out a framework to incorporate these data
        2. Repeat the Western Regional Editors Meeting in other regions
           1. Goals: evaluate existing types and datasets, advance existing types, bring together REs and other contributors who haven’t yet worked together
           2. Piggyback on upcoming National Natural Heritage meetings

Covering two regions with meetings this fall

Northeast: Pennsylvania, sometime in October

Northwest: Reno, Oct 30th-Nov 1st

Can anyone (1-2 people) from Veg Panel attend and facilitate?

Honoraria available.

Funding

Estimated: could likely get these workshops done for $14,000

Plan on using next year's budget for these workshops

NatureServe could cover travel

**Next steps:**

**Tod and Don as major drivers**

**Start budgeting for this**

**Reach out to other attendees to decide...**

**Who to invite**

**When to schedule the one-day NVC workshop**

**How to work with NHP organizers**

Note: Patrick McIntyre will be on planning call and can ask some of these questions.

* + - 1. PR Workshop
         1. Use remaining funds from this year's grants to run a workshop with a PR professional to help develop Veg Panel outreach materials
         2. Ideas for who this person could be?

NatureServe past worker/contractor

Compass (Jane Lubchenco sci comm org)

* + - * 1. Who would attend from Veg Panel?

Todd, Este, Pat, Alexa

* + - * 1. Funding:

Want to keep it to $14, 435

Depends on price for hiring a PR person

* + - * 1. Timing:

Weekend after Labor Day weekend

* + - * 1. **Next steps:**

**Make sure this is on next Panel Call**

* + - 1. Earth Science Information Partners summer meeting
         1. July 17th -20th, Tucson. Data for our Changing Earth: Realizing the Socioeconomic Value of Earth Science Data

Relate to Veg Panel work: do we have economic analyses we could share?

TNC tool: Invest. More for ecological services of land conservation. Invest uses a basic land-cover map, as opposed to a more detailed vegetation type map.

NC Heritage Trust: 1% of ½ billion spent on land was spent on inventory and mapping, and it made that a much more valuable land conservation investment. Easy case to make.

Alan could work on case studies to present.

* + - * 1. Prepare a talk/session about NVC use and possibilities OR use that venue to do work as a group
        2. DataONE and LTER will likely be present
        3. Funding:

Current funds could support travel.

* + - * 1. **Next steps: Decide if attending this year is valuable use of funds.**
* Cyberinfrastructure
  1. VegBank
     1. VegBank could be primary way for author/submitter to make their data available, but was never designed to be the only home
        1. Panel has never been explicit about defining “acceptable” data formats or databases to submit.
     2. Benefits of VegBank:
        1. Anyone can access and download prior data
        2. Works best as an archive
        3. All changes are timestamped, so you can see the plot as it was at a specific moment (permanent and changeable)
     3. Drawbacks:
        1. No one is stewarding the repository
        2. Does not provide other details and attributes of datasets
        3. Not well-connected to other repositories
        4. Cyberinfrastructure broken; don’t currently have funds to really fix it
     4. **VegBank Working Group**
        1. Members: Don (lead), Alexa, Ayzik, Bruce, Bob, Dave R., Dave T., Mike Lee
        2. Points to cover (suggested by Bob):
           1. Prioritize weaknesses/broken parts of VegBank to fix when funding is available
           2. Decide how to identify/cite a static version of VegBank for Proceedings publications

Permanent link/identifier/DOI

Quick option: house a static version in a university archive, etc; include in Proceedings as Supplement

* + - * 1. Create a “three-table system” to allow a simpler repository: sampling event info, species occurrences, annotations of the plot.

Possibly align with DarwinCore standard, and Dryad as repository for these tables.

Proceedings articles should link to these tables.

* + - * 1. Identify partner databases; determine how to have them interact with VegBank.

Veg Panel identifies teams, datasets, other databases that are important to our work. Create a catalogue of them, prioritize them.

* + - 1. Other VegBank Actions:
         1. Data collection guidance

Provide authors with guidance on how to collect data for easier submission to VegBank

Structure database to match those fields

This guidance currently exists, but awareness of it is low.

* + - * 1. VegBank as link to other vegetation datasets

Ask associated databases to send metadata to VegBank

Organize metadata so users can query for specific datasets

i.e. user tells VegBank, “I’m interested in CA vegetation plots, where else can I look?” and VegBank pulls up list of other repositories with CA vegetation information

In the future, partner databases should be web-searchable—but not there yet

Simple solution: develop an ongoing list, with region described and link provided

Drawback: wouldn’t be queryable, the way entering metadata to VegBank would be.

Connect with <http://schema.org/> which provides structure to published search engines.

Connect with Sky Bristol and NSF project on advertising datasets in geosciences. Developing best techniques for inserting structure/metadata into database so that search engines can discover more easily.

Potential issue: standard data identifiers, to ensure integrated databases don’t duplicate data.

What do we do with individuals and agencies that won’t/don’t have the right information to join VegBank?

Ex: FAA— vegetation information could be deposited in VegBank but there’s no location data.

Databases to connect with:

Global Index of Vegetation Databases.

Could start by giving 30 databases of-interest the GIVD template, and then publish those on VegBank.

LandFire

Oklahoma Biodiversity

Arctic Vegetation Archive

* 1. Proceedings Site:
     1. Home for where submissions are published; houses author instructions
     2. Multiple types of documents: editorial notes, tools/methods, and additions to the NVC
        1. Ex: Western RE Process article will be a “tools/methods” submission
  2. Recording changes to the NVC:
     1. Process for making edits: Process: author requests description from Biotics. Makes edits, uploads to PR tool. PR process goes through, and editor accepts. Then goes back to Biotics. Update will be present in next version release.
     2. Options for recording edits to NVC
        1. For minor edits to the NVC, there may not need to be a Proceedings addition.
        2. Produce end-of-year list of changes made during the year, i.e. between version 2.02 and 2.03.
        3. As minor edits are made, they’ll be fed back to Biotics and then posted online.
        4. Direct annotation on hierarchy. Sky Bristol has ideas on how to implement something like this— kind of like a wikispace.
        5. Structured versioning allows stability to authors, but indicate in near-real time when editorial changes have been accepted.
  3. Scholastica Site:
     1. Why Scholastica?
        1. Pay as you go: minimum of 25 submissions (or $250 payment), then $10 per submission. Simple updates are not prohibited by high cost.
        2. Standard tools: automatic notifications for authors, reviewers. Metrics to see how long editors and PRs take. Internal discussions between editors tracked within the tool. Editor inbox. Handles word documents with tracked changes.
     2. **Next steps:**
        1. **REs need to identify associate editors now, to get them signed in to the tool**
        2. **Build associated NVC-supporters into peer review list.**
           1. i.e. a review in Texas would automatically include Texas Heritage Center. If submission covers 5 or 6 states, would automatically update all of those people.
  4. Biotics
     1. Core USGS responsibility is to provide access to the official public version of USNVC. Shares type-description data, not plot data.
     2. Making it more usable
        1. Started with 2.02 version from Biotics
        2. Translated to document-based database (rather than relational)
           1. This format allows different indexing of the database.
        3. Added API (application program interface): low-level way of accessing queries to database
           1. Will build new website based on API (data.usgs.gov)
           2. Website will look similar, but should allow for…

Live data-sharing

More robust method to query database

Adding annotation capabilities to hierarchy

Adding links to the references so that they’re automatically involved

Provide API in case people want to download & program it themselves

Link to ScienceBase, where raw data are housed before being processed into database

Potentially will include tools for data analysis

Ex: Crosswalking tools

USGS needs to know more about analytical needs before developing these tools.

* + - 1. Editing process
         1. Edits come from USGS, go through internal review, sent to Veg Panel for review, and updated
      2. Link between plot descriptions (USGS NVC) and plot data (Veg Bank) and primary literature.
         1. Would like to link typal plots to type descriptions in NVC
         2. Easier for USGS to point to these data on VegBank/partner database rather than being accountable for contributors’ Excel sheets

Suggestion: invest in VegBank, load it with APIs that could connect to USGS

Will this allow a live-connection between type description (on USGS) and plot data (on VegBank or partner database)?

How would this work with the three-table idea?

Start a spreadsheet of these three-tables…each project is added on

Allows new data to be searched/found, even before incorporated in VegBank and NVC

How is NVC linking to the primary literature that’s underlying these descriptions?

This literature can be hard to access digitally

Sky outlines process for USGS to id what pubs are cited, whether they exist in USGS reference library, and whether others can be added

Once we have that literature, USGS could store it

May be possible to textmine/datamine from those sources

encourage authors to make grey literature available as part of their submission (and copyright/permissions)

widespread public access may not be an issue, because narrow group of people need access

* Mission & Vision
  1. Review statements on website currently—History of Veg Panel provides important 4 points of Veg Panel mission
  2. **If Panel can identify what elements they would like, Cliff/Jill could craft a version of a mission statement.**
  3. Ideas to include:
     1. NVC work is enormously valuable for conservation, building resiliency against climate change, building effective linkages.
     2. As a standard, NVC allows consistency, nimbleness, and reaction to market forces (elements of standards, as opposed to methods).
     3. NVC brings a common language to allow land-management to be coordinated, allow collaboration.
     4. Panel connects people from different agencies.
  4. Questions to consider:
     1. How is the Panel mission different from the NVC mission? Ditto the FGDC mission?
        1. Panel mission is to make sure NVC is scientifically credible. FGDC mission is to make sure people use it.
     2. Should outreach be explicitly included in mission?
     3. How has mission changed since the Standards were first completed and approved? What is the new goal (development, summarizing, outreach
     4. How to clarify role of Panel to FGDC? Source of confusion.
* Partnerships
  1. State Partners
     1. Year and a half ago: surveyed status of State Heritage Programs to learn what classification they were using
        1. 45 respondents
        2. 18 respondents had private database plot records, 4 had public plot records
     2. “We’re in a better place now” to engage states: 2 big pieces
        1. REs identifying AEs/peer reviewers from different states/state agencies
        2. partner databases to VegBank could come from state databases
     3. Database collaborations:
        1. send factsheet out to state agencies
        2. Bruce could make his biodiversity (?) work available to all states
        3. might share goal of Darwin Core from databases
        4. collaborations with SWAPs
     4. Peer Review collaborations:
        1. partners from state agencies automatically notified to be possible PR on new submissions
        2. brown bag on partnerships talk at upcoming meetings
     5. What do states get out of it? This has to be clear.
        1. You’re contributing data, you’re contributing peer review, but these efforts are also advancing your own objectives towards your classifications
     6. **Next steps: Don will invite every contact from the states that he knows are interested to join Scholastica Peer Review.**
  2. Other partnerships:
     1. Agencies that haven’t been participating in recent years
        1. EPA, National F&W, BLM
        2. **FGDC can reach out to these groups**
     2. Grow connections to military
        1. Karl mentioned Asia-Pacific islands military connection
        2. Lots of work with DoD in past, on species data.
        3. CEMML (Center for Environmental Management in Military Lands)
     3. National Resource Conservation Service (NRCS)
        1. Workshop last winter—is there still energy there?
        2. Gene Foltz is acting range lead, currently on FGDC subcommittee
        3. There has been interest in NVC, but next step institutionally is harder to take
        4. Next steps:
           1. Este can continue conversation with Joel
           2. Connect with Terrel Harrison (sp?) in DC
     4. Regional ecologists from USFS
        1. Dave Tart emailed regional ecologists from west to ask about plot-based data, has already gotten some responses
* NVC Regions
  1. Western Regional Editor Meeting was April 3rd and 4th
     1. Goal was to fill in descriptions for undescribed forest and woodland associations.
        1. Three teams: Central Rockies, Southern Rockies, and California.
        2. Pilot process: Start by going through literature, identify sources that are linked to an association. Prioritize literature to develop short list of publications that are most important for associations. Score literature for whether it was plot-based, whether data were available, how those data could be accessed, who would be the point communication person for those data.
        3. In the next month, participants will complete spreadsheets with primary literature that is most useful to writing descriptions. Sets the stage for someone to write the descriptions.
        4. Took time & effort, but not an impossible process. Deemed valuable.
     2. Still need to decide how descriptions will be written.
        1. One option: Professional/experienced scientist
           1. Estimated day-and-a-half of work by an experienced scientist to write each description.
        2. Alternatives: workstudy-type student could streamline by cut/pasting some of the pertinent info from key publications.
     3. Plot-based vs not plot-based description?
        1. Common to find associations with non plot-based descriptions.
           1. Some of these are valuable descriptions, still. Ecology hasn't always been plot-focused.
        2. Using plot data to write new descriptions rather than trawling through literature.
           1. Requires accessing and compiling that plot data.
        3. Triage: descriptions that aren't plot-based are "provisional" and lower-priority (though "Confidence" score in NVC may cover this already.).
     4. Extend this work to other associations that are missing descriptions.
        1. This process deemed valuable for finding gaps and prioritizing literature, and repeatable.
        2. Background work (database queries, spreadsheet creation) relatively straightforward.
        3. Regional editors could lead process.
     5. **Next steps:**
        1. **Share spreadsheet with REs and ask them to identify associations without descriptions and key literature for other regions. REs drive gap-filling for their region**
        2. **Submit process write-up as a “tools/methods” paper for Proceedings.**
  2. Alaska:
     1. 30 people from various agencies came together
     2. Arctic, Boreal, Coastal working groups
     3. Outcomes:
        1. Refined working macrogroup and group descriptions
        2. Drafted alliances
        3. Linked plant community type papers to these alliance and association descriptions
     4. Post-workshop
        1. Difficult to get post-workshop review. Patrick McIntyre organizing post-workshop calls to get alliance and association descriptions
        2. Final proposed documents will return to participants.
        3. Coastal is better-established than Arctic and Boreal. In July, Arctic meeting at IAVS. They will be submitting units for Arctic to NVC; timeline will be more clear after IAVS. Boreal is more unclear, but the meeting Don ran had good collaborators, maps.
        4. USNVC will be updated in later spring
  3. Caribbean
     1. Difficult to get in touch with Fito post-hurricane. Eileen and Janet Franklin both in touch.
        1. Crosswalking/building NVC support
           1. Rutchey system, Braun-Blanquet in use currently

Need more info on the classification information currently in use. Karl Brown could provide?

* + - * 1. Crosswalking between lower elevations types in Caribbean with South Florida and Texas (higher elevations are island-specific, harder to crosswalk)
  1. Hawaii (and other Pacific Islands)
     1. Top-down and bottom-up description work
        1. Note: some levels are completely covered by US jurisdiction, others need multi-nation collaboration for finding data.
        2. Work by Marion, 2 years ago: group descriptions complete, but not macrogroups (except on mainland)
        3. Association names come from NPS partnership, but not always well-defined.
        4. Lower level units aren't NVC-complete, but we have material to work with.
     2. Support from military holdings: Marianas, Midway, Samoa.
  2. Identifying regional editors:
     1. Jim Jacoby (USGS), retired.
     2. Art Whistler (Samoa, mapping contractor).
     3. **Ideas and names for TBD places (Central Interior/Midwest, Western Arctic, Eastern Arctic, Hawaii), please send to Don.**
* Crosswalks & Keys
  1. Completed products
     1. FAA keys on Eastern forests
        1. Complete but not yet operational on website
     2. Landfire autokeys
        1. Assigns plots to group level for entire country
        2. Some internal hang-ups, but should be available soon
     3. Group Alliance Keys
        1. Field key for types on BLM lands, primarily
  2. Future products
     1. Make keys available digitally/mobile
     2. Aim for alliance-level and more detailed
        1. Group-level useful for mapping
     3. Expand regions
        1. Start with National Parks, National Forests (already mapped to some extent)
           1. Bridge habitat type classifications to NVC classifications by working in National Forests adjacent to National Parks

Example: Grand Teton NPS, Bridger-Teton National Forest

Would be worth a pilot project

* + - 1. Work with state partners on state keys
      2. James Van Kley has keys down to the association level for West Gulf Coastal Plains
         1. Crosswalk into NVC
         2. <http://james-vankley.com/index.html#research>
      3. Pat Comer's work on ecological systems keys across country
         1. Field keys, can inform group-level classification
         2. Sage Grouse Working Group

Could use associaton-level keys (herbacious layer work)

Dave Tart did write a key for 150 sagebrush types, using NVC explorer, published data, and plot data— currently in use by the monitoring.

Post this on NVC

* + - 1. **Next steps: add "Keys" tab to NVC website to increase awareness of this possibility**
         1. **Include keys as part of PR conversations**
* Current projects and funding examples:
  1. Todd: Examples from California
     1. Wildlife conservation supports vegetation mapping in Modoc Plateau through state wildlife grants from CA Dept of Fish & Wildlife.
        1. Full data collection on major veg types across plateau.
        2. Created maps with structural attributes for sake of vertebrate habitats.
        3. Can get additional funding for sensitive species.
        4. State wildlife plan is macrogroup driven. Picked macrogroups in Modoc Plateau with the most sensitive vertebrates (based on funding).
        5. Setting up bird-monitoring stations in those macrogroup polygons to record bird calls
        6. UC-Davis collaborator will identify which species are present and bird density, ultimately get more detailed estimate of what vegetation types are most important to bird occupancy and density.
        7. Repeating process in Mojave Desert and Central Valley, where vegetation maps already exist.
        8. Revitalizing department’s approach to predicting high-priority habitat.
        9. These grants can be renewed, so this work is likely to continue.
        10. Overall: project links places with good vegetation mapping into high-interest vertebrate conservation.
     2. Leveraging state legislation on mitigation of transport project planning to map vegetation.
        1. Railway location and mitigation planning has allowed a lot of vegetation mapping in those areas.
     3. Applying these ideas in other states
        1. CA is “particularly planiferous”, but so are BLM/other federal agencies. Collaborate with planners to convince them that vegetation mapping is a valuable part of the planning process.
        2. Integrate vegetation mapping at all levels— conservation of plants > vertebrates > landscapes > response to climate change. Emphasize this idea in NVC outreach.
        3. Attend/give presentations on veg mapping at regional agency meetings.
        4. Don’t be shy to approach disciplines you may not know as well (transport planning, ornithology, etc) to make connections.
  2. Bob Peet, with Alan Weakley, Tom Wentworth: North Carolina mapping.
     1. 62% of vegetation types in NC and VA regions have been sampled with plots. Majority of un-plotted types are ruderal.
     2. Systematically working through these types to suggest revisions for the NVC.
     3. USGS had funded longleaf pine part of project, which has allowed them to continue working on that part actively.
     4. Plots include NPS sites.
  3. Este: New Mexico State Wildlife Action Plan (SWAP)
     1. When NM Game and Fish did state wildlife action plan, asked for connection to NVC types.
     2. NM was excited about opportunity to link to statewide mapping projects, and ability to link right to USNVC on websites.
     3. Overall: SWAPs combined with forest types seems like lots of potential.
  4. Marion: Connecting with BLM
     1. A few years ago, BLM asked NatureServe to relate species of concern with NVC types. Developed species habitat database to ID those relationships.
     2. This could grow into a more intensive spatial analysis and inventory project.
  5. General Lessons
     1. Arguments to make to funding agencies
        1. Wildlife angle: more detailed vegetation info is helpful to wildlife understanding, SWAPs.
           1. Make sure wildlife linkages are clear to funders, to show the full spread of their funding
        2. Keeping up with government needs and mitigation needs
        3. Focus more on regional context, rather than just local. Increases the available funding agencies.
        4. Bottom-up funding process described by Todd & Este: move this beyond CA & NM.
     2. Outreach
        1. Webinars on these topics.
           1. Audience: USFS, but also to different groups with funding from USFS.
        2. Good outreach for NVC to start popping up on different projects.
        3. Vegetation Subcommittee is working on increasing presence within state F&W depts.
        4. Present on NVC at conferences like Natural Areas and agency regional meetings.
        5. Overall: We’re providing a product that can help someone get their job done easier and better. Market that.