April 27, 2018

The Honorable Lisa Murkowski
Chairman, Appropriations Subcommittee
Interior, Environment, and Related Agencies
US Senate
Washington, DC 20515

The Honorable Tom Udall
Ranking Member, Appropriations Subcommittee
Interior, Environment, and Related Agencies
US Senate
Washington, DC 20515

Dear Chairman Murkowski and Ranking Member Udall:

Improving the future health and sustainability of the nation's forests and grasslands requires a strong investment in USDA Forest Service Research and Development (R&D), with benefits to forests, wildlife, and fish. The undersigned organizations and professional societies urge Congress to **increase funding for** *all* **Forest Service R&D to a minimum of $307 million in FY 2019 including all necessary increases for the Forest Inventory and Analysis program and at least $224 million for the remaining Forest and Rangeland Research program areas.**

Building on over 100 years of critically important research, Forest Service R&D programs inform policy and land-management decisions that improve health and use of the nation's forests and rangelands, including aquatic systems. Funding for these important activities is critical to sustaining the nation's natural resources. Showing value in this investment requires R&D leaders and scientists be attuned and responsive in providing relevant and timely information and support with an ability to effectively deliver assistance to all users.

The work conducted at experimental forests and ranges, regional research stations, and the Forest Products Lab, incubates progress on new products and services; tracks disturbance responses; fosters greater forest resilience; quantifies contributions to air and water quality; and drives innovation in renewable energy and product development. Notable recent Forest Service R&D contributions include:

Using Science to Guide Drought Management Response
Forest Service R&D has been a leader in reviewing impacts of drought on U.S. forests and rangelands to help better manage for drought resiliency and adaptation going forward. In 2016 Forest Service R&D released an assessment report that included management options to help federal, state, and private organizations implement strategies to sustain healthy, resilient ecosystems that continue to produce vital goods and services, such as forest products and recreational fishing opportunities. This scientific synthesis of all recent research with additional research into identifying drought indicators on the landscape are important to natural resources managers as they consider how to integrate drought contingencies in planning efforts.

Helping to Identify Pragmatic Solutions for Species at Risk
Through long-term monitoring and collaborative research efforts with state agencies and other partners, Forest Service R&D generates an understanding of wildlife-habitat relationships for multiple species and communities that enables informed land management decisions that benefit wildlife and people. This includes informing conservation efforts that have helped to avoid Endangered Species Act listings for several forest and rangeland wildlife species. The USFS works on the greater sage-grouse in cooperation with the Bureau of Land Management culminated in two USFS Records of Decision and associated land management plan amendments to conserve greater sage-grouse and its habitat on National Forest System lands and Bureau of Land Management-administered lands.

Improving Smoke and Fire Management Capabilities
The Prescribed Fire Combustion and Atmospheric Dynamics Research Experiment is a landmark study improving predictions of fire spread and smoke behavior. This behavior prediction tool with the Blue Sky Smoke Management Model allows fire managers to better understand where flames and smoke from wildland fires will go to alert affected communities sooner and reduce human health effects. These tools also support decision making for prescribed fires, allowing managers to model a variety of different scenarios to evaluate potential impacts on air quality and soil under a variety of conditions. Research scientists continue to expand on this landmark study by mapping risk assessments for entire national forests to better determine risk, predict cross boundary transmission probabilities that aid safe and effective use of fire as a tool. The desired outcome is increasing forest resiliency to disturbances, improving forest health, and protecting communities.

Developing Innovative Solutions to Managing Invasive Species
Forest Service R&D also develops innovative solutions to manage invasive pathogens and species that can decimate native plant and animal populations. This includes but is not limited to developing a cost-effective way to quickly identify the presence or absence of invasive species in an aquatic environment through eDNA technology; developing trees with a natural resistance to emerald ash borers; and successfully developing the first nonlethal treatment for white-nose syndrome (WNS)—a lethal fungal disease that has reduced bat populations by upwards of 80% in certain parts of the country. As voracious consumers of insect pests, bats reduce the pesticide bill of the U.S. agricultural industry by over $23 billion annually. Using a native soil bacterium to inhibit growth of the fungus that causes WNS, USFS researchers have been able to return previously sick bats to the wild.

Expanding and Protecting US Market Opportunities for Forest Resources
The Forest Products Laboratory drives innovation and expansion of commercial applications for forest products. The work at the Lab on woody biofuels, advanced composites and wood structures, and value-added wood products promotes healthy forest ecosystems and economies by creating, enhancing, and protecting markets for forest products. In partnership with universities, scientists from Research Stations across the country, and partners in the private sector, the Lab is exploring potential of mass timber structures by conducting work on building codes and wood utilization models to increase use of wood in building construction and potentially invigorate markets for materials that were previously considered low value or undesirable. The Lab also houses the leading producer of nanocellulose material in the US and explores breaking the woody fiber down to the nanoscale and what commercial uses make sense for this high strength, low weight material that can be collected from nearly any source. Building on unparalleled understanding of wood properties, R&D scientists are also able to combat deforestation and timber and wildlife trafficking by identifying origin of wood products, thereby protecting US supply chains.

Calculating the Value of Urban Forests and Trees
The publication of Community Tree Guides helps managers calculate the value of new tree plantings in terms of property value increases, future energy savings, air pollutant uptake, and storm water runoff reduction. Credible information quantifying benefits of managed urban forests helps cities protect and restore environmental quality and enhance economic opportunity.

Guiding Conservation and Management of Aquatic Species
Using stream temperature and fish data, Forest Service R&D is developing important tools to inform and enhance management and conservation of aquatic resources. Climate Shield produces spatially-precise and user-friendly digital maps to guide conservation efforts in key watersheds. This tool forecasts specific locations that are most likely to continue supporting native cutthroat trout and ESA-listed bull trout allowing managers to make precise predictions about which streams are most likely to continue supporting native trout species based on future temperature scenarios.

Quantifying the Role of Forests in Providing Clean Air and Water
This research directly linking trees to clean air and water underscores the economic value and benefits trees and forests provide to all residents and communities. Recent R&D work shows that forests, which make up 26% of US land area, are the source of 46% of the US water supply—generating far better returns than other land uses. Forest Service R&D's understanding of how to manage forested landscapes to enhance production of sustained, low cost clean water supplies is critically important. Studies are also linking contributions of plants and trees to improved air quality and human health benefits. The community benefits that plants provide while removing pollutants and improving human health is valued at nearly $7 billion every year and is significantly more cost effective than alternatives.

Advancing forest science is integral to improving the health and welfare of U.S. forests and citizens, increasing the competitiveness of U.S. products in the global marketplace, and adapting to unforeseen future challenges. Continuing the trend of reductions in the R&D budget will result in significant gaps in the knowledge base and data sets necessary to address the many threats facing our nation's forests and associated wildlife could result in competitive losses in the global economy. ***Therefore, our organizations request a funding level of $307 million for USFS R&D with emphasis on research projects uniquely suited to R&D expertise and the furthering of agency and partner objectives.***

Sincerely,

American Fisheries Society

Ecological Society of America

Society for Range Management

Society of American Foresters

The Wildlife Society