Written Testimony of Dr. Emily Roberson  
Director, Native Plant Conservation Campaign

Before the House Natural Resources Committee Subcommittee on National Parks, Forests and Public Lands

H.R. 1572, the Botanical Sciences and Native Plant Materials Research, Restoration, and Promotion Act  
July 31th, 2019

Chairwoman Haaland, Ranking Member Young, and Members of the Subcommittee:

Thank you for the opportunity to provide written testimony in support of H.R. 1572, the Botanical Sciences and Native Plant Materials Research, Restoration, and Promotion Act.

The Native Plant Conservation Campaign is a national network of 53 Affiliate native plant societies and other plant science and conservation organizations, representing more than 250,000 native plant enthusiasts throughout the U.S.

The testimony regarding H.R. 1572 presented to the Subcommittee on July 18th, 2019 provided differing perspectives and raised valid questions. I hope that the material presented below helps to clarify the need for H.R. 1572 and responds to specific questions posed by Mr. Walcher.

H.R., 1572 would provide funding and support to restore rapidly declining botanical capacity within federal land and resource management agencies (see below). The bill would also strengthen federal botany programs so that the U.S. can better address growing environmental crises such as climate change, mass extinction, catastrophic wildfire, and the spread of invasive species.

Why do we need botany programs? What do botanists do for agencies?

Plants are essential to life on earth and central to human well-being, the sustainable use and preservation of the nation’s resources, and scientific discovery. In addition to delivering ecosystem services necessary to human survival, such as air and water purification, food production, and climate modulation—our plant landscapes provide habitat for myriad treasured — and economically valuable -fish and wildlife species across the United States. This rich legacy of biodiversity is an invaluable component of our heritage, and is essential to our future.

Botanists are uniquely qualified for the following critical tasks on public lands:

1. Conservation of rare plants – botanists recognize unique plant species and understand their ecological requirements thereby increasing the likelihood of successful conservation, often preventing species from being listed under the Endangered Species Act or achieving species recovery and removal.
from federal listing. These conserved species can lead to discoveries of the next life – saving drug or the next drought or disease resistant food crop.

2. Management of plant communities to support wildlife and recreation – botanists can best develop management plans that balance plant community needs with the needs of people who use those communities for recreation and tourism. Native plant communities help make our country diverse, unique and strong. They provide a sense of place and areas for recreation, hunting and fishing, spiritual renewal and more. In 2016, 331 million people visited national parks alone. These visitors spent an estimated $18.4 billion in local gateway communities, supported 318,100 jobs, and added $34.9 billion in economic output in the national economy (U.S. National Park Service). A 2019 poll of eight mountain west states found that for 63 percent of respondents, the ability to live near, recreate in, and enjoy public lands like national forests, parks, or trails are a factor in why they live in the West. An overwhelming majority—87 percent—believe the outdoor economy is important to the future of their state. (State of the West Poll, Colorado College)

3. Restoring ecological integrity, resiliency, and sustainability – botanists define seed mixes that make our public lands work harder, be more safe and sustainable, and deliver more ecosystem functions (including reduced fire and flood danger, improved wildlife and pollinator habitat, erosion control, water purification, improved air quality, natural resource production, greenhouse gas absorption, soil fertility and more). Fighting wildfires cost taxpayers over $2 billion in 2017 (Reuters). A 2015 review reported that carbon sequestration in the U.S. National Parks alone is estimated at 17.5 million metric T/yr, with a value of $705 million annually. These benefits are predicted to drop 31% by 2050 if invasive species, wildfire and other damage to the parks are not adequately addressed.

4. Effective post-fire restoration and recovery restoration and restoration of disturbed landscapes - botanists understand how, when and where to successfully deploy seeds for successful restoration outcomes. Botanists save tax dollars by using their expertise to craft restoration programs that are cost effective and that work. Botanists understand the benefits of using appropriate, locally adapted native seed material to the extent possible.

5. Management of invasive plant species – botanists understand plant reproduction and population biology and can better develop management plans for invasive plants that minimize damage to native species. Invasive plants cost taxpayers at least $34 billion annually in lost productivity, fire and flood damage, and harm to wildlife and recreational opportunities on public lands.

Plants are Unequal: Protection and Funding

Plants are the foundation of life on earth. Despite their importance, plants are second class conservation citizens, receiving only a fraction of the legal protection and conservation funding that is provided for other species.

A 2014 analysis of expenditure reports for federal and state threatened and endangered species programs by published in the journal Biological Conservation showed that while the majority of species listed under the Federal Endangered Species Act are plants, they receive <5% of the total funding for
species recovery from federal and state agencies ([Perspective: Pattern of expenditures for plant conservation under the Endangered Species Act Biological Conservation 2014 v. 171:36-43](#)).

Further, a 2008 analysis found that only a small percentage of State Wildlife Action Plans (SWAPs), among the most important mechanisms for rare species management and conservation in the U.S., include explicit provisions to protect plants. Only eight out of 56 jurisdictions—Georgia, Hawaii, Missouri, Nebraska, Oregon, Vermont, Guam, and the U.S. Virgin Islands—included plants as species of greatest conservation need, and fewer than one-third (17 plans) included any conservation actions specifically targeting plant species of concern. ([Stein BA and Gravuer K. 2008. Hidden in Plain Sight: The Role of Plants in State Wildlife Action Plans. Arlington, Virginia: NatureServe.](#)) In 2015, most jurisdictions submitted updated State Wildlife Action Plans. While more jurisdictions included plants in their revised State Wildlife Action Plans than in 2005, they were still only a small percentage of the total.

Plants are also underrepresented in another of the most important funding mechanisms for rare species research and management in the United States, the National Fish and Wildlife Foundation. From 1995-2013, the National Fish and Wildlife Foundation administered the Native Plant Conservation Initiative. “During its 15 years of operation, NPCI distributed around $7 million — in addition to about $12 million in matching funds — to help support more than 300 projects aimed at addressing one of the six national core strategies for native plant conservation: partnerships, education, restoration, research, sustainability, and creating data linkages.” ([HerbalEGram: Volume 10, Number 8, August 2013](#)). The National Fish and Wildlife Foundation cancelled the Native Plant Conservation Initiative in 2013, attributing this, not to the programs lack of value or effectiveness, but to the federal government’s 2013 sequester and the lack of management funds for the Native Plant Conservation Initiative.

H.R. 1572 would provide much needed funding to support all aspects of plant conservation. The funding support is needed because much of the funding that supports animal conservation is not available for plant conservation.

**Botanical Capacity Extremely Limited**

Botanical capacity plays a fundamental role in solving the grand challenges of the next century, including climate change, sustainability, food and water security, preservation of ecosystem services, conservation of threatened species, and control of invasive species. If botanical capacity continues to erode at its current rate, the nation’s science, sustainability, and land management agenda will suffer, opportunities to economically and efficiently solve environmental challenges will be lost, and our public and private lands will continue to degrade.

A 2013 assessment of botanical capacity found that United States will lose nearly half of its workforce with botanical expertise by 2023, largely due to retirement. Without botanists, public lands and the nation’s natural heritage cannot be efficiently or effectively managed. The United States will lack critical expertise needed to strategically plan and successfully implement projects to mitigate the effects of climate change on habitats, biological diversity, and ecosystem services. This will lead to significant and unnecessary costs while exposing the nation’s natural heritage to dramatic losses. The
United States will be unable to address critical challenges such as prevention and control of invasive species – adding to the billions of dollars already spent. The United States will continue to lose its international scientific competitive status. The United States will lose future opportunities to improve food security, cure disease, naturally sequester carbon and produce carbon-neutral biofuel. (Kramer, A., B. Zorn-Arnold, and K. Havens. 2013. Applying lessons from the U.S. Botanical Capacity Assessment Project to achieving the 2020 GSPC targets. Annals of the Missouri Botanical Garden 99:172-179.)

For example, Arizona and New Mexico have the 3rd and 4th highest levels of plant diversity among all U.S. States. At the state level, Arizona does not have a state botanist and New Mexico has one state botanist. The U.S. Forest Service manages over 20 million acres of land combined in these two states, with 11 National Forests and many more Ranger Districts. Within these 11 National Forests are over 500 rare plants, 64 of which occur nowhere else in the world. These National Forests also house 17 rare plants that have status under the Endangered Species Act (Endangered, Threatened, or Candidate) and another 3 species with Candidate Conservation Agreements in place precluding the need to list them under the Endangered Species Act. There are a maximum number of 7 Forest Service botanists in all Arizona and New Mexico, counting unfilled positions and botanists who are not able to focus on botany. If filled and working full-time on plant conservation, each botanist position would be responsible for over 2.85 million acres of National Forest. This includes the 3.3 million acre Gila National Forest that does not have a Forest Botanist.

Summary of 2013 Botanical Capacity Report

Federal Land Management: Common Ground Possible

From Mr. Walcher’s testimony: The Department of the Interior has roughly 70,000 employees, including many with the expertise sought by this legislation.” “I encourage the Committee, in working through the details of this proposal, to add language making the authorization much more specific. It should also articulate with much greater clarity the precise purposes for what could become a significant new employment program, and determine more specifically where the new employees would be structured, what their work would entail, how it would differ from work already routine at DOI and the U.S. Forest Service (USFS), and how the success of this effort would be measured.”

Unfortunately, as noted above, botanical expertise in the DOI and other federal agencies is in steep decline as retirements of botanists accelerate. Rather than creating a “new employment program”, this legislation would help to address that problem. The legislation would authorize funding and remove administrative barriers to make it easier for agencies to maintain necessary levels of botanical expertise, for example through expediting botanical training. The legislation would also clarify existing programs and policies, such as the 2015 National Seed Strategy, and the Bureau of Land Management plant conservation program, and would provide mechanisms to improve and encourage interagency cooperation on endangered species, invasive species, pollinators and other plant-related issues.

In summary, H.R. 1572 would both help stem the loss of essential botanical expertise in federal land management and would streamline administrative procedures to allow federal agencies better to respond, with the latest and best science, to the accelerating environmental challenges that put this country, and its population, at risk.
Thank you for the opportunity to submit this testimony.

Emily B. Roberson

Director, Native Plant Conservation Campaign

Native Plant Conservation Campaign Affiliate Organizations