Senate Committee on Agriculture, Nutrition and Forestry
Federal, State, and Private Forestlands: Opportunities for Addressing Climate Change

Thursday, May 20, 2021
Tony Cheng
Director, Colorado Forest Restoration Institute
Professor, Forest & Rangeland Stewardship
Colorado State University
Fort Collins, Colorado

Madam Chairman, Members of the Committee,

Thank you for the invitation to speak. My name is Tony Cheng. I am the director of the Colorado Forest Restoration Institute (CFRI) and a professor in the Department of Forest and Rangeland Stewardship, both located at Colorado State University (CSU).

CFRI is part of the Southwest Ecological Institutes authorized by Congress in 2004 (through the Southwest Forest Health and Wildfire Prevention Act (PL 108-317)) to develop, transfer, and apply locally-relevant science and science-based decision support to address forest restoration and wildfire risk mitigation across all land ownerships and management jurisdictions in the Interior West. We're one of many programs at CSU developing and applying science-based decision support systems to address climate change solutions for agriculture and natural resources, a highlight being the COMET project conducted with the US Department of Agriculture that helps farmers and ag land conservation specialists make informed management decisions.

Federal forests are part of a green infrastructure portfolio to mitigate climate change. Climate change is also impacting the climate-mitigation capacity these forests. Western federal forest in particular have a unique set of issues and vary greatly in the diversity of their ecology, and their linkages to western communities' social and economic well-being. I am here today to share a western perspective (and there are many), especially in the Rocky Mountain West where forests are being impacted by a succession of wildfires, insect outbreaks, and severe droughts.

My first point is that climate change is delivering a double blow to western US forests

Forests need disturbances to rejuvenate and sustain. However, increasing temperatures and more frequent droughts wrought by climate change have led to large-scale wildfires, insect outbreaks, and drought-induced die-offs in western federal forests over the past 20 years. Many western forests are experiencing what scientists call "compounding disturbances", where insect outbreaks, wildfires, and severe droughts are impacting an entire region's forests at the same time or in relatively short succession. When forests are lost, the carbon they store is released, exacerbating climatic changes.

Additionally, the pace of climate change may be outpacing forests' natural capacity to recover from disturbances. A growing body of scientific evidence is showing that, in many places, forests are not regenerating some 20 or more years after wildfires. This is due in part to the size and severity of wildfires, but also to climatic conditions no longer conducive to trees being able to establish and grow after fires. Forest recovery could take centuries, if at all. In the meantime, this green infrastructure to mitigate climate change has been lost.

Second, there is a need and opportunity for strategic long-term investments in a portfolio of climate-forward forest management approaches

The work needed to make western forests more resilient to climate-induced disturbances involves a portfolio of actions that can take many years to accomplish. For example, in many western forest ecosystems, forest thinning is one part of a resilience strategy that also requires long-term maintenance through prescribed fire to reduce extreme fire behavior and restore fire as a natural process. Prescribed fire is also a critical tool to reducing the size and duration of future wildfires, but only if it is implemented at a sufficiently large scale. In many areas of the West, this program of work can take many years to achieve the scale needed to make an impact.

Multi-year funding programs such as the Collaborative Forest Landscape Restoration Program and Joint Chiefs program have made a difference in places receiving these funds. These national programs provided the stability and consistency needed for forest managers and their stakeholders to implement the portfolio of work needed at scale over many years. Both programs were critical to the success of projects CFRI has been involved, as Senator Bennet saw first hand the results of this work during his visit to the Cameron Peak Fire on May 7 (2021).

I want to acknowledge and credit the work of this committee to reauthorize the CFLR Program and members for advocating for doubling CFLRP funding in FY18. I encourage the Committee to formally authorize the Joint Chiefs Landscape Restoration Partnership Act that Senator Bennet and Senator Hoeven introduced earlier this month.

Additionally, re-starting federal forests that not regenerating after large severe fires or other disturbances is critical to mitigating climate change now and into the future. The non-profit organization, American Forests, estimates that 2 million acres of national forest in the US are in immediate need of reforestation. But this will require long-term investment to rebuild and sustain the supply chain from seed collection to tree nurseries to getting seedlings into the ground. The proposed REPLANT Act would provide the US Forest Service with the needed funds to plant well over a billion trees over the next decade. This scale of reforestation is essential not only to sequestering carbon, but providing clean water, recreation opportunities, wildlife habitat, and wood fiber, among many other values, into the future.

My third point is that sustaining federal forests as a form of green infrastructure needs robust, sustainable social infrastructure

Developing and implementing the portfolio of work needed to fortify our federal forests to climate change exceeds the capacity of any single entity. As such, across the West, representatives from government entities at all levels, community-based organizations, conservation groups, and private industry have been working collaboratively to craft portfolios of work informed by locally-relevant science, and tailored to their specific ecological and social contexts. Supporting the work of forest collaboratives is the core of what CFRI and the other SWERIs do. There is increasing research showing that this "front-end" collaboration can produce larger-scale projects and achieve higher efficiencies than projects without collaboration. Collaboration can therefore be regarded as a form of social infrastructure foundational to sustaining forests as green infrastructure.

While many federal policies and programs intended to resilify federal forests rely on multi-stakeholder collaborative processes, the cost of sustaining collaboration are not explicitly funded. Programs like CFLRP and Joint Chiefs dedicate funding for implementing so-called "shovel-ready" projects, but do not support the social infrastructure necessary to do the collaborative planning, analysis and decision-making necessary to get to shovel-ready in the first place.

Additionally, federal land agencies' own social infrastructure has been decimated by decades of divestment, competing mandates, misaligned incentives, and economic dislocations. As my CSU colleague Dr. Courtney Schultz and her colleagues have found in their research on policy barriers to prescribed fire, a key limiting factor to expanding the scope and scale of prescribed fire is human capital – simply having sufficient number of trained and qualified individuals to safely and effectively carry out the backlog of prescribed burns already planned.

The lack of investment in social infrastructure has not only affected federal land agencies, but also has also limited the long-term sustainability and effectiveness of community-based and non-governmental organizations that are the linchpins of collaboration. These entities are instrumental in facilitating science-informed 'zones of agreement', fostering community and public understanding and acceptance, and leveraging financial and technical resources to accomplish work across jurisdictions and land ownership boundaries. If the pipeline of climate-forward forest management on federal lands and adjacent landownerships is to expand, there needs to be substantial investments in these entities.

The proposed Outdoor Restoration Force Act would allow federal land agencies and their collaborative partners to make up significant ground. Both the Restoration and Resilience Grant Program and Partnership would provide foundational funds to shore up and strengthen needed social infrastructure and human resource capacity.

I want to thank the committee for inviting me to present at this hearing. I am happy to answer questions you may have.