



**Testimony of Dan Keppen
Executive Director
Family Farm Alliance**

**Before the
Committee on Agriculture, Nutrition and Forestry
Subcommittee on Conservation, Climate, Forestry and Natural Resources
United States Senate
Washington, D.C.**

**“The Western Water Crisis: Confronting Persistent Drought and Building
Resilience on our Forests and Farmland”**

June 7, 2022

Good morning, Chairman Bennet, Ranking Member Marshall and Members of the Subcommittee.

My name is Dan Keppen, and I am executive director of the Family Farm Alliance (Alliance). I thank you for this opportunity to share this testimony on the current drought conditions in the Western U.S. The Alliance is a grassroots organization of family farmers, ranchers, irrigation districts, and allied industries in 16 Western states. The Alliance is focused on one mission: To ensure the availability of reliable, affordable irrigation water supplies to Western farmers and ranchers. We are also committed to the fundamental proposition that Western irrigated agriculture must be preserved and protected for a host of economic, sociological, environmental, and national security reasons – many of which are often overlooked in the context of other national policy decisions.

Today’s hearing could not come at a better time. Americans are facing rising food costs and global famine looms on the horizon. Amid concerns of higher food prices and growing concerns of a looming global wheat shortage, the recent national infant formula shortage has further underscored the importance of a strong national domestic food supply system.

Meanwhile, our own government has voluntarily withheld water from producers in places like the Central Valley, Central Oregon and the Klamath Basin. Many Family Farm Alliance members are bracing for the second straight year of severe drought and unprecedented water shortages.

The Western drought continues, with no real federal policy action other than to limit irrigation supplies to farmers and residents. Major reservoirs in California and along the Colorado River have reached or are approaching historic lows, threatening the ability to generate hydropower, particularly at Lake Powell, behind Glen Canyon Dam. In the Rio Grande Basin, New Mexico's Elephant Butte Reservoir is less than 13% full. Our farmers and ranchers that are largely responsible for keeping the nation's grocery store aisles stocked are being forced to leave fields fallow or reduce livestock herds.

At this critical juncture, I truly appreciate this opportunity to share my observations and recommendations to help our communities in the face of this crisis.

Overview of the Western Drought

This testimony focuses on this year's drought – an unprecedented disaster for many farmers and ranchers, their families and rural communities across the West. At a time when Western water projects are typically operating at full strength, with delivery canals charged, bringing essential water supplies to the headgates of thousands of Western farmers and ranchers, crushing drought conditions are once again leaving millions of acres of productive farm and ranch land without water this spring. Many of our farmers and ranchers this year are going to be hit hard by this “unprecedented” drought, the second straight year we've used the term “unprecedented” when describing the Western drought.

Some of our producers in the Great Plains and the northern Rocky Mountains saw some recent relief when heavy precipitation fell across much of the contiguous U.S. in late May. Improvements to drought conditions were widespread in the Great Plains, with parts of central Kansas seeing two-category improvements to conditions, according to the U.S. Drought Monitor.

Despite the improving drought conditions, agricultural problems continued in the region. Winter wheat harvest potential in Kansas was reduced by over 25%, while conditions are too wet in parts of Montana and the Dakotas for planting spring wheat. Impacts from the widespread drought include reduced grazing for cattle in New Mexico due to wildfire closures in national forests and hydropower production concerns at reservoirs in Nevada and California due to very low water levels.

In California, the state's two largest reservoirs are at critically low levels moving into the dry season with Shasta Lake currently at 40% of total capacity on June 2 and Lake Oroville at 46% of capacity on May 26. In the Rio Grande Basin, New Mexico's Elephant Butte Reservoir is less than 13% full.

The Colorado River Basin is in its 21st year of drought and its reservoirs will end up at their lowest levels since they were initially filled. Central Arizona farmers are facing water cuts resulting from the first ever shortage declaration, and the most recent modeling shows increasing risk of reaching additional critical levels at Lakes Powell and Mead. The drought impact on Western irrigated

agriculture is not limited to the water, either. Reduced hydropower generation and the high cost of replacement power is threatening to cause double digit percentage power cost increases to millions, including many farmers and non-agricultural users. In the midst of the numerous challenges caused by the ongoing drought, efforts are underway to renegotiate new interim operating guidelines in advance of the expiration of the “Interim Guidelines for the Lower Basin Shortages and the Coordinated Operation for Lake Power and Lake Mead (Interim Guidelines)” in 2026.

Dire challenges are being faced by agricultural water users in California’s Central Valley, the Klamath River Basin in California and Oregon, the Columbia River Basin and its tributaries in Idaho, Oregon and Washington, the Rogue River Basin in southern Oregon, the Colorado River watershed, and the Great Basin.

Water users in nearly every region of the West are scrambling, looking for creative ways to stretch scant water supplies. In mountain watershed areas from the Sierra Nevada to the Rocky Mountains, the driest of conditions have prevailed. Water supply forecasting has been an incredible challenge, and much of the meager runoff has been consumed by dry upstream soils. These severe drought conditions, coupled with the arid nature of many parts of the West, again make for a trying, shortened water year.

Drought Challenges

The current drought crisis underscores some key concerns:

- 1. Water infrastructure is needed to protect future water supply reliability.** A national coalition of over 220 organizations last year urged Congress to include Western water infrastructure provisions in any potential infrastructure or economic recovery package. Congress has clearly heard and acted on our coalition’s request.
- 2. Water management in the West is becoming too inflexible.** Water users served by Western federal water projects – including but not limited to – California’s Central Valley Project, the Klamath Project, and Oregon’s Deschutes River Basin - are facing “regulatory droughts” as well. We need a new way of looking at how we manage environmental demands for our limited water resources. We need a broader view of how water is used and managed to meet environmental needs, one that considers state water laws, population growth, food production and habitat needs.
- 3. Fierce Western wildfire disasters are becoming an annual occurrence.** This underscores the importance of improving on-the-ground management and restoration actions that can lead to improved forest health, which benefits every Western watershed’s water supply capability.
- 4. Now is the time for collaboration, not confrontation.** Now more than ever, ag producers, tribes and conservation groups need to come together to provide locally driven solutions.

If we don't, the public policies and resource management strategies that we need to maintain a viable and sustainable rural West will be impossible to achieve.

Western farmers and ranchers faced a brutal growing season in 2021 as drought conditions drastically reduced water deliveries. Many were forced to make difficult decisions about the future of their operations. Cattle ranches and dairy farms liquidated their herds as they ran short of feed and water. Some farmers were forced to tear out certain crops to plant less water-intensive ones. Others let their fields lie fallow.

There are many other impacts that crop up when once-reliable surface water supplies are no longer available. Most importantly, no water for a farmer means no crops, no food, and a very limited ability to take care of his/her family. Farmers have mortgage payments, property taxes, irrigation district assessments and equipment payments. Many producers have production contracts that they have worked years to achieve and retain. If producers cannot deliver on those contracts, those contracts are lost.

We're losing farm workers, who are not only great employees but are long-time, valued members of our rural communities. The impacts of shutting down agriculture further causes harm to ag supply businesses. The drought also hits businesses on Main Street in the rural West.

We're seeing devastating impacts to the environment. In some agricultural areas, the wildlife – particularly the waterfowl - that rely on the canal system, ditch banks, and irrigated fields are simply not there anymore. Dust storms – coupled with the horrific air quality we are seeing from our burning forests – pose health risks to farmers, workers and the general public.

When surface water supplies diminish or disappear, farmers sometimes turn to groundwater, if they have access to it. In some areas, canal water is a prime source of clean recharge for shallow domestic wells. That's not happening this year where the canals have been left bone dry. Increased groundwater pumping to replace lost surface water will continue to draw down groundwater levels. Thousands of domestic wells in the San Joaquin Valley, the Klamath Basin, and elsewhere dried up last summer. Many households continue to rely on bottled water to drink. Rural residents who don't even farm are having to stay with family and friends to shower and wash clothes.

Drought Solutions

There are things that Congress and this subcommittee can do to alleviate this disaster and better prepare and manage for future droughts. Federal investments in improving and building new water supply infrastructure - partnering with the Western states and non-federal water users - can help prevent or reduce the impacts of future droughts. Moving away from knee-jerk single species management to collaborative watershed-based approaches that respect all uses will help prepare Western water stakeholders for a more predictable and secure future. We need to act, and act now to accomplish these tasks.

Perhaps the only silver lining is that this unprecedented drought crisis will hopefully draw public and political attention to Western agriculture's critical role to provide a quality food supply, boost the national economy, and continue the country's stature as the world's premier food basket. We can only hope that this leads to necessary, reasonable policies that support farmers and investment in rural communities, including water infrastructure and increased water-storage capacity. The Family Farm Alliance and other Western agriculture and water organizations believe the drought underscores the urgent need to take immediate action to help better manage impacts to water resources from drought in the West.

Western irrigated agriculture has been dealing with changes in climate and hydrology for over a century. But the prognosis for our water supplies in the future is not positive and will continue to negatively impact this important source of our Nation's food supply, the economic engine for most of our rural Western communities. Coupled with the growing demand for existing water supplies from burgeoning cities and the environment, irrigated agriculture is fast becoming a target for one thing – water. The Alliance believes we must look to several solutions in order to maintain food security for the nation and economic wellbeing of the Western landscape:

- Invest in Western water infrastructure – new water storage and improved conveyance facilities, groundwater recharge, water conservation, water management improvements, water reuse and desalination can all help alleviate the stress on our existing water supplies, especially for agriculture in the growing West;
- Invest in technology – we must manage our water supplies better – more efficiently and effectively use technology to improve the modeling and predicting weather patterns, snowpack, and runoff forecasting, as well as using technology to manage our water storage and distribution to improve efficiencies in utilizing our precious water resources; and,
- Improve regulatory processes at the federal level to expedite permitting and get projects to construction within a reasonable period of time at a reasonable cost, as well as create collaborative partnerships between federal, state and local entities interested in finding solutions to our water-climate problems through adaptive strategies that can work on the ground.

Congress has helped this past year by passing the *Infrastructure Investment and Jobs Act* (IIJA), which includes more than \$8 billion for projects that will enhance water supply reliability across the West, including repairing aging dams and canals, building new surface and groundwater storage and conveyance facilities, funding water conservation and recycling projects, and improving watershed and ecosystem management. The Western water provisions included in this legislation represent a once-in-a-generation federal investment that will bolster our aging water infrastructure and keep water flowing to our nation's farms and ranches. It will also improve our ability to provide water supply reliability for cities and the environment in future droughts. The package both aligns with the solutions water managers across the Western United States have requested for years and provides a balanced package of tools that local and regional managers may select from to best resolve the water needs and challenges in their local communities.

There is a need for short-term action, as well. We are just moving into the dry portion of another serious unprecedented West-wide drought year. Preparing for this requires a level of reaction that is immediate and sustainable. We recommend a fast-track response capability from the U.S. Department of Agriculture (USDA) and Interior Department that enables a localized response by farmers and ranchers. Farmers and ranchers need programs through their local Natural Resources Conservation Service (NRCS) offices to assist with the purchase of infrastructure including solar panels, pipeline materials, well-drilling, tanks, gated pipe and projects to develop water. Such projects can benefit wildlife and wetlands as well as food production. An immediate and local response is imperative.

The State of Western Forests

Wildfires have already burned more than a million acres of land in the U.S. this year and the months ahead present significant fire potential to all or parts of more than a dozen states. Areas where multiple large wildfires are already burning – including parts of the Southwest, Rocky Mountains and Plains – remain at the greatest risk heading into summer due to ongoing drought and abundant fire fuels such as dried out vegetation, according to the latest wildfire outlook released last month by the National Interagency Fire Center.

Increasingly fierce Western wildfire disasters are becoming an annual occurrence and underscore the importance of improving on-the-ground vegetation management actions that can lead to improved forest health. Improving the condition of our nation's forested lands is of primary importance to water providers. National Forest lands are overwhelmingly the largest, single source of water in the U.S. and, in most regions of the West, contributing nearly all the water that supplies our farms and cities. In addition, our already fragile water infrastructure can be severely damaged or rendered useless by fire and post-fire flooding and debris flows. Burned areas hold no water at all, leading to floods, erosion, and mudslides. It also increases turbidity in the streams flowing through our watersheds. The unhealthy state of our national forests, which were initially reserved specifically to protect water resources, has led to catastrophic wildfires that threaten the reliability, volume, and quality of water for tens of millions of Americans, along with the wildlife, recreational, and multi-purpose values of these lands.

Our great Western forests are damaged and diseased. This came about through a perfect storm of neglect, misguided litigation, lack of use of science, strained management budgets, and, of course, climate change. We can have no doubt that the West is warming, and some places are warming more rapidly than past modeling has predicted. Insect outbreaks have weakened and killed trees. Violent winds have brought these trees down providing an abundant source of fuel. Drought and forests cluttered with dead fall timber serve as a tinderbox for increasingly intense and devastating fires. Our National Forests in the Rocky Mountain Region are suffering from climate-driven lack of function. The inability to develop a logical management strategy has led to these consequences: catastrophic fires, lack of wildlife habitat and critical interruption of our water supply.

Western Wildfire and Forest Health Challenges

Today's wildfires are often larger and more catastrophic than in the past. Some of the blame can be attributed to climatic conditions, like reduced snowpack in alpine forests, prolonged droughts and longer fire seasons. Western population growth has also played a role, since we now have more homes within or adjacent to forests and grasslands. However, decades of fire suppression and inability to manage our forests through controlled burns, thinning, and pest/insect control probably play an even bigger role. Where California now has about 100 trees per acre, it once had about 40 trees / acre.

Much of last year's media coverage on the fires raging in Northern California featured commentary from politicians, environmental activists and academics who point to climate change as the driving factor behind the fires that have forced tens of thousands of Westerners to flee their homes. Climate change concerns may certainly be shared by some rural Westerners who live in once-thriving timber dependent communities. However, there is also a growing frustration that forest management – or rather, the perceived lack of management by federal agencies, driven in part by environmental litigation – fails to get the attention it deserves in many media accounts of the current Western wildfire infernos.

Some of us who live in rural Western communities who have watched the condition of federal forests deteriorate in recent decades have a different perspective. We have witnessed how federal forest management actions have been hampered in recent decades, in part due to environmental lawsuits initiated by certain activist groups. We encourage the Subcommittee to listen to the men and women on the ground regarding the urgency of implementing forest restoration and management.

1. National Environmental Policy Act (NEPA) Processes Associated with Forest Health

The U.S. Forest Service (Forest Service) is not fully meeting agency expectations, nor the expectations of the public, partners, and stakeholders, to improve the health and resilience of forests and grasslands, create jobs, and provide economic and recreational benefits. The Forest Service spends considerable financial and personnel resources on NEPA analyses and documentation, as well as environmental litigation.

In recent years – catalyzed by the ominous increase in Western wildfire activity – we have worked with other organizations, seeking ways to discourage litigation against the Forest Service relating to land management projects. We have supported efforts to develop a categorical exclusion (CE) under NEPA for covered vegetative management activities carried out to establish or improve habitat for economically and ecologically important Western species like elk, mule deer, and black bear. Thus, we have advocated for expediting and prioritizing forest management activities that achieve ecosystem restoration objectives.

Reforming the Forest Service's NEPA procedures is needed at this time for a variety of reasons. An increasing percentage of the Forest Service's resources have been spent each year to provide for wildfire suppression, resulting in fewer resources available for other management activities, such as restoration. In 1995, wildland fire management funding made up 16 percent of the Forest Service's annual spending, compared to 57 percent in 2018. Along with a shift in funding, there has also been a corresponding shift in staff from non-fire to fire programs, with a 39 percent reduction in all non-fire personnel since 1995.

Additionally, the Forest Service in 2019 had a backlog of more than 5,000 applications for new special use permits and renewals of existing special use permits that are awaiting environmental analysis and decision. On average, the Forest Service annually receives 3,000 applications for new special use permits. Over 80 million acres of National Forest System land need restoration to reduce the risk of wildfire, insect epidemics, and forest diseases¹.

2. Forest Management Impacts on Upper Watershed Water Supplies

It is hard to overstate the importance of snowmelt as a source of fresh water in parts of the Rocky Mountain West, and great attention is paid to ecosystem water cycles in this region. Some of the snow that falls in the mountains goes directly from crystalline snow to water vapor, bypassing the liquid water phase. This phenomenon – sublimation – accounts for the loss of a large portion of the snowfall during the winter months in the Rocky Mountains. Snow intercepted by tree branches sublimates the fastest, often disappearing within a few days of a snowfall. Recently published work by the Rocky Mountain Research Station² (RMRS) teases apart how the loss of spruce canopy affects the sublimation rates for snow both in the canopy and on the ground in these ecosystems. These findings have some important implications to snow interception and retention.

Two years ago, Family Farm Alliance President Pat O'Toole, whose family owns and operates a cattle and sheep ranch on the Colorado-Wyoming border, testified before the Senate Energy and Natural Resources Committee. President O'Toole referenced the Forest Service's figure that 160,000 acre-feet (AF) of water was not going into the Platte River system because of invasive species such as the pine beetle. The study he referenced relates to research³ conducted by the Forest Service on the Upper North Platte River in 2000 and 2003. It shows that management restricting timber harvest had already severely impacted the watershed and water yield to the tune of a minimum of 160,000 AF⁴ per year. The Forest Service uses Equivalent Clear-cut Acres modeling to predict water yield associated with vegetation disturbance, primarily associated with

¹ Federal Register Doc. [2019-12195](#) Filed 6-12-19

² Beetle Outbreaks in Subalpine Forests and What They Mean for Snowmelt, May 2021. Rocky Mountain Research Station, U.S. Forest Service.

³ Estimating Additional Water Yield From Changes in Management of National Forests in the North Platte Basin, May 12, 2000, C.A. Troendle & J.M. Nankervis (Note: This is an independent report prepared for the Platte River EIS Office)

⁴ 160,000 AF of water would cover all of Chicago, Illinois with over one foot water.

timber harvest and wildfire. The literature and research show that implementing a 100-year rotation on all eligible timber lands would sustain an increase of 50-55,000 AF of water per year – for just one part of one forest in the state of Wyoming.

In focusing on opportunities in Wyoming, it is important to provide context for what is happening in the West because lessons learned across the region has application in Wyoming. For example, across the West, federal laws, regulations and environmental litigators have greatly restricted our ability to thin forests and take other actions to aggressively combat invasive insects like the pine beetle. As a result, large swaths of national forest lands essentially remain “un-managed”. In some places, all you can see for miles is a sea of dead trees, victims of the pine and spruce beetles.

Overgrown Western forests also means forests are using more water than they did historically. Because the moisture content of the trees and brush is so low, it makes them more vulnerable to fire and parasites, such as the bark beetle, which has ravaged millions of acres throughout the West. The Western wildfire disasters have underscored the importance of improving on-the-ground management that can lead to improved forest health. Thinning out trees can reduce water stress in forests and ease water shortages during droughts. By reducing the water used by plants, more rainfall flows into rivers and accumulates in groundwater. If we could calculate potential water yield impacts with even more confidence, we could determine how much water could be freed up by thinning forests and controlling pests and invasive insects like the pine and spruce beetle. Fortunately, we are seeing more recent, positive developments towards this end.

Examples described below provide additional models for ways of quantifying the amount of water removed from Wyoming’s water supply by dying forests and invasive species like the bark beetle.

Scientists affiliated with the National Science Foundation (NSF) Southern Sierra Critical Zone Observatory (CZO) in 2018 conducted a study in the forests of California’s Sierra Nevada mountains. The team of scientists from the University of California and the National Park Service combined sensors that measure evapotranspiration with satellite images of “greenness” on the landscape to estimate the additional freshwater runoff that could be created by thinning overgrown forests. Their research, published in 2018 in the journal *Ecohydrology*, shows that water loss from evapotranspiration has decreased significantly over the past three decades, due in large part to wildfire-driven forest thinning. Forest thinning has increased in recent decades to stave off disastrous wildfires fueled by dense forests. This study shows that restoring forests through mechanical thinning or prescribed burning can also save California billions of gallons of water each year. The total effect of wildfires over a 20-year period suggests that forest thinning could increase water flow from Sierra Nevada watersheds by as much as 10 percent.

We have also heard numerous other anecdotal reports from around the West of water yield increases resulting from clearing pinon and juniper stands in northwestern Utah, arid communities in the high desert of Oregon and Northern California, the Pecos River watershed in New Mexico and the upper Purgatoire River in eastern Colorado. Pinon and juniper reduction in the Gallup,

New Mexico area triggered the reappearance of flowing water in once dry arroyos that had not been there for decades. A 2016 study⁵ conducted on the San Carlos Apache Reservation showed that different vegetation types displayed various responses to water availability. This further highlights the need for individual management plans for forest and woodland, especially considering the projected drier conditions in the Western U.S.

Forest Health Solutions

Regardless of the causes behind the sad state of our forests, it is our job now to look for solutions. These solutions will be applied through specific and thoughtful management. The problem involves a natural landscape, so some of the solutions will be time-tested natural processes. Others will be driven by landowners and forest managers through proactive, aggressive actions. The neglect and deterioration of our forests cannot continue. We must act now to heal them. We offer below the recipe for success.

1. Actively Manage and Restore our Federal Forests

Drought brings less snowfall in many areas. The snow that falls melts off up to 45 days earlier and runs off downstream on frozen ground. Therefore, the snowpack no longer functions as a reservoir delaying the release of water in a timely manner. However, the forest floor can be restored through thoughtful management. A responsible level of continuous fuels reduction includes a combination of robust mechanical thinning and prescribed fire. This can be employed to significantly reduce evapotranspiration, tree stress, disease, and pest infestation, preserve forest health conditions, and protect species and habitats.

This is not only good stewardship – it is good economics.

Failure to employ this approach will continue the downward, accelerating spiral of fuel accumulation, drought, disease, and invasive insects. This will lead, inevitably, to additional high-intensity and costly fire events in the future.

We believe active forest management can increase water yield, improve water quality, provide for jobs, and reduce the cost of firefighting, while increasing forest resiliency. This can be done, in part, by increasing the productivity of national forests and grasslands; employing grazing as an effective, affordable forest and grassland management tool; increasing access to national forest system lands; expediting environmental reviews to support active management; and designing West-wide studies to quantify water yield.

⁵ Vegetative response to water availability on the San Carlos Apache Reservation, Roy Petrakis, Zhuoting Wu, Jason McVay, Barry Middleton, Dennis Dyem, John Vogel. July 2016. U.S. Geological Survey, Western Geographic Science Center, 255 North Gemini Drive, Flagstaff, AZ 86001, USA.

a. Use Controlled Fire and Grazing as Management Tools to Restore Forests

Wildlife habitat has suffered profoundly from the “pick-up-sticks” of dead trees on the forest floor, from disruption in water function, and most dramatically, from widespread hot fires. These large catastrophic fires not only eliminate habitat, but kill millions of animals, birds and insects. Controlled fire is one of the tools that can be used to improve forest grounds. However, it is not the only tool. A 2021 article in the Sacramento Bee ([“‘Self-serving garbage.’ Wildfire experts escalate fight over saving California forests”](#)) does a nice job explaining this. We are seeing a major shift happening; the people who love the forest are coming together.

The Organic Administration Act of 1897 (Organic Act) addresses the role of the forests as part of a larger community—a larger and complex landscape. They do not exist in a vacuum. Forest grounds were intended to produce timber for Americans. We have seen the terrible effects of the near halting of the timber industry. Foresters know how to log in a responsible and sustainable manner. When done properly, it is one of the most effective tools to restore forest health. The alternatives are unregulated logging in other parts of the world and sky-high lumber prices. Sustainable timber management is a practice that must be encouraged and facilitated.

Likewise, the forests are part of our food production system. The grasslands existing in forest lands sustain not only grazing wildlife like deer, elk, big horn sheep, and antelope, but also forage for domestic livestock like cattle and sheep. Proper grazing improves soil through hoof actions and fertilization from manure. Grazing returns carbon to the soils and is a tool, indeed almost the only tool, for improving and restoring soils. Again, it must be properly managed, but many grazers are experts in just those practices. Narrow policy proposals that disconnect the role of responsible grazing, or even seek to eliminate this practice, from grassland function will result in cascading impacts to habitat connectivity, soil health, wildlife habitat, and carbon sequestration. These actions will also create added strain on rural communities.

b. Secure Long-Term Conditions of Water Flows

“Securing long-term conditions of water flows” is named as a top priority in the Organic Act, yet it is perhaps the most severely impacted by the deteriorated forests. The forests act as a sponge. Winter snowfall settles among the trees, and snowmelt and rainfall alike traditionally soak into the humus and healthy soils on the forest floor. Climate change and human mismanagement have disrupted this crucial cycle.

In the Intermountain West, flood-irrigated wet meadows provided by ranchers as part of their agricultural operations comprise the bulk of the wetland habitat in snowpack-driven systems. These hay meadows and irrigated pastures provide important habitat for sandhill cranes, white-faced ibis, northern pintails, and other priority waterbirds, as well as an array of ecosystem benefits. Flood irrigation naturally maintains underlying groundwater that is less vulnerable to a warming climate and key to supporting seasonally flooded wetlands on the surface. Filling these “sponges” through flood irrigation is critical to slowing the movement of water through the system

and thus increasing resiliency in the face of drought. Likewise, upland watershed and forest management activities can help increase water quality and quantity, as well as mitigating the risk of catastrophic wildfire.

Restoration – utilizing what we refer to as “AgroForestry” - is very doable. It will require planning, resources, commitment and will. All of these things exist.

c. Improve Watershed Yield Through Better Forest Management

As previously discussed, there is a significant gain in water supply to streams because the consumptive use of water is reduced when the number of trees growing as forests are managed to avoid the conditions that result in catastrophic insect infestation or wildfires. We believe the North Platte River example noted above should be used as a solid starting point for a case study because of the abundance of available scientific literature, including the work already developed by the Forest Service. Improved water yields also have positive implications for downstream Platte River species protected by the Species Act. Congress could help initiate a pilot project that builds upon this work. In addition to underscoring the positive aspects of active forest management noted above, such a study could also underscore the importance of appropriately measuring any new water gained through this and other water enhancement approaches. Generating new water through landscape management practices should become a new priority in the Colorado River watershed and other parts of the American West.

d. Improve Invasive Species Management

Addressing the harmful impacts of invasive species should also be a priority. Water users confront challenges associated with invasive species across the West, where salt cedar (Tamarix), quagga mussels, and cheatgrass – just to name a few- all proliferate. For example, Tamarix species along riparian corridors or around desert springs can seriously reduce underground water tables and surface water availability, drying up wetlands, and reducing flows. Tamarix species can increase flooding in riparian areas by narrowing channel width. In addition, the plants are flammable and can introduce fire into wetland and riparian communities that are not adapted to periodic burning. While millions of dollars have already been spent on efforts to reduce the impacts of these and other non-native pests, it hasn’t been enough. And more invasive species will continue to arrive.

2. Engage the U.S. Forest Service

Since the Forest Service is responsible for much of the forestland in the West, it’s engagement will be critical. Bold action is required. Decision-makers must be empowered to act, rather than get bogged down in bureaucratic morass. Unfortunately, current bureaucratic practices are not equipped to fulfill the need. Upper-level policy makers and managers will need to create a plan and set an agenda that will lead to success. We must “empower the competent” to achieve scale. The areas in need of restoration encompass millions of acres; 100-acre solutions will not suffice. Legislation may be required.

Experts from the Forest Service and various affected interests must be part of the planning process. These interests would necessarily include area and state foresters, private sector forest managers, watershed experts, wildlife scientists, grazers, and local community representatives. This group should be broad enough to cover areas of concern, but nimble enough to plan quickly and set the wheels in motion. The multi-level strategy includes solutions to sustainably manage our water, which largely originates on forest landscapes and watersheds. It must consider the habitat provided, or formerly provided, by the affected forest lands, and the needs of those species whose lives depend upon those lands. Likewise, traditional forest uses that have sustained local communities must be considered both as a tool to bring about needed change, and as a part of the holistic system which includes trees, wildlife, water and people. These tools include targeted logging, particularly of dead standing trees, and grazing to restore soils and reduce fire danger.

Healthy forests provide multiple recreation, agricultural, ecological and economic benefits, and indeed the legislation that created the Forest Service, mandates this. A successful plan must direct the effective transition from the forests' present non-functioning state to a functioning state. This will take time, but a commitment to action is required to ensure long-term success.

3. Improve federal funding programs and delivery

To increase stakeholder confidence and ensure effective funding delivery, federal agencies should invite outside guidance and clearly state to the maximum extent practical, the intended impact of funds, method of distribution, and other discretionary factors. We understand that these agencies have limited influence over specific legislative prescriptions and that further direction may be provided as the legislative process unfolds. We also believe that a certain amount of discretion based on agency expertise is necessary to ensure proper allocation of funds. However, we submit that our collective on-the-ground experience can serve as a guide to ensure that such funds broadly dedicated to conservation and restoration are best utilized to the benefit of ecosystem function, local community vitality, and working lands health.

4. Remove regulatory barriers to conservation

From our decades of collective expertise, we are aware of numerous barriers that prevent interested landowners and other entities from participating in programs administered by federal agencies, and ultimately, prevent funding from reaching the ground in a meaningful way. Statutory limitations such as program payment caps can create misalignment between program eligibility and conservation objectives. Regulatory hurdles, for example presented through interpretation of NEPA, can prolong agency action.

a. NEPA Concerns

The current implementation of the NEPA is reactive, cumbersome, time consuming and does not enable the Forest Service to implement forest management strategies in a timely manner. We have

advocated for some key general recommendations to improve the Forest Service application of environmental laws: 1) Allow landscape-level land management plans to guide individual actions on the ground without duplicative administrative process under federal environmental laws; 2) Direct the creation and use of CEs already allowed under NEPA in preventing catastrophic wildfires and restoring forest habitat and ecosystems more effectively and on a timely basis; and 3) Use the NEPA process to consider how a robust vegetative management program could improve forest health, improve water quality and lead to increased available water supply by reducing demand from overly dense tree and vegetative cover.

We do not seek changes that waive or ignore existing federal environmental laws. Instead, we call for improvements to make those laws work for the benefit of the nation as intended. By eliminating duplicative or unnecessary processes and using streamlining tools already allowed under the law - and promoting action instead of litigation - the status quo could be changed. The proposed changes could help government agencies to use their limited resources to expeditiously implement land management actions designed to prevent wildfires and improve habitat for priority, endangered and/or threatened species. Surely that would be a dramatic improvement over spending precious time and resources on bureaucratic process and litigation. These types of critically needed procedural changes to NEPA implementation will improve our Western landscapes and protect our valuable water supplies from the devastating effects of wildfires. They will also allow agencies to improve habitat, restore ecosystems for the benefit of federally important species and allow continued agricultural use of our public lands.

The Forest Service two years ago proposed revisions to its NEPA procedures with the goal of increasing efficiency of environmental analysis while meeting NEPA's requirements. We supported these proposed changes to NEPA, many of which were based on adding or expanding existing CEs. At the time, it was estimated that on average, an environmental assessment took 687 days to complete. Average time to complete a CE was just 206 days. By using the new CEs in the proposed rule, the Forest Service could potentially complete NEPA analyses between 30 and 480 days earlier on applicable projects.

One of the ways to protect agency credibility in the use of CE's is to include an explicit provision that the agency will reopen the CE decision if changed circumstances or new information militate such an action. The Federal Energy Regulatory Commission (FERC) has had such a provision (called a "reopener" by FERC) for many years in its NEPA regulations and this has aided FERC in its administration of NEPA. Such a "reopener" provision is so attractive that the Bureau of Reclamation's similar provision prompted Congress to direct Reclamation to use its CE process in administering the 2013 *Reclamation Small Conduit Hydropower Development and Rural Jobs Act*, P.L. 113-24.

Increasing the efficiency of environmental analysis would enable the Forest Service to do more to increase the health and productivity of our national forests and grasslands and be more responsive to requests for goods and services. The Forest Service's goal should be to complete project decision making in a timelier manner, improve or eliminate inefficient processes and steps, and, where

appropriate, increase the scale of analysis and the number of activities in a single analysis and decision. Improving the efficiency of environmental analysis and decision making will ensure that lands and watersheds are sustainable, healthy, and productive; mitigate wildfire risk; and contribute to the economic health of rural communities through use and access opportunities.

b. Candidate Conservation Agreements with Assurances and Safe Harbor Agreement

Federal agency staff capacity and siloed communication structures also present very tangible hindrances to effective program implementation on the ground and further complicate already complex processes. For example, Candidate Conservation Agreements with Assurances and Safe Harbor Agreements can serve as useful tools to ensure that landowners' efforts to conserve and recover at-risk and listed species do not put them in jeopardy of further regulatory restrictions as a result of their conservation actions. However, these agreements are time consuming and sometimes costly to landowners to develop. Beyond agreement development though, the cost of ongoing implementation, monitoring and reporting is largely unaccounted for and often falls on landowners, the state or other agreement holders. There are certain funds that can provide cost-share assistance in developing these agreements, but ongoing support for implementation, monitoring, management and stewardship remains a gap and presents a hurdle to the long-term success of conservation objectives.

5. Real World Success Stories

We know there's much more that needs to be done to accelerate the pace and scale of forest health and watershed resilience projects, but we're pleased that our members are on the leading edge of successful, scalable efforts in the West.

a. North Yuba Forest Partnership

Last month, USDA announced that the North Yuba River watershed in Northern California will be one of the first 10 landscape investments to be funded nationally through the U.S. Forest Service's Wildfire Crisis Strategy. The North Yuba landscape stretches from New Bullards Bar Reservoir in Yuba County up to the Sierra Crest along Highway 49 in Sierra County. The anticipated resilience work builds upon and scales up previously successful and innovative efforts in the North Yuba River watershed, including the utilization of a groundbreaking, public-private financing tool called the Forest Resilience Bond (FRB).

Launched earlier this year, the strategy outlines the need to treat up to an additional 20 million acres on national forest lands and up to an additional 30 million acres of other federal, state, Tribal, private and family lands over the next decade. The partnership is using the latest science to integrate multiple stakeholder priorities into projects with the objective of accomplishing forest restoration and wildfire risk reduction at a landscape scale. Planned activities include meadow restoration, ecological thinning of forest density and prescribed fire.

The North Yuba Forest Partnership (NYFP), of which Yuba Water (a Family Farm Alliance member) is a founding member, is a diverse group of nine organizations passionate about forest health and the resilience of the North Yuba River that shares the ambitious goal of implementing forest restoration across 275,000 acres of the watershed. Founded in 2019, members of the NYFP include Blue Forest Conservation, the National Forest Foundation, the Tahoe National Forest, Yuba Water Agency, the South Yuba River Citizens League, Sierra County, the Camptonville Community Partnership, Nevada City Rancheria, and The Nature Conservancy. By mitigating the risk of high-intensity wildfire and restoring forest health, the NYFP will protect a variety of vital resources, including wildlife habitat, water supply, opportunities for recreation, as well as multiple communities.

The USDA investment will result in over \$25 million in additional federal IJA funding for the Partnership's work over the next three fiscal years and almost 17,000 additional acres of forested watershed lands treated. Moreover, last week, Yuba Water learned that USDA awarded the Partnership an additional \$3 million for this year as one of 15 projects selected nationwide under the Collaborative Forest Landscape Restoration Program. The Partnership's work demonstrates that comprehensive and collaborative approaches can help us tackle even the toughest natural resource issues.

a. Headwaters of the Colorado River Project

Family Farm Alliance President Patrick O'Toole is helping to lead an effort to design a comprehensive, multistakeholder, large landscape initiative to restore two severely degraded (non-functioning) 50,000-acre watersheds; one in the Medicine Bow National Forest in Wyoming and a second in the Routt National Forest in Colorado. The vision is to restore two forested rangelands to a resilient state that filters and stores water, produces protein, sustains wildlife and fisheries, sinks carbon, produces renewable energy feedstocks and enables economically viable rural communities to thrive.

The Little Snake River Watershed is a fascinating combination of a functioning conservation district that has a 30-year record of nationally recognized river restoration, grazing habitat enhancement, fish passage, and migratory bird habitat enhancement projects. Mr. O'Toole and his team are designing a plan to implement an integrated, multidisciplined and multilevel watershed enhancement project that will demonstrate how collaborative and cooperative restoration efforts can be carried out at scale and replicated in watersheds across the West.

Men and women like the O'Toole family who live and work in the forests have up-close and personal experiences and observations upon which they formulate their assessment of the conditions in these forests. They view the watersheds and assess their functionality as intact, interconnected ecosystems. In their view, the forested watersheds are in a state of dramatic decline as a result of decades of siloed, top-down management, litigation that has prevented many pragmatic enhancement and restoration initiatives from moving forward. Climate change has further taken a major toll on the health and functionality of the watersheds.

Mr. O’Toole and other local interests believe it is time for a new way forward, one that would be characterized by large landscape scale, integrated and multidisciplinary enhancement projects guided by multistakeholder collaboration.

6. Action in Congress

We are pleased that there appears to be growing recognition in Congress of the importance of active forest management. There are several bills that have been introduced in this Congress, intended to facilitate responsible forest management.

One of those is the *Outdoor Restoration Partnership Act*, sponsored by Senator Michael Bennet (D-CO), and supported by the Family Farm Alliance. To date, Congress has failed to invest in our Western lands, undermining our economy and way of life. As a result, local governments are often left to foot the bill for conservation, restoration, and wildfire mitigation. Senator Bennet’s bill would establish an Outdoor Restoration Fund to increase support for local collaborative efforts to restore forests and watersheds, reduce wildfire risk, clean up public lands, enhance wildlife habitat, remove invasive species, and expand outdoor access. It would empower local leaders by making \$20 billion directly available to state and local governments, tribes, special districts, and non-profits to support restoration, resilience, and mitigation projects across public, private, and tribal lands. The bill would invest another \$40 billion in targeted projects to restore wildlife.

Another bipartisan bill would provide carbon credits to companies and other non-federal partners in exchange for thinning trees on fire-prone forests. *America’s Revegetation and Carbon Sequestration Act*, co-sponsored by Senators John Barrasso (R-WY) and Joe Manchin (D-WV) would encourage more intensive forest management — and reforestation — through a variety of initiatives. The carbon credit idea would allow non-federal entities to be awarded carbon credits through voluntary markets in exchange for money they provide the Forest Service for projects that increase carbon sequestration.

One more important piece of legislation is the *Resilient Federal Forests Act*, introduced by Rep. Bruce Westerman (R-AR). This bill – supported by 85 organizations, including the Family Farm Alliance – would help address the environmental and economic threats of catastrophic wildfires.

Each of these bills is important. We hope that efforts like these will build momentum towards larger forest management reforms in subsequent bipartisan legislation.

Looking Ahead to the New Farm Bill

While the actual “brass tacks” work on drafting the next Farm Bill may not occur until 2023, farm and conservation groups are beginning to advance their own policies to take to Congress. Engaging in the development of the 2023 Farm Bill is a top priority for the Family Farm Alliance, both

internally and through our association with the Western Agriculture and Conservation Coalition (WACC).

1. Farm Bill Engagement with the WACC

The Alliance is a member of the steering committee of the WACC, a coalition of constructive agriculture and conservation groups who have engaged in recent years on the farm bill, environmental appropriations, climate-smart agriculture, forestry, wildfire and Endangered Species Act issues. Created twelve years ago, the WACC now includes nearly twenty national, regional and state water, ag and conservation organizations. The 2018 Farm Bill conservation title contains many provisions the WACC advocated for. Now, the WACC is preparing to engage in the 2023 Farm Bill.

There is always competition between the proponents of the various titles in Farm Bill authorization. The WACC plans to put together the story of how the NRCS is using its current Farm Bill conservation title dollars, and construct a rationale based on facts for why they should keep the baseline in the upcoming round of negotiations.

The conservation title of the last farm bill was a good thing, and parts of that title are due to the direct work of the WACC Alliance and its agricultural and conservation allies. The 2018 conservation title reflects the growing trend in the West, where individual producers – working with irrigation districts, non-governmental organizations and state and federal partners – are performing large-scale projects that benefit the environment, improve on-farm water management, and provide a new cash stream that helps rural communities.

2. Farm Bill Conservation Program Implementation Concerns

Our overall goal when we engage in Farm Bill negotiations is to increase opportunities for Western farmers and their related water management entities to invest in improved water management and efficient irrigation technologies, leading to more and more reliable water supplies, increased conservation, increased crop yield and environmental benefits. Of course, benefits realized by farmers and ranchers translate to benefits enjoyed by American consumers, as well as protecting and enhancing our food security for the Nation and the world.

Several of our members over the past two decades have noted diminished efficiencies associated with NRCS delivery of conservation programs to on-the-ground applications. They have observed that the “evolutionary process” which began to occur at that time has weakened NRCS’ ability to provide technical assistance. Currently approximately 20 percent of the NRCS budget is spent on financial/contractual administration matters. This is likely one of the key reasons that only 16% of American farmers are involved with federal farm programs. This issue, and the need to put priority on local input, must be addressed in the new farm bill. We’d like to see less paperwork and more applied conservation.

One means of improving local input would be to dedicate more dollars to educating farmers on available programs and opportunities. The once strong role of watershed teams needs to be revived. There are also opportunities to leverage personnel at the local level, where local professionals can take on some of the technical duties once provided by NRCS staff. Many producers in the West use irrigation water delivery systems that are shared among multiple producers, such as irrigation districts, canal companies, or mutual ditch companies. Thus, flexibility is needed to work directly with these multi-producer, water-delivery entities to best deliver the Farm Bill's conservation title benefits to western producers. Greater focus on the part of NRCS to work with these agencies - both in terms of education and program implementation - is needed.

3. Initial Recommendations for the 2023 Farm Bill

The specific recommendations presented below would remove some of the existing contracting barriers for Western producers and make the Farm Bill's conservation title programs more accessible and relevant to western producers. We also offer recommendations on Farm Bill provisions that would protect our valuable Western watersheds and incentivize young farmers to enter and stay in the industry.

1. **Regional Conservation Partnership Program (RCPP), Environmental Quality Incentives Program (EQIP), and the Agricultural Conservation Easement Program (ACEP) are particularly important to achieving conservation and rural economic and social goals in the West.** These programs in Title II must be funded at no less than current funding levels to provide for on-farm and on-ranch operational and resource conservation needs. The RCPP derives, in part, from the Agricultural Watershed Enhancement Program (AWEP), a program whose conceptual idea was originally driven by the Alliance and other Western U.S. ranching and conservation interests in past Farm Bill negotiations. This excellent program allowed agencies such as irrigation districts to partner with local NRCS offices on worthwhile conservation projects, often in partnership with the Bureau of Reclamation. In these cases, Reclamation funded the irrigation district providing the water to the farms, and the NRCS funded on-farm projects associated with that district system. This proved to be an effective way to leverage funds.
2. **Ensure that EQIP remains available for use across all land ownerships and increase funding for farmers. Appropriately fund EQIP, specifically increase funding programs for farmers to invest in efficient irrigation technologies and services.**
 - Increase investment in private sector consulting services, including technical service providers and irrigation district staff.
 - In accordance with state water law, allow farmers to decide what happens to the saved water, rather than requiring water be returned to the environment.
 - Assign priority to those areas where federal regulations and laws have diminished once-reliable surface water supplies.

- Include improved water quality as justification for farmers to invest in efficient irrigation technologies (rather than just water savings).

NRCS should also look for opportunities to improve efficiency of water utilization in other sectors, including the riparian and forest environments.

3. **Remove RCPP Contracting Barriers and Streamline Implementation.**

- Encourage the use of a grants program for eligible partners to deliver conservation benefits.
- Eliminate the unnecessary administrative burden and complexity of fund tracking.
- Streamline RCPP applications.
- Ensure that agriculture producers will be beneficiaries of each RCPP proposal.
- Allow local partners to use in-kind services – such as in-house engineering, marketing and administration – as a means of satisfying the RCPP requirement to leverage one local dollar for every federal dollar spent.

4. **Maintain priority funding and allow more flexible utilization of the Watershed and Flood Prevention Operations Program (WFPO), for watershed enhancements.** This funding could be used for a variety of critical drought response and resilience projects including irrigation modernization, development of rural water supply sources, erosion and sediment control, and fish and wildlife habitat enhancement. It is also critical for supporting the modernization of irrigation water delivery infrastructure at scale. This is a program that Family Farm Alliance members have put to use to replace leaking, open canals with pressurized pipes, and overall improving agricultural water security. The program’s funding is becoming increasingly competitive because of the scale of need in modernizing agricultural infrastructure.

The NRCS awarded all \$500 million that the IJA allocated to WFPO in two rounds of announcements in March and April of 2022. The NRCS’ announcement recognized that “[t]he amount provided to protect our watersheds is historic and highlights the priorities set by Secretary Vilsack to address the effects of climate change, ensure equity, and create a path toward climate resiliency.” Unfortunately, the “path toward climate resiliency” created by the funding awards is overwhelmingly dedicated to feasibility studies (94% of awards) for small dam construction (59% of feasibility studies) to address flooding concerns in the eastern United States.

This recent decision raises three concerns: 1) Several Western irrigation modernization projects which have already developed watershed plans and are in the cue, moving towards implementation, were not funded; 2) It is uncertain how many of the feasibility studies for the new projects will ultimately be implemented. If the recently funded feasibility studies ultimately support implementation of small new dam projects, the available funding for a program that is already oversubscribed and underfunded will become even more strained.

5. **Strengthen NRCS Technical Assistance capacity for both program implementation and non-Farm Bill conservation planning.**
6. **Better define inter-agency cooperation to improve conservation program delivery and yield broader positive impacts.**
7. **Encourage local, regional and state land managers to lead watershed enhancement efforts and provide them with the tools to do so.**
8. **Encourage development of Payment for Ecosystems Services (PES) programs.** Approaches like that advocated for through Senator Wyden’s *Watershed Results Act* would provide a predictable source of federal funding for up to five pilot watersheds to compensate for ecological services provided by farmers – either water conservation and nutrient management or more habitat related irrigation practices – all informed by prioritization technologies and data analytics that can measure results and allow markets to be created for these services. Existing limited sources of federal funding should be used most efficiently to purchase results rather than actions.
9. **Support beginning farmers and ranchers.**
10. **Move towards managing for healthy forests**, as described earlier in this testimony.

Our goal at the Family Farm Alliance is to find solutions to Western water conflicts that protect our national ability to feed ourselves, export food to others and continue to lead the world in agricultural production while finding ways to accommodate the water supply needs of growing urban areas, energy development, recreation, and environmental preservation. We look forward to working with you to build a 2023 Farm Bill that embeds some of these sensible, workable policies.

Conclusion

The continued epic drought we have been experiencing across the western United States, especially in the last two years, and other weather abnormalities are different than in the past. Our organization has found that the best solutions are locally driven. Solutions come from the land. Farmers, ranchers, foresters and fishers across the West work in the extremes of elements and volatile weather, and we share a love of the land and our waters. They see the pressure on the land they manage and their water supplies. Sadly, strategies appear to be evolving to take water from Western farmers, from food production, and redirect it to other uses.

Farmers and ranchers must be at the center of all discussions and decision-making in Western watersheds. The revival of watershed forests is crucial to combating the effects of climate change. By bringing together changemakers and working collaboratively, we can change the paradigm of forest management. Success will mean healthier forests, healthier wildlife populations, more

prosperous and dynamic local communities, more recreation opportunities, greater economic benefits and much-needed security in our water supplies.

Balance in production and conservation is the answer to forest health.

Significant input will be needed from a wide range of farmer and other producer organizations outside of typical policymaking structures. We all must become more adaptable and open to change. We must learn from those who have experience.

We must become more effective in communicating to the world the value of farmers and ranchers. Our societies are confused. The basic principles of existence are under pressure. The steady rhythms of food production and ecosystem services are crucial to understanding our challenges and finding solutions.

Are we going to wake up and realize the world has drifted far from the stability we have known for our lifetimes and make required course corrections? Or do we remain committed to our own demise and continue on a crash course with what may likely be the greatest food shortage in American and world history?

We have some decisions to make.

Agricultural production in the West is an irreplaceable, strategic national resource that is vital to U.S. food security, the ecosystem, and overall drought resilience. The role of the federal government in the 21st Century should be to protect and enhance that resource by doing whatever it can to ensure that water remains on farms.

Western producers must continue to manage water as if every year is a drought year. We need to invest in water storage facilities to capture water in wet years, we need to look to innovative technology to enhance supplies and delivery, and we need to get the most benefit from the water we have available. The ability to measure, assess and show value for how that water is used is incumbent on every water manager - environmental, urban and agricultural.

The Alliance looks forward to working with your Subcommittee to address the issues we have identified in this testimony and those we have not. It has been a tough year for many of our producers and the rural communities they support. At the Alliance, we'll continue our efforts to ensure that irrigated agriculture continues to play a vital role in feeding our Nation and the world, while keeping our rural communities and the environment healthy. At a time of unprecedented change, one certainty holds firm and true – our nation's most valuable natural resource must be preserved.

Thank you for this opportunity to submit this testimony.