

**Testimony of William Diedrich  
Representing  
The Family Farm Alliance**

**Before the Subcommittee on Water, Wildlife and  
Oceans, United States House of Representatives**

**Oversight Hearing  
On  
“The State of Water Supply Reliability in the 21<sup>st</sup> Century.”**

**Washington, D.C.  
February 26, 2019**

Good morning Chairman Huffman, Ranking Member McClintock, and Members of the Subcommittee.

My name is William Diedrich, and on behalf of the Family Farm Alliance (Alliance), I thank you for this opportunity to present this testimony on a matter of critical importance to our membership: the reliability of water supplies in the western United States. 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.

The Family Farm Alliance has a long history of collaboration with partners in all levels of government, conservation and energy organizations, and Native American tribal interests who seek real solutions to water resources challenges in the West. We seek to advocate for a proper role for the federal government on water matters, a vision that focuses on research and development; full integration, coordination and maximum sustainable use of resources; and planning that is driven from the “ground up.” The Alliance also has a well-established relationship with Congress, with 70 invitations to testify before Congressional committees on Western agriculture, water and environmental matters in the past decade.

This testimony will illustrate the problems Western farmers and ranchers face in terms of water supply reliability, outline what producers like me and other Westerners are doing to address these challenges, and provide policy recommendations that we believe lay the foundation for effectively addressing water supply reliability in the Western United States.

**Personal Background**

I am a fourth-generation California Central Valley farmer and I appreciate the role of a sustainable irrigated agriculture industry. I have also been very involved in water issues and see the importance

of reliable water for the many important needs that exist. At my core, I am a Californian and an American, and I believe the health of our communities, our ecosystems and our farmers and ranchers are directly related to our prosperity as a state and a Nation. Water shortages affect all sectors of the Western economy, creating problems for cities and towns, manufacturers, builders, service providers, and individual citizens that are just as challenging as the difficulties faced by farmers and ranchers. The environment, too, is stressed by water shortages. In many areas of the West, we see fish and wildlife, plentiful or endangered, struggling to adapt and survive in extremely harsh conditions during times of drought.

Water connects us all – farms, cities and the environment – and while decreased water supply reliability presents unique problems for each sector, our solutions should be interconnected and mutually beneficial – not divisive. That requires a willingness of all parties, including federal agencies, to be creative and flexible. That is happening in some places. In other places, it's not. The most helpful thing that Congress can do for states suffering from a lack of water supply reliability is to encourage, demand, and even mandate, where necessary, creativity, innovation and flexibility on the part of federal water management and regulatory agencies.

The Family Farm Alliance is an organization made up of farmers and ranchers in the West, but the water shortage problems we all face vary by region, topography, climate, soil conditions, hydrology, and crop. These problems have some elements in common, including inadequate or deteriorating water storage infrastructure, inflexible or outdated operational requirements and regulatory conditions, and government agencies that are not nimble enough, or not motivated, to seek out and embrace better ways of doing things to ensure the most benefit for the broadest suite of public interests. Solutions also vary by state or by region, but they, too, are characterized by certain common elements, including creativity, flexibility and balance. I will discuss water supply reliability issues in a few different areas of the West, as well as some examples of successful solutions and potential solutions. Since I'm from California, I'll begin there.

### **Recovering from the 2012-2016 California Drought**

California is still recovering from the 2012-2016 drought, the worst drought in its recorded history. Record dry conditions, coupled with water supply reductions related to regulatory actions and aging water storage and conveyance infrastructure, resulted in water supply reductions or constraints for most sectors in California. In 2014, vast areas of farm land in the San Joaquin and Sacramento Valleys received no surface water at all – a 100% reduction. Those same areas were again zero-ed out in 2015. Overall, agricultural water supplies in the Central Valley have had their reliability reduced by 65% since 1992. During the drought, nearly 75% of the state's irrigated farm land (seven million acres), received 20% or less of its normal surface water supply and according to the California Department of Water Resources (DWR), nearly 692,000 acres of farmland were fallowed in 2014 as a result of water shortages.

During the height of the recent drought, for two years in a row, many agricultural water users received no allocations at all from the federal Central Valley Project (CVP), one of the largest

water projects in the world. Table 1 shows the CVP allocations from 2014-2016. In both 2014 and 2015 no surface water supplies were allocated to water users on the Tehama-Colusa Canal, and in the San Luis Unit and Friant Division of the CVP. Settlement contractors, primarily agricultural water users, have water rights that pre-date the federal project, making them priority rights on the system, yet even allocations to those senior water rights holders were reduced during the drought.

**Table 1. Central Valley Project Water Allocations (2014, 2015 & 2016)**

<i>Contractors</i>	<i>Percent Supply</i>		
	<i>05/13/14</i>	<i>02/27/15</i>	<i>07/18/16</i>
<b><u>North of Delta</u></b>			
<i>Agricultural Contractors (Ag)</i>	<i>0%</i>	<i>0%</i>	<i>100%</i>
<i>Urban Contractors (M&amp;I)</i>	<i>50%</i>	<i>25%</i>	<i>100%</i>
<i>Wildlife Refuges</i>	<i>75%</i>	<i>75%</i>	<i>100%</i>
<i>Settlement Contractors / Senior Water Rights</i>	<i>75%</i>	<i>75%</i>	<i>100%</i>
<i>American River M&amp;I Contractors</i>	<i>50%</i>	<i>25%</i>	<i>100%</i>
<i>In Delta-Contra Costa</i>	<i>50%</i>	<i>25%</i>	<i>100%</i>
<b><u>South of Delta</u></b>			
<i>Agricultural Contractors (Ag)</i>	<i>0%</i>	<i>0%</i>	<i>5%</i>
<i>Urban Contractors (M&amp;I)</i>	<i>50%</i>	<i>25%</i>	<i>55%</i>
<i>Wildlife Refuges</i>	<i>65%</i>	<i>75%</i>	<i>100%</i>
<i>Settlement Contractors / Senior Water Rights</i>	<i>65%</i>	<i>75%</i>	<i>100%</i>
<i>Eastside Division Contractors</i>	<i>55%</i>	<i>0%</i>	<i>0%</i>
<i>Friant – Class 1</i>	<i>0%</i>	<i>0%</i>	<i>75%</i>
<i>Friant – Class 2</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>

*Source: Bureau of Reclamation 2019*

Almost as large as the federal CVP, California’s State Water Project (SWP) cut agricultural deliveries by 80 percent in 2015.

In most areas where surface water supplies were severely reduced or eliminated, farmers turned to groundwater to maintain their permanent crops – grapes, tree fruits, nuts, citrus – that represent a lifetime’s investment. But groundwater supplies are not infinite and were severely depleted during the drought in areas that received no surface water. Groundwater also isn’t cheap. Wells cost upwards of \$200,000 each and they are expensive to run, so many farmers pump only enough water to keep their trees alive, but not producing. Often, farmers tear out mature, productive trees and vines and replace them with saplings that won’t produce a crop for years, but require far less water to keep alive in challenging conditions. And in some places like the citrus belt in the Friant Division of the CVP, there is no groundwater at all. The many small farms there, which produce most of the nation’s oranges, had their surface water cut off for the first time in 60 years in 2014 and 2015.

Many of my neighbors in 2014 and 2015 were forced to abandon or fallow portions of their farms,. When one hears that land is “fallowed” it might only seem that the impact is to the farmer, but that is definitely not the case. Every acre of farmed land generates jobs, economic activity and products. That is why the reduction in the water supply reliability of the CVP is so devastating to the rural agricultural communities of the Central Valley.

For every acre fallowed, workers have less work and tractors are used less. If I use my tractor less, I buy less fuel, lubricants and parts and tires, which means the local businesses that supply these things sell less and their companies suffer. When I don’t purchase inputs for the land (fertilizer, seeds, amendments, etc.), the local companies that sell these items suffer reduced sales and the truck drivers who deliver these items have less work. With fewer trucks running fewer routes, fuel and parts purchases are reduced. If that one fallowed acre was intended to be a tomato field, those tomatoes would not be trucked to market or the processing plant.

As you can see, there is a direct interconnection between agriculture and many other industries. Press reports will acknowledge that California agriculture is a \$50 billion-dollar industry, but then attempt to minimize this impact by suggesting that it is “only” 2% of the GDP of the state. The oft-reported \$50 billion number is only the farm gate value of the products. It does not include all the other industries that benefit from the trucking and processing of the agricultural products (and all the fuel, parts, etc., from the activities). Clearly, agriculture is a huge economic driver for my state, particularly in rural communities. A report by the University of California shows that the food and beverage industry contributed \$82 billion and 760,000 jobs that are directly and indirectly linked to agricultural products.<sup>1</sup>

This is a very concerning time for me, my family, and my neighbors, since substantial investments are being made, primarily with the intent of converting more of our operation to drip irrigation, which we hope will stretch limited water supplies. This conversion creates an electrical demand as we move from gravity irrigation to pressurized subsurface irrigation. My friend Cannon Michael, who serves on the Family Farm Alliance board of directors, recently installed 1 megawatt of solar panels to offset the impact of the power cost needed to support his drip irrigation conversion. Those investments will be for naught if the current lack of reliability for surface water deliveries persists into the future and there is no water to conserve or use for groundwater recharge.

My fellow California farmers are doing their best to offset the devastating loss of water. For example, producers have been forced to buy water, when available, from other sources. In certain instances, farmers had no choice but to buy water at a rate more than 25 times what they normally would pay. In the absence of once reliable surface water supplies, California farmers have looked to groundwater, where available, which is not sustainable. Central Valley producers have been trying to get ahead of a much feared, but anticipated, drought for years. Notably, they’ve spent about \$3 billion to install more efficient irrigation systems on almost 2.5 million acres from 2003

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<sup>1</sup> [http://giannini.ucop.edu/media/are-update/files/articles/V18N4\\_3.pdf](http://giannini.ucop.edu/media/are-update/files/articles/V18N4_3.pdf)

to 2013, according to information compiled by the California Farm Water Coalition. These investments will continue as farmers strive to stretch and most efficiently manage their water supply.

### **California Drought: Myth vs Reality**

Here are some facts that are often overlooked in media coverage of the recent California drought:

- California agriculture grows more than 50% of America's fresh fruits, nuts and vegetables across 78,000 farms, 400 crops and 450,000 jobs. California's value of agricultural output was \$50 billion in 2017<sup>2</sup>
- California is the country's largest agricultural producer and exporter. Agricultural products were one of California's top 5 exports in 2017, totaling \$20.6 billion, over 14.6% of total U.S. agricultural exports.<sup>3</sup>
- Crop production per acre-foot of water rose 43% in California between 1967 and 2010.<sup>4</sup>

Some media accounts continue to advance the decades-old myth that farmers consume 80% of water supplies in California and other parts of the West. But if we look at the "water footprint" in the same way as we have come to talk about the "carbon footprint," we get a different picture, particularly in California. Numbers from the California DWR provide perspective. According to the Department, statewide water use breaks down as follows: 10 percent urban use; 41 percent agricultural use and 49 percent use for environmental management: wetlands, Delta outflow, wild and scenic designations, and instream flow requirements.

We should also recognize that farms transform water into products that are needed to sustain the lives of our entire population. We are all part of "agricultural water use" every day – multiple times per day.

Others in the media suggested that the shift towards higher value crops like nuts and wine grapes have led to an increase in agricultural water use. During the 2014-2015 drought years, almonds were the preferred target of these reports. But according to California DWR, the total amount of agricultural water use has held steady since 2000 and has actually declined over the longer term.

### **The California Water Reliability Crisis**

California has an incredibly diverse and variable climate, with precipitation and snowpack totals varying widely from year to year, with runoff totals ranging from a high of 52,830,000 acre-feet

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<sup>2</sup> California Department of Food and Agriculture, Gianinni Foundation of Agricultural Economics – University of California, USDA, Assembly Committee on Jobs, Economic Development and the Economy

<sup>3</sup> California Department of Food and Agriculture, California Agricultural Statistical Review, 2017-2018

<sup>4</sup> USDA National Agricultural Statistics Service, California Department of Water Resources

in 1983 to the lowest recorded runoff of 6,170,000 acre-feet in the driest individual year of 1977. While California has natural variability in precipitation and snowpack, water allocations to CVP contractors have been disconnected from water year types, predominantly resulting from increased requirements for environmental water deliveries. This year is a good example of the increasing disconnect between the amount of actual water that California receives each year and the ability of the Bureau of Reclamation (Reclamation) to operate the CVP and allocate water to its contractors in a fashion that reflects the actual hydrology.

As of February 22, 2019, nearly every reservoir in California is at or over its historical average for this time of year, snow water content is 115 percent of the April 1 peak, and precipitation is 120 percent of average, but just last week, south of Delta CVP agricultural service contractors received an initial allocation of only 35 percent of their contract amounts. What this means is that California has plentiful snow, plentiful rain, and nearly full reservoirs, yet San Joaquin Valley irrigators are likely to receive less than 50 percent of their contracted water supplies when the final allocations are made. In order to make decisions about planting crops, a farmer must consider the water available to grow the crop. Thus, the initial allocation numbers are critical. Even if the allocation increases in future months, it will be past the time when a farmer must make their decision to plant.

### **Future Projections**

The Sacramento and San Joaquin Rivers Basin Study released by Reclamation indicates that throughout the 21st century, temperatures are projected to increase, snowpack will likely decline and snowpack elevation levels will rise, precipitation will increase during fall and winter months, and spring runoff will decrease. These factors will exacerbate the existing imbalance between the demands in these river basins and the ability to deliver reliable water supplies to communities and ecosystems that rely on them. The result of these changes, coupled with expected population growth and changes in land use, is an average annual unmet water demand for CVP contractors that is expected to range between 2.7 million and 8.2 million acre-feet per year, with most of the unmet demands occurring south of the Bay-Delta.<sup>5</sup>

### **Groundwater**

Groundwater is a critically important part of California's water supply, accounting for 40% of total annual agricultural and urban water uses statewide in an average year, and up to 65% or more in drought years. About three-quarters of the state's residents – around 30 million people – depend on groundwater for at least a portion of their water supply; for 6 million residents, it is their only supply.

California DWR estimates that on average, 2,000,000 acre-feet is withdrawn from the state's aquifers per year more than what is being recharged, and much more so during periods of drought. This is nothing new; scientists estimate that since California's development in the late 1800s, the state's groundwater reserves have been reduced by 125,000,000 acre-feet, or 4.5 times the capacity

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<sup>5</sup> [https://www.doi.gov/sites/doi.gov/files/uploads/sec\\_order\\_no.3343\\_cal\\_water\\_0.pdf](https://www.doi.gov/sites/doi.gov/files/uploads/sec_order_no.3343_cal_water_0.pdf)

of Lake Mead. Most of this groundwater depletion has occurred in the San Joaquin Valley, predominantly as a result of a reduction in the reliability of surface water supplies.

### **Key Challenges Facing Western Irrigators**

The key challenges Western irrigators face in times of reduced water supply reliability include competition for scarce water supplies, insufficient water infrastructure, growing populations, endangered species and increasing weather variability/climate change. Across the West, several key water policy challenges stand out:

#### ***Water management in the West is becoming increasingly complex and inflexible.***

We need a new way of looking at how we manage our limited water resources, one that includes a broader view of how water is used, along with consideration of population growth, food production and habitat needs. The goal should be to integrate food production and conservation practices into water management decision making and water use priorities, creating a more holistic view of water management for multiple uses. We must begin to plan now in order to hold intact current options. Planning must allow for flexibility and consider all needs, not just focus on meeting future needs from population growth.

In many parts of the West, litigation stemming from citizen suit provisions of environmental laws including the ESA and Clean Water Act (CWA) is producing federal court decisions (or court approved “settlements”) that direct federal agency “management” of state water resources. Congress should recognize that this type of litigation and resulting settlements can actually harm the overall health and resilience of landscapes and watersheds by focusing on single species management under the ESA. We should seek solutions that reflect a philosophy that the best decisions on water issues take place at the state and local level. Finding ways to incentivize landowners to make the ESA work is far more preferable than the ESA being used as a means of “protecting” a single species (such as the Sacramento-San Joaquin River Delta smelt in California, or the spotted frog, in Oregon) without regard for other impacts, including those on other non-listed or state-listed species.

Droughts occur routinely in the West; that is why Reclamation made such important investments in water supply infrastructure over the past century. However, this infrastructure was never designed to meet the burgeoning demands of growing populations and environmental needs in the West, while continuing to support farmers, ranchers and rural communities during periodic droughts. Unfortunately, future droughts in the West are predicted to be deeper and longer than we have historically experienced in the 20th century. We believe Congress should provide federal agencies with more flexibility under environmental laws and water management regulations to respond to drought conditions when they arise. And where such flexibility currently exists, Congress should demand that agencies use it promptly and with a minimum of bureaucratic delay.

As one example of where innovation, flexibility and creativity are needed, the U.S. Army Corps of Engineers (Corps) operates dozens of water projects throughout the West, and it regulates the

operations of many non-federal dam and reservoir projects according to criteria that in many cases were established decades ago and have not been updated to reflect changed conditions or new technology. As a result, projects are sometimes forced to waste large amounts of water in order to adhere to the letter of a flood-control plan that no longer has a basis in reality. The Corps now has existing authority to make short-term adjustments to operation criteria during droughts, but the agency rarely does so on a proactive basis.

**Environmental water management should be held to an equal standard of accountability as other beneficial uses.**

We must manage water to meet all needs but in a manner that “shares the pain,” not creates winners and losers, especially when the losers are mostly the very beneficiaries – farmers and rural communities – the federal water projects were originally built to serve. The past federal management of water flows in California’s Bay-Delta, which has redirected millions of acre feet of water away from human uses and towards the environment, with little, if any, documented benefit to the ESA-listed fish intended for protection, is a prime example.

Good water management requires flexibility, as well as adaptive management. More regulation usually reduces this flexibility to balance competing demands and find a way forward that works for all stakeholders. Federal agencies managing the competing demands for water in the West have in some cases failed in creating opportunities for more flexible water management during times of crisis, and rarely measure their actual results (good or bad) from their water supply decisions.

**The ESA needs to be implemented in a new way to better benefit species and rural communities.**

The original intent of the ESA - stated in the Act itself - was to encourage “the states and other interested parties, through federal financial assistance and a system of incentives, to develop and maintain conservation programs which meet national and international standards.” Of special importance to the Family Farm Alliance is that the ESA explicitly declared that it was the policy of Congress that “federal agencies shall cooperate with state and local agencies to resolve water resource issues in concert with conservation of endangered species.”

The authors of the ESA clearly believed in applying the ESA in a way that would foster collaboration and efficiency of program delivery, in an incentive-driven manner. Unfortunately, implementation of the ESA has developed into an approach that is driven by litigation and conflict rather than collaboration. As far as the Act itself is concerned, little to no progress has occurred to keep this 40-year-old law in step with the challenges facing declining species in an era of climate change. The ESA has not been substantially updated since 1988.

At the heart of the Family Farm Alliance’s concerns with the ESA is the ever-present potential of serious federal restrictions being placed on the West’s irrigation water storage and delivery activities, often using federally developed water infrastructure in protecting listed species. Future endangered species listings are on the horizon. That prospect has the Alliance very concerned

about potential new federal restrictions being placed on the water supplies that are crucial to the West's \$172-billion per year irrigated agricultural economy.

The ESA, while well intentioned, is a law that is not working as it was originally intended. It needs to be more about incentives and collaboration and less about litigation and regulation. Fewer than 2 percent of the species ever listed under the Act have been recovered and removed from the list. Meanwhile, the negative economic and sociologic impacts of the ESA have been dramatic.

The Family Farm Alliance for decades has worked to develop specific, practical changes to the ESA that we think will make it work effectively today. Application of the ESA today must be viewed through the prism of other human needs, including food production. To that end, management of our natural resources should be geared towards an approach that views the entire landscape in a more holistic manner regarding its value for wildlife, food production, and other capacities. The flexibility built into the Act has the potential to yield net conservation benefits for imperiled species, as ESA practitioners have recognized.<sup>6</sup> While a regulatory approach may be necessary for species on the brink of extinction, such an approach should be employed sparingly, consistent with congressional intent and sound public policy.

***Insufficient Storage and Aging Water Infrastructure Must be Addressed to Protect Future Water Supply Reliability***

More surface and groundwater storage is a critical piece of the solution to future water shortfalls. Congress should streamline regulatory hurdles and work to facilitate the construction of new and expanded surface storage facilities, providing a more effective process to move water storage projects forward.

Also, new tools to assist in financing major improvements to aging water infrastructure will be needed in the coming years to ensure that farmers and ranchers who benefit from these upgrades can afford repayment terms. Water infrastructure is a long-term investment, as are farms and ranches, and longer repayment and lower interest terms will be crucial to reinvesting in these aging facilities to meet the challenges of tomorrow. Such improvements could include investments in everything from new and expanded water storage reservoirs (both on- and off-stream), regulating reservoirs, canal lining, computerized water management and delivery systems, real-time monitoring of ecosystem functions and river flows for both fish and people, and watershed-based integrated regional water management. With the creation of the Water Infrastructure Finance and Innovation Act (WIFIA) in the WRRDA 2014, the Alliance believes a similar affordable loan program could be instituted at Reclamation to assist in providing capital for such investments. Also, more flexibility may be needed to allow for private investments at Reclamation facilities in order to attract additional capital to meet future water supply needs.

Western irrigators need flexible, streamlined policies and new affordable financing tools that can provide balance and certainty to support collaborative efforts and manage future water

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<sup>6</sup> P. Henson, R. White, and S.P. Thompson. 2018. *Improving Implementation of the Endangered Species Act: Finding Common Ground Through Common Sense*, BioScience (available at <https://doi.org/10.1093/biosci/biy093>).

infrastructure challenges. Solutions in all of these areas will be crucial to future successes in agricultural production, conservation and community outcomes in the West.

### **Innovative Solutions**

For family farmers and ranchers, finding solutions to constantly emerging challenges is just business as usual. Nature, the markets and the government are always finding new problems to throw at farmers, and farmers who are not determined, resourceful and innovative will not succeed.

Irrigators and their local water agencies are responding to the challenges of reduced water supply reliability with determination, resourcefulness and innovation. They also are bringing those attributes to bear in planning for a future where “drought” may be a long-term or even permanent condition. Throughout the West, farmers, ranchers and irrigation agencies have undertaken creative measures to efficiently manage increasingly scarce water resources. Some of these actions were intended to address the immediate crisis of recent western droughts; others have been implemented as part of the broad portfolio of actions that successful farmers are employing to stay profitable in today’s fierce economic and regulatory climate. If federal agencies are willing to work collaboratively with farmers and ranchers, the result would likely be better management of water for both economic purposes and environmental uses.

The following are real-world examples that Congress and the Administration should consider when developing legislation and polices to address the current drought and water management for the future:

#### ***Collaboration, Ecosystem Restoration, and New Storage: Yakima Basin (Washington)***

The Yakima River Basin in Washington State does not have enough surface water storage facilities, with over 2.4 million-acre feet of water needs annually dependent upon only 1 million acre-feet of surface water storage capacity. The Yakima Basin is experiencing increased pressures and demands on our 1 million acre-feet of reservoir storage capacity, while we are now at above average carryover water storage, current water storage capacity cannot make up for shortages in the snow pack. They desperately need increased water storage carrying capacity to meet dry-year demands like those we experienced in 2015, with pro-ratable (junior) water rights receiving only 47% of normal supplies – a dire situation for the significant number of permanent crops in the Basin.

To help plan for expanding access to more irrigation and M&I water storage capacity and to help relieve tensions in the Yakima Basin over water supply management for all needs, a large cross-section of the water stakeholder interests and the Yakama Nation have worked together over the past several years in developing the Yakima Basin Integrated Plan. The Integrated Plan is a well thought out, long-term comprehensive set of solutions to restore ecosystem functions and fish habitat and improve long-term reliability of water supplies for stream flows, agricultural irrigation and municipal supply. The Integrated Plan was developed in a public, collaborative process involving local, state, federal and tribal governments plus stakeholders representing environmental, irrigation and business interests. The consensus achieved by this diverse group

represents a major and unprecedented accomplishment for the Yakima Basin and for water management in the western United States. The Integrated Plan offers a means to avoid a tangle of litigation and hardship for these users in future years. The Yakima Basin Integrated Plan is believed to be the first basin-wide integrated plan in the United States to achieve this level of success.

Prior efforts to increase water storage in the Yakima Basin have failed, in part due to a lack of consensus among the key stakeholders. The Integrated Plan offers the best opportunity in decades to resolve long-standing problems afflicting the Basin's ecosystem and economy. In addition, improving water conservation and management, along with making available increased water storage for farms, fish and our communities are key components of the Plan. When implemented, the Plan will greatly improve operational flexibility to support instream flows while meeting the Basin's basic water supply needs under a wide range of seasonal and annual snowpack and runoff conditions, both now and under a wide range of estimated future hydrologic and climatic conditions.

*Long-term Environmental Enhancement and Water Supply Reliability: Voluntary Settlement Agreements to update the Sacramento San Joaquin Bay-Delta Water Quality Control Plan (California)*

The California State Water Resources Control Board (SWRCB) oversees water rights and water quality in California. The Board is in process of updating its Bay Delta Water Quality Control Plan, which identifies beneficial uses of the Bay-Delta, water quality objectives for the reasonable protection of those beneficial uses, and a program of implementation for achieving those objectives.

The U.S. Department of the Interior, the California Natural Resources Agency, and water rights holders throughout California are working on a separate but related effort to craft voluntary, stakeholder-based outcomes in the watersheds of the Sacramento River and major San Joaquin River tributaries. These voluntary settlement agreements (VSA's) are a comprehensive plan to improve water quality and habitat conditions with a manageable impact to water users and highlight the positive outcomes that can occur when agencies choose to collaborate with water users. Implementation of the VSA's will maintain the viability of native fishes in the Sacramento and San Joaquin River watersheds and the Delta ecosystem, while concurrently protecting and enhancing water supply reliability, consistent with the statutory requirement of providing reasonable protection for all beneficial uses.

The VSA's have a few key components<sup>7</sup>:

- Provide additional instream flows averaging between 740,000 and 1,040,000 acre-feet in a manner that does not conflict with groundwater management requirements under California law, doesn't reduce flows for wildlife refuges, and maintains reliability of water supply for other beneficial uses.

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<sup>7</sup> FRAMEWORK PROPOSAL FOR VOLUNTARY AGREEMENTS TO UPDATE AND IMPLEMENT THE BAY-DELTA WATER QUALITY CONTROL PLAN (<https://water.ca.gov/-/media/DWR-Website/Web-Pages/Blogs/Voluntary-Settlement-Agreement-Meeting-Materials-Dec-12-2018-DWR-CDFW-CNRA.pdf>)

- Implementation of significant non-flow measures to address the many factors negatively impacting fish populations, including predation by non-native species, passage barriers, and hatchery productivity.
- The development of a comprehensive science and monitoring program, incorporating a structured decision-making process, to inform implementation of flow and non-flow measures
- Dedicated funding for implementation of science and ecosystem and habitat improvement measures of approximately \$770 million from a per acre-foot fee placed on water users.

It is the Alliance’s position that locally negotiated, stakeholder driven solutions are far more durable than those driven through a regulatory process that leads to litigation. The Alliance would urge Congressional support for federal efforts to implement California’s Voluntary Settlement Agreements.

**Conservation and Drought Resilience: Colorado River Basin**

In Wyoming, ranchers Pat and Sharon O'Toole have always managed their land with conservation in mind. Along the way, they've built strong partnerships with Trout Unlimited, Audubon Wyoming and The Nature Conservancy; organizations some ranchers once viewed as adversaries. Further south, in the fertile North Fork Valley outside of Paonia, Colorado, Harrison Topp took the leap from annual vegetable production to perennial fruit, growing food in a region with just 15 inches of annual average precipitation.

The Family Farm Alliance report, *“Innovations in Agricultural Stewardship: Stories of Conservation & Drought Resilience in the Arid West,”*<sup>8</sup> focuses on these two case studies and three others that profile producers across the Colorado River Basin and beyond who – with curiosity, creativity and seasons of trial and error – are conserving resources while enhancing productivity. The Alliance teamed up with the National Young Farmers Coalition on this report with the aim of elevating the voices of farmers and ranchers who are employing smart solutions to build drought resilience, steward water and grow good food.

Some of the farmers highlighted in the Alliance report are integrating efficient irrigation technology with soil health to increase both productivity and water savings. Others are navigating conservation within constraints outside of their control, such as the operations of the ditches which deliver water to farms. To paint a fuller picture of the complexities and nuances of agricultural water conservation in the West, the Alliance worked with the engineering firm Applegate Group to create a water balance for three of the case studies. These water balances utilize a technical, objective approach to assess the producers’ water rights, current conservation efforts, and barriers or opportunities for future conservation. They underscore the reality that conservation practices are different on every operation and unique from farm to farm.

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<sup>8</sup> [https://www.youngfarmers.org/wp-content/uploads/2015/05/NYFC-template-FINAL\\_lowNew.pdf](https://www.youngfarmers.org/wp-content/uploads/2015/05/NYFC-template-FINAL_lowNew.pdf)

As the pressures of climate variability and drought increase, farmers and ranchers are at the forefront of our national adaptation strategy. Producers are coming together to help one another, but they also need support from consumers, policy makers, scientists, and service providers. The Alliance hopes that these case studies will provide policy makers and other stakeholders with a more nuanced understanding of the diversity and complexity of western agricultural water conservation and an appreciation of what continuing to take agricultural lands out of production might mean.

**Empower Locals to Develop New Storage: Sites Joint Power Authority (California)**

Growing concerns about the delays and costs associated with the proposed Sites off-stream reservoir project in the Sacramento Valley of California, as well as the need for a local voice, led to the formation, in August of 2010, of the Sites Project Joint Powers Authority (Sites JPA). The Sites JPA, which includes Sacramento Valley counties and water districts, was formed with the stated purpose of establishing a public entity to design, acquire, manage and operate Sites Reservoir and related facilities to improve the operation of the state's water system.

The Project would also provide improvements in ecosystem and water quality conditions in the Sacramento River system and in the Bay-Delta, as well as provide flood control and other benefits to a large area of the State of California. The formation of local JPA's was included as a key provision in the 2009 California Water Package Water Bond legislation for the purposes of pursuing storage projects that could be eligible for up to 50% of project funding for public benefits.

As the Sites JPA began working with the Bureau of Reclamation and California Department of Water Resources, the JPA took a common-sense approach. The JPA worked with Reclamation and DWR to put together *Foundational Formulation Principles*. In other words, first identifying the needs of the water operations system and then designing the project that would meet those needs. Local project proponents envisioned a project that would be integrated with the system they already had, and one that would also operate effectively regardless of future operational changes to the larger system, such as construction of new conveyance to export water users located south of the Delta. The JPA wanted to maximize the benefits associated with existing infrastructure and provide as much benefit as possible to both the existing state and federal water projects at the lowest feasible cost.

The JPA has approached the Sites project with the goal of making the best possible use of limited resources, and in the end, local irrigators believe they have identified a project that is both affordable and will provide significant benefits. The proposed project maximizes ecosystem benefits consistent with the State water bond, which states that at least 50 % of the public benefit objectives must be ecosystem improvements. Other benefits include water supply reliability, water quality improvements, flexible hydropower generation, more recreation benefits and increased flood damage reduction. In short, the JPA approached the Sites project with the goal of generating water for the environment while improving statewide water reliability and regional sustainability

in Northern California. They believe they are achieving that goal.

*Collaboration with Diverse Stakeholders: The Western Agriculture and Conservation Coalition (WACCC)*

The Family Farm Alliance sits on the Steering Committee of the Western Agriculture and Conservation Coalition (WACC), a diverse group of organizations that first came together a decade ago around the Farm Bill conservation title with the goal of supporting the common interests of agriculture and conservation. Other founding steering committee members included Trout Unlimited, The Nature Conservancy, California Farm Bureau, Environmental Defense Fund, Public Lands Council, Arizona Cattle Growers Association, Wyoming Stock Growers Association, and the Irrigation Association. The group has expanded in recent years; for a complete list of members, go to: <http://www.waccoalition.org/>.

The WACC is becoming increasingly effective on the narrow list of topics its members engage in, including the farm bill that Congress passed last December, sending the compromise legislation to the president's desk. The new farm bill includes several important provisions – many of them driven by the WACC – that will assist Western agricultural irrigators. The new farm bill included expanded authority under the Environmental Quality Incentives Program (EQIP) for irrigation districts– for the first time ever – to receive funding as direct applicants for water conservation measures, as well as continued eligibility as partners for conservation activities with growers. This language was originally proposed and advocated for by the Alliance and other WACC partners starting a decade ago. The new EQIP includes funding for water conservation scheduling, water distribution efficiency, soil moisture monitoring, irrigation-related structural or other measures that conserve surface water or groundwater, including managed aquifer recovery practices. The farm bill also provides improved contracting for partners engaged in work with producers, which is intended to be streamlined and made more effective under the Regional Conservation Partnership Program. Importantly, the 2018 farm bill preserves existing authorization structure and \$50 million in mandatory funding for the Watershed Protection and Flood Prevention Act, a flexible and useful program utilized by Western water managers. The demand for this program is probably at least twice as much as what was funded, but the farm bill made this mandatory funding, which is encouraging.

The WACC provides a core that can help policy makers and our collective members remember that the foundation for some true, collaborative solutions that are driven from the constructive “center”. The WACC shared perspective on species conservation is rooted in our experience with practical, on-the-ground solutions that work well for ranchers, farmers, and other landowners, as well as for fish, wildlife and plants. Indeed, maintaining a mosaic of working farms and ranches along with lands managed for conservation purposes, represents the best opportunity for conserving the ecosystems upon which species depend so that species do not decline to the point where a listing under the ESA is warranted, and so that currently listed species can recover.

Unless the agricultural industry and conservation come together, the public policies and resource

management strategies necessary to maintain a viable and sustainable rural West will be impossible to achieve. There will always be isolated instances of successful partnerships. But, these discrete examples of success will not suffice. The threats to a viable and sustainable rural West are numerous, complex, and variegated. A broad and authoritative voice like that of the WACC is needed to effectively address these threats with collaborative solutions. The coalition's recent engagement and success in the farm bill's conservation title is Exhibit "A" towards that end.

### **How the Federal Government Can Help**

The Congress and the federal government certainly cannot change the hydrology of the West, but there is a role it can play to support family farmers and ranchers. Policy makers should understand the following observations and principles as they develop new solutions to the decreasing long-term reliability of western water supplies:

- State water laws, compacts and decrees must be the foundation for dealing with shortages.
- Water use and related beneficial use data must be accurately measured and portrayed.
- Benefits of water use must reflect all economic / societal / environmental impacts.
- Water conservation can help stretch water supplies, but has its limits in certain situations (impacts to groundwater recharge by moving away from flood irrigation).
- Public sentiment supports water remaining with irrigated agriculture, and developing strategic water storage as insurance against shortages.
- Technologies for water reuse and recycling are proven effective in stretching existing supplies for urban, environmental and other uses.
- Urban growth expansion should be contingent upon sustainable water supplies; using irrigated agriculture as the "reservoir" of water for municipal growth is not sustainable in the long run and will permanently damage our nation's food supply and rural communities.
- Planning for water shortage in the West must look to the long-term in meeting the goals of agriculture, energy, cities, and the environment.
- A successful water shortage strategy must include a "portfolio" of water supply enhancements and improvements, such as water reuse, recycling, conservation, water-sensitive land use planning, and water system improvements. New infrastructure and technologies can help stretch water for all uses.
- Temporary fallowing proposals should be approached in a thoughtful, thorough manner only after urban, energy and environmental users of water demonstrate a better management of their share of the finite supply.
- Unintended consequences associated with reducing productive agricultural land/groundwater recharge/riparian habitat benefits should be avoided and, if unavoidable, minimized and fully mitigated.

We offer the following specific actions that federal policy makers can address in new water supply legislation:

***Encourage accurate measurement and portrayal of water use and related beneficial use data.***

As is often the case, what happens in California often has a ripple effect that extends to other Western states. For example, the common misconception that “farmers use 80% of the water” is applied by critics of irrigated agriculture in areas throughout the West. We need to find clear and comparable ways to present these types of water use numbers as we struggle with finding the appropriate way to prioritize our water uses among competing demands. And, we need a solid understanding of how water used for environmental purposes is really benefitting the species or habitat it is intended to protect, and how to more efficiently manage such uses for maximum benefit using less water, the same standard to which irrigated agriculture is currently being held.

***Find ways to streamline regulatory hurdles to assist in developing new environmentally-sensitive storage projects and other necessary infrastructure improvements.***

In past Congresses, several bills have been introduced that were intended to facilitate the construction of new surface storage facilities. Congress should work to pass legislation to increase water storage throughout the western United States.

The President and Congress will prioritize whatever federal funds are available to meet existing and future water supply needs. As for the rest of the necessary capital needed to develop and construct this new water infrastructure, it must come either from state and local governments or from the private sector. If the federal government cannot fund the required investments, it should take meaningful steps to provide additional incentives for non-federal entities to fill the void, and remove barriers to the new ways of doing business that will be required.

The Alliance believes that the federal government must seriously consider adopting a policy of supporting new projects to enhance water supplies while encouraging state and local interests to take the lead in the planning and implementation of those projects. Local and state interests (see Sites JPA example above) have shown enormous creativity in designing creative water development projects. Water agencies have at times obtained additional federal funding through the appropriations process; however, Reclamation could also supplement this effort by providing funding for local partnership agreements, especially where Reclamation and its water contractors are identified as potential beneficiaries.

***Provide additional funding to support WaterSMART and/or other programs that provide incentive-driven cost share money for new water conservation projects.***

Small federal investments in cost-shared, competitive grants help irrigation districts make larger investments in water conservation and management technologies that can help stretch water supplies to meet unmet needs. The Secure Water Act should be reauthorized to extend these grant programs into the future. Additionally, legislation should be enacted to authorize Reclamation to develop or access a WIFIA-like loan program, which would increase access to affordable, long-term, credit-based loans to help support locally developed water projects across the West.

***Require fish and wildlife agencies to set scientifically based priorities and be accountable***

*in their effort to manage environmental water.*

In the Western U.S., environmental enhancement and mitigation programs are increasingly competing for existing sources of water. In some instances, these actions have caused major conflicts, costly lawsuits and delayed benefits for endangered species and the environment. Water is far too important a resource in an era of a changing climate to utilize it in an ineffective or inefficient manner. Accordingly, the Alliance believes that all users of water should be held to the same level of accountability in their water use. Environmental interests, fish and wildlife agencies and water managers must set scientifically based priorities and be held accountable in their effort to manage environmental water. Legislative language that requires fisheries agencies to demonstrate quantifiable benefits to targeted imperiled fish species would be helpful. An institutional structure that ensures true peer review and impartial decision-making relative to this objective would also be useful.

**Conclusion**

California and the West need to manage water as if every year is a drought year. We need to invest in new water storage facilities to capture water in wet years, we need to look to innovative technology to enhance management of water supplies and delivery and we need to maximize the benefits from the water we have available to meet multiple needs. The ability to measure, assess and show value for how that water is used is incumbent on every water manager – environmental, urban and agricultural.

It will be hard work to reach an agreement and enact legislation to wisely manage the West's water now and in the future, but that's the kind of work we elected you to do. Farmers work hard, and we expect Congress to do the same. We need you – all of you, urban and rural, Republican and Democrat – to come together and find a way to fix this broken system, now, before it breaks us all.

Only together can we in California and the West plan and prepare for our collective future. If we don't, we ensure only that the water supply reliability will continue to decline.

Thank you.