

Agenda Item XV
Attachment B



DRAFT

**Sierra Nevada Watershed
Improvement Program
Regional Strategy**



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Sierra Nevada Watershed Improvement Program Regional Strategy

“Only an environmental restoration program of unprecedented scale can alter the direction of current trends.”

U.S. Forest Service Region 5 Ecological Restoration Leadership Intent

Executive Summary

The Sierra Nevada Region (Region) is critically important to the environmental and economic well-being of California. It is the source of origin for more than 60 percent of the state’s developed water supply, headwaters of the State Water Project and federal Central Valley Project, and primary source of fresh water for the Delta. The Region’s forested watersheds store massive amounts of carbon, provide crucial habitat to hundreds of species, provide world-class recreational opportunities enjoyed by millions, and are major producers of wood products and hydro-electric power.

Several high-profile statewide plans and programs identify the importance of the Sierra to the state’s well-being and recognize the critical state of its forests, including the CA Water Action Plan and the AB 32 Scoping Plan (see appendix A). Recently Governor Brown issued a Proclamation of Emergency addressing the substantial tree mortality occurring in California. The Governor identified a number of actions state government will be undertaking to address this issue, all consistent with the objectives of the Sierra Nevada Watershed Improvement Program (WIP).

Why is the WIP necessary?

Today, all is not well in this critical region of California. Many Sierra Nevada watersheds are unhealthy with overgrown forests, suffering uncharacteristically large and intense fires and dramatic amounts of tree mortality. Degraded streams and meadows exist throughout the Region, some a result of decades old practices such as the legendary gold mining. And many Sierra communities face extreme adverse economic conditions. Clearly the severe drought conditions we face have made the situation worse and the projections of a changing climate portend more trouble ahead.

The occurrence of uncharacteristically large, intense wildfire presents the most significant threat to the Region. In fact, the number of acres burned on the western slope of the Sierra has increased steadily, and with a normal fire season in 2016, we will establish the new record for acres burned in a decade – with three years to go in the decade. In addition, the historic average of nearly 20 percent of acres burned succumbing to high-intensity fire has steadily increase to nearly 30 percent. The 2013 Rim Fire had nearly 40 percent area burn at high intensity, while the 2014 King Fire reached almost 50 percent. Additional information detailing the conditions of Sierra



forests can be found in the [State of Sierra Nevada's Forests](#) report, published by the Sierra Nevada Conservancy (SNC) in 2014.

To be clear, not all fire is bad; in fact it has always been an essential part of the Sierra Nevada ecosystem. A key component of the WIP will be to significantly increase the use of fire as an ecological restoration tool under appropriate conditions.

What is the WIP?

The Sierra Nevada Watershed Improvement Program (WIP) is a coordinated, integrated, collaborative program to restore the health of California's primary watershed through increased investment, needed policy changes, and increased infrastructure. This comprehensive effort is being organized and coordinated by the Sierra Nevada Conservancy (SNC) and US Forest Service (USFS) in close partnership with other federal, state and local agencies, and diverse stakeholders, and aims to increase the pace and scale of restoration in the Sierra Nevada Region.

The WIP is a large-scale restoration program designed to address ecosystem health in the Sierra Nevada in a holistic manner and encompass concerns beyond wildfire and water, including habitat, infrastructure, recreation, socio-economic and public safety issues. By restoring and protecting the health of Sierra forests, streams, meadows, and soils we can achieve the following objectives:

- Reduce the risk and consequences of large, damaging wildfires
- Reduce greenhouse gas (GHG) emissions and stabilize carbon storage
- Improve and protect air quality
- Improve and protect the quantity and quality of water available throughout the year
- Improve and protect habitat for wildlife, fish, and plant species
- Improve local socio-economic conditions and public safety

This Regional Strategy identifies the processes, steps, and activities needed to achieve these objectives. The foundation of the WIP will include watershed-by-watershed needs assessments that identify a wide range of restoration needs including forest, stream and meadow restoration, invasive species removal, sediment reduction treatments, and abandoned mine lands restoration. The full range of activities will be identified during the assessment phase, as local conditions will vary from watershed to watershed. The WIP will build upon existing efforts, while providing a basis for exploring new models for getting restoration work done more effectively at the watershed level.

The key focus areas of the WIP are:

Increased Investment in Restoration

Significant financial investments are needed now to increase the pace and scale of watershed restoration in the entire Sierra Nevada Region. The WIP will serve as a tool to attract and focus investments in watershed restoration from a broad array of stakeholders, including federal, state and local governments, special



districts, private and corporate interests, non-profit organizations and foundations, and out-of-region beneficiaries.

Addressing Key Policy Issues Affecting Restoration

A number of policy-related issues need to be addressed in order to restore Sierra forests and watersheds to a healthier state. Even if funding is increased to support more restoration activities, if impeding policy challenges are not addressed it will be virtually impossible to make significant progress towards establishing resilient Sierra forests that provide for the health and well-being of all California.

Increased Infrastructure Needed for Restoration

The lack of wood and biomass-processing infrastructure remains a significant impediment to forest restoration efforts – the Sierra’s forest management infrastructure must be enhanced if it is to handle the pace and scale of needed restoration. In doing so, it will be imperative that policies and procedures are aligned to appropriately provide for maximization of local contracting opportunities in forest restoration activities.

The WIP is designed to increase coordination and interaction at the regional and watershed levels. It is not intended to create a singular set of restoration priorities, but rather to assist in harmonizing the multiple organizational restoration activities and objectives that already exist in the Region. It also provides an opportunity to explore new models and approaches in achieving large landscape restoration. In order to gauge success of the WIP, performance measurement metrics will be developed and regularly reported on as part of WIP communications efforts.

Overview

In March 2015, the USFS and the SNC co-hosted a summit to launch the WIP, with participation from a number of state, federal and local agencies, and key stakeholders. In September, a Memorandum of Understanding (MOU) between Natural Resources Secretary John Laird and the Regional Forester for USFS Region 5, Randy Moore, committed ongoing support to the effort and helped to guide this program. The MOU identified the SNC as the lead state agency in the WIP.

This Regional Strategy identifies key information, trends, plans, efforts, and data for major categories influencing watershed health, as well as the process and timeline through which the WIP will be implemented. The key activities are assessing watershed restoration needs across the Sierra, increasing investment in the Region, and addressing policy issues to ensure the implementation of needed restoration projects and the infrastructure needed to support such efforts. The Regional Strategy identifies opportunities to leverage collective resources to affect significant on-the-ground progress towards watershed resilience, and specific metrics will be developed to measure the program’s success.



The SNC and the USFS Region 5 will act as the primary coordinators of the WIP and partner activity. Given the scope and scale of this program, however, the active engagement and participation of governmental and non-governmental partners will be critical. The creation of steering and/or advisory groups will occur as needed to move the program forward. This may occur at both the regional and watershed level.

The WIP process consists of two primary activities: assessing the level and cost of watershed restoration needs in the Region, watershed by watershed; and implementation, which includes project identification and completion, increased investment, and addressing key policy issues.

WIP supported activities will build upon and enhance existing collaborative efforts addressing watershed restoration. The WIP process also provides an opportunity to explore new models for delivering restoration activities.

Assessing Restoration Needs

In addition to addressing key issues at a Sierra Nevada Regional level, the WIP also will identify critical issues and restoration opportunities at the watershed level. Initially, information will be gathered in sixteen identified watersheds (see Map, appendix B) and will include assessments of restoration needs on public lands, as well as available information on needs, plans, reports, and existing efforts within each watershed. These dynamic assessments will allow information to be added over time, and some watersheds may require unique categories or situations to be addressed.

Watershed Level Assessments will provide baseline knowledge, and present information to help steer interested partners to specific watersheds, issues, or types of restoration. The assessments will paint a picture of on-the-ground conditions and restoration needs across the Sierra Nevada, help identify areas best suited for deploying a more detailed assessment process, and provide a basis for exploring new models for accomplishing restoration work more effectively at the watershed level.

Public Lands Assessments

Given the USFS's role as the program's primary federal partner, the WIP effort is beginning with the USFS assessing the holistic restoration needs of the lands they manage in the Region. The National Forest Assessments will consider a wide range of watershed restoration issues, including forest health and fuel reduction projects, meadow and stream restoration, habitat restoration and enhancement projects, invasive species removal, sediment reduction activities, aquatic organism passage issues, and abandoned mine lands remediation. Other restoration issues may be added on a forest-by-forest basis, based on local conditions. The assessments will quantify restoration needs and costs for the next decade, as well as identify key constraints that affect restoration efforts. It is anticipated these assessments will be completed by mid-2016.



The Bureau of Land Management and the National Park Service are also expected to engage in a similar exercise, although details of those assessments have not been worked out.

Watershed Restoration Needs Assessments

The condition and needs of each watershed will vary, and multiple partners will be relied upon to gather relevant data and to help develop localized strategies for moving assessments forward in the sixteen watersheds. This effort has been initiated by the Sierra Coordinated Resources Management Council (SCRMC), a Joint Powers Authority comprised of several Sierra Nevada Resource Conservation Districts, through an interagency agreement funded by the SNC and USFS Region 5. This arrangement relies on the RCD's local relationships and on-the-ground knowledge of these watersheds to gather, verify, and summarize available information regarding restoration needs, plans, reports, and efforts. The watershed assessments are expected to be completed by early 2016.

The main focus for the SCRMC staff will be gathering the following data (if other relevant categories are identified, they will be added):

- Reports, studies, plans
- Traditional Ecological Knowledge (TEK)
- Collaborative groups and efforts
- Key stakeholders
- In-watershed and downstream beneficiaries
- Model projects

Together, the public lands and broader watershed assessments will be used as a foundation for identifying and increasing the pace and scale of restoration activities in the Sierra Nevada. The WIP will bring agencies, stakeholders and valuable information together, and be the hub of a network connecting partners to data, funding, projects and each other in order to more efficiently restore Sierra watersheds. The assessments are expected to inform and support decisions on increased investment and key policies. It will likewise help connect funders and decision makers to specific projects, issues, and partners in areas of interest to implement needed restoration.

WIP Implementation

Increased Investment

Significant financial investments are needed now to increase the pace and scale of forest and watershed restoration in the entire Sierra Nevada Region. The WIP will serve as a tool to attract and focus investments in watershed restoration from a broad array of stakeholders, and help ensure investments yield a positive return.



Successful implementation of the WIP will require commitments to invest from all stakeholders, including federal, state and local governments, special districts, private and corporate interests, non-profit organizations and foundations, and out-of-region beneficiaries. Failure to invest at the needed levels will result in the assured deterioration of the Region's natural, social, and economic capital to the detriment of all.

Federal Government

The largest landholder in the Sierra Nevada Region is the USFS, and significant acreage is under the responsibility of the Bureau of Land Management, National Park Service, US Fish and Wildlife Service, Bureau of Reclamation, Department of Defense, and the Bureau of Indian Affairs. The public at-large places many demands on these federal lands and derives multiple benefits from resources found on these lands. Sustainable management of these public resources requires investments to secure long-term delivery of clean water, clean air, forest products, fish and wildlife resources, tourism attractions, and healthy communities. In addition, the Natural Resources Conservation Service (NRCS) provides significant support for private landowners in the Region and the USDA Rural Development has been an active partners on restoration related activities in the Region.

There are a number of existing federal programs and funding streams that align with WIP objectives, and efforts will be undertaken to increase the Sierra Nevada's share of these opportunities.

One key issue that is currently garnering considerable attention is federal legislation intended to correct "wildfire borrowing" by putting wildfire disasters on par with natural disasters such as floods, tornadoes, and hurricanes for response funding. The current system forces the USFS to pay for fire suppression costs above the appropriated amount out of other budget categories, including restoration. For the fiscal year that ended fall 2015, the USFS redirected \$700 million from important programs including recreation, research, watershed protection, rangeland management, and forest restoration to cover fire suppression costs. The State and Private Forestry program, the leading federal effort to provide technical and financial assistance to protect communities from wildfire, lost \$37 million that instead went to cover fire suppression costs.

State Government

California is a major stakeholder and landowner in the Region and its citizens are the primary beneficiaries of resources originating in the Region. Increased levels of investment are needed from state sources to restore and maintain lands which provide environmental and economic benefits for all of California. There are a number of state funding sources that could be accessed and/or enhanced to contribute to the WIP, including, but not limited to:

- Proposition 1 (and other Bonds) Grant Funds
- Greenhouse Gas Reduction Fund
- CA Electric Program Investment Charge
- State Responsibility Area Funds



Local Government

Counties, cities, special districts, and other local governments operating in the Region continually invest in their respective jurisdictions at levels they can afford. Investments made at this level contribute to the benefits received by all beneficiaries, in and out of the Region, and must be accurately tracked. The WIP will provide opportunities for these local governments to receive credit or recognition for their stewardship and investment in the Region, and provide a platform to leverage additional investments in their respective watersheds.

Private Stakeholders

The economic survival of many private businesses is directly attributable to the continued health of Sierra Nevada watersheds. Since much of the responsibility for managing and maintaining the resources used by the private sector falls to public agencies, a strong partnership will be required to leverage additional investment from the private sector. Clear and compelling examples of the need for additional private investment must be developed and demonstrated.

Nonprofit Organizations

Hundreds of nonprofit organizations are operating within the jurisdiction of the Sierra Nevada. These organizations range in size and capacity and will play a critical role in implementing projects and securing funds to support the WIP. They also must be collaboratively engaged and involved in representing the public in political processes. The collective influence of this sector will be extremely important and effective if messaging is unified.

Out-of-Region Beneficiaries

Water agencies, municipalities, utilities, agricultural interests, irrigation districts, and others beyond the Sierra Nevada Region derive benefits from ecosystem services that originate in the Sierra Nevada. Engaging partners and beneficiaries beyond the Sierra Nevada Region in investing to protect and enhance those benefits is essential.

Addressing Key Policy Issues

There is growing understanding that a number of key policy issues at the federal and state level affect the pace and scale of forest restoration in the Sierra Nevada. These include policies established by public land management agencies, as well as by statute and regulation. The WIP provides a forum for identifying, reviewing, and discussing ecological needs and potential necessary and appropriate policy changes.

Clearly, opportunities to establish more reliable, policy-based funding sources for restoration in the Sierra exist, but coordination among federal, state and local agencies, and private partners is necessary.

A number of policy areas exist that affect restoration efforts and provide examples of issues to be addressed as a part of the WIP:



Air Quality and Prescribed Fire

Using fire, under appropriate conditions, is an important restoration tool that improves forest resiliency and reduces the risk of large, high-intensity fires. However, a number of factors including air quality regulations, staffing, funding, and liability issues can restrict the use of prescribed and managed fire.

Existing policies may have the unintended consequence of enabling larger, more damaging fires to occur and result in far more emissions than would have been released by prescribed fire. Working with the US EPA, Cal EPA, California Air Resources Board (CARB), and local air districts to determine strategies to achieve air quality objectives while allowing for an increased use of fire will be an important focus of WIP. WIP partners will also work with local communities, health care professionals, and recreation/tourism to educate parties of the value of prescribed fire.

GHG Emissions Reduction and Carbon Storage

Since 2000, the climate and fire behavior patterns in California have differed significantly from the previous century. Sierra Nevada forests are huge carbon reservoirs, but high-intensity wildfires are turning storage pools into emissions sources. For example, the Rim Fire of 2013 produced GHG emissions equivalent to the emissions of 2.3 million vehicles in one year, counting only the fraction of total emissions that occurred during the fire. Additionally, more and more conversion of forests to shrub and/or grassland has been documented, dramatically reducing the capacity for storing carbon.

Identifying immediate and long-term mechanisms to increase investment in the Sierra Nevada through the Greenhouse Gas Reduction Fund will be critical as California works to meet greenhouse gas emission reduction goals. As state officials adopt and implement policies guiding the use of these funds, it is important to understand the opportunities that exist to provide for stable long-term carbon storage while reducing GHG emissions from uncharacteristic high-severity fire. Additional investment in meadow restoration also offers a positive opportunity for stable storage of carbon. Using science to determine how best to restore forests and meadows is crucial and urgent.

Water Quality and Quantity

If California is to restore its primary watershed and increase reliability of the water needs of a growing population, protecting and improving water quality is critical. For example, the impacts on surface water from abandoned mines present unique challenges in many Sierra watersheds. Mercury, sediment, and other substances from abandoned mines in the Sierra travel downstream, impairing California's reservoirs and accumulating in the Sacramento-San Joaquin Delta and the San Francisco Bay. Adopting policies and providing investment that remediate these substances is an important component to a holistic approach to water quality.

Healthy watersheds likewise contribute to stable water yield and reduced sedimentation. Sedimentation rates from high-intensity burn areas are at least five to



ten times greater than experienced in low- or moderate-intensity burn areas. Post-fire sedimentation not only degrades water quality and damages infrastructure, but also fills reservoirs and reduces storage capacity.

Wood and Biomass Utilization

The lack of wood and biomass processing infrastructure in the Sierra Nevada is a significant impediment to forest restoration efforts. While recent state policy efforts such as the Bioenergy Action Plan, SB 1122 (2012), and Governor Jerry Brown's Proclamation of Emergency addressing tree mortality (2015) provide direction on increasing the use of forest biomass for energy production, a number of challenges remain. Utilizing biomass removed as part of restoration efforts can improve community safety, offset forest restoration costs, and reduce GHG emissions. Biomass power generation is heavily constrained by the cost of transporting the feedstock material (wood chips) from the field to the plant – transportation costs often exceed the value of the fuel.

The USDA Biomass Crop Assistance Program (BCAP), which subsidizes transportation costs using Farm Bill funding, has been a critical resource for biomass energy facility operators and provides greater potential for the future. Additionally, the USDA Forest Service Woody Biomass Utilization Grant program provides another source of funding to promote and support the utilization of woody biomass, products, and residues from forest restoration. Matching funds from the Greenhouse Gas Reduction Fund could help alleviate some transportation costs and would be highly beneficial to forested landscapes, the economy, and California's renewable energy goals.

Milling capacity, in particular for smaller diameter trees, is also very limited in the Sierra Nevada. In the most recent years, a significant portion of mill capacity was met with logs burned as a part of wildfire, reducing opportunities for managing "green forests." Considering new business models that can utilize materials removed as a part of forest restoration activities is essential.

Landscape-scale Restoration

The variety of policies, regulations, issues, responsible agencies, and range of stakeholders make landscape level restoration complicated and challenging. Identifying opportunities to improve the efficiency of planning processes and enhancing the coordination and integration of various processes will result in increased ecologically sound restoration activities in the Sierra Nevada. Identifying specific opportunities to demonstrate more efficient approaches to landscape restoration planning as it relates to National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA) and Endangered Species Act (ESA) processes is critical to increasing the pace and scale of ecological restoration.

Federal Lands Management Opportunities

Because the federal government is the largest land manager in the Sierra Nevada, its land management practices have significant impacts on the benefits Californians



receive from the Region. Therefore, it is critical to identify and evaluate policies that affect the pace and scale of restoration. Also, utilizing authority granted under the most recent Farm Bill, including the expansion of Sierra Nevada areas designated as “insect and disease threat areas” and the Good Neighbor Authority, provide opportunities to achieve significant restoration efforts.

Project Identification and Implementation

By better identifying the true restoration needs and costs, increasing restoration investment, and addressing key policy issues, the WIP will result in an increase in the pace and scale of on-the-ground restoration activities.

The WIP serves as a hub connecting partners to data, funding, projects, and each other in order to more efficiently and effectively implement the restoration projects needed to restore the health of Sierra watersheds. As the WIP is fully implemented, specific restoration projects will be identified and will be considered in the context of the watershed. The WIP will provide the following:

- Data regarding the need for restoration, including restoration projects that have been identified
- Information about issues critical to watershed health, and strategies for addressing them
- Information on potential funding sources for various project types
- Facts regarding partners and project plans at the Regional and watershed levels
- Information about successful collaborations and funding invested in the Sierra Nevada

The WIP also creates the opportunity to explore new models for delivering restoration activities to Sierra watersheds. Given the mix of land owners/managers, various regulatory regimes, and competing priorities, determining a more efficient and effective way to achieve the work needed may be an outcome of the WIP.

Socio-economic Implications

The Sierra Nevada would greatly benefit from a robust, skilled workforce to conduct proposed restoration work. Groups such as the Calaveras Healthy Impact Product Solutions (CHIPS) are examples of restoration-focused collaboratives with workforce development as a key component. These workgroups emphasize diversity in the workforce and keep work local to provide maximum benefit to the communities where the work originates. Workforce development opportunities like the CHIPS program should be considered for replication throughout the Sierra Nevada.

Another key component of improving the social well-being of Sierra Nevada communities is the utilization of contracting options that maximize local benefit. Significant work on this issue has been done by the USFS, SNC, and partners to clarify options that exist at the project level and provides an opportunity for further progress.



Communications and Outreach

The Sierra Nevada Watershed Improvement Program is complex, with many moving pieces and partners. It cannot succeed without consistent messaging delivered to prioritized audiences through effective channels. The goals of the WIP include increasing investment to restore watershed health in the Sierra Nevada, addressing policy barriers limiting the pace and scale of restoration, and increasing the infrastructure necessary to increase the pace and scale of ecological restoration. Those who have the ability to direct funding and alter policy within the Sierra Nevada Region are the primary audiences. With the support of our partners, we will work to develop and utilize key messages, produce communications tools and materials that support those messages, and implement outreach and communications strategies that engage our key audiences.

A successful communications strategy for the WIP will:

- Establish the Sierra Nevada Region as a critical component of California's water and climate future.
- Encourage partners, and policy and decision makers to view the WIP as California's solution to addressing declining forest and watershed health in the Sierra.
- Establish the WIP as the program for distributing state forest and watershed health-related funding in the Sierra.
- Encourage policy and decision makers to implement new policies and/or recommend legislation that helps improve forest and watershed health in the Sierra Nevada, and begin addressing past policies and legislation that hinders ecological restoration in the Region.
- Provide partners across the Region with the messages and tools they need to communicate the value of the WIP to primary audiences.
- Enable all partners to speak clearly and coherently about the WIP, and incorporate these messages into their regional work activities.

Timeframe

The WIP is a long-term, ongoing effort that evolves and serves as a hub for the restoration of Sierra Nevada watersheds. The critical first phase includes engaging appropriate partners to continue to refine the WIP strategy and identify details required to ensure implementation success.

The assessment phase described above is expected to be substantially completed by mid-2016. Project implementation will occur on an ongoing basis, with the assessments and efforts to increase investment and address policy issues serving to increase the pace and scale of activities.



Metrics

Metrics will be identified and utilized to measure progress of on-the-ground restoration activities. Identifying meaningful performance metrics will be critical to WIP implementation success, and the process of establishing restoration metrics will rely heavily on partner expertise and engagement. Where possible, appropriate metrics already established by WIP partners will be utilized. Active partner engagement will refine the development of appropriate performance metrics, which may include:

- Amount of increased funding invested in the Sierra Nevada Region
- Reduction of fire threat within the WUI
- Percentage of fire acres burning at high, medium, and low severity
- Tons of carbon sequestered and GHG emissions avoided
- Number of acres of forests and meadows improved or restored
- Number of acres of habitat improved or restored
- Number of sites of abandoned mine lands restored
- Acreage treated through prescribed/managed fire
- Development of new infrastructure for forest products (hard infrastructure)
- Number of new jobs created and/or preserved
- Amount of funding spent in fire suppression and restoration
- Kilowatts of renewable energy production capacity maintained or created

Conclusion

Sierra Nevada watersheds are in need of increased restoration efforts, without which there will be significant adverse impact to the many benefits they provide to all of California. Wildfires are getting bigger and more intense, a changing climate with record-low snowpack are compromising the Region's ability to filter and store water, and greenhouse gases are being released at a higher rate than previously expected due to drought, insect-related tree mortality, and high-intensity fire events. There is a growing understanding that many Sierra Nevada forests are not healthy and that overgrown forests are susceptible to disease and intense wildfire. There is likewise broad consensus that science-based ecological restoration of Sierra Nevada forests must be dramatically increased in order to stem the tide of large, uncharacteristic wildfires.

The WIP is an unprecedented large-scale restoration program designed to address a variety of ecosystem health issues in the Sierra Nevada in a holistic manner. The WIP will be the hub of a network connecting partners to data, funding, projects, and each other in order to more efficiently and effectively implement the projects needed to restore the health of Sierra watersheds. It likewise will provide the opportunity to explore and implement new models for delivering restoration at a landscape scale.

The Sierra Nevada Watershed Improvement Program is the solution to addressing declining forest and watershed health in the Sierra Nevada.



APPENDIX A. State Plans and State Guidance Document Updates

Because the Sierra Nevada provides environmental services that benefit the entire state of California, the issues identified in the WIP process are/should be included in the development and implementation of state and federal planning processes including, but not limited to:

- **California Water Action Plan and its Implementation Plan**
Any comprehensive plan to conserve water resources and improve water quality must acknowledge the impact the health and functionality of Sierra watersheds have on downstream ecosystems and water users. Sierra watersheds and meadows are specifically identified in the California Water Action Plan as needing restoration; including the WIP in ongoing plan developments can help make sure that need is reflected in the Implementation Plan and facilitate watershed and meadow restoration.
- **Safeguarding California Climate Adaptation Plan and AB 32 Scoping Plan Updates**
Since Sierra watersheds have the potential to be carbon sinks or emission sources, quantifying the GHG benefits of restoration and connecting watershed health to AB 32 directives would help the state achieve its emission-reduction goals. The WIP will collect and analyze significant data regarding restoration and preparing the Sierra's forested watersheds for a warmer climate, and can provide important information to help shape planning and scoping activities.
- **Greenhouse Gas Reduction Fund Investment Plan Updates and Guidelines Development**
Restoring stressed watersheds will provide myriad benefits, including reducing the threat of severe wildfires that release huge quantities of carbon dioxide and other greenhouse gases to the atmosphere. Connecting WIP partners developing plans that will provide an emission-reduction benefit with funding sources designated for emission reduction could streamline processes and increase the pace of on-the-ground restoration efforts.
- **California Department of Fish and Wildlife's Wildlife Action Plan**
Watershed-level restoration directed through the WIP will yield dividends including improved water quality, aquatic species habitat conservation, and enhanced biodiversity. Dialog between WIP partners and regulators must be encouraged to ensure consistency and compatibility with state agency efforts.
- **California Department of Water Resources' Water Plan**
Watershed restoration efforts will aim to improve California's water quality and quantity. WIP partners should be encouraged to work with regulators to find more efficient ways to effect landscape-level restoration, conserve water resources at the watershed and Regional levels, and help DWR achieve its goals while leveraging available funds.



- California Department of Forestry and Fire Protection's Fire Plan
Watershed restoration in the Sierra must address the uncharacteristic fuel loads that have been driving an increase in severe wildfire in the Region. WIP collaboration during statewide planning efforts can help ensure consistent approaches to restoration treatments, identify opportunities to increase regulatory efficiency, and help achieve fuel-reduction goals.
- Forest and Rangelands Assessment
The WIP will amass significant volumes of data regarding the condition of Sierra forests and rangelands and the effectiveness of various restoration treatments. Upfront planning and strategic coordination between WIP partners and CAL FIRE staff could avoid duplication of efforts and result in more efficient information collection and analysis.
- Forest Carbon Plan (under development)
The WIP will encourage investment in watershed restoration treatments that reduce accumulated fuel loads, increase biomass utilization, and improve terrestrial carbon sequestration capacity while establishing resilient forests on the landscape. WIP activities could well inform efforts to develop the state's forest carbon plan.

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APPENDIX B. Watershed Assessment Areas Map



Note: This delineation of watersheds has been developed to assist in organizing and tracking WIP activities. It is understood that restoration efforts will likely occur in a more localized fashion, based on local conditions, relationships, and existing efforts.

