



One California **A Vision and Call to Action to Restore California's Forests and Watersheds**

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The 2015 Sierra snowpack was at a five-hundred-year low—five percent of normal; California's reservoirs now hold half the water they normally would at this time of year. Ground water pumping is the new gold rush in California, with NASA reporting land subsidence of inches per month in the San Joaquin Valley as a result of it. Wells are drying up there and elsewhere as a result of over pumping.

Wildfires have torched 700,000 acres, compared to 500,000 in a normal year and killed eight people. Almost 3,000 structures have been lost in the Valley and Butte Fires, forcing residents into desperate uncertainty. Only the Oakland firestorm of 1991 caused more property damage in a single fire. And the 2015 fire season isn't over.

California and the federal government spend hundreds of millions of dollars fighting fires every year in California alone, but far, far less on preventing them. The drought and overly dense forests have spawned a new and frighteningly dangerous fire behavior that includes tornadoes of fire and smoke. It's a kind of fire that existing fire models cannot predict. Finally, climate change is producing longer and more destructive fire seasons.

A new vision and bold action are needed to shift spending from fire fighting to fire risk reduction through forest restoration and improved watershed management. This vision must also bring together rural and urban, environmental and worker interests, and all of California together to tackle forest resilience, watershed health, drought, and climate change.

One California is a vision that moves beyond regionalism and separatism, and takes an integrative and landscape-scale approach to address forest, watershed, and climate issues facing California. As climate change reduces the snowpack, increases fire risk, and threatens headwater health and water supplies, we need to focus attention on restoration of forests and watersheds.

One California is action involving the restoration of upper headwater forests and watersheds at a landscape scale. And *One California* involves the federal government and the State of California working in concert, because work at the landscape scale knows no boundaries and requires the intellectual and financial resources of both.

One California involves the restoration of forests for habitat and biodiversity, reduces the risk of catastrophic wildfire, and restores forest watershed resiliency so forests continue to provide the habitat, water, and other services as they have for millennia. Reduced snowpack has diminished the state's largest reservoir—the upper watersheds—that fills streams with clear and cold water and provides critical aquatic and riparian habitat well into the hot summer months. It is the critical source water that feeds lower elevation reservoirs.

Restoring headwater forests, whether it is the State Water Project area in the north or the Los Angeles River Watershed in the south, will address fire risk reduction, habitat, water, and energy needs. Prolonged drought only increases the importance of restoring headwater forests and underscores the value of reducing catastrophic wildfire that can render soils impermeable to water and reduce forests to brush fields.

One California recognizes that action is needed to support the development of infrastructure that creates demand, increases opportunities for utilizing forest woody material, and creates rural jobs.

One California also involves advancing the science across regions of the state to better understand the relationship between forest health and biodiversity needs, watershed management, and climate change. *One California* is needed to bring the people and communities of the state together to address forest, water, and climate issues critical to our common future.

One California Action Plan

Purpose: To restore headwater forests and reduce the risk of catastrophic fire, improve wildlife habitat and biodiversity, and foster healthy creek and stream flows and watershed function

Who: State of California (Resources Agency, CalFire, Sierra Nevada Conservancy, others) and the U.S. Department of Agriculture and U.S. Department of Commerce, others

Landscape: Develop and advance landscape scale treatments that focus on the importance of landscape-level management activities. One billion dollars over ten years.

- State and federal government each commit \$50 million a year in new money for forest restoration treatments for ten years:
 - New funding sources from California include but are not limited to: Cap and Trade Auction Revenues, State Responsibility Area funds (SRAs), Timber Regulation Forest Restoration Fund (TRFRF), and Proposition 1 funds (see below); federal funding through USDA Forest Service Fuel Hazard Funds, and development of a new Stewardship Program;
 - Advance landscape-scale work, with a focus on landscape and communities, by building on the work of existing entities, especially landscape-focused collaboratives (the Sierra Watershed Improvement Program and the Collaborative Forest Landscape Restoration Program are examples of large and small landscape-level focused initiatives, respectively); increasing the capacity of existing groups (e.g., Resource Conservation Districts); or establishing new groups (i.e., new conservancies in the north state) that bring diverse stakeholders together to advance landscape-scale work.

Economics/Demand: Landscape scale forest restoration at needed pace and scale necessitates advancing mechanisms and markets that can utilize material removed, including development of facilities that process and use material.

- State and federal governments advance a program that supports exploration and advancement of energy and production technologies that utilize woody biomass and create jobs:
 - Advance exploration and support small-scale biomass to electricity utilization technologies with co-located heat users in rural areas;
 - Contribute \$10 million dollars a year for three years to support biomass energy facilities (CEC, SRA, TRFRF funds; USDA; others), distributed generation, and exploration of co-located heat users (co-located heat users are needed to improve economic viability of smaller SB 1122 facilities and reduce needed Feed-in-tariff price);
 - Modify California's SB 1122 Process (No money, California processes);
 - Develop more flexibility with auction queue (for example, retain three bidder minimum throughout Feed-in-tariff process; remove limits on public funding sources; change maximum production to 5MW and/or do not limit to gross nameplate to enable additional heat production for co-located businesses and parasitic load; remove automatic cancellation clause) and increase the current 50MW cap to 100MW;
 - Advance stewardship contracting mechanisms that focus on material removal and supplying material to new facilities to ensure longer-term, low cost supply that will facilitate their launch and reduce the needed Feed-in-tariff price.
- State and federal government launch a program to support exploration of and advancement of production technologies that utilize woody biomass and create jobs:

- Examples include but are not limited to pellet-production facilities and cross laminated timber material for seismic safety use (funding through USDA Forest Service & Rural Development, U.S. Economic Development Administration; TRFRF, other);
- State support exploration of development West Sacramento Port (or the Port of Oakland) to ship pellets and/or related wood fuels to Asian markets; \$500,000 for feasibility (Twenty-five million dollars needed to upgrade West Sacramento Port to handle shipping of pellets or other material to China, Japan, South Korea).
- State and federal government agencies need to examine alternatives and stimulate development of long-term funding mechanism that will fund forest restoration and landscape work:
 - Examples of alternatives include increasing the value of material removed through product development described above, along with drawing benefits from restoration of forest watersheds from Proposition 1 and other initiatives and programs.

Advancing Science and Understanding: *Continued improvement in our understanding of Landscape Scale work is needed.* (Two key topics are identified as examples.)

- California needs to improve jurisdictional accounting to address Greenhouse Gas reductions. These include jurisdictional (county) inventory and baseline against which GHG reductions can be monitored in order to increase focus on jurisdiction and how projects contribute to ecological and environmental landscape and socioeconomic priorities; This will allow for landscape-level approaches to emission reductions for agriculture and forestry sectors.
- State and federal government commit one million per year to pilot two watershed restoration projects in critical headwater forests—watersheds in which a significant portion of flows is used by urban users:
 - Select two pilot watersheds for landscape-scale treatment and assessment from: the Feather, Mokelumne, and Pit River, all of which are key California headwater forests;
 - Develop landscape-scale treatment of these watersheds and assess the degree to which forest restoration management contributes to surface water and ground water flows; assess catastrophic fire risk reduction of the same;
 - Advance peer-reviewed science focused on understanding the relationship of forest restoration management to headwater forest water production including *both* surface flows and groundwater contribution;
 - Assess use of Proposition 1 funds and upper forest watershed restoration to offset one planned reservoir to enable funds to be dedicated to longer-term forest restoration and groundwater storage.

About the Author and Sierra Institute

Dr. Jonathan Kusel is founder and the Executive Director of the Sierra Institute for Community and Environment. The non-profit Sierra Institute promotes healthy and sustainable forests and watersheds by investing in the well-being of rural communities and strengthening their participation in natural resource decisions and programs. Dr. Kusel participated on the Clinton Administration's Forest Ecosystem Management Assessment Team for which he pioneered new approaches to assess communities in the Pacific Northwest. He later led community assessment and public involvement teams for the Congressionally funded Sierra Nevada Ecosystem Project, and a national study of the Secure Rural School and Community Self-Determination Act supported by the Departments of Agriculture and Interior. Kusel also was principal investigator of a Congressionally supported study of the Northwest Economic Adjustment Initiative, the federal government's \$1.2 billion recovery program, and is currently leading studies of the Collaborative Forest Landscape Restoration Program and other federal landscape scale initiatives.