2019 Chancellor's Awards for Public Service | Campus-Community Partnership Award: The Sagehen Forest Project

Team members at UC Berkeley award ceremony, April 29, 2019 (left to right): Pat Manley (USFS PSW), Ann Jeffrey (UCB AVCR-Administration), Dave Smith (UCB Regional Assets Manager), Pete Stine (USFS-retired), Jeff Brown, Faerthen Felix & Rob Rhew (Sagehen Creek Field Station), Trish Hare (UCB-retired).

1. **Key campus and community partners in the program:**

- Jeff Brown | Director | Central Sierra Field Research Stations | sagehen@berkeley.edu
- Faerthen Felix | Asst. Manager | UC Berkeley Sagehen Creek Field Station | ffelix@berkeley.edu
- Joanne Roubique | District Ranger | Tahoe National Forest | jroubique@fs.fed.us
- Pat Manley | Research Scientist | Pacific Southwest Research Station | pmanley@fs.fed.us
- Patrick Wright | Executive Officer | Lake Tahoe Conservancy |
- Kim Carr | California Director | National Forest Foundation |
- Josh Harrison | Co-Director | Center for the Study of the Force Majeure, UC Santa Cruz | joshuaharrison929@gmail.com
- Steve Frisch | Executive Director | Sierra Business Council |
- Jim Branham | Executive Officer | Sierra Nevada Conservancy |

- Lisa Wallace | Executive Director | Truckee River Watershed Council | lwallace@truckeeriverwc.org
- Steve Brink | VP of Public Resources | California Forestry Association | steveb@calforests.org
- Doug Cushman | Senior Water Resources Control Engineer | Lahontan Water Quality Control Board | douglas.cushman@waterboards.ca.gov

2. **The community being served by the partnership. The need or social issue the partnership's work is addressing:**

The community being served by this project began with the Truckee Ranger District of the Tahoe National Forest, and the communities embedded within it. The project has scaled up and now serves the entire forested area of the Central Sierra Nevada, and the downstream communities that receive water and other ecosystem services from these forests (including the Bay Area). This project continues to expand, and is applicable to all western US forest. Our team is now also working with Nevada on a bi-state Wood Utilization Team funded by the US Forest Service.

The social need is to save California's forests. 100 years of single-focus management for maximum timber yield has left us with public forests that are severely out of balance. Too many trees are competing for water, which has them stressed and vulnerable to disease and infestations like the bark beetles that are killing entire stands in California and other western states. These dense tree-farm forests are terrible habitat for wildlife and undesirable for recreation.

Meanwhile, timber harvest continues to target the remaining valuable fire-resistant large trees, leaving us with torchy small trees, brush and leftover slash. Well-intentioned California public policy has created a perverse incentive for these timber companies to profit from dying forests at no cost to themselves until our forests are gone, rather than investing in the conversion to small tree forestry that would help save our forests, provide sustainable forest economies, and which most of the developed world has already made.

Suppression of critical, natural low-intensity fire has allowed 100 years of fuel to accumulate so that when things do catch fire, it's a conflagration that destroys the entire forest and the communities built in them. The problem grows yearly, costing California alone over $1.5B a year for fire-fighting that is really little more than public theatre. The problem is magnified when air quality suffers, and burned over forest erosion dumps heavy sediment loads into the drainages, no longer holding water to release slowly to downstream users and underground aquifers.

3. **Work the partnership is doing to address this issue and to support this community. Why is the issue important to them? How have they demonstrated meaningful commitment to this work and community?**

To address this issue and support California forest communities, the Sagehen Forest Project grew out of a Joint Fire Sciences grant obtained by UC Berkeley PIs John Battles and Scott Stephens, and US Forest Service District Ranger Joanne Roubique. That study collected a massive vegetation and fuels data set, and assessed whether a Forest Service prescription that thinned trees in a patchy mosaic pattern would interrupt wildfire behavior while costing less than thinning everywhere. The work produced a Berkeley Ph.D. thesis. While the modeled findings were positive, the study only looked at fire, no other values were considered.

The issue was (and is) important to local interests. In response to serious community concerns about the potential forest treatment effects on wildlife, water, economics, recreation and other community values, we formed a collaborative group to decide how to restore ecological function to the Sagehen forest, including but not exclusively resiliency to wildfire. The project would ultimately come to address our local problem, while offering a model for other forests and communities throughout California, the western US, and--potentially--forests in Mediterranean climes all over the world that suffer from the same issues.

We invited every organization we could think of that might have an interest (including our major partners, above); they ranged from the environmentalists who litigate every forest project in California, to the loggers who are the largest landowner in California, accustomed to doing things how and where they like. Everyone committed to the process. We all came together for 18 months, eventually hashing out a prescription that everyone enthusiastically agreed on.

The solution involves breaking up the landscape by topographical characteristics, and treating each unit based on its highest value. For instance, in the design we heavily thin dry, south facing slopes where wildlife doesn't den, but fire rages; meanwhile, on shady, cool north aspects, we did little thinning, since fire is not a big problem there and wildlife likes this forest structure for denning. Not every forest acre is identical, but previous Forest Service prescriptions treated every acre the same, so no one got what they wanted.

We cut two demonstration plots to make sure everyone was on the same page, then found funding from our partners to begin treatments in the 9,000-acre basin. We masticated some units, hand thinned others, logged a few, and left some alone. We are currently burning slash piles, and will broadcast burn the rest of the treatment areas to get fire back into the system at low intensity. We are monitoring to assess changes to historic data sets of hydrology, wildlife and vegetation.

Our partners have demonstrated meaningful commitment to the work and the community. Since 2005 when the Ph.D study began, in addition to the investment of their expertise and time, our partners have invested approximately $3M in the various stages of the Sagehen Forest Project, with more expected this year to effect the final broadcast burning to complete the project***.*** Berkeley has contributed Sagehen staff time.

The Sagehen Forest Project has transformed the way the Tahoe National Forest operates, and our strategy has been adopted for scaled up projects on nearby National Forests in the politically-charged Lake Tahoe Basin (the West Shore Project), and the greater Central Sierra (the Tahoe-Central Sierra Initiative). We are partnered with Nevada in a Wood Utilization Team grant from the Forest Service that is working to build a small wood timber industry to create a market for the low-value wood that needs to come off of our forests to restore ecological function and resiliency so that we still have forests in the next 100 years.

4. **The impact of the partnership's efforts and how the community benefits:**

At project completion, natural fire can and should be allowed to burn in the future to recycle nutrients and maintain the new forest structure inexpensively, and without turning into a conflagration.

Despite everyone's assumptions to the contrary, the result we obtained was ***more wildlife habitat preserved, more timber cut, and just as much fire hazard reduction achieved than in traditional prescriptions...and--thanks to the developmental work that our project did--at lower cost, with no litigation or lingering resentments.***

Everybody was heard, everybody wins.

We are now working to create a sustainable forest economy around small wood, to replace the destructive, boom-and-bust large tree timber industry that just refuses to change (or die) in the western US.

And the project strategy has been scaled up to larger forests throughout the Central Sierra.

5. **The roles played by each partner and the financial, in-kind, and volunteer contributions made by each:**

Coordination, vision, communication, information sharing with state and federal Congress. Staff time.
Jeff Brown | Director | Central Sierra Field Research Stations
Faerthen Felix | Asst. Manager | UC Berkeley Sagehen Creek Field Station

Land co-management authority for Sagehen Experimental Forest; PI on Joint Fire Sciences grant for original Ph. D. work; planning, contracting and execution of, and legal responsibility for actual forest work. Staff time + $2M.
Joanne Roubique | District Ranger | Tahoe National Forest

Environmentalist perspective; critical project design. Staff time.
Craig Thomas | Executive Director | Sierra Forest Legacy

Land co-management authority for Sagehen Experimental Forest; science and monitoring design and guidance. Staff time.
Pat Manley | Research Scientist | Pacific Southwest Research Station | pmanley@fs.fed.us

Vision and scaling for project to larger scale. Staff time.
Patrick Wright | Executive Officer | Lake Tahoe Conservancy

Funding for forest work and monitoring program. Staff time + $700K.
Kim Carr | California Director | National Forest Foundation

PI for Wood Utilization Team grant; communication and outreach; artistic vision. Staff time + $250K.
Josh Harrison | Co-Director | Center for the Study of the Force Majeure, UC Santa Cruz

Coordination of interested parties. Staff time.
Steve Frisch | Executive Director | Sierra Business Council

Funding of forest restoration work and burning. Staff time + $250K.
Jim Branham | Executive Officer | Sierra Nevada Conservancy

Sagehen Forest Project facilitation. Staff time.
Lisa Wallace | Executive Director | Truckee River Watershed Council

Forest industry perspective and advice. Staff time.
Steve Brink | VP of Public Resources | California Forestry Association | steveb@calforests.org

Water board perspective and support. Staff time.
Doug Cushman | Senior Water Resources Control Engineer | Lahontan Water Quality Control Board | douglas.cushman@waterboards.ca.gov

6. **Other awards the partnership or program has received for public service work:**

2017 Sierra Business Council, Sierra Vision Award
2016 UC Berkeley Chancellor's Outstanding Staff Team Award
2016 US Forest Service Wood Utilization Team Award
2006 UC Berkeley Chancellor's Outstanding Staff Team Award