Case Study: *Fire's Impact on Water Storage*

The Mokelumne River is the primary drinking water source for 1.4 million East Bay residents, but its forests are heavily overgrown and at risk of large-scale damaging wildfire.

After a century of wildfire suppression, many forests in the Sierra are overgrown and at high risk of large, damaging wildfires. Overgrown forests burn easily and fire can quickly pass into the canopy, making it more difficult to contain. The Rim Fire illustrates this in graphic terms.

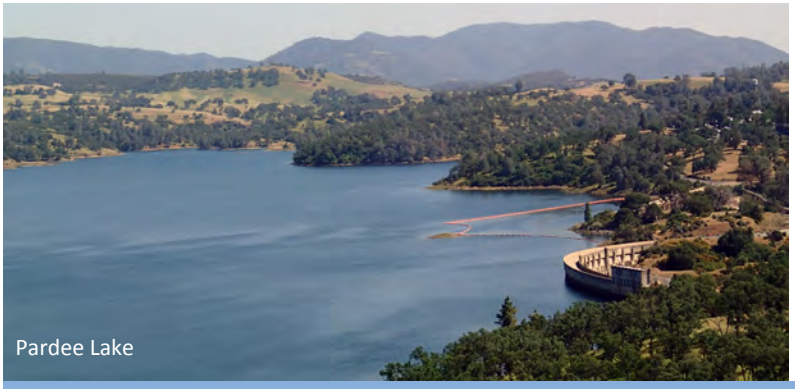
The increasing number, and associated spiraling costs, of large-scale fires and the devastation they can cause inspired the SNC to partner with; The Nature Conservancy, U.S. Forest Service, local leaders and organizations and other stakeholders to launch an ***avoided cost*** analysis.

The Mokelumne River Watershed Project aims to quantify the ***benefits of proactive forest restoration*** by calculating the cost difference of investing in fuels reduction compared to post-fire impact costs. It uses models to forecast the effect wildfire might have on a watershed's forests and rivers, and the value that fire prevention measures bring to water users. Preliminary results demonstrate the danger of both fire and post-fire sediment in the watershed. For example, one model identifies a 2,000-acre hillside in the watershed that is at risk of burning with flames higher than 50 feet. After the fire, it is estimated that the hillside would ***release 185,000 tons of sediment*** into nearby waterways.

Proactive forest management will restore overgrown forests to their ***original fire-resilient condition***,

Trucks such as the one above can hold 52,000 pounds of sediment. The sediment coming off the hillside in the previous example would fill over 7,100 trucks.

reestablishing forests that use less water and are made up of large, healthy trees that absorb more carbon dioxide (a greenhouse gas) from the atmosphere. These results highlight the potential damage from unmanaged forests. The final results of the study will provide a solid basis for discussions with additional stakeholders and downstream beneficiaries regarding investment opportunities that may reduce the costs associated with the existing state of our forests.



An ounce of prevention is worth a pound of cure.