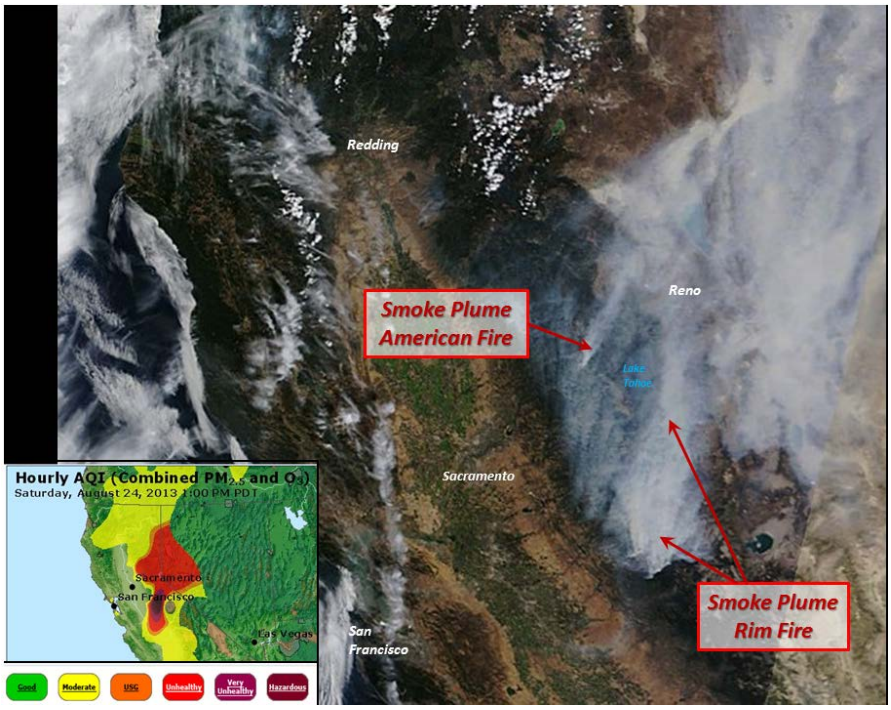
The Rim Fire: Why investing in forest health equals investing in the health of California

What happens in the Sierra doesn't stay in the Sierra

On August 17, 2013 the Rim Fire began burning in the steep, rugged canyons of the Stanislaus National Forest, headed for Yosemite National Park. As devastating as the event was to the local landscape and communities, the impacts of the Rim Fire were widespread:

- On August 23rd, Governor Brown declared a **state of emergency for the City of San Francisco** due to the threat that the fire posed to water and power resources at Hetch Hetchy - the reservoir that serves 2.6 million people in the Bay Area.
- **Air quality warnings** were issued for Lake Tahoe, Carson City, and Reno, **more than 100 miles away**. Some hotels in South Lake Tahoe experienced as much as a 20% drop in business as a result of the smoke.



The smoke plume from the Rim Fire stretched across the Sierra and in to Nevada, creating unhealthy air as far away as Reno and Carson City.

*Initial estimates indicate that the Rim Fire released **11,352,608 metric tons of greenhouse gas** emissions. Based on the U.S. EPA's web site, those emissions are roughly equivalent to:*

- Annual **greenhouse gas emissions** from **2.3 million cars**
- **Carbon dioxide emissions** from **1.2 billion gallons of gas** consumed
- **Carbon dioxide emissions** from the electricity use of **1.5 million homes** for 1 year
- Annual **carbon dioxide emissions** of **3.2 coal fired power plants**

Fire's impacts will be long-term

Decades of fire supression, a changing climate, and a shortage of forest restoration efforts have led to the current unhealthy condition of many of our Sierra forests, resulting in an increase in the frequency of larger, more damaging fires. These fires, like the Rim Fire, take longer to heal and can result in long-term impacts on water quality and supply.

- The Rim Fire burned so hot in some areas -- **five times hotter than boiling water** -- that it changed soil chemistry and structure. These "high burn" areas are **more erosion-prone**.
- Nearly 100,000 acres, about **40% of the area**, burned at **high intensity**. Ecologists say that it could take **30 to 50 years** for the forest to reestablish itself in these areas.
- Denver Water is still spending **millions of dollars** to stem erosion **12 years after** the Hayman Fire burned across 215 square miles in the foothills south of Denver. The Rim Fire has consumed nearly 2 times that area at 402 square miles.

The Rim Fire illustrates both the need to address existing forest conditions in the Sierra and the direct relationship between the Sierra Nevada and the rest of California. More than **60% of California's water** originates in the Sierra Nevada, and Sierra forests store enough carbon to offset the annual carbon dioxide emissions of 108 coal fired power plants. Investing in forest health and reducing the risk of large damaging fires, like the Rim Fire, is essential to ensuring that these Sierra benefits continue to exist in the future.

Photo Credit: USFS Mike McMillian

Rim Fire: Largest fire in recorded history of the Sierra Nevada

The Rim Fire doubled in size during the early stages. In less than 3 weeks it grew to be the largest wildfire in the Sierra Nevada and the 3rd largest in California history.

- To date the Rim Fire has burned, 257,314 acres, about 402 square miles or an area equal to eight times the size of San Francisco.
- Supression cost to date: $127.2 million
- Cost of emergency road, trail, and watershed stabilization efforts to date: $8.5 million
- An estimated $900,000 was spent to purchase alternative energy when 2 of San Francisco Public Utility Commission's (SFPUC) 3 hydroelectric powerhouses were taken offline as a result of the fire. The exact cost to repair the damage to these powerhouses is still unknown, but SFPUC estimates it to be in the millions.
- Habitat for many species, including listed or proposed for listing species such as the California spotted owl, great gray owl, and Pacific fisher was drastically altered.
- Losses to the ranching community, such as destroyed grazing land, killed livestock, and damaged infrastructure, are estimated to be in the millions.
- Tuolumne County budget projections show about $275,000 less in estimated income from the tourism-driven occupancy tax on hotels, campgrounds, and other lodging.

Investing in forest health, clean energy

During the past five years, over 4.5 million acres of California forests have been impacted by wildfire. Many predict that the size and severity of these fires, like the Rim Fire, will continue to increase unless investment is made in proactive forest restoration treatments. This sustainable forest management includes removing excess biomass, or small diameter trees, branches, and diseased wood, that act as fuel for a fire. Biomass represents a huge untapped resource for the generation of heat and power and its removal can improve forest health and reduce the risk of catastrophic wildfire. In fact, burning biomass in a controlled facility to generate power, as opposed to an open fire, can reduce carbon dioxide emissions and create jobs for rural economies.

The Sierra Nevada Conservancy is a state agency that carries out a mission of protecting the environment and economy in a complementary fashion across 25 million acres, one-quarter of the state. To learn more, please visit the Sierra Nevada Conservancy Web site.

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