Benefits of Forest Fires

by Francie McGowan

Now that the Rim Fire is in mop-up mode, and the number of firefighters has been reduced from over 5,000 to less than 1,500, hopefully we can breathe a sigh of relief that the worst is over. This is a good time to examine some of the positive effects of forest fires and learn more about what constitutes good forest management.

If we can pull away from our own, albeit very real, negative experiences from this fire, we can possibly survey the bigger picture concerning forest fires and the benefits created by them. We may gain a better understanding and appreciation of the Sierra Nevada and the Stanislaus Forest where we have chosen to live.

Before European settlers came to these mountains, fires were a natural part of the ecology of the forest. Whether ignited by lightning, or by Native Americans, fires burned at regular intervals throughout a broad area extending from the foothills up to the mixed conifer forests at higher elevations. John Muir, in 1895, described how forest fires occurred in the Sierra Nevada: "In the main forest belt of California, fires seldom or never sweep from tree to tree in broad all-enveloping sheets .... Here the fires creep from tree to tree, nibbling their way on the needle-strewn ground."

After settlement by Europeans, fire suppression—especially during the 20th century (aided by Smokey the Bear cautioning everyone to prevent forest fires)—allowed the forest to grow dangerously dense and the forest floor to fill up with dried vegetation. Plants native to this area and essential to animals died off due to lack of sunlight caused by dense forest growth. What had been naturally-occurring, relatively small fires turned into raging infernos engulfing huge areas.

Although logging has helped clear some areas of the forest, selective logging, if removing only the largest trees, can add to the problem by harvesting large, healthy trees and leaving smaller trees and slash. This, along with undergrowth not cleared by homeowners, creates "ladder fuels"—small trees and brush which carry a fire into the forest canopy.

Forest fires allow conifers to remain the dominant tree species in the Sierra. The heat from the fire opens serotinous cones and allows their seeds to fall to the forest floor. These then germinate and grow into new trees. Some examples of plants that depend on fire for germination are from the buckhorn family, native morning glory, rock rose family and ceanothus. Chaparral plants, including manzanita and scrub oak, also require intense heat for seed germination.

Fires are essential in removing exotic plants from the ecosystem, giving an edge to native species so they can germinate and grow. The forest fauna depend on these native plants for food. Dead wood, withering plants and weaker trees are removed by fire, allowing sunlight to stream through the fire-opened areas. The newly admitted light gives rise to an abundance of wildflowers and stronger, more robust forest growth. Reducing the competition for nutrients and

water allows established trees to grow stronger. Less competition for water results in fuller rivers and streams.

Fire is also a scourge to insects—like the aggressive bark beetle—that prey on trees. These beetles infest drought-stressed or weakened trees. Their growth over the last decade has burgeoned causing trees to die off and become fuel for major fires. More trees die each year from insects than from fire. These insects also act as vectors, or carriers, of diseases fatal to many of the forest trees.

Many people lost homes and animals crucial to their livelihood in the Rim Fire. So far, it is the third largest in recorded California history. Lack of funding from Congress for national forests, and lack of awareness of good forest stewardship, has contributed to the intensity of wild fires in the last fifty years. It is much cheaper to pay for forest clean up than it is to fight a major forest fire. As of September 23rd, the Rim Fire has cost over $122 million dollars. It is up to us to raise everyone's awareness about what it takes to keep our forests healthy so we can all thrive in the Sierra Nevada mountains and foothills.

Francie McGowan is a transplant from San Francisco who enjoys gardening in her forest home.

Sources consulted for this article:

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