What Does Restoration Mean for the Clearwater Valley?

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An important objective recognized by agencies and landowners in the Clearwater Valley is protecting human lives and property from wildfire. Agencies and private landowners have all been working together to address this need through fuel mitigation projects. An additional objective, particularly for the U.S. Forest Service, is restoration. For example, an important component of the new Coordinated Forest Landscape Restoration Project is restoration of forest and aquatic ecosystems. What is meant by restoration? Is it the same as fuel mitigation, and if not, how does it differ?

Restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. For example, forest restoration attempts to return an ecosystem to the kinds of trees and their sizes and densities that occurred under historical disturbances. Thus, restoration requires an understanding of what was here historically for use as a reference condition. Managers today may choose not to entirely restore the conditions that were here historically, for example to address concerns about sustainable conditions under future predicted climate change, but the historical reference still provides essential information for designing restoration treatments.

A recent project conducted by the Ecosystem Management Research Institute (EMRI) that is assisting the Coordinated Forest Management Initiative of the Clearwater Resource Council and the Seeley Lake Community Foundation evaluated the historical conditions of forests in the Blackfoot Watershed. EMRI first mapped the ecological sites in the Watershed that allow different kinds of trees and vegetation conditions to occur. Ecological sites differ in physical attributes such as their elevations, slope, exposure to sunlight, soils, and precipitation levels. Not surprisingly, these ecological sites also differed in the types of historical disturbances, specifically the kinds of fire regimes that would typically occur for each ecological site. At low elevations, in drier and warmer ecological sites, fires historically occurred relatively frequently (less than 25 years on average). Because of this frequency, fire tolerant species such as ponderosa pines were common but at relatively low densities and the fires tended to be of low severity, primarily burning through the understory. At much higher, cooler, and moister sites, fires in many locations occurred only every 100 years or longer, resulting in forests comprised of subalpine fir, Douglas fir, Engleman spruce and other species. When they did burn, they were typically of high intensity, burning through entire stands and killing nearly all of the trees. In between these two types of sites were areas that supported what is termed a mixed-severity fire regime. Fires in these areas produced a mosaic pattern of areas where the fire burned through the understory, leaving fire resistant species such as larch, ponderosa pine, and to a lesser extent, Douglas fir, while in other patches, the fire would flare up and take out all of the trees, particularly patches of lodgepole pine and dense Douglas and subalpine fir. The work conducted by EMRI quantified how much of each of these types of fire regimes occurred while also mapping the general locations of where they would be located in the Valley.

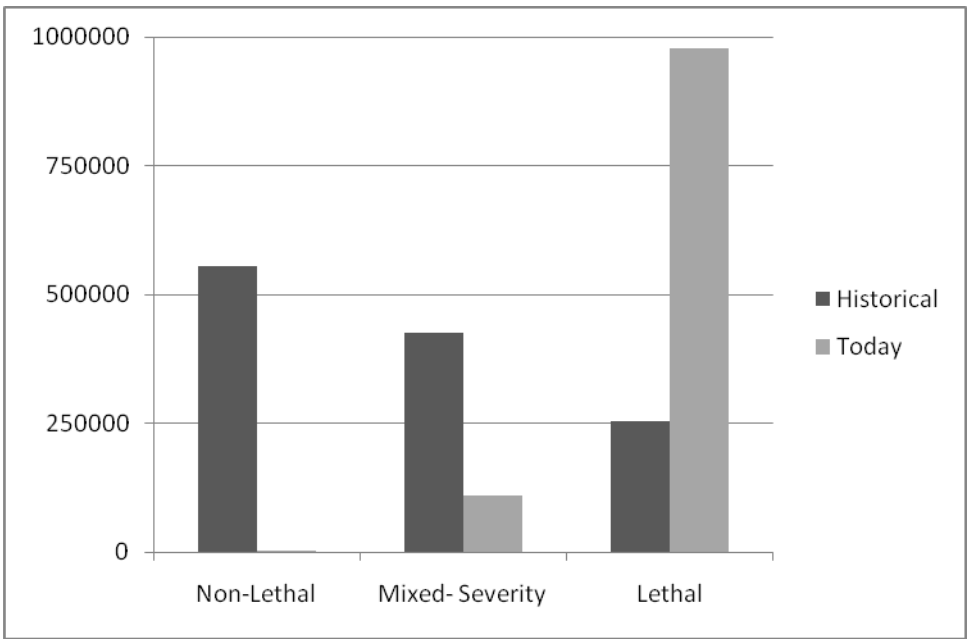
EMRI then compared what was here historically to what is present today, using the best available information on existing vegetation. Substantial differences were noted. Today, the high intensity types of fire conditions predominate, even in low and mid-elevation sites. Tree sizes, on average, are

substantially smaller, with much fewer stands supporting the more fire resistant large ponderosa pines and larch than occurred historically.

What are the implications of these findings? First, that while wild and working forest lands cover the majority of the Valley, they do differ substantially from what was here historically. While a management objective is not to restore all lands to historical conditions, it is important to understand the types and extent of changes that have occurred over the past 100 years. Where we want to restore historical forest conditions, we can describe the specific mix of tree species and their sizes and densities that were likely to have occurred. This differs across the various ecological sites in the Valley. In low elevation forests, particularly where large ponderosa pine, larch, and Douglas fir still occur, restoration and fuel mitigation may be mutually obtainable objectives. At higher elevation sites, restoring historical conditions differs from fuel mitigation objectives. Within the delineated wildland urban interface (WUI) surrounding town and homes, fuel mitigation needs will override restoration objectives. But outside the WUI, mixed severity fire conditions may be the management goal. In these areas, various types of treatments may be appropriate, from mechanical thinning of some forest stands, to use of prescribed burning, once existing fuel loads are reduced enough to allow for acceptable fire conditions.

A complicating factor in planning for fuel mitigation and forest restoration work is integrating these activities with the need for aquatic restoration. Work by USFS Research Station emeritus scientist Bruce Rieman being conducted as a companion study is investigating where the best aquatic restoration potential exists in the Valley, and how this can be coordinated with the forest restoration efforts. A central consideration is what road network is needed to both allow access to the forest for management and recreational activities while minimizing disruption to aquatic ecosystems and habitat for bull trout and westslope cutthroat trout. In the long-term, forest restoration is needed to maintain the lands surrounding forest streams in sustainable conditions. However, in some areas, treatments may need to be carefully timed to maintain appropriate stream conditions to support declining populations of these two indicator aquatic species.

Thus, restoration and fuel mitigation is not a one-size-fits-all proposition for an area like the Clearwater Valley. Careful evaluation and planning will help identify the areas and kinds of forest and aquatic ecosystems that will best meet the various management objectives for that location. Looking at the Valley as an entire watershed and understanding the interactions of different land ownerships is needed. Coordinated Forest Management is an important part of maintaining the safety of our communities, the productivity of our forests, the fish in our streams, rivers, and lakes, and the quality of wildlife habitat that we all look for in our surrounding wild and working forest and aquatic ecosystems.



Historical and current estimated fire regime conditions in the Blackfoot Watershed.

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