

Upper Applegate Watershed Restoration Project

Nature's Benefits, Purpose and Need, and Restoration

July 2018

Background

Multiple community workshops have been held over the last three years to provide the opportunity for early public engagement to integrate community values in the development of project proposals in the Upper Applegate watershed. The planning process for the 52,000 acre Upper Applegate watershed is a collaborative effort between stakeholders and federal agencies that incorporates an all-lands approach to address landscape resilience to disturbance and climate change. An objective of this effort is to identify desired values (based on a “nature’s benefits” or ecosystem services approach) from which activities can be designed to restore or enhance these benefits and related ecological processes. Collaboratively developed projects that recognize the connection between ecological conditions and a sustainable flow of goods and services form the foundation of this Proposed Action.

Additionally, this collaborative work within the Upper Applegate utilizes adaptive management principles. Adaptive management is a process that bases management actions on clearly defined outcomes and monitoring to determine if actions are meeting desired goals, and if not, to facilitate changes in management that will best ensure those outcomes are met.

Benefits from Nature

“Benefits from nature” are the goods and services that people receive from natural systems. This concept aligns well with the strategy to manage the land adaptively to achieve social and ecological sustainability. The “benefits from nature” concept was integrated into this planning process to underscore relationships between ecological, social and economic conditions in and around the AMA.

Community and Agency Identified Values

Initially, nearly fifty “values” were initially identified in the community workshops. Further discussions in subsequent workshops grouped and prioritized important values. The following values were identified as high priority for the Upper Applegate watershed. These values are organized into three major themes:

- **Water and Aquatic Habitat**
 - Water quality and quantity
- **Terrestrial Biodiversity**
 - Late-successional forests (northern spotted owl habitat).
 - Plant and animal biodiversity.
 - Important ecological connectivity corridors.
- **Community and Culture.**
 - Recreation opportunities (motorized and non-motorized).
 - Roadless and unmanaged areas.
 - A sustainable flow of goods and services.
 - Human life and property.

Threats to Values

Threats were categorized as either environmental/ecological, management practices, or social. Environmental threats include high severity wildfire, overstocking (overly dense timbered stands), drought, and climate change. Threats related to management practices include fire suppression (lack of a disturbance process), single species management (including clearcutting or unsustainable management practices), and a fragmented approach to management (not taking a landscape approach). Social threats include impacts from unmanaged recreation (illegal camping, garbage, vandalism, motorized use) and lack of agency capacity to complete restoration work.

Purpose and Need for Action

Over one hundred years of fire exclusion, subsequent fuel accumulations, and natural and human-caused disturbances in this watershed's ecosystem now present conditions that could substantially interrupt the conditions and processes that provide important nature's benefits. The underlying **need** for action is to **restore structure and processes** in the Upper Applegate watershed to provide for landscape conditions resilient to natural and human-caused disturbances.

The **Purpose** of the action is to protect and enhance the important community and agency identified values through the attainment of the following goals:

Water and Aquatic Habitat – *Improve watershed conditions and reduce road-related impacts to natural resources. To achieve this, there is a need to:*

- Minimize road related impacts on water quality and quantity and aquatic habitat.
- Maintain or improve important aquatic habitat features so they are sustainable over time.

Terrestrial Biodiversity – *Improve ecosystem resilience and function at the landscape scale in order to sustain healthy forests and watersheds for future generations. To achieve this, there is a need to:*

- Manage forest structure and species composition to increase biodiversity.
- To restore fire-adaptive species in the ecosystems, thereby encouraging more fire-resilient forests allowing the re-establishment of the ecological role of fire. (T3, T8)
- Develop and maintain habitat connectivity corridors. (T2, T6, T8)
- Maintain/enhance late-successional habitat. (T3)
- Protect legacy features such as ponderosa and sugar pine, oak savannas. (T1, T8)
- Minimize introduction and spread of non-native species including noxious weeds. (T4)
- Restore landscapes to more resilient conditions by providing a mosaic of seral stages. (T6, T8)

Community and Culture – *Provide protection to communities at risk from wildland fire, provide for sustainable recreation opportunities, and to improve community awareness for stewardship of the land to foster a respect for ecosystems and the processes that maintain them. To achieve this, there is a need to:*

- Reduce risk to communities and other developed areas from wildland fire.
- Provide sustainable recreation opportunities in response to changing demand.
- Minimize unauthorized recreational and other uses (OHV, camping, dumping, etc.).
- Promote small innovative forest products and restoration by-products.
- Foster collaborative approach to land management.
- Improve community awareness of our stewardship of the land and foster a respect for ecosystems and the processes that maintain them.

Restoration

By including a wide range of actions in the Upper Applegate Watershed Restoration Project, there has been concern expressed as to whether it is truly a “restoration” project. From the beginning, this project had focused on the important community values, including both ecological and social values. We have included “restoration” in the title of this project because we have the goal of protecting, maintaining, and restoring these important community values. On the Forest Service restoration website, the following purpose of restoration is given.

“Restoration means creating and maintaining healthy, resilient forests capable of delivering all the benefits that people get from them—clean air and water, carbon sequestration, habitat for native fish and wildlife, forest products, opportunities for outdoor recreation, and more. When we restore our Nation’s forests, we create jobs in rural communities and benefit the environment at the same time.” <https://www.fs.fed.us/restoration/>

Forest Service policy is established in Forest Service Manual 2020 as follows:

Chapter 2020—Ecosystem Restoration FSM 2020 provides policy for reestablishing and retaining ecological resilience of National Forest System lands and resources to achieve sustainable multiple use management and provide a broad range of ecosystem services. Resilient ecosystems have greater capacity to survive disturbances and large-scale threats, especially under changing and uncertain future environmental conditions, such as those driven by climate change and human uses.

The following definitions are from the Land Management Planning Handbook, FSH 1909.12, zero code chapter, section 05 at: <https://www.fs.fed.us/im/directives/fsh/1109.12/>

Restore. To renew by the process of restoration. See restoration (36 CFR 219.19).

Restoration, ecological. The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. Ecological restoration focuses on reestablishing the composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystems sustainability, resilience, and health under current and future conditions (36 CFR 219.19).

Restoration, functional. Functional restoration focuses on the underlying processes that may be degraded, regardless of the structural condition of the ecosystem. Functionally restored ecosystem may have a different structure and composition than the historical reference condition. As contrasted with ecological restoration that tends to seek historical reference condition, the functional restoration focuses on the dynamic processes that drive structural and compositional patterns. Functional restoration is the manipulation of interactions among process, structure, and composition in a degraded ecosystem to improve its operations. Functional restoration aims to restore functions and improve structures with a long-term goal of restoring interactions between function and structure. It may be, however, that a functionally restored system will look quite different than the reference condition in terms of structure and composition and these disparities cannot be easily corrected because some threshold of degradation has been crossed or the environmental drivers, such as climate, that influenced structural and (especially) compositional development have changed.