



Improving Watershed and Aquatic Conditions on the Umatilla National Forest



"Tapping our roots"

The National Forests were first established to 'secure favorable conditions of water flows' in the nation's headwaters in response to public concern for adequate supplies of water and control of destructive erosion and flooding. The nation's forests have long been recognized as critical to water supplies: about two-thirds of our scarce freshwater resources originate on forests, which cover about one third of the nation's land area (USDA, 2000). Forests provide drinking water to more than 180 million people, and 66 million people in the nation rely on a national forest for their water source (USDA 2008).

Healthy forest lands capture and store water, maintain streamflows, reduce flooding and storm damage, replenish ground water, filter and maintain clean water supplies, and provide essential habitat for many species. Watershed protection and restoration are the very roots...of the national forest system.

Past intensive livestock grazing, minerals extraction, timber harvest, road construction, and occasional natural events like floods, windstorms, fire and drought caused damage to the forest in some areas by increasing runoff and erosion, loss of productive soils, impacts to streams and damaging productive aquatic habitat.

The Umatilla National Forest along with many partners has a rich history of working to protect, improve, and restore watershed and aquatic habitat conditions on the forest, and, in recent decades, working with neighbors across boundaries to improve watershed conditions across all ownerships to benefit whole watersheds and communities.

Many challenges and much work to be done...

- Uplands - fixing gullies and meadow headcuts
- Instream habitat -late season low flows restrict migrating salmon, lack of wood for hiding cover, warm water temperatures
- Mining -acid mine discharge from abandoned hardrock mines and dredge (placer) mining severely impacted some streams
- Roads -unstable fills, poor drainage causing erosion
- Fish passage - some road crossings and developments pose barriers to migrating fish and other aquatic species
- Flood damage repair -floods in 1964 and 1996 damaged roads, trails, and campgrounds
- Riparian revegetation - loss of streamside vegetation affects stream stability and water quality and habitat



Upland Gully repair



Instream habitat improvement

Roads...repair, storm-proof, decommission



Flood damage and repair...



1965...



1996...

Riparian planting, in meadows and riparian areas after wildfires



Before (1996) and After (1999) Dredge tailings removed from floodplain on the NFJD River to restore function and improve habitat



Before (2005) and After (2006) passage barrier replaced with low cost prefabricated bridge Texas Bar Creek in 2006



Adaptive management is learning by doing; we continue to learn many lessons...examples are:

- ✓ Protecting sensitive areas is more cost effective than fixing problems after the damage is done, for example by storm proofing roads and buffering streams
- ✓ A shift from treating site conditions to considering whole watershed conditions
- ✓ Giving streams room to function by removing b... reduces flood impacts and improve stream habitat

