



WINTER 2009

Greater Harney Basin Agricultural Water Quality Management Area Plan

Landowner activities protecting water quality

The Greater Harney Basin Local Advisory Committee (LAC) told the Oregon Department of Agriculture (ODA) that landowner efforts were protecting water quality in their area.

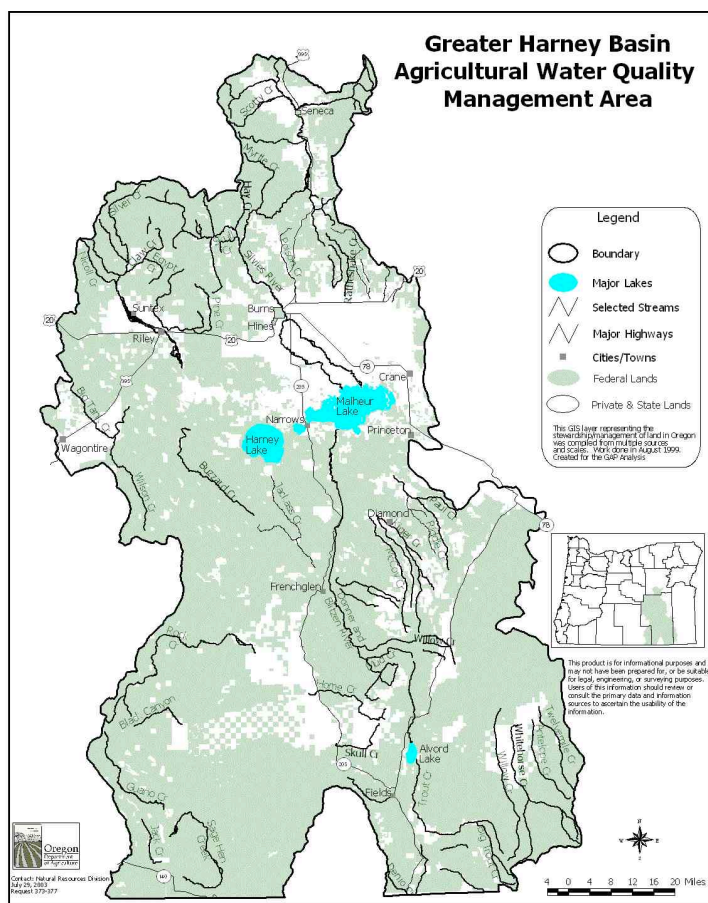
Landowners have been working with the Harney County Soil and Water Conservation District (SWCD), Harney County Watershed Council, and other conservation partners to improve watersheds from ridge top to ridge top.

Projects have improved both streams and uplands. Projects ranged from stabilizing streambanks, seeding rangelands, and thinning juniper - all will enhance water quality.

The LAC recommended that all parties continue their conservation efforts. One positive sign is that ODA has received no complaints in the six years that water quality requirements have been in effect.

To support conservation work, the LAC suggested that a local entity develop a central database for data related to water quality. Information would include water chemistry and riparian conditions.

The LAC also requested that outreach activities target small-acreage landowners and the non-agricultural community. ODA will work with LAC members and conservation agencies to develop and implement an outreach strategy.



The Management Area consists of the Silver, Silvies, and Donner and Blitzen River systems. It also includes all the drainages in the Catlow Valley and Alvord Desert.

According to the LAC, "to help achieve water quality standards in the Management Area, an effective strategy should ... result in the maintenance or improvement of:

- **Riparian vegetation along streams**
- **Stream channel morphology**
- **Wet meadows and seasonal wetlands**
- **Upland conditions"**



“RIDGE TOP TO RIDGE TOP”

Upland plants protect water quality

A healthy watershed needs healthy vegetation in the uplands and in riparian areas.

Riparian areas

Riparian areas are adjacent to streams. Healthy riparian areas are those that have enough vegetation to stabilize streambanks, filter out nutrients, provide shade, and store moisture in the soil profile. A healthy stream can withstand a medium-sized flood without excessive erosion.

Healthy uplands capture, store, and beneficially release precipitation

Uplands are areas in a watershed away from a stream. They make up 90-99% of a watershed, and most of the rain and snow lands there. Responsible landowners manage for desirable, vigorous vegetation to promote precipitation capture and storage.

Vegetation and the soil surface **capture** rain and snow. Management objectives should include:

- Providing sufficient cover to reduce raindrop impact and to trap precipitation,
- Adding organic matter to soil,
- Improving root mass to enhance soil permeability.

Soil acts as a large reservoir to **store** water.

Management objectives should include:

- Protecting desirable vegetation that has healthy root systems to promote soil structure.
- Ensuring proper vegetative cover and organic matter to reduce excess evaporation.

The soil reservoir **beneficially releases** stored water via increased subsurface flows instead of overland flows. This extends late-season flows and reduces erosion and stream sedimentation.

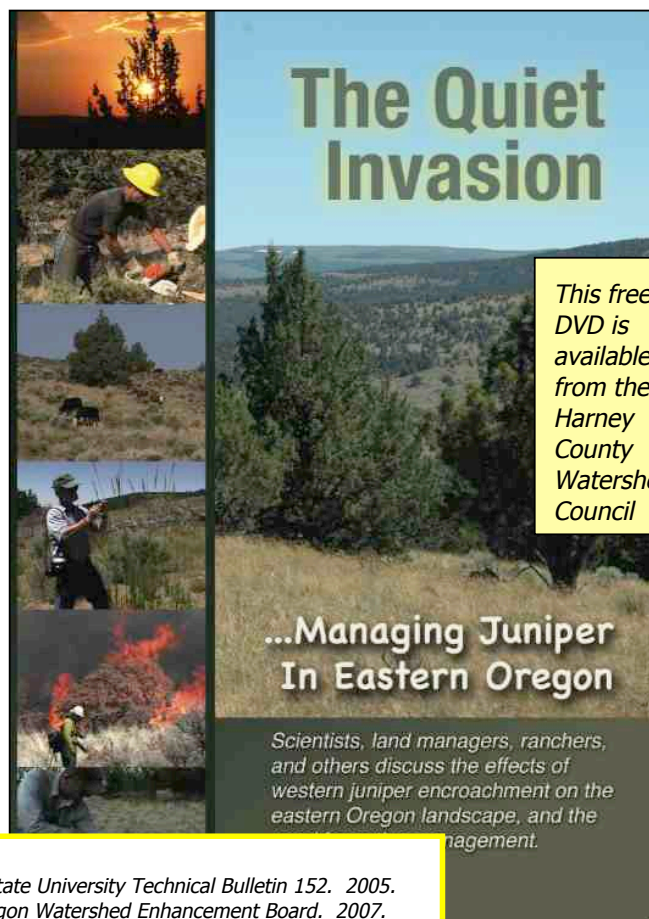
Dense juniper stands compromise watershed health

Junipers are native to the Greater Harney Basin, but fires historically restricted them to rocky areas. Over the years, fire prevention and overgrazing allowed junipers to spread into areas that traditionally supported just grasses and shrubs.

Dense juniper stands inhibit the growth of other beneficial plants by capturing large amounts of water for their own use year-round.

The lack of moisture to sustain growth of grasses and shrubs means more bare soil that easily erodes. Dense junipers allow less water to enter the soil profile, reducing summer stream flows.

Dense junipers also reduce the amount and variety of wildlife food and cover.



Sources:

- *Biology, Ecology, and Management of Western Juniper*. Oregon State University Technical Bulletin 152. 2005.
- *Western Juniper Management: A Field Guide*. Hugh Barrett. Oregon Watershed Enhancement Board. 2007.

Juniper Removal Enhances Cucamonga & Big Pasture Creeks



Aspen stands and riparian plants used to struggle for survival along Cucamonga and Big Pasture Creeks because of juniper. Hillsides, covered with juniper, used to erode sediment into the streams. But not any more.

Fred Otley, Earl and Shirley Carson, and Hoyt Wilson joined with Burns District BLM to remove juniper from 2,400 acres of private land and 2,000 acres of public land. The project is enhancing 7-1/2 miles of stream and allowing aspens to regenerate. The landowners received help from the Eastern Oregon Agricultural Research Center, Oregon Department of Fish and Wildlife, US Fish and Wildlife Service, and Harney County Watershed Council.



Juniper trees can intercept up to 25 percent of annual rain and snowfall, and change historic snowdrift patterns. All of which contributes to the decline of aspen. By removing junipers, more snow will reach the ground, and more will accumulate on north-facing slopes. This will benefit the aspen groves.

Project plans called for an intentional fire to help remove unwanted junipers and to improve plant diversity and regeneration of aspens. Crews cut the juniper in a mosaic pattern to allow some trees to

survive the burn, and to provide escape routes and cover for wildlife. They allowed the cut trees to dry for one year, and then started the burn with a heli-torch. They burned the junipers in the riparian areas in the winter when the ground was still frozen to protect desirable riparian vegetation.



After the burn, the landowners built fences, seeded burned areas with native grasses, built ponds to capture sediment, and modified their grazing strategies. They now follow a rotational grazing system to rest pastures and improve grass health.

Landowners and public land managers are pleased with the results.





Landowner and BLM work together

Dan Nichols wanted to improve conditions along McCoy Creek in his pasture on Steens Mountain. The Bureau of Land Management (BLM) wanted to thin juniper adjacent to Dan’s property. It seemed like a good idea to work together. They got help from a cooperative effort with the Oregon Watershed Enhancement Board (OWEB), Farm Service Agency (FSA), and Harney County Soil and Water Conservation District (HSWCD).

Streamside improvements

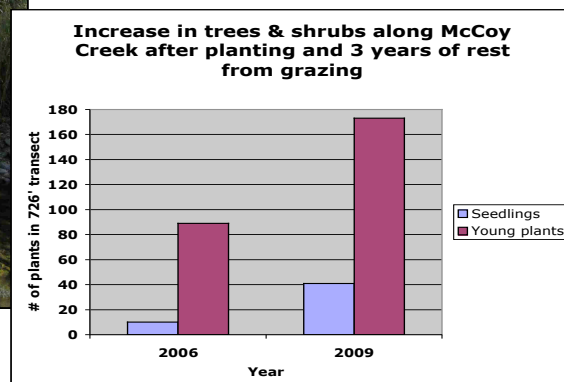
One mile of McCoy Creek runs through Dan’s 640-acre pasture. Boulders armor the creek, and it is naturally shallow and wide. Little sediment builds up due to high flows in spring. Growth of grasses and flowers is limited, and most of the vegetation consists of trees and shrubs.

McCoy Creek flows year-round and provides important habitat for redband trout. Redband trout prefer cooler water, and shade from trees and shrubs helps maintain cooler water. One of Dan’s management goals was to increase the number of trees and shrubs along McCoy Creek.



McCoy Creek was the primary water source for livestock. Except for early spring, it was the only watering source in the pasture. Steep and rocky slopes above McCoy Creek deterred livestock from returning to the uplands after they drank. Livestock congregating at the creek impeded the growth of willows and other trees and shrubs. Meanwhile, grasses in the upland areas of the pasture were undergrazed. To correct this situation, Dan developed a spring approximately 1/2 mile west of McCoy Creek. This will provide water for wildlife and attract livestock to the uplands

In 2006, Dan enrolled this portion of McCoy Creek into the Conservation Reserve Enhancement Program (CREP). Dan built 7,920 feet of fence to separate the riparian area from the majority of the uplands. He planted 230 native trees along the stream. He will keep cattle out of this area until the vegetation recovers, after which it will be grazed in a manner compatible with good water quality.



Enhancing upland vegetation



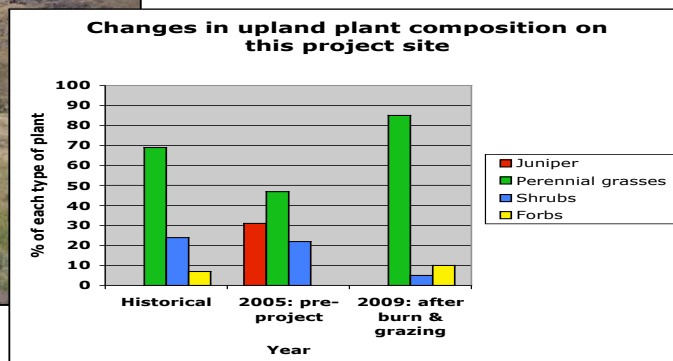
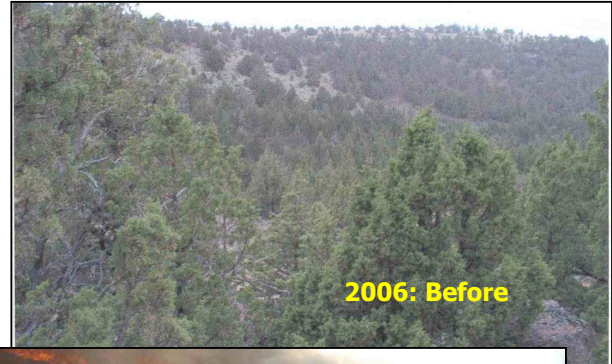
Grasses and shrubs historically dominated Dan’s pasture and the adjacent BLM lands. By 2005, junipers had invaded the pasture to the point where grasses were being crowded out.

In March 2006, workers cut every other juniper on 325 acres to promote burning. That fall, they burned Dan’s property in conjunction with BLM’s controlled burn of 3,000 acres.

Dan kept his livestock off the pasture before the fire to build up fine fuels to carry the fire. He excluded his cattle from the pasture for three years after the fire. This allowed grasses and forbs (flowers) to recover.

Data collected in 2007 show that forbs dominated regrowth after the burn. In 2008, perennial grasses began to overtake forbs. In another five years, we expect shrubs to increase while grasses and forbs decrease slightly. This will approximate historic conditions.

After the rest, 250 cow/calf pairs and 10 bulls grazed this pasture for two weeks in August 2009. Dan will incorporate this pasture into his larger BLM livestock allotment pasture rotation. This will allow for additional watershed enhancement activities on both properties.





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Background

The LAC helped ODA develop the Area Plan and associated Oregon Administrative Rules 603-095-3300. They reconvene every two years to review progress towards achieving Area Plan goals. The LAC has representatives from farming and ranching, Burns-Paiute Tribe, Grant and Harney County Farm Bureaus, Harney County Watershed Council, and the Harney County Court.

The LAC’s mission is “to promote agricultural management that maintains, improves, or protects water quality in the Greater Harney Basin while sustaining a viable agricultural economy and community” by focusing on “educational programs regarding land treatment and the encouragement of desirable agricultural practices.”

The goal of the Area Plan is to “limit water pollution from agricultural activities to help achieve water quality standards that protect beneficial uses in the Greater Harney Basin.”

This is being accomplished by:

1. Minimizing agriculture’s contribution to water quality concerns.
2. Focusing on education, not regulation.
 - Developing strategies to provide landowners with information and technical and financial assistance.
 - Continuing to include landowners, land managers, and local communities in developing and implementing the Area Plan and the associated Area Rules.
 - Informing the general public about beneficial agricultural practices.

The Area Rules are:

1. Desired Streamside Riparian Condition. Consistent with site capability, landowners must allow regeneration and growth of riparian vegetation along natural waterways to stabilize banks, filter sediments and nutrients, sustain riparian community integrity through spring runoff and larger storm events, and provide shade and aquatic habitat. Water gaps, livestock watering, and hardened crossings are allowed in streams that otherwise have desired streamside riparian conditions. This Rule does not apply to natural waterways, such as sloughs and backwater areas, that only hold water for short periods of time during spring runoff.
2. Waste Management. No person shall cause pollution, place wastes where they are likely to pollute, or discharge waste sufficient to violate water quality standards.