

CHAPTER TWO:

WATERSHED ISSUES, FINDINGS AND RECOMMENDATIONS

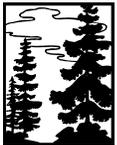
The Process

The Federal Guide (USDA 1995a) lays out the six step Watershed Analysis process. The process includes identification of key issues and questions to help focus the analysis. In the Beaver Creek watershed, two significant resource issues drove the analysis: coho salmon and older forests. Core questions within the Federal Guide were also considered.

Issue: Older Forests

Older forests currently occupy about 45 percent of federal lands, 23 percent of the private lands, and 31 percent overall of the Beaver Creek watershed. However, *interior* older forests, those that are not affected by fragmentation, occupy 1 percent of the watershed, all on federal lands. Logging, along with residential and agricultural development within the last 100 years removed many stands of older forest, especially within the lower reaches of the watershed.

Key Questions for Older Forests



What is the priority for restoring older forests within the Beaver Watershed Analysis Area as compared to other Siuslaw watersheds?



Where are the best opportunities to restore late-successional forests within the watershed?
What stands are reaching a size where they would benefit from thinning?



What other restoration treatments are recommended for the terrestrial environment?

Issue: Coho Salmon

The most significant resource in the Beaver Creek watershed is coho salmon. Coho populations in this small watershed are considered among the strongest on the central coast of Oregon. Coho salmon production would likely increase following restoration of low gradient, unconfined stream habitat (primarily on non-federal lands).

Key Questions for Coho Salmon



What are the presettlement and current habitat conditions and population trends for coho salmon?



What factors are limiting coho production?



How does the upper watershed affect the lower?



Which streams or reaches within the watershed contain intact, functioning systems and/or serve as critical habitat for anadromous fish?



Does the Key Watershed designation in the North Fork Beaver Creek provide high quality habitat and refuge for anadromous salmonids?

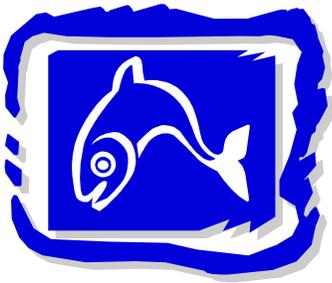


What restoration techniques might be appropriate?



What role does the Forest Service have on the private land?

Key Findings



Beaver Creek can provide a solid refuge that can serve as a core coho salmon population for recovery efforts in nearby watersheds. The Key Watershed designation on federal lands provides for long-term recovery. About 68 percent of anadromous fish bearing stream miles are on private land. High quality anadromous fish habitat exists on federal land along North Fork Beaver Creek.

Beaver Creek is a dynamic system; upland conditions affect downstream habitat because sediment, nutrients, food, and wood move from the headwaters to the low gradient reaches downstream. Logging in the headwaters, along with land and stream clearing in the lower reaches, has reduced the amount of large wood important to coho salmon. Within the watershed, the most significant impacts from land use to fish and wildlife has been loss/degradation of tidal-influenced wetlands. Beaver Creek contains more miles of potential floodplain restoration than any other mid coast watershed.



Older forest restoration within Beaver Creek has less priority for this decade than some other Siuslaw watersheds. About three percent of federal lands within the watershed are currently functioning as interior forest habitat (the watershed as a whole is highly fragmented, with one percent of the acreage functioning as interior habitat). Additionally, the watershed is isolated from larger blocks of forest that are higher priority for immediate treatment. The North Fork of Beaver Creek was identified as an area that currently provides better late-successional habitat than elsewhere in the Coast Range Province (USDA 1995b).

About 2,000 acres of federal lands within the watershed are reaching a size where commercial thinning is possible.



Grizzly bear, Pacific fisher, and gray wolf were last reported in the Coast Range around 1860, 1913, and 1934, respectively. Other species that were once more widespread although uncommon were extirpated by mid 1980, (e.g. wolverine - 1972 and lynx - 1984). Still other species that were once common are uncommon to rare today (e.g. peregrine falcon, bald eagle, etc.). Many early seral associated species, as well as non-native species (plant and animal) and species which have expanded their ranges westward with settlement (i.e. opossums, barred owls, cowbirds), were uncommon or absent from the watershed prior to the mid-1800's.

Recommendations

Table 3 summarizes Interdisciplinary Team recommendations and considerations related to management of the Beaver Creek Watershed.

Table 3: Management Recommendations

What	Why	Comments
<i>Aquatic Projects on National Forest</i>		
Place in-stream structures	Enhance diversity and complexity of low gradient, anadromous fish habitat in North Fork Beaver Creek.	Limited road access.
Encourage beaver activity		
Fall trees into stream		Only if sufficient cover is present to provide for riparian species
Plant conifers in riparian areas		Cedar and spruce preferred species
<i>Terrestrial Projects on National Forest</i>		
Thin upland stands to a minimum 40 percent crown cover (hemlock and mixed conifer stand may carry a higher density). Vary spacing.	Enhance forest diversity and complexity. Ease edge-effect, increase connectivity between older forest stands. Increase wind-firmness.	Prioritize critical habitat for PETS ¹ species and younger stands along roads that connect existing older forest. Highest priority adjacent to Drift Creek. Consider risk of blowdown, especially adjacent to large openings.
Plant trees and encourage natural regeneration.	Restore diversity and complexity, especially in riparian areas.	Consider role of red alder vs. conifers within riparian areas.
Avoid unnecessary increases in dead or down woody material in areas susceptible to DF beetle.	Reduce mortality from Douglas-fir beetle.	DF beetles may infest live standing trees in stands that have 3 or more dead trees per greater than 12 inches diameter per acre (Hosteetler, 1996).
Manual release and brushing.	Control unwanted vegetation.	Aggressive brush invades disturbed areas or areas where conifers are widely spaced.
Avoid thinning on potential infection sites or thin wide and underplant western hemlock and western red cedar. Vary spacing.	Reduce impacts and risk of spreading Swiss needle cast.	Need to stay abreast of emerging information on dealing with this disease. Prioritize stream influence zones.
Plant and protect western red cedar. Fall trees around root rot pockets.	Reduce spread of <i>Phellinus</i> in susceptible species.	Would also create large woody material.

¹ Proposed, Endangered, Threatened and Sensitive Species

What	Why	Comments
Consider potential for noxious weed spread from management activities.	Reduce spread of noxious weeds.	Evaluate road work such as daylighting and waste disposal, firewood cutting and timber operations.
Hand removal of noxious weeds. Identify cooperative projects with other landowners.	Reduce spread of noxious weeds.	Help secure funding for cooperative projects on and off National Forest.
<i>Road Projects on National Forest</i>		
Place rolling dips above culverts and size culverts appropriately.	Reduce road failure potential.	--
Monitor culverts with potential to plug regularly.	Reduce risk of road failure.	1995 Road Survey indicated problem culverts (see Table 11 and Map 13)
Time road closures to allow access for restoration projects	Reduce cost /increase likelihood of implementing restoration projects.	500 Road already decommissioned. Most roads on federal land in good condition.
<i>Other Projects</i>		
Post directional/informational signs leading to Drift Creek Wilderness Area trailheads	Improve recreation experience.	Avoid signing main junction at Highway 101.
<i>Monitoring Opportunities</i>		
Formal stand exams on dense plantations before and after treatment.	Information to determine stand-level treatment needs. Increase understanding of the dynamics of mixed Douglas-fir and western hemlock stands. Monitor snags densities and growth response.	--
Riparian Zone Vegetation Development	Determine where conifers are most likely to be successful.	--
Wood recruitment zones, blowdown areas.	Observe how wood moves through the system; gap dynamics; insect and disease and vegetation response.	Low elevation flights may be helpful.

Table 3A lists recommendations related to non-federal lands in the watershed. Further information about site-specific proposals is available by contacting the referenced groups.

Table 3A: Potential Projects off the National Forest

What	Why	Comments
<i>Potential Projects off the National Forest</i>		
Maintain current condition and function of Zeke Marsh (Happ Wetland). Add interpretive signs.	Encourage natural wetland processes; improve coho production; environmental education.	Wetland Conservancy interested in acquiring adjacent and other properties in the watershed. Potential private/public partnership for additional interpretation and signing. Contact Esther Lev, 503-239-4065.
Property Acquisition	Resolve land use conflicts areas of high ecological value.	The Central Coast Land Conservancy has applied for a North American Wetlands Conservation Act (NWCA) grant to fund conservation related purchases in the Beaver Creek and other coastal watersheds. Contact: Fran Recht, Central Coast Land Conservancy, 541-765-2234
Consider acquiring Elkhorn (Kingset) inholding.	Improve anadromous fish habitat effectiveness and connectivity within National Forest.	Potential 3 rd party arrangement with Beaver Creek residents to trade for SNF property outside the National Forest boundary.
Plug ditches with large woody material, redirect water onto the floodplain, plant willows.	Enhance channel sinuosity and attract beaver.	South Beaver Creek, NW ¼ of section 33. A grant application has been submitted to OWEB. Implementation is scheduled to begin in 2002. Contacts: Tony Stein, ODFW 541-867-0300 x253 and Wayne Hoffman, Mid-Coast Watersheds Council, 541-265-9195
Plant willow and spruce along channelized stream segment.	Restore native vegetation.	South Beaver Creek, S. ½ of section 33, approximately ¼ mile above the county road bridge. This project is in the “talking stage” between the watershed council and the landowner. Additional areas in Section 33 have been identified for restoration by the Wetlands Conservancy.
Add large woody material to areas identified in the 6 th Field Assessment	Improve anadromous fish habitat, restore channel complexity.	Specific locations identified in 6 th field assessment include the mainstem of Beaver Creek (from the confluence with Elkhorn Creek upstream to a tributary junction near the eastern boundary of section 14) and South Beaver Creek (between Graves and Oliver Creeks).
Graze or otherwise remove canary grass.	Reduce canary grass competition with native grasses.	Control of canary grass and other noxious weeds on and off forest requires cooperative efforts.

What	Why	Comments
Breach dikes, divert flows back to original channels, Remove obstructions to tidal influence. Design stream crossings to meet fish migration and flood needs.	Restore channel sinuosity and hydrologic function.	Requires high level of expertise and cooperation with potential adverse effects on agriculture. Develop priorities in cooperation with Wetlands Conservancy, Mid-coast Watershed Council, and others.
Planting, thinning, fencing, or eliminating unwanted vegetation.	Restore native riparian vegetation.	FS to provide technical expertise and help secure funding in cooperation with the Midcoast Watershed Council and private landowners under the State of Oregon's Plan for Salmon and Watersheds and other initiatives (see Chapter Four).