

**South Coast  
Regional Restoration Priorities  
July 31, 2006  
OWEB  
*FINAL***



# South Coast Restoration Priorities – July , 2006

## Introduction:

This document sets forth our best, current thinking about restoration priorities for Oregon's South Coast watersheds. It is a synthesis of several documents (see attached bibliography for details). This document builds on, and incorporates, the South Coast Watershed Assessment and Action Plan produced for OWEB (2001).

This **Restoration Priorities** document is designed to be both prescriptive (in the sense that it points towards solutions) – and permissive (in the sense that it allows for new and unforeseen opportunities).

The rivers and streams covered by this document include (north to south):

- New River and Floras Creek
- Sixes River
- Elk River
- Port Orford Watersheds
- Euchre Creek
- Hunter Creek
- Pistol River
- Chetco River
- Winchuck River

Two 4<sup>th</sup> field HUCs are covered: 17100306 SIXES; and 17100312 CHETCO. There are 11 5<sup>th</sup> field HUCs: 30601; 30602; 30603; 30604; 31201; 31202; 31203; 31204; 31205; 31206; 31207 also incorporated into this analysis.

We have organized our thinking into five guiding restoration principles. They are:

- *Focus on connectivity & passage*
- *Restore watershed processes and functions*
- *Protect & restore high value habitats*
- *Reduce anthropogenic (human-caused) impacts.*
- *Work socially to educate humans about watershed processes.*

The rest of this document outlines our thinking and analysis of these five principles, as they apply to South Coast Watersheds. Each section starts with a brief discussion and background of the principle, followed by examples of project types – and in some instances, specific locations or opportunities. An updated “**Limiting Factors Matrix - 2006**” is a companion to this paper. This matrix summarizes the limiting factors we have identified for each watershed in our area.

## **Focus on connectivity & passage**

*Discussion:* Phil Roni, Paul Hoobyar (*Bibliography*) and others have ranked connectivity as the number 1 priority for restoration, based on decades of watershed research. These projects have a high likelihood of success, are generally cost-effective, show immediate results, and can last a long time (centuries). Allowing fish to access quality habitat areas for spawning and rearing --- areas that were not previously accessible --- is our first priority.

*Passage* means allowing fish to access all potential parts of their in-stream habitat.

*Connectivity* extends this concept to include off-channel rearing areas such as sloughs, wetlands, and other highly productive areas adjacent to mainstem rivers and their tributaries. Many South Coast streams have lost a great deal of their off-channel habitat, due to ditching, straightening, and other activities during the past century. Allowing for the natural creation of off-channel habitat is an important component of our overall strategy.

Examples:

- Removing fish passage barriers (culverts, etc)
- Re-establishing off-channel and slackwater/backwater areas off the mainstems of rivers.
- Connecting isolated habitats where possible.
- Connecting “marginal” habitat with known areas of high productivity (to allow seeding as recovery occurs).

Possible projects:

- Bagley Creek (Elk)
- Investigate Upper Sixes (DeMent Ranch, etc)
- Mill Creek (Garrison Lake)
- Mountain Home Creek (Chetco)
- County Road network
- Hubbard Creek (Port Orford)
- Sea Wind Farms (juveniles at the fish ladder)
- Blackberry Creek (Elk River)
- Elk River mainstem @ Wahls (off-channel slough)

## **Restore watershed processes and functions:**

*Discussion:* Re-establishing watershed functions and processes allows us to do some restoration and then “walk away” to allow natural processes set in place to function over time. An example of a natural watershed process would be the delivery of large wood to streams and rivers – and the replenishment of spawning gravel from periodic landslides.

Some processes we can aid through our restoration activities: For example: restoring the process of shading streams and rivers with riparian trees and cover to help lower water temperatures, especially for small tributary streams. Another process is the trapping and re-distribution of sediment provided by large wood, and the creation of habitat complexity provided by large in-stream wood.

Examples:

- Plant riparian trees for shade and eventual delivery of large wood to streams
- Add large wood where appropriate to trap spawning gravel and create habitat complexity.
- Protect upland areas (by fencing and planting) to ensure delivery of cold, clean water throughout the watershed.

Possible project locations:

- Upper Floras (large ranches)
- New River and tributaries (Butte, Bethel, Morton, etc)
- Enlarge buffers on Elk River and Floras mainstem (Marsh Ranch; Brown Livestock)
- Willow Creek (Floras) as key refuge.
- Euchre Creek

### **Protect & restore high value habitats:**

*Discussion:* “Protect the best ---- and restore the rest” has been the motto of smart watershed restoration for the past 30 years. It is far cheaper to protect intact, functioning systems than it is to degrade a watershed and then try to “fix it.” High value habitats include:

Examples:

- Areas with good spawning gravel, cool water, intact riparian zones, large wood, and adequate water flow.
- Wetlands
- Off-channel alcoves
- Highly responsive stream reaches
- Agricultural lowlands with a stream gradient of less than 2%.
- Areas where spawning and juvenile counts show we have good fish production now.

Possible projects & key areas for protection (north to south):

- New River
- Willow Creek (Floras)
- South Fork Floras

Possible projects & key areas for protection (cont):

- Dry Creek (Sixes)
- Upper Sixes
- Pistol River
- Winchuck River lowlands
- All estuaries

### **Reduce anthropogenic (human-caused) impacts.**

*Discussion:* One of our biggest needs is to reduce sediment overloading by doing road surveys, identifying excess sediment delivery sources, and then fixing roads and other human-caused structures that may deliver excess sediment to streams. Too much sediment, especially “fines,” can smother salmon eggs in gravel --- and can fill pools, reducing quality habitat. Too much sediment can also cause deposition, channel widening, erosion, and stream heating in the lower reaches of streams. Other ways to reduce human impacts:

**On agricultural lands,** provide off-stream watering to remove livestock from streams, rivers and sensitive riparian areas. Fence and plant riparian buffers to filter water entering streams.

**On private industrial forest lands,** work with companies to ensure compliance with Forest Practices Act. Look for opportunities to expand riparian buffers to minimize impacts from logging.

**In rural residential zones,** work with landowners to educate and enforce the county riparian ordinance (75-foot setback on Chetco River; 50-foot setback on all other rivers).

Examples:

- Reduce excess sediment:  
Do road surveys and fix “loaded guns” as appropriate.
- Improve water quality:  
Fence and plant riparian areas  
Reduce the use of pesticides, herbicides, and fertilizers  
Encourage buffer strips next to waterways to mitigate inputs to streams  
Provide off-stream watering  
Protect wetlands for water filtering capacity.
- Encourage sinuosity:  
Allow channels to migrate, creating off-channel alcoves and habitat complexity, including overhanging banks, pools, and hydrologic variety.
- Protect in-stream water rights  
Encourage conservation of water use, both domestic and agricultural.  
Keep water instream, as appropriate.

Possible projects & key areas for work:

- All of Floras Creek
- Chetco River
- Winchuck River
- All county watersheds

### **Work socially to educate humans about watershed processes**

*Discussion:* Research in systems thinking posits that the most powerful intervention one can make in a “system” (for example, an ecosystem that includes humans) is to change the belief system from which all behaviors flow. In other words, if people hold watershed protection as a deep, internal value, their behavior on the land will tend to reflect that belief. Therefore, working hard to educate people about their place in the natural world is a valuable intervention and “restoration technique.”

An “on-the-ground” restoration project may change and improve one reach of stream...but a watershed restoration presentation that affects 50 people (property owners) could have even further reaching effects and implications for the environment over the long term.

Examples:

- Speak to groups about water quality, water conservation, and salmon habitat
- Conduct restoration project tours
- Invite guest speakers to talk to watershed groups and citizens
- Develop a watershed curriculum for all schools
- Develop Adopt-A-Stream programs for all rivers in the county
- Engage citizens in water quality testing (Storm Chasers, etc)

Key approaches and delivery systems:

- Pamphlets to real estate developers
- Brochures for county planning dept.
- Door-to-door outreach
- Watershed council meetings.
- Newspaper articles; radio spots
- *Curry Currents* (quarterly newsletter)
- Watershed web-site ([www.currywatersheds.org](http://www.currywatersheds.org))

## **South Coast Restoration Priorities Bibliography**

BLM New River Area of Critical Environmental Concern (ACEC) Management Plan. May 2004.

Hobbs, Stephen, et al. 2002 Forest and Stream Management in the Oregon Coast Range. Oregon State University Press

Hoobyar, Paul OWEB Prioritization Framework. 2003. Restoration priorities for the Hood and Lower Columbia Basins.

Independent Multidisciplinary Science Team (IMST) 1999 Recovery of Wild Salmonids in Western Oregon Forests: Oregon Forest Practices Act Rules and Measures in the Oregon Plan for Salmon and Watersheds. Technical Report 1999-1.

Independent Multidisciplinary Science Team (IMST) 2002 Recovery of Wild Salmonids in Western Oregon Lowlands. Technical Report 2002-1.

Independent Multidisciplinary Science Team (IMST) 2004 Oregon's Water Temperature Standard and its application: Causes, consequences and controversies associated with stream temperature. Technical Report 2004-1.

Massingill, Chris. Coastal Oregon Riparian Silviculture Guide Oregon Watershed Enhancement Board December 2003

Massingill, Chris and Myers, Cindy: Properly Functioning Condition Assessment (PFC) of New River and tributaries 2002.

Naiman, Robert and Bilby, R. 1998 River Ecology and Management

Roni, P. T.J. Beechie, R.E. Bilby, F.E. Leonetti, M.M. Pollack, and G. R. Pess. 2002 A review of stream restoration techniques and a hierarchical strategy for prioritizing restoration in Pacific Northwest watersheds. In *Journal of North American Fisheries Management*. 22: 1-20

Stouder, Deanna J., Bisson, P.A. and Naiman, R.J. editors. 1997 Pacific Salmon and their ecosystems; Status and Future Options.

South Coast Watershed Council Assessment and Action Plan 2001 OWEB protocol.

Williams, Jack, C.A. Wood, and M. P. Dombeck, editors. 1997 Watershed Restoration: Principles and Practices. American Fisheries Society, Bethesda, Maryland