

COHO SALMON: LIFE IN THE WATERSHED

Coho salmon have been the most important variety of salmon caught commercially in Oregon. Until recently, coho were also the most common variety in most coastal streams. Based on records from salmon canneries, coho in Oregon north of Cape Blanco (near Port Orford) numbered about 1.25 million adults annually 100 years ago. During recent years, the annual production of wild coastal coho in Oregon has been dramatically less, around 50,000 to 80,000 fish—a 90 percent decline.

Given this decline, the National Marine Fisheries Service (NMFS) considered listing two groups of coastal coho in Oregon as threatened under the Federal Endangered Species Act. In April 1997 the agency decided to list a population of coho that spans the Oregon-California border, from Cape Blanco south to Punta Gorda. Meanwhile NMFS placed the population north of Cape Blanco to the Columbia River on a “candidate list” and agreed

to let Oregon attempt to recover Oregon coho according to a plan developed by state agencies, working with local groups. The goal of the Oregon Plan is not merely to prevent the extinction of coho salmon in the coastal region, but to restore salmon populations.

Efforts to restore salmon must focus on improving the fish’s habitat in the watersheds it lives in, along with addressing other factors of its decline, such as harvest and hatchery effects on the species.

Coastal residents have a critical role to play in improving fish habitat in watersheds. Improving watersheds can not only help prevent the extinction of species, but also provide benefits to individuals and communities in terms of enhanced water quality and quantity.

This publication is designed to help readers understand the fundamentally important how, when, and where coho salmon live in watersheds and what people can do to help.



The Oregon coast’s most important producers of wild coho salmon are the Nehalem, Nestucca, Siletz, Alsea, Siuslaw, Umpqua, Coos, Coquille, and Rogue Rivers; Tillamook Bay tributaries; and Siltcoos, Tahkenitch, and Tenmile Lakes (on the central coast).

A watershed is the land area onto which rain or snow falls and is stored and from which this water drains over time. The drainage occurs through a river to a single point, such as a lake or the ocean. The boundaries of a watershed are the ridgelines that separate it from neighboring watersheds.

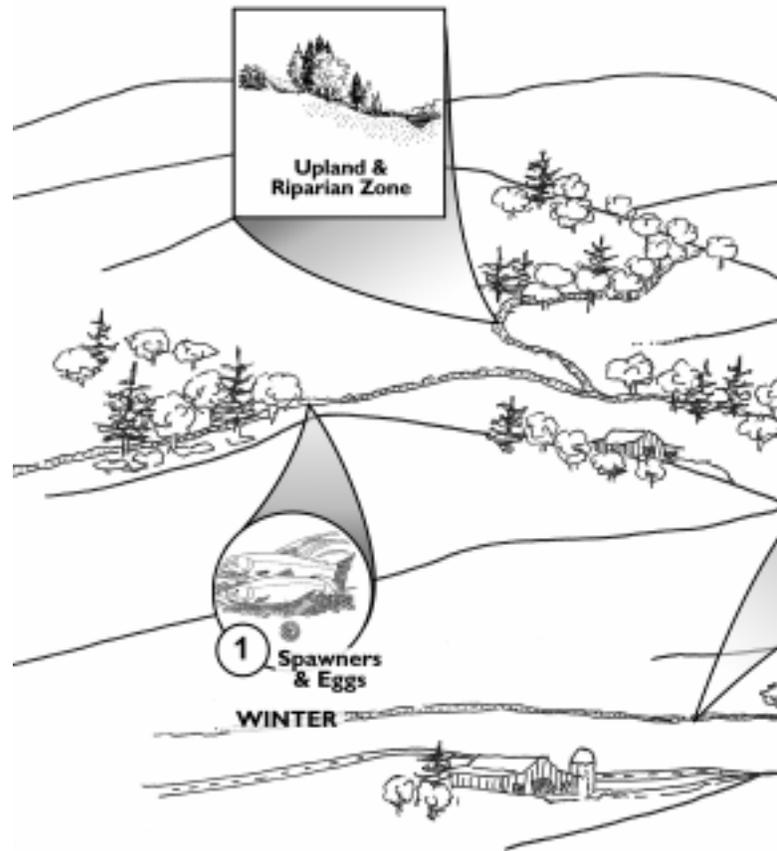
From the ridgetops to the water body, the watershed drains all land areas. These areas are connected. We know that actions and consequences are connected in a watershed: what happens upslope and upstream eventually comes down.

Functioning watersheds are important to us and to fish. We've come to depend on them for timber, for suitable land for farming and grazing, and for drinking and irrigation water. The land areas that people manage provide large wood, boulders, gravel, shade, and food that build healthy

stream habitats for coho salmon. It's a fact: we all live in a watershed—not only people, but the salmon and other animal and plant species, too.

No single picture can convey the understanding that a stream is an ever-changing ecosystem that reflects the condition of the watershed around it. The stream and riparian (stream-side) areas are especially dynamic, shaped by such disturbances as fire and windthrow, channel erosion, peak flows, floods, and debris flows. Such natural disturbances are a normal part of a stream's existence and help create the conditions and habitats that salmon and other species have adapted to over evolutionary time. However, human activities that modify the watershed and stream channel can exaggerate the effects of natural disturbances, with detrimental results.

WE LIVE IN WATERSHEDS . . .



LIFE HISTORY

1 Adult coho migrate into freshwater in the fall to spawn, usually to the stream they themselves were born in. Spawners are typically three years old and weigh 4 to 12 pounds.

Spawning usually occurs from mid-November through February.

Females create nests in the gravel, called “redds,” where they deposit their eggs. The gravel needs to be clean and range in size from a pea to an orange.

Coho prefer to spawn and rear in small, relatively flat streams.

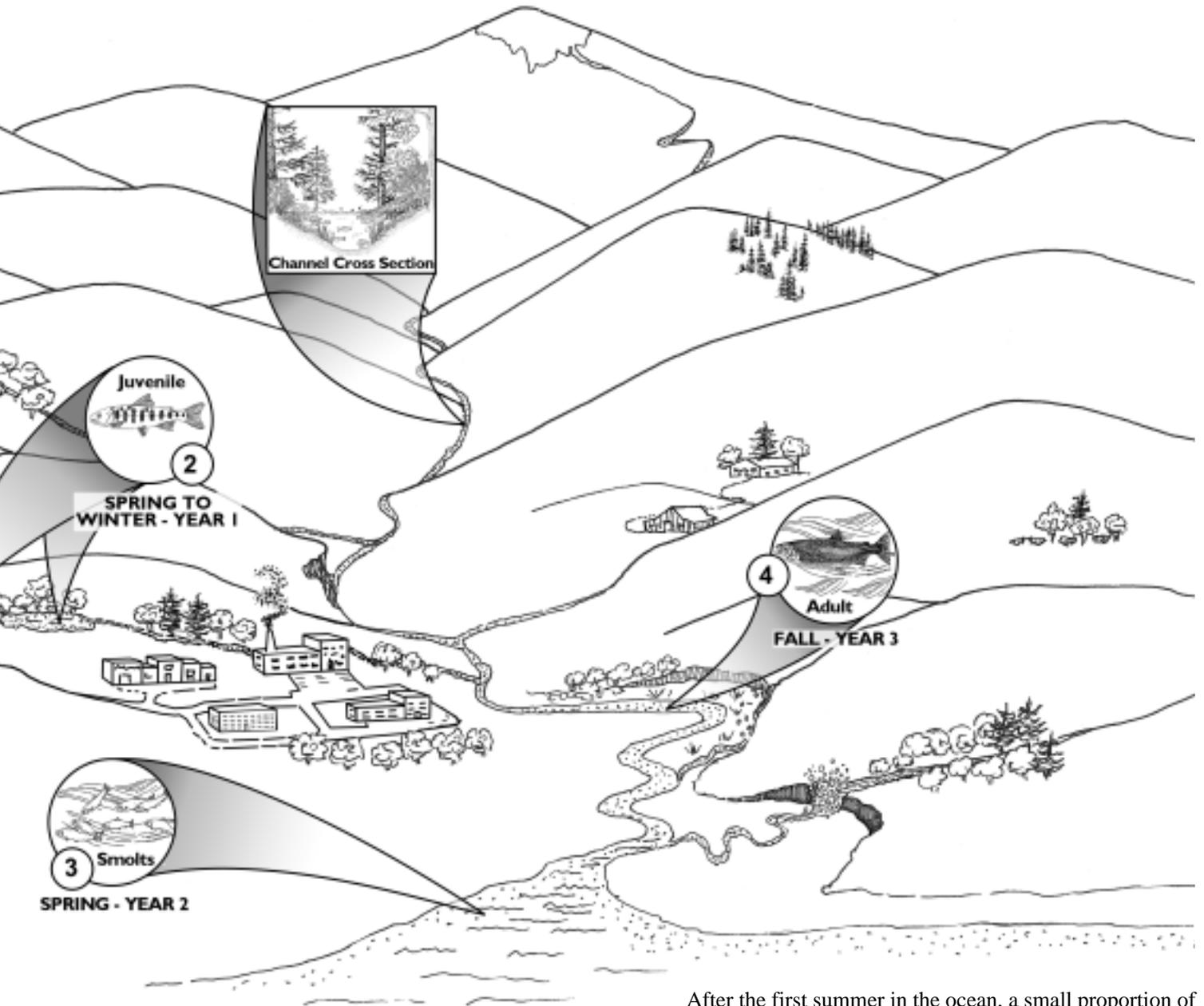
2 The eggs hatch in about 35 to 50 days.

Juveniles emerge as “fry” in the spring and spend one summer and one winter in freshwater.

Because they are small, they seek wetlands, off-channel ponds, and slackwater areas in pools to survive swift currents during the winter.

Cool water is required for rearing (53–58°F is preferred; 68°F is maximum).

AND COHO LIVE IN WATERSHEDS



Habitat complexity, primarily in the form of large and small wood, is an important element of productive coho salmon streams.

3 In the spring, about a year after their emergence, juveniles migrate to the ocean as silvery “smolts.”

Smolts are four to five inches long and can survive in saltwater. The smolts grow rapidly in the ocean.

Little is known about where coho from Oregon coastal streams migrate.

After the first summer in the ocean, a small proportion of the males become sexually mature and return to spawn as “jacks.”

4 Coho remaining at sea over the second winter feed voraciously during the next spring and summer.

Adults grow to about 23 to 33 inches in length.

In the fall, coho that escape predators, fishers, and natural calamities return to their home streams or neighboring streams.

After spawning, coho die and, if left to decay in the rivers, contribute nutrients to support the next generation of coho.

YOU CAN HELP SALMON

Oregon's coastal coho—and chinook, steelhead, and cutthroat trout—can be saved! Land owners and managers play an important part in this effort. Whether your land covers hundreds of acres or a residential lot in town, you can help.

The first way is by simply being aware of your place in the watershed and of your local fish runs.

The second way is to help provide the habitat conditions the fish need. Here are a few helpful tips for different kinds of landowners.

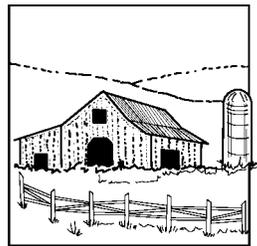


FOREST OPERATIONS

- Protect streamside trees and other vegetation at least consistent with the Oregon Forest Practices Act requirements.

- Leave good natural features, such as a beaver pond or natural side channel, alone. These are important rearing areas for fish.

- Check areas where your roads cross streams. If your culverts have a drop or are above the stream channel, they could be barriers to fish passage. Consider redesigning problem culverts or replacing them completely with a bridge structure.



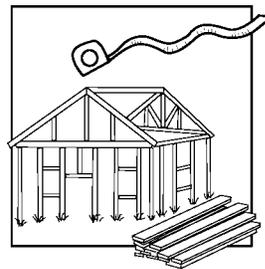
AGRICULTURAL BUSINESSES

- Create streamside (riparian) pastures that can be managed for grazing during times when livestock will prefer pasture grasses over riparian trees and shrubs. Provide a trough or watering tank away from the stream.
- Plant willows, cottonwood, poplar, or other shrubs and trees along your water-

ways. They help stabilize the banks, filter out sediments from runoff, and provide cooling shade.

- If riparian pastures are not viable options for your operation, consider using fencing to keep animals away from the water's edge.

- Protect wetlands, rivers, and estuaries through careful animal waste management and from the effects of poor fertilizer or herbicide application.



LAND DEVELOPERS, HOMEOWNERS, BUSINESSES

- While state and federal law may allow filling wetlands or estuaries (with the proper review and permits), loss of such habitat can harm fish. Consider options that preserve these habitats.

- Construction can cause serious sediment problems, even well away from a

waterway, if storm-water runoff is not properly contained. Although smaller operations may not need permits, they still can have significant impacts. Check with the state Department of Environmental Quality or local construction companies about responsible runoff management at your site.

- If possible, homeowners and businesses should connect to a sewage treatment and disposal facility. Poorly performing septic tanks can contaminate groundwater and nearby streams, lakes, and bays. If you must use a septic tank, be certain it is properly designed, located, and maintained.

- Dispose of household chemicals such as used motor oil, antifreeze, pesticides, and paints at approved collection facilities in your area.

For more information—other publications about coho and watersheds, contacts at organizations and agencies—see the insert page.

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