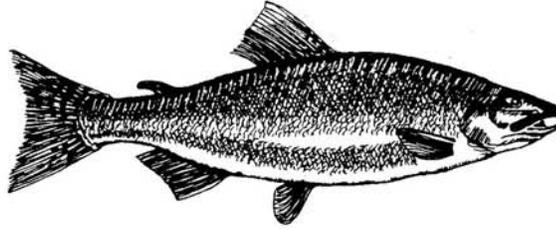


# **COHO SALMON**



In the State of Oregon

Coho salmon (*Oncorhynchus kisutch*), also called silver salmon, are abundant in Oregon coastal streams and lower Columbia River tributaries. In Oregon the coho salmon is the most numerous species of salmon caught by sport anglers and commercial fishermen.

### Habitat Needs 1/

The salmon has a complicated life cycle requiring both a fresh water and an ocean environment for its development. Fresh water streams are used for spawning and early rearing while salt water provides the food-rich environment that enables the salmon to grow to large size. Free passage is essential for young salmon from fresh water streams to the sea and for adult fish from the ocean to stream headwater areas. High water temperatures, low stream flows, heavy silt loads, and pollution can adversely affect production of salmon.

Spawning: The female coho salmon digs a nest known as a "redd" in gravel on or near a riffle. She deposits two to four thousand eggs. The male fertilizes them and they are immediately covered with six to eight inches of gravel by the female. Egg incubation time varies with the temperature. Approximately 50 days are required to hatch salmon eggs at 50° F. Less time is required if the temperature is higher and more time if the temperature is lower. The young fish remain in the gravel about two weeks after hatching and emerge when the attached yolk sack is absorbed. Adult coho salmon die shortly after spawning.

Spawning Criteria: Adult coho salmon enter streams on the spawning migration in October to January and spawning may occur from November through January in tributary streams. Spawning conditions are exacting

1/ Habitat needs for spring chinook, fall chinook, salmon, chum salmon and steelhead are generally similar to the needs of coho salmon.

and ideal flow conditions and suitable gravel must be present. Some of the criteria are listed below.

1. The depth of water over spawning gravel ranges from .5 to 1.8 feet. Optimum depth is 1 foot.
2. The optimum velocity of water flowing over coho redds is 1.5 feet per second. The range is .75 to 3.0 feet per second.
3. Water temperatures for spawning should range from 38<sup>o</sup>F to 55<sup>o</sup>F.
4. Coho salmon utilize gravel for spawning which ranges in size from ½ inch to 3 inches in diameter.

It is important that the gravel environment remain free of silt while the salmon eggs are incubating.

Stream rearing: Young coho salmon remain in the stream for a year before migrating to the sea during April and May as 5 to 6 inch smolts. The young fish develop in the headwater tributaries where summer temperatures and other water quality factors are important. Low stream flows can be a limiting factor.

Ocean rearing: Coho salmon grow rapidly in the food-rich environment of the ocean and attain a weight of about 8 pounds in less than two years. Large catches of coho are taken by sport and commercial fishermen in the ocean during the summer and fall. Adult salmon return to the same freshwater streams in which they were hatched.

#### Basic Considerations for Protection of Salmon and Steelhead

Timing: Channel work in streams where coho salmon are present should be accomplished from June through September. Care should be used to hold silting to minimum. Avoid work in gravel bars which may contain incubating salmon eggs.

Obstructions: State law requires that passage must be provided over any dam, culvert or water diversion structure that may constitute a block to the migration of salmon and steelhead. Improperly laid culverts often block fish passage. Diversion structures with long, shallow aprons seriously hamper fish passage. Salmon and steelhead can jump comparatively high obstructions if a depth of 2 to 3 feet of water is provided at the base of the obstruction.

Special problems: If a question concerning damage to the anadromous fish resources arises, consult with Soil Conservation Service Biologist or local State Fish and Game Commission Biologist.

#### Opportunities for Enhancement

Low summer flows and poor water quality are often serious factors limiting fish production in streams. Opportunities for enhancement of the rearing environment include proper land treatment applied in the

The Time of Migration and Spawning and the General Distribution of Oregon's Common Anadromous Fish

	<u>Jan.</u>	<u>Feb.</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Sep.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Coho	+++++	XXXXXXX	*****	*****	*****	*****	*****	*****	*****	*****	*****
Spring Chinook	+++++	XXXXXXX	*****	*****	*****	*****	*****	*****	*****	*****	*****
Fall Chinook	+++++	XXXXX	*****	*****	*****	*****	*****	*****	*****	*****	*****
Steelhead	+++++	XXXXXXX	*****	*****	*****	*****	*****	*****	*****	*****	*****
Sea Run	+++++	XXXXXXX	*****	*****	*****	*****	*****	*****	*****	*****	*****
Cutthroat Trout	+++++	XXXXXXX	*****	*****	*****	*****	*****	*****	*****	*****	*****
+++ Upstream migration (adults)	+++++	XXXXXXX	*****	*****	*****	*****	*****	*****	*****	*****	*****
XXX Spawning	+++++	XXXXXXX	*****	*****	*****	*****	*****	*****	*****	*****	*****
*** Downstream migration (young)	+++++	XXXXXXX	*****	*****	*****	*****	*****	*****	*****	*****	*****

Coho Salmon are numerous in all coastal streams and tributaries of the Columbia River below Bonneville Dam, although a few pass on to tributaries above the dam. One of these is the Grande Rhonde River.

Spring Chinook are found in longer and larger rivers. Important streams include the Rogue River, Umpqua River, Willamette River and tributaries from the east side, the Deschutes River, the John Day River, the Grande Rhonde River and the Imnaha River.

Fall Chinook are numerous in most of Oregon's coastal streams and in the Columbia River and its tributaries. This species is not now found in numbers above Willamette Falls at Oregon City.

Steelhead are plentiful in nearly all of Oregon's coastal streams and in most Columbia River tributaries in Oregon. It is Oregon's most widely distributed anadromous fish.

Sea Run Cutthroat Trout are numerous in nearly all of Oregon's coastal streams and in many lower Columbia River tributaries. This fish spawns in very small streams.

watershed and the provision of stored water for rearing through the summer low flow period.

Temporary diversion or storage structures properly located can provide valuable growing water for young anadromous fish. These structures are removed in the fall before increased stream flows occur.

PL-566 watershed developments may also provide opportunities for the enhancement of anadromous fish.