

Facts about Chinook

Description



Male chinook (Photo: Manu Esteve)

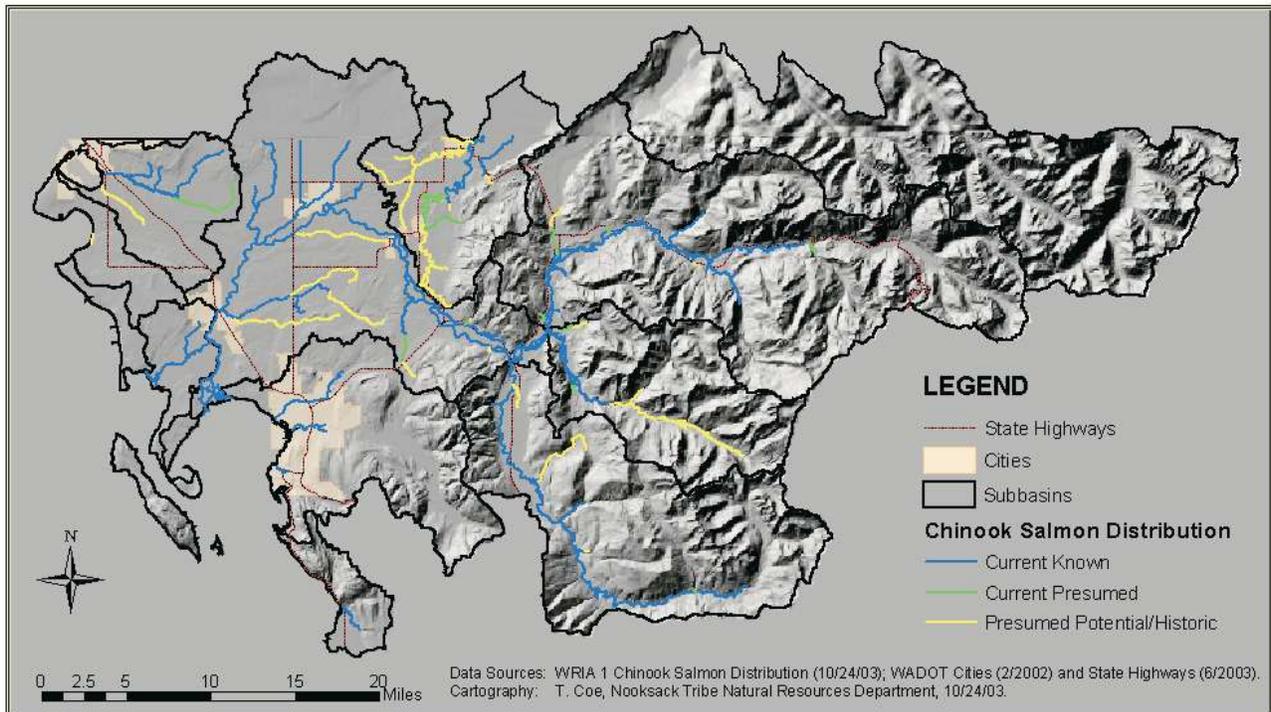
Chinook (*Oncorhynchus tshawytscha*), the largest of the salmon species, is commonly referred to as “king” salmon. At maturity, the average chinook will weigh between 10-20 pounds but can exceed 50 pounds; the average length is 36 inches.

Distinguishing features of the chinook include its black gums and irregular black spotting on the back, dorsal, and caudal (tail) fin. While in the ocean, they are a deep bluish-green, with silver sides and white bellies.

Chinook juveniles can be identified by the large, oval parr marks (spots) along their sides that are wider than the spaces between the marks. They have dark spotting on both lobes of the tail, but do not have any spots on the dorsal fin.

The chinook salmon of this region are listed as a threatened species under the Endangered Species Act.

Distribution



Three stocks of chinook have been identified in the Nooksack Basin. One early-run (spring) native stock spawns in the North Fork up to Nooksack Falls, as well as tributaries such as Glacier, Canyon, Racehorse, Maple and Boulder Creeks and the lower reaches of the Middle Fork.

Another genetically unique early run spawns primarily in the Mainstem channel of the south Fork, with additional spawning observed in Hutchinson, Skookum, Deer and Plumbago Creeks. These early-run



chinook are not only unique from each other, they are also unique with respect to other chinook in the Puget Sound region.

The third stock is a late-run (fall) non-native, hatchery-enhanced run found in all of the forks, the lower Nooksack, major lowland tributaries, and coastal streams.

In North America, chinook salmon range from Monterey Bay in California north to the Chukchi Sea area of Alaska.

Life Cycle and Reproduction

Early-run chinook enter the Nooksack basin between February and August and spawning activity occurs between July and October. Upstream migration of the late-run chinook begins as early as June through November with spawning occurring from September to possibly as late as December.

In preparation for spawning, a female digs a nest or redd into the streambed gravel while the dominant male fends off other potential mates. The female chinook drops into the nest and is courted by the male who nudges her with his dorsal fin and body. The eggs and sperm are released into the nest and the female quickly begins to dig upstream to cover the eggs and protect them from any additional males trying to deposit their sperm. The female chinook repeats this process until all of her eggs have been deposited; she dies shortly thereafter.

After incubating about four months, juvenile chinook develop into alevins and remain in the gravel beds until the yolk sac has been absorbed. Most Nooksack juvenile chinook migrate to the estuary to rear shortly after emergence (ocean type). But a portion (suspected to be in the range of 35%) of the Nooksack early chinook juveniles spend the winter in freshwater and migrate as yearlings (stream type).

After migrating to marine waters, chinook will spend anywhere from three to seven years maturing before returning to the freshwater environment to spawn and continue the cycle.

Habitat Needs

Compared to other Pacific salmon, spawning chinook require larger and deeper streams and pools (at least a meter deep), as well as larger gravel (up to 14cm). Like other salmonids, they also require cool, clean, free flowing water with high concentrations of dissolved oxygen.

In Whatcom County, studies conducted by the Lummi Nation, Nooksack Tribe, and Washington Department of Fish and Wildlife determined that the health of the chinook in fresh water are highly influenced by decreased water quality, increased sedimentation, and altered basin hydrology such as flow changes and channel modifications. The early-run chinook's ability to spawn is also hindered by competing late-run salmon using the same area. Loss of estuarine and nearshore marine habitat resulting from current and historic development also affects the juvenile chinook's ability to forage and to acclimate to the saltwater environment.

Economic Value

Over the past 25 years, ocean harvesting of chinook has dropped by 96 percent in response to the need to protect declining runs. The Nooksack fishery targeting early chinook was closed in the early 1980s to conserve the early runs, which are now ESA-listed; incidental harvest by Canadian fishers still occurs.



WRIA1 SALMON RECOVERY PROGRAM

Commercial and sport chinook fisheries still occur in Bellingham Bay and the river but target the later-returning, hatchery-origin fall chinook.

Current Status

In 1999, both early run native stocks of the Nooksack Basin and the late-run chinook stock were listed as “threatened” under the Endangered Species Act and included as part of the Puget Sound Evolutionarily Significant Unit (ESU).

Both South and North/Middle Fork chinook stocks are classified as separate “Genetic Diversity Units”, are critical stocks for species diversity and recovery, and are considered essential for recovery.

Sources

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