Upper Klamath–Trinity Rivers Spring Chinook Salmon *Oncorhynchus tshawytscha*

chances for survival: *poor* **2**

1 **2** 3 4 5

SALMON

PHOTO: AARON MARTIN

California Trout is There for the Fish!

Since 2000, California Trout has worked collaboratively with agencies, tribes, water users, commercial fishermen, and conservation groups to remove four dams on the Klamath River. These dams block access to hundreds of miles of spawning and rearing habitat for salmon and steelhead. California Trout is committed to moving this important effort, one of the most ambitious river restoration projects ever undertaken, forward in the coming years. If successful, we will help foster the recovery of the once world class Klamath River salmon and steelhead runs.

The Upper Klamath–Trinity Rivers Chinook salmon ESU includes all Chinook salmon in the Klamath River Basin upstream of the confluence of the Klamath and Trinity rivers and includes both fall and spring run fish. These spring Chinook are similar to fall Chinook salmon except that they enter fresh water while sexually immature and are silvery fish during spring without breeding colors or elongated male kype. Genetic analyses indicate that spring Chinook from a sub-basin within the region are more closely related to fall Chinook in the same stream than to spring Chinook elsewhere in the ESU. Despite this, we treat Upper Klamath–Trinity Rivers spring Chinook as unique because they represent a life history strategy that is highly distinctive and requires separate management strategies. Historically, these fish were on their own evolutionary path before being negatively affected by human activities in the basin. They enter the Klamath River in March through July and then hold in upstream deep cold pools for two to four months before spawning in September and October. Peaks of juvenile emigration have been observed during spring/early summer and fall.

CATEGORY	SCORE	EXPLANATION
Range	2	Multiple populations exist including hatchery populations, but only the Salmon River and South Fork Trinity populations are viable
Population size	2	Although there is a hatchery stock, effectively there are few natural spawners to support the population
Intervention needs	2	Hatchery programs in Trinity area are probably keeping Trinity stock viable and the Salmon River wild population is vulnerable to extinction from both local and out-of-basin events; more intervention is necessary to preserve the Klamath stock by re-establishing populations
Tolerance	2	Temperature and other factors in the summer holding areas may exceed physiological tolerances
Genetic risk	2	Hybridization may be occurring in some watersheds with fall-run fish and populations low enough so genetic problems can develop
Climate change	1	The Salmon River has temperatures in summer (70–73°F) that approach lethal temperatures; 1–2°F increase in temperature could greatly reduce the amount of suitable habitat
Overall status	2	
Reliability	3	Watershed monitoring efforts by the U.S. Forest Service, CDFG, tribes and local organizations give reasonable information about status

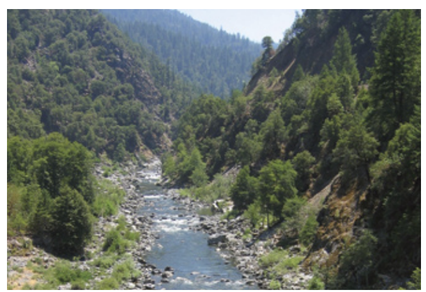
DISTRIBUTION: Upper Klamath–Trinity Rivers spring Chinook were once found throughout the Klamath and Trinity basins and within the larger tributaries, including the Salmon, Scott, Shasta, South Fork and North Fork Trinity Rivers. Their distribution is now restricted to below dams that block access to the upper Klamath and Trinity Rivers. These Chinook once spawned in tributaries up to upper Klamath Lake. In the Trinity River they are present in small numbers in Hayfork and Canyon creeks as well as in the North Fork Trinity, South Fork Trinity and New Rivers.

ABUNDANCE: While spring Chinook salmon are still scattered through the Klamath and Trinity basins, the only viable wild population appears to be in the Salmon River. Trinity River numbers are presumably largely influenced by the Trinity River hatchery. Even if Trinity River tributary spawners are considered to be wild fish, the total number of spring Chinook in the combined rivers rarely exceeds 1,000 fish and may drop to less than 300 in many years.

FACTORS AFFECTING STATUS: Upper Klamath–Trinity Rivers spring Chinook are largely lost from their historic range because their life history makes them extremely vulnerable to the combined effects of dams and other factors. Access to a significant portion of their habitat has been blocked by Lewiston, Iron Gate, and Dwinell Dams. Dams have also led to their extirpation in the Klamath and Shasta Rivers due to alteration in water quality and temperature, channel simplification, and disconnection from floodplains. They have also been affected by logging, mining, rural development, fisheries, hatcheries, and disease.

STATUS 2: The only viable wild population today is in the Salmon River. This population has wide annual fluctuations, is small in size, and is highly localized in distribution. For this reason, the Upper Klamath–Trinity Rivers spring Chinook are vulnerable to extinction in the next 50 to 100 years. Other populations are either small and intermittent or heavily influenced by hatchery fish and so are likely to be lost in the near future. Spring Chinook are a state species of special concern and are listed by the U.S. Forest Service as a sensitive species.

CONSERVATION RECOMMENDATIONS: To prevent extinction of this species, cool water refuges are required as well as reconnecting historic habitats in the Klamath and Trinity Rivers and their tributaries. Among other things, this would require reforming commercial timber harvesting practices and motorized instream gold mining activities known to be harmful to these fish and obstacles to their recovery. These efforts would increase habitat availability for spring run Chinook and remove barriers which negatively impact water quality and quantity.



Salmon River. PHOTO: PETER MOYLE

Historic Upper Klamath–Trinity Rivers Spring Chinook Salmon Distribution, Including Migratory Pathways