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

chances for survival: *average* **3**

PHOTO: NATHANIEL PENNINGTON

The Upper Klamath–Trinity Rivers Chinook salmon ESU includes all populations of Chinook salmon in the Klamath River Basin upstream from the confluence of the Klamath and Trinity Rivers. The ESU includes both fall and spring run fish, treated separately here. Spawning adults are smaller, on average about 28 inches long, more rounded, and heavier in proportion to their length compared to Sacramento River fish. Adults are olive brown to dark maroon without streaking or blotches on the side. They enter the Klamath estuary from early July through September where they often hold for a few weeks. Upstream migration takes place in mid-July to late October. Migration and spawning both occur as temperatures decrease. Juveniles spend less than a year in fresh water.

CATEGORY	SCORE	EXPLANATION
Range	3	They are widely distributed in Klamath and Trinity basins
Population size	5	These Chinook salmon are abundant with several large populations
Intervention needs	3	Presumably they would survive without much human intervention, albeit in small numbers, however, major intervention is required to maintain fisheries
Tolerance	3	They possess moderate physiological tolerance and multiple age classes
Genetic risk	4	There is one genetically diverse population
Climate change	2	Climate change can reduce abundance but their 'ocean' life history strategy makes them least vulnerable of all runs, although warm temperatures in Klamath River threaten this part of population
Overall status	3	
Reliability	4	These fish are the most studied of Klamath River Chinook runs

California Trout is There for the Fish!

California Trout and partner Friends of the Trinity River advocated for and supported the 2000 Record of Decision that resulted in a near doubling of flows on the Trinity River, establishment of the Trinity River Restoration Program and mandated watershed restoration. California Trout was appointed by the Secretary of Interior to the Trinity Adaptive Management Working Group to oversee the Program and recommend restoration actions for the Trinity River.

DISTRIBUTION: These Chinook salmon are found in the mainstem and all major tributaries of the Klamath and Trinity Rivers. They are also reared in the hatcheries at Iron Gate and Trinity Dams. They historically spawned in reaches above Iron Gate Dam. In the mainstem Klamath River, most spawning occurs between Iron Gate Dam and Indian Creek. Historically, the majority of Trinity River fall Chinook spawning was between the North Fork Trinity River and Ramshorn Creek. Currently, spawning is confined in the North Fork Trinity to between Lewiston Dam and Cedar Flat.

ABUNDANCE: Historic numbers of fall Chinook spawners were probably 300,000 to 400,000 fish per year. In recent years (1978 to 2006), the numbers have averaged an estimated 112,000 fish, although 50% to 60% of these fish are of hatchery origin.

FACTORS AFFECTING STATUS: Principal causes of decline have been (1) dams, (2) logging and other land use, (3) hatcheries, and (4) disease. Upper Klamath–Trinity River fall Chinook are primarily mainstem spawners, so dams have had a negative impact by both changing downstream habitat and denying access to historic spawning areas. The dams have reduced spawning gravels and adversely impacted water movement. Inadequate release of water from Iron Gate Dam was a factor in the September 2002 salmon kill in the lower river. The direct cause of the fish kill was a disease outbreak related to poor water quality. Flows on the Trinity River were greatly reduced by Lewiston Dam, but a restoration effort is now underway. Most spawning and rearing habitat is surrounded by public lands which have been heavily logged, roaded, and mined. As a result, the rivers are impaired from sediment and high temperatures. The large hatcheries maintain fisheries, but competition between hatchery and wild fish may suppress wild populations.

STATUS 3: Upper Klamath–Trinity River fall Chinook populations seem stable at reduced or slightly declining numbers, but are increasingly reliant on hatcheries to maintain population size. They are a U.S. Forest Service sensitive species and managed for sport, tribal, and ocean fisheries.

CONSERVATION RECOMMENDATIONS: Conservation of these fish requires the restoration of the Klamath River in order to provide adequate water temperatures critical to maintaining and increasing healthy populations. The Shasta and Scott Rivers need continued restoration efforts and improved water allocations to protect the salmon. Instream motorized gold mining practices that disrupt spawning and rearing of juvenile fish also need to be curtailed.

Trinity River. PHOTO: JEFF BRIGHT

1 **2** **3** **4** **5**

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