



# North Cascades National Park

## *Fish in the Lake Chelan Watershed*

Lake Chelan is the largest lake in Washington State and the third deepest lake in the United States. The Stehekin River, which lies wholly within the boundaries of North Cascades National Park, is the largest tributary to the lake and provides 75% of the inflow. The native fish community of the Lake Chelan system was typical of post-glacial refugia in the upper Columbia Basin headwaters. The occurrence of these isolated native fish populations was probably the result of repeated massive flooding when ice dams forming glacial Lake Missoula periodically burst. The native fish assemblage of Lake Chelan included bull trout (*Salvelinus confluentus*, not documented in the lake since the 1950's), westslope cutthroat trout, (*Onchorhynchus clarki lewisi*), burbot (*Lota lota*), largescale sucker (*Catostomus macrocheilus*), longnose sucker (*C. catostomus*), bridgelip sucker (*C. columbianus*), northern pikeminnow (*Ptychocheilus oregonensis*), peamouth (*Mylocheilus caurinus*), redbelt shiner (*Richardsonius balteatus*), slimy sculpin (*Cottus cognatus*), shorthead sculpin (*C. confusus*), torrent sculpin (*C. rhotheus*), mountain whitefish (*Prosopium williamsoni*) and pygmy whitefish (*P. coulteri*).

Several non-native fish species have been introduced into Lake Chelan. Salmonids that were stocked by fisheries managers and have developed reproducing populations include rainbow trout (*O. mykiss*), kokanee (*O. nerka*), brook trout (*Salvelinus fontinalis*), Chinook salmon (*O. tshawytscha*) and lake trout (*S. namaycush*). Other salmonids that were stocked but did not develop reproducing populations include Yellowstone cutthroat trout (*O. clarki bouvieri*), Arctic grayling (*Thymallus arcticus*), Dolly Varden (*S. malma*) and sockeye salmon (*O. nerka*).

Native westslope cutthroat trout were historically one of the dominant fish species in Lake Chelan and the Stehekin River, exhibiting both fluvial<sup>1</sup> and adfluvial<sup>2</sup> life histories. A combination of many factors has led to the near disappearance of the westslope cutthroat trout within these systems. Historic hatchery egg taking programs, repeated stocking of competing fish species, and westslope cutthroat trout hybridization with rainbow trout are important factors leading to the decline of native westslope cutthroat trout stocks.



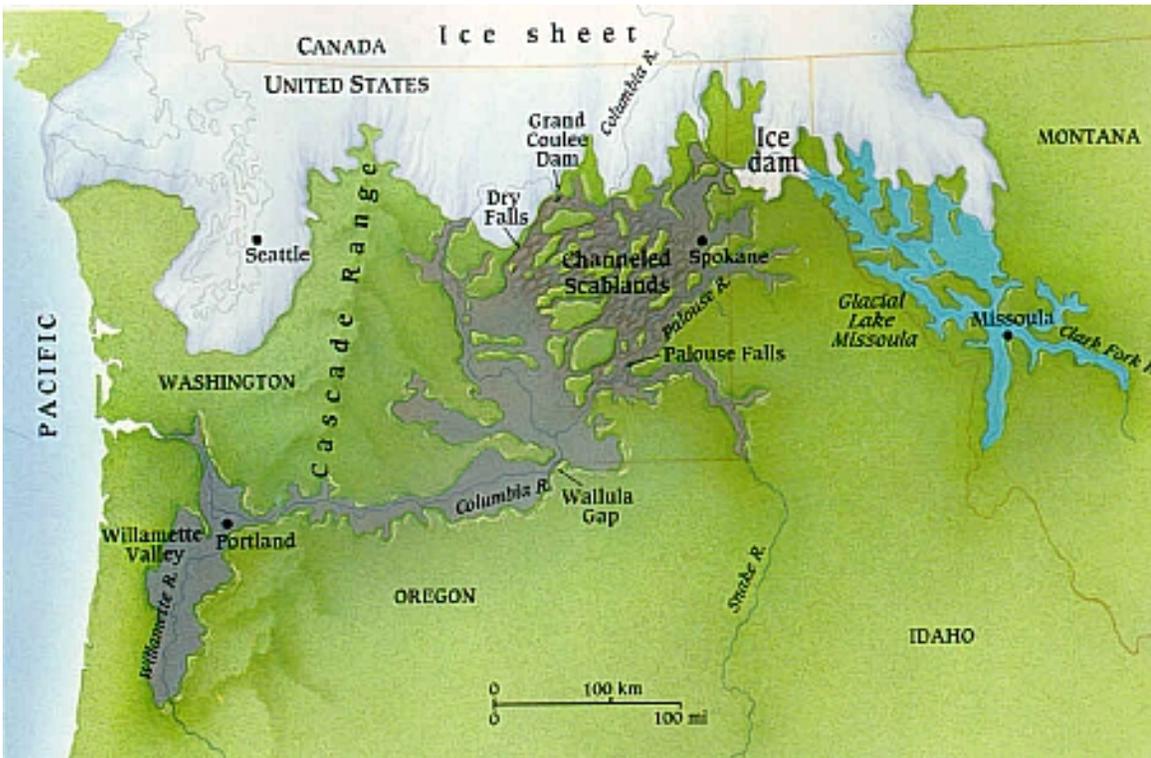
Native westslope cutthroat trout in the Stehekin River, North Cascades National Park

Native westslope cutthroat trout are currently found throughout the Lake Chelan and Stehekin River systems, though their population status is uncertain. Robust populations of fluvial westslope cutthroat trout exist in the upper reaches of the Stehekin River above migration barriers (physical and temperature), but below these barriers and throughout the lower Stehekin River, introduced rainbow trout have largely displaced the native westslope cutthroat.



Unidentified sculpin species in the Stehekin River

Bull trout were native to Lake Chelan and once commonly caught by anglers, but they are no longer found in the basin and are most likely extirpated. The last verified observation occurred on July 16, 1957. Although the reason for the disappearance is not known, several possibilities have been suggested, such as flooding of spawning grounds, an introduced pathogen, and over-fishing.



Glacial Lake Missoula was formed when the Cordilleran ice sheet dammed the Clark Fork River near the Idaho Montana border (near present day Lake Pend Oreille). This glacial dam was weakened by rising waters and burst in a catastrophic flood which raced across much of Washington State. Glacial Lake Missoula filled and emptied in repeated cycles, at least 25 times in 2000 years. Map credit: Ice Age Floods Institute (via Burke Museum website).



Two large bull trout taken from the Stehekin River in 1910. Photograph courtesy of Lake Chelan Historical Society.

This checklist was compiled on February 22, 2016, using data exported from the National Park Service NPSpecies database. The database can be accessed at: <https://irma.nps.gov/NPSpecies/>. We are currently working on generating other reports based on NPSpecies. Please be advised that Latin scientific names often change as a result of new research; therefore, scientific names used here may not reflect the most current accepted nomenclature.

- <sup>1</sup> Fish that spawn in tributary streams where the young rear from 1 to 4 years before migrating to a river system, where they grow to maturity.
- <sup>2</sup> Fish that spawn in tributary streams where the young rear from 1 to 4 years before migrating to a lake system, where they grow to maturity.



## Lake Chelan Fish Species List for North Cascades National Park (NOCA)

This represents information currently in the NPSpecies data system at the date and time the list was generated. Records are continually being added or updated by National Park Service staff. There is a key with definitions at the bottom of the report.

This report is filtered by the following Park Tags: **Chelan** and by the following Taxonomic Categories: **Fish**

To generate your own report, go to <https://irma.nps.gov/NPSpecies/Report/>, select park name, and click on Species List with Park Tag Filter under the Park Custom Reports heading.

Scientific Name	Common Names	Occ	Abd	Nat	NPS Tags	Park Tags	Checklist
<b>Fish</b>							
<b>Catostomidae</b>							
<i>Catostomus commersoni</i>	longnose sucker	P	Uc	N	B	Mon, Res; WS, Skg, Bkr, Chl	[ ]
<i>Catostomus commersoni</i>	largescale sucker	P	Uc	N	B	WS, Skg, Bkr, Chl	[ ]
<b>Centrarchidae</b>							
<i>Micropterus dolomieu</i>	largemouth bass	P	U	Nn	MP; B	Spl; Chl	[ ]
<b>Cottidae</b>							
<i>Cottus cognatus</i>	slimy sculpin	P	Uc	N	B	ES, Chl	[ ]
<i>Cottus bairdii</i>	shorthead sculpin	PP		N		Chl	[ ]
<i>Cottus snyderi</i>	torrent sculpin	PP		N		ES, Chl	[ ]
<b>Cyprinidae</b>							
<i>Mylocheilus castraneus</i>	peamouth	P	C	N	B	ES, Chl	[ ]
<i>Ptychocheilus oregonensis</i>	northern pikeminnow, northern squawfish	P	C	N	B	ES, Chl	[ ]
<i>Richardsonius balteatus</i>	redside shiner	P	Uc	N	B	Mon; WS, Skg, Chl; CS	[ ]
<b>Gadidae</b>							
<i>Lota lota</i>	lingcod, burbot	P	Uc	N	B	ES, Chl	[ ]
<b>Salmonidae</b>							
<i>Oncorhynchus tshawytscha</i>	westslope cutthroat trout	P	C	N	B	Mon, Res; ES, Chl; CS	[ ]
<i>Oncorhynchus mykiss</i>	rainbow trout, redband trout, steelhead	P	C	N	B	An; Int, Mon, Reg; WS, Skg, Bkr, Chl, Chk; CS	[ ]
<i>Oncorhynchus nerka</i>	blueback salmon, kokanee, red salmon, sockeye salmon	P	A	N	B	An; Int, Mon, Res; WS, ES, Skg, Bkr, Chl, Chk; CS	[ ]
<i>Oncorhynchus tshawytscha</i>	Chinook salmon, king salmon	P	R	N	MP; B	An; Int, Reg; WS, Skg, Bkr, Chl, Chk	[ ]
<i>Prosopium coulterii</i>	pygmy whitefish	P	R	N	R	ES, Chl	[ ]
<i>Prosopium williamsoni</i>	mountain whitefish	P	C	N	B	WS, ES, Skg, Bkr, Chl, Chk	[ ]
<i>Salvelinus fontinalis</i>	aurora trout, brook trout, charr, coaster brook trout, salter, sea trout	P	Uc	Nn	B	Int, Mon; Chl	[ ]



## Species List by Park Tag for North Cascades National Park (NOCA)

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Scientific Name	Common Names	Occ	Abd	Nat	NPS Tags	Park Tags	Checklist
<i>Salvelinus namaycush</i>	lake trout	P	Uc	Nn	B	ES, Chl	[ ]
<b>Species In Review - proposed or provisional records needing additional review</b>							
<b>Fish</b>							
<b>Catostomidae</b>							
<i>Catostomus columbianus</i>	bridgelip sucker	Un		N		WS, Skg, Bkr, Chl	[ ]
Report Species Count: 19							

NPSpecies - The National Park Service biodiversity database. <https://irma.nps.gov/npspecies/>. To report an error or make a suggestion, go to <https://irma.nps.gov/npspecies/suggest>.

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### Key

	Code	Term	Definition
<b>Occurrence (Occ)</b>	P	Present	Species occurs in park; current, reliable evidence available.
	PP	Probably Present	High confidence species occurs in park but current, verified evidence needed.
	Un	Unconfirmed	Species is attributed to park but evidence is weak or absent.
	NP	Not In Park	Species is not known to occur in park.
<b>Abundance (Abd)</b>	A	Abundant	Animals: May be seen daily, in suitable habitat and season, and counted in relatively large numbers. Plants, Chromista, Protozoa, and Fungi: Large number of individuals; wide ecological amplitude or occurring in habitats covering a large portion of the park
	C	Common	Animals: May be seen daily, in suitable habitat and season, but not in large numbers. Plants, Chromista, Protozoa, and Fungi: Large numbers of individuals predictably occurring in commonly encountered habitats but not those covering a large portion of the park
	Uc	Uncommon	Animals: Likely to be seen monthly in appropriate habitat and season. May be locally common. Plants, Chromista, Protozoa, and Fungi: Few to moderate numbers of individuals; occurring either sporadically in commonly encountered habitats or in uncommon habitats
	R	Rare	Animals: Present, but usually seen only a few times each year. Plants, Chromista, Protozoa, and Fungi: Few individuals, usually restricted to small areas of rare habitat
	O	Occasional	Animals: Occurs in the park at least once every few years, varying in numbers, but not necessarily every year. Plants, Chromista, Protozoa, and Fungi: Abundance variable from year to year (e.g., desert plants)
	U	Unknown	Abundance unknown
<b>Nativeness (Nat)</b>	N	Native	Species naturally occurring in park or region.
	Nn	Non-native	Species occurring on park lands as a result of deliberate or accidental human activities.
	U	Unknown	Nativeness status is unknown or ambiguous.



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<b>Nativeness Tags</b>	R	Restoration	Also refers to reintroductions. Native species that has been extirpated or substantially diminished from the park as a result of human-induced change, and that has been or is in the process of being restored.
	C	Cultivated	Species has been introduced or is maintained as part of the park's mission, significance, or cultural landscape (e.g., orchards, crops, fields)
	I	Invasive	Non-native species whose introduction is likely to cause economic or environmental harm.
	N	Noxious	Designation by a governmental authority. Species grows aggressively and has broad environmental tolerance that allows it to establish in many locations.
<b>NPS Tag (Management)</b>	EC	Exploitation Concern	Species is considered a target for collection, poaching, commercial harvesting, or other non-permitted or exploitative activities.
	MP	Management Priority	Species warrants particular management attention as determined by park management staff.
<b>NPS Tag (Seasonality)</b>	B	Breeder	Population reproduces in the park.
	R	Resident	A significant population is maintained in the park but does not breed within park boundaries.
	M	Migratory	Species occurs in the park only while in transition between breeding and wintering grounds.
	S	Summer	Typically spending only summer months in the park.
	W	Winter	Typically spending only winter months in the park.
	V	Vagrant	Park is outside of species' usual range.

<b>ParkTags</b>	<b>Code</b>	<b>Term</b>	<b>Definition</b>
<b>Broad response pattern of animal species to its environment</b>			
	An	Anadromous	Species of fish which migrates from the ocean into fresh water to spawn
<b>Vegetation life forms</b>			
	Tr	Trees	Tree species
	SV	Shrubs and vines	Shrub and vine species
	Fb	Forbs	Herbaceous flowering plant species
	Gr	Grasses sedges and rushes	Grass, sedge, and rush species
	Fe	Ferns and allies	Fern and fern ally species
	Br	Bryophytes	Moss, hornwort, and liverwort species
	Li	Lichens	Lichen species
<b>Subunits, watersheds, and unique habitats in North Cascades National Park</b>			
	WS	Westside	Species occurs on the west side of the Cascade Crest
	ES	Eastside	Species occurs on the east side of the Cascade Crest
	Alp	Alpine/subalpine	Species occurs in alpine and/or subalpine habitat
	Rip	Riparian	Species occurs in riparian habitat
	Skg	Skagit	Species occurs in Skagit watershed



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<b>Subunits, watersheds, and unique habitats in North Cascades National Park</b>	Bkr	Baker	Species occurs in Baker watershed
	Chl	Chelan	Species occurs in Chelan watershed
	Chk	Chilliwack	Species occurs in Chilliwack watershed
	For	Forest	Species occurs in forest habit
	Wet	Wetland	Species occurs in wetland habitat
<b>Tags useful for management of park resources</b>			
	Int	International	Species with individuals moving across border with Canada
	Spl	Special interest	Species that may be sensitive to habitat change and of interest to Park but not currently studied
	Mon	Monitored	Species or specific location actively monitored for management purposes
	Res	Research	Species included in past or current research
	Reg	Regulatory species	Species with state and/or federal T&E status, sensitive, candidate, etc.
<b>Tags highlighting resources of interest to the public</b>			
	CS	Commonly seen	Species likely to be seen in areas frequented by visitors
	Wf	Wildflower	Showy flowering plant species that can be seen in areas frequented by visitors

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