



2018 ANNUAL REPORT

Status and Trends
Reporting Project



March, 2019



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INTERACTIVE FEATURES ONLINE

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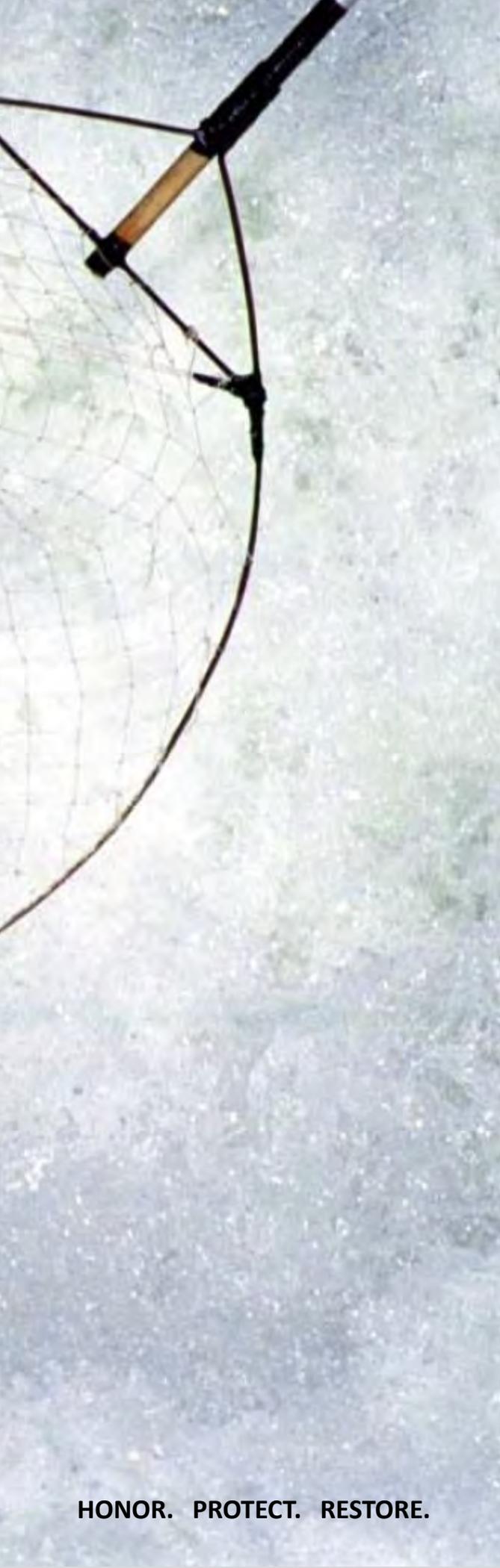
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Photo: YN Rock Creek fish survey



Photo: Lyle Falls, Klickitat River (CRITFC)



FROM OUR FISH AND WILDLIFE COMMITTEE CHAIRMAN

Over the past 10 years, the 2008 Columbia River Basin Fish Accord with the Bonneville Power Administration, US Army Corps of Engineers, and US

Bureau of Reclamation has provided a stable source of support for the Yakama Nation to protect and restore our fish resources throughout our Treaty Territories. Funding provided by the Accord is meant to address the damage to cultural and natural resources caused by federal hydroelectric dams on the Columbia River. Being able to protect our resources and where they live at a larger scale and over a longer period of time has allowed us to make slow headway in their recovery from past losses. This work must continue for many more years if our resources are to recover from the severe damage that has occurred to the natural world since the time of our ancestors.

We have to look to the future as well, because the impacts on the natural world haven't stopped. The number of people is increasing, and they need homes and consume resources. The climate is changing, and so the conditions in the streams, rivers and the ocean are not always good for the fish. The stronger our resources are now, the better they can weather these future challenges. That is why, in October 2018, the Yakama Nation signed a 4-year extension of the Fish Accord Agreement. It will continue the work we have begun to improve conditions for resources that we depend upon as people of the Yakama Nation. As the Unwritten Laws and our elders tell us, we must take care of our resources so they will take care of us, so that future generations will still be able to enjoy the natural resources that are of such great importance to our people.

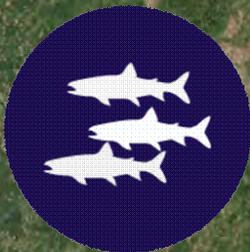
Gerald Lewis, Chairman
Fish and Wildlife Committee
Yakama Tribal Council

Gerald Lewis Photo: Rob Manning, OPB

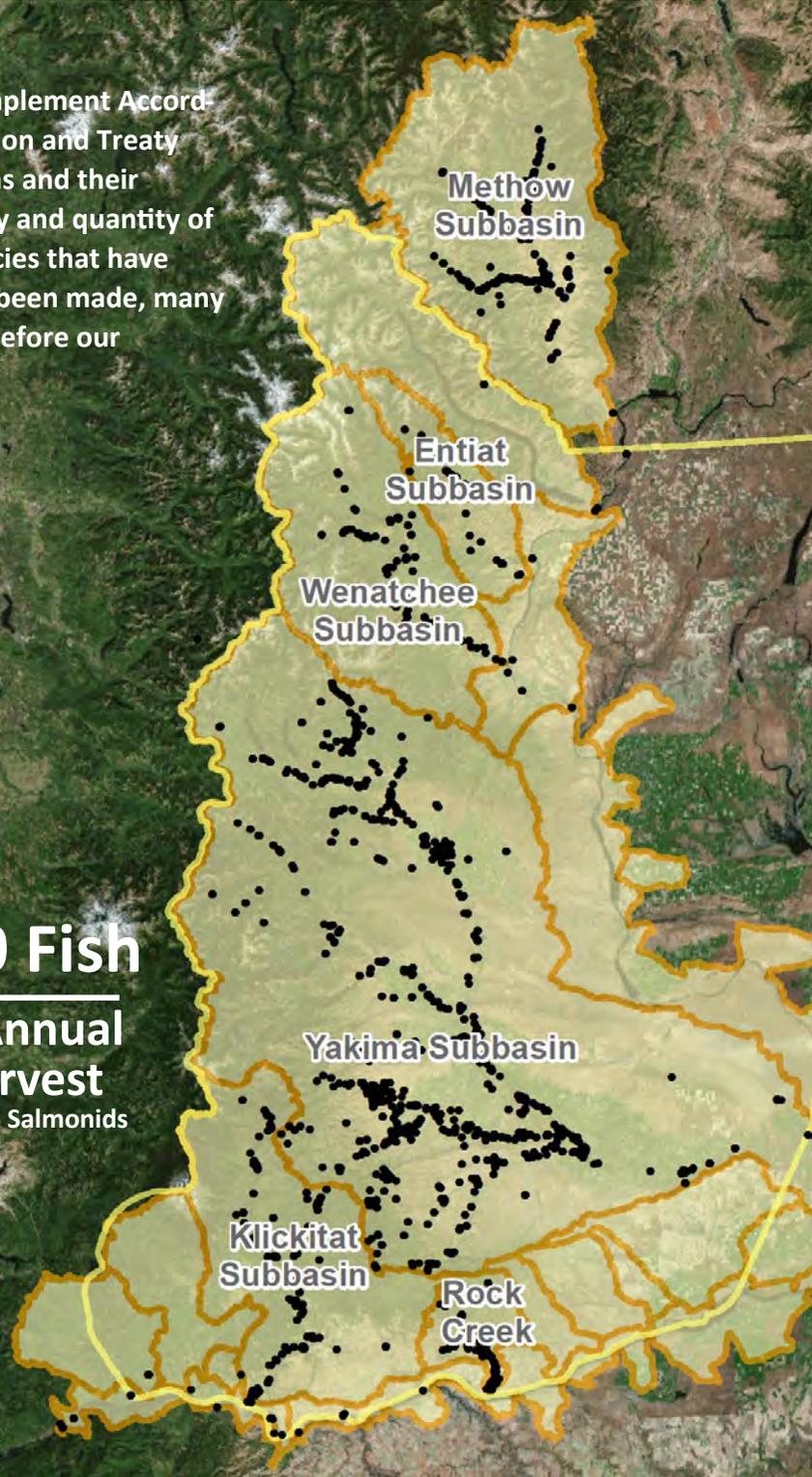


EXECUTIVE SUMMARY

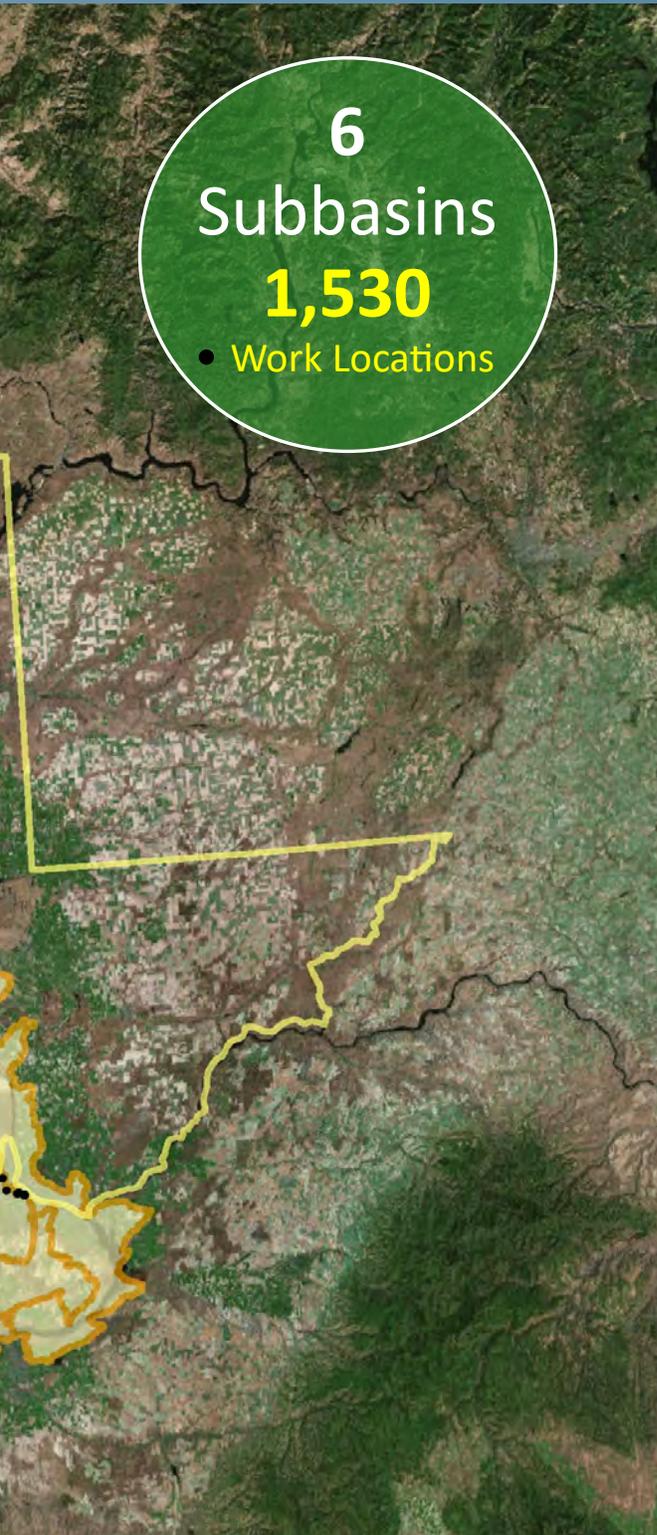
During 2018, the Yakama Nation continued to implement Accord-funded projects throughout the Tribe's Reservation and Treaty Territories to protect and restore fish populations and their habitats. These efforts have improved the quality and quantity of stream habitats important to the survival of species that have great value to us. Although improvements have been made, many ecological risks remain that must be addressed before our recovery and harvest goals can be achieved.



222,700 Fish
Average Annual Tribal Harvest
2010-2018, Zone 6 Salmonids



2008-2018



118,200 Acres

Habitat improved or protected



436 Miles

Habitat made accessible to fish



1,216 Miles

Stream and riparian habitat improved, treated, or protected



59,700 People

Educated and informed

*YN metrics reported to cbfish.org (funded by BPA), 1/2008-12/2018. Includes work completed or in-progress, plus SFB cost-share in the Klickitat.



Photo: YN Helicopter Aquatic Restoration Project



YAKIMA SUBBASIN

By the 1970s and 1980s, all Yakima River steelhead and salmon populations were either gone or severely depressed. Summer Chinook were extirpated by 1970 and coho were gone by the early 1980s. By the 1980s and 1990s, adult spring Chinook and steelhead returns were less than 3,500 and 1,000, respectively.

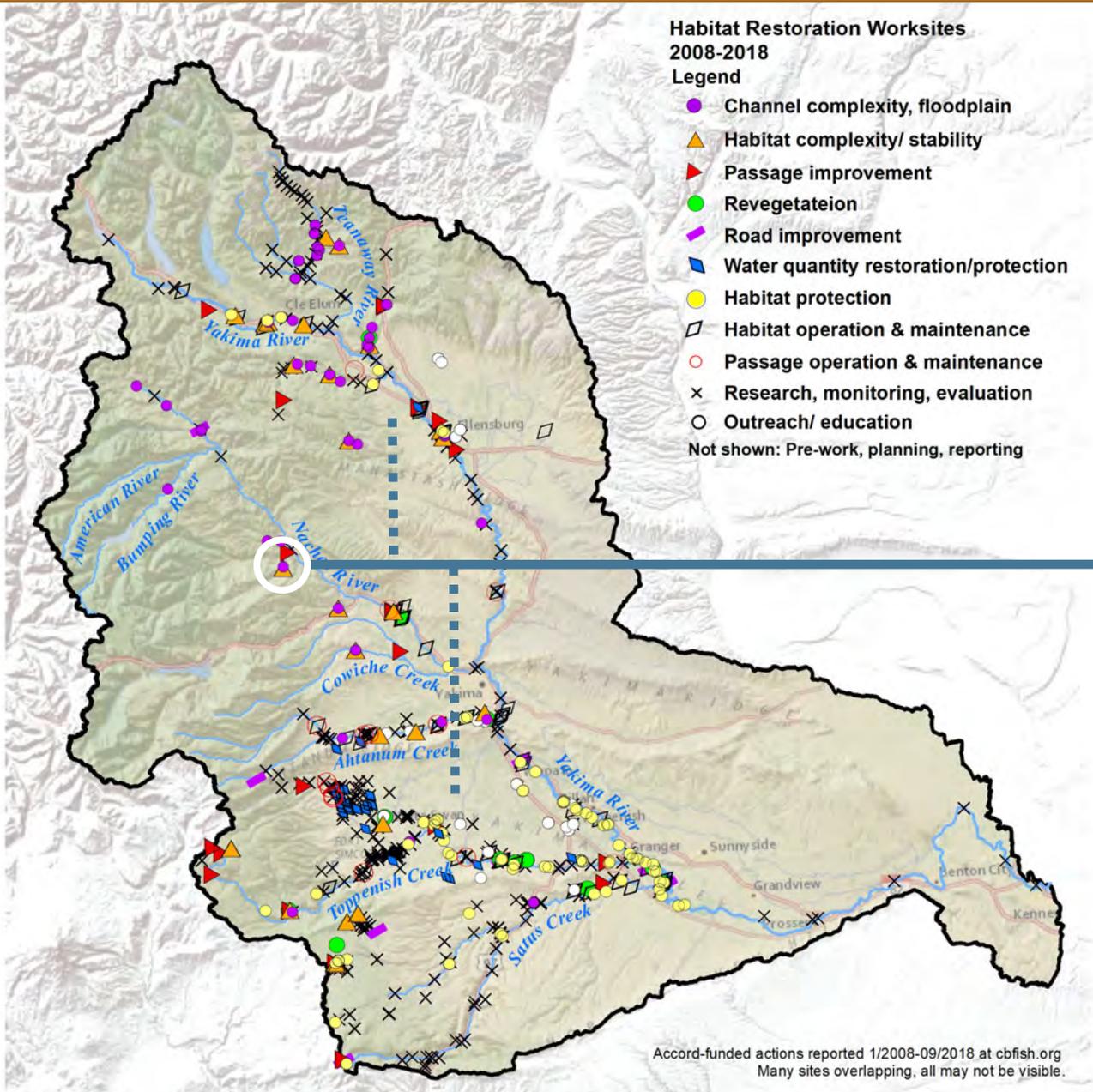
To restore these culturally and economically important species, we are applying a combination of habitat and hatchery supplementation/reintroduction efforts to restore the ecosystem with sustainable and harvestable populations of salmonids and other at-risk species.

With coho reintroduction efforts by the Yakama Nation in the Lower Yakima River since 1985, in 2018 we broke ground on the Melvin R. Sampson Coho Supplementation Hatchery in Ellensburg, Washington. The goals of the project are to restore natural coho stocks to the upper watersheds and contribute to harvest. Construction is expected to be completed in 2019.



August 2018 groundbreaking for the Melvin R. Sampson Coho Supplementation Hatchery. (L-R: DJ Brownlee (YN Fisheries Hatchery Manager), Dan James (BPA Deputy Administrator), Melvin R. Sampson (YKFP Program Manager), and Davis Washines (YN General Council Chairman).

YAKIMA SUBBASIN



**298
Miles**

**Habitat made
accessible to fish**



**5,376
cfs**

**Flow kept in
streams**



**6,117
Acres**

**Wetland improved
or protected**

YN metrics reported to cbfish.org (funded by BPA), 1/2008-12/2018 for the Yakima Subbasin.

HABITAT ACTIONS 2008-2018

PROJECT SPOTLIGHT

Yakima Basin “Wood Fiesta” Helicopter Aquatic Restoration

Date Completed: November 2018

Fish Present: Salmon and steelhead

Problem: Past management practices have greatly altered aquatic habitat through construction of roads, channel straightening, wood removal, and livestock grazing. Stream beds have eroded, there are flashier high flows and poor wood retention. Pools are lacking, baseflows are diminished, and water temperatures are elevated.

Restoration Actions: Working with partners to enhance instream and floodplain habitat, wood was placed in seven Yakima River tributaries using a helicopter, as the terrain and vegetation prevented the use of ground-based equipment.

Accomplishments:

- 24 miles of degraded streams replenished with wood
- 5,900 large wood pieces placed instream and on floodplains

Benefits: The addition of large wood to Yakima Basin streams assists the recovery of essential spawning and rearing habitats. Project actions improve connection with the historic floodplain, reduce erosive flows, and help store groundwater for later release, while log jams provide habitat for smaller species and insects. Over time, the wood will sort and maintain spawning gravels and form pools that serve as refuges for larger fish. Also, increased floodplain connectivity is beneficial to riparian vegetation, which provides shading and stream-bank stability.

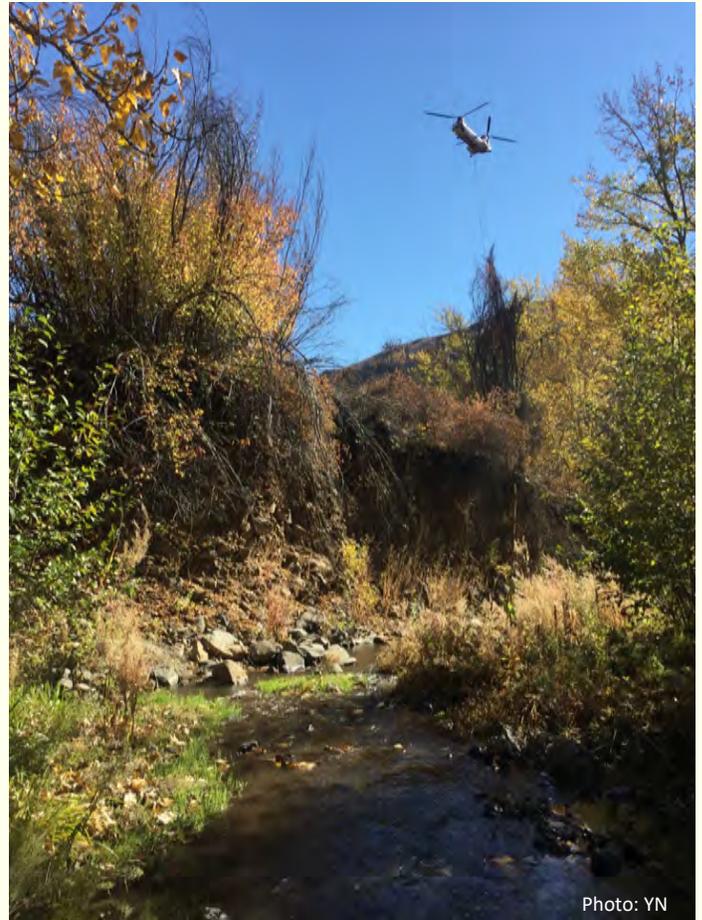


Photo: YN



**988
Miles**

**Riparian improved
or protected**



**84
Miles**

**Stream restored
or created**



**85,686
Acres**

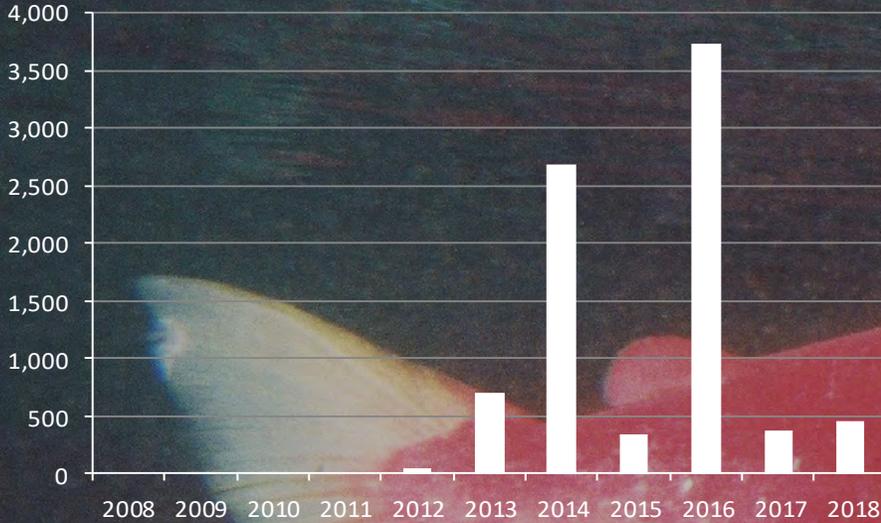
**Upland improved
or protected**

YN metrics reported to cbfish.org (funded by BPA), 1/2008-12/2018 for the Yakima Subbasin.



YAKIMA SUBBASIN

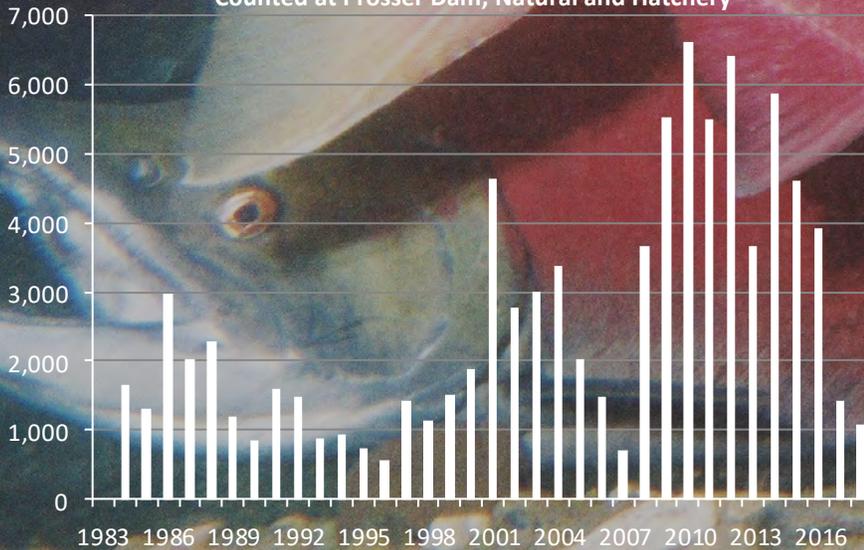
Yakima Adult Sockeye
Counted at Prosser Dam



Sockeye

- Extirpated from the Yakima Basin in the early 1990s
- Yakama Nation reintroduced adults to Lake Cle Elum in 2009
- First adults returned in 2013
- Cooperative efforts to restore passage to nursery lakes is ongoing
- Plans to reintroduce sockeye to other lakes in the region in the future

Yakima Adult Summer Steelhead
Counted at Prosser Dam; Natural and Hatchery



Summer Steelhead

- Comprised of 4 populations: Toppenish, Satus, Naches and Upper Yakima
- Listed as threatened in 1999, but overall population-group trend is increasing
- Runs are almost entirely naturally produced fish
- Yakama Nation is working on increasing kelt (repeat spawner) survival to increase productivity

Adults Counted at Prosser Dam: 2018

Spring Chinook

2,344

Summer Chinook

421

Fall Chinook

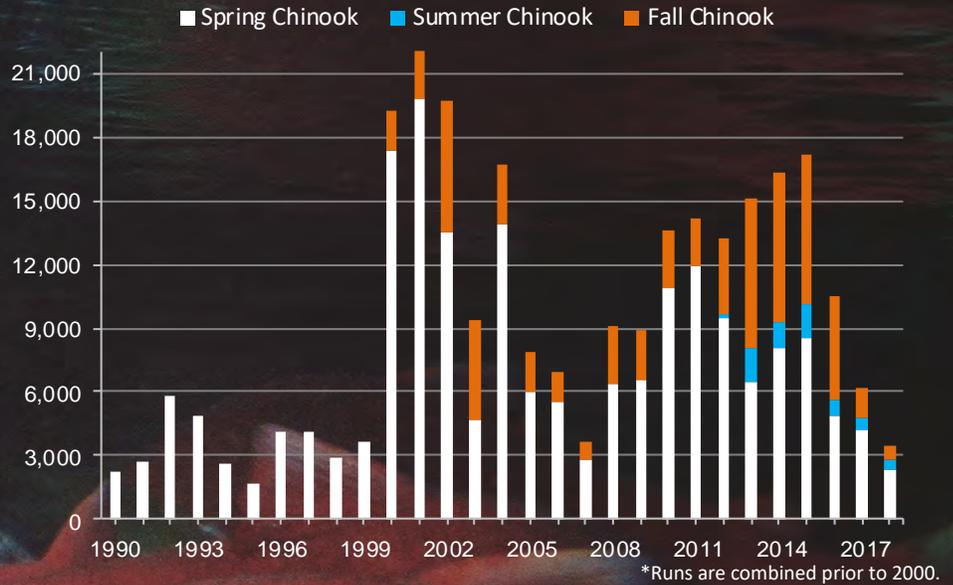
708

SPECIES STATUS AND TRENDS

Yakima Adult Spring, Summer, and Fall Chinook*
Counted at Prosser Dam; Natural and Hatchery

Chinook

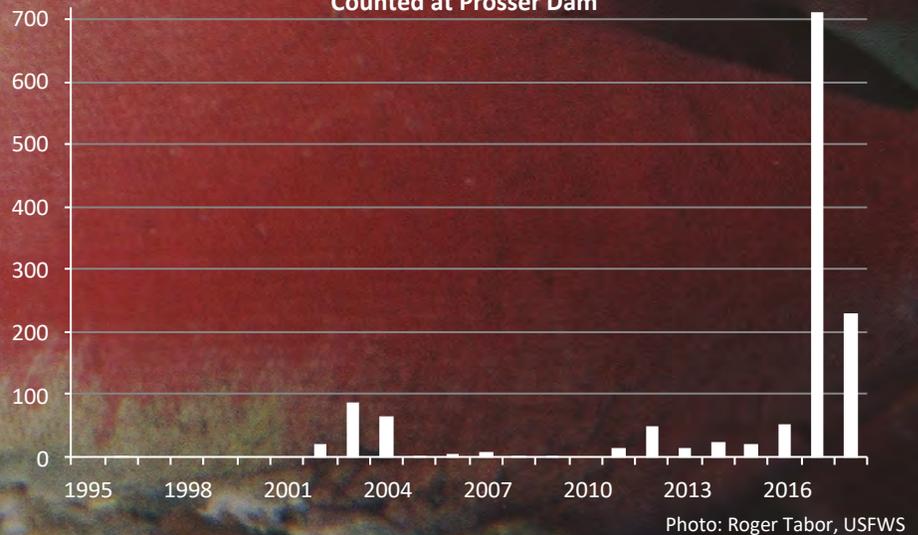
- Extirpated in the 1970s, summer Chinook reintroduced by the Yakama Nation in 2009
- Spring Chinook spatial distribution is increasing
- Supplemented by the Yakama Nation from 1983, fall Chinook spawner distribution is increasing
- Fall Chinook contributing to Treaty fishery, with 10-year average escapement of 5,279



Pacific Lamprey

- Restoration efforts began in 2009
- Over 2,000 adults translocated to the Yakima Basin since 2011
- Two adult lamprey passage structures installed at Prosser Dam (2016-2017)
- Passage improvements planned for other locations in the near future
- Distribution and abundance improving, including wild spawning

Yakima Adult Pacific Lamprey
Counted at Prosser Dam



Sockeye

457

Coho

1,672

Pacific Lamprey

231





KLICKITAT & ROCK CREEK SUBBASINS

Prior to the 1920s, there was a large spring Chinook run and a significant Tribal fishery at Lyle Falls in the Klickitat River. From 1977 to 2003, returns decreased to an average of 1,900 fish. The subbasin supports native winter and summer steelhead and historically provided a significant steelhead fishery. From 1987 to 2003, average escapement of steelhead was fewer than 300 fish. In Rock Creek, native steelhead population numbers only reach minimum viability thresholds in some years.

To restore these species, we are improving habitat and restoring watershed function to improve flows, and are conducting research and monitoring of fish populations to evaluate their needs. To mitigate for lost harvest opportunities, hatchery-produced coho and fall Chinook are released.



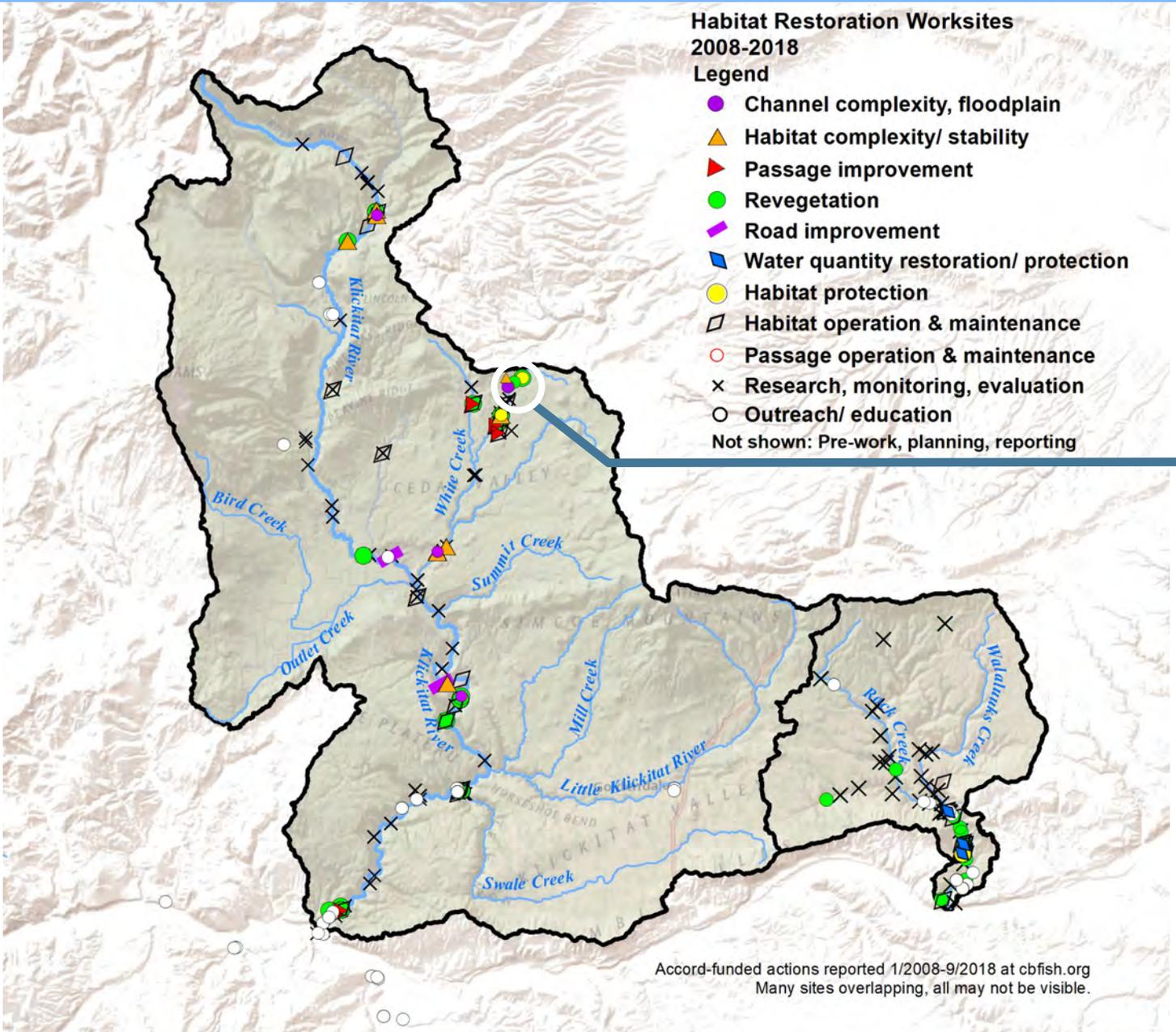
Lyle Falls in the Klickitat Canyon is one of the last remaining places in the region where tribal members can still utilize traditional fishing methods and pass on these important cultural practices and skills to future generations. Photo: Traditional dip-net fisher at Lyle Falls, Klickitat River (Thomas Boyd, The Oregonian)

KLICKITAT & ROCK CREEK SUBBASINS

Habitat Restoration Worksites 2008-2018

Legend

- Channel complexity, floodplain
 - Habitat complexity/ stability
 - Passage improvement
 - Revegetation
 - Road improvement
 - Water quantity restoration/ protection
 - Habitat protection
 - Habitat operation & maintenance
 - Passage operation & maintenance
 - Research, monitoring, evaluation
 - Outreach/ education
- Not shown: Pre-work, planning, reporting



**134
Miles**

**Habitat made
accessible to fish**



**9,000
People**

**Informed and
educated**



**121
Acres**

**Wetland improved
or protected**

Estimated YN metrics reported to cbfish.org (funded by BPA) plus SRFB (NOAA) cost-share (roc.wa.gov), 1/2008-12/2018 for Klickitat and Rock Creek Subbasins.

HABITAT ACTIONS 2008-2018

PROJECT SPOTLIGHT

Tepee Creek Phase 3: Floodplain Reconnection

Date Completed: October 2018

Fish Present: ESA-listed Middle Columbia River steelhead

Problem: Past land-use practices have resulted in a 3-4 foot downcut stream channel that is disconnected from the floodplain, leaving fish stranded in isolated pools in late-summer.

Restoration Actions: To improve fish habitat, the floodplain was reconnected by raising the streambed with channel fill. Compacted soils were also loosened and revegetated, a livestock exclusion fence was installed, and invasive plants were removed.

Accomplishments:

- 8.8 acres of meadows protected by exclusion fence
- 150 plants installed and native seed sowed
- 1,000 feet of channel improved
- 9 acres treated to remove invasive weeds

Benefits: As a tributary to White Creek, Tepee Creek provides important spawning and rearing habitat for ESA-listed Middle Columbia River steelhead. Project actions in Tepee Creek have improved meadow function thus increasing groundwater storage and providing year-round flow. Connectivity to high-quality habitat now reduces stranding and improves steelhead production.

Construction of exclusion fencing is protecting the stream against erosion and siltation. Conditions for medicinal and traditional food plants have also been improved.



**101
Miles**

**Riparian improved
or protected**



**17
Miles**

**Stream improved
or created**



**115
Acres**

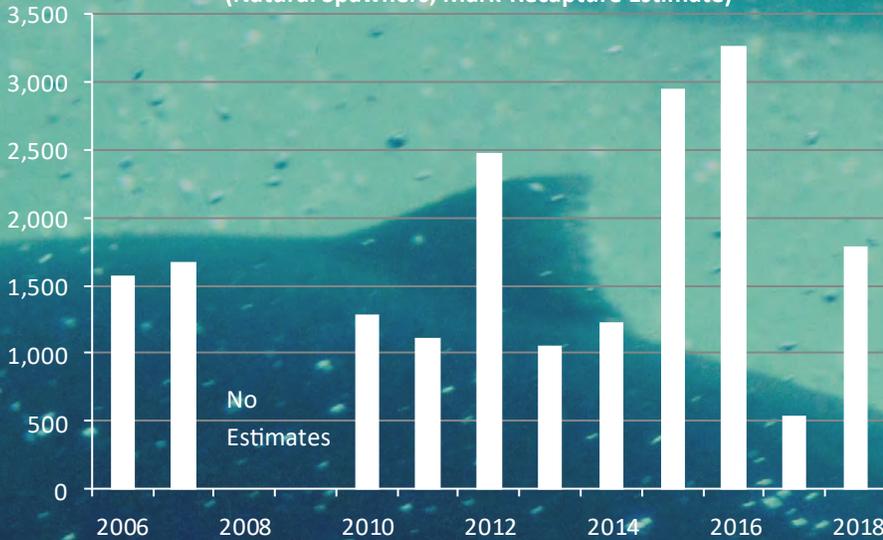
**Upland treated
and improved**

Estimated YN metrics reported to cbfish.org (funded by BPA) plus SRFB (NOAA) cost-share (roc.wa.gov), 1/2008-12/2018 for Klickitat and Rock Creek Subbasins.



KLICKITAT & ROCK CREEK SUBBASINS

Klickitat Summer/Winter Steelhead Population Estimate
(Natural Spawners; Mark-Recapture Estimate)



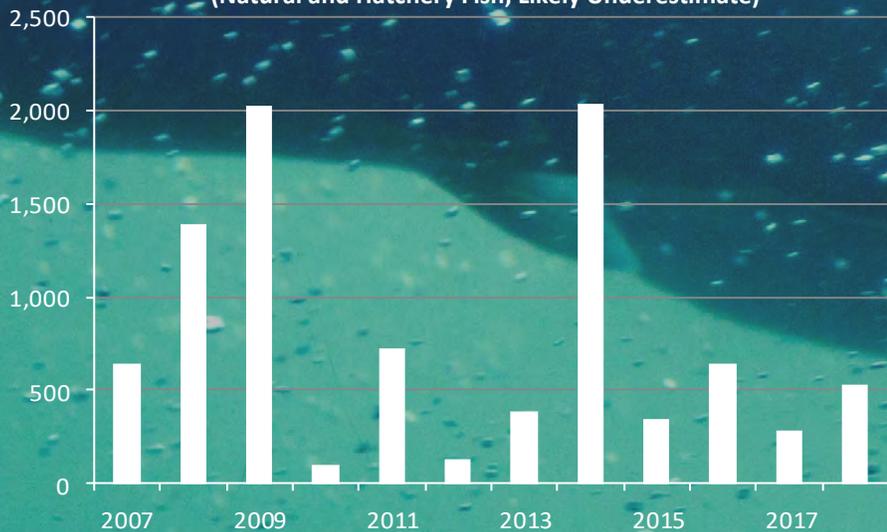
Klickitat Steelhead

- Treaty-era returns were estimated at 3,000-6,000 fish
- Spatially diverse population with spawning in the lower and middle Klickitat Subbasin
- Most hatchery releases are not spawning in the wild

Rock Creek Steelhead

- Watershed protection, research, and restoration is underway to improve conditions for native steelhead

Klickitat Adult Coho Counts at Lyle Falls Fish Trap*
(Natural and Hatchery Fish; Likely Underestimate)



Klickitat Coho

- Released to mitigate for lost harvest opportunities
- 1 million fish released annually (more than 9 million released since 2008) by the Yakama Nation
- Sport and tribal harvest have increased since 2008
- Goal to transition to locally adapted population, separate from wild fish stocks

*Fish trap located at Klickitat river mile 2.4

Adult Fish Counted at Lyle Falls Trap (Klickitat): 2018*

Spring Chinook

141

Summer Chinook

5

Fall Chinook

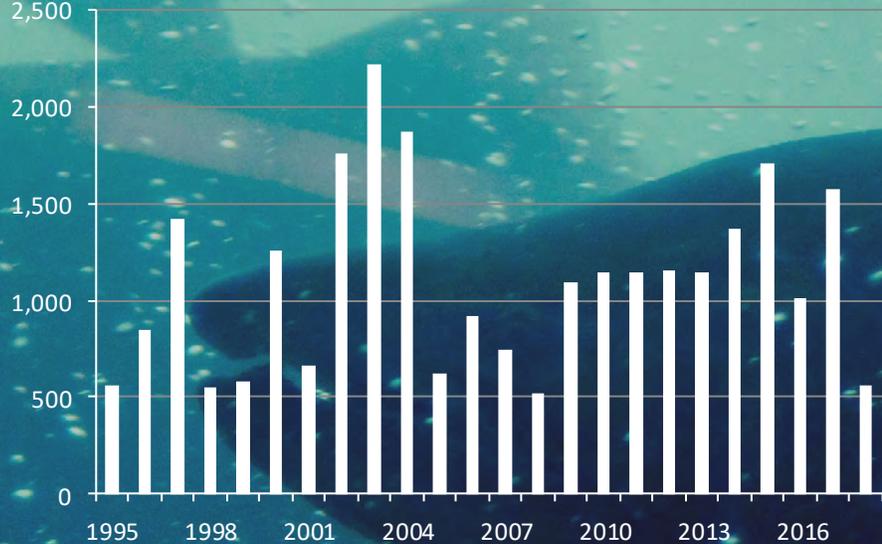
332

SPECIES STATUS AND TRENDS

Klickitat Spring Chinook

- Once harvested in significant numbers, reduced to returns of 900-1000 in the late 1970s
- Native to the Klickitat, most spawning is in the upper watershed
- Supplemented by production from Klickitat Hatchery
- Hatchery reforms in place to increase natural influence
- Passage Improvements implemented by the Yakama Nation to increase colonization above Castile Falls

Klickitat Spring Chinook Escapement Estimate
(Natural and Hatchery; Expanded Redd Surveys, Possibly Underestimate)



Klickitat Fall Chinook

- Introduced in 1952 to meet harvest obligations
- Sustained by Yakama Nation hatchery releases
- 3 million smolts released annually since 2008
- Spawning is occurring between Twin Bridges and the Klickitat Hatchery (RM 16.8-42)
- Annual harvest has increased since the early 2000s

Klickitat Fall Chinook Escapement Estimate
(Spawners Plus Carcasses; Likely Underestimate)

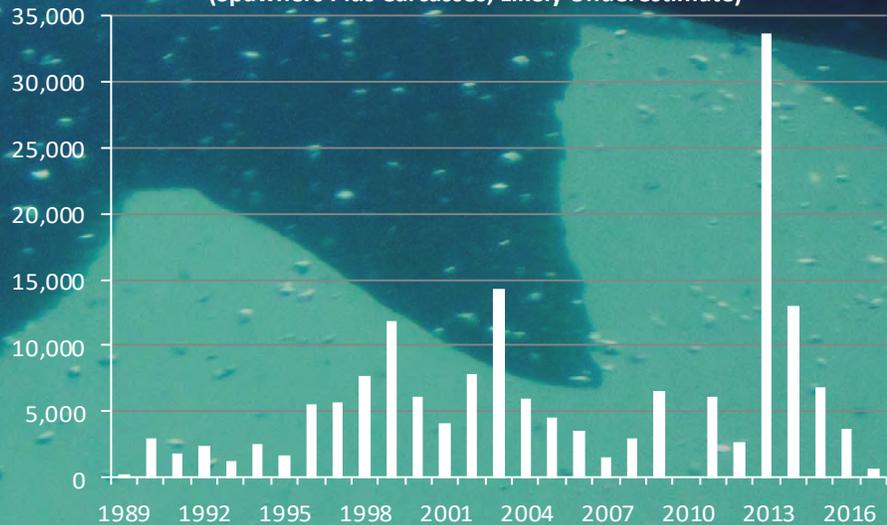


Photo: Tony Grover, Flickr

Coho

528

Steelhead**

565

* Numbers are an underrepresentation, only a portion of total returns are counted at Lyle Falls Trap, located at Klickitat RM 2.4
** Includes summer- and winter-run natural and hatchery fish





WENATCHEE SUBBASIN

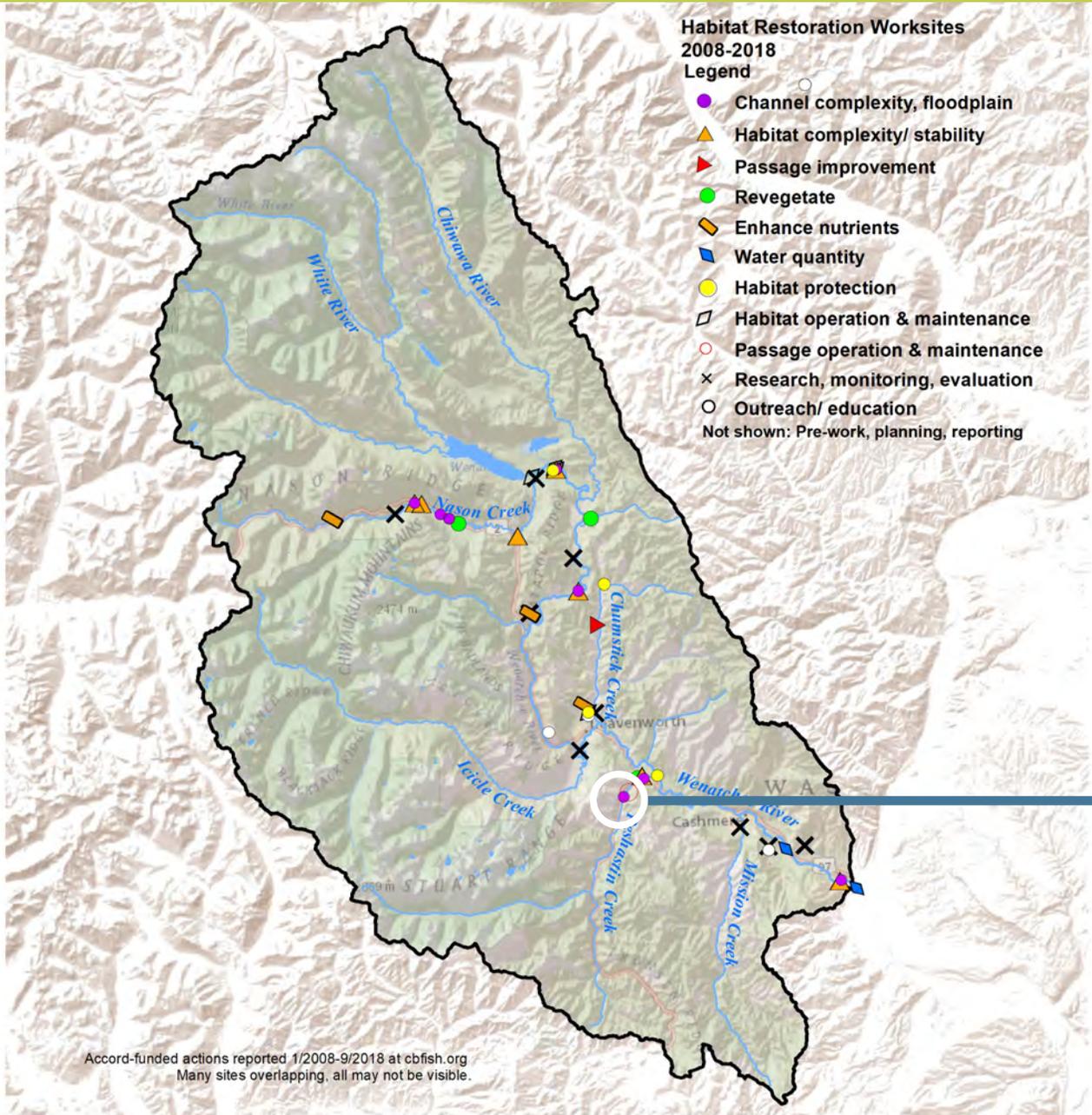
During the pre-treaty era, salmonids were abundant in the Wenatchee Subbasin. Although exploitation and habitat degradation have depleted runs and some populations are ESA protected, the Wenatchee still has the greatest diversity and overall abundance of fishes amongst Upper Columbia Subbasins. Past forest management and mining practices, and recreational, agricultural, municipal, and residential development have led to a decline in fish habitat quality and quantity. The Yakama Nation is currently implementing habitat restoration projects to address some of these impacts.

From low numbers in the 1990s that prompted species protections, fish numbers have increased in recent decades. However, spring Chinook and summer steelhead population numbers do fluctuate, and they are often still not reaching recovery goals. Work to help restore fish population abundance and distribution is ongoing. Coho, extirpated by the 1930s, have recently been reintroduced by the Yakama Nation and are now reproducing in the wild.



To maximize reproductive success and survival, the Yakama Nation is working with partners to help acclimate steelhead and Chinook to home-in on the areas proven to be most successful. Photo: Juvenile spring Chinook and coho (USFWS, WNFH).

WENATCHEE SUBBASIN



**0.5
Miles**

**Habitat made
accessible to fish**



**35
cfs**

**Flow kept in
streams**



**3
Acres**

**Wetland habitat
improved**

YN metrics reported to cbfish.org (funded by BPA), 1/2008-12/2018 for the Wenatchee Subbasin.

HABITAT ACTIONS 2008-2018

PROJECT SPOTLIGHT

Peshastin Creek RM 2.7 Habitat Enhancement

Date Completed: 2018

Fish Present: Spring Chinook and summer steelhead

Problem: Past actions such as channel excavation, straightening, levee construction, floodplain filling, and bridge and highway construction have impacted Peshastin Creek. Much of the valley bottom has been cleared and developed for agricultural and residential land uses. These actions have led to the lack of wood in lower sections of the creek.

Restoration Actions: Initially, this project intended to reconnect a side channel system located on private land; however, conditions were not adequate without increasing the flood risk to adjacent homes, so habitat restoration work was restricted to along the stream. This project was developed under the 2007 Salmon Recovery Plan framework, in coordination with private landowners, the Lower Peshastin Creek Tributary and Reach Assessment, and the Upper Columbia Salmon Recovery Board Regional Technical Team's Revised Biological Strategy.

Accomplishments:

- 5 wood structures installed
- 400 feet of stream bank improved with scour pools

Benefits: Rearing habitat has been improved for listed species as the installed wood structures remain submerged year-round, even during base-flow water elevations. Scour pools provide refuge, and long-term riparian health and large wood recruitment is improved.



127
Features

**Placed instream
for fish habitat**



4
Miles

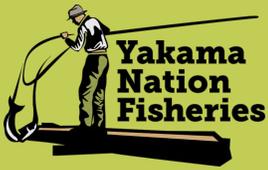
**Stream improved
or created**



4,000
People

**Informed and
educated**

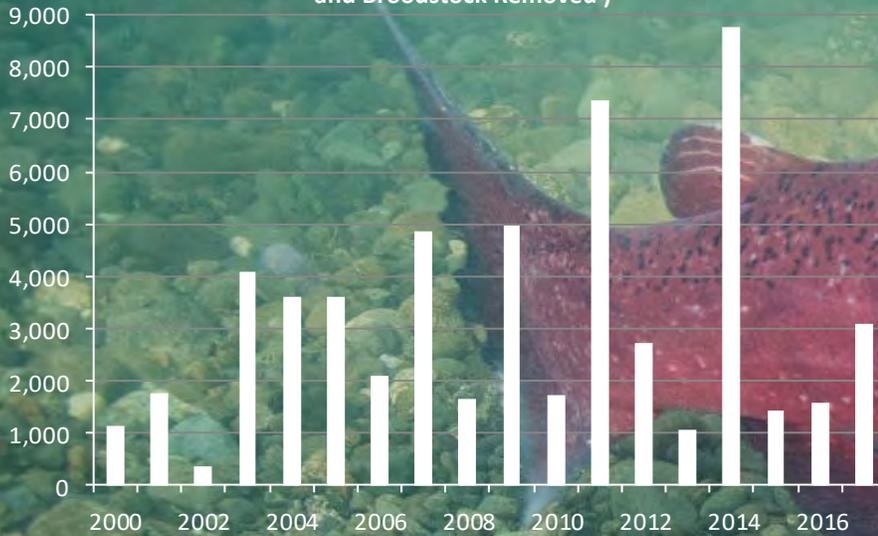
YN metrics reported to cbfish.org (funded by BPA), 1/2008-12/2018 for the Wenatchee Subbasin.



WENATCHEE SUBBASIN

Wenatchee Coho Escapement Estimate

(Natural and Hatchery; Tumwater Dam Counts Plus Redds Below Dam and Broodstock Removed)

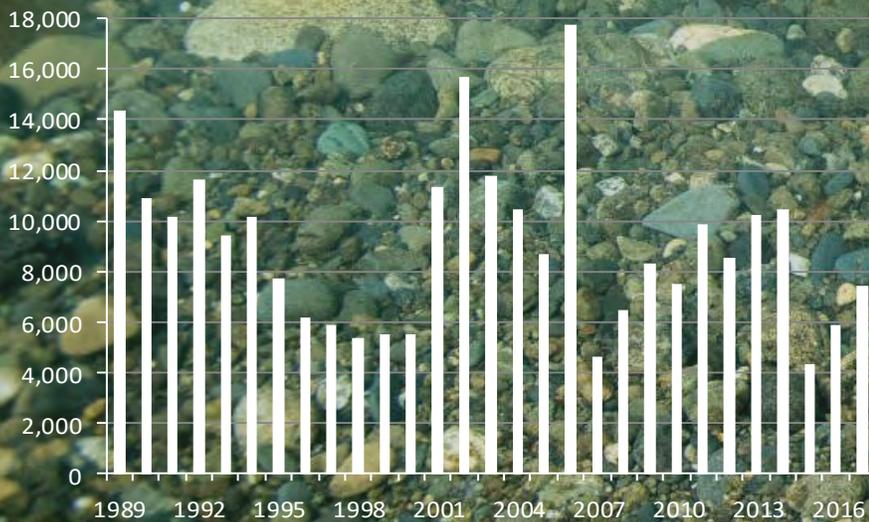


Coho

- Extirpated in the 1930s, the Yakama Nation began reintroduction in 1999
- Goal: Locally adapted, naturally producing harvestable population
- 908,000 smolts released annually since 2008
- Natural reproduction is now occurring in the subbasin

Wenatchee Summer Chinook Escapement Estimate

(Natural and Hatchery; Expanded Redd Counts, Census Since 2014)



Summer Chinook

- Hatchery releases by GPUD/CPUD for increased harvest opportunities
- An integrated program, hatchery fish are released in the Lower Wenatchee to reduce potential impacts on spring Chinook

Adult Spawning Escapement Estimate: 2017*

Coho

3,091

Sockeye

20,521

Summer Chinook

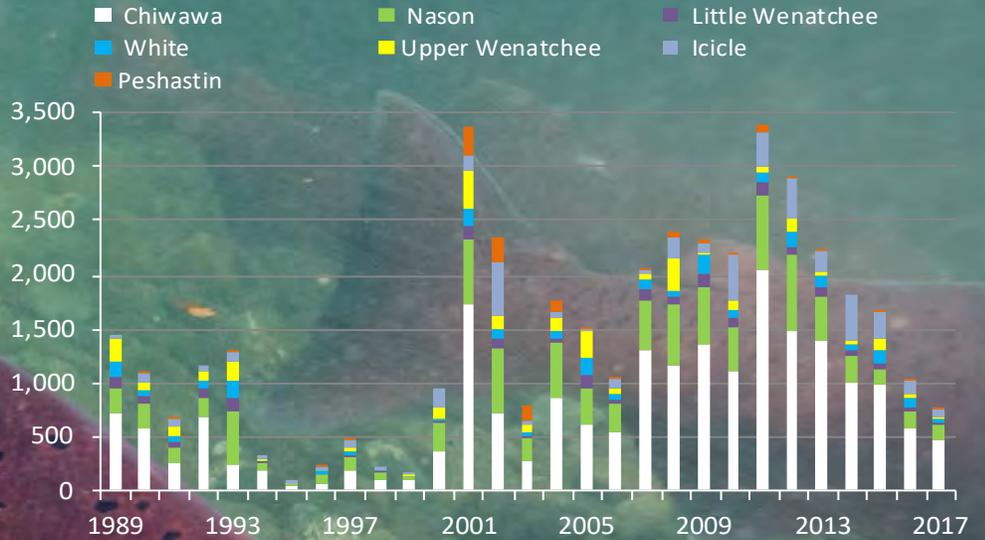
7,425

SPECIES STATUS AND TRENDS

Spring Chinook

- Hatchery releases are GPUD/CPUD/USFWS/WDFW mitigation and supplementation efforts
- Collaborative research evaluating homing and habitat use is ongoing
- Although not yet reaching recovery goals, numbers are better in recent decades than the lows of the 1990s

Wenatchee Spring Chinook Escapement Estimate
(Natural and Hatchery; Expanded Redd Counts)



Summer Steelhead

- Escapement estimate is for upstream of Tumwater Dam
- Most hatchery releases are CPUD-funded
- Collaborative research ongoing evaluating improving homing
- Reaching recovery abundance goals in some, but not all, years
- The Yakama Nation, with partners, is reconditioning kelt in the Upper Columbia to help increase lifetime reproductive success

Wenatchee Summer Steelhead Escapement Estimate
(Natural and Hatchery; Upstream of Tumwater Dam; Expanded Redd Counts, Mark-recapture in Tributaries Since 2014)

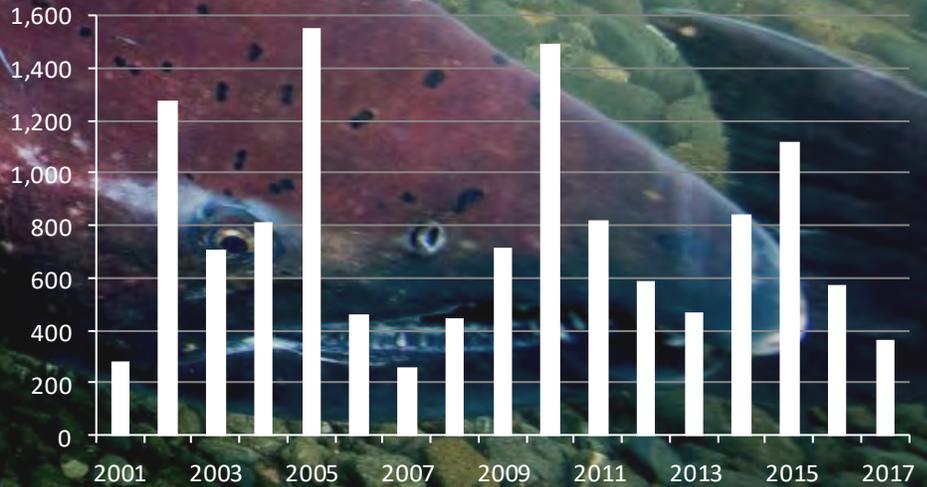


Photo: Ryan Hagerty, USFWS

Spring Chinook

745

Summer Steelhead

463

* Includes natural and hatchery fish

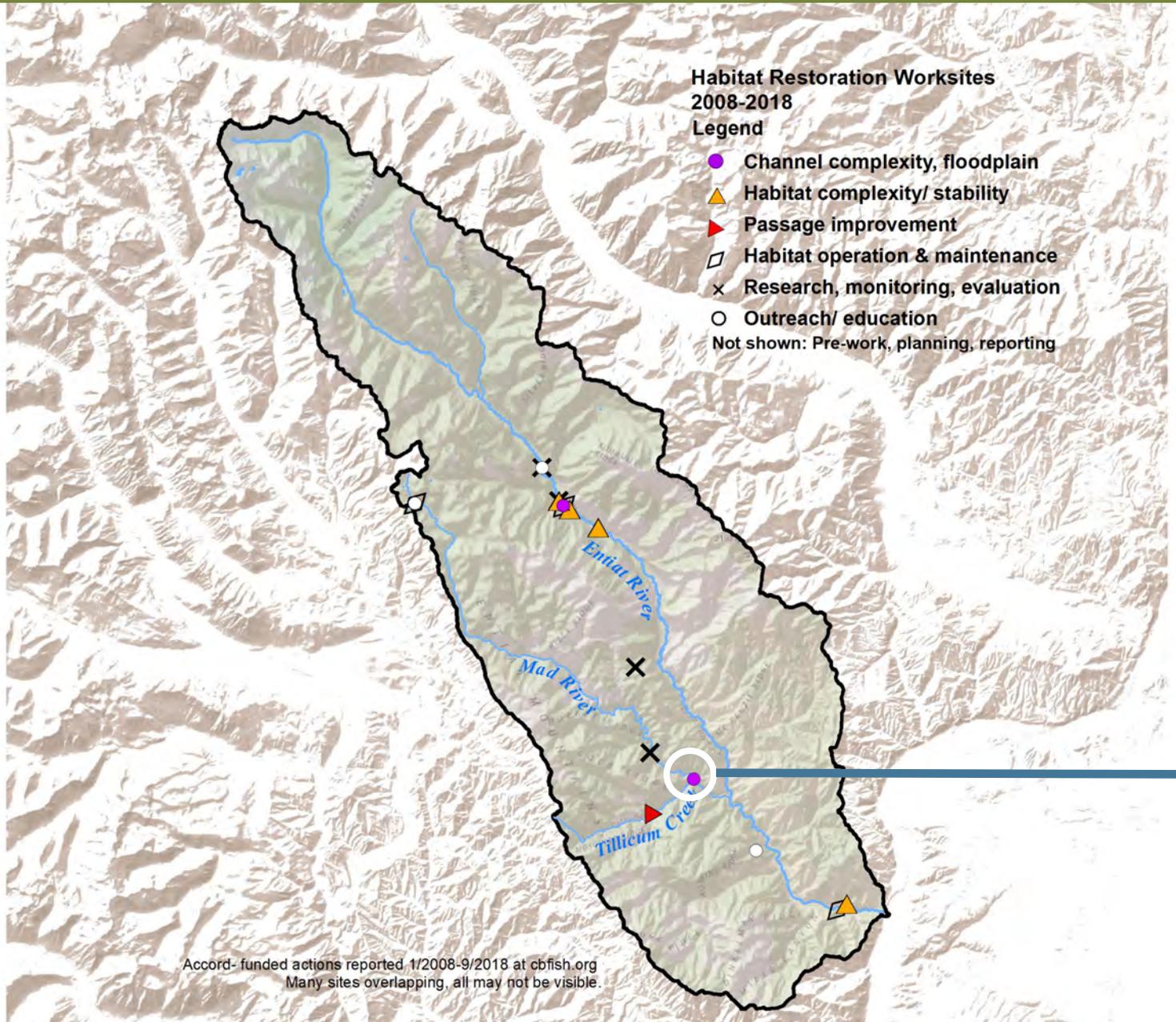




ENTIAT SUBBASIN

Salmon and steelhead were abundant in the Entiat Subbasin during the pre-development period; however, resource exploitation depleted runs and in some cases led to their extirpation. In addition to other factors, past land management practices such as mining, logging, diversions, and flood control structures have contributed to habitat degradation, erosion, and loss of habitat complexity and diversity. These habitats are needed by fish for essential spawning, rearing, and resting areas throughout their lives. The Yakama Nation and others are restoring habitat to help bring back fish populations. Although there has been some improvement in numbers in recent decades, recovering fish populations still need to improve before they can be considered a viable resource.

ENTIAT SUBBASIN



**1
Mile**

**Habitat made
accessible to fish**



**81
Acres**

**Vegetation
maintained**



**2
Acres**

**Upland treated
and improved**

YN metrics reported to cbfish.org (funded by BPA), 1/2008-12/2018 for the Entiat Subbasin.

HABITAT ACTIONS 2008-2018

PROJECT SPOTLIGHT

Tillicum Creek Fan Habitat Enhancement Project

Date Completed: Fall 2018

Fish Present: Salmon and steelhead

Problem: Located along the Mad River, the Tillicum Fan was disconnected from its floodplain resulting in a loss of off-channel, wetland, riparian, and instream habitat. It has become disconnected from groundwater exchange, resulting in reduced year-round streamflow.

Restoration Actions: To restore healthy stream function, side channels were constructed for Tillicum Creek and the Mad River. Included in the construction were scour pools and the placement of wood in the floodplain adjoining the stream. Following construction, the area was revegetated, seeded, and decompacted.

Accomplishments:

- 166 pieces of large wood installed
- 4 scour pools created
- 1,200 feet of side-channel created
- 4,100 herbaceous trees/shrubs planted

Benefits: This project addressed limiting factors identified for salmon and steelhead. Improvements in hydrologic connectivity and stream processes improved habitat complexity, expanded and generated new wetland and riparian vegetative communities, and improved surface water and groundwater interactions that contribute to year-round flow.



**3
Miles**

**Riparian habitat
improved**



**4.7
Miles**

**Stream habitat
improved**



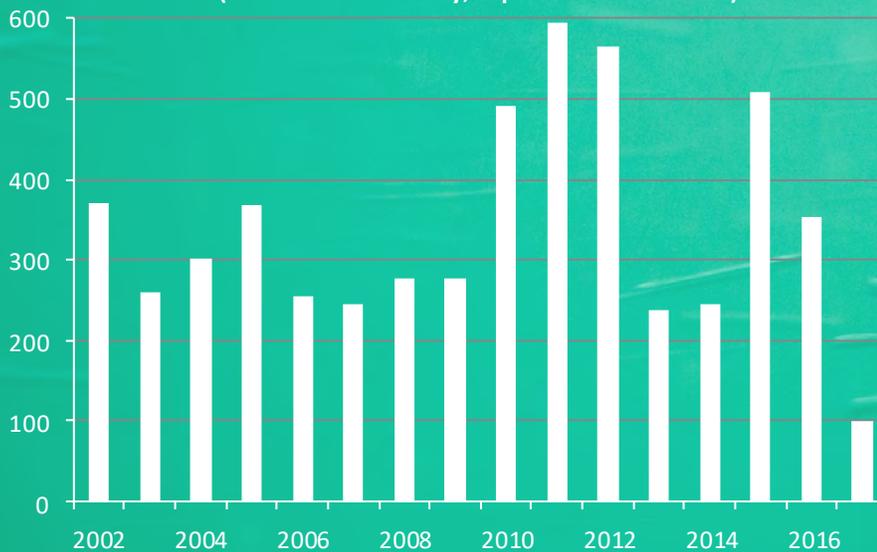
**16,000
People
Informed and
educated (regionally)**

YN metrics reported to cbfish.org (funded by BPA), 1/2008-12/2018 for the Entiat Subbasin.



ENTIAT SUBBASIN

Entiat Spring Chinook Escapement Estimate
(Natural and Hatchery; Expanded Redd Counts)



Spring Chinook

- Hatchery supplementation started in 1942, but ended in 2008 due to hatchery reform recommendations
- After low numbers in the 1990s, greater escapement has been observed since 2001, but still is not reaching viability threshold for recovery

Adult Spawning Escapement Estimate: 2017*

Spring Chinook

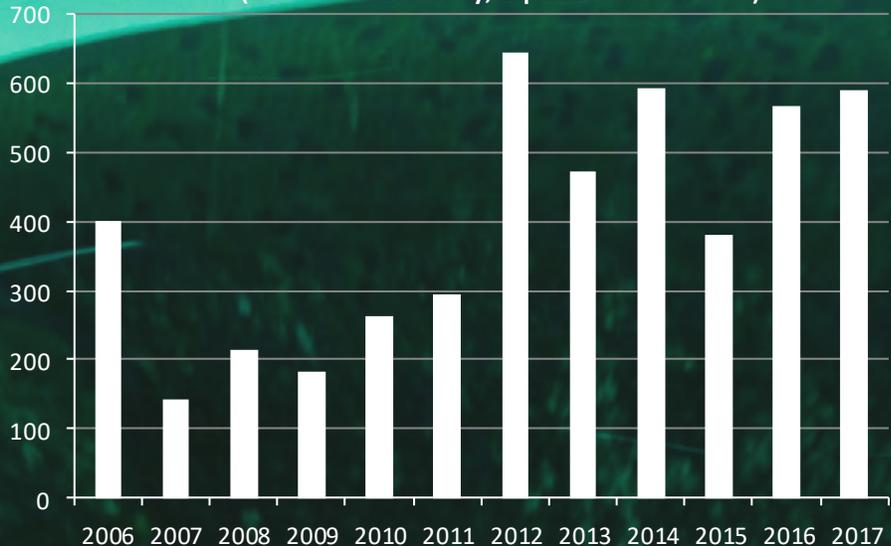
101

SPECIES STATUS AND TRENDS

Summer Chinook

- Not native to the subbasin
- Hatchery releases initiated in 2011
- Purpose of releases is to increase harvest opportunities as mitigation for Grand Coulee Dam impacts
- Hatchery returns are segregated from natural spawning populations

Entiat Summer Chinook Escapement Estimate
(Natural and Hatchery; Expanded Redd Counts)



Summer Steelhead

- Historical abundance has been estimated at around 500 fish
- Population numbers have increased more than most other Upper Columbia steelhead populations in recent decades
- Considered a reference stream, hatchery releases have ceased, but there are still some strays from other subbasins

Entiat Summer Steelhead Escapement Estimate
(Natural and Hatchery; Apportioned Dam Counts, Broodstock, Pre-spawn Mortality Removed)

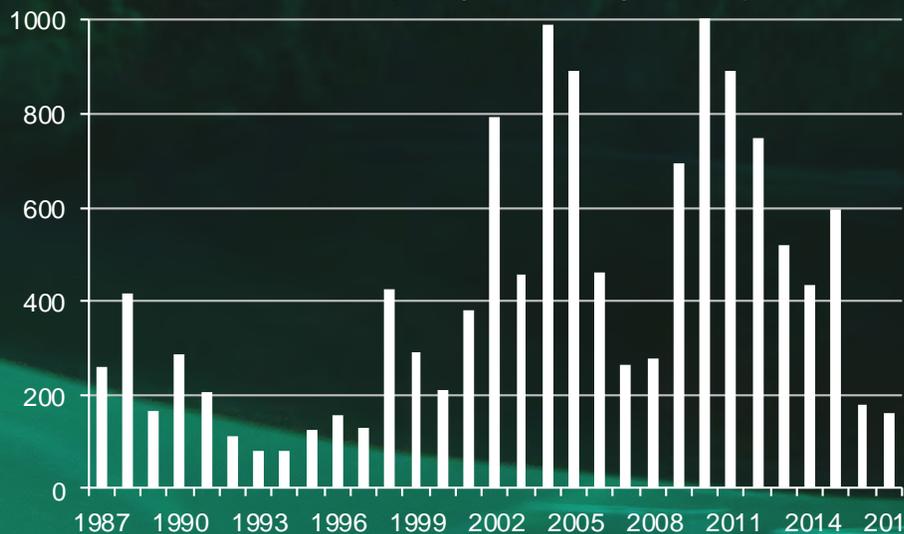


Photo: Tony Grover, Flickr

Summer Chinook

591

Summer Steelhead

161

*Includes natural and hatchery fish



Photo: YN Chewuch RR Side Channel Restoration Project



METHOW SUBBASIN

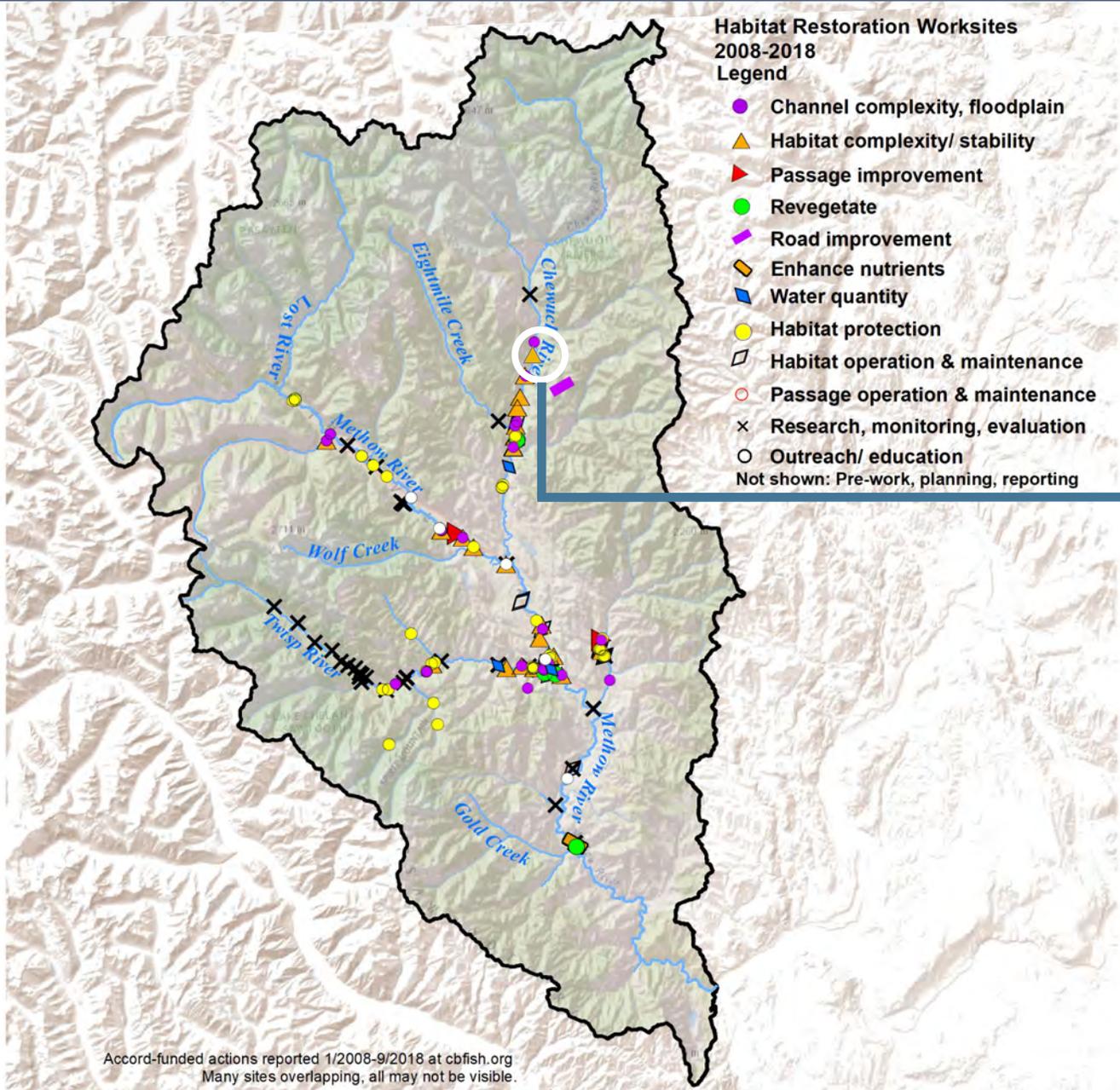
Industrial development of the Columbia River, mining, water diversions, forestry, and private development in the Methow Subbasin, combined with historically intensive fishing, have led to declines of wild salmonid populations. Most of the habitat degradation is located in the mid-to-lower portions of the subbasin.

Of all the fish species in the Methow, spring Chinook is one whose population numbers are of most concern. By the 1930s, only 200 to 400 adult spring Chinook returned to the Methow. There have been large fluctuations in redd counts from the 1950s through the 1990s, and they are still not reaching minimum thresholds for viability. Summer Chinook, which is now supplemented, averaged a run size of about 1,000 adults from 1980 to the 1990s, but now is seeing greater returns and harvest in the mainstem Columbia River. Although the subbasin was once a productive steelhead system, the population now sustains itself only at a threshold population size. Coho were extirpated in the early-1900s; however, through the Yakama Nation's reintroduction efforts, natural reproduction is now occurring.



The Yakama Nation is reconditioning steelhead kelts at the Winthrop National Fish Hatchery to increase survival and lifetime reproductive success (YN)

METHOW SUBBASIN



**2
Miles**

**Habitat made
accessible to fish**



**168
Acres**

**Wetland habitat
protected**



**199
Acres**

**Upland improved
or protected**

*YN metrics reported to cbfish.org (funded by BPA), 1/2008-12/2018 for the Methow Subbasin.

HABITAT ACTIONS 2008-2018

PROJECT SPOTLIGHT

Chewuch River Mile 15.5 to 20 Fish Enhancement Project

Date Completed: October 2018

Fish Present: Spring Chinook, steelhead, and bull trout

Problem: The project area was identified in assessments as a high priority for restoration actions including the need to improve sediment conditions, peripheral and transitional habitats, channel structure and form, riparian conditions, water quantity, food, species interactions, and habitat quantity.

Restoration Actions:

- 7 wood apex and 9 wood bank structures installed
- 10 scour pools developed instream
- 2 large wood cover habitats installed
- 5,710 trees, shrubs and herbaceous plants planted
- 5 acres revegetated
- 2,800 feet of side channel created/reconnected
- 2,410 feet of instream habitat improved

Benefits: Restoration actions improved the opportunity for fish production by increasing the quality, quantity and complexity of fish habitat. Besides fish, amphibians, reptiles, mammals, and birds are also benefitting from the effort.



**15.6
Miles**

**Riparian improved
or protected**



**18
Miles**

**Stream improved
or created**



**1,900
People**

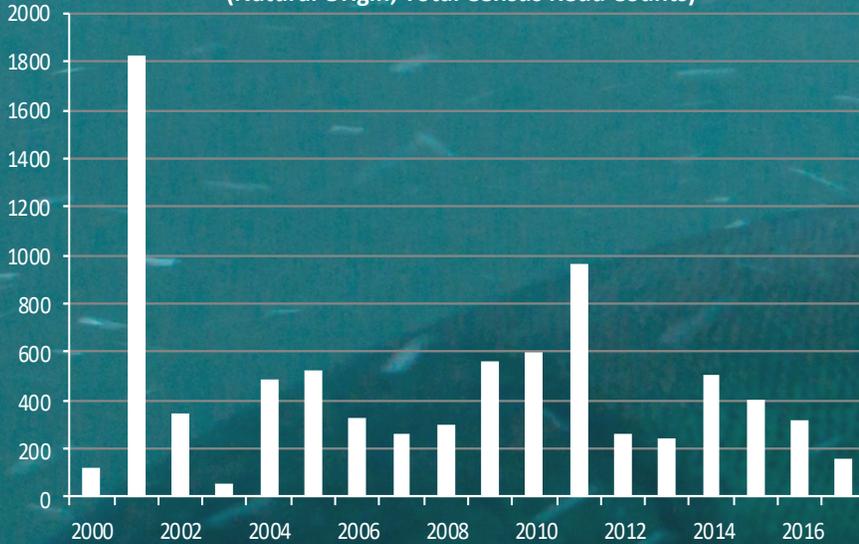
**Informed and
educated**

*YN metrics reported to cbfish.org (funded by BPA), 1/2008-12/2018 for the Methow Subbasin.



METHOW SUBBASIN

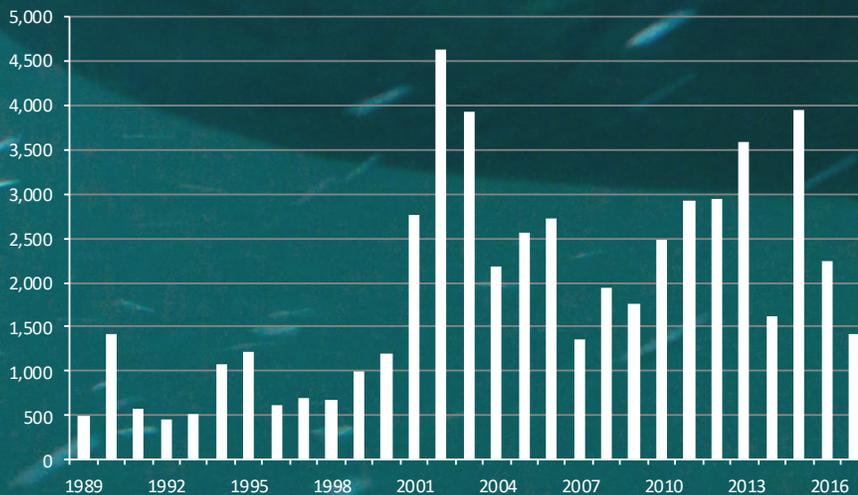
Methow Spring Chinook Escapement Estimate
(Natural Origin; Total Census Redd Counts)



Spring Chinook

- Hatchery releases represent GPUD/CPUD/DPUD/USFWS mitigation and supplementation efforts
- Yakama Nation assisting with experimental acclimation to improve homing to locations with better habitat
- Population still not reaching the minimum threshold of a natural spawner abundance of 2,000 fish

Methow Summer Chinook Escapement Estimate
(Natural and Hatchery; Expanded Redd Counts)



Summer Chinook

- Once an important tribal and non-tribal fishery in the Upper Columbia
- Depleted by fishing in the early 1900s, damming, and habitat degradation
- Purpose of GPUD/WDFW hatchery releases is to increase harvest opportunities
- Hatchery returns segregated from natural spawning population

Adult Spawning Escapement Estimate: 2017*

Spring Chinook

464

Summer Chinook

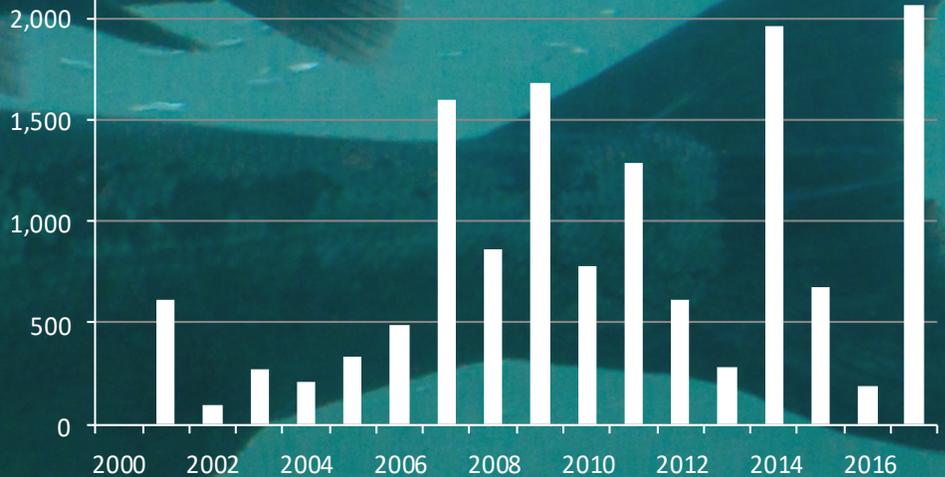
1,408

SPECIES STATUS AND TRENDS

Coho

- Yakama Nation began reintroductions in 1997
- Transitioned to local broodstock
- Acclimation sites expanded to increase natural origin productivity within historic coho spawning areas
- Targeted acclimation areas include the Twisp and Chewuch Subbasins, and the Upper Methow

Methow Coho Escapement Estimate*
(Natural and Hatchery; Wells Dam Counts Plus Broodstock Removed)



*In-basin escapement is underestimated due to the difficulty in identifying coho redds, spawning preferences and environmental conditions

Steelhead

- Natural spawner abundance has reached the minimum viability threshold in some of the recent years
- Yakama Nation began the Upper Columbia kelt reconditioning program in 2012
- Working with partners, we are evaluating the effectiveness of kelt reconditioning to improve lifetime reproductive success

Methow Steelhead Escapement Estimate
(Natural and Hatchery; Expanded Redd Counts)

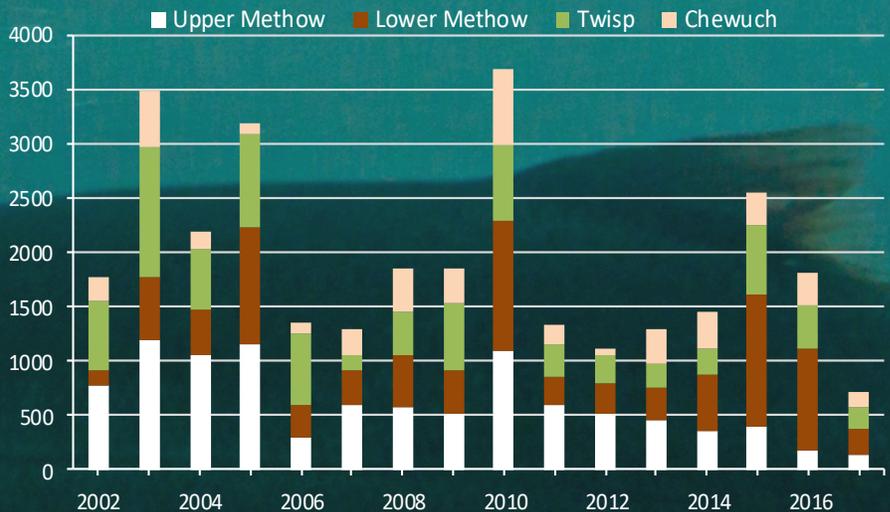


Photo: Tony Grover, Flickr

Coho **

2,065

Summer Steelhead

710

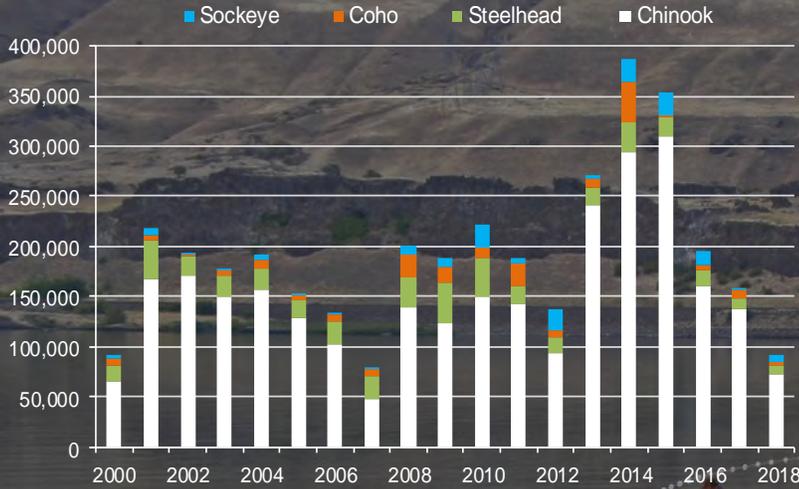
* Includes natural and hatchery fish

**Fish counted at Wells Dam plus broodstock collected; 2018 Estimate: 2,812 fish



HARVEST

Tribal Harvest Columbia River Zone 6



Mainstem (Zone 6)

- On average 62,500 more fish were harvested annually by Tribes in 2008-2018 vs. 2000-2007
- With the exception of Upper Columbia sockeye, returns in 2018 were lower than recent years
- Of Tribal Zone 6 (between Bonneville and McNary Dams) Chinook harvest in 2018, approximately 80% was fall Chinook

Tributaries

- Average annual Yakama Nation tributary harvest 2000-2018 is 7,500 spring Chinook
- Although there have been poor returns for the past several years, catches since 2000 are generally better now than in the 1990s
- The most productive Yakama Nation tributary harvest area for spring Chinook in 2018 was Little White Salmon/Drano Lake

Yakama Nation Spring Chinook Tributary Harvest

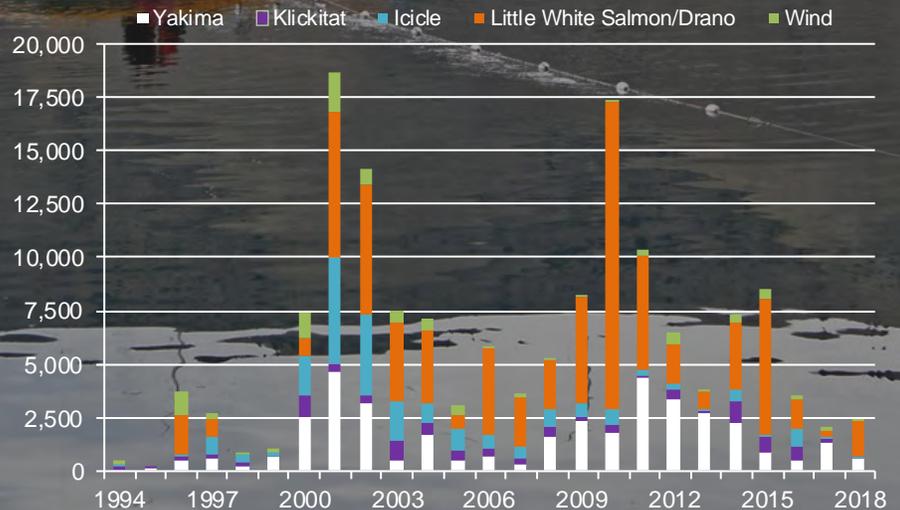


Photo: CRITFC

Zone 6 Tribal Harvest: 2018

Chinook

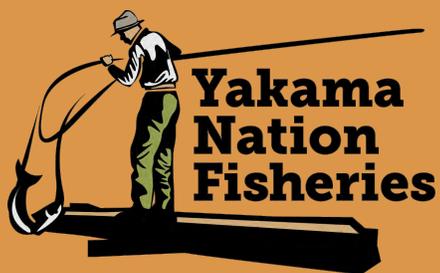
73,138

White Sturgeon

1,076

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- Coho escapement estimates: Cory Kamphaus, YN Fisheries Biologist, personal communication, 2018.
- Habitat Metrics, Summaries** Downloaded from BPA contract reporting site (<https://www.cbfish.org>); categorized and summarized by the STAR Project.
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- 2019 Joint Staff Report Concerning Stock Status and Fisheries for Sturgeon and Smelt. Joint Columbia River Management Staff (ODFW, WDFW). January 18, 2019.
- Maps** Created by the STAR project on ESRI software. Backgrounds are from ESRI, USGS, National Geographic and NOAA. Worksite locations are downloaded from BPA reporting site ([cbfish.org](http://www.cbfish.org)) with STAR Project categories applied.



HONOR

PROTECT

RESTORE



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