



Lesson 1.2: SALMON SPECIES IN THE SKEENA WATERSHED

GRADE LEVEL: Grades 1-4

OBJECTIVES:

Students will be able to:

- Identify the name and characteristics of each of the salmon species
- Identify the difference between a spawning and non-spawning salmon

OVERVIEW

The Skeena Watershed supports five Pacific salmon species: Chinook, Chum, Coho, Pink and Sockeye, as well as another important salmonid, Steelhead.

BACKGROUND INFORMATION

Skeena Sockeye Salmon

Latin Name: Oncorhynchus nerka

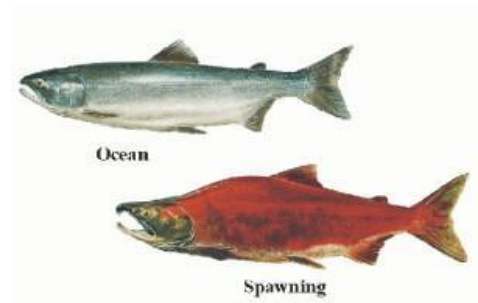
Other Common Names: Red

Average commercial size: 6 lbs

Life Cycle: 5 years

Sockeye is the most valuable commercial fish in the Skeena Watershed. Most sockeye return to their natal streams as 4 and 5 year old fish, although 3 year old males (jacks) are common in some years. Juvenile sockeye rear in 30 different lake systems in the Skeena Watershed. The tributaries and outlets of these lakes are major sockeye spawning areas. Fisheries scientists have identified 32 Skeena sockeye Conservation Units, or distinct populations. The Babine system, which includes BC's largest natural lake, produces 90 per cent of Skeena sockeye, although historically other tributaries accounted for a larger portion (30-40 percent). The Babine Lake and Lakelse Lake systems are the most biologically productive with lots of food (plankton) and fry usually rear there for one year. Sockeye from less productive lakes (ex. Subalpine lakes like Morice Lake and Bear Lake) usually spend two years rearing in the lake. Many stocks are depressed or at risk of extinction, mainly due to over-fishing and habitat degradation.

Kokanee Salmon, found in many of the lakes in Southern British Columbia and Northwestern US, are the non-anadromous (non-migrating) form of Sockeye Salmon, and like all salmon, they die after their first spawning.



Skeena Chinook Salmon

Latin Name: Oncorhynchus tshawytscha
Other Common Names: Spring, King, Tyee
Average Commercial Weight: 20 lbs
Average Commercial Size: 22-32 inches

Life Cycle: 4-7 years

Chinook are the largest species of salmon in the Skeena Watershed. Generally, they are found in larger streams and they spawn in faster moving water with gravel that is coarser than other salmon species prefer. 85 tributaries are home to spawning Chinook. Main Chinook spawning areas are lake outlets and the main-stems of larger Skeena tributaries. The Kalum, Bear and Morice systems produce 65-75 percent of Skeena Chinook. Other, lesser-understood areas, such as the Skeena mainstem below Terrace and the upper Skeena, are also thought to contribute significant Chinook numbers. Side channels and gravel bars along the middle and lower Skeena are important juvenile Chinook habitat, and contribute substantially to the Skeena's productivity. Fisheries scientists have identified 12 Skeena Chinook Conservation Units. Habitat appears to be fairly healthy, although logging and agriculture have had significant localized habitat impacts, especially in smaller tributaries such as the upper Bulkley and Lakelse.

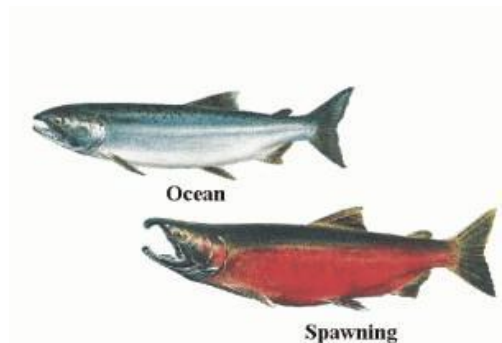


Skeena Coho Salmon

Latin Name: Oncorhynchus kisutch
Other Common Names: Silver
Average Commercial Weight: 4-12 lbs
Average Commercial Size: 22-26 inches
Life Cycle: 3 years

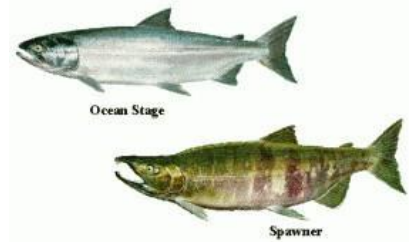
Most sockeye Coho spawn in hundreds of small and medium-sized tributaries of the Skeena. Juvenile Coho rely on countless side channels and small tributaries with complex habitat structures. Fisheries scientists have identified four Skeena Coho Conservation Units, each with a large number of spawning and rearing locations. Historically, Coho have suffered from high harvest levels and habitat degradation from logging

ng. Harvest has recently been reduced and logging practices improved, which has helped populations.



Skeena Chum Salmon

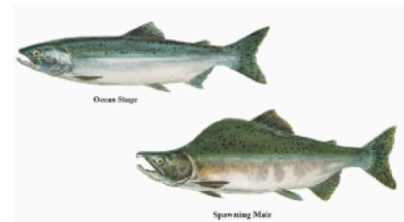
Latin Name: Oncorhynchus keta
Other Common Names: Dog
Average Commercial Weight: 8 lbs
Average Commercial Size: 22-26 inches
Life Cycle: 2-5 years



Chum are the least abundant of the salmon species in the Skeena Watershed (they are much more abundant in southern BC and Southeast Alaska). In the Skeena Watershed, chum live two to five years. Three-year-old returning fish are most abundant but four year olds are generally present at spawning time. Chum spawn mainly in the lower Skeena and Ecstall, but populations exist as high as the Babine. The least understood species in the Skeena. Spawning sites are difficult to assess due to the turbidity of the water (siltation). Fisheries scientists have identified three Skeena chum Conservation Units. Chum face serious conservation issues. In general, chum habitat is thought to be in good shape, though some lower Skeena areas have been negatively affected by highway and railway development.

Skeena Pink Salmon

Latin Name: Oncorhynchus gorbusha
Other Common Names: Humpback;
Humpy Average Commercial Weight: 4 lbs
Average Commercial Size: 14-18 inches
Life Cycle: 2 years

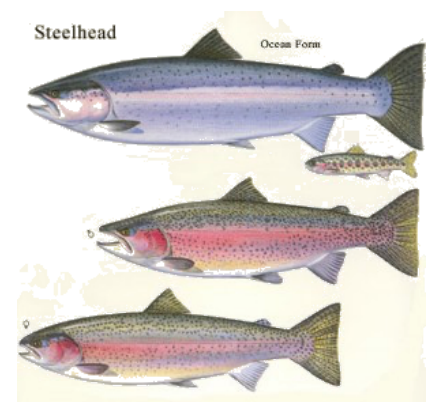


Pink salmon are always two years old at the time of spawning. This means that there are odd and even year populations that are genetically separate and most discussions of pink salmon stocks treat the odd and even years separately. In most watersheds, either the odd or even years are a dominant run. This doesn't happen in the Skeena and so the two cohorts are dealt with together. Several tributaries have high-value habitat, including Lakelse, Kitwanga, Kispiox, Babine and Morice. Similar to Chum, pinks quickly migrate to the Skeena Estuary and near-shore marine areas after hatching out of the gravel each spring, making these areas critical to their life history. Fisheries scientists have identified three Skeena pink Conservation Units. Habitat is currently thought to be healthy in most areas of the watershed.

Skeena Steelhead

Latin Name: Oncorhynchus mykiss
Other Names: Ocean-going Rainbow Trout

The Steelhead Trout is an ocean-going version of the rainbow trout, hence the same species name. They have an anadromous life cycle similar to Pacific salmon, and are often classified as salmon. The Skeena is possibly the world's most diverse steelhead system. The majority of low-gradient tributaries above Terrace contain summer-run steelhead, and nearly all low-gradient tributaries below Terrace contain



winter-run steelhead. Fisheries scientists are currently working to delineate Conservation Units for Skeena steelhead. The majority of the Skeena's steelhead habitat remains healthy, with some localized impacts from logging, agriculture, and linear developments such as roads. Steelhead have both summer and winter populations. Summer run steelhead return in July and August; winter run return from November to March, and are limited to the coastal portions of the Skeena River from Terrace to Prince Rupert. Most steelhead in the Skeena Watershed spend three years in fresh water, however, steelhead from the Morice River and Sustut River mostly have a fresh water residence time of four years. Unlike the other five species of Pacific Salmon found in the Skeena River, Steelhead does not die after its first spawning, but makes return trips to the ocean and spawns again in its natal streams.



ACTIVITY 1: REMEMBERING THE NAMES OF THE SKEENA SALMON SPECIES

Grade Level: Kindergarten to Grade 3

Objective: Students will use this easy mnemonic technique to help them remember the five species of salmon.

Procedure:

- Ask kids to hold one hand up and spread their fingers.
- We motion to the thumb and say “Thumb rhymes with Chum”
- Then we ask them to use their pointer finger and point to their eye. “Eye rhymes with Sockeye”
- The middle finger is the largest finger on the hand, we say the largest of the Skeena Salmon is the Chinook (or King)
- Then we look at the ring finger, and say that some people wear silver on their ring finger, so that is silver salmon or coho.
- And last but not least, there’s the pinky finger for Pink Salmon.



Source: Alaska Department of Fish & Game

Skeena wild salmon diversity



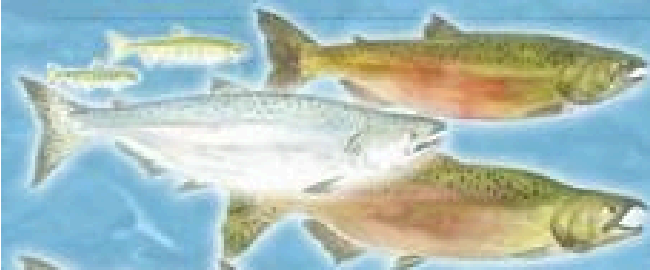
Skeena Sockeye Salmon

Genetic studies show 20 different sockeye fish systems in the watershed. The tributaries and confluents of these rivers are major sockeye spawning areas.

Fisheries scientists have identified 12 Skeena Sockeye Conservation Units, or distinct populations.

The Babine system, which includes B.C.'s largest natural lake, produces 90 percent of Skeena sockeye, although historically other tributaries accounted for a larger portion (85-90 percent).

Many stocks are depressed or at risk of extinction, mainly due to over-fishing and habitat degradation.



Skeena Chinook Salmon

20 Skeena tributaries are home to spawning Chinook.

Major Chinook spawning areas are lake outlets and the main stems of larger Skeena tributaries.

The Babine, Bulkley and Mowat systems produce 65-75 percent of Skeena Chinook. Other, less-understood areas, such as the Skeena meadows below Terrace and the upper Skeena, are also thought to contribute significant Chinook numbers.

Salvage channels and gravel bags along the banks and lower Skeena are important juvenile Chinook habitat, and contribute substantially to the Skeena's productivity.

Fisheries scientists have identified 12 Skeena Chinook Conservation Units.

Habitat appears to be fairly healthy, although logging and agriculture have had significant localized habitat impacts, especially at smaller tributaries such as the upper Bulkley and Labella.



Skeena Coho Salmon

Spawns in hundreds of small and medium-sized tributaries of the Skeena.

Spawns primarily in mountain side channels and small tributaries with complex habitat structure.

Fisheries scientists have identified five Skeena Coho Conservation Units, each with a large number of spawning and rearing locations.

Historically, coho have suffered from high harvest levels and habitat degradation from logging. Harvest has recently been reduced and logging practices improved, which has helped populations.



Skeena Chum Salmon

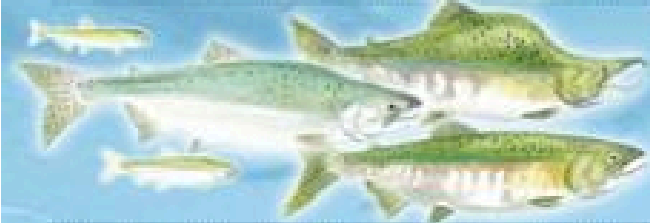
Spawns mainly in the lower Skeena and Bulkley, but populations occur as high as the Babine.

The least understood species in the Skeena, spawning sites are difficult to access due to the turbidity of the water (fallouts).

Fisheries scientists have identified three Skeena Chum Conservation Units.

Chum face serious conservation issues.

In general, chum habitat is thought to be in good shape, although some lower Skeena areas have been negatively affected by highway and railway development.



Skeena Pink Salmon

Large numbers throughout the Skeena, generally more abundant closer to the coast.

Spawns tributaries with high water habitat, including Labella, Bulkley, Bulkley, Babine and Mowat.

Similar to Chum, pink quickly migrate to the estuary and near-shore marine areas after hatching out of the gravel each spring, making these areas critical to their life history.

Fisheries scientists have identified three Skeena Pink Conservation Units.

Habitat is currently thought to be healthy in most areas of the watershed.



Skeena Steelhead

Steelhead are anadromous trout that have an anadromous life cycle similar to Pacific salmon, and are often classified as salmon.

The Skeena is possibly the world's most diverse steelhead system. The majority of low-gradient tributaries above Terrace contain summer-run steelhead, and nearly all low-gradient tributaries below Terrace contain winter-run steelhead.

Fisheries scientists are currently working to delineate Conservation Units for Skeena steelhead.

The majority of the Skeena's steelhead habitat remains healthy, with some localized impacts from logging, agriculture, and linear developments such as roads.

This 24"x36" poster is available at the SkeenaWild office (illustrated by Rod Brown)

ADDITIONAL RESOURCES

WEBSITES

- **Salmon Facts – Pacific Salmon.** Fisheries and Oceans Canada. Descriptions of the Pacific Salmon species. <http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especies/salmon-saumon/facts-infos-eng.html>
- **BC Fishing Journal – Pacific Salmon Species Identification** (ocean and spawning phases)
○ <https://bcfishingjournal.com/project/pacific-salmon-species-identification/>
- **Skeena Salmon Species Poster** - <https://skeenawild.org/maps/#!overlay/12/>

BOOKS (Non-Fiction)

- “Skeena River: Fish and Their Habitat” (by Allen S. Gottesfeld and Ken A. Rabnett)

HANDOUTS

- **Skeena Salmon Species Poster** (illustrated by Rod Brown) – contact SkeenaWild Conservation Trust at 250-638-0998.
- **Salmon Colouring and Activity Sheets** – contact SkeenaWild Conservation Trust at 250-638-0998

You can also visit our website at www.skeenawild.org/education to view all of our educational resources.

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