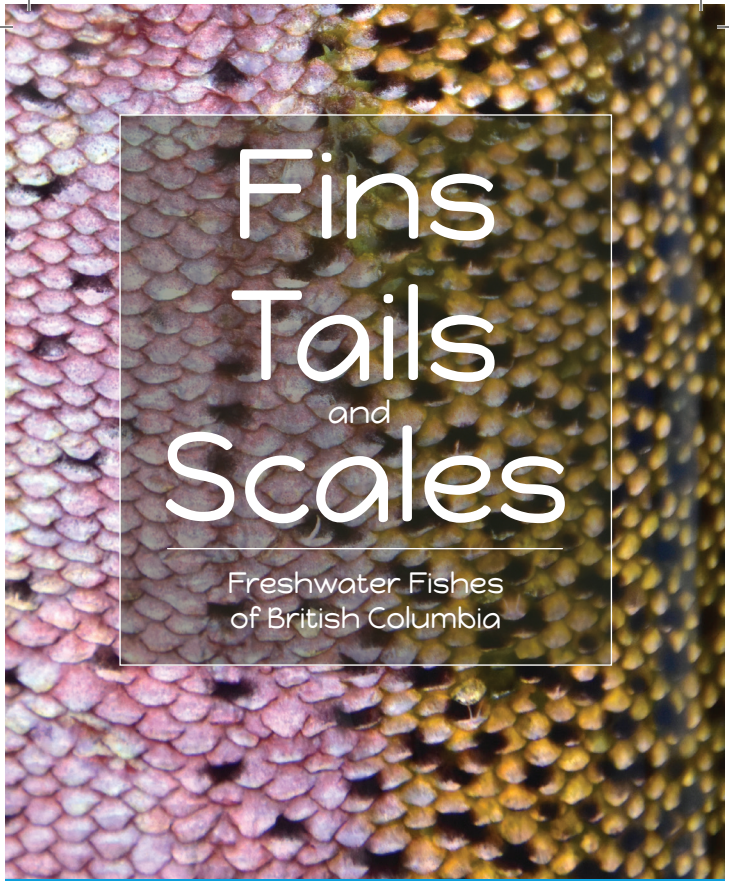

Fins Tails and Scales

Freshwater Fishes of British Columbia

HCTF Education

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Salmon making their way upstream to spawning grounds

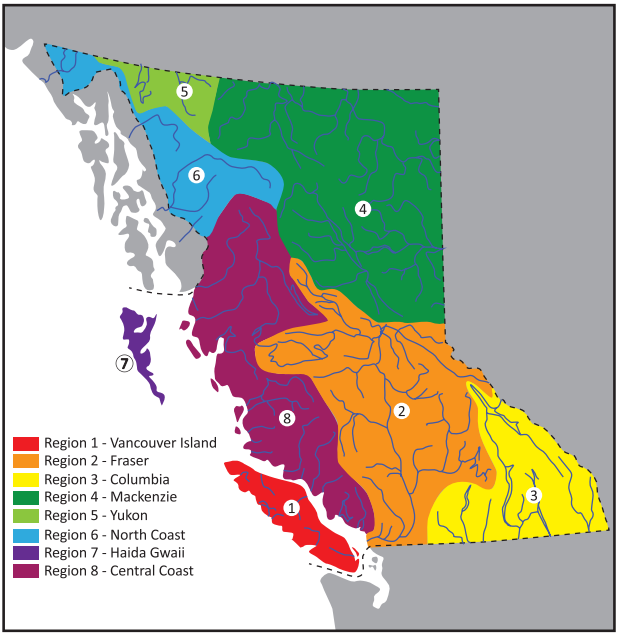
About this guide

The purpose of this guide is to serve as an introduction to the diversity of freshwater fishes found in British Columbia. As there are at least 67 native species and 15 introduced species in BC waters, this collection focuses on identification at the family level rather than individual species.

When attempting an identification, keep in mind that within a species, characteristics can be notoriously variable and can be affected by habitat and location. Appearance can also change with maturity, breeding season, and transition between freshwater and marine environments.

To simplify location descriptions, the province has been divided into eight regions (See map on reverse): Vancouver Island, Fraser, Columbia, Mackenzie, Yukon, North Coast, Haida Gwaii, and Central Coast. Generally, the regions correspond to major drainage basins of river systems, or in the case of the coastal and island regions, geographic proximity and connection to the sea.

Juvenile White Sturgeon, Vanderhoof BC (Fraser Region)


5
6
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Region 1 - Vancouver Island
Region 2 - Fraser
Region 3 - Columbia
Region 4 - Mackenzie
Region 5 - Yukon
Region 6 - North Coast
Region 7 - Haida Gwaii
Region 8 - Central Coast

Conservation

Due to isolation caused by the Rocky Mountains, BC is home to fewer fish species than some other parts of North America. What makes BC unique however, is its diversity of distinct or "cryptic" populations within fish species. Among BC's salmon and trout species there are hundreds of distinct populations. These populations may appear similar, but can be distiguished by differences such as when they return to fresh water to spawn. Each fish population is unique and should be conserved.

The principal threats to BC's freshwater fishes are habitat loss and degradation. Habitat is lost to human development of cities, agriculture, industry, and roads. Erosion caused by land use, such as construction, logging, and mining, increases the runoff of sediment into streams and rivers, harming fish eggs and reducing the availability of food.

Throughout the province there are groups and individuals working to restore aquatic habitats. The Pacific Streamkeepers Federation website (PSKF.ca), is a good place to find resources and groups active in your area.

At least 15 species of non-native fishes have been introduced to BC waters; many of these introduced species are considered invasive due to their negative impacts which include competition, predation, and/or disease transfer on the native population. To avoid introducing invasive species, do not use live fish as bait, and do not release aquarium fish into the wild. Do not keep angled fish alive in live wells or on stringers, and never move live fish from one waterway to another. It is illegal to do so, as well as harmful to native species and habitats.

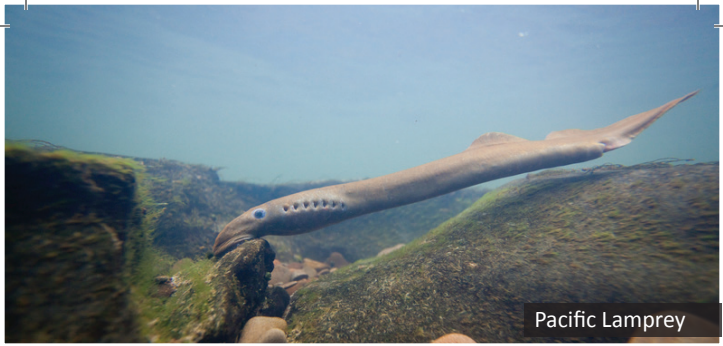
Responsible Fishing Practices

Many people are first introduced to fishes at the end of a fishing rod. If you choose to fish, be sure to follow local regulations and best practices. Be sure to read and understand the rules before you go fishing. There are province-wide and region-specific regulations. Links can be found on the Freshwater Fisheries of BC website: www.gofishbc.com

If you are 16 or older you must have a freshwater fishing license to fish recreationally in non-tidal waters in BC. You can purchase your fishing license online through the government of BC's website, or from an authorized vendor.

Respect fish and treat them humanely. Single, barb-less hooks are recommended, if not already stipulated in the regulations. Keep fish immersed in water until you identify the species and its size. Catch only what you will use and never exceed the legal limit. Practice "let them go, let them grow," and "catch and release" when appropriate .

Protect the environment. Each aquatic ecosystem is unique. Prevent transfer of aquatic species or weeds from one water body to another. Remember to "Clean Drain Dry" in between. This means cleaning all plants, animals, and mud off your boat and gear, draining all water from your boat and gear onto land, and letting all parts dry completely. Avoid sensitive habitats such as shallow water, spawning areas, and wildlife nesting or foraging areas.



Pacific Lamprey

Pacific Lamprey

Western Brook Lamprey

Lampreys Family *Petromyzontidae*

Species in BC: Pacific Lamprey *Entosphenus tridentatus*, Western River Lamprey *Lampetra ayresi*, Western Brook Lamprey *Lampetra richardsoni,* Vancouver Lamprey *Entosphenus macrostomus*

Where found: Present in the Vancouver Island, Fraser, North Coast, Haida Gwaii, and Central Coast regions. Juvenile lampreys prefer slow-moving fresh water that is high in organic nutrients. Anadromous species live in waters that connect to the ocean and spend their adult lives at sea before returning to fresh water to spawn. Other species spend their entire lives in fresh water.

Description: Lampreys have an "eel-like", scaleless body and originate from an ancient group of fishes. They have one or two dorsal fins, a tail fin, a single nostril on top of the head, and seven gill openings on each side of the body. Lamprey skeletons are made of cartilage rather than bone. The mouth is a round, jawless aperture with horny teeth.

Young lampreys spend up to 8 years in their larval form, living as filter-feeders in fresh water. After developing into their adult form, some species stay in fresh water while others migrate to the sea and become carnivorous parasites, attaching themselves to fish and marine mammals to feed.


Eulachon


Surf Smelt


Arctic Rainbow Smelt

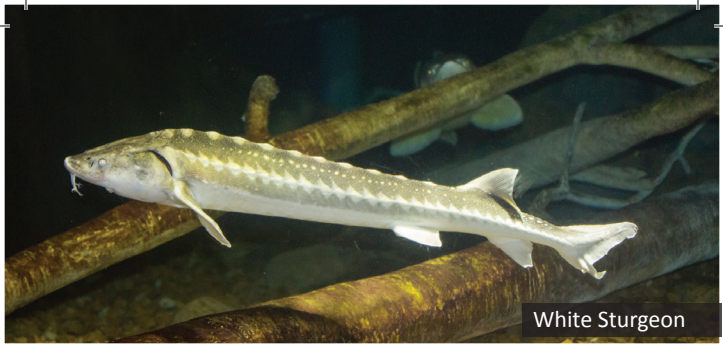
Smelts Family *Osmeridae*

Species in BC: Eulachon *Thaleichthys pacificus*, Longfin Smelt *Spirinchus thaleichthys*, Surf Smelt *Hypomesus pretiosus*, Arctic Rainbow Smelt *Osmerus dentex*

Where found: Present in the Vancouver Island, Fraser, North Coast, Haida Gwaii, and Central Coast regions. For the most part, Smelts in BC are anadromous. However there are a few landlocked populations. Most Smelts spend much of their lives at sea but return to the lower reaches of coastal rivers to spawn over gravel and sand bars.

Description: Smelts are small, slender, silvery fishes with large mouths and jaw teeth. Their body plan is similar to that of salmon and trout, to which they are related. Smelts can grow to 30 cm in length.

The Eulachon is a species of Smelt with a blue-brown back and silvery sides. At spawning time they increase fat reserves to the point where up to 15% of their total body weight is fat. Due to this high fat content, Eulachons are also called “candlefish” because if they are caught, dried, and strung on a wick, they can be burned as a candle.



White Sturgeon

White Sturgeon

Green Sturgeon

Sturgeons Family *Acipenseridae*

Species in BC: Green Sturgeon *Acipenser medirostris*, White Sturgeon *Acipenser transmontanus*

Where found: Present in the Vancouver Island, Fraser, Columbia, North Coast, and Central Coast regions. The White sturgeon is a mostly freshwater species. In BC, it is particularly widespread throughout the Fraser and Columbia river systems and only rarely enters the sea. The Green sturgeon is more common in the sea and is only rarely observed in the lower portions of rivers.

Description: Sturgeons are ancient fishes whose characteristics have remained relatively unchanged since the earliest fossil record. They are late-maturing, and among the longest-lived of fishes, with some individuals living over 100 years.

Sturgeons have an elongated body that is smooth-skinned, scaleless, and armoured with five lateral rows of bony plates called “scutes”. Their skeletons are almost entirely made of cartilage. White sturgeons can reach 6.1 m in length and Green sturgeons reach 2.1 m. Both species have four barbels in front of wide, toothless mouths. Sturgeons are primarily bottom feeders, with a diet of shells, crustaceans, and fish.

Brown Bullhead

Black Bullhead

Yellow Bullhead

Catfishes (Bullhead) Family *Ictaluridae*

Species in BC: Brown Bullhead *Ameiurus nebulosus* (Invasive), Black Bullhead *Ameiurus melas* (Invasive), Yellow Bullhead *Ameiurus natalis* (Invasive)

Where found: Introduced to the Vancouver Island, Fraser, and Columbia regions. Bullheads are bottom-feeders who thrive in a variety of habitats, including lakes, ponds, and slow-moving streams with low oxygen or muddy conditions.

Description: The *Ictaluridae* are a family of catfishes with four pairs of barbels around their mouths, which have tiny, pin-like teeth in the jaws. Their skin is scaleless. Black and Brown bullheads are very similar looking, with dark backs and cream coloured bellies. Brown bullheads can be identified by the large, tooth-like spine-lets on their pectoral spine.

Native to south-eastern North America, Bullhead catfishes most likely arrived in BC as contaminants with shipments of other game fish that were released into provincial waters for sport fishing. Members of this family are mainly active at night. They are known to prey on native fish and amphibians.

Trout-Perch

Trout-Perches Family *Percopsidae*

Species in BC: Trout-Perch *Percopsis omiscomaycus*

Where found: Present in the Mackenzie region. Trout-perch prefer clear to slightly turbid water in lakes and deep pools of creeks and rivers with sandy bottoms. Uncommon throughout most of their range.

Description: *Percopsidae* is a small family of fishes composed of one genus with two species. Of these, only the Trout-perch (*Percopsis omiscomaycus*) is found in BC.

The Trout-perch grows up to 20 cm in length. Its body is transparent yellow-olive with rows of dusky spots along its sides. The head is large, unscaled, and flattened below with large, white chambers on the cheeks.

Trout-perch follow a daily migration, traveling from deep water during the day to shallow waters at night. This behaviour is important in transporting nutrients throughout lake levels. The nocturnal migration allows for foraging under the cover of darkness as they feed on insects and small crustaceans.

Arctic Grayling

Graylings Family *Salmonidae,* Subfamily *Thymallinae*

Species in BC: Arctic Grayling *Thymallus arcticus*

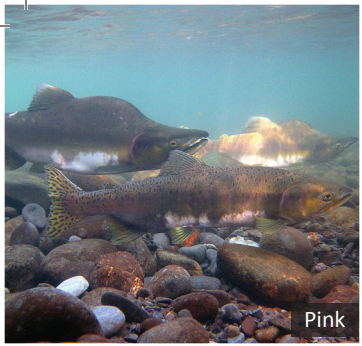
Where found: Present in the Columbia (Introduced), Mackenzie, Yukon, and North Coast regions. Grayling are found in the open water of cold, clear lakes and rivers. They spawn in smaller rocky creeks.

Description: Grayling are in the only genus in the subfamily *Thymallinae*. The Arctic grayling is the only species of this genus found in BC.

Arctic grayling grow up to 76 cm in length. Their most notable characteristic is a very large purple to black dorsal fin with rows of red to green spots. Their flanks are grey with a pink iridescence.

The Arctic grayling's diet includes crustaceans, insects, and insect larvae, and fish eggs. Larger individuals may also eat fish.

In spawning season, males become territorial and court females by flashing their colourful dorsal fins.


Pink


Coho


Sockeye


Chinook


Chum


Atlantic

Salmons Family *Salmonidae,* Subfamily *Salmoninae,* Anadromous species

Species in BC: Pink Salmon *Oncorhynchus gorbuscha*, Coho Salmon *Oncorhynchus kisutch*, Sockeye (Kokanee) Salmon *Oncorhynchus nerka*, Chinook Salmon *Oncorhynchus tshawytscha,* Chum Salmon *Oncorhynchus keta*, Atlantic Salmon *Salmo salar* (Invasive)

Where found: Present in the Vancouver Island, Fraser, Columbia, Mackenzie, Yukon, North Coast, Haida Gwaii, and Central Coast regions. The five species of Pacific salmon found in BC are anadromous. After maturing at sea, Pacific salmon return to spawn in the very stream in which they were born. The exception to this is the Kokanee, the non-anadromous form of Sockeye, which are born in streams and migrate to lakes.

Description: Salmon are slender fishes with small scales and forked tails. Size varies between species with adult lengths ranging from 76-147 cm. Their mouths contain a single row of sharp teeth. At sea they typically have silver flanks with darker blue-green backs. When they return to fresh water to spawn, their bodies undergo dramatic changes, particularly the males. These changes include humped backs, deep red colouring, and large hooked jaws.

The return of salmon to their spawning grounds delivers nutrients throughout the waterways they travel. Pacific salmon are semelparous (they die after spawning). Not only do great numbers of wildlife benefit from the bounty of returning salmon, but the surrounding forest itself is richly nourished with nitrogen from the remains.


Westslope Cutthroat Trout


Steelhead


Rainbow Trout


Dolly Varden

Trouts and Chars Family *Salmonidae,* Subfamily *Salmoninae,* Freshwater species

Species in BC: Brown Trout *Salmo trutta* (Introduced), Westslope Cutthroat Trout *Oncorhynchus clarki lewisi*, Coastal Cutthroat Trout *Oncorhynchus clarki clarki* (semi-anadromous), Rainbow Trout (Steelhead - anadromous) *Oncorhynchus mykiss*, Brook Trout *Salvelinus fontinalis*, Lake Trout *Salvelinus namaycush*, Dolly Varden *Salvelinus malma*, Bull Trout *Salvelinus confluentus*

Where found: Present in the Vancouver Island, Fraser, Columbia, Mackenzie, Yukon, North Coast, Haida Gwaii, and Central Coast regions. Trout and Char are typically cold-water dwelling members of the subfamily *Salmoninae* who primarily inhabit fresh waters across BC. However some species also migrate to the sea. Anadromous populations of Rainbow trout are known as Steelheads. They are larger and less colourful than their freshwater counterparts.

Description: Trout and Char are slender fishes, with small scales and forked tails. Their bodies and fins are dappled with spots, and their mouths contain a single row of sharp teeth. Size varies between species. Adult lengths for species found in BC range from 56-126 cm.

Trout and Char generally feed on aquatic invertebrates, such as flies, mayflies, caddisflies, stoneflies, mollusks and dragonflies. In lakes, various species of zooplankton often form a large part of the diet. Larger individuals (over 30 cm in length) feed primarily on other fish.

Lake Whitefish

Mountain Whitefish

Arctic Cisco

Whitefishes Family *Salmonidae;* Subfamily *Coregoninae*

Species in BC: Lake Whitefish *Coregonus clupeaformis*, Pygmy Whitefish *Prosopium coulteri*, Mountain Whitefish *Prosopium williamsoni*, Inconnu *Stenodus leucichthys*, Cisco *Coregonus artedi*, Arctic Cisco *Coregonus autumnalis*, Round Whitefish *Prosopium cylindraceum*, Least Cisco *Coregonus sardinella*, Broad Whitefish *Coregonus nasus*

Where found: Present in the Fraser, Columbia, Mackenzie, Yukon, North Coast, and Central Coast regions. Whitefish are cold-water dwellers found in the lakes and rivers of BC, particularly in more northerly parts of the province. A number species can be found in brackish water, and some populations within species are anadromous.

Description: Whitefish are slender, silver-scaled fishes with severely forked caudal (tail) fins, making them fast swimmers. Whitefish have small mouths. Teeth are small or absent. Size varies between species and adult lengths for species found in BC range from 28-140 cm. The name "Whitefish" is in reference to the light colour of their flesh.

Larval Whitefish feed on plankton. As they mature they switch to feeding on bottom-dwelling animals (snail, insect larvae, and bivalves). In summer months, some inland lake populations of Ciscoes and Lake whitefish leave the deep, cool waters to feed on emerging mayflies and midges in the shallows.

Threespine Stickleback

Brook Stickleback

Ninespine Stickleback

Sticklebacks Family *Gasterosteidae*

Species in BC: Threespine Stickleback *Gasterosteus aculeatus*, Brook Stickleback *Culaea inconstans*, Ninespine Stickleback *Pungitius pungitius*

Where found: Present in the Vancouver Island, Mackenzie, Haida Gwaii, and Central Coast regions. Sticklebacks are most commonly found in the ocean, but some species can be found in fresh water. The Threespine stickleback has both anadromous and freshwater populations which can sometimes be found in the same lakes. Within BC, the Ninespine stickleback is known only from a small stream in the Mackenzie region. The Brook stickleback is found in slow-moving fresh water with dense vegetation.

Description: Sticklebacks are characterised by strong and clearly isolated spines in their dorsal fins. They have no scales, although the Threespine species has bony armour plates on its sides. Body lengths range between 5-9 cm. Stickleback colouration is typically olive to dark green mottling above and lighter to silver below. Breeding males may display red patches on the head, fins, or belly.

Stickleback diets includes insects, crustaceans, and fish larvae.

Male sticklebacks build nests from aquatic vegetation held together by a sticky kidney secretion. Females are coaxed into the nest through complex courting maneuvers by the male. After depositing her eggs, the female departs and the male enters to fertilize the eggs. He then remains to guard the eggs and the young when they hatch.


Yellow Perch


Walleye


Walleye

Perches Family *Percidae*

Species in BC: Yellow Perch *Perca flavescens* (Invasive), Walleye *Sander vitreus* (Invasive in southern BC)

Where found: Present in the Columbia and Mackenzie regions. Yellow perch are commonly found close to shore in both large and small lakes, but they also inhabit slow-moving rivers and streams, brackish waters, and ponds. Walleye are adapted to low light and are found in large, shallow turbid lakes and the deeper waters of clear lakes. Their native range includes the Mackenzie region but they have also been introduced into the Columbia region.

Description: This family is characterised by having the dorsal fin split into two. There are two species of perch found in BC, the Yellow perch and the Walleye.

The Yellow perch is recognized by its dark vertical green-brown stripes and yellow sides. It grows to 40 cm in length. The Walleye is larger, growing to 91 cm in length. It has a long, slender olive-gold body and a large mouth of sharp teeth.

Yellow perch feed on invertebrates, fish eggs, crayfish, mysid shrimp, and juvenile fish. Walleyes have excellent vision under low light levels, and tend to feed more extensively at dawn and dusk, on cloudy days, and under choppy conditions. Walleye feed on fish, as well as on crayfish, minnows, and leeches. Perches are known to eat juvenile salmon and other native species.

Slimy Sculpin

Torrent Sculpin

Prickly Sculpin

Sculpins Family *Cottidae*

Species in BC: Pacific Staghorn Sculpin *Leptocottus armatus*, Coastrange Sculpin *Cottus aleuticus*, Prickly Sculpin *Cottus asper*, Torrent Sculpin *Cottus rhotheus*, Slimy Sculpin *Cottus cognatus*, Shorthead Sculpin *Cottus confusus*, Spoonhead Sculpin *Cottus ricei*, Tidepool Sculpin *Oligocottus maculosus*, Sharpnose Sculpin *Clinocottus acuticeps,* Columbia sculpin *Cottus hubbsi,* Rocky Mountain sculpin *Cottus sp.*

Where found: Present in the Vancouver Island, Fraser, Columbia, Mackenzie, Yukon, North Coast, Haida Gwaii, and Central Coast regions. The *Cottidae* are a family of sculpins found primarily in the northern Pacific Ocean. In BC, sculpins can also be found in rivers, streams, lakes, and estuaries. Some primarily marine species are found in the brackish waters of estuaries, while other species live entirely in fresh water. Gravel riffles in rivers and sandy bottomed lakes are favoured habitats.

Description: These sculpins have large mouths and 1-4 spines on their gill covers. Their pectoral fins are large and fan-like. The body shape is wide at the head, tapering to a slender tail. It can be difficult to identify sculpins down to species as many of their features (such as colour pattern and spine size) are variable and are known to be affected by an individual's environment.

Sculpins feed primarily on benthic insects including mayflies, caddisflies, stoneflies, and dragonflies. They are also known to eat crustaceans, fish eggs, and small fish.

In spawning season, males excavate and defend nesting sites. Once the eggs are laid, the male will drive the female out and proceed to attract additional females into the nest to lay eggs. The male will guard the eggs until they hatch.

Goldeye

Mooneyes Family *Hiodontidae*

Species in BC: Goldeye *Hiodon alosoides*

Where found: Present in the Mackenzie region. The Goldeye lives in deep, open pools of medium to large rivers and lakes. Often in turbid waters. In BC, they are limited to the lower Liard and the lower Peace rivers.

Description: Goldeyes are recognizable by their silvery, compressed body form and their large gold eyes. Their colouring is blue-green silver above and white silver below. Goldeyes can grow to a length of 52 cm.

The Goldeye is one of only two living species in the family *Hiodontidae*, and the only member found in BC.

Goldeyes are known to feed on insects, crustaceans, fish, mollusks, and frogs.

The eggs laid by Goldeyes are semi-buoyant. This is a rare trait in freshwater fish, but is more common in marine fish. The eggs are suspended in the water and they drift downstream or into quiet waters.

American Shad

Herrings and Shads Family *Clupeidae*

Species in BC: American Shad *Alosa sapidissima* (Introduced)

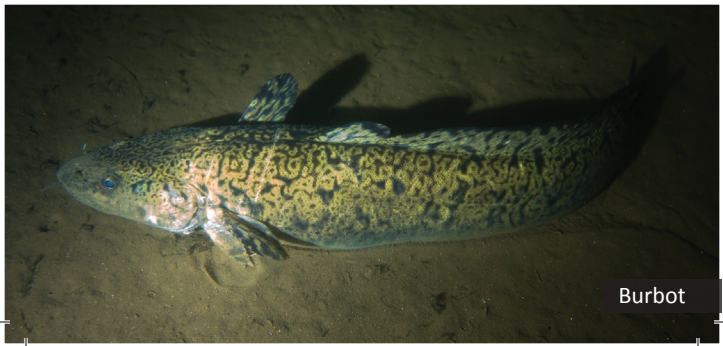
Where found: Present in the Fraser region. The American shad was introduced into California from eastern North America in the late nineteenth century and have since expanded their range. This species spawns in fresh water but spends most of its life in the sea. No self-sustaining runs of shad are known in BC but occasional individuals enter the lower Fraser River.

Description: Herrings and shads have a strongly compressed body shape and lack scales on the head. The belly has sharply pointed scales, creating a sawtooth edge along the keel. Adult American shads lack jaw teeth. They are blue-green above with silver sides and grow to 75cm in length.

Like other herrings, the American shad is primarily a plankton feeder, but also eats small shrimp and fish eggs.

Mature American shad enter coastal rivers in spring or early summer to spawn in sandy or pebbly shallows.

Pacific herring *Clupea pallasii* are found along BC's coast but do not enter fresh water.



Burbot

Cuskfishes Family *Lotidae*

Species in BC: Burbot *Lota lota*

Where found: Present in the Fraser, Columbia, Mackenzie, Yukon, North Coast, and Central Coast regions. Burbot live in large, cold rivers and lakes. In BC, its range in the southern part of the province is mostly limited to large, deep lakes where water temperatures remain cool.

Description: The Burbot has an eel-like body shape with a flattened head and wide mouth. A single barbel on its chin is the source of its name, which is derived from the Latin word *barba*, meaning beard. It is light brown to yellow in colour with dark brown to black mottling.

All members of the *Lotidae* family are marine, with the exception of the Burbot.

Burbot are primarily fish-eaters, preying on lamprey, whitefish, grayling, suckers, stickleback, trout, and perch.

Burbot require cold conditions for reproduction. Spawning season typically occurs between December and March, often under ice at frigid temperatures ranging between 1°C and 4°C.


Northern Pike

Pikes Family *Esocidae*

Species in BC: Northern Pike *Esox lucius* (Invasive in southern BC)

Where found: Present in the Mackenzie, Yukon, and North Coast regions. Northern pikes are found in the northern regions of BC, and are particularly abundant in shallow weedy lakes and slow flowing streams. They have been introduced into southern BC as stock for sport fishing and are spreading.

Description: Pike fishes get their name from their resemblance to the pole-weapon known as the pike. They are predatory fishes with elongated, torpedo-like bodies, pointed heads and sharp teeth.

The Northern pike has a green back and sides covered with bean-shaped yellow spots. Fins are yellow to reddish with black spots. They can grow to 142 cm in length.

The Northern pike is considered an aggressive species, especially while feeding and defending its territory. Larger pikes will steal food from smaller pikes, and will turn to cannibalism when food is scarce.

Northern pikes generally eat small fish and frogs, but large individuals will also prey on small mammals and birds.


Longnose Sucker


Mountain Sucker


White Sucker

Suckers Family *Catostomidae,* Genus *Catostomus*

Species in BC: Mountain Sucker *Catostomus platyrhynchus*, Largescale Sucker *Catostomus macrocheilus*, Bridgelip Sucker *Catostomus columbianus*, Longnose Sucker *Catostomus catostomus*, White Sucker *Catostomus commersoni*

Where found: Present in the Fraser, Columbia, Mackenzie, Yukon, North Coast, and Central Coast regions. In BC, some species are found in cooler water, at the bottom of medium to large lakes and rivers while others are found in the warmer waters of creeks and lake margins.

Description: Suckers in the genus *Catostomus* are characterized by cylindrical bodies, scaleless heads, and large, horizontal mouths that are located on the underside of the head. The mouth is surrounded by large, fleshy lips covered in raised bumps. Colouration is generally olive above with a pale belly.

Suckers specialize in feeding on the bottoms of lakes and rivers, where they suck up organic detritus and bottom-dwelling organisms, such as crustaceans and worms. However, they are also known to consume surface insects and other fish on occasion.

Northern Pikeminnow

Redside Shiner

Lake Chub

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Minnows and Carps Family *Cyprinidae*

Species in BC: Peamouth *Mylocheilus caurinus*, Redside Shiner *Richardsonius balteatus*, Northern Pikeminnow *Ptychocheilus oregonensis*, Brassy Minnow *Hybognathus hankinsoni*, Longnose Dace *Rhinichthys cataractae*, Leopard Dace *R. falcatus,* Speckled Dace *R. osculus*, Umatilla Dace *R. umatilla,* Chiselmouth *Acrocheilus alutaceus*, Lake Chub *Couesius plumbeus*, Flathead Chub *Platygobio gracilis*, Spottail shiner *Notropis hudsonius,* Emerald Shiner *N. atherinoides*, Redbelly Dace *Chrosomus eos*, Finescale Dace *C. neogaesus*, Northern Pearl Dace *Margariscus nachtriebi*, Fathead Minnow *Pimephales promelas* (Invasive), Common Carp *Cyprinus carpio* (Invasive), Goldfish *Carassius auratus* (Invasive), Tench *Tinca tinca* (Invasive)

Where found: Present in the Vancouver Island, Fraser, Columbia, Mackenzie, Yukon, North Coast, and Central Coast regions. Members of the *Cyprinidae* family can be found throughout most of BC, with more species diversity in the southern regions. Members are found in a wide variety of freshwater habitats including rivers, lakes, ponds, and ditches.

Description: *Cyprinidae* is the largest and most diverse fish family and the largest vertebrate animal family in general. There is a significant amount of variation in the physical characteristics among members of this family. However, they all lack a stomach and jaw teeth, though many have pharyngeal teeth to grind their food. All have scales on their bodies and lack true spines in their fins.

Among BC's native species of *Cypinidae*, size ranges from the Brassy minnow (10 cm in length) to the Northern pikeminnow (63 cm). The introduced Common carp can grow to 120 cm. As they lack the stomach organ, nutrients are absorbed as they pass through the intestines. Their diets are mainly vegetation and small invertebrates.

Pumpkinseed

Largemouth Bass

Black Crappie

Sunfishes and Basses Family *Centrarchidae*

Species in BC: Pumpkinseed *Lepomis gibbosus* (Invasive), Smallmouth Bass *Micropterus dolomieu* (Invasive), Largemouth Bass *Micropterus salmoides* (Invasive), Black Crappie *Pomoxis nigromaculatus* (Invasive), Bluegill Sunfish *Lepomis macrochirus* (Invasive)

Where found: Present in the Vancouver Island, Fraser, and Columbia regions. All members of the *Centrarchidae* family found in BC have been introduced from eastern North America. They prefer clear, slow-moving, warmer waters of ponds, lakes, and pools in rivers.

Most Sunfish and Bass are valued for sport fishing, and have been introduced in many areas outside their original ranges, becoming invasive species.

Description: Centrarchids are laterally compressed with scaly bodies and two dorsal fins which appear fused into one. However, the front area of the fin contains spines while the rear area does not. Body size of species found in BC varies from the Pumpkinseed, which grows to a length of 40 cm, to the Largemouth bass which grows to 97 cm.

The males of this family build nests in gravel or vegetation. After spawning, the male remains to guard the eggs and young.

Basses are known to out-compete other fish species through aggressive feeding and a varied diet which can include prey as large as 50% of the bass's body length or larger. Black crappies are very prolific reproducers and can out-compete native species. Pumpkinseeds are environmentally adaptable and their diet is flexible. They can reach high densities and compete with native fish.

Tench

Oriental Weatherfish

Goldfish

Invasive Species

Invasive fish species are fishes that have been introduced into BC from elsewhere in the world or a different waterway from their natural range in BC. An introduced species is considered invasive when it causes ecological or economic damage. Invasive species lack their native predators, allowing them to reproduce and spread quickly, with devastating consequences for native species and habitats. Below are a few examples of invasive species in BC and their impacts. Early detection is an important tool in preventing the spread of invasive species. Invasive species sightings can be reported via webform here: **bcinvasives.ca/take-action/report/**

Tench *Tinca tinca* have a robust body covered with scales. Colouring is olive-green to almost black, with dark fins and a red iris. They have one single barbell at each corner of the mouth. Typically 20-25 cm in length. Tench have been found in Osoyoos, Christina, Skaha, and Okanagan lakes along with the Pend d'Orielle system near Trail. IMPACTS: Tench compete with native fish species for food and habitat. Their feeding behaviour can affect water clarity.

Oriental weatherfish *Misgurnus anguillicaudatus* have a long eel-like body shape, up to 25 cm in length. They have a small mouth lined with six barbells and a distinct retractable spine below the eye. Colouring is yellow to brown with greenish-brown spots. Oriental weatherfish are present in the Lower Fraser Valley, specifically in the Alouette River system. IMPACTS: These fish are known carriers of pathogens and parasites that are harmful to native fish, birds, and humans. They compete with native fish species for food and lower aquatic insect diversity.

Goldfish *Carassius auratus* have large scales on their bodies, but lack scales on the head. Colour ranges from orange to olive-green to white. They can grow to 40 cm in length. Populations have established in the lower mainland, southern Interior and southern Vancouver Island. IMPACTS: Released by pet owners and escaping from ponds, Goldfish compete with native fish species for food and prey on native fish.

Terminology

Anadromous: Fishes that live in the sea as adults and migrate into fresh water to spawn.

Barbel: Fleshy, whisker-like projection on the head of some species. Usually found near the mouth, barbels are sensitive to touch and taste.

Benthic: Living on or near the bottom of a body of water.

Brackish: Water that is slightly salty, as is the mixture of river water and seawater in estuaries.

Cartilage: Material that forms the skeleton of young fishes and persists in adults of some species, while in others it is converted into bone.

Jaw teeth: Teeth located along the jaw.

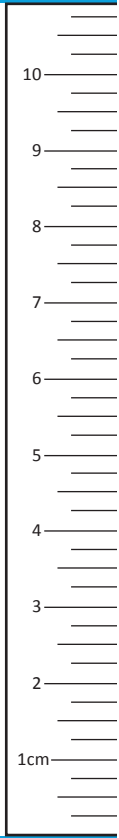
Pharyngeal teeth: Teeth in the throat of carps, minnows, suckers, and a number of other fish species otherwise lacking teeth.

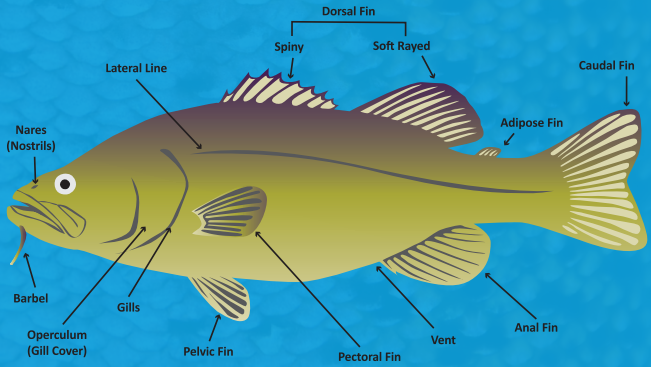
Plankton: Small and microscopic organisms drifting in the water; chiefly diatoms, protozoans, crustaceans, algae, and the eggs and larval stages of larger animals.

Riffle: Fast-flowing, shallow segment of a stream where the surface of the water breaks over rocks or debris.

Spawning: The process of releasing the eggs and sperm into water by aquatic animals.

Turbid: Water that is cloudy, opaque, or thick with suspended matter.





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