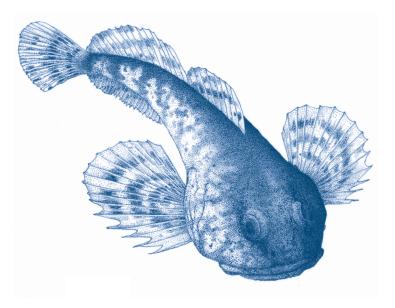
Yukon Freshwater Fishes

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Front cover illustration of a slimy sculpin by Lee Mennell. Fish illustrations used with permission from W.B. Scott and E.J. Crossman, 1973, Freshwater Fishes of Canada, Fisheries Research Board of Canada.

Family key on page 3 is adapted with permission from J.D. McPhail, 2007, Freshwater Fishes of British Columbia, University of Alberta Press.

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For more information on fish and other Yukon wildlife, visit Environment Yukon website www.env.gov.yk.ca/fishing

Wildlife Viewing Program Environment Yukon Box 2703 (V-5N) Whitehorse, Yukon Y1A 2C6

Phone 867-667-8291, Fax 867-393-6263 Toll free in Yukon 1-800-661-0408, ext. 8291 wildlife.viewing@gov.yk.ca www.wildlifeviewing.gov.yk.ca

For more information on salmon or fish habitat, visit Fisheries and Oceans Canada website www.pac.dfo-mpo.gc.ca

If you suspect illegal activity related to fish or other wildlife, please call the Turn In Poachers (T.I.P.) Hotline at 1-800-661-0525.

Special thanks to Fisheries and Oceans Canada for its contributions to this project.

A GUIDE TO YUKON FRESHWATER FISHES

This booklet introduces Yukoners and visitors to the 38 freshwater fish species in the territory. Although the number of fish found in Yukon is not large compared to other provinces and territories, fish are an important and integral part of Yukon's wilderness.

HOW TO USE THIS GUIDE

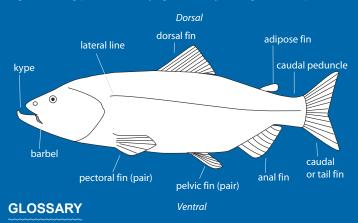
First, determine the fish family using the key on page 3. Once you know which one of the 10 families you are looking for, go to the correct page and look at the sketches for each species in that family. Species that are uncommon in, or introduced to, Yukon are noted. Short descriptions are accompanied by information on size, food, habitat, spawning behaviour, life history and, sometimes, fish facts. For example, did you know that lake trout can live 50 years or more?

A complete list of Yukon fish species is on page 33.

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FISH ANATOMY

A good starting point for identifying a fish is by looking for the adipose fin.



Adipose fin – a small fin composed of fatty tissue on the back between the dorsal and caudal fins

Anadromous – referring to fish that ascend rivers from the sea to spawn

Barbel – a whisker-like organ near the mouth of some fish

Caudal peduncle – the narrow part of a fish's body before the caudal fin

Concave – curved inward like a bowl (opposite of convex)

Convex – curved outward like the outside of a bowl (opposite of concave)

Dorsal – relating to the back or upper surface (opposite of ventral)

Estuary (estuarine) - places where freshwater rivers flow into the ocean

Kype – a pronounced curvature of the jaw in male Salmonidae

Lateral line – a sensory system on the side of the body

Morphology – the form and structure of an organism

Parr marks – distinctive vertical bars on the sides of some young Salmonidae species

Substrate – quality and type of material on the bottom of creeks, rivers and lakes

Ventral – relating to the front or lower surface (opposite of dorsal)

FISH FAMILIES (key adapted from McPhail, 2007)

Lampreys, Petromyzontidae (1 species) Not true fish; eel-like; lack bones, scales and paired fins; mouth is a large sucking/rasping disc (p.10)

© 100m

Minnows, Cyprinidae (7 species) Small fish; no adipose fin; no spiny fins (p.11)

Suckers, *Catostomidae (2 species)* Ventral large-lipped sucking mouth; no adipose fin (p.15)

Pikes, Esocidae (1 species)

Large, wide, flat, toothy mouth with protruding lower jaw; dorsal fin well back on body (p.16)

Smelts, Osmeridae (2 species)

Small, slender, silvery fish; adipose fin; lower jaw protrudes beyond upper (p.17)

Trout/Char/Salmon, Salmonidae (9 species) Subfamily Salmoninae Small scales; moderately compressed body; adipose fin; large mouth with teeth in jaw; young typically with parr marks (p.18)

Whitefish, Salmonidae (9 species) Subfamily Coregoninae Large scales; typically small mouthed; lacking teeth in jaws; young typically without parr marks (p.23)

Graylings, *Salmonidae (1 species)* Subfamily Thymallinae Very large dorsal fin; colourful **(p.28)**

Trout-Perches, *Percopsidae (1 species)* Small fish; adipose fin; large head; subterminal lower jaw (p.29)

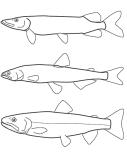
Cods, Gadidae (1 species)

Large head with terminal mouth; barbel on chin; two dorsal fins; small scales (p.30)

Sticklebacks, *Gasterosteidae (2 species)* Small fish; spines in front of dorsal fin; thin caudal peduncle; no adipose fin (**p.31**)

Sculpins, Cottidae (2 species)

Small fish; eyes on top of large head; body tapering to tail; 2 dorsal fins, first with spines; pelvic fins well forward (p.32)















FISH VIEWING ETIQUETTE

To be respectful of fish, their habitats and other wildlife, please follow these guidelines:

- Be considerate of fish. They are often seen when they are spawning or feeding; they have good eyesight and may be disturbed if they can see you.
- Please control your pets, refrain from throwing rocks and don't walk or drive through creeks or streams.
- Be considerate of habitat. Plants are an important part of fish habitat. Do not remove or damage vegetation.
- Dispose of your garbage properly. Take it with you, especially fishing line and other plastics. Garbage can be fatal to fish and other wildlife.
- Be considerate of other people. Respect private property and the activities of others.

STUDYING FISH HABITAT

Biologists collect information to better understand the aquatic environment. Studying substrate, water temperature, and oxygen and nutrient levels provide biologists with important data to understand how and why fish use different habitats.



Biologists collecting data



FISH HABITAT: MORE THAN JUST WATER

Fish use a wide variety of habitats at different stages of their lives and at different times of the year. Surrounding forests and wetlands provide food, and influence temperature, flow and quality of water. Healthy habitats are needed for fish to complete their life cycle. Just as one weak link in a chain will cause it to break, one lost habitat may cause a population collapse.

Spawning habitat is the place where eggs develop, sometimes for many months, before young fish emerge. In lakes, these areas can be clean cobble and gravel areas (preferred by lake trout) or shallow vegetated areas (preferred by northern pike).

Juvenile fish spend most of their time in rearing habitats, which are sheltered areas with good cover, plentiful food and low flow.

During long, cold Yukon winters many parts of lakes, streams and rivers freeze, making them inaccessible to fish. Under solid ice, water can become low in oxygen. Waters that remain ice-free and oxygen rich in winter are important over-wintering habitat.

After a long winter of low activity, fish spend much of the summer in feeding areas.

Fish habitat can be degraded or destroyed in many ways, including sedimentation, vegetation removal, pollution, channelization, dams, water withdrawal and/or change of flow. This damage can take place to the water or to the lands nearby.

> "Fish 'people' (qwani, Tlingit) are like other members of the animal world and must be properly treated if the supply is to continue." *My Old People Say*, p. 185

THE LEGACY OF ICE AND WATER

Glaciers dominated Yukon over the last three million years. Enormous lakes formed and drained. Massive floods from the outwash of glaciers ravaged downstream valleys.

Few fish species were able to survive these harsh conditions. Scientists think those that did were in waterbodies found near isolated nunataks, rocky peaks exposed above the ice surface, or in lakes in Beringia, the ice-free lands that connected the North American continent with Asia (see top map, next page).

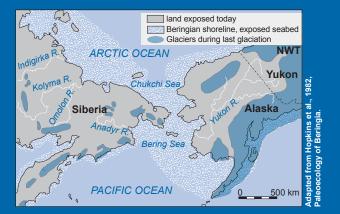
When the ice melted, some of these waterbodies stayed isolated, trapping species such as lake trout, lake whitefish and Arctic grayling. Others remained connected to river systems, which allowed fish species to migrate. In the Yukon River watershed, anadromous fish such as salmon and lamprey have persisted since Beringian times.

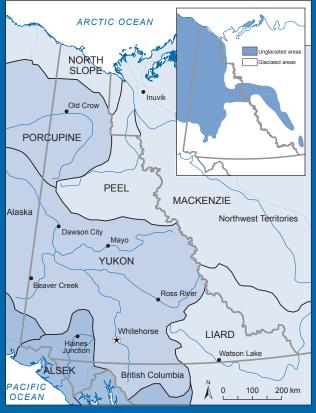
Other fish species colonized the watersheds from south of the ice sheets. For example, the Mackenzie River watershed includes many of the same species as the Yukon River. After the glaciers retreated, other fish arrived, such as Dolly Varden and bull trout, now widely found in the Peel and Liard rivers (Mackenzie drainage).

The Alsek River watershed's complex glacial history is reflected in its varied native fish species. Yukon River fish, as well as coastal species such as salmon, rainbow trout, cutthroat trout and Dolly Varden, are found in various parts of this watershed.

Colonization of Yukon streams continues today. Streams on the continental divide periodically change their course due to landslides or other factors, and allow fish species to move into new areas.

The top map opposite shows the ice-free continent of Beringia at the height of the last glaciation, about 20,000 years ago. The bottom map opposite shows the major watersheds in Yukon. Fish distributions are largely based on watersheds. Throughout this booklet, each fish species has a range map showing where the fish can be found.





FISH AT RISK

Healthy and diverse fish populations are key to maintaining strong ecosystems. Three Yukon fish species have recently been listed as species of Special Concern under the federal Species at Risk Act because they have characteristics that make them particularly sensitive to human activities or natural events.

Squanga whitefish, found only in Yukon, is a genetically and morphologically distinct subspecies of the lake whitefish (see page 24). The Bering cisco, in Canada, is only found in the Yukon River. The Dolly Varden population of the North Slope and Peel watersheds has a relatively small number of key spawning and overwintering locations.

For current information on the risk status of Yukon fish species, see the General Status of Species in Canada website at www.wildspecies.ca or the Committee on the Status of Endangered Wildlife in Canada website at www.cosewic.gc.ca.

FISH CONSERVATION

Biologists assess the status of fish species and populations to identify species of conservation concern and to come up with objectives and management plans to maintain healthy populations. There are currently plans to assess several species of Yukon fish, including populations of bull trout.

HOW YOU CAN HELP

You can contribute to science and conservation by

learning more about Yukon fish. Report unusual

sightings to the Wildlife Viewing Program:

wildlife.viewing@gov.yk.ca or by calling (867) 667-8291

FISH VIEWING

Viewing fish is a great way to connect with nature and can be a fun family activity. Yukon has many fish viewing opportunities. Some of the highlights include:

Whitehorse Rapids Fishway: Located near downtown Whitehorse, this facility includes an interpretive centre (open daily from June to early September) and the world's longest wooden fish ladder. The centre offers displays of local fish species, live exhibits, underwater viewing and information on the world's longest fish migration. During the summer, you can view fish through Yukon Energy's underwater webcam at www.yukonenergy.ca/community/multimedia/fishcam.

Wolf Creek Campground: Located at km 1408 of the Alaska Highway, Wolf Creek provides good fish viewing opportunities. Interpretive panels at the campground entrance describe the annual migration of chinook salmon. A fish ladder here assists fish movement under the Alaska Highway. The two-kilometre Yukon River Vista Trail follows Wolf Creek to an overlook of the Yukon River.

Tatchun Creek Campground: The nearby creek offers chinook salmon viewing from July to early September. Turn off the North Klondike Highway at km 382, just north of the Five Finger Rapid. Interpretive panels explain the importance of this site to the Little Salmon/Carmacks First Nation.

Fish can be seen in almost any Yukon lake, stream or river. Take a few minutes to look in clear water without moving and chances are you will see fish. Polarized sunglasses reduce glare from the water surface and allow you to see fish better.



Ophir Creek

LAMPREYS, Petromyzontidae

Not true fish; eel-like; lacks bones, scales and paired fins; mouth is a large sucking/rasping disc

Arctic Lamprey

 Eel-shaped; smooth, leathery skin; no scales, bones or paired fins



- · Mouth surrounded by circular sucking disc
- Two long, soft dorsal fins nearly continuous with each other and blending into the tail fin



SIZE: 10–35 cm, 100–200 g (anadromous), 50–100 g (freshwater)

FOOD: Juveniles – algae, organic matter and aquatic invertebrates; adults – parasitic, feed on blood and body fluids of other fish HABITAT: Juveniles – muddy margins and backwaters of rivers and lakes; adults – oceans or lakes, migrating through streams and rivers SPAWN: Spring/summer – gravel riffles and runs of clear streams, out of the main channel

LIFE HISTORY: Anadromous and freshwater forms

FISH FACTS: 1. Most Arctic lamprey are anadromous and parasitic. Non-parasitic lampreys (usually freshwater only) do not feed as adults. A freshwater, but parasitic, lamprey population is reported to exist and feed on whitefish in Ta'tla Mun, which drains into the Pelly River. 2. In the parasitic (usually anadromous) form, teeth are sharp and strongly developed; in the non-parasitic form, the teeth are blunt and weak.

DOCUMENTING YUKON FISH

Fisheries researchers have been collecting information on Yukon fish for years. Sampling nets have been set in many Yukon lakes to determine the presence and diversity of fish species. The results provide information on the overall health of these systems. In streams and rivers, nets are used in conjunction with other techniques like minnow trapping, angling and electrofishing to provide much needed information to make sound management decisions.





Minnow trap on Potato Creek

MINNOWS, Cyprinidae

Small fish; no adipose fin; no spiny fins

Lake Chub

- · Small fish with no adipose fin
- Blunt snout; terminal mouth
- Small, distinct barbel starting near the end of both upper jaws
- Adults are black, dark brown or green above, leaden silvery on the sides and pale silvery below with a dark band along lateral line, occasionally indistinct



SIZE: 8-12 cm, 50-100 g

FOOD: Aquatic and terrestrial insects, crustaceans and small fish

HABITAT: Lakes, rivers and streams, water clear to very muddy, usually close to the bottom SPAWN: Early summer – tributary streams and rivers

LIFE HISTORY: Freshwater

FISH FACT: Lake chub are widespread in Yukon and can often be seen in the outlets of hot springs, including the lower pools of Liard Hot Springs and Atlin Warm Springs.

Northern Pearl Dace – UNCOMMON

- Very similar in appearance to lake chub
- Dark on back with silvery sides; dark band along lateral line



- Dorsal fin originates about an eye diameter behind the pelvic fins origin (roughly equal in lake chub)
- Small barbels near the end of both upper jaws are indistinct (compare with lake chub)



SIZE: 10–15 cm, 10–40 g FOOD: Aquatic and terrestrial insects, crustaceans and small fish HABITAT: Sluggish streams and small lakes, often in stained water SPAWN: Spring/early summer – in clear water; spawning males develop bright coloured band (orange-red) on their flanks

LIFE HISTORY: Freshwater

FISH FACT: Males defend an area for spawning by chasing away other males, but welcoming females into the area.

Minnows

Flathead Chub – UNCOMMON

- Small, shark-like shape; head wide and flat with prominent barbel on each side of mouth
- · Large scales; no adipose fin; distinct sickle-shaped pectoral fin
- Colouration is dusky above and pale on underside; sides are silvery and sometimes have a dusky stripe



SIZE: 10–20 cm, 10–200 g FOOD: Aquatic and terrestrial insects, molluscs, small fish and vegetation HABITAT: Turbid moving waters of rivers and streams; rarely in clear or standing water SPAWN: Summer – in smaller streams LIFE HISTORY: Freshwater

FISH FACTS: 1. Flathead chub uses taste buds associated with its barbels to help identify food sources. **2.** Its streamlined shape and large fins make it well suited to the faster waters where it is usually found. **3.** Flathead chub have been known to eat small mammals.

Longnose Dace – UNCOMMON

• Ventrally flattened; long snout overhanging the mouth



- No adipose fin; rounded pectoral fins
- Fleshy connection between upper lip and snout; barbels at corners of jaws
- Colouration is olive/dark green to black above and light below; usually a darkish stripe along the lateral line, expanding to a spot on the tail



SIZE: 5-10 cm, 10-50 g

FOOD: Aquatic and terrestrial insects, fish eggs and larval fish

HABITAT: Bottom dweller, in running water, either clear or muddy

SPAWN: Spring – in riffles over large-gravel bottoms

LIFE HISTORY: Freshwater

FISH FACTS: 1. Its poorly developed swim bladder makes it less buoyant and, combined with its wedge-like head, helps it to remain stationary in swift currents. **2.** Most widely distributed minnow in North America.

Minnows

Northern Redbelly Dace – UNCOMMON

- · Very small scales
- Two dark lateral stripes
- Short mouth; viewed from below mouth ends just before eye (different from finescale dace)



SIZE: 4–6 cm, 5–10 g FOOD: Primarily algae HABITAT: Standing water, bogs, slow boggy streams and lakes, beaver ponds SPAWN: Spring/summer – in shallows over algae mass LIFE HISTORY: Freshwater

Finescale Dace – UNCOMMON

- Very small scales
- · Single dark lateral stripe
- Short mouth; viewed from below mouth ends just past front edge of eye (different from northern redbelly dace)



SIZE: 4–6 cm, 5–10 g FOOD: Primarily algae HABITAT: Stained water, bogs, slow boggy streams and shallow boggy lakes, beaver ponds SPAWN: Spring/summer – over algae/plants LIFE HISTORY: Freshwater

FISH FACTS: The brilliant red colouration of the belly in mature males of both species is characteristic through mid-summer in most areas. Northern redbelly dace and finescale dace often crossbreed with each other.

WHY ARE FISH SO SLIMY?

A substance called glyco-protein is produced by the outer cells and becomes slimy when mixed with water. Slime protects against parasites; some parasites cannot attach to the fish because the surface is too slippery while others suffocate in the slime. Slime also covers wounds and scrapes and helps the fish heal.













Minnows

Goldfish - INTRODUCED

- Small to moderately sized fish with deep body and large scales
- Single dorsal fin with 3–4 spines at leading edge
- ly the second seco
- Head with no scales, oversized eyes
- Often gold in aquariums, but quickly reverts to drab olive greenish brown in the wild; some patches of gold, white or black may persist



SIZE: 5–20 cm, 20–500 g FOOD: Aquatic insects, crustaceans, molluscs, fish eggs, small fish, plants and detritus HABITAT: Waterbodies with no or slow flow SPAWN: Early fall – shallow water in aquatic vegetation LIFE HISTORY: Freshwater

FISH FACTS: 1. Native to Asia, goldfish are hardy, making them popular for ornamental ponds and aquaria. Introduced populations exist in a pond near the Takhini Hot Springs despite efforts to eradicate them. Goldfish also exist near the Atlin Warm Springs.

INTRODUCED AND INVASIVE AQUATIC SPECIES

Yukon has many pristine and intact aquatic ecosystems. The delicate balance between native plant, fish and insect species can be easily upset by introduced alien species. While we don't have problems on the scale of zebra mussels in the Great Lakes, we are not immune.

Because of fish stocking programs in the past, non-native sticklebacks are now found in two pothole lakes, and rainbow trout are in the Yukon River near Whitehorse. The Reed Canary Grass planted along Yukon highways near wetlands may threaten fish habitats.

Unfortunately, pet goldfish were released into a pond near Whitehorse and have survived. The full effects of these "alien invasions" are unknown and still evolving.

Please make sure your activities don't upset the balance of our environment. Learn more at www.habitattitude.ca or www.env.gov.yk.ca/wildlifebiodiversity/invasivespecies.php.











SUCKERS, Catostomidae

Ventral large-lipped sucking mouth; no adipose fin

Longnose Sucker

Round to oval in cross-section



- 9–11 dorsal rays
- Pointed snout, sucker-like mouth behind tip of snout, with large protruding lips on ventral surface, no teeth
- Small scales (>90 on lateral line)
- Brown/tan/olive to black back and sides with cream or white underparts; spawning adults develop a vivid rose/red coloured stripe along the lateral line, males are much brighter



SIZE: 25-45 cm, 0.5-2.5 kg

FOOD: Aquatic insects, molluscs, crustaceans, fish eggs and vegetation

HABITAT: Warm, shallow, turbid rivers and lakes SPAWN: Spring, immediately after ice break-up – gravel bottoms of inlet and outlet streams/rivers and shallow lakes

LIFE HISTORY: Freshwater

White Sucker – UNCOMMON

- Round to oval in cross-section
- 11–12 dorsal rays



- Large scales (<75 on lateral line)
- Coppery brown to black back and sides with cream or white underparts; spawning adults may have a vivid rose/red coloured stripe along the lateral line



SIZE: 30-50 cm, 0.5-2.5 kg

FOOD: Aquatic insects, crustaceans and molluscs HABITAT: Warm, shallow, turbid rivers and lakes SPAWN: Spring, immediately after ice break-up – gravel bottoms of inlet and outlet streams/rivers and shallow lakes

LIFE HISTORY: Freshwater

FISH FACT: Longnose and white suckers are both born with mouths in the front. The young begin feeding on plankton and small invertebrates near the surface, then shift entirely to bottom feeding as they mature and their mouths move to the bottom of the head.



PIKES, Esocidae

Large, wide, flat, toothy mouth with protruding lower jaw; dorsal fin well back on body

Northern Pike

- Long, flat, "duck-like" snout; large mouth with many sharp teeth
- · Elongated body
- · Dorsal fin close to the caudal fin



• Dark green colour across the back, mottled down the sides with lighter spots, fading into a whitish belly



SIZE: 40-85 cm, 1-12 kg

FOOD: Aquatic insects, crustaceans, amphibians, fish, small mammals and birds

HABITAT: Shallow weedy areas close to shore, and calmer rivers; often wintering in deeper rivers and lakes

SPAWN: Spring – right after ice-out in shallow water with vegetation

LIFE HISTORY: Freshwater

FISH FACTS: 1. The most widely distributed freshwater fish in Canada. **2.** Usually solitary and highly territorial; except during spawning time, they rarely move more than 0.5 km. **3.** So far, the oldest pike aged in Yukon was a female in her 17th summer. **4.** Also known as slough shark and jackfish.



Northern pike, Wellesley Lake

RANGE MAPS HOLD RIDDLES

Looking at range maps, such as the one above for northern pike, leads fishery people to wonder why certain areas remain free of a fish species. This often leads to further study. In this case, the northern pike is not found upstream of Aberdeen Canyon on the Peel River, or in the headwaters of the Peel River watershed.

SMELTS, Osmeridae

Small, slender, silvery fish; adipose fin; lower jaw protrudes beyond upper jaw

Pond Smelt – UNCOMMON

- Small, slender, silvery fish
- Moderate size head and eyes; small mouth extending to mid-eye or less; protruding lower jaw; adipose fin



 Yellow-brown to olive-green on back; silver/white belly; snout and gill cover speckled



SIZE: 12–17 cm, 50–100 g FOOD: Invertebrates and algae HABITAT: Freshwater arctic ponds, lakes and streams, occasionally in brackish water SPAWN: Spring – streams and shallow ponds over bottoms covered in organic debris LIFE HISTORY: Freshwater

FISH FACT: Pond smelt are the only member of the smelt family to spend their entire life in freshwater.

(Arctic) Rainbow Smelt - UNCOMMON

- Small, slender, silvery fish
- Moderate size head and eyes; large mouth extending past eye; protruding lower jaw; adipose fin



 Light olive-green on the back and iridescent silver below; spawning males develop bumps on their scales



SIZE: 12–20 cm, 50–200 g FOOD: Crustaceans and small fish HABITAT: Ocean and coastal rivers only short distances into freshwater; often schools SPAWN: Spring – at night over stone/gravel bottoms in freshwater streams close to the coast LIFE HISTORY: Anadromous

FISH FACTS: 1. The common name "smelt" is derived from the distinctive smell of these fish. It is often described as similar to freshly cut cucumbers. **2.** Extremely sensitive to light; as a result, they tend to stay in mid-level or deep water, particularly during the day.

TROUT/CHAR/SALMON, Salmonidae SUBFAMILY SALMONINAE

Small scales; moderately compressed body; adipose fin; large mouth with teeth in jaw; young typically with parr marks

Rainbow Trout/Steelhead

- Black spots on the back, sides and dorsal and caudal fins
- Rounded snout; large mouth; lack of teeth at the base of the tongue
- · A distinct light pink to vivid red lateral stripe is usually visible
- · Steelhead are much larger than rainbow trout

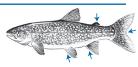


SIZE: 20–40 cm, 1.3–1.8 kg (rainbow); 50–75 cm, 3–10 kg (steelhead)
FOOD: Aquatic insects, molluscs, crustaceans, fish
HABITAT: Rainbow trout occupy lakes, rivers and streams, also introduced in pothole lakes (stocked); steelhead use marine waters and rivers
SPAWN: Spring - in flowing water
LIFE HISTORY: Freshwater (rainbow trout); anadromous (steelhead)

FISH FACTS: 1. Rainbow trout are short-lived and rarely live beyond age eight. **2.** Unlike other Pacific salmon, steelhead do not necessarily die after spawning; some migrate between the ocean and rivers to spawn several times

Lake Trout

More deeply forked tail than other char



- Varies from almost black to grayish or very light green and is sometimes almost silvery
- Heavily spotted with irregularly shaped light spots on back, sides and
 dorsal and caudal fins



•Small scales; white leading edges of the paired fins

SIZE: 40–100 cm, 1–20 kg FOOD: Aquatic insects, molluscs, crustaceans, leeches, fish eggs and fish HABITAT: Lakes, rarely in rivers SPAWN: Fall/early winter – lakes LIFE HISTORY: Freshwater

FISH FACTS: 1. Lake trout is the second largest North American salmonid, smaller only than chinook salmon. **2.** Can live 50 years or more. **3.** Not found in northeastern Beringia.





Trout/Char/Salmon

Dolly Varden

- Small head with large mouth
- Pale pink, lilac or red spots along sides are small and crowded
- · Spots are usually smaller in diameter than the pupil of the eye
- Spawning fish develop brighter spots, orange fins; males develop a kype
- · Small scales; white leading edges on the paired fins



SIZE: 30–60 cm, 0.1–2 kg FOOD: Aquatic insects, molluscs, crustaceans, leeches, fish eggs and fish HABITAT: Lakes, ocean, deep runs and pools of creeks and rivers, clear mountain streams and estuarine waters SPAWN: Fall – gravel bottom of streams and rivers

LIFE HISTORY: Anadromous and freshwater

FISH FACT: Due to their predation on fish eggs and fry, they were once blamed for declining populations of commercially valuable fish like sockeye salmon. This resulted in culling and bounty programs, including one during the 1930s in which Alaskans were paid 2½ cents for each Dolly Varden tail.

Bull Trout

- · Large flat head, large mouth and slender body
- · Small scales; white leading edges of the paired fins
- · Pale pink, lilac or red spots along sides are large and well spaced
- Spawning fish are less coloured than Dolly Varden and Arctic char; males develop a smaller kype



SIZE: 30–60 cm, 0.8–4 kg FOOD: Aquatic insects and small fish HABITAT: Cold streams and lakes SPAWN: Fall – gravel bottom; stream and river inlets/outlets LIFE HISTORY: Freshwater

FISH FACTS: 1. Bull trout and Dolly Varden are difficult to distinguish but occupy different geographic ranges. Bull trout were previously thought to be Dolly Varden. 2. Their voracious appetite and habit of congregating during spawning time make bull trout extremely susceptible to over harvest by anglers. 3. Its head is unusually large for salmonids, giving it its name.





Arctic Char

- Small, scattered light pink or red spots along silvery sides
- Largest spots are usually larger in diameter than the pupil of the eye



- · Small scales; white leading edges of the paired fins
- Deeply forked tail with a narrow caudal peduncle

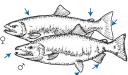


SIZE: 25–80 cm, 0.5–4.5 kg
FOOD: Aquatic insects, molluscs, crustaceans, leeches, fish eggs and fish
HABITAT: Native populations are only known from two lakes on the north slope; all other populations were introduced in pothole lakes (stocked)
SPAWN: Fall/early winter – near-shore shoals of lakes; gravel bottom; stream and rivers
LIFE HISTORY: Freshwater and anadromous

FISH FACTS: 1. Found in much of the circumpolar north with the most northerly distribution of any freshwater fish. **2.** Arctic char, as a food source, have been farmed in Canada since the early 1980s.

Chum Salmon

- · Pelvic and anal fins are white tipped
- · Shallow forked tail with pointed tips
- Fine black speckling on the upper sides an back; no spots on tail or fins



 Spawning fish are greenish to black with dark red mottling and/or greenish bars on their sides; males develop a kype and large teeth



SIZE: 50-80 cm, 3-7 kg

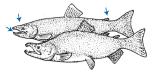
FOOD: Juveniles – aquatic insects and crustaceans; adults returning to spawn do not feed HABITAT: Young spend a short time in spawning areas, then move directly to the ocean SPAWN: Fall/early winter – only in areas where ground water discharges, or "upwells" into stream bottoms

LIFE HISTORY: Anadromous

FISH FACTS: 1. The most widely distributed Pacific salmon; spawn in rivers from California to Japan, north to the Arctic, east to the Mackenzie River. **2.** Commonly called "dog salmon," a name that refers both to their toothy appearance during spawning and to their past and present use as dog food. **3.** Most abundant salmon species in Yukon.

Kokanee/Sockeye Salmon

- Small eyes and small, weak teeth
- Shiny silver with no black spots on the dorsal and caudal fins, although there may be very fine black speckling on the back



 During spawn they have a dark to brilliant red body, with olive green head; males develop a kype, a hump behind head and more prominent teeth



SIZE: 25 – 40 cm, 0.3–0.9 kg (kokanee); 45–72 cm, 1.5–3 kg (sockeye).

FOOD: Aquatic insects and crustaceans; adult sockeye returning to spawn do not feed

HABITAT: Kokanee spend entire lifecycle in lakes. sockeye young live in lakes for 1–3 years before migrating out to sea, or migrate to sea quickly from rivers not associated with lakes; also introduced in pothole lakes (stocked)

SPAWN: Fall – lake-associated rivers and streams **LIFE HISTORY:** Freshwater (kokanee); anadromous (sockeye)

FISH FACTS: 1. Known for its rich flavour, high oil content and deep red flesh. 2. Third most abundant salmon species in Yukon.

Chinook Salmon

Small irregular black spots on back including dorsal and caudal fins



- Gum line of lower jaw is black
- · Spawning fish may be black, reddish or green; males develop a kype



SIZE: 51–120 cm, 5–14 kg

FOOD: Juveniles – terrestrial and aquatic insects and crustaceans; adults returning to spawn do not feed

HABITAT: Juveniles are usually found in moving water and swim up small streams to feed and overwinter; migrate to the ocean in May or June of their second year

SPAWN: Late summer and early fall – gravel and cobble beds of rivers and streams

LIFE HISTORY: Anadromous

FISH FACTS: 1. Largest of the Pacific salmon; largest known weight of 57 kg. 2. "Spawning dunes" are the result of salmon spawning in the same place for thousands of years. 3. Some males do not migrate to sea and may be less than 20 cm long when they spawn. 4. Other common names include king, spring, quinnat, blackmouth and tyee. 5. Second most abundant salmon species in Yukon.

Coho Salmon

- Leading edge of anal fin is usually white tipped; remaining fins often have an orange tint
- Black spots usually occur only on the upper back and upper lobe of the tail
- Gum line on the lower jaw not black
- Spawning fish develop dark backs and stomachs with a red stripe on the sides; spawning males are more colourful than females and develop a kype and large teeth



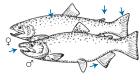
SIZE: 50-85 cm; 2-6 kg

FOOD: Juveniles – aquatic insects and small fish; adults returning to spawn do not feed HABITAT: Juveniles prefer still water habitats such as beaver ponds, side channels, or in and around debris and spend 1–4 years in freshwater SPAWN: Late fall to early winter – clear water habitats, often as isolated pairs LIFE HISTORY: Anadromous

FISH FACTS: 1. Coho salmon are very strong swimmers. In coastal streams they are usually found spawning far upstream of all other salmon. **2.** Coho salmon in the Porcupine River migrate under river ice to their spawning grounds. **3.** Least abundant salmon species in Yukon.



Chum salmon over cobble bottom, Mark Connor photo



WHITEFISH, Salmonidae SUBFAMILY COREGONINAE

Large scales; typically small mouthed; lacking teeth in jaw; young typically without parr marks

Least Cisco

- · Large scales and large eyes
- Lower jaw projects beyond the tip of the upper jaw



- · No teeth except a small cluster on the tongue
- · Elongated slender body; slight lateral compression
- Freshwater form has black tips only on the pelvic fins, with no spotting on the body or fins; silvery with pinkish iridescence on its sides
- Anadromous form has dark tips on all its fins, as well as dark spots on the head, back, dorsal and adipose fins



SIZE: 10-20 cm; 50-200 g

FOOD: Aquatic insects, molluscs, crustaceans and small fish

HABITAT: Lakes, rivers, tributary streams, and estuaries

SPAWN: Fall/early winter – in shallow, turbid water over gravel

LIFE HISTORY: Freshwater and anadromous

FISH FACTS: 1. Its scientific name sardinella means "small sardine." **2.** It closely resembles a saltwater herring, earning it the common nickname "lake herring." **3.** A jumbo form is found in some Yukon lakes, reaching 40 cm.

Bering Cisco – UNCOMMON

• In Canada, only found in the Yukon River near Dawson City



Similar to Arctic cisco except smaller



SIZE: 25-35 cm; 200-500 g

See Arctic cisco on next page for more information

Arctic Cisco – UNCOMMON

- Small scales
- Small eyes
- Terminal mouth: upper and lower iaw even: teeth only as small cluster on the tongue
- Pale to colourless pectoral, pelvic and anal fins
- Elongate body, somewhat deeper toward the front; slight lateral compression
- Similar to other ciscoes, particularly Bering cisco, although usually larger



SIZE: 30-40 cm; 200-600 g

FOOD: Aquatic insects, molluscs, crustaceans and small fish

→**●**

HABITAT: Coastal, near river mouths and brackish estuaries: makes extensive spawning migrations SPAWN: Fall - in fast water over gravel LIFE HISTORY: Anadromous and possibly freshwater

FISH FACTS: 1. Juveniles migrate to the Arctic coast, maturing in rivers of Yukon/Alaska's North Slope before returning to spawning grounds in the Mackenzie River system. 2. Bering and Arctic ciscoes are distinguished from least cisco by their broader bodies.

Lake Whitefish (includes Squanga form)

· Concave head with small mouth below an overhanging rounded snout



- Strongly compressed laterally
- · Adults have a fleshy bump at the shoulders, giving them their common nickname "humpback"
- · Caudal fin is deeply forked; fins may be black tipped
- Large, dark-edged scales



SIZE: 25–45 cm; 0.3–2.2 kg FOOD: Aquatic insects, molluscs, crustaceans, fish eggs and small fish HABITAT: Widely distributed from lakes to large rivers SPAWN: Fall/early winter - shallow water of lakes, rivers; gravel and/or sandy bottoms LIFE HISTORY: Freshwater

FISH FACTS: 1. The oldest lake whitefish aged in Yukon was 37 vears old and weighed 0.9 kilograms. 2. Lake whitefish spawn at night so very little is known about their spawning behaviour. 3. Northern populations grow much slower and live longer than southern populations.

Broad Whitefish

- Convex head; small mouth and very blunt overhanging snout
- Named after the shape of its body; thick, deeper in front and noticeably compressed laterally

Whitefish

- · Large adipose and deeply forked caudal fin
- Often with small, brown spots on the cheeks



SIZE: 35–50 cm, 0.5–3 kg FOOD: Aquatic insects, molluscs and crustaceans HABITAT: Rivers and streams; occasionally in lakes or brackish waters SPAWN: Fall/early winter – flowing water, probably under the ice

LIFE HISTORY: Freshwater and possibly anadromous

FISH FACTS: 1. During spawning time, males develop rows of hard white conical bumps on the scales. **2.** Very little is known of the life history of broad whitefish in Yukon; some river populations may be anadromous.

Pygmy Whitefish – UNCOMMON

- Cigar-shaped body; large scales
- Bluntly rounded snout; toothless
- Large eyes
- Fins are generally clear, occasionally whitish
- Dark, diffuse parr marks along lateral line and midline of back, may fade with adulthood



SIZE: 8-12 cm, 30-100 g

 $\ensuremath{\textbf{FOOD}}$: Aquatic insects, molluscs, crustaceans and fish eggs

HABITAT: Usually found in deeper water of lakes or in moderate to swift rivers and streams SPAWN: Fall – inlet streams or lakes LIFE HISTORY: Freshwater

FISH FACT: Due to their small size and the presence of parr marks, adults are often misidentified as juveniles of other whitefish species.











Whitefish

Round Whitefish

 Cigar-shaped body with a strongly forked tail



- Laterally pinched snout; upper jaw extends past lower jaw; small down-turned mouth without teeth
- · Small adipose fin; shorter than caudal peduncle depth
- Small scales

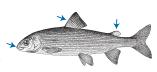


SIZE: 20–35 cm, 0.25–1 kg FOOD: Aquatic insects, molluscs, crustaceans, fish eggs and small fish HABITAT: Lakes, rivers and streams, preferring clear water and migrating up tributary streams SPAWN: Fall – in both lakes and rivers LIFE HISTORY: Freshwater

FISH FACTS: 1. Round whitefish are documented to spawn during the day, which is unusual, as most whitefish spawn at night. **2.** Its past reputation for waiting for the shad to spawn and eating their eggs earned the round whitefish its nickname "shad waiter" in New England.

Mountain Whitefish – UNCOMMON

- Cigar-shaped body; similar to round whitefish, but more compressed laterally
- Laterally pinched snout; upper jaw extends past lower jaw; small downturned mouth without teeth



- Large adipose fin, longer than caudal peduncle depth
- When dorsal fin is compressed, the front rays are shorter than back rays (opposite in lake whitefish)



SIZE: 20-30 cm, 0.25-1.5 kg

FOOD: Aquatic insects, molluscs, crustaceans, fish eggs and small fish HABITAT: Fast streams, with clear to silty water, deep pools and shallower lake waters SPAWN: Late fall – over gravel or cobble in river or stream riffles or along lake shores LIFE HISTORY: Freshwater

FISH FACT: In northern British Columbia, there is a form of mountain whitefish that has a turned up, elongated snout used for bottom foraging; these are known as the "Pinocchio" form.

Whitefish

Inconnu

 Large mouth, protruding lower jaw and numerous small teeth



- · Elongated body; large scales
- · Silvery colour with green, blue or brown on the back
- · Dorsal and caudal fins have dusky margins; other fins are pale



SIZE: 30–65 cm, 2–5 kg FOOD: Aquatic insects, crustaceans and fish HABITAT: Muddy rivers, lakes and estuaries SPAWN: Fall/early winter – tributary streams LIFE HISTORY: Freshwater and anadromous

FISH FACTS: 1. Dubbed the "poisson inconnu" (unknown fish) by explorer Alexander Mackenzie's voyageurs in the 19th century. 2. Largest and fastest growing whitefish species. 3. Its scientific name, leucichthys, means "narrow-toothed." 4. Other common names include coney and sheefish. 5. Very little is known of the life history of inconnu in Yukon; some river populations may be anadromous and migrate as much as 1,500 km to spawn.



FISH MOVEMENTS

Fish move for different reasons, such as to look for food or a place to spawn. Movements can be short distances ranging from a few metres, like slimy sculpin, or thousands of kilometres,

Lake trout with external tag

like chinook salmon. These movements reveal a great deal about important fish habitats and activities. One method of studying movements is to apply coded external tags to fish. These fish can then be identified when they are later captured by biologists or anglers. Another method involves equipping fish with a small tag that transmits a signal via radio.

GRAYLINGS, Salmonidae **SUBFAMILY THYMALLINAE** Very large dorsal fin; colourful

Arctic Grayling

- Oversized, sail-like dorsal fin
- Slender body, unusually large eyes and a small, squarish mouth



- Dark purplish-blue on the back with purplish grey sides and scattered black spots
- Dorsal fin can be edged in orange; pelvic fins often have orange or pink stripes



SIZE: 25–40 cm, 0.25–1 kg FOOD: Aquatic and terrestrial insects, molluscs, fish eggs and small fish HABITAT: Lakes, large rivers and small streams SPAWN: Spring – immediately after ice-out – flowing water in smaller gravel/rock-bottomed tributaries LIFE HISTORY: Freshwater

FISH FACTS: 1. Males have a larger dorsal fin than females; nearly reaching adipose fin when depressed. **2.** Large eyes are characteristic for sight feeders. **3.** They are an important early spring food source for First Nations.



lacBride Museum of Yukon History 2007-1-370 onated by the Taylor Family

"Fish camps mean togetherness, they're a method of communication. Everybody gets together, tells stories and has a job to do. Everyone works together – it's an important social event."

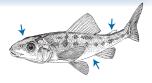
Ed Schultz, Little Salmon/Carmacks First Nation

TROUT-PERCHES, Percopsidae

Small fish; adipose fin; large head; subterminal lower jaw

Trout-perch – UNCOMMON

- · Small fish with a blunt, large head
- Large, rough scales
- Spiny dorsal, anal and pelvic fins
- Large pectoral fins extend beyond the start of the pelvic fins



- Silvery with a purplish tinge, often appearing partially transparent
- Three rows of small dark spots: along back, lateral line and between them



SIZE: 7.5–10 cm, 50–200 g

 $\ensuremath{\textbf{FOOD:}}\xspace$ Aquatic insects, crustaceans, molluscs and small fish

HABITAT: Quiet backwaters of large muddy rivers and along sandy lake beaches; typically in deeper waters during the day; shallower areas at night SPAWN: Spring/early summer – shallow rocky streams or sand/gravel in lake shallows

LIFE HISTORY: Freshwater

FISH FACTS: 1. Trout-perch refers to having the head and scales of a perch and the adipose fin of a trout. 2. Also known as a silver chub.



CODS, Gadidae

Large head with terminal mouth, barbel on chin, two dorsal fins, small scales

Burbot

30

- Eel-like, elongate body with two soft dorsal fins, tapering to a rounded tail
- Flattened head; large mouth; single barbel under the chin



- Olive-green to brown/black on back; sides with irregular pale blotches
- · Small, embedded scales



SIZE: 40–65 cm, 1–5 kg FOOD: Aquatic insects, molluscs, crustaceans, fish eggs and fish HABITAT: Deep lakes; eddies of large rivers and streams SPAWN: Winter/early spring – under the ice in shallow water LIFE HISTORY: Freshwater

FISH FACTS: 1. The only freshwater member of the cod family. 2. When cooked, burbot tastes very similar to lobster; often referred to as a "poor man's lobster." 3. One of very few fish that spawn under the ice. 4. Spawn in large writhing masses called "spawning balls." 5. Also known as ling cod.

FISH BIOLOGY

A complete understanding of different fish species involves understanding fish growth and reproduction. Here, biologists are measuring fish to record their lengths and weights. Some are more fully sampled to study age, sex, maturity and diet.



Slimy sculpin



STICKLEBACKS, Gasterosteidae

Small fish; spines in front of dorsal fin; thin caudal peduncle; no adipose fin; large head with projecting jaw and large lips

Threespine Stickleback - INTRODUCED

- · Narrowing of body before tail
- Freshwater form is partially covered by bony plates on sides instead of scales
- Three sharp spines (3rd often short)
- Spawning males develop bright red throat and belly; iridescent blue eyes



SIZE: 3-9 cm, 10-50 g

FOOD: Aquatic insects, crustaceans, aquatic worms, fish eggs and small fish HABITAT: Fresh, brackish and marine waters, with a preference for shallow bays and slow streams in freshwater SPAWN: Spring/summer – shallow, sandy areas

LIFE HISTORY: Anadromous and freshwater

FISH FACTS: Accidentally introduced into two pothole lakes in Yukon, likely originating with fish stockings in the 1970s.

Ninespine Stickleback – UNCOMMON

- 7–11 sharp, weak spines in front of a soft dorsal fin
- · Long, narrow caudal peduncle
- Clear fins
- Bony plates instead of scales along sides and belly
- Spawning males become jet black under the chin and along the belly and can develop white colouration in the pelvic fins

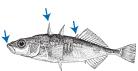


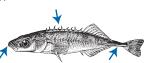
SIZE: 4–7 cm, 10–50 g FOOD: Aquatic insects, crustaceans, molluscs, fish eggs and small fish HABITAT: Shallow vegetated areas of lakes, ponds, slow areas in streams. Anadromous forms found in estuaries and near-shore marine waters

SPAWN: Early summer – freshwater, usually nesting in dense vegetation

LIFE HISTORY: Anadromous and freshwater

FISH FACTS: 1. The territorial male builds a nest from vegetation and debris, courts females to lay their eggs inside the nest, and guards the eggs, and then the young after hatching. **2.** Spines incline alternately left and right.





SCULPINS, Cottidae

Small fish; eyes on top of large head; body tapering to tail; two dorsal fins, first with spines; pelvic fins well forward

Slimy Sculpin

- Broad, bony head with bulging eyes on top, body tapers, compressed laterally toward tail
- Pelvic fins forward near pectoral fins, fanned; two dorsal fins: front is short, spiny and back is longer, soft rayed



SIZE: 5–10 cm, 10–30 g **FOOD:** Aquatic insects, crustaceans, fish eggs, and small fish

HABITAT: Rock- or cobble-bottomed streams or lakes; sometimes brackish waters

SPAWN: Spring – shallow water under rocks or woody debris

LIFE HISTORY: Freshwater

FISH FACTS: 1. Sculpin have no swim bladder, which would provide buoyancy, and is an awkward swimmer. As a result, the fish often seems to be hopping over the bottom rather than swimming. **2.** It moves only short distances over its lifetime.

Spoonhead Sculpin – UNCOMMON

- Two to four upward curving spines along the cheek, top one prominent
- Broad, flat, bony head, small eyes on top; body tapers; compressed laterally toward the tail



- Pelvic fins forward near pectoral fins, fanned; two dorsal fins: front is spiny and rear is soft-rayed
- Colouration is light brown above and white below, with darker bars on the back and sides



SIZE: 5–8 cm, 10–30 g

FOOD: Aquatic insects, crustaceans, aquatic worms

HABITAT: Rocky areas of swift creeks and rivers; shallow to very deep in large rivers and lakes SPAWN: Spring – after ice out – under rocks. LIFE HISTORY: Freshwater

FISH FACTS: 1. The spoonhead sculpin is wide ranging in other parts of Canada in a variety of habitats from streams to deep water lakes, but has only been found in moving water in British Columbia and Yukon. 2. Male sculpins make a nest under rocks into which females are courted and spawning takes place. Males defend this nest until after the eggs have hatched.

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*Accidental species that may be seen but are not regularly occurring and are not described in this booklet.



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