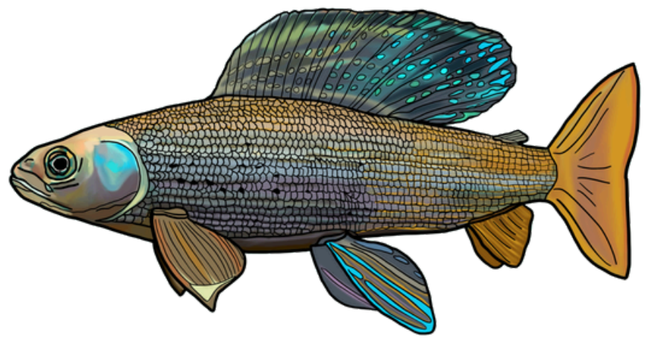
Arctic Grayling

Thymallus arcticus

August 2024

The Arctic Grayling (*T. arcticus)* is a **Salmonid** - from the trout/salmon/char family, from the cold waters of the Arctic and Pacific drainage basins in Canada (from Hudson Bay to Alaska) and central Alberta and B.C.

LIFE HISTORY



A mixture of lifestyles are employed by the Arctic Grayling; some populations are **fluvial -** live in rivers, spawn in rivers, **lacustrine -** live in lakes, spawn in lakes, and **adfluvial -** spawn in rivers (or tributary streams) but live in lakes.

Whatever their spawning preference, Arctic Grayling require shallow, moderate flow breeding grounds with fine, sandy substrate. Spawning takes place in Spring (May - June) during the daytime. Males are typically territorial and will court females with aggressive flashes of their ornamented dorsal fin. Mating pairs do not build nests into the substrate and after the release of milt and roe, the parents will leave the eggs unattended to mix with the river/lake bed and then return to larger rivers or to the lakes they normally inhabit.

Baby Arctic Grayling are born after a period of 13-18 days (2-3 weeks) and remain imbedded in the substrate until they have fully absorbed the yolk of their egg. After emerging (at a length of around 12-18mm), embryos will aggregate and create shoals near the rivers margins. Juveniles experience rapid growth for the first 2 years and feed on zooplankton and insect larvae until large enough and then feed primarily on insects, crustaceans, and occasionally smaller fish. The Arctic Grayling has a life span of around 18 years.

DISTRIBUTION

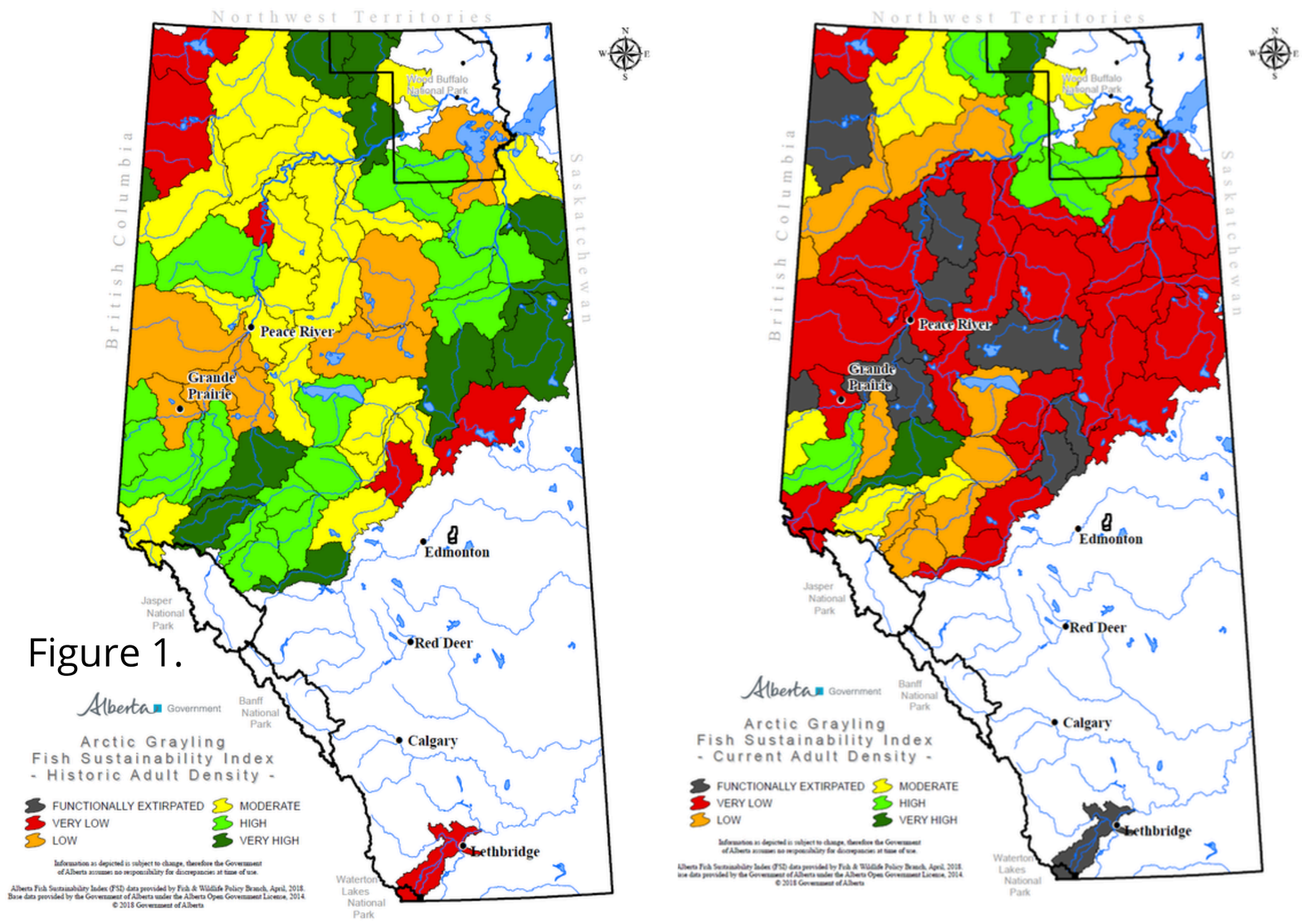


Figure 1.

THE ARCTIC GRAYLING LIFE STYLE

Size: Avg. Length: 30-40cm
Avg. Weight: 0.6-1.8lbs

Colouring: Large scales with black/brown spots on body and behind head. Flanks may have a pink iridescence.

Distinguishing features:
Dark, midlateral band between the pectoral and pelvic fins. Colourful, large dorsal sail-like fin

Diet: Crustaceans, insects, insect larvae, fish eggs, smaller fish

Habitat: Freshwater lakes, rivers, and streams, cold water preference

Learn more about Arctic Grayling and other species at risk, visit https://www.alberta.ca/fish-species-at-risk

In Alberta Arctic Grayling are primarily found in the Athabasca, Hay, and Peace River drainage systems, though they can sometimes be found in the Belly River system in southwest Alberta.

CONSERVATION

Worldwide the Arctic Grayling boasts a status of **Least Concern** (LC) according to the International Union for the Conservation of Nature (IUCN) with populations on the rise. In Alberta, however the Endangered Species Conservation Committee (ESCC) has deemed the Arctic Grayling a **Species of Special Concern** - a species that will become threatened without human intervention. Decades of over fishing, blocked migration routes, and transformed stream flow due to improper culvert placement/ maintenance, populations have decreased (see figure 1 for historic and modern distribution of Arctic Grayling in Alberta). In a 2015 update to the Status of the Arctic Grayling in Alberta, the Fish Sustainability Index (FSI) compared pop. numbers pre-1960 to recent (2004-2014), which indicated that populations had declined by nearly 70% since 1960 – the most likely culprit years of over fishing, as Arctic Grayling are a popular sport fish and very easy to capture.

There are a number of threats to the sustainability of Arctic Grayling populations in Alberta:

HARVESTING - Arctic Grayling from the Little Smoky River have been protected with catch-and-release regulations since the 1980s and these populations remain at a healthy status.

WATER QUALITY - Highly developed watersheds like the Beaverlodge and Tawatinaw Rivers have had declines in water quality and one abundant populations of Arctic Grayling have been lost.

LAND USE CHANGES (Roads, pipelines, clearcuts, seismic lines, etc.) - Changes to land can cause alterations to ground and surface water movement/flow, causing streams to experience more severe flooding and droughts. This reduction in habitat can have adverse effects on Arctic Grayling populations, as well as other wildlife. Fragmentation of habitat due to human activity such as culvert road crossings can affect long term sustainability of fish populations.

TEMPERATURE CHANGES - Increasing summer temperatures and climate change are reducing the thermally suitable habitats available and driving Arctic Grayling to higher elevations.

Habitat Disturbance

WHAT IS BEING DONE? & HOW TO GET INVOLVED

The Alberta Land-Use Framework (LUF) has a focus on Arctic Grayling as the primary fisheries indicator for planning and management in affected watersheds.

WATERCOURSE CROSSING PROGRAM (WCP) - put in place to address and repair the fragmentation of fish habitats in Alberta and land disturbance caused by human trails and water crossings.

The WCF takes steps for both monitoring, improving, and fixing damaged crossings/habitat with four steps: **Inspect, Report, Remediate, Watershed-based collaboration for priority remediation**. Check out the Alberta Watercourse Crossing Inventory (Ab WCI) App to help **Inspect** and **Report** watercourse crossings in your community.

Available on the App Store

GET IT ON Google Play

Athabasca WATERSHED COUNCIL

Alberta Conservation Association

FUN FACT!
The Arctic Grayling (*Thymallus arcticus*) shares its namesake with the Arctic Grayling (*Oeneis bore*) a butterfly from the Canadian Arctic.

TD Friends of the Environment Foundation

Alberta

REFERENCES:

Arctic grayling - Facts, Diet, Habitat & Pictures | Animalia.bio
Arctic grayling | Alberta.ca
Arctic Grayling FSI | Alberta.ca
www.alberta.ca/watercourse-crossing-program
Ingram, A.; Ibbotson, A.; Gallagher, M. "The Ecology and Management of the European Grayling Thymallus thymallus (Linnaeus)" (PDF). East Stoke, Wareham, U.K.: Institute of Freshwater Ecology. p. 3. Retrieved 2014-02-27.

LEARN MORE ABOUT PAST AND PRESENT INIATIVES:

freshwaterconservationcanada.org
www.ab-conservation.com/
www.alberta.ca/native-trout-recovery-program
poeschlab.ualberta.ca/