

Fluvarium Fact Sheets

Brown trout

Salmo trutta



The brown trout, native to Europe, western Asia and northern Africa, was introduced to North America in the 1860's. It is an important part of the recreational fishery in Newfoundland is the most common fish you will see through the windows of the fluvarium.

Description

Brown trout are golden brown or olive coloured with silvery sides and white undersides. Dark brown to black spots cover their head, back, fins and sides. Irregular red spots cover the sides. The adipose fin found just behind the dorsal fin is reddish orange. Mature males have a more flattened head than females and may have a hooked lower jaw called a **kype**.

Size

The average size of brown trout varies depending on habitat.

- **Sea-run or anadromous trout** (see Box 1) can be especially big, with the largest caught in Newfoundland weighing 13 kg (28.5 lb).
- Trout living in streams grow to about 1.8 kg (4 lb).
- Trout living lakes range in size from 2.3-3.2 kg (5-7 lb).

Lifespan

These fish generally live for about 6-7 years in the wild but individuals aged 11 and 13 years have been caught.

Habitat

Brown trout are usually found in cool (12-19 °C), medium to fast streams with silt free rocky bottoms and **pool** and **riffle** areas. Lake and sea-run populations are also

common. This species likes water with lots of dissolved oxygen and shade. They often hide in deep pools and under overhanging vegetation, in-stream debris, and undercut banks.

Range

The brown trout is native to Europe, western Asia and northern Africa. In Newfoundland its range includes the Avalon Peninsula, the Burin Peninsula, Trinity Bay and Bonavista Bay.

Box 1: Definitions

Alevin - A newly hatched fish that has a large yolk sac. It is a stage of trout and salmon development.

Fry - A young fish and a stage of trout and salmon development. In trout, fry have absorbed their yolk sac and have emerged from the gravel.

Parr - It is a stage of trout and salmon development where the fish is rapidly growing and has parr marks or dark vertical bars on its side.

Pool area - a deep or shallow part of the stream with slower water flow. Older, larger fish are generally found in deeper pools which provide shelter and shade. Shallow pools are good nursery habitats where you will find more young fish.

Redd - a shallow depression or spawning nest made by salmon or trout.

Riffle area - an area characterized by shallow, fast, well oxygenated, moving water, and contains a gravel bed. It is here that Brown trout migrate to spawn or lay eggs.

Sea-run or Anadromous - fish that live in the ocean but return to freshwater to reproduce.

Diet

These fish are carnivorous and catch their food by actively chasing it.

- Small, young trout eat aquatic and terrestrial insects, zooplankton and small bottom-dwelling invertebrates.

- Large trout prey on fish, worms, crustaceans, molluscs, frogs and rodents.

Reproduction and development

Brown trout spawn from early October to mid-December in Newfoundland. They choose spawning sites in spring-fed headwaters, at the head of a riffle or at the tail of a pool that have good water flow and a gravel substrate. Gravel substrate has spaces for the eggs to fall into reducing the chance they will be eaten by predators or other trout.

The female uses her tail to dig a nest or **redd** in the gravel. She and a male may spawn several times in one area, covering up the redd with gravel after each spawning. The female may also spawn with several different males of the spawning season.

An average sized female (2.3 kg, 5 lb) will produce about 3400 eggs, but only a small percentage (~ 1 %) will survive till maturity.

The eggs hatch around mid-April to mid-May but remain buried in the gravel. The young trout are called **alevin** at this stage and take nourishment from their large yolk sacs.

After the yolk sac has been mostly absorbed and the water has warmed, the young fish emerge the gravel as **fry**.

The fry quickly grow into **parr**, a stage of rapid growth where parr marks or dark vertical bars appear on their sides.

It takes 2-6 years to for the fish reach sexual maturity. Some adults may migrate to lakes, estuaries or the ocean for their adult lives, but all brown trout return to streams to spawn.

Predation

Brown trout are preyed upon by larger fish, various birds of prey, mink, otter and humans.

Relation to humans

This trout is recreationally fished around Newfoundland. It has become an increasingly popular game fish in Canada.

Interesting facts

- The Avalon Peninsula population is the most successful in Canada, producing exceptionally large fish at high densities.
- The brown trout densities of rivers and ponds in the St. John's area are the highest in the world.

- Newfoundland was the first place in Canada where brown trout were introduced around the 1860's.

- Ships involved in laying the first Trans Atlantic Cable carried trout in live wells for food on the voyage. Uneaten fish from these voyages were dumped near Heart's Content in Trinity Bay.

- In 1887, the St. John's Game Fish Protection Society built a fish hatchery on Long Pond to support the local game fishery.

- In 1888, the society brought about 118 000 Loch Leven brown trout eggs from Scotland to the Long Pond hatchery. About 10 000 eggs were handed over to the Newfoundland government each year to distribute around the island.

At The Suncor Energy Fluvarium

- Look out at our fish ladder from the second floor exhibits area. In the fall, watch brown trout jumping up the fish ladder as they head towards spawning areas.
- The Fluvarium level or the 'windows on a stream' area has a speculator panoramic view of brown trout as they move throughout their natural habitat.

Additional resources

Hustins, D. 2007. Brown trout and rainbow trout: A journey into Newfoundland waters. Tight Lines Publishers: St. John's, NL, Canada.

Scott, W.B. and M.G. Scott. 1988 Atlantic Fishes of Canada. Canadian Bulletin of Fisheries and Aquatic Sciences, 219: 731 p.

Smith, P. 2000. [Online] Sea-run brown trout fishing in Newfoundland Available: <http://flyangersonline.com/features/canada/can111.php>. (Accessed December 8, 2010).

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