Kootenay Lake Sport Fishing Update

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This bulletin provides an update on the status of fish populations in Kootenay Lake. In particular, it responds to concerns about:

- fewer large Gerrards in the sport fishery
- parasites

Where are the big Gerrards?

Kokanee - the primary food source

A key factor driving the growth and survival of Gerrard rainbow trout is the abundance of kokanee, which form their diet. Access to kokanee is especially important when Gerrards return to the lake in a weakened condition after spawning.

Although kokanee numbers have improved notably since the start of the Kootenay Lake fertilization program in 1992, fish of the size preferred by rainbows declined briefly around 2005. This temporary reduction in prey could now be showing up in the form of reduced numbers of larger, trophy-sized trout.

Gerrard spawning success

Past spawning conditions are another factor that could be contributing to reduced numbers of older fish. Several of the current age classes of adult rainbows hatched during years when Mobbs Creek debris torrents impacted spawning conditions at Gerrard. Mobbs Creek enters the Lardeau near the downstream end of the spawning area. In some years debris from this creek has covered part or all of the spawning grounds. This occurred most recently in 2000, 2001 and 2002.

For various reasons, it's difficult to predict how much impacts of this kind affect egg survival. It's possible that poor spawning success in some years may have influenced the numbers of older fish currently in the lake.

Should we worry about parasites?

Broad fish tapeworm

Kootenay Lake anglers have reported concerns about parasites in their rainbow trout catches for the past two years. These parasitic worms appear to be mainly larvae from a species known as the "broad fish tapeworm." The larvae of this tapeworm affect both freshwater and marine fishes, and are always present in the Kootenay Lake rainbow population at some level.

Tapeworm eggs are excreted in the feces of animals hosting the adult tapeworm (fish-eating birds or mammals). They develop in water into larvae that work their way through the food chain and eventually into fish.

Heavy infestations of these larval tapeworms could kill some fish. The flesh would appear soft and the fish would be sluggish. Fish most likely to be affected would be in an already weakened condition, such as older fish or post-spawning migrants that are just returning to the lake. This might influence the numbers of older, larger trout available in the fishery.

Why are there more parasites?

We don't know for sure why these parasites are more common at this time. The phenomenon is not just occurring in Kootenay Lake. Kokanee in Koocanusa Reservoir above Libby Dam, in the headwaters of the Kootenay system, are also known to be significantly affected, along with kokanee from Meadow Creek.

The broad distribution of the infestation suggests the possibility of a large scale influence, such as warmer water temperatures or changes to migratory bird populations carrying the adult tapeworm. Another factor might be the general increase in fish populations since nutrient restoration (lake fertilization) work commenced in 1992. Parasites are known to occur more commonly in denser host populations. However, note that the fertilization program is designed to compensate for nutrients trapped upstream by the Duncan and Libby dams, and does not raise nutrients beyond natural, pre-dam levels.

Parasite loads fluctuate. Although more trout appear to be affected by these parasites now than in the recent past, some anglers and retired fish biologists recall relatively high levels of parasites in past decades.

There is no practical way of controlling parasites in fish populations, but reductions should occur naturally over time. They may be hastened by factors such as colder winters or fluctuations in fish abundance. Only time will

tell. For anglers, the key consideration is care in the preparation of your catch prior to consumption.

Parasites and fish consumption

Parasites such as the broad fish tapeworm reach adult maturity in the intestinal tract of mammals and birds, commonly growing to lengths between one and two meters (three to seven feet). People can be affected if they eat improperly prepared fish.

To protect yourself and others:

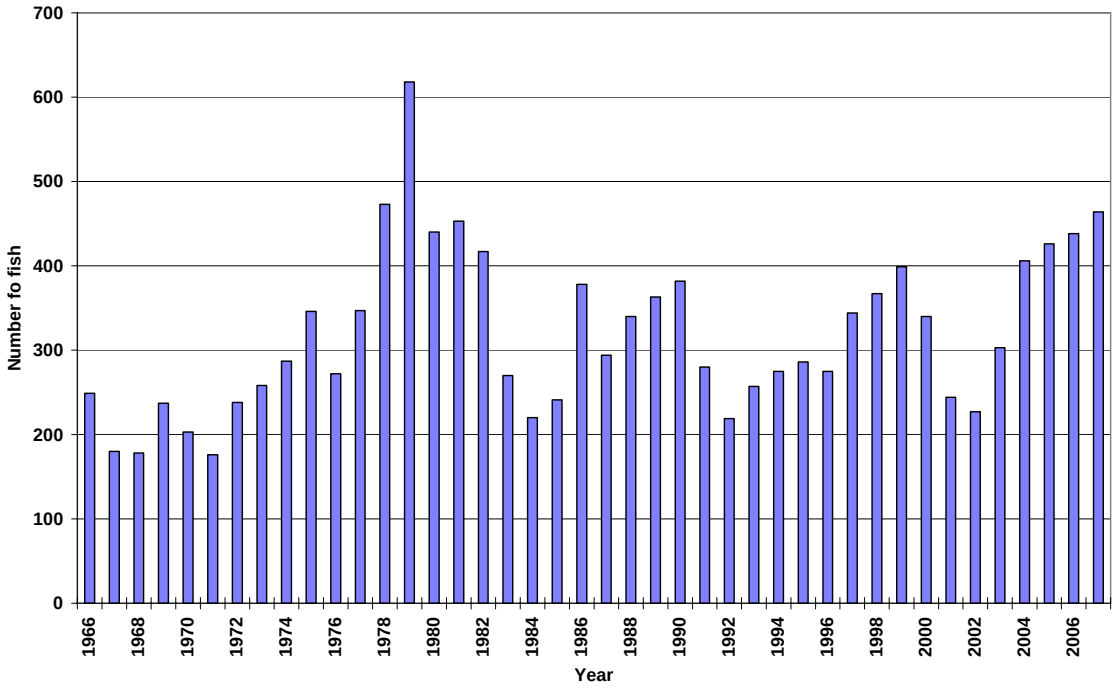
- **Cook your catch to an internal temperature of 70°C to kill the parasites.**
- Freezing to -20 °C for 7 days or -35 °C for 15 hours is another option, although most home freezers do not reach these low temperatures.
- Wash your hands well after handling fish.
- Clean and sanitize contact surfaces with hot soapy water, followed by a solution of 1 part bleach to 10 parts water.
- Do not feed infected raw fish to pets.

The future

The outlook for improved numbers of large Gerrard rainbow trout is good. Annual counts of spawners at Gerrard continue, and numbers have remained strong for the past several years. The peak count in 2007 was the third highest in the past four decades (see graph). Ongoing studies and improvements of the spawning area at Gerrard will reduce the effects of Mobbs Creek floods and improve egg-to-fry survival.

The kokanee population is rebuilding nicely following the recent brief downturn, and this will form a solid forage base for younger, smaller Gerrards currently making up the majority of the sport catch. Numbers will continue to fluctuate in the years to come, but trophy-sized fish should start to become more common in catches over the next year or two.

We wish to take this opportunity to thank Ronda Gates, our Gerrard guardian for 28 years, who is retiring and leaves a challenging vacancy for us to fill in 2008.



Peak annual counts of Gerrard rainbow trout spawners, 1966-2007.

Contacts

For further information, contact:

- Ministry of Environment (250-354-6333) for questions related to fisheries management
- for questions related to human health, B.C. Centre for Disease Control (www.bccdc.org and go to Prevention & Control / Food Protection), or Interior Health (250-365-4301)