

Kootenay Lake Kokanee Recovery Update

December 2021



Kokanee Update

Low kokanee survival rates in the main lake have reduced spawner numbers to less than 40,000 in recent years, with approximately 24,000 spawners counted in 2021. Abundant kokanee predators (i.e., Gerrard rainbow and bull trout) were the main driver in kokanee collapse and predation continues to keep kokanee survival below a level that supports quick recovery.

Despite the low kokanee spawner numbers in 2021, other kokanee population data suggests that previous actions have moved the balance in the right direction. In-lake surveys conducted this fall indicate there was a large population (approximately 17 million) of kokanee fry (i.e., the youngest age class) in Kootenay Lake. In addition, juvenile (i.e., age 1-2) kokanee survival improved significantly in 2021, which is likely attributed to continued reductions of rainbow trout and bull trout in Kootenay Lake. Survival for the youngest age class of kokanee continues to be low and we will therefore continue to deliver actions to improve kokanee survival.

Recovery Actions

Although the Ministry remains committed to kokanee stocking as an important component of recovery (approximately 1.1 million eggs were stocked in 2021), data suggests that stocking alone cannot achieve recovery. For example, greater than 8 million eggs were stocked in Meadow Creek in 2017, and only 15,000 spawners returned from these efforts to the Meadow Creek Spawning Channel in 2021. Therefore, it's important that stocking is coupled with predation reductions (i.e., increasing juvenile kokanee survival in the lake) to achieve recovery.

To date, most actions to reduce predation pressure have focused on increasing harvest through angling. The Ministry has liberalized Kootenay Lake angling regulations by increasing rainbow trout and bull trout quotas to ensure anglers are unrestricted in harvest, opening previously restricted areas to harvest, and exploring tools to encourage more angler participation. For example, the Kootenay Lake Angler Incentive Program launched in June 2020, is a collaborative effort led by the B.C. Wildlife Federation and the West Arm Outdoors Club. This program was highly successful at removing predators from Kootenay Lake (there were approximately 11,000 head returns in the 2020-2021 program). The Ministry thanks all anglers for their

contributions to the program. Improved in-lake survival for age 1-2 kokanee in the last year is likely due to the success of the program. However, the continued low in-lake survival for the youngest kokanee suggests that predator removal by angling alone has not resulted in kokanee recovery yet. This suggests that now is a critical time to reinforce previous actions around predator reductions, and that additional actions may be necessary.

Despite the actions to reduce predation pressure Kootenay Lake Gerrard rainbow trout and bull trout spawning populations have remained above levels of conservation concern. It takes very few spawners to saturate the available juvenile habitat in streams (i.e. there are usually excess spawners under normal abundance). This means that there is additional room to reduce kokanee predation without risking conservation of these populations.

The only other potentially effective category of actions that have not been implemented to date are to reduce spawners or juveniles far enough to reduce future Gerrard and Bull trout populations, as a means to reduce kokanee predation pressure. An expert advisory team reviewed the risks and benefits of such actions and suggested that benefits to kokanee recovery are likely, while risks are manageable if spawner reductions (or reductions of juvenile fish) are short-term (i.e., 1-2 years initially) and undertaken according to best management practices. Decisions will be made on these specific actions based on recommendations of our expert team, and in discussion with First Nations over the next month.

How can anglers help?

Data collected during the 2021-2022 Kootenay Lake Angler Incentive Program suggest that anglers are still releasing some of their catch. The Ministry urges anglers to continue to participate in this program and **harvest all of your catch** within daily quota limits to reinforce improved juvenile kokanee survival and continue to support low in-lake survival for the youngest kokanee.

Find more info:

<https://www.env.gov.bc.ca/kootenay/fsh/main/mainfish.htm>
