
Kokanee Shore-spawners
October 21, 2019
What Can We Do?

Friends of Kootenay Lake
Stewardship Society

"They Spawn Where"? Shoreline Spawning Kokanee

Spawning Kokanee

Kokanee (*Oncorhyncus nerka*) are sockeye salmon that spend their entire lives in freshwater. Within each lake, Kokanee populations have evolved and uniquely adapted to the lake they reside. In some cases within the same lake, there are more than one unique group of kokanee.

Shoreline Spawning Kokanee

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Most people are familiar with Kokanee spawning in some of the habitat-rich creek systems in our Kootenay region. However, few people are aware that shoreline spawning Kokanee are genetically unique and spawn in habitat found along the shoreline of Kootenay Lake. Shore-spawners in the West Arm of Kootenay Lake migrate to spawning beaches along the lake shoreline from mid September to late October and spawn more than a few weeks later than stream spawners.

These important shoreline spawners accounted for 3% of the total Kokanee that spawned in 2014 and an upwards of about 7-9% in 2009 and 2012.

In total there were 17 Kokanee shoreline spawning sites that have been identified in Kootenay Lake. Most of the sites are located on the shoreline of alluvial fans (shoreline sediment deposits) in the West Arm of Kootenay Lake. Find a map of shoreline spawner distribution sites at:
http://www.friendsofkootenaylake.ca/initiatives/lake-watchers-program/

From the FOKL website

In Fall – September to October

What does spawning look like?

From FOKL website

When the Fry Emerge in April

Shore-Spawning
Kokanee Salmon

J. Siderius

Do you have shore-spawners?

report a shore spawner
hot line at #***250- 354-6333***.

From FOKL website

Shore-spawner Surveys

- Kokanee Salmon shore-spawner redds were surveyed in the fall of 2018 by Fish and Wildlife on seven active shore-spawning sites on the west arm of Kootenay Lake.
- A total of 968 redds (nests) were found. This number indicates that there were 2,420 shore-spawners at these sites – producing perhaps 1000 eggs in each redd.
- In 2017 there were 1667 redds found at these sites.

Shore-spawner Surveys

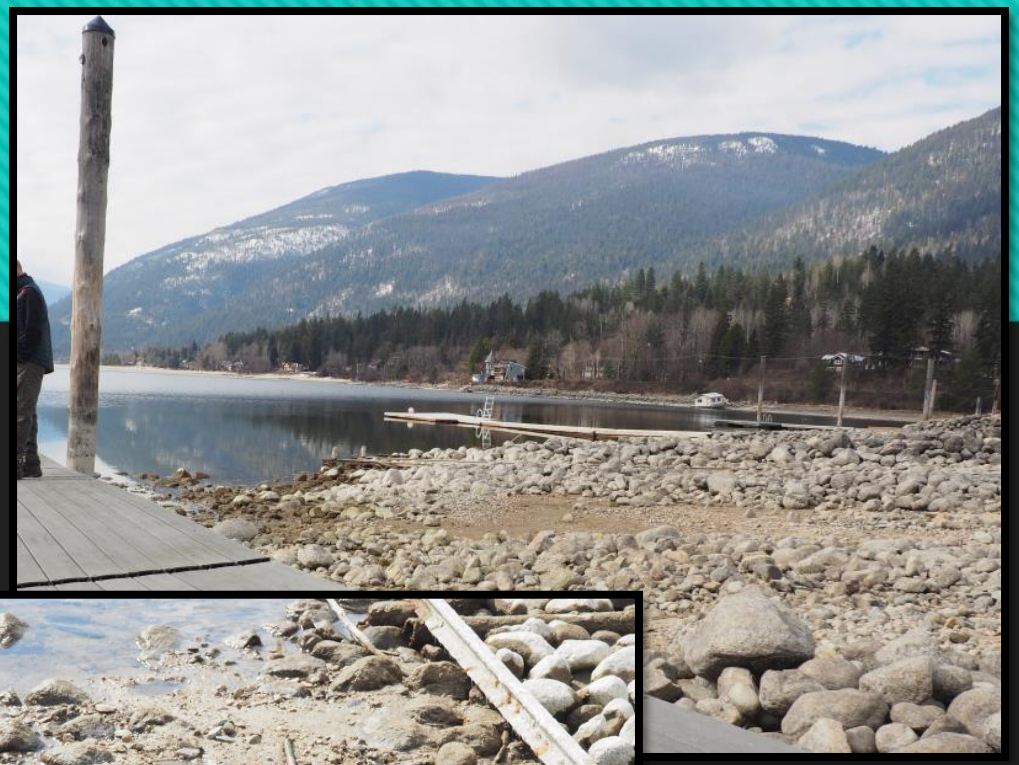
- In the spring of 2019, we checked on two shore-spawner sites on the West Arm of Kootenay Lake to see how the emerging fry were faring.

- On March 24 of 2019 we visited the redds and found the fry had no remains of the yolk pouch of the alevin (the stage that emerges from the egg and that becomes the fry) and were at swimup, ready to go to the lake. We found live fry in damp redds, some damp and some dried up redds. These redds were an average of 2.5 m from the lake.

- On a second visit to these redds on April 4 we found live fry, dead fry and dried up nests – all well above the water level. These fry in the videos cannot make it to the lake

High and Dry Redds

J. Siderius



April 2019 – low water levels six mile

J. Siderius

J. Siderius

April 2010 low water levels at McDonald's Landing

Submerged vs High and Dry

J. Siderius

What you can do:

Avoid shoreline disturbance to protect spawning areas.

- Do not create rock groynes by stacking rocks from the beach in a pile.
- Please leave large woody debris in place along the shoreline.
- Please leave or plant native vegetation to secure shoreline from erosion and sediment release.

"Report a Spawner" make note of the location and call 250-254-6333.

WHY?

"These areas can be adversely affected by excess sediment that can smother the eggs by reducing the flow of oxygenated water through the redd (nest). High stream/lake water temperatures and associated low dissolved oxygen levels can also reduce egg and juvenile development and survival."

Reminder to "Report a Spawner"

We are trying to learn more about where shoreline spawning is taking place. If you see shoreline spawning Kokanee call 250-354-6333 with the **location and number of fish spotted.**

From the FOKL website

What can you do?

- Maintain native vegetation and woody debris (logs and stumps) on the shore
  - Provides shelter for kokanee when they are spawning and when the fry are emerging when the water level accommodates.
  - Reduces wave action that can result in sedimentation and washing eggs away
- Don’t build groynes etc. on shoreline
  - digs up redds and may remove eggs and fry

Request to the Kootenay Lake Board of Control, Sept. 19, 2019

Our Request:
Is it possible to raise the water level in March (under the constraints of IJC curve) to allow out-migration of the Kokanee shore spawner fry on the West Arm of Kootenay Lake?

- High and dry redds in spring
- total of 968 redds (nests) were found. This number indicates that there were 2,420 shore-spawners at these sites – producing perhaps 1000 eggs in each redd. In 2017 there were 1667 redds found at these sites.
- Early Sept. 2019 seven tributaries on the West Arm were censussed and the numbers were very low in these tributaries. There were perhaps 5,000 spawners in 2019 at the Kokanee Creek spawning channel and 1900 at the Redfish spawning channel this summer.

- 2,420 shore spawning Kokanee Salmon are significant and important to the population of Kokanee on the West Arm.

- up to 70% of the redds of these shore spawning Kokanee Salmon are regularly de-watered in spring.

- The numbers of shore-spawners are important for several reasons. But also consider that water temperatures in the tributaries are increasing and that lake temperatures are slower to increase. The shore-spawners in the West Arm of Kootenay Lake may survive rising water temperatures due to climate change longer than the tributary spawners.

Do you have shore-spawners?

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Questions?

Channel Spawning Kokanee
J. Siderius