

## Coho Salmon In The Shawnigan Creek Watershed By Bernhard Juurlink

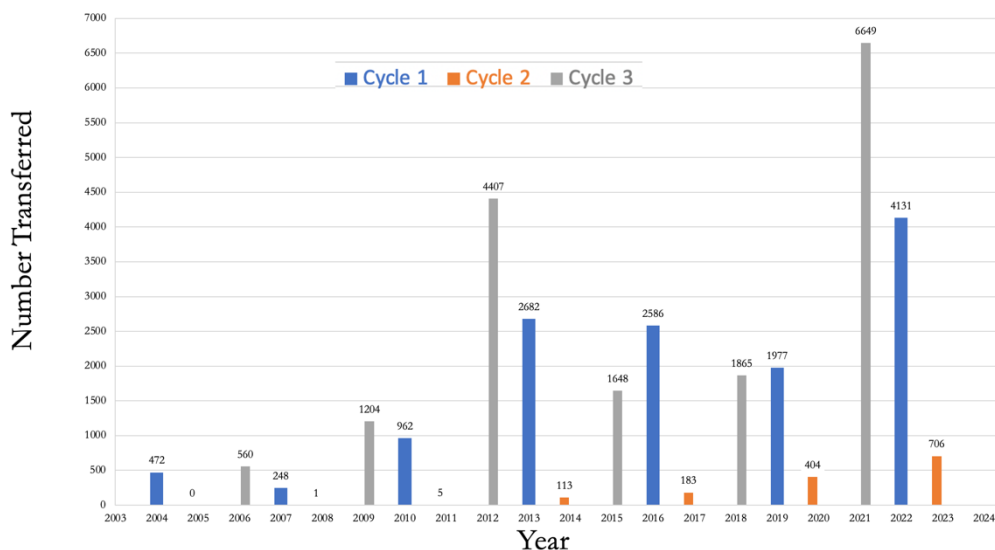
The Shawnigan Basin Society is looking for volunteers to help determine where Coho salmon spawn and develop in the streams that enter Shawnigan Lake. Volunteers of the Mill Bay and District Conservation Society has been transporting Coho salmon from the mouth of Lower Shawnigan Creek, past a number of major waterfalls, into the creek at Wilkinson and Shinrock bridges. Many of these salmon spawn in the creek but a number do swim into the lake and spawn in streams entering the lake. Except for sightings of Coho fry in a Taylor Park stream, we do not know where the Coho spawn and develop in the Shawnigan Lake watershed. In addition to Coho salmon, the Shawnigan Lake watershed also has Kokanee salmon, a landlocked form of Sockeye salmon.

Coho typically have a 3-year life cycle. In the fall female salmon scoop out shallow gravel beds, known as redds, in shallow parts of the stream where there is good water flow and lay their eggs in the gravel. Male salmon then fertilize the eggs. After 50 to 70 days, depending upon temperature, the eggs hatch giving rise to alevins that are dependent upon the yolk in their yolk sac for nutrition. After the yolk is consumed, they develop into fry, that initially stay close to their birth redd, and eat plankton and insects. The fry mature into smolts which make their way to the ocean the following spring.

Coho salmon typically have an average 3-year life cycle. In the first year the eggs hatch forming alevins that develop into fry and finally smolts that return to the sea in the spring of the second year. Most Coho return to spawn when they are 3-years old, a few males return at 2-years of age (Jacks) and a few males and females return at 4 or even 5-years of age. The graph below shows the number of adult Coho salmon transported to Lower Shawnigan Creek. Note the graph shows the numbers for each of the three 3-year cycles. The decline for a while in Cycle 1 and Cycle 3 may have been due to blockages in Lower Shawnigan Creek since the increasing numbers are



### Total Coho Transferred (Adults Only)



coincident with removing of these blockages. Cycle 3 has had a slow start but there has been a steady increase in returns, especially since 2014.

We are looking for volunteers to assist in this survey. The first step is to identify redds. Redds can be recognized by the gravel being cleaner and are comprised of finer and larger gravel. Redds are formed by all salmonid species. Rainbow and Cutthroat trout are present in the watershed but spawn in the spring while both Kokanee and Coho salmon spawn in the fall. The redds observed may belong to either species. The second step is to identify which species formed the redd. When the alevin develop into fry, Kokanee can be distinguished from Coho by their parr marks. Kokanee parr marks are mainly above the lateral line while the Coho parr marks cross the lateral line. It will be difficult to examine the parr marks without a good underwater camera. The Shawnigan Basin Society is putting in a grant application to obtain some fishing cameras to obtain clear shots of young fish to aid in the unequivocal identification of Coho and Kokanee at various stages of development. If anyone has such a fishing camera and wish to lend, or use, during the survey, it will be much appreciated.

Note, this survey will also provide important information not only where Coho spawn and develop but also where Kokanee spawn and develop.

The main streams of interest are Upper Shawnigan Creek, especially in the vicinity of the lake, McGee Creek and West Arm Creek and its tributaries. However, observations of smaller streams would also be much appreciated.