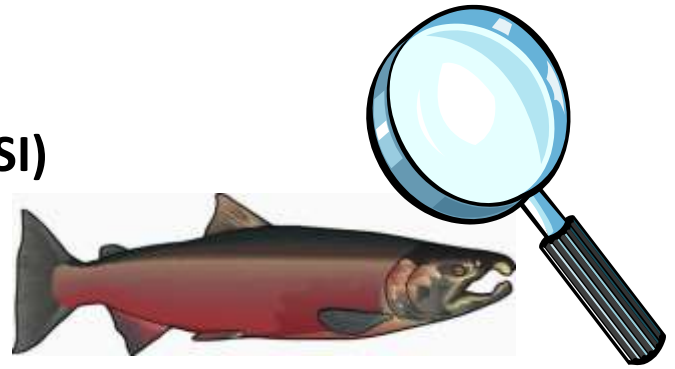


Findings from the **Miller-Walker Community Salmon Investigation (CSI) for Highline – 2015 Fall Season**



Why Count Salmon?

Citizen CSI volunteers survey Miller and Walker Creeks, located west of Sea-Tac Airport in Normandy Park, every fall to search for live and dead salmon. They are looking for scientific facts to answer two questions about the health of our local streams:

1. How many and what types of salmon return to spawn every year in Miller and Walker Creeks?
2. What portion of the coho salmon which return to spawn are killed by polluted runoff – known as pre-spawn mortality – and is pollution prevention working?

How Were Salmon Counted?

- In 2015, small teams of 2-4 volunteers walked over a mile of Miller and Walker creeks (see map) every day possible from October 8 until December 24 to count live and dead adult fish.
- The 31 volunteers were trained in salmon identification, and given data sheets, maps, and salmon necropsy tools.
- Volunteers did not survey on 12 days because the rain caused the creeks to rise and turn brown – it would have been unsafe and they would not have been able to see fish!
- Survey teams identified live salmon, and if they found dead salmon, they did a necropsy by opening their bellies to find out the sex and whether they spawned. Dead fish were marked by cutting off tails so they were only counted once.

How Many Fish Were Seen?

- Citizen scientists counted 145 live fish, but only identified 37 coho and 64 chum. (See Figure 1 to compare this to previous years.)
- Because they surveyed almost every day, and fish are usually in the stream for several days, we estimated the actual number of spawners (or escapement) was about 24 coho and 43 chum (see Figure 2).
- They found 19 dead coho and 38 dead chum.



Other CSI Findings

- Fewer salmon than normal returned to many creeks around Puget Sound in 2015 – many people think this could be in part due to “the blob” of warm water in the Pacific Ocean, and less forage fish for salmon to eat.

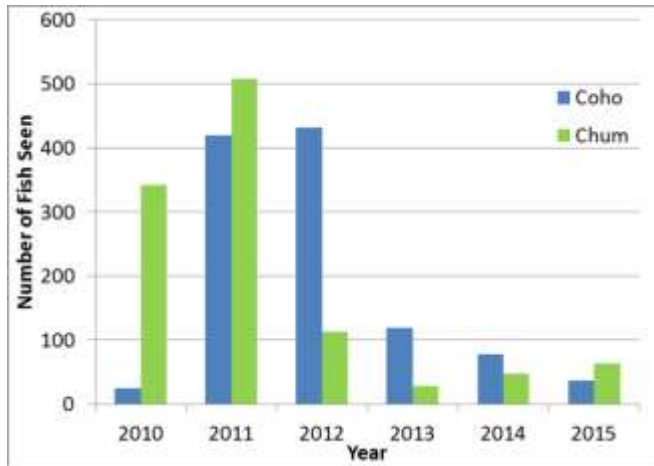


Figure 2. Number of live coho and chum salmon seen by CSI surveyors each fall between the start of surveys in 2010 through 2015.

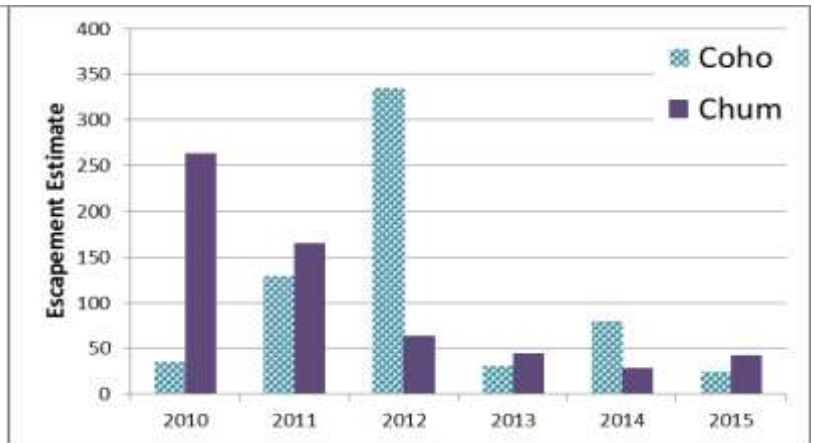


Figure 1. Estimated spawning population based on the number of live fish seen along the 1.2 miles surveyed each year. These numbers are for comparison between years, and do not represent the actual number of fish that spawned.

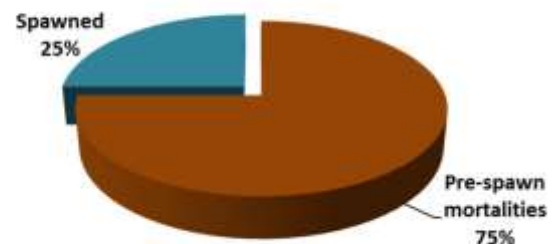
- 58% of coho carcasses showed evidence of predation – being bitten or attacked by wildlife. 92% of chum carcasses showed evidence of predation.
- December was the rainiest month of the season, with 11 inches of rain – over twice the normal amount!
- Coho were about 4-6 inches smaller in length than normal, but chum were about the same size as most years since 2010, based on dead fish measurements.

How Many Coho Died Before Spawning, and What Can We Do About It?

75% of coho died before spawning in Miller Creek in 2015, similar to previous years.

- Pre-spawn mortality is caused by polluted runoff, such as runoff from roads, parking lots, and lawns. Coho pre-spawn mortality is less than 1% in non-urban watersheds.
- Carcasses were only found in Miller Creek in 2015 – usually, some are also found in Walker Creek.
- Filtering runoff through soil mixed with compost, such as through a rain garden, makes it non-toxic to salmon.

Miller and Walker Creeks – 3/4 females =
75% Pre-spawn Mortality



To learn about volunteering, building your own rain garden, and to find out what your local jurisdiction is doing to clean up runoff and protect salmon, contact your Miller-Walker Basin

Steward, Elissa Ostergaard, at (206) 477-4792 or elissa.ostergaard@kingcounty.gov

The Miller-Walker Basin Community Salmon Investigation (CSI) program is funded by:



Miller-Walker Basin Local partners working together for clean water and healthy streams