Fish Trapping Operations – South Santiam Hatchery – FAFF – 2019

8/30 – I had just returned from being on vacation all week. As of this date we had only collected 177 Chinook total. There were an estimated 25-40 adults in the Foster Trap, I observed a respectable number of fish in the step below the weir on the pre-sort pool on this day, they were struggling against the current and failing when attempting to jump the weir. I reduced the presort pool diffuser valves by almost 50% and adjusted the weir height accordingly and immediately had several fish move over the weir into the presort pool. I then walked down to the main ladder entrance and noticed a school of Chinook adults holding just off to the side of the ladder effluent. I then worked with the operator to lower the entrance gate, close the side entrance, turn off the AWS pumps, and divert the warmer upper intake water from the side entrance to the main where the fish were holding. My logic was to create an area where the water temp would be in between the ladder and river and give the fish a chance to temper, vs. having to immediately commit to colder ladder flow.

9/1 – Over the last two evenings the number of fish in the presort pool was higher each night. I was working alone over the holiday weekend and did not have sufficient help to adequately work the trap and move un-marked fish up stream so I let them accumulate. I observed very few fish holding below the bar grates at the effluent of the hatchery ladder at this point.

9/1 – 8:00 a.m. – The operator opened a spill gate, allowing surface water to mix in the tailrace. I checked the USGS site late morning and it had increased the river temp by 4 degrees F. It was 51 and was now 55. Just before noon I started hearing fish jumping into the grating covering the old ladder opening. The old holding pond is now a rearing pond with 300,000 ChS juveniles and has 8 cfs flowing through it. I investigated and saw an estimated 100 plus Chinook adults holding below the grating. I called in an employee who assisted in removing the grating. Fish immediately started entering the old ladder. They were able to exit as well so the next day we fabricated a weir.

I also noticed some additional movement into the Foster trap but many of the adults there had already swam in prior to the spill operation.

Now that there was spill in the tailrace the operator and I felt we should open the side entrance and turn on two AWS pumps to add some of the warmer water back into the lower end of the ladder.

9/4 – Staff returned from the long weekend. We sorted fish from both the hatchery ladder and FAFF. Prior to the 8/30 we had 177 ChS adults at Foster, in the three weeks that followed we have collected nearly 750 additional adults, 458 of those were during that first week.

The old ladder was in operation from 9/1 thru 9/16 when fish were no longer congregating at the outflow. In that time we trapped 302 adults, nearly 32% of our over all return.

Observations

- The reduced ladder flow made it easier for fish near spawning age to enter the ladder and pre-sort pool.
- Increased water temperatures increased fish movement.
- Once the fish started moving, a large percentage were attracted to the flow coming out of the juvenile fish pond. The water supply for that pond is fed solely off the hatcheries lower intake which is also 50 degrees F.
- Removing adult fish from the hatchery ladder is very labor intensive and currently has to be done with a dip net one or two fish at a time depending on size. It is hard on fish and staff. It would be especially hard to hold these fish without a significant increase in mortality if they were handled this way in May or June.