



Monthly Hatchery Report March/April, 2016



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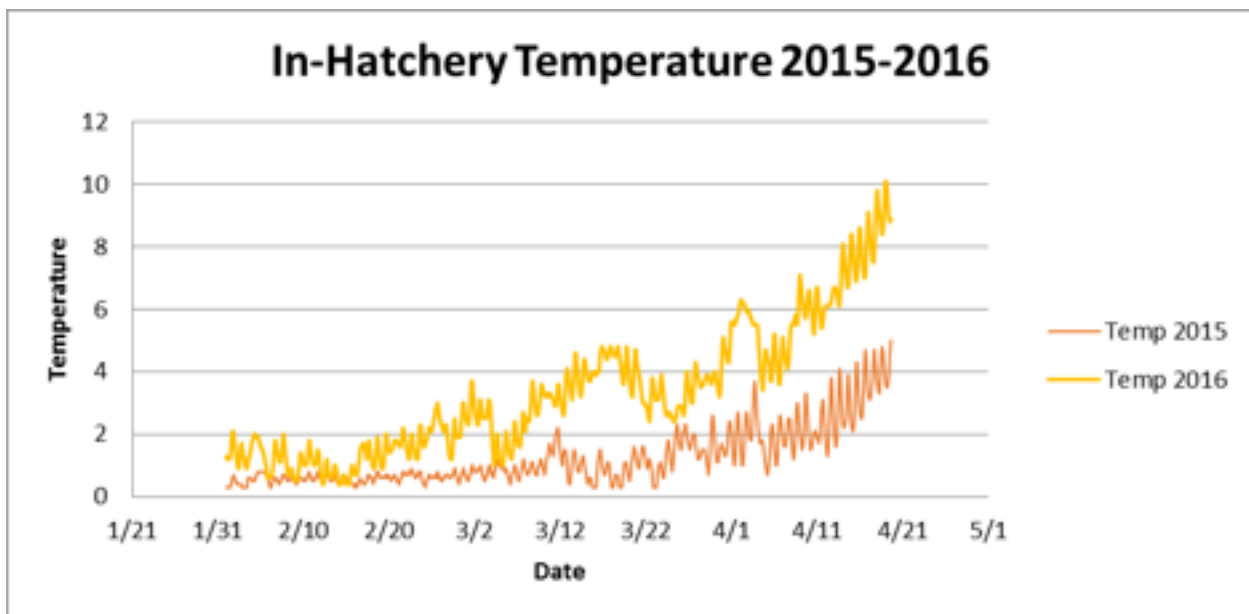
A report of monthly activities and events

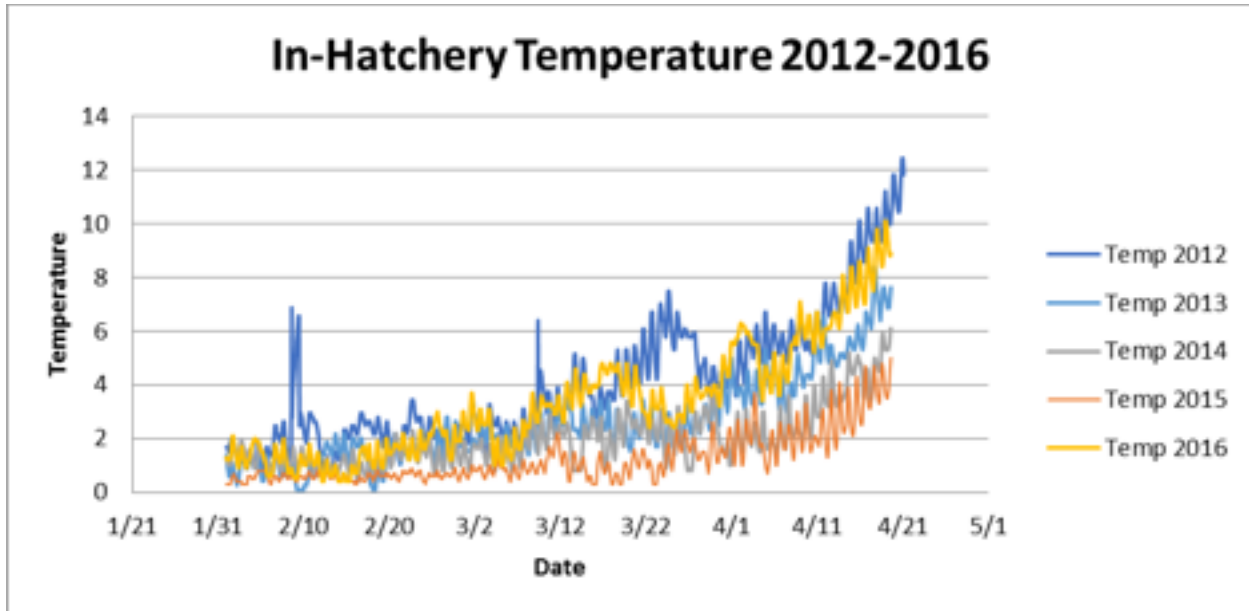
A Report on activities from the *Peter Gray Hatchery*, East Machias, ME.



Spring has arrived in Downeast Maine. What little snow we had is now gone, temperatures are warming up, and with that, all of our salmon eggs have hatched. Spring is a busy time here in the hatchery as we get ready for emergence, and transition from incubating alevin, to rearing fry.

Temperatures have been quite warm this season as you can see in the graph below. One graph shows in-hatchery temperature for 2015 and 2016, and another with temperatures from 2012 through 2016. Though temperatures are much warmer than last year, we are seeing a similar trend as in 2012. We had a very mild winter in 2012, and a very early spring. I would think we will see fry emerging from their incubation boxes within the next two weeks.

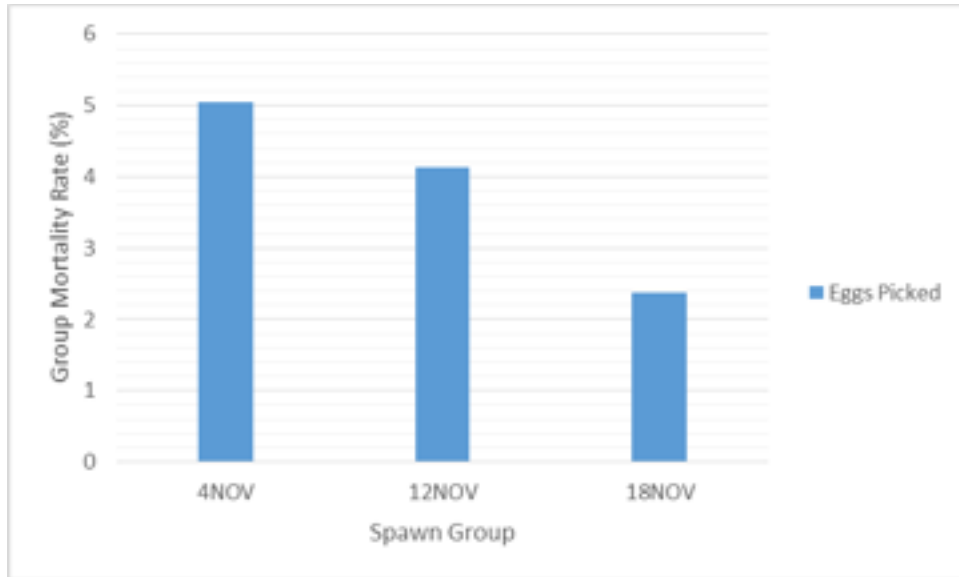




All of our fish were transferred to their incubation boxes by the first week in April. Below is a table showing development based on a development index. 100% development indicates first feeding, or emergence. With some of our fish at 86% development, we should be seeing them begin to emerge sometime the first week of May.

Date	April 21 st 2015	April 21 st 2016
Max Development	67.13%	86.11%
Min Development	56.17%	72.63%
Average Development	60.95%	78.8%

Egg survival was pretty good this year. To date we have had a 4.1% mortality rate since eggs were laid down at EMARC in January. Below is a graph showing the mortality rate of each take group. These groups are specified at the Craig Brook National Fish Hatchery and signify groups of fish that were spawned on certain days (November 4th, November 12th, and November 18th).



Smolt traps were deployed on April 14th this year. We have not captured any smolt so far, but that is to be expected this early in the season. Smolt traps have been deployed statewide, and I have only heard of one site with any captures so far. The smolt traps are a rotary screw style trap, as shown in the picture below. As smolts migrate downstream, they are captured in the screw portion of the trap and are funneled into a trap box at the end. Each morning, we check the traps with staff from the Department of Marine Resources. When smolts are captured they are weighed, measured, scale samples are taken, and they are given a small mark on their tail fin. Once this is done, the fish are released about a kilometer upstream. We can then estimate how efficient our traps are fishing based on how many of the released smolts we recapture. If we recapture 30% of what we released upstream, we can estimate our traps are fishing with a 30% efficiency. So, if we capture 100 fish in the trap in total, we can estimate that is 30% of the population, giving us a population size of 333 fish.



Rotary Screw Smolt Traps

We have been working with eight schools with the Salmon in the Schools program. This month we have made a second visit to each school to talk about egg and alevin incubation in the wild vs. the hatchery. This March visit is always a good opportunity to get the students to the hatchery at EMARC to see what we are doing here and get them interested in, and excited about, our work.