



Monthly Hatchery Report

June, 2015

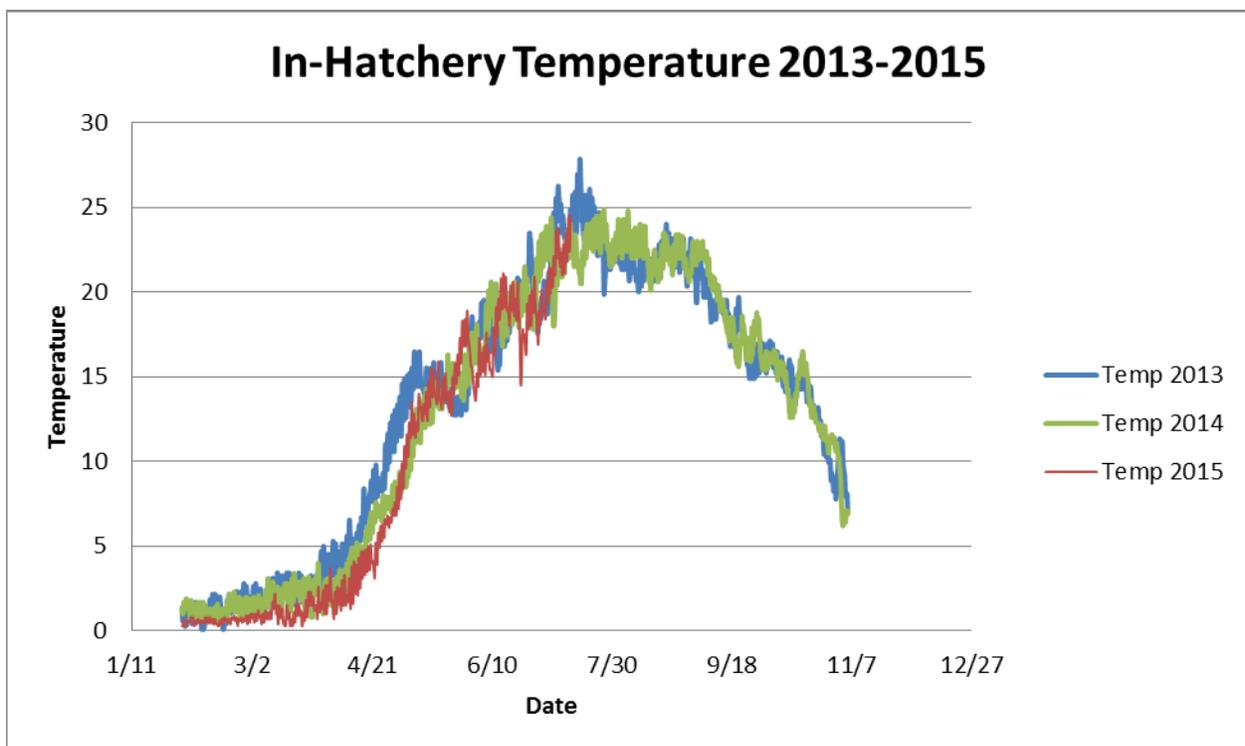


Report by: Kyle Winslow; Hatchery Manager

A report of monthly activities and events

With spring coming to an end and summer finally on its way, temperatures in the hatchery are starting to get a bit warmer. The fish are doing well, though we have had increased mortalities through the month of June. The visitor's center is also starting to get a little busier as summer traffic increases.

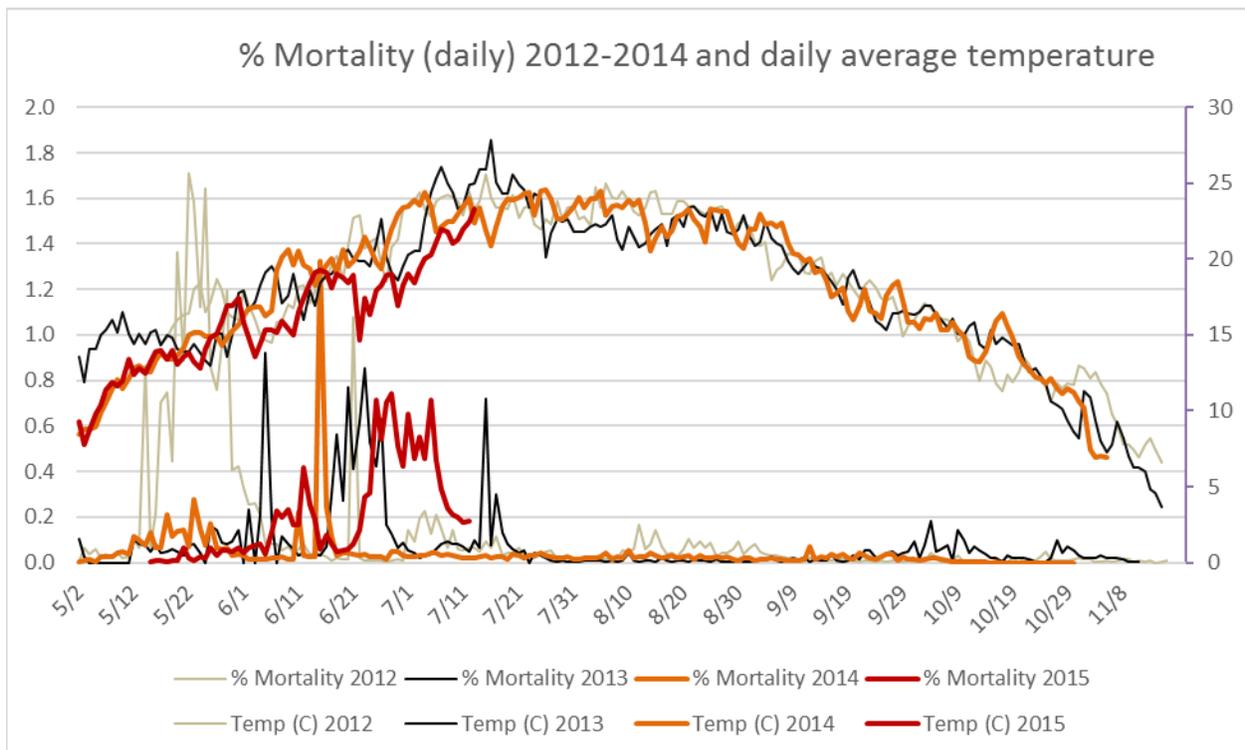
Temperatures in the hatchery have been rising steadily as the summer heat has arrived. We saw quite cool temperatures this spring until mid-June. The spring rain also never really came, which caused a steady rise in temperature, and very low water conditions in the river. We did get a bit of a reprieve in early June with a big rainfall which helped water levels rebound. This also caused the river temperature to drop more than 5 degrees, dipping back to around 15C.



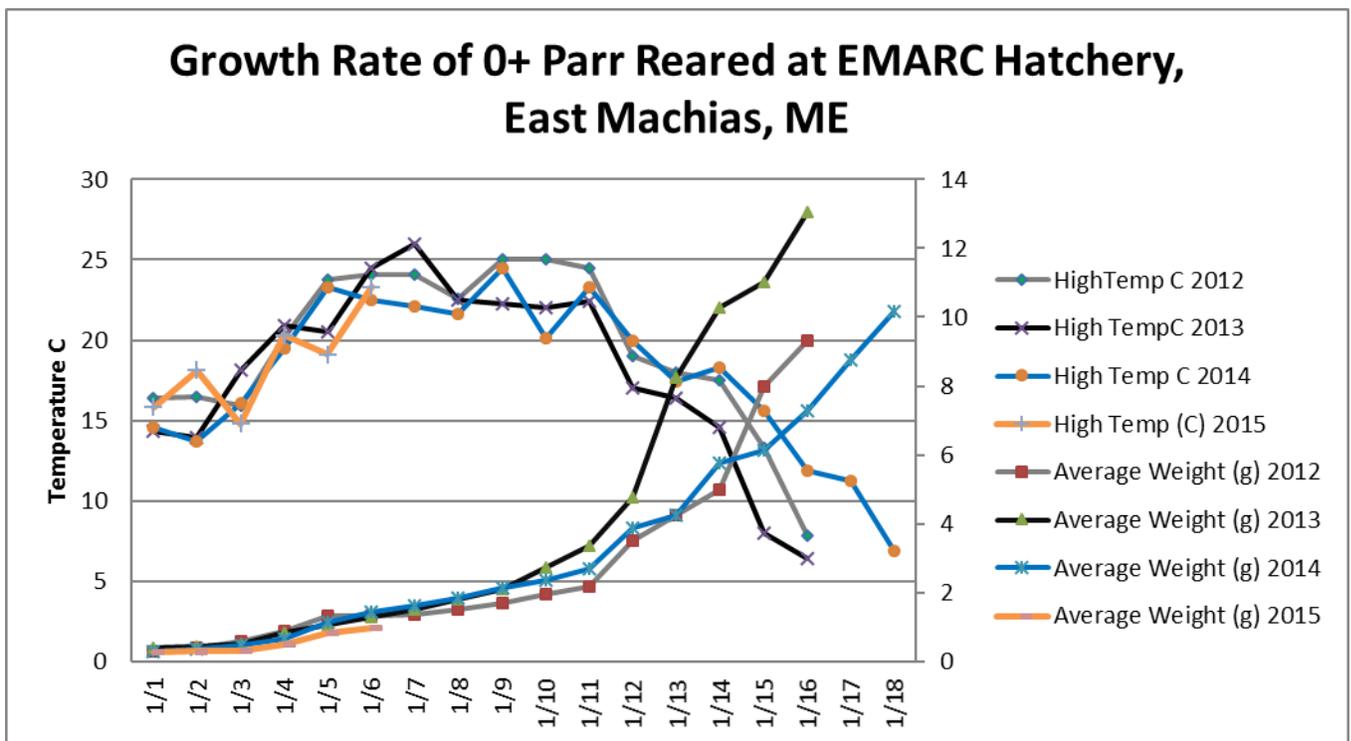
The very same day we got the significant rainfall and drop in temperature, we began to see increased mortality in the hatchery. As you can see in the graph below, mortality has increased over the past 2 to 3 weeks. Disease samples were sent to our state fish health lab for bacterial and viral analysis on June 22nd. The

results, which just returned July 12th, showed presence of a bacteria *Aeromonas hydrophilia* and *A. bestiarum* in the kidney samples that were analyzed. This bacteria is ubiquitous, common in fresh and brackish water, as well as soils, everywhere. Though it can be very harmful and fatal to its host, it does not seem to be prone to serious outbreaks. It appears that this may have been the cause of the mortality we have been experiencing the past couple weeks. We began salting immediately when the first signs of any issue occurred late June. We also treated with static salt bath. The mortality rate is slowing now, and things seem much better in the tanks, but the loss was not insignificant; we saw a 7% loss over the past three weeks.

This issue was rather difficult to pinpoint. Because this bacteria does not necessarily cause outward symptoms, fin rot or other types of necrosis which are very visible, it was difficult to say if it was poor water quality, which we found no signs of, or a bacterial issue. And though 7% is significant, it did not all happen at once; there were days when mortalities were high, but not so high as to indicate a serious bacterial or viral outbreak.



Through the past month, growth has been slow. A large part of this was due to the bacterial infection we experienced; the fish did not feed much over the past couple weeks. As you can see in the graph, the fish are behind where they have been at this time previously. In addition to the issues with bacterial infection, densities are higher throughout the hatchery compared to the previous three years; we have found fish reared in higher densities are, on average, smaller than fish reared in lower densities.



We will be having our bi-annual parr project meeting this July. The focus will be on smolt trapping and what we have found, and the plan for this year's electrofishing season. There is concern that there was a very drastic decline in juvenile salmon based on the number of smolts we had migrate through the traps this spring. Electrofishing surveys early this September will help us understand better what happened, whether there was a significant loss in the river, or whether the fish simply stayed in the river for one reason or another. We have



heard several anecdotal accounts of there being a lot of juvenile salmon in the river this spring and summer, so we are optimistic that the fish are there.

Much of the month was spent recovering from the very busy spring. All incubation boxes are dismantled, disinfected, and stored for the season; the very last of the Salmon in the School groups stocked their young fry early this June; and the last of the smoked alewives made their way through the smokehouse at EMARC. We also stocked all fry from our hatchery on the Pleasant River.

At this hatchery we have limited capacity and are only able to stock fry. This year, however, we held about 50,000 salmon fry and fed them for about four weeks before stocking. In this time, they put on a little size and got through the initial stage of mortality when getting on feed. The Maine Department of Marine Resources will help in this project by electrofishing sites in the Pleasant River to determine if this method will result in more large parr in the coming years. In the sites we stocked fed fry, we have seen very few large parr produced through unfed fry stocking in the past.