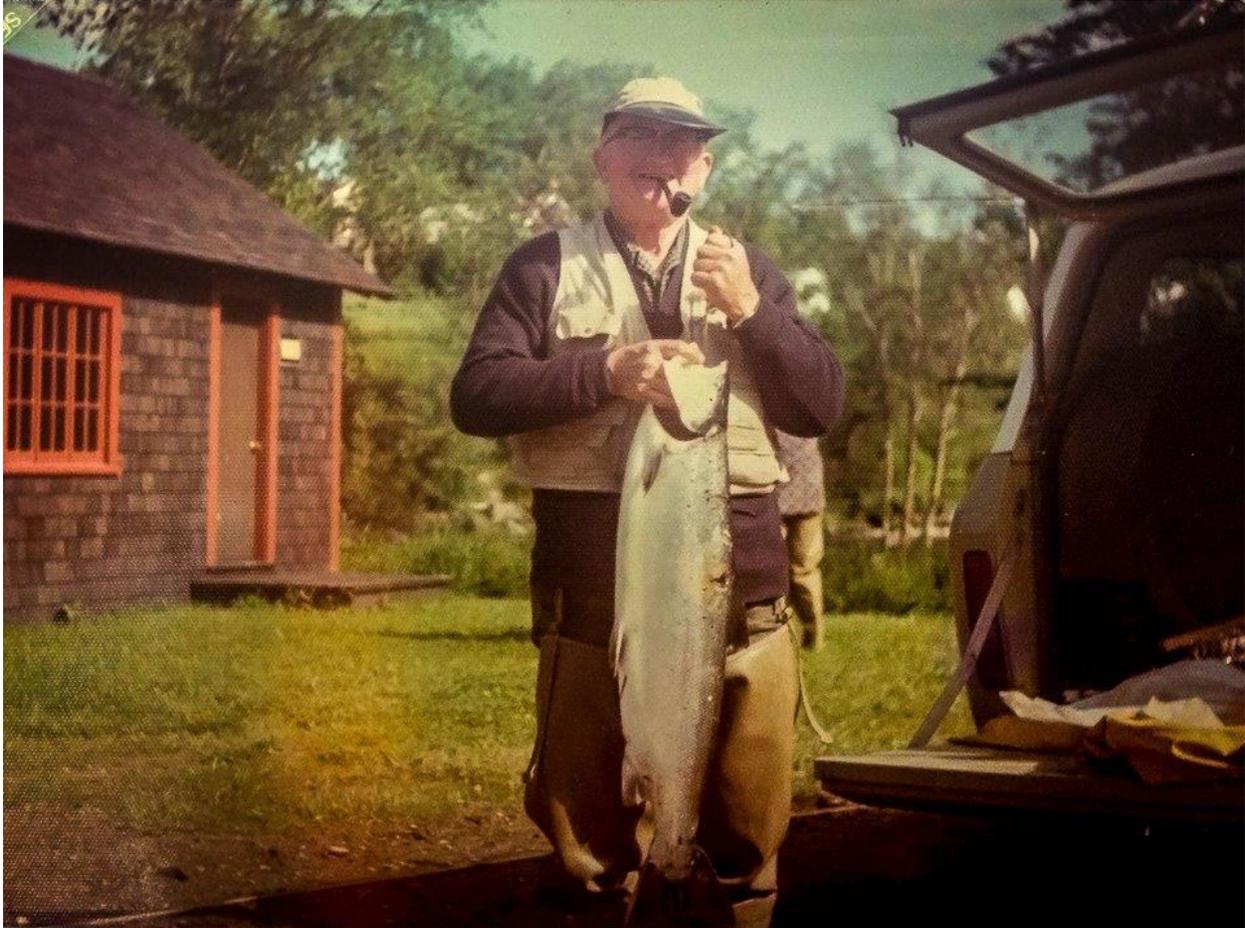




Monthly Hatchery Report August, 2016



A 1977 East Machias River salmon

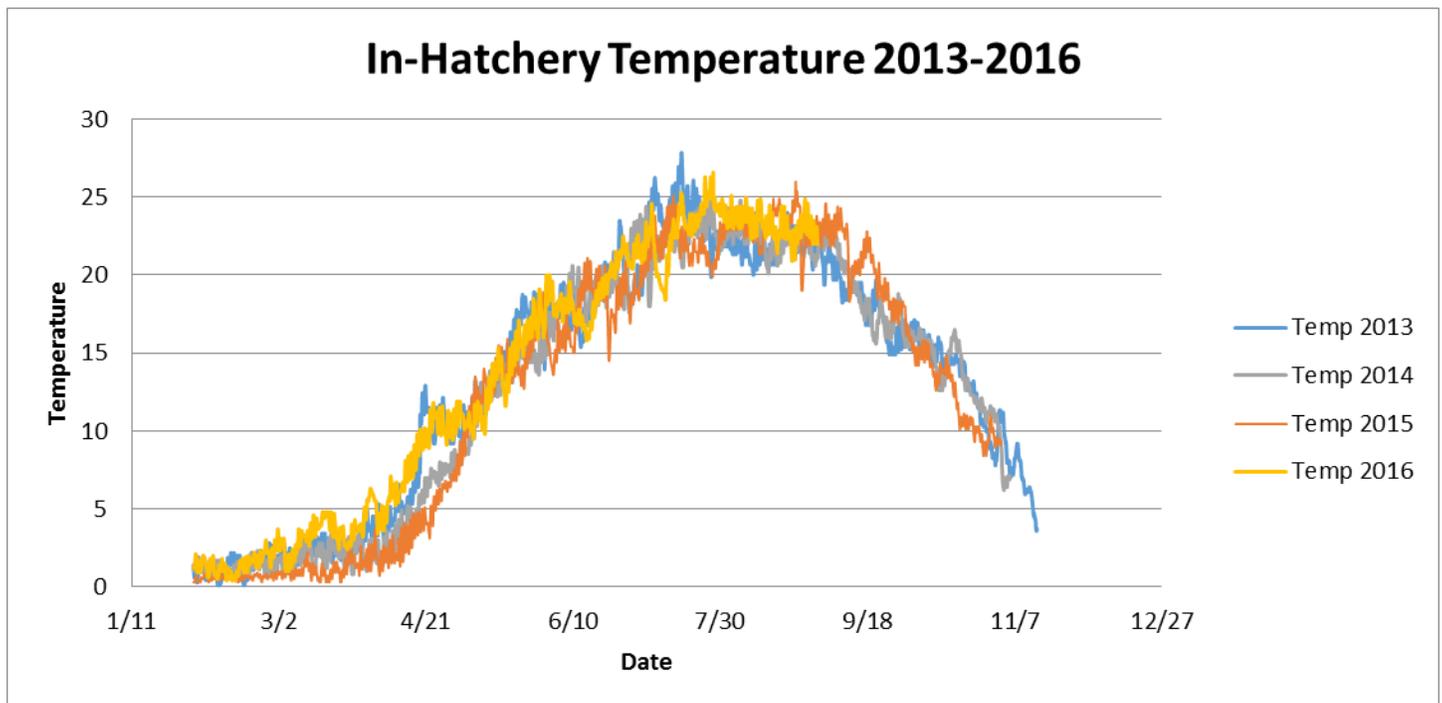
Report by: Kyle Winslow and Zach Sheller

A report of monthly activities and events

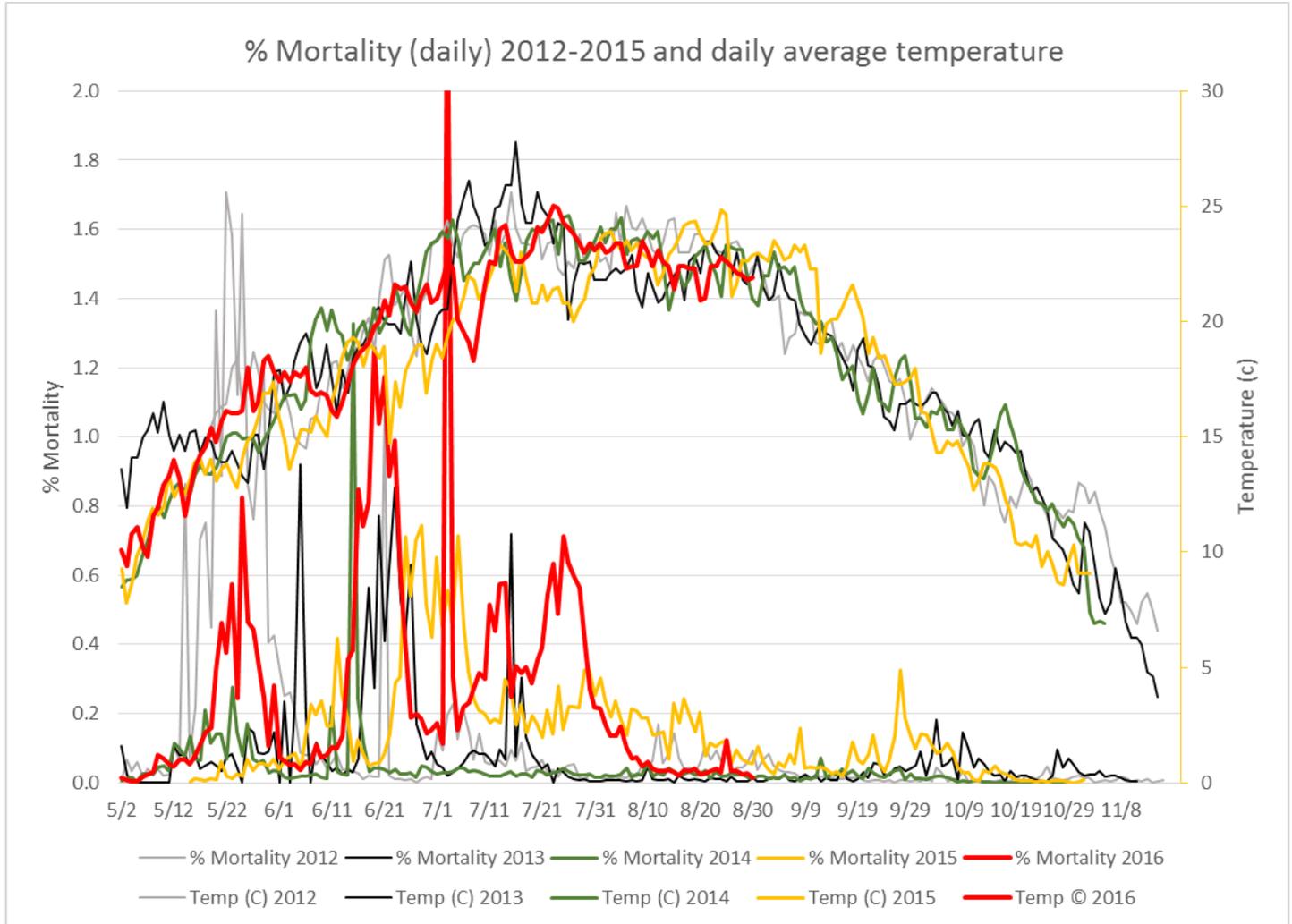


The warm dry trend continues here in Downeast Maine. This makes for good beach weather for us, but more stressful conditions for our fish. So far, It has been one of the driest summers on record for Downeast Maine. This lack of precipitation means that the majority of our waterways are essentially running at their base flows, which are quite low. Let's hope that the salmon in the rivers have found deeper, cooler waters to hang out in until the water level rises.

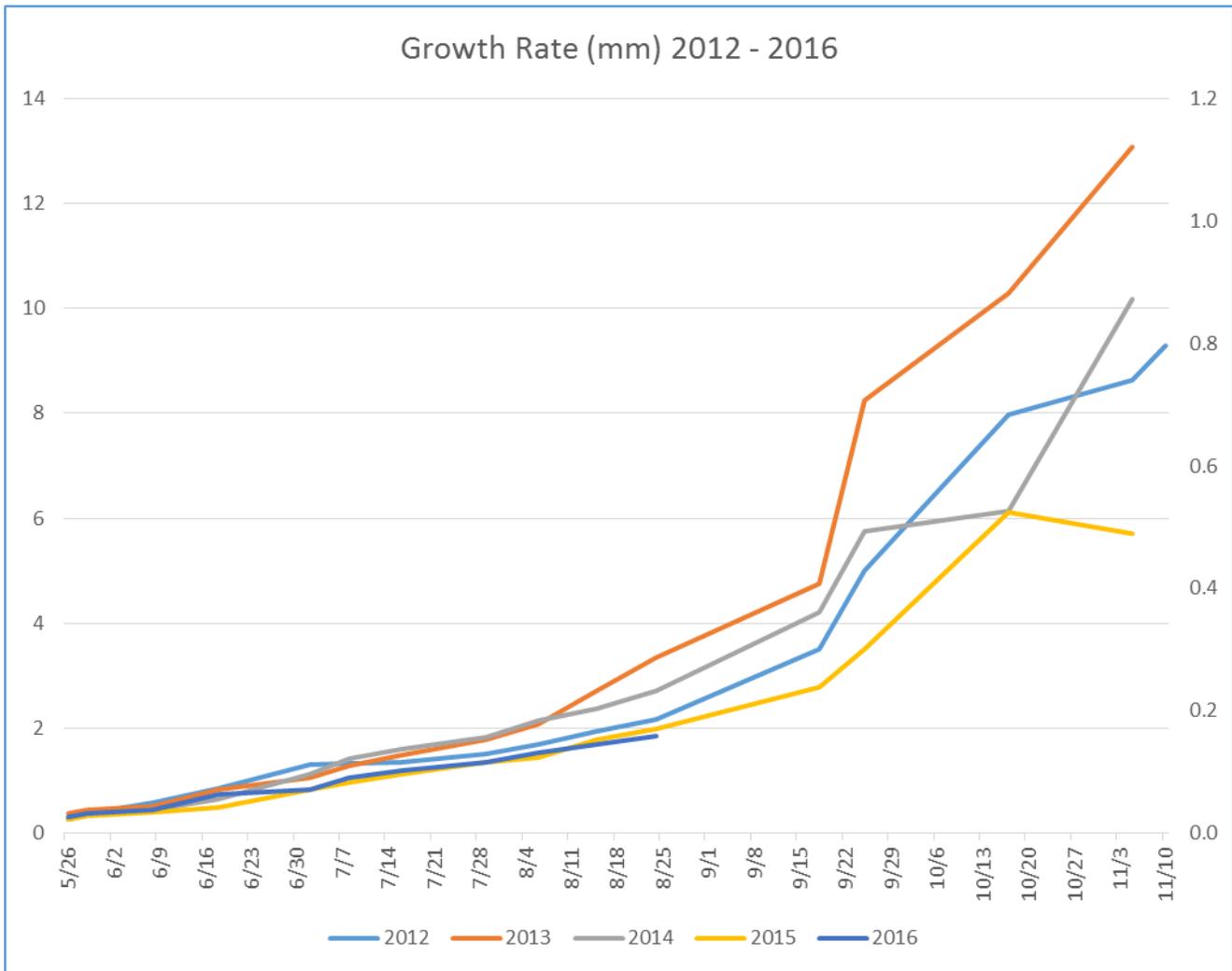
With water levels very low, we continue to see temperatures in the hatchery in the 20°C – 25°C range (see temperature graph below). Late in July, temperatures rose above 26°C and we started adding a small amount of well water to our head tank, bringing temperatures down by 1 – 2°C. Temperatures reaching 28°C can be lethal, and persistent temperatures above 26°C can cause undue stress on the fish. In the wild, cold water fish will move, sometimes great distances, in search of cold water refugia. In the hatchery, however, they do not have this option. This is only the second year in the past five that we have had to add well water to bring the temperatures down. On August 9th, we turned off the well water input as temperatures dropped back to the 22-24°C range. Cooler nights that come with August are helping to drop the river temperature to around 20°C.



Mortality in August has stayed low, with the majority of tanks losing less than 15 fish per day. The previous problems with bacteria we were seeing seems to have abated. Below is the mortality graph to date.

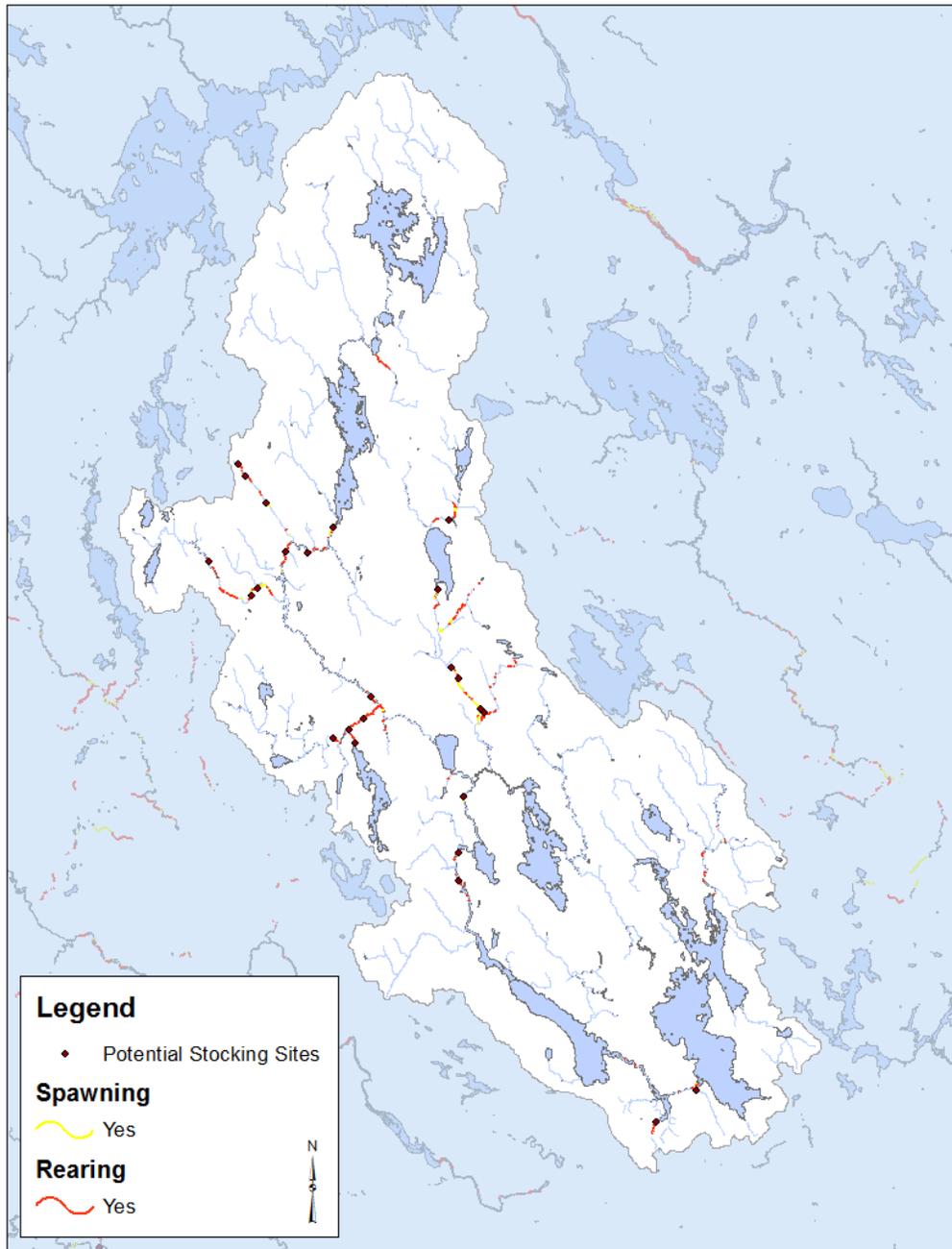


Growth of our parr has been in line with growth seen last year. At our last sampling to determine the growth rate of our fish, their weights fell just behind the growth of last year's fish. Bacterial infections and high temperatures have kept growth slow through the summer months of this rearing season, but as temperatures decrease, the feeding rate and growth rate will rise. We have already started increasing feed amounts everyday to ensure there is ample amounts of food available to the growing fish. Below is a graph showing growth through this rearing season, as well as previous years.



The next few months will be, and always are, a busy time. Electrofishing surveys will likely start the second week in September, and will put us in the field for the majority of that week. Together with DMR, we will continue our intensive electrofishing effort on the East Machias River to monitor the impacts of the Project. During this time we will also be collecting parr to send to Craig Brook National Fish Hatchery, where they will be raised for broodstock. Following electrofishing, once temperatures drop below 18°C, we will begin fin clipping. This process will likely take all of four weeks to complete this year. Teachers and other groups have already starting signing up for times to bring their students to the Peter Gray Hatchery to get in on the fun.

Stocking will start directly after fin clipping, in mid-October through early November. Below is a map indicating stocking sites for 2016. In the coming weeks, stocking numbers for each site will be determine based habitat units (1 unit = 100m²) and the target stocking density. We welcome volunteers for either activity, and both fin clipping and stocking are great opportunities to see and even handle the fish. We will follow up stocking with redd counting which is when we will have our first real indications of adult returns from our initial stocking efforts as part of this project.



As the fifth year of this project is quickly winding down, we are working to summarize our efforts to date. This document will be a comprehensive evaluation of all that has been accomplished through this project - from the efficiency of the hatchery operation and quality of fish reared each year, to population estimates of juveniles and smolt and how this all relates to the current U.S. Atlantic salmon recovery program. This project has had very positive impacts on the recovery program, and indications from the results of assessment done to date show population increases at all life stages. With the early stages of this project a success, we are looking forward toward the next five years and beyond. Please stay tuned for this summary report and more information on moving forward with the next step of this project!