



Monthly Hatchery Report

Date

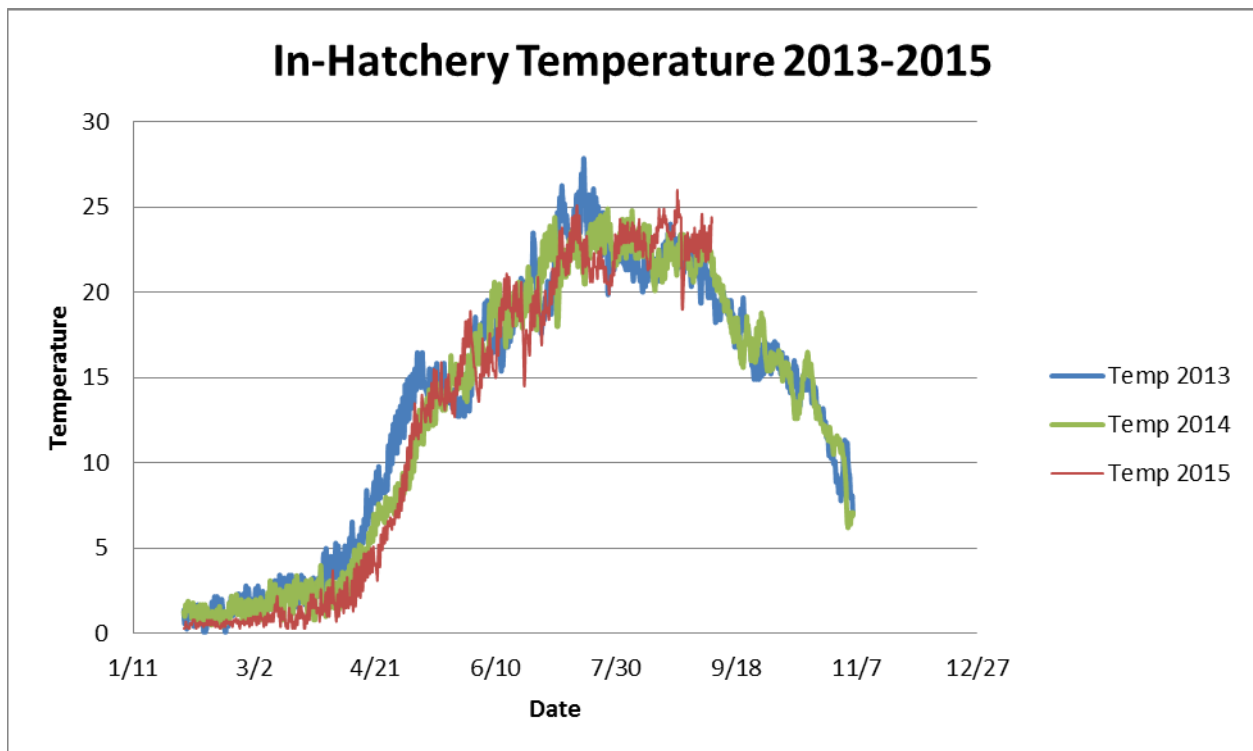


Report by: Kyle Winslow; Hatchery Manager

A report of monthly activities and events

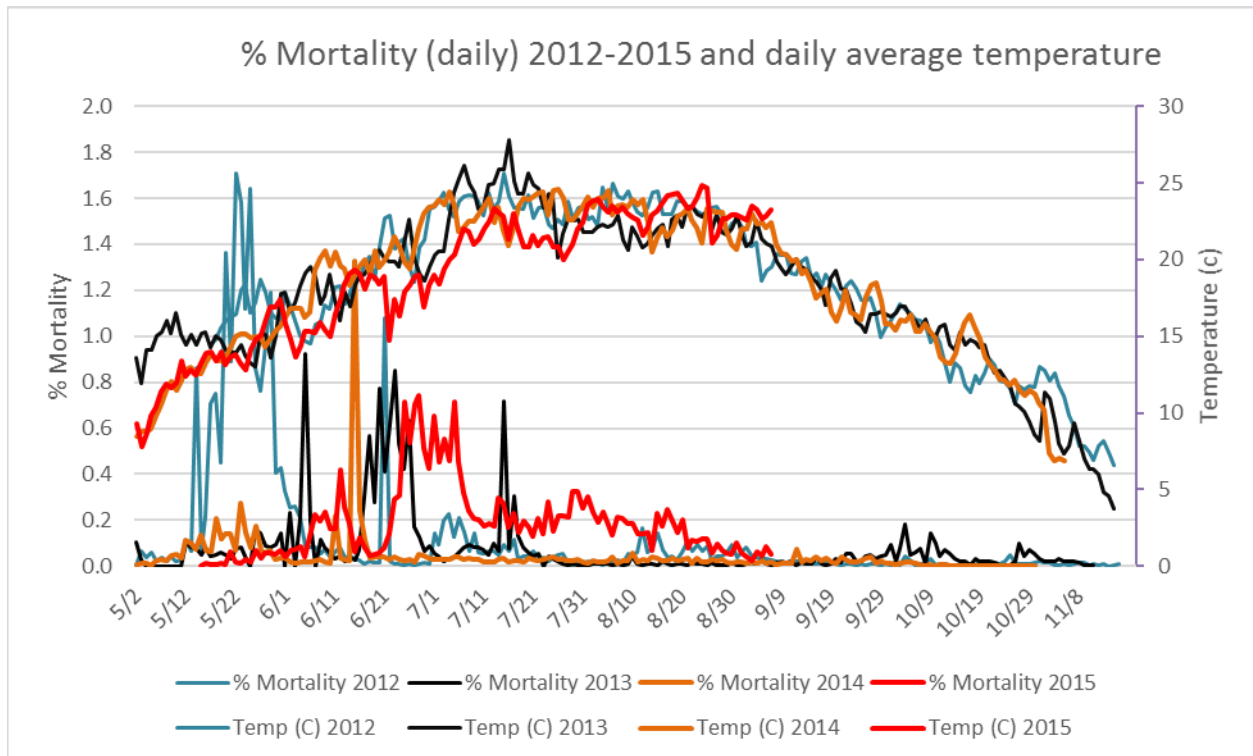
Summer is winding down, and we are getting ready for a busy fall. Things have stayed quite warm this year and we are seeing some of the warmest temperatures of the summer in late August. Though it is nice weather for us, I think the fish are looking forward to temperatures cooling down a bit.

As shown in the graph below, temperatures have remained consistently warm through August and into September. Temperatures did drop over 4°C after a rather unexpected 8+ inches of rain on August 26th. There were no negative effects of the rainfall seen in the hatchery, and the cooler temperatures were, I'm sure, a bit of a reprieve for the fish. The rain was much needed as the rivers were very low. Without much rain since then, the rivers have receded, temperatures are back up, and we are looking forward to the fall rain.



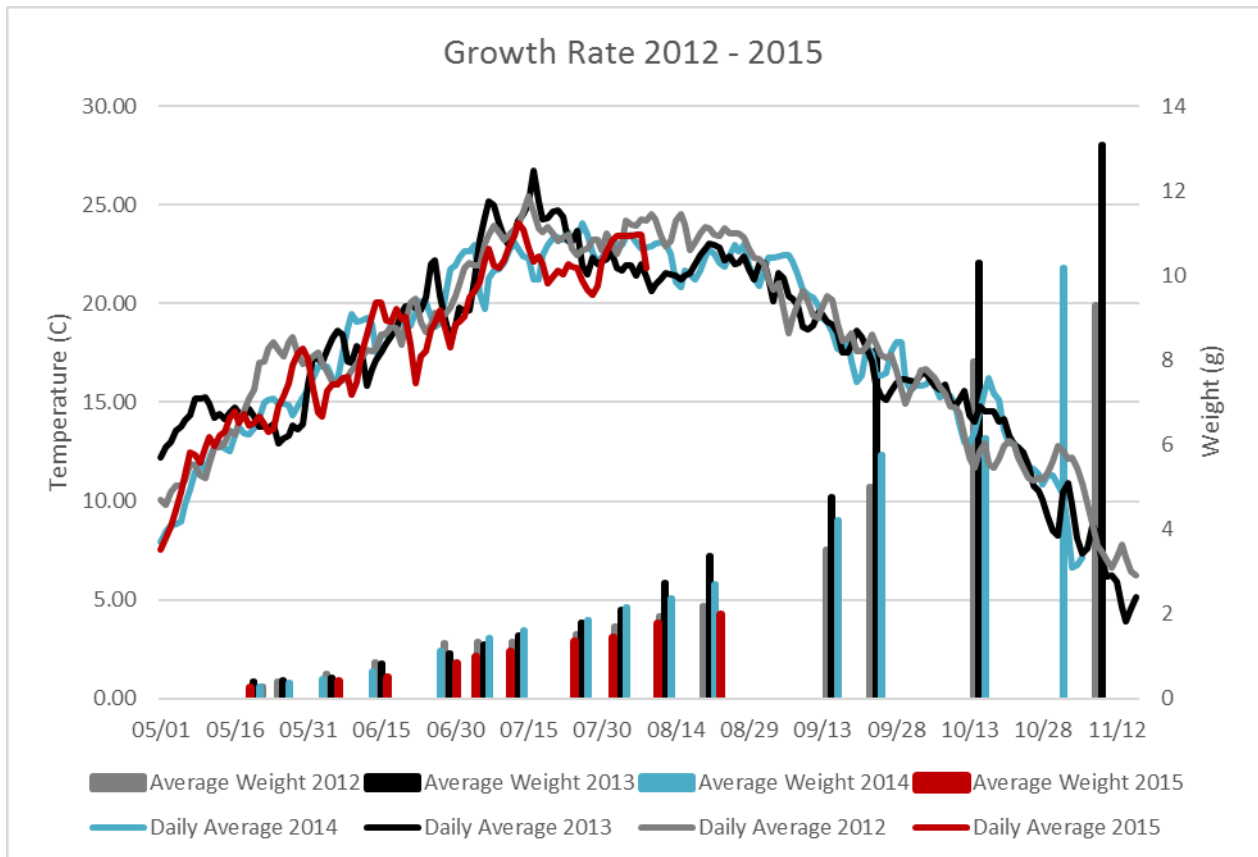
Mortality in the hatchery has been steadily improving. We have seen some mortality that is consistent with what we have seen previous years as the summer comes to an end, and we have been able to keep this mortality in check through salting and managing the feeding rate. As shown in the graph below, we are

about in line with previous years in terms of percent mortality for this time of year.



Growth, as seen in the “Growth Graph” below, has been relatively slow this year. This is due in part to the persistently warm temperatures, as well as the persistent issues we have faced with bacteria this year. While mortality was higher this summer the fish were not feeding, and the feed rate was decreased in an effort to decrease stress in the tanks and keep food from collecting in the tanks. As temperatures drop in September, the fish will feed more aggressively, and they will grow rapidly until stocking.

We began electrofishing surveys with the Maine Department of Marine Resources early this September. We will continue once temperatures drop a little more, but initial surveys have shown good parr densities with nearly all of the parr originating from EMARC. Once electrofishing is complete, we will put out a report showing what we have found. We are excited to get out and see where our fish are, and in what numbers.



We have been getting ready for fin clipping and will be starting as soon as temperatures fall below 20°C. We already have several school groups lined up to help with the effort and have several volunteers lined up to get the task done.

DSF will be involved in a culvert removal project this September. Beaverdam Stream, a very important tributary to the East Machias River, has two road crossings with culverts that limit fish movement, and create an unnatural dead water. The full project will include removing the culverts at both crossings, with a bridge replacing the lower crossing and a permanent decommissioning the upper crossing. The first step of the project will be to remove the upper culvert, which will release water held up by the crossing. This upper culvert will be removed this September with help from Project SHARE, a local organization focused on habitat restoration.



Traffic through the visitors center has picked up steadily through the summer. More and more people are getting wind of what we are doing here in East Machias, and there is a lot of interest. We also had a nice article published in a local paper recently – this article published in *The Quoddy Tides* is at the end of this report.

We have given several presentations to school groups this month including two groups in a summer school program for children whose parents were working on the blueberry harvest, and a high school group with students from all over the northeast. We also had a booth at the Machias Wild Blueberry Festival this month and had a significant amount of traffic through our booth the entire day. It was a great time and we had a chance to connect with many people.

The title 'THE QUODDY TIDES' is rendered in a large, black, serif font. The letters are partially obscured by a detailed black and white illustration of a coastal scene, including a lighthouse, a boat, and a sailboat.

THE QUODDY TIDES

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On a cool sunlit morning, as mist hovers over the stream, the salmon begin to move, returning home. There is nothing like the sight of a salmon returning from the ocean waters, up a river to where it began life, to spawn and make new life. Many years ago, those sights were plentiful on the East Machias River and brought with them a cadence to life in Downeast Maine. But today there is a quiet absence. The salmon have nearly disappeared from this and other rivers Downeast, but for one organization the commitment to bring back the Atlantic salmon is just as strong today as it was back in 2000, when it began the challenging task.

The East Machias Aquatic Research Center (EMARC) is owned and operated by the Downeast Salmon Federation (DSF). The facility is housed in what was an abandoned hydro plant located in East Machias, sitting directly on the banks of the river. With the dam long gone, there was an opportunity to create a hub for research and education and a chance to achieve the ultimate goal: hatching and releasing Atlantic salmon into this river and having them return in the fall to spawn.

The hatchery within the facility is named for the late Peter Gray, who developed a successful salmon-rearing technique in the United Kingdom on the River Tyne. The Tyne had been void of the fish, but now it's one of the top salmon rivers in all of the UK. This technique was brought over to Maine to be replicated on the East Machias



River. The building was remodeled, and the first rearing of salmon at the hatchery took place in 2012.

The parr project is now in its fourth year of an initial five-year contract. EMARC hopes to implement the second phase of the plan over the next five years.

Traditional salmon stocking methods call for fry -- salmon just beginning to feed to be released in the spring. The method EMARC uses is a parr release in the fall. Kyle Winslow, hatchery manager, explains, "We are stocking fall parr, which are nine months old -- five months older than fry. We keep the fish in the hatchery over the first summer and stock in the fall when they are bigger, and at a time when they don't have to focus on competing with other species for food, but rather on finding their place in the river to overwinter. The fish are better able to evade predators, and at this point have made it past their most vulnerable life stage."

EMARC runs the hatchery on a budget of \$200,000 annually. The building also houses offices for Maine Coast Heritage Trust as well as the Conservation Fund. Continued state funding for the project is in limbo as LD 450 was carried over in May and is anticipated to come up again for a vote next winter. This bill, if passed, would provide much-needed funding for EMARC and DSF to continue their efforts with this project, as well as construct similar hatcheries on the Narraguagus and Machias rivers.

As with any program, results are the key to funding. The gains have been small to date, but there have been signs that momentum is building, and the potential for greater success may be close at hand. Winslow says, "There have been successes in the four years since the project started. Over 270,000 fall parr have been stocked into the East Machias River, with another 230,000 scheduled for this October." Through a process known as electrofishing, EMARC has seen the largest densities of juvenile salmon in the river in 25 years. Winslow adds, "We also continue to see heavy populations of healthy smolts [the stage after parr] that were reared at EMARC headed to the ocean. In line with the Atlantic salmon life cycle, it takes an average of three years after we stock our fish before we could see some returning adults. Based on our smolt trapping results, we will likely see adult returns start to increase in 2016."

Challenges still remain. The Atlantic salmon, once prevalent Downeast, has been



at very low numbers for some time. As for why that is, Winslow says, "It is a long and complex answer. There are many factors that played a part in the current state of fish populations. One of the biggest would be habitat degradation. Two hundred years of log driving, dam building and sedimentation have taken away vital habitat for all fish, including Atlantic salmon. Overfishing is another factor, both in freshwater and at sea." Winslow points out that the same populations of salmon that are endangered here in Maine are still commercially harvested in their summer feeding grounds off Greenland.

The return of the Atlantic salmon is an open book that is still writing its next chapter, but there are also other things EMARC provides to the community. Winslow says, "EMARC has had thousands of students, community members, out-of-state visitors and volunteers come through the doors since its opening. The parr project is also unique in that it is a working conservation project that involves non-government organizations, international organizations, communities, individuals and local, state and federal agencies all working together toward a common goal of restoring our rivers."

The road ahead continues to be a challenging one. The factors against the salmon's return appear to outweigh those that are favorable, but the dedication and commitment of EMARC will no doubt continue. And, if successful, what awaits is the sight of the Atlantic salmon moving in the early morning hours towards the end of a long journey, a journey home.