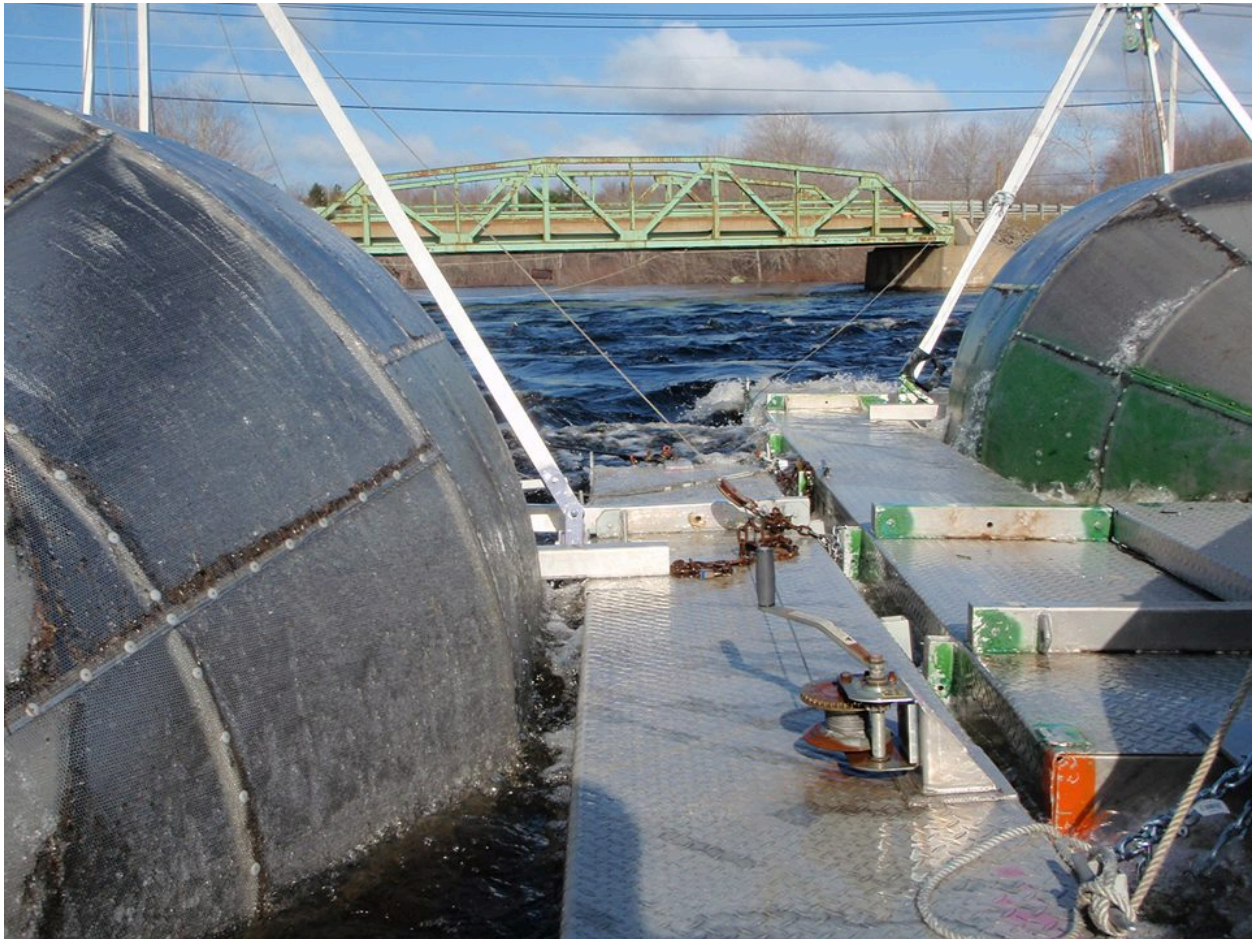




Monthly Hatchery Report

April, 2015



Report by: Kyle Winslow; Hatchery Manager & Zach Sheller; Assistant Hatchery Manager

A report of monthly activities and events

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

April is a busy time in the salmon and river restoration business. There are many activities that take place during this time. Egg picking wrapped up and alevin transferred into their substrate incubation boxes, smolt traps went into the East Machias River, and we held our annual smelt fry event.

Temperatures have remained lower than the previous two years (see figure 1) until a warming trend in early May. This lower temperature regime has delayed development, but once the river temperature approaches 15C, we should start to see some emergence from the incubation boxes.

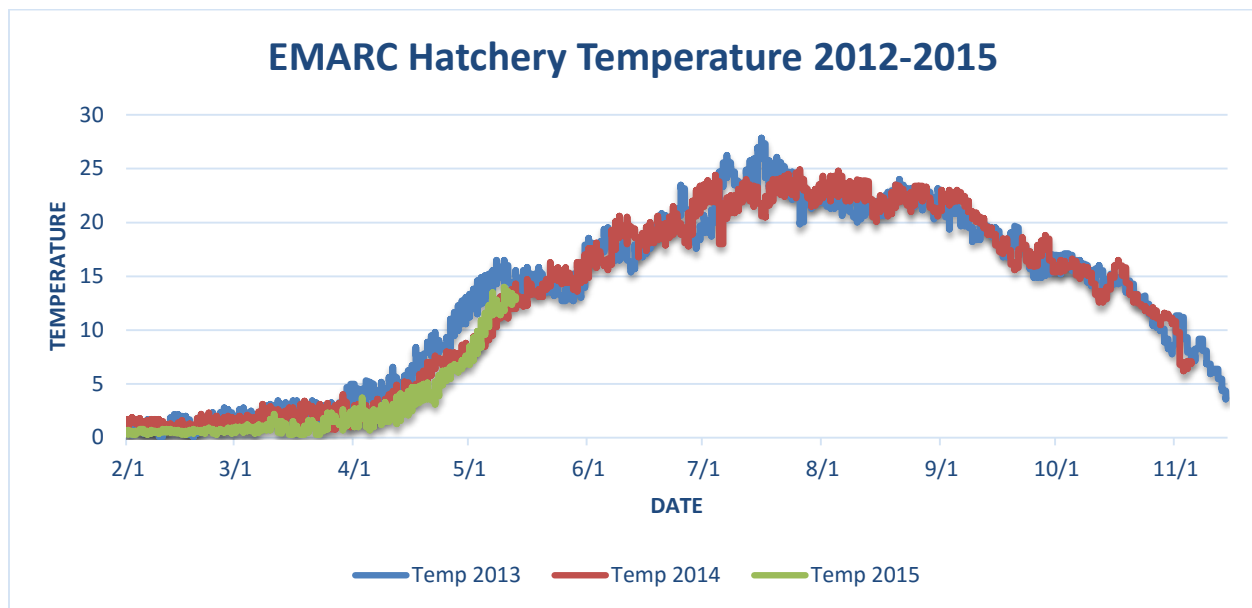


Fig. 1. Temperatures in 2015 have remained lower than the previous two years due to lingering river ice and persistently cold temperatures.

All of the alevin were transferred to their respective boxes with the help of a few University of Maine at Machias students. We also had a University faculty member take some pictures of this, and write an article on the UMM – DSF connection. It was a well-written article, and well distributed. You will find the article at the end of this report for your reading pleasure.



Egg mortality at EMARC was relatively low this year. We saw a total egg mortality rate of 4.8%. We had two rather fastidious helpers this winter that helped to keep things clean, and helped us keep up on near daily picking.

We had a pre-smolt trapping meeting with the Maine Department of Marine Resources (DMR) this past month to re-visit smolt trapping protocols, and any changes to methodology. As there were no changes to speak of, this meeting was mostly a review of protocols.

Smolt traps were deployed April 27th and began fishing that evening. The first smolt was caught on May 2nd. As with development in other stages of the salmon lifecycle, smolt migration is dependent in part on temperature. With cool temperatures persisting into the spring, smolt migrations are a bit later. This falls in line with other diadromous fish migrations, such as alewives, which are a bit more delayed this year as compared to previous years. As of the second week in May, we have captured 29 hatchery smolt, 5 wild smolt, and have recaptured 9 smolt at the trap. Attached to this document you will find the weekly smolt trapping report through May 11th put out by DMR.

We held our annual Smelt Fry this April. Tracy did a wonderful job coordinating the event; it was a huge success! This year we held the Smelt Fry during the day on a Saturday, rather than a Friday evening supper. This allowed for the fried smelt and other food to be served over the course of the afternoon, and made for a nice, relaxed atmosphere.

Kyle and Dwayne presented at the Friends of Taunton Bay Conference on Citizen Science in April to discuss how DSF engages in citizen science. The focus was mainly on efforts taken by DSF to monitor Rainbow Smelt populations in Downeast Maine, and included work being done through EMARC. This monitoring effort will continue this spring, and Colin Shankland has been hired on again to take on this work.



Unique Collaboration Benefits both Atlantic Salmon and University of Maine at Machias Students

Added on: April 17, 2015

EAST MACHIAS, Maine -- The air inside the East Machias Aquatic Research Center is chilly and filled with the sound of running water. The stocking room is filled with tiers of egg trays and huge vats of river water, all part of the process of raising salmon. Two University of Maine at Machias students work alongside two UMM alumni to move hatched salmon eggs, known as alevin, into incubator boxes.

"This is one of the most important parts of the process," EMARC Manager Kyle Winslow says.

Carefully, the students sift the pink eggs through a mesh screen. Tiny alevin, looking much like little brown worms, are then placed in a larger tank that simulates the gravel river bottom, where they will continue to develop.

Senior students Breanna Nicely of Machiasport and Meagan Peterson of Columbia are getting real life experience at EMARC - experience they both know can translate into a lifetime of success.

"This is an amazing opportunity that most kids attending college never get," Nicely said. Nicely did not know what field of study she was interested in when she enrolled at UMM but volunteer opportunities at EMARC set her on her path. "This is really what I want to do now. In fact, I work here now," she said. Nicely said that even if a full time career at EMARC doesn't happen, the experience at the research facility will be a key part of her job resume.

The parr project at EMARC employs a naturalized approach to rearing salmon. Untreated water from the East Machias River runs the hatchery and by adjusting water velocities in rearing tanks, the fish are pushed to swim and "stay in shape," resulting in a more naturally-sized, fit and strong fish at release time.



Students and staff work closely, from egg to release, hoping ultimately that their work will no longer be needed, the fish will return and fill the rivers again.

The salmon are held in the hatchery at EMARC from the eyed egg life stage, which happens around early February, to stock out about nine months later in October. Using all of these techniques, the hope is that more Atlantic salmon smolts will migrate from Maine's freshwater streams to the sea, and return as adults to spawn. Winslow is also a UMM alumni and he has high praise for the UMM collaboration.

"More than half of the staff members at the Downeast Salmon Federation are UMM alumni," Winslow said. "Two part time staff are current UMM students." Winslow said this close relationship with UMM pays off for both DSF and the students.

"In the fall, all of the salmon being raised at EMARC need to be marked with a fin clip. This is a great time to involve students, and UMM students get involved in a big way," he said. "This is also a time for students to meet DSF staff and recognize opportunities to volunteer and get involved in the project. We have had several long time volunteers; some of whom have become part time staff."

Winslow said the UMM students are currently working to keep salmon eggs healthy by picking the dead eggs from the incubating trays. "With over 350,000 eggs, this is no small task," Winslow said. "They are also helping with events put on by DSF such as the annual Smelt Fry, and the annual Smolt Bolt. We have had wonderful engagement with UMM students during fall stocking as well. This is a time when many hands make light work, and UMM has been very much involved in this effort."

EMARC is housed in a former electric generation facility, which has been renovated to become a riverside education and research center. "Much like the Pleasant River Hatchery and Wild Salmon Resource Center in Columbia Falls, the idea was to turn this old Bangor Hydro Electric Facility into a community building focused on research, education and community involvement, and use its convenient riverside location to run a river-specific hatchery," Winslow said. "It has been transformed into a state of the art conservation hatchery and visitors center."

Renovations are still being made to EMARC, including the addition of classroom, laboratory, and meeting space on the second floor. When



complete, EMARC will serve as a hub for education and research in Downeast Maine and Winslow said the collaboration with UMM and its students is a key to that growth.