




Neosho National Fish Hatchery

NEWSLETTER

March and April 2016

These wonderful spring months kick off our big events and the landscape comes alive for another year. We hope you enjoy this update from the nation's oldest operating federal fish hatchery!



Increasingly, as the weather warms up, we get people of all ages wanting to visit and of course, feed our trout!






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This year we had 168 veterans register and dip their lines in the pond for our fifth annual **Veterans Fishing Derby**, which was down a bit from last year. We put a few thousand trout in that pond a few months back so that they would be ready for this day. Some of the big ones were holdovers from the previous year, and some others were not quite as impressive. Whether their hooks found the largest fish or not, all seemed to catch their limit of trout by the time the ending whistle sounded. We closed up the event at 2 o'clock, but most had departed long before then, full of pleasant memories and a tasty hotdog lunch.

It is always a pleasure to hear the stories as I walk around and watch the activity around the pond during a fishing derby. One veteran was over 90 years young, and it was fun to see him fish with friends by his side. Most participants wore some hat or shirt or other emblem of their service, so there was a colorful display from all their different branches and experiences. Everyone was so thankful that we put on this event each year – for them to be acknowledged like this is a great pat on the back and chance to reminisce. We are pleased to present it to them and so pleased that our volunteers stepped up as always in a huge way.





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Some of our visitors have feathers, and some are fish thieves...but not all of them!



Freshwater Mussel Work

For a number of years, the hatchery has worked to restore, recover and repopulate aquatic species that are imperiled. We also raise rainbow trout for habitat mitigation – a project that is reimbursed by the Army Corps of Engineers for their completion of the Table Rock dam in 1958. But heartbeat of the hatchery and whole U.S. Fish & Wildlife Service is helping to restore ecological balance as humans and nature grow forward in 2016 and far beyond.

Since 2002, we have been working with the endangered pallid sturgeon, breeding them each May and stocking their Missouri River home with thousands of young. But we didn't just jump right into this important program without establishing a firm foundation of experience. We actually started this program by raising paddlefish in the mid-1990s, then transitioning to lake sturgeon before finally being entrusted with the precious rare pallids.

In much the same way we are experimenting and learning how to raise endangered mussels at the hatchery now. Our largest pond on the east end of the property is entirely devoted to our mussel program. And while we do not currently have any federally endangered mollusks on hand, we are making great strides in that direction with the similar fatmucket mussel and its host fish, the largemouth bass.

A few weeks ago, we began our quest for breeding these bivalves. Last year was our first time trying to get them to cooperate, and all went well until the critical host fish implantation and metamorphosis phases. Normally after successful implantation and following the incubation period, they drop off and grow there into adult mussels, but we never saw this happen. We are looking for better results this

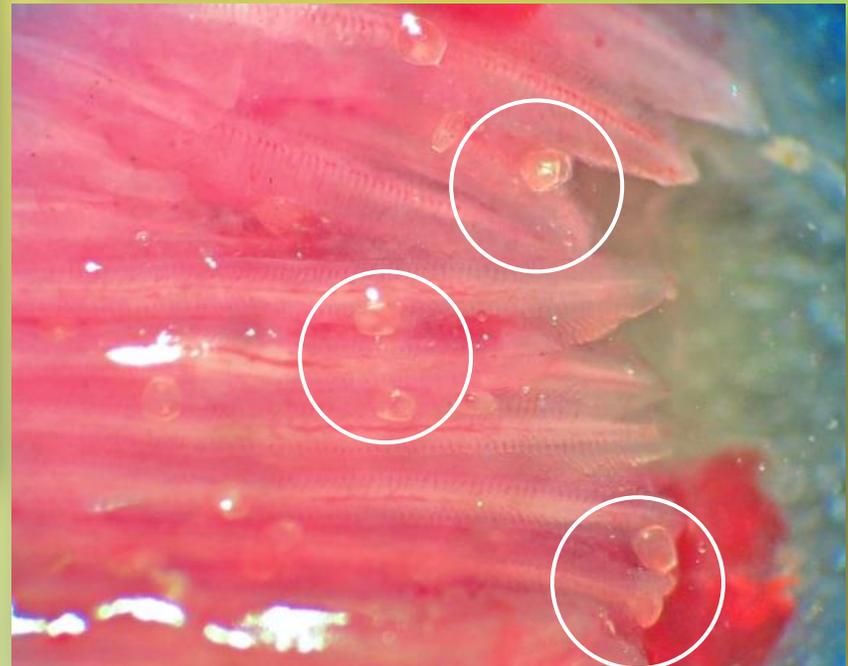
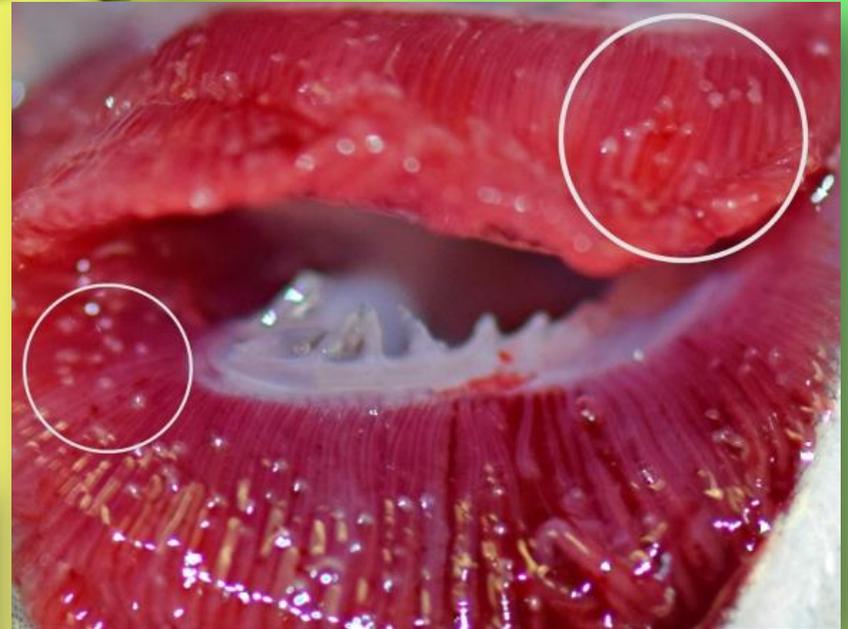


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year. A few of the juvenile fatmuckets have been located at the bottom of the bass tank, but they are still about the size of a small grain of sand, so they are difficult to spot. Once we gather up all we can, they will be placed in special growing trays where they will slowly mature.

All this is exciting and it is helping us learn and lay that firm foundation for the next steps ahead for the hatchery and building up for our next projects. Hopefully all the kinks will be ironed out with this year's mussel propagation, and then soon we'll get another endangered species to help!





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Early Pallid Sturgeon Spawning

Last week was a first for the hatchery and our program that works to restore the imperiled pallid sturgeon population of the Missouri River. To recap, we received our first pallids in 2001, and have been working to breed them each year since. The hatchery didn't just jump right in though, these valuable fish are fragile and difficult to care for and propagate. In the late 1990s, the Neosho National Fish Hatchery started working with the similar paddlefish and lake sturgeon. Producing both eggs for export and raising the young up to ten inches or so, Neosho released just over a million paddlefish over a five year span. Lake sturgeon, whose final destination was the very distant Great Lakes, generally stayed until they were about six inches long. We stocked almost 70,000 of them. Both of these species helped us fine-tune our facility, mindset and practices to work with the endangered pallids.

We were glad to receive our original adults and ecstatic to be able to hatch out those first special sturgeon. Our initial production resulted in 956 nine-inch yearlings being stocked into the river – a great success. The next years have followed suit by adding another 50,000+ of various ages and sizes. They have all been tagged and marked in some way to identify their origin in Neosho, should they survive and be recaptured in the wild.

What is different about all this is the timing. Ordinarily, the sturgeon spawning takes place in the first week of May. Time after time, this is the way the fish's biological clocks are set for reproduction. But this year we had three females that were telling us that their clocks were two months ahead of schedule. So we listened to them! How do we know when the time to breed is? Determining the best time to induce ovulation is an imprecise process involving a certain amount

of art. General indicators of a female's ripeness include a softening of the abdomen, coloration of eggs (coloration difference of animal and vegetal poles, with clear demarcation between the two poles), and nuclear (germinal vesicle) breakdown. The main indicator is called the Oocyte Polarity Index – a value that measures the germinal vesicle migration. In simple terms, it measures readiness for egg fertilization. We take samples of eggs from expectant female sturgeon, and these eggs are cut in half and examined for these specific qualities by USGS specialists.

This year we had three females that showed signs of readiness (and 15 that did not). They only release eggs every 3-6 years, so holding on to healthy females is a standard practice around here. These three fish have spent two and three years here, so we think their clocks were a little skewed by being in our artificial setting for so long. Anyway, last week we induced the fish with LHRH, a hormone used much the same in humans for the same reason, and hoped for the best. Despite checking on the fish at regular intervals over several days, only a negligible number of eggs were ever released. These were not even enough to fertilize.

Instead of just turning them back into the wild, we ended up using them for telemetry studies and release them into the Missouri River. The two devices implanted will track location in the river and depth/temperature readings, and will last a couple years or longer. Bottom line – we work uphill with this whole recovery process. It is difficult, time consuming, filled with unknowns and costly. We like to report on the successes and the happy things that we do, but sometimes things are just hard. And we don't always know why things didn't work right. But we will learn and make steps to improve and do our darnedest to help this species from fading off into extinction.

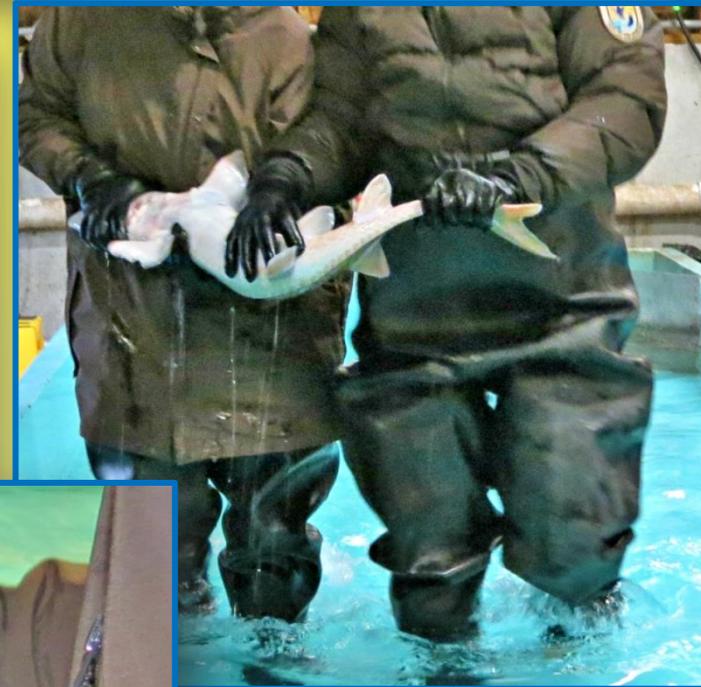
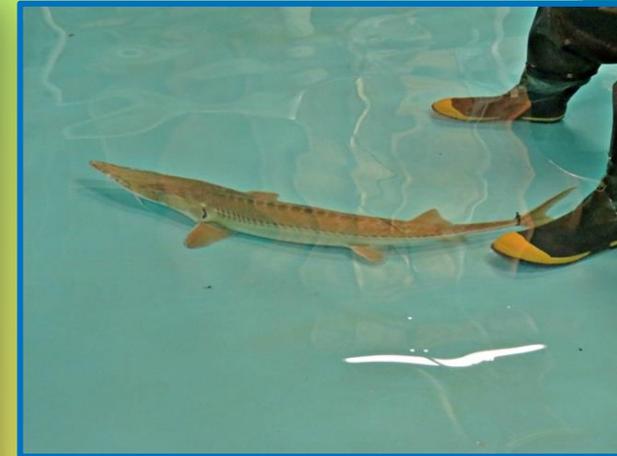
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Pallid early spawn efforts:



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Open House 2016

The scene on April 16th!






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Final shots...



The Final Word, from hatchery manager David Hendrix.



Hi Everyone ☺,

The Federal Fish Hatchery system has evolved over the years into being quite varied in its productions. The Neosho NFH is one our system's most diverse hatcheries, focusing on endangered pallid sturgeon recovery, Topeka shiner restoration, endangered Ozark cavefish protection, and production of rainbow trout, freshwater drum and mussels. Although our hatchery is the oldest operating facility in the whole system, it is still one of the most productive ones. We encourage everyone to stop by when the opportunity allows and enjoy a wonderful visit to a beautiful place. It would be well worth your stop! If you're ever in the area, make sure you stop by and take in this American treasure.

Until Next Time, Take Care ☺ !!!!!!!!!

*Newsletter and photos by Bruce Hallman,
Environmental Education Specialist*

