

Genoa National Fish Hatchery News and Notes



November 2017



About Genoa NFH

Genoa NFH was established over 80 years ago by the Upper Mississippi River Fish and Wildlife Act. The mission of the hatchery has changed from providing sport fish for area waters to a conservation hatchery concerned with the recovery of endangered aquatic species.

The hatchery is open for tours during business hours. For large groups, please call for an appointment. You can reach the hatchery at 608-689-2605 from 7:30 am to 3:30 pm. You can also find us online at: fws.gov/midwest/genoa And on Facebook at: facebook.com/GenoaNFH



How Far Would You Go To Raise a Mussel?

This might sound like a philosophical question, but in this can I mean it literally. How far, how many miles, would you be willing to travel to ensure production of one freshwater mussel species for a year? For some species the answer is as short as 50 miles, for others 100 or even 300, but we've developed a partnership at Genoa NFH that requires a 650 mile drive, each way. The North Platte State Fish Hatchery in North Platte, Nebraska has access to two species of fish that make mussel propagation much easier at Genoa NFH. The freshwater drum and flathead catfish are two species that are difficult to collect in significant numbers and appropriate sizes around Genoa. Fortunately, the North Platte SFH has access to both species nearby due to their unique water supply. For the last several years we've sent samples of both species to our fish health lab to certify that they are not carrying any diseases, and once they pass the inspection we take the long drive out to western Nebraska to pick up the fish and bring them home. Last month we made the run again, collecting 250 flathead catfish and 1,000 freshwater drum. While this is a very long distance to travel for host fish, the fish received are always of a high quality and handle captivity well because they've already spent time in a hatchery. The biggest bonus is that by getting both species of fish on the trip we can propagate 6 different mussel species each year (Pistolgrip, Butterfly, Pink Heelsplitter, Fragile Papershell, Deertoe and Fawnsfoot). That would bring the average mileage per species down to just over 100 miles each way, a much more reasonable number. We also have interest in propagating two additional endangered species in the future which both utilize the freshwater drum. Having this



partnership in place now ensures that we'll be ready if we ever get in the business of raising the Scaleshell or Fat Pocketbook. A big Thank You goes out to our partners in Nebraska for being willing to help us improve mussel propagation at Genoa NFH!
By Nathan Eckert

A net full of flathead catfish headed for the truck

Requests Pouring in for Fish

While winter settles in at Genoa National Fish Hatchery (NFH) spring planning kicks into high gear. In many professions, the arrival of winter can bring about a slower pace but at the hatchery there is no time to slow down. Planning for the upcoming production cycle begins almost immediately after the previous fish go out the door. It is important for staff at Genoa NFH to prepare and plan to make sure all of the appropriate pieces are in place. This entails prepping culture buildings for incoming eggs, repairing nets for spawning activities, and compiling fish requests from tribal, federal, and state partners. Biologists at the hatchery send out fish request forms to all partners which compile their fish needs and report them back to the hatchery staff.



Collecting Golden Shiners for mussel propagation

This allows the hatchery to determine pond space and rearing tanks needed to make sure these requests can be met. In the event that Genoa NFH does not raise the fish that partners sometimes need we can help coordinate partners with others to help find the fish they are after. The staff

also attends various fish meetings where requests can be shared with one another. This process allows Genoa NFH to gain access to fish that are not normally raised on station. Some good examples are the acquisition of Golden Shiners and Mudpuppies that are used for mussel propagation. All incoming or outgoing fish are passed through a rigorous series of fish health examinations to ensure that no possible pathogens are passed among stations and all partners are receiving certified healthy fish. All this is going on during the time we are collecting and caring for eggs from our fall spawning species such as lake herring, brook and rainbow trout. These species hatch out in the winter months and will need special care and attention to ensure that they acclimate to commercial starter diets, and begin their cycle of life. By

A juvenile mudpuppy. Once matured, the adult will be used for mussel propagation



By Aaron Von Eschen

Newly arrived Coaster Brook Trout eggs after the disinfecting process

Genoa National Fish Hatchery's mission is to recover, restore, maintain and enhance fish and aquatic resources on a basin-wide and national level by producing over 35 aquatic species of varying life stages, participating in active conservation efforts with our partners, and becoming a positive force in the community by educating future generations on the benefits of conservation stewardship



Cisco Restoration Continues at Genoa

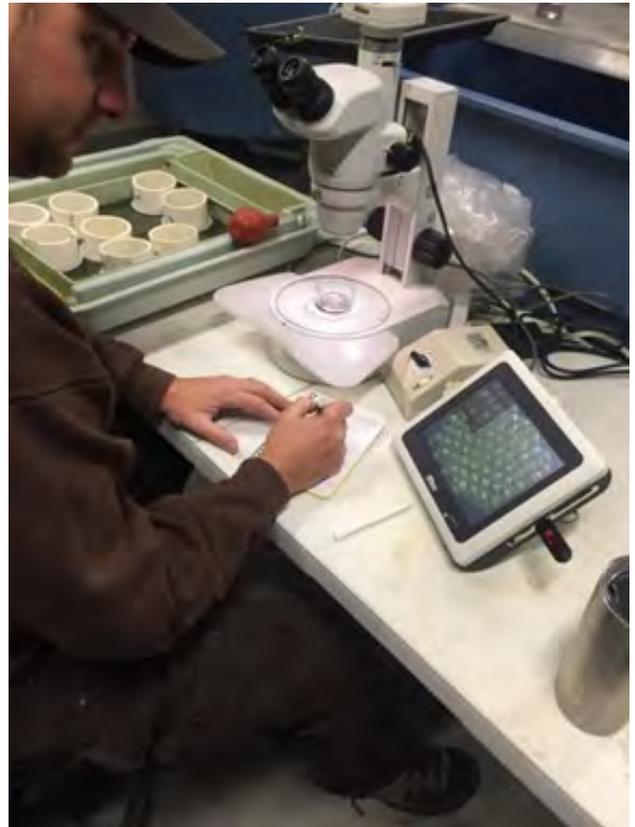
In 2016 cisco eggs were collected from Lake Huron and reared at the Genoa National Fish Hatchery as future brood stock for the Jordan River National Fish Hatchery. Currently the 2016 year class fish are approximately five inches and are well on their way to becoming future brood stock. Recently staff from the Jordan River, Genoa and Iron River National Fish Hatcheries and Alpena Fish and Wildlife Conservation Office were out on Lake Huron, near the Les Cheneaux Islands collecting cisco (*Coregonus artedii*) eggs for 2017 restoration projects. In an effort to reestablish and enhance cisco



A new lot of Cisco eggs from this years spawning collection

populations the U.S. Fish and Wildlife Service has partnered with multiple agencies to create brood stocks to assist in future reintroduction of lake herring into the Great Lakes. Genoa received eggs from collection efforts in November and the eggs are currently incubating in the newly constructed isolation facility. Staff members monitor development of the eggs before they are equally divided into brood lots. As the eggs begin to hatch, an equal representative sample of fry from each pair of

parents will be transferred to circular culture tanks for grow out. Once the fish begin actively feeding they will be offered a combination of live brine shrimp and dry commercial diets. These fish will remain in the isolation facility until clearing three separate disease inspections by the LaCrosse Fish Health Center. Once the Cisco clear disease inspection after two years, they will be transferred to Jordan River National Fish Hatchery in Michigan. These fish will serve as future bloodstock in the national fish hatchery system. Future reintroduction of these native prey species into the Great Lakes will strengthen food web dynamics and increase availability of food for predatory fish such as Lake Trout. By Orey Eckes



Monitoring development of cisco eggs



Pond 3 Dike Rehab

Being this close to the mighty Mississippi has its advantages. One of them is being close one of the most diverse mussel populations in the country. This allows us to make use of these populations for brood stock in our mussel conservation programs. Another is the source of eggs that we can collect and use for raising for mussel hosts, and to raise to meet the needs for fisheries management plans for other tribal and federal stockings. Another advantage is the supply of groundwater literally under our feet, both artesian and through shallow aquifers that is at a great quality and temperature to raise cold, cool and warm water species of fish. One of the drawbacks however, is being next to the

immense power of all that river water, especially during high water events. Floods in 1965, 1993 and 2001 did actually inundate the station, due to faulty dike earthwork or water control structures. Improvements have been made over the years to keep the good water in and the flood waters out, but funding our last major dike renovation had eluded us. That was the case at least until recently. The hatchery had just received funding to rehabilitate the dike protecting Pond 3 through the Service's deferred maintenance allocation in 2017. A contract was let and the River went down this fall, allowing contractors to complete the job in record time during a period of low precipitation. The original dike was built in 1969 by the Corps of Engineers, and many cottonwood, soft maple, and box elder had colonized the dike. Some of these trees were over 4 feet in diameter.

Removal of tress along the dike road



Reshaping the slop along the Pond 3 dike road

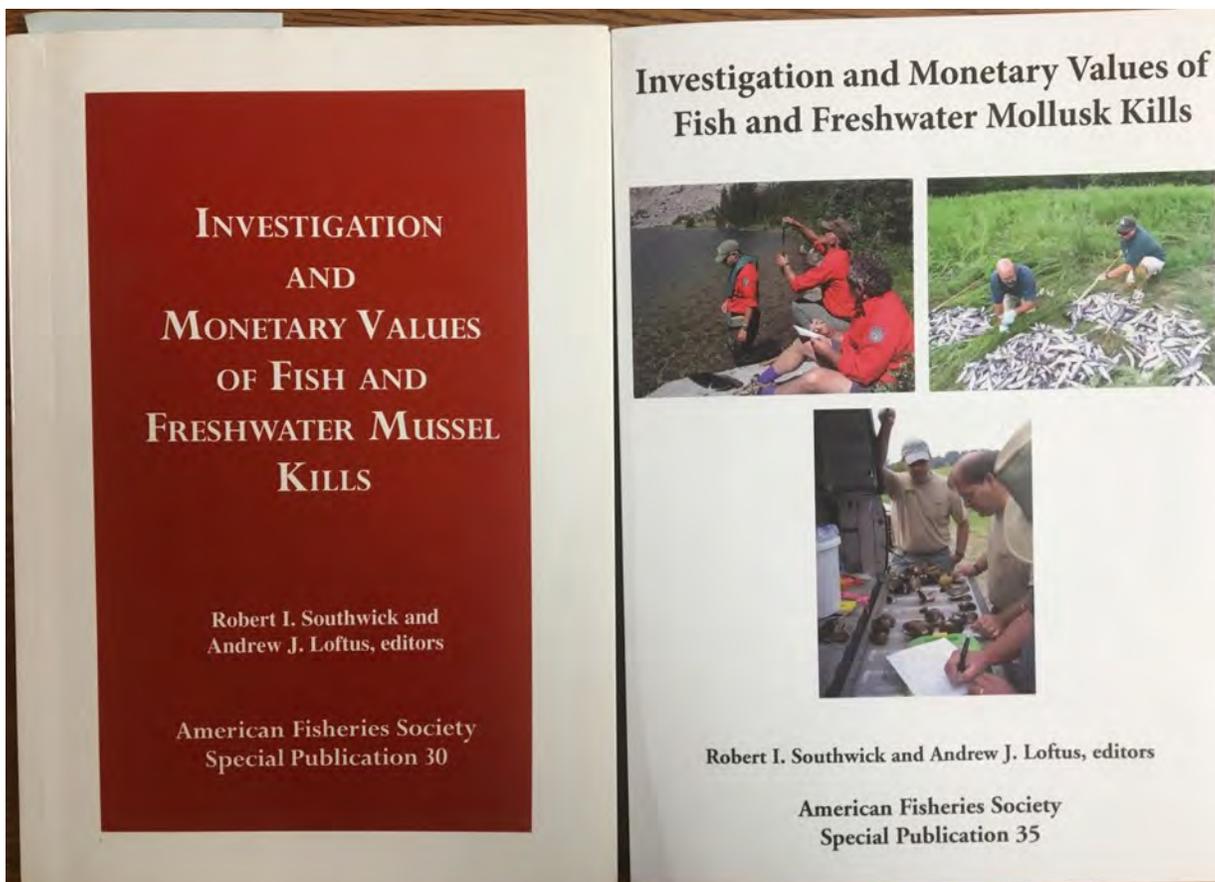
Trees are the bane of dikes, with their root systems causing collapse over time. The trees were removed from the dike, and slopes were reshaped, compacted and topsoil added to stimulate grass growth to reduce erosion. This will also allow the station to control brush growth on the dikes with pollinator friendly mowing practices. By using an environmentally friendly design that does not include riprap, the station will also not have to use pesticides control weeds and brush. The project also ensures that the station will maintain its biosecurity protocols by not allowing river water and its associated aquatic animals and their potential pathogens to enter our pond rearing system. By Doug Aloisi

How Much is that Mussel in the Window? A New Set of Replacement Values for Mussels and Fish

Have you ever wondered how much mussels and fish raised at Genoa National Fish Hatchery are worth? One way their value is established is through collaboration among biologists on a book published by the American Fisheries Society called “Investigation and Monetary Values of Fish and Freshwater Mollusk Kills.” A new edition of this book was just published and it creates sea-change in our understanding of the costs of mussel production and rearing. The values of freshwater mussels in the 2003 edition underestimated their replacement cost by more than half because so little was known about mussel propagation techniques at the time and mussels were being released at less than 1 mm long. Today we’ve propagated animals from most genera and been successful with the culture of some, but now largely release mussels that are large enough to tag. Underestimating the cost per mussel in the past limited the likelihood that animals that were killed could actually be replaced. When resources are undervalued it makes it easy to underestimate the damage done by even small changes. The values in this book are only intended to be used for animals that aren’t protected under the Endangered Species Act because there is an established process for estimating the value of federally protected species called National Resource Damage Assessment (NRDA). Further, these values only account for replacing an animal that can be replaced. Some endangered species are so rare that finding and raising more to replace even a small number is a near Herculean task. One other interesting chapter of the book is dedicated to investigating a fish or mollusk kill. Have you ever considered what biologists do if they walk up to a stream and find a sea of floating fish forms or pale mussel bodies on the river bottom? More than likely you have some ideas after watching crime drama on television, but we don’t get to call in the ichthyological (fish) or malacological (mollusk) CSI, instead we do it ourselves. These chapters give us and other biologists the tools to

The old (left) and new (right) editions of the American Fisheries Society “Investigation and Monetary Values of Fish and Freshwater Mollusk Kills” book

organize and collect samples of water and animal tissue, improving the chance of identifying the cause of the kill. Quickly and accurately determining the cause may mean that someone is held accountable, similar events can be prevented in the future and animals killed are replaced.
By Megan Bradley



Always Improving at Genoa

One can never go wrong with increasing success in fish and mussel culture programs. This is just what Genoa strives for with each of our programs. To ensure the success continues Genoa’s support team, consisting of Jeff Lockington and Zach Kumlin, are constantly developing and improving equipment from basic maintenance checks to updating monitoring systems. This fall Zach Kumlin



The new DO/O₂ monitoring system installed in our Isolation building



Connected though a set of pulleys, the probe is joined to the monitoring system

has been working on installing another PLC system to monitor



The connecting point of hoses from the oxygen tanks to control box

DO and oxygen flow in our Isolation building. The isolation building is the last building on station to get on our online alarm system. This brings a peace of mind for staff knowing that we will be able to prevent any inadvertent loss of species on station. This PLC system will be able to react to a pressure drop resulting from a possible blockage in the connecting hoses or any leaks that may have occurred along the hose or at a connecting point. Similar to the DO monitoring system this DO/oxygen flow can be set to a minimum and maximum level where once breached an alarm will sound. If there is a decrease in the pressure of the flow, a reduction in the amount of oxygen to the raceways can result in fish mortalities. By Erin Johnson



Full view of the oxygen and backup oxygen tanks linked up with the PLC system

Upcoming calendar of events

January 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 New Year's Day	2	3	4	5 Regional Mussel Coordination Meeting	6
7	8	9	10	11	12	13
14	15 Martin Luther King Jr. Day	16	17	18	19 Summit Outdoor classroom	20
21	22	23	24	25	26	27
28	29 Rainbow Trout Eggs Arriving	30	31 Friends of the Upper Mississippi Meeting			