

Building a Nursery for Lake Sturgeon



Outside view of the streamside rearing unit. USFWS

This spring a small but important new trailer-based sturgeon hatchery, built by the U.S. Fish & Wildlife Service with funds from the Great Lakes Restoration Initiative (GLRI), was delivered to the banks of the Kalamazoo River in southwestern Michigan, this facility is a key step in the long-term effort to rehabilitate critically small lake sturgeon populations in Lake Michigan.

Great Lakes sturgeon declined dramatically in the late 1800s from overfishing, pollution and habitat loss. Though many populations were extirpated long ago, sturgeons still persist in at least 8 rivers around Lake Michigan at a small fraction of their historic abundance. Once depleted, it is often difficult for sturgeon to recover because the survival rate of young fish is poor and it takes them many years to mature.

As part of a multi-agency effort to rehabilitate this ancient species in Lake Michigan, the Service committed to constructing and operating this new trailer-based streamside hatchery on the Kalamazoo River. This effort involved both the Green Bay Fish and Wildlife Conservation Office (FWCO) and the Genoa National Fish Hatchery (NFH) working in partnership with the Michigan Department of Natural

Resources (DNR) and other local partners.

The new streamside hatchery was procured and constructed at the Genoa National Fish Hatchery (NFH) and began operation in April 2011. During weeks of 24 hour field sampling, a dedicated crew of biologists from the Service's Green Bay FWCO and Genoa NFH, Michigan DNR, the Match-e-be-nash-she-wish Band of Pottawatomi Indians, and the Kalamazoo River Chapter of Sturgeon For Tomorrow were successful in collecting several hundred wild fertilized eggs from the Kalamazoo River. Once placed in the new hatchery, these wild eggs soon hatched and started their life within the streamside facility. They had a much better chance of survival than eggs and fish in the wild that face predation, disease and starvation.

Over the following 6 months, the team of Service and Michigan DNR biologists nurtured the survival of 150 young sturgeon along, feeding them brine shrimp, blood worms and krill. The fish grew up to a size of 6-10 inches so they could be tagged and released back into the river in the fall to continue their life as Kalamazoo River sturgeon.



These juvenile sturgeon have spent the entire summer living in the streamside rearing unit. They will soon be ready to be released back into the wild . USFWS

An important aspect of "streamside" rearing is that the fish are reared in water pumped from the river. This increases the likelihood that the young sturgeon will "imprint" in the same way wild fish do, ensuring their return to this river as mature adults and reducing the chance that they might stray to other rivers, causing genetic concerns for other populations. The big test will be in 20-25 years when these streamside reared fish start to return to the Kalamazoo River to spawn and sustain the next generation of sturgeon.

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Service biologists set egg collection mats near the spawning grounds on the Kalamazoo River. Collected sturgeon eggs are transported to the streamside hatchery facility for rearing. Rob Elliott, USFWS



Service biologists Kevin Mann (left) and Sam Stafslieen (right) examine egg mats for lake sturgeon eggs. These wild collected eggs are then transported to the Kalamazoo River streamside rearing facility where they are reared to fingerling size and released in the fall. River Elliott, USFWS



Top left: USFWS technician Lindsey Lesmeister (left) and MIDNR Biologist Kregg Smith (right) deploy mats near lake sturgeon spawning grounds to collect eggs. Kevin Mann, USFWS

Left: Service Biologist Sam Stafslieen searches through drift net samples collected from the Kalamazoo River to find eggs and larval lake sturgeon. Rob Elliott, USFWS

Bottom: Tribal employees Jesse Comben (left) and Andrea Koster (right) search for radio-tagged adult lake sturgeon near their spawning grounds. Rob Elliott, USFWS



In 2002, a partnership of agency and university biologists and researchers initiated a lake-wide assessment of the status of lake sturgeon in Lake Michigan. Rehabilitation needs were identified and prioritized and rehabilitation guidelines for conserving the genetic characteristics of remaining populations were developed. One particularly important idea was that stocking traditionally reared hatchery fish might lead to the loss of some remnant but genetically distinct populations. This was the impetus for developing the streamside rearing technique, first initiated on the Manistee River by the Little River Band of Ottawa Indians. This technique was then used to begin reintroducing sturgeon to four rivers in Michigan and Wisconsin where they had been extirpated. The Service's new Kalamazoo River hatchery is the sixth streamside facility now in use on Lake Michigan. 



Inside the streamside rearing unit. USFWS