



NEWSLETTER

Pallid Sturgeons on the Big Muddy



Pallid Sturgeon Survey 2018

Chapter members Bill and Cliff
(center and center right) bait
hooks for the trot lines

By Gerry Crawford

April 4, 2018 was the date and KC Riverfront Park the place to begin the 13th year for the Pallid Sturgeon Survey on the “Big Muddy” Missouri River. These ongoing surveys are funded by the USACE with agencies like MDC providing the equipment, expertise and staffing for the data collection. Our survey team consisted of MDC Fishery Techs Carol Lutes, Bethany Hoster, and Kyle Winters, all from Chillicothe, along with MMN Loess Hills Chapter volunteers Bill Blackledge, Cliff Amos and myself. Another chapter member, Bruce Windsor, was on the river in another survey boat.

The Pallid Sturgeon, so named for its pale skin coloration, is a 70 million year old species from the Cretaceous period, endemic to the MO river and some other tributaries. It has been declared endangered by the USFWS since 1990 largely due to the loss of gravelly spawning habitat on the river from upstream damming and channelization along the river’s course. Female Pallids may reach breeding age around 15 years but at maturity may only spawn at 3 to 10 year intervals. The males may be mature enough to spawn at 5 to 9 years but could also take several more years to become breeders.

Capture of the fish at each survey area on the river involves the use of 8 trot lines each with 40 dropper lines and circle hooks baited with night crawlers. Lines had been set on a previous day at appropriate locations, mostly at the end of wing dikes. On this day we caught 65 fish consisting of: 4 Blue Catfish, one Pallid/Shovel nose hybrid, one wild Pallid and the rest Shovel Nose Sturgeon. The Techs were especially enthused about the wild Pallid which had been naturally spawned in the river versus spawned in a hatchery and released in the river. The Techs said this fish was one in a thousand and very unique since survival rate of wild spawned Pallids reaching adulthood is very low.

All fish are measured, weighed and examined for anything notable. Additionally the Pallids are scanned for an implanted PIT chip (previously installed at the hatchery), spaghetti tag (on a previously caught wild fish) and/or a clipped side scale called a scoot. The wild Pallid we caught was an adult male 36” long but not yet developed enough to

Pallid Sturgeon Survey Missouri River



Above: Gerry holds a Pallid Sturgeon caught on one of eight trot lines

Below: Survey team members (l to r) Bethany, Cliff, Carol, Gerry, Bill, Kyle



be a prospective breeder. It received an ultra sound exam to determine gender and breeding maturity; if it had been mature enough, it would have been kept for transport to a hatchery for breeding. Captured wild Pallids will have a chip installed and a small tissue sample clipped from the tail for genetic testing later in the lab. We were told that currently one hatchery is at capacity for female Pallids but is needing mature males. All the data for each fish is recorded in a computer system along with GPS location and in some cases the river velocity (termed habitat). Captured fish are handled gently and released back to the river.

Hatchery spawned fish are raised to about 8" and released into the river. Approximately 165,000 fish have been released since the program began in 1998. The USFWS has determined the survey and restocking programs will continue indefinitely.

Since we pulled and removed each trot line during the catching process, they must now be re-baited again and installed in the river for the next day's survey. Every crew member gets to enjoy this wormy re-baiting part of the process but at least it's after lunch. HA!!

Although this day began at 18°F, the sun was bright and wind light making for a fine day to be on the Big Muddy in support of an important conservation effort and enjoy the camaraderie of other naturalists.

A video/journalist from Kansas City channel 41, was along on this trip doing a story on the survey.

Several Members Dig Into Statewide Soil Health Survey

By Hayley Howard

To say soil is an important component of a healthy ecosystem would be an understatement. Contrarily, healthy soil is essential to the proper growth of plants for food and helps complete both the carbon and water cycles on Earth. The depletion of healthy soil could potentially disrupt life on the planet.

These facts are part of what is driving the MO DIRT (Missourians Doing Impact Research Together) survey of which several members of the Loess Hills MMN chapter are involved. As citizen scientists, they are digging into the science of dirt, collecting and analyzing samples and reporting their findings to help determine the impact climate change has on soil health.



To participate in the ongoing, grant-funded survey, members attended a workshop last August led by Dr. Sandra Arango-Caro from the Donald Danforth Plant Science Center where they received all the necessary equipment and training.

As part of the research, participants selected their own survey sites, and revisit them monthly, completing field and lab tests that include measuring the water content, density, fertility, pH, active carbon, temperature and texture of the soil.

Kim LaFollette and Sue Ann Knight chose two former soybean fields on their farm in Plattsburg that they converted into grazing pastures for their sheep. Since discovering some deficiencies in the sheep that could be attributed to the soil, they have developed more sustainable practices such as composting and rotational grazing.

Haley collecting Sample for MoDirt Citizen Science

“I think this program is a great opportunity to learn more and be able to apply what I learn in a practical way to promote the health of my little piece of property,” Kim said.

Other members who are involved in the survey include Hayley Howard, Marsha Williams, Cliff Amos, Dennis and Suzanne Rush and Richard Fulker.

This is the first collective soil survey of its kind in Missouri. To learn more or get involved, visit <http://modirt.missouriepscor.org/soilhealthsurveys>.

Massasauga Rattlesnake Survey at Loess Bluffs Refuge

By Gerry Crawford

The Prairie Massasauga Rattlesnake is an endangered species in Missouri. The Prairie subspecies is a close relative to the Eastern subspecies, which was once found along the Mississippi River but now considered driven out of Missouri.

The Prairie Massasauga's coloration runs from light to dark with brown blotches on the back and a light belly. The snake's head is a diamond or triangle shape having pits between the eyes and nose. Its length is typically 18" to 30". Its venom is highly toxic but human deaths from their bite is very rare. They prefer a wet prairie habitat having crayfish holes, which the snakes use for protection from the weather and predators. Much of these wet prairie habitats have been lost due to farming practices of draining and drying them. The snake's preferred foods consist of small rodents like voles and deer mice along with other small snakes such as Garter snake varieties. The snakes mate in summer and females give birth every other year, also in summer, to 4 to 10 live young.

Thursday, April 12th was a near ideal weather day for a snake survey at LBNWR with the air temperature near 80°F, warming the soil, causing snakes to emergence from the holes in the ground. Darrin Welchert, Refuge Biologist, conducted the survey with assistance from: Dr Jay McGee, from NWMU; Dr. Mark Mills, from MWSU; 5 of their students; and Naturalists Bill Blackledge and myself. The survey is conducted on wet prairie areas on the refuge, which had been burned, leaving the soil nearly bare, save for some very young emergent grass. Survey personnel walk the prairie in a line with about 10' spacing looking to locate and capture the snakes using snake tongs and specimen bags. Darrin supervises examination of the snakes to gather the data; and then safely releases them back where they were caught. The Massasaugas are weighed, measured, wanded for in implanted ID chip, and sexed. Rattles are counted and females are examined for possible pregnancy. Scale sample taken from some; their tails painted to identify recaptures during the survey. If no chip was detected, one is installed. The soil temperature is taken and GPS location acquired. All of this data is entered into an APP on a smart phone. The phone APP is a new system replacing the paper forms used in previous years. All tools and devices that had contacted each snake are cleaned with hygienic wipes to prevent spread of any potential disease. No disease signs were found on any of the snakes sampled.

On this day 21 Saugas were caught and sampled; 2 escaped; 37 non venomous species were counted. Some of the non venomous varieties were: Garter snakes, Diamond-back Water snake, Brown snake, Crayfish snake, and others. Overall it was a good survey with rewarding results. Darrin always practices and stresses the utmost in safety and caution during all phases of the survey.



It's a worthy effort in the interest of preserving and protecting an endangered specie in the state of Missouri and as always a great opportunity to enjoy the wildlife diversity at the LBNWR.

Left: Mort Nelson looks on as snakes are examined (photos by Bill Blackledge)

Below: The Prairie Massasauga Rattlesnake



Please visit our excellent chapter website: <https://loesshills.missourimasternaturalist.org>