



Missouri
Department of
Natural Resources

WATER QUALITY COORDINATING COMMITTEE

DNR Conference Center
Roaring River Conference Room
1730 E. Elm Street
Jefferson City, Missouri

November 19, 2013

10:00 a.m.

MEETING AGENDA

Conservation of Missouri's Threatened and Endangered Stream Fish, Doug Novinger, Aquatic Systems Resource Scientist, Missouri Department of Conservation

Collaborating for Success, Jim Marsteller, Mill Creek Watershed Coalition

Other

Agency Activities

Meetings & Conferences



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MINUTES

Attendees:

Greg Anderson	DNR, Water Protection Program	Valerie Hentges	DNR, Water Protection Program
Doug Novinger	MDC	Graham Freeman	DNR, Water Protection Program
Mark Osborn	DNR, Water Protection Program	Kirk Lambrecht	DNR, Water Protection Program
Karen Westin	DNR, Water Protection Program	Chris Riggert	MDC
John Johnson	DNR, Water Protection Program	Amy Meier	MDC
Terri Brink	EPA Region 7	Kat Lackman	MDC
Ken Struempf	DNR, Soil & Water Conservation Pgm	Jim Marstiller	Mill Creek Watershed Coalition
Norb Plassmeyer	Interested Citizen	Darlene Schaben	DNR, Water Protection Program

Introductions were made.

Conservation of Missouri's Threatened and Endangered Stream Fish, Doug Novinger, Aquatic Systems Resource Scientist, Missouri Department of Conservation PowerPoint Presentation

Doug is a Resource Scientist with the Missouri Department of Conservation (MDC). Doug's focus is on monitoring and research related to endangered stream fish and collaborating on different stream conservation projects. He manages MDC's fish community database, which is a compilation of fish collection records beginning from the 1930's. He is also a Fish Natural Heritage Biologist, coordinating approvals and reviews of different wildlife collector permits and other issues that come up with natural heritage-type species and conservation concerns. Doug said there are seven species of fish that are federal listed in Missouri—Grotto Sculpin, Pallid Sturgeon, Shovelnose Sturgeon, Topeka Shiner, Neosho Madtom, Niangua Darter, and Ozark Cavefish. Doug presented information on four of these.

Some challenges found when studying these fish are that the threats are complex, difficult to study, a lack of information, and the political and social issues. There are a variety of methods to study population, habitat preferences, and status types of surveys. Most of their field time is spent on the Niangua Darter. It was listed as threatened in 1985. Adults grow to approx. 4-5 inches in length. They move in the substrate in the bottom of the stream and are only found in north-flowing tributaries of the Osage River and only found in Missouri. One main threat is the construction of large reservoirs. Maries River and Tavern Creek, Little Niangua and Big Niangua, Pomme de Terre River, and tribs to Sac River are where populations are currently found. Threats to the Niangua Darter include poorly designed road crossings, erosion, cattle in streams, and gravel mining and channelization. Darters do not do well in streams where there is heavy sediment. They are working to institute a number of recovery activities, which include population monitoring, actively searching for new populations, habitat improvement initiatives (livestock fencing, stream bank stabilization), removing fish passage barriers, and research into ecology and propagation. Doug showed a map where monitoring was done in Tavern Creek and where fish were detected. One thing learned is the Darters occupy habitats with diverse fish communities.



Surveys have shown they are harder to find in late fall/winter months and think they must winter-over in substrates.

Removing barriers to fish passage have been a priority over the last few years. The preference is a clear span bridge instead of a low water crossing so fish can move freely upstream and downstream. They have replaced 17 crossings so far with 2 more scheduled for 2014. They have found positive results in a short amount of time where crossings have already been replaced. One study included an elastomer mark to show movement from season to season. This study was in collaboration with UMC.

The Topeka Shiner was listed as endangered in 1998. The adult grows to approx. 2 inches. Studies show they are located in Iowa, Kansas, Minnesota, Missouri, Nebraska, and South Dakota. There are two major populations in Missouri—Moniteau Creek and northwest Missouri. Doug displayed a map of Missouri that showed since 1940 the Topeka Shiner population has declined dramatically. Threats to Topeka Shiners include poor water quality, loss of suitable habitat, changes in stream flows, increased predator fish, and isolated populations. In 2010 MDC developed a 10-year Plan for Recovery of Topeka Shiners in Missouri with a goal to stabilize and enhance populations in seven streams. Some efforts include monitoring populations and habitat, habitat improvement, research on biology and propagation, and reintroductions. A large number of sites were monitored in Moniteau Creek. In 2011 they found Topeka Shiners in more than 50% of the watershed. In 2013 they found more had returned after the 2012 drought. Their resilience seems to be pretty impressive. Based on the 2011 data, they found the fish were sensitive to conductivity. They are excited about non-essential experimental populations. Doug showed a map of watersheds where they have proposed reintroduction. As of Nov. 6 reintroductions have been in Big Muddy Creek and Little Creek watersheds.

Ozark Cavefish was listed as threatened in 1984. They only grow to be 3 inches and have white to translucent bodies. They are very fascinating but difficult to study. They lack operative eyes and live in the underground system. They are found in the Springfield plateau of southwest Missouri, northeast Oklahoma, and northwest Arkansas in slow-flowing underground streams. Water quality is the number one threat. Sometimes there is direct flow to the underground system with little filtration or buffering, easily allowing contaminants. They work with landowners to have vegetation around sinkholes to alleviate contaminants to enter the groundwater.

The federal and state recovery plans call for 15 stable populations. Efforts have been placed on site protection, protection of water quality, population monitoring, public information and education, and research on ecology, genetic relatedness and methods. The Recharge Areas have been delineated which helps identify threats. They have marked some Ozark Cavefish with visible implanted elastomer using individual color and position code to determine turnover, movement among sites, but they have all disappeared. However, they did see other fish so, there may be more fish than they imagined.

Doug also talked about results of a study on relating lead-zinc mining in the Tri-State Mining District and distribution to cavefish and other cave organisms. A lot of heavy metals were released into the environment and groundwater in 1850-1960. They have contracted with Missouri State University and worked with Fish & Wildlife Service to use part of the natural resource damage fund to sample a number of sites, both inside and outside mining impacted areas. There were 67 different survey sites. There were strong spatial patterns among groundwater organisms, mining-associated contaminants, and other water quality. Stygobites were rarely observed inside mined areas (n=2, 8%) compared to outside (24 sites, 57%). Ozark Cavefish were observed in one site inside mined areas vs. 12 sites outside (four new sites). Sites inside mined areas had high metals and sulfate, lacked nutrients (low nitrate+nitrite), and had low dissolved oxygen, elevated ammonia, and high temperatures. They found pretty good predictors of where cavefish could be found. Doug said it may take years, if not decades, to recover.



Collaborating for Success, Jim Marsteller, Mill Creek Watershed Coalition
PowerPoint Presentation

Jim leads the Mill Creek Watershed Coalition. Mill Creek is located in Phelps County; the watershed is located approx. 10 miles southwest of Rolla. It includes 30,000 acres. Mill Creek is a premier birding area (over 170 birds identified), a Blue Ribbon trout stream (not stocked since 1888), multiple endangered species, restored grasslands, a natural bridge, 50 acres of wetland fens and 12+ springs, and a priority watershed for MDC and Forest Service. Their mission is to conserve and restore the Mill Creek Watershed and its natural communities. The Coalition is governed by an Executive Committee, and moving toward more of a local ownership. They are a non-profit group and associated with the Missouri Stream Team Watershed Coalition (MSTWC). They collaborate with several groups: Mill Creek Neighbors, US Forest Service, USDA, Project Healing Waters Flyfishing, Federation of Fly Fishers, MO Dept. of Natural Resources, MSTWC, Audubon, MO Dept. of Conservation, MO Stream Team, Troutbusters, MO Master Naturalist, The Nature Conservancy, KETC PBS Channel 9, and MO University of Science and Technology, to name a few.

Jim said their vision is to leave a legacy of how conservation best gets done. This will be accomplished through collaboration and education, which is enabled through attitude, focus, and resources. They did a 24-hour Mill Creek Bio-Blitz in 2013. MDC was one of 8 sponsors and donated t-shirts. The purpose was to inventory the flora and fauna. There were approx. 104 volunteers, 22 scientists/teams, and has approx. \$15K contributed. Results included finding 397 species, distributed 500 bottles of water and 300 hot dogs, listened to a bluegrass band and had a lot of fun, learning, and new relationships. Jim showed a video of the Bio-Blitz. Jim felt the event was very successful. It involved six months of planning and leadership, with 25 volunteer leaders appointed to gather other volunteers, a lot of local commitment, contributions and sponsors, it was a learning opportunity, a lot of appreciation and fun.

Using Section 319 funding they developed a website with animation (millcreek.org). With KETC Channel 9 support, they plan to produce a film to tell the story. Jim showed part of the film. They also have some action-learning brochures. Jim tested the group to make an origami tadpole that includes learning about recycling. The Mill Creek Watershed Coalition had a collaborative planning meeting to decide how to build a plan to satisfy everyone's needs. Using an approach provided by The Nature Conservancy, they can start with a framework and build on it.

In looking ahead, they have a Forest Stewardship Program, the Clean Water Experience (a tour and field trip), Engineered Log Jams, and Total Ecosystem Restoration. They, along with The Nature Conservancy, submitted a proposal for Elm Spring Restoration and received funding from the National Fish and Wildlife Foundation (NFWF). The project would restore the hydrology, geomorphology, and aquatic habitat for long-term stability, wetland enhancement, and native fish recovery within Elm Spring and its spring run. The objective is to develop the technical design for restoring Elm Spring and its spring run using Natural Channel Design principles.

In answer to a question, Jim said the funding was approx. \$28,000 from NFWF. Jim encouraged the group to follow the group on Twitter @MillCreekMo.

Other

Greg mentioned the 319 program has new guidance from EPA which places equal emphasis on protecting waters as well as restoring waters. Greg felt this was something that was missing for a while.

Meeting adjourned.