

Functional Assessment of Missouri River Mitigation Wetlands in Iowa

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Duration: June 2009 to May 2014
Funding Source(s): U.S. Army Corps of Engineers
Goals and Objectives:

- Evaluate herpetofauna habitat function of restored wetlands in the Missouri River floodplain
 - Relate species response to management practices and physical attributes of wetlands
 - Integrate results from comparable studies in collaborating states to produce models to inform adaptive management of existing and future mitigation programs
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Introduction:

Between 1912 and 2003, 522,000 acres of Missouri river habitat were lost in the states of Nebraska, Iowa, Missouri and Kansas as a result of the Bank Stabilization and Navigation Project (BSNP). Not only were valuable wetland acres lost, the channel itself was highly altered. 127 river miles were lost between Sioux City and St. Louis, leading to increased degradation in the upper regions and aggradations issues below Council Bluffs. Drastic measures within the channel were taken to insure navigation flow was maintained along with regulated flows from Gavin Point, resulting in a major disconnect of the river from its floodplain and a loss of the diverse habitats once created and maintained by highly variable flow rates. The previously dynamic river is no longer able to create wetlands and side channel areas as it had prior to channelization. Many existing wetlands have begun to fill with silt or otherwise dewater, leaving few remaining wetlands.

The U.S. Army Corps of Engineers (USACE) is the agency responsible for managing the Missouri River for navigation and flood control. It is also the entity responsible for implementing the BSNP mitigation project. The USACE, in partnership with the U.S. Fish and Wildlife Service (USFWS), and state fish and game agencies, are acquiring land and restoring fish and wildlife habitat along the channelized reach of the Missouri River. A critically important component of the mitigation program is restoration of some portion of the acreage, types and functions of the historic wetlands along the Missouri River floodplain. The Water Resources Development Acts of 1986 (WRDA86) and 1999 (WRDA99) authorized the acquisition of 148,550 acres as part of the Missouri River Mitigation Project and habitat development on a further 18,200 acres. The goals of the Mitigation Project include improving “the biological health of the ecosystem of the canalized Missouri River.” By 2003 approximately 10,000 acres of wetlands had been restored. Assessment of wetland restorations is important to ensure that the created wetlands function is similar to the natural wetlands that were lost over the last 100 years.

Progress:

We identified 42 potential long-term study wetlands in the Tieville-Decatur-Louisville Bend regions in Monona County. We conducted a Call Survey in each wetland in May and June, 2009 and documented presence of seven species of frogs and toads in at least one site. Plains leopard frog, Eastern grey tree frog, and Blanchard’s cricket frog were most frequently recorded. We constructed drift fences and pitfall traps at five wetlands, and subsequently captured and marked approximately 400 individuals of eight species, but the large majority were northern and plains leopard frogs. We used minnow traps in each site and captured painted and false map turtles, as well as various tadpole and fish species.

Future Plans:

Results from the 2009 pilot season will be used to modify field techniques and sampling designs. In consultation with our collaborators and the USACE, study objectives will be refined or changed as appropriate.