USACE Natural Resource Management

Fish

Neosho Madtom

Neosho Madtom *(Noturus placidus)*: This is a small member of the catfish family and is typically less than 3 inches in length. Appearance is typical for a catfish in terms of body shape, sensory barbels on the head, scaleless skin, and a dorsal adipose fine that is joined or nearly joined to the top of the caudal fin. This species has a mottled coloration with dark vertical bars on the caudal fin. (USFWS)

Status: *Threatened,* listed 1990

NatureServe: *Imperiled*

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Imperiled

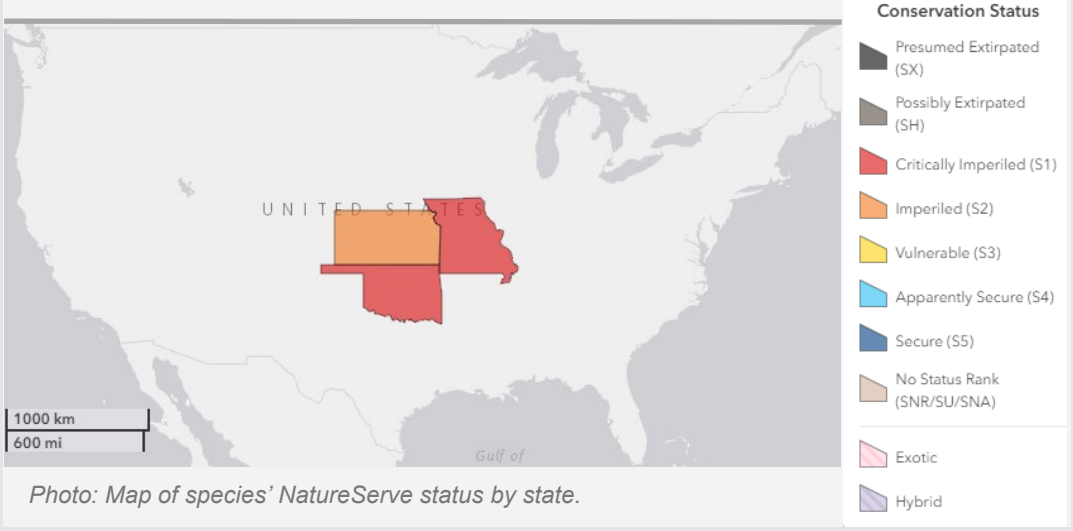


Photo: Map of species' NatureServe status by state.

Order: The order *Siluriformes* is comprised of the world's catfish species. There are a total of eleven families which belong to this order. Common characteristics of catfish species include one to four pairs of barbells on the head around the mouth. Catfish typically have spiny rays at the front of the dorsal and pectoral fins. Additionally most catfish lack body scales. (ITIS.gov, USFWS)

Photos Left to Right: U.S. Fish and Wildlife Service, U.S. Fish and Wildlife Service, U.S. Geological Survey

Management and Protection:

- Found only within the Neosho river basin, the Neosho madtom occupies stream riffles where there is loosely-packed gravel substrate. Adults display a preference for swift, shallow currents while the young madtoms prefer deeper water with slower currents. (USFWS)
- Much of this madtom's habitat has ben inundated by the construction of dams and reservoirs. This inundation destroys the gravel riffles and swift current the Neosho madtom needs to survive. Other threats to this species include gravel dredging and pollution stemming from cattle feedlots. Droughts have the potential to reduced habitat via the drying of rivers. (USFWS)
- In the USFWS's 2020 Five-Year Status Review for the Neosho madtom, the Service noted that the species still persists within the Neosho river basin despite the numerous stressors and threats. However, the total number of individuals remains low to moderate.
- The careful management of and operation of dams has potential to benefit the Neosho madtom. Efforts to reduce non-point source pollution within the Neosho River's watershed will benefit this species. (USFWS)

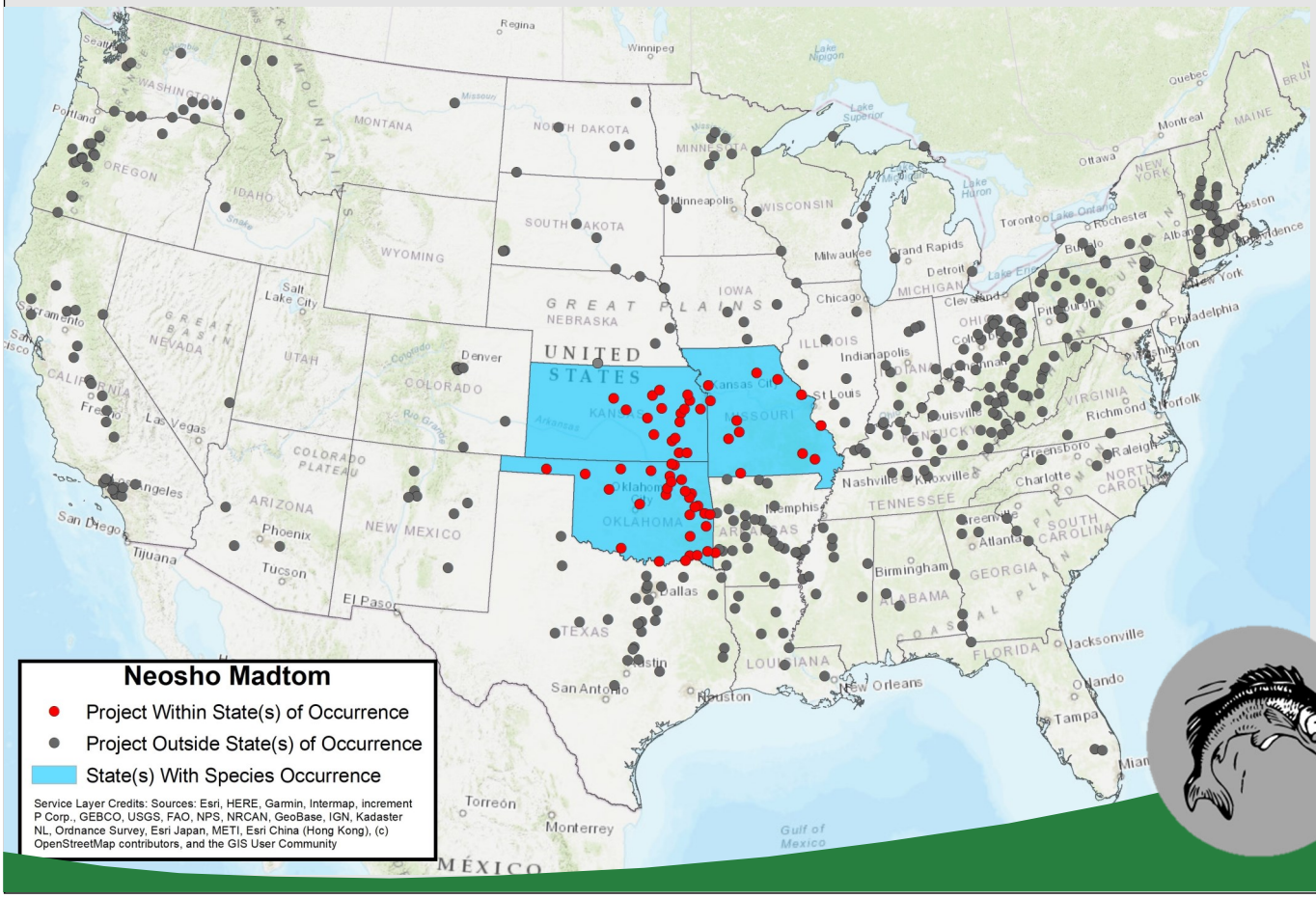
USACE ROLE: According to the Engineering Research and Development Center's Threatened and Endangered Species Team Cost Estimates, the USACE has expended over $120,000 on efforts related to the Neosho Madtom since 2005. These funds have been expended multiple business lines. Expense types have ranged from Coordination and Determination to Inventory, Survey, and Monitoring efforts as well as Site Visits and Inspections.

Neosho Madtom= $120,984 (2005)

What is USACE NRM Doing: John Redmond Dam of Tulsa District is located directly on the Neosho River, which the Neosho madtom is endemic to. During the 1990's surveys were done and fishery data was collected regarding Nesoho madtoms and other catfish species. Data was collected both upstream and downstream of the dam and reservoir and was published in 2000. With Nesoho madtoms present in connected waterways, efforts were made to determine how dam operations impact catfish populations. Comparative studies were conducted to determine differences in the fishery above the dam comparted to the fishery below the dam. Generally, more catfish were present above the dam.

Photo: An image of John Redmond Dam and Reservoir.

Project staff work to ensure that all current and proposed work is performed in a manner which does not negatively impact federally listed species, like the Nesho madtom, or their habitats.



Source: Map provided by Ashleigh Boss, ORISE Fellowship, Institute for Water Resources

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