Contemporary status of the North American paddlefish, *Polyodon spathula*

Kim Graham  
Missouri Department of Conservation, III0 South College Ave., Columbia MO 65201, U.S.A.  

Received 28.7.1994 Accepted 13.3.1996

**Key words:** Polyodontidae, commercial fishing, sport fishing, distribution, endangered status

**Synopsis**

North American paddlefish, *Polyodon spathula* were once abundant in most large rivers and tributaries of the Mississippi River basin, but numbers have declined dramatically in most areas during the past 100 years. Habitat destruction and river modification are the most obvious changes affecting their distribution and abundance. Although peripheral range has dwindled, paddlefish still occur over most of their historic range and are still found in 22 states. Populations are currently increasing in 3 states, stable in 14, declining in 2, unknown in 3, and extirpated in 4. Sport harvests presently occur in 14 states, however two states with traditionally important sport fisheries report decreased recruitment into the population and are planning more restrictive regulations. Commercial fisheries are reported in only six states. During the past 10 years, five states have removed paddlefish from their commercial list primarily because of declines in adult stocks due to overfishing or illegal fishing. Ten states are currently stocking paddlefish to supplement existing populations or to recover paddlefish populations in the periphery of its native range.

**Introduction**

The North American paddlefish, *Polyodon spathula* is one of two living species of paddlefishes, the other being the Chinese paddlefish, *Psephurus gladius* (for additional basic information on Polyodontidae, see Russell 1986, Grande & Bemis 1991, Bemis et al. 1997 this volume, and Wei et al. 1997 this volume). Paddlefish once were abundant in most large rivers and major tributaries of the Mississippi River basin (Carlson & Bonislawsky 1981), however since the turn of the century, these populations have declined dramatically in most areas (Gengerke 1986). Habitat destruction and river modification are the most obvious changes affecting the abundance and distribution of paddlefish. Construction and operation of dams on mainstem streams has had severe impacts (Sparrowe 1986, Unkenholz 1986). Dams eliminated traditional spawning sites, interrupted natural spawning migrations, altered water flow regimes, dewatered streams, and eliminated backwater areas that were important as nursery and feeding areas. To a lesser degree, industrial pollution, poaching adults for caviar, and overfishing by commercial and sport fishermen have adversely affected paddlefish populations (Pflieger 1975, Carlson & Bonislawsky 1981, Pasch & Alexander 1986).

In 1989, the U.S. Fish and Wildlife Service was petitioned to include paddlefish on the list of Threatened and Endangered Species under provisions of the Endangered Species Act of 1973. The U.S. Fish and Wildlife Service, after collecting supplemental information from all 22 states, agreed that the listing of paddlefish as ‘threatened’ was not warranted. Because of the uncertainty of the species’ status in several portions of its range, the U.S. Fish and Wildlife Service recommended a reclassifi-
cation from category 3C to a category 2 under authority of the Endangered Species Act of 1973, as amended. Category 3C is intended for taxa that have proven to be more abundant or widespread than previously believed and/or those that are not subject to any identifiable threat. Category 2 indicates taxa for which information now in the possession of the U.S. Fish and Wildlife Service indicates that proposing to list as endangered or threatened is possibly appropriate, but for which conclusive data on biological vulnerability and threat are not currently available to support proposed rules. The U.S. Fish and Wildlife Service believes this classification will encourage further investigation and biological research of the species’ status throughout its range. Additionally, paddlefish were added to the list of Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1992 primarily because of concern about illegal poaching for the international caviar trade.

This paper reviews major changes in paddlefish status in the United States since Gengerke’s (1986) report, illustrates historical changes since the turn of the 20th century, discusses major reasons for declines, defines current range of paddlefish in the United States, describes current status of paddlefish in the United States, and predicts their future as a fisheries resource.

**Distribution**

Historically, paddlefish were abundant throughout the Mississippi River basin and adjacent Gulf drainages, with a few records from the Great Lakes (Gengerke 1986). Neill et al.\(^1\) reported that several