

Effects of Commercial Harvest on Shovelnose Sturgeon in the Upper Mississippi River

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Goals and Objectives:

- Describe population parameters of shovelnose sturgeon in the upper Mississippi River (UMR),
 - Assess current and future harvest scenarios and accompanying actions that might be used to sustain commercial harvest of shovelnose sturgeon in the UMR, and
 - Model variation in recruitment as a function of flows through the UMR system
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Introduction:

Shovelnose sturgeon are becoming an increasingly important commercial species in the upper Mississippi River (UMR) due to collapsing foreign sturgeon populations and bans on imported caviar. Data regarding shovelnose sturgeon population parameters in the UMR are currently more than thirty years old; therefore, more recent information is needed for managing these populations. We began a project in the spring of 2006, in collaboration with the Iowa Department of Natural Resources (IDNR) and the Wisconsin Department of Natural Resources (WDNR), to study the impacts of commercial harvest on shovelnose sturgeon populations in the UMR system. Three study pools (Pools 9, 13, and 14) were chosen as the focus of the study.

Progress:

During the 2006 field season, 781 shovelnose sturgeon were collected from the three study pools. Preliminary analyses indicate that shovelnose sturgeon in Pool 9 have higher mean lengths, weights, and relative weights (W_r). Pool 9 is also an area of interest because small shovelnose sturgeon (< 530 mm) are absent, but are common in Pools 13 and 14. Sex ratios were similar for Pools 9 and 13 (62 F : 38 M and 69 F : 31 M, respectively), but in Pool 14 the ratio was more even (48 F : 52 M). An analysis of the precision of four aging structures for shovelnose sturgeon is also underway. Preliminarily, cross-sectioned fin rays appear to be more useful than dorsal scutes, opercles, and cleithra.

Future Plans:

Future plans include obtaining additional egg samples for fecundity estimates as well as analyzing data to model effects of commercial harvest and potential management alternatives on UMR shovelnose sturgeon populations. Collected data will also be used to model variation in recruitment as a function of spring flows through the UMR basin.