

## *Shortnose Sturgeon Research Priorities*

NOAA's National Marine Fisheries Service (NMFS) has identified the following research priorities for shortnose sturgeon. The priorities appear in random order and all are considered high priority.

- Presence Studies: Sample for shortnose sturgeon in systems where they are suspected to occur and/or have occurred historically using accepted presence/absence protocol.
- Interbasin Movements and the Potential for Colonization: Evaluate coastal migrations and interbasin movements of shortnose sturgeon including the occasional use of smaller rivers near known spawning populations. Explore the potential for colonization across river systems. Note: the scale of this research objective may require the cooperative efforts of multiple researchers covering several states.
- Long-term population monitoring programs: There are relatively few shortnose sturgeon populations with long-term monitoring programs. New and more reliable estimates of population size, age structure, survival and recruitment are needed to monitor population health and status through time (e.g., whether it is decreasing, increasing, or remaining stable).
- Improve the quality of demographic information used in population estimates: Develop techniques to validate sturgeon ageing procedures and improve estimates of spawning periodicity (reproductive schedule).
- Distribution and Abundance: Information on the distribution, abundance, and movements of all life stages of shortnose sturgeon is still needed for some populations, particularly for young-of-the year and juveniles.
- Rangewide Habitat Characterization: Identify map and characterize important overwintering, spawning, rearing and foraging habitats.
- Rangewide Genetic Assessments: Conduct genetic assessments to identify the evolutionary processes behind the genetic differentiation observed among shortnose sturgeon populations. Determine whether observed genetic differences between populations are indicative of adaptive significance or are simply due to isolation and random genetic drift.
- Contaminants and Water Quality Studies:
  - Determine the effects of contaminants on shortnose sturgeon survival, growth and reproduction using cultured fish.
  - Identify contaminants in the wild that may impact shortnose sturgeon using water quality data and information gained from tissue analyses of

- deceased fish found in the wild. Work to develop a baseline to detect causal relationships and trends related to specific contaminant levels.
- Expand on existing and past research identifying oxygen demanding sources. Map causal relationships of high biological oxygen demand in shortnose sturgeon habitats.
  - Develop Fish Passage Devices for Sturgeon: Currently there is little information that sturgeon use existing fish passage devices. Both up- and down-stream fish passage devices need to be engineered to help sturgeon species pass dams so that historic and possibly more suitable spawning habitat can be reached.