

Primary Factors Affecting Sturgeon Populations in the Southern United States: Fishing Mortality and the Degradation of Essential Habitat

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Atlantic and shortnose sturgeons are highly valued for their eggs (caviar) and flesh, but stocks of both species are depleted. The shortnose sturgeon is listed as an endangered species, and a longterm (multidecade) moratorium on fishing for Atlantic sturgeon is specified in the recently updated fishery management plan of the Atlantic States Marine Fisheries Commission. Thus, identification, protection, and enhancement of essential habitats are priority issues for management agencies. As anadromous (Atlantic) and nearly anadromous (shortnose) species, these sturgeons use a wide variety of habitats; variations occur latitudinally, seasonally, and among different life stages. Spawning habitats have been identified in two southeastern rivers for shortnose sturgeon, but to date no spawning sites have been verified for Atlantic sturgeon. Some life stages of both species (including young juveniles) concentrate in or are restricted to small portions of estuaries during summer. Deterioration of water quality (especially dissolved oxygen) appears to be degrading the nursery function of these summer refugia, creating a recruitment bottleneck. Protection of essential habitats, especially nursery/summer habitats, from humancaused dissolved-oxygen reductions and other impacts is critical. By-catch, primarily in riverine/estuarine gillnet and estuarine/marine trawl fisheries, appears to be the second major source of mortality for southern sturgeons. Reserves, or no-fishing zones, could protect populations by reducing or eliminating by-catch mortality. This protection would be especially valuable in high salinity foraging areas (used primarily during cool months) and during spawning migrations. Proposed management strategies aimed at conservation and restoration of sturgeon populations therefore focus on two areas: protection of essential habitats and establishment of reserves to provide protection from fishing gears that generate substantial sturgeon by-catch. Specific management recommendations were developed on a system-by-system basis.

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