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MANAGEMENT BRIEFS

Distributions of Shortnose and Atlantic Sturgeons in South Carolina

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Abstract.—Records of 662 Atlantic *Acipenser oxyrinchus oxyrinchus*, 1,024 shortnose *A. brevirostrum*, and 59 unknown sturgeons in South Carolina were acquired from various sources. Shortnose sturgeon were 25.6–129.0 cm total length (TL) and were reported from 10 rivers, 3 bays or sounds, 2 reservoirs, and the Atlantic Ocean. Atlantic sturgeon were 10.1–245.0 cm TL and were reported from 11 rivers, 3 bays or sounds, 1 reservoir, and the Atlantic Ocean. All ocean records of shortnose sturgeon were from near shore, primarily in the vicinity of river plumes, while juvenile Atlantic sturgeon were recorded in depths up to 40 m. During the spawning season, adult shortnose sturgeon were recorded at upriver locations in the Savannah, Cooper, Waccamaw, Santee, and Congaree rivers. The Congaree River records add credence to the hypothesis that there is a landlocked population in the Santee–Cooper Lake system (Lake Moultrie, Lake Marion, and the Congaree River). There is also apparently a population in the ACE Basin (Ashepoo, Combahee, and Edisto rivers). Atlantic sturgeon populations probably are present in the Savannah, Santee and Waccamaw rivers, and the ACE Basin and, perhaps, in the Cooper River. No records provided information on probable spawning locations of Atlantic sturgeon. About 96% of shortnose sturgeon were taken in gill nets, 2% in trawl nets, and 2% on trotlines (from a reservoir). About 76% of Atlantic sturgeon were captured in gill nets and 23% in trawl nets. There were no verifiable reports of capture by hook and line (i.e., angling) for either species.

Atlantic *Acipenser oxyrinchus oxyrinchus* and shortnose *A. brevirostrum* sturgeons are sympatrically distributed along the Atlantic coast from Canada to Florida (Vladykov and Greeley 1963). These species once supported valuable fisheries throughout their ranges, and South Carolina produced about 55% of sturgeon landings along the Atlantic coast of the United States in 1976 (Smith et al. 1984). Fisheries now are closed in most states, including South Carolina, and the shortnose sturgeon is listed as endangered. Determining the status of extant populations, identifying critical habitats, and restoring depleted stocks of both species are high priorities for state and federal fisheries management agencies (e.g., NPSSC; Rakes 1993).

Information on the temporal and geographic distribution of sturgeons in South Carolina has been recorded by various groups and agencies for many years. However, these archived data are not available to regulatory and management groups because, with the exception of a few directed studies (e.g., Hall et al. 1991; Collins and Smith 1995), specific records are held in various forms and locations by a number of agencies. In this paper we compile and analyze the available information on occurrence of sturgeons in South Carolina.

Methods

Historical and recent records of sturgeons in South Carolina waters were obtained from all available sources and compiled during 1994–1995. Original data sets, rather than publications or institutional reports, were examined whenever possible. Anecdotal reports were omitted from analyses; remaining records were primarily from biologists associated with various state and federal agencies and educational institutions. Many, if not most, sturgeons were collected incidentally while sampling for other species. Thus, gear types used, sampling effort, and seasons sampled varied among water bodies, and these variations are reflected in the data. Although additional information was included in some reports, fish length, capture location and date, and gear type used were the only variables recorded consistently enough to be included in analyses.

Results

Records of 1,024 shortnose sturgeon, 662 Atlantic sturgeon, and 59 sturgeon of unknown species were compiled. Reports began as early as 1896, and were from most major bodies of water along the coast of South Carolina (Figure 1). Most records were from the South Carolina Department of Natural Resources (SCDNR, formerly the South Carolina Wildlife and Marine Resources Department), which initiated extensive sturgeon research in the late 1970s.