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J. A. Musick

Virginia Institute of Marine Science

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STATUS OF STURGEONS IN VIRGINIA

By

J. A. Musick

Virginia Institute of Marine Science

and

School of Marine Science

The College of William and Mary

Gloucester Point, Virginia 23062

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Virginia Marine Resources Report #80-8

STATUS OF STURGEONS IN VIRGINIA - June 1980

by J. A. Musick

Acipenser brevirostrum Lesueur - Shortnose Sturgeon

Distribution in Virginia: Known from a single specimen, the skin of which is deposited in the Smithsonian Institution (USNM 26273). Musick recently examined and confirmed the identification of this specimen which was collected from the Potomac River by J. W. Milner on 19 March 1876. The specimen has been the basis for reports of Acipenser brevirostrum from the Potomac River by Uhler and Lugger (1876), Smith and Bean (1899), Hildebrand and Schroeder (1928), Vladykov and Greely (1964) and Musick (1972).

Status: Endangered in Virginia. This species is classified as Endangered on the U.S. Endangered Species List, (Federal Register, vol. 32, 11 March 1967). It is already protected by Virginia laws Relating to Fisheries of Tidal Waters section 28.1-49.1 (Anonymous, 1974).

The question exists whether Acipenser brevirostrum was ever a member of the Virginia fish fauna. The existence of one specimen collected more than 100 years ago is certainly not good evidence that a viable population (either resident or migratory) ever occurred in the state. Conversely, the species was first discovered and described from the Delaware River estuary, the nearest large estuarine system to the north of the Chesapeake, and apparently the species still spawns there. In addition, viable populations presently exist in river systems to the south of the Chesapeake. Therefore, it

It is possible that Acipenser brevirostrum may have spawned in Virginia's larger rivers at one time or at least may have occurred in Virginia's nearshore waters as a migratory component of populations which spawned elsewhere. As in other Atlantic coast rivers Acipenser brevirostrum probably has been extirpated in Virginia because of dam construction and pollution.

Protective Measures Proposed: If Acipenser brevirostrum still occurs in Virginia it should be taken occasionally by the spring gillnet fishery for shad or in spring poundnet catches. The Virginia Institute of Marine Science monitored these fisheries as part of its continuing study of anadromous fishes (supported by the National Marine Fisheries Service) in 1978 and 1979 (Loesch et al., in press). Although they reported a total of 2500kg of sturgeon caught (and released) in 1978 and 5214kg in 1979, no A. brevirostrum were taken. Through the auspices of the National Marine Fisheries Service the Shortnose Sturgeon Recovery Team is currently attempting to compile and assess all available information on Acipenser brevirostrum. Following this compilation the team will make recommendations for re-establishment of the species. Among their options may be fish culture (artificial fertilization and transplantation of eggs). Such techniques for other species of sturgeons were investigated many years ago (Ryder, 1890). Fish culture of Acipenser brevirostrum should be more successful than that of Acipenser oxyrinchus because Acipenser brevirostrum is much smaller and easier to handle, and modern culture techniques utilizing hormones may be used to produce and maintain fish in spawning condition.

Acipenser o. oxyrinchus Mitchell - Atlantic Sturgeon

Distribution in Virginia: Recent catches from the Potomac Rappahannock, York and James river estuaries (Wiley, 1970; Musick, 1972; VCU collection). Loesch et al. (in press) reported that 2500kg of this species were captured and released in 1978 as a by-catch in the spring pound and gillnet fisheries in Virginia. They found 107% increase in the by-catch of this species (5214kg) in 1979. Most of this increase was due to higher catches in the James River. All but a few of the sturgeon reported were immature. Average weights were: James River, 1.6kg; York River, 3.8kg; and Rappahannock River, 2.9kg. One of the most surprising findings reported by Loesch et al. is that 22 sturgeon tagged in the Hudson River by W. L. Dovel were recovered in Virginian estuaries. These sturgeon represent more than 30% of the total of 60 recaptured out of 4264 Atlantic sturgeon tagged in the Hudson. It is possible that Atlantic sturgeon spawned in the Hudson may use the Chesapeake estuary seasonally as a feeding ground.

Status: Threatened in Virginia. Considered Depleted, Rare and/or Endangered in 13 other states (Miller, 1972).

The history of sturgeon stocks along the eastern seaboard is one of overfishing and decimation by habitat destruction (pollution and dam construction). Even though Acipenser oxyrinchus has a high fecundity, its great age to maturity makes the species particularly vulnerable to overfishing. Because it is anadromous in large rivers the species has been particularly susceptible to spawning habitat destruction.

Industrial and domestic pollution associated with Fall Line population centers have led to degradation of adjacent riverine and estuarine habitats. Dam construction such as that on the lower Susquehanna River and possibly that associated with navigation canals in Virginia has further reduced the spawning habitat available to sturgeon.

The decline of the sturgeon fisheries has been well-documented by Ryder (1890) and several other authors summarized in Murawski and Pacheco (1977). In Chesapeake Bay Hildebrand and Schroeder (1928) documented a drastic decline in sturgeon landings from 1880 to 1920. By 1928 a law was passed in Virginia stating that no sturgeon less than 4 feet in length might be removed from the waters of the state. After assessing the extremely depleted condition of sturgeon stocks in the early 1970's we suggested that further protection was needed and Virginia laws relating to the Fisheries of Tidal Waters (Section 28.1-49.1) now state "It shall be unlawful for any person to take or catch and retain possession of any sturgeon fish....".

Even though sturgeon are protected in Virginia, our stocks may still be subject to fisheries during their post-spawning migration along the coast. During the colder months, substantial landings of sturgeon are still reported from North Carolina. It is possible that these landings are comprised of fish from Virginia and other mid-Atlantic states that spend the winter along the North Carolina coast.

Protective Measures Proposed: Tagging studies should be initiated to determine whether Virginia sturgeon are being taken by North Carolina winter fisheries. If so, consideration should be given to protection of sturgeon from coastal fisheries. Individual states might still allow estuarine and riverine fisheries for sturgeon where stocks are adequate to support such fisheries.

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