



NOAA Technical Report NMFS SSRF-731

Annotated Bibliography and  
Subject Index on the  
Shortnose Sturgeon,  
*Acipenser brevirostrum*

James G. Hoff

April 1979

# NOAA TECHNICAL REPORTS

## National Marine Fisheries Service, Special Scientific Report—Fisheries

The major responsibilities of the National Marine Fisheries Service (NMFS) are to monitor and assess the abundance and geographic distribution of fishery resources, to understand and predict fluctuations in the quantity and distribution of these resources, and to establish levels for optimum use of the resources. NMFS is also charged with the development and implementation of policies for managing national fishing grounds, development and enforcement of domestic fisheries regulations, surveillance of foreign fishing off United States coastal waters, and the development and enforcement of international fishery agreements and policies. NMFS also assists the fishing industry through marketing service and economic analysis programs, and mortgage insurance and vessel construction subsidies. It collects, analyzes, and publishes statistics on various phases of the industry.

The Special Scientific Report—Fisheries series was established in 1949. The series carries reports on scientific investigations that document long-term continuing programs of NMFS, or intensive scientific reports on studies of restricted scope. The reports may deal with applied fishery problems. The series is also used as a medium for the publication of bibliographies of a specialized scientific nature.

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649. Distribution of forage of skipjack tuna (*Euthynnus pelamis*) in the eastern tropical Pacific. By Maurice Blackburn and Michael Laurs. January 1972, iii + 16 p., 7 figs., 3 tables. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
650. Effects of some antioxidants and EDTA on the development of rancidity in Spanish mackerel (*Scomberomorus maculatus*) during frozen storage. By Robert N. Farragut. February 1972, iv + 12 p., 6 figs., 12 tables. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
651. The effect of premortem stress, holding temperatures, and freezing on the biochemistry and quality of skipjack tuna. By Ladell Crawford. April 1972, iii + 23 p., 3 figs., 4 tables. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
653. The use of electricity in conjunction with a 12.5-meter (Headrope) Gulf-of-Mexico shrimp trawl in Lake Michigan. By James E. Ellis. March 1972, iv + 10 p., 11 figs., 4 tables. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
654. An electric detector system for recovering internally tagged menhaden, genus *Brevoortia*. By R. O. Parker, Jr. February 1972, iii + 7 p., 3 figs., 1 app. table. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
655. Immobilization of fingerling salmon and trout by decompression. By Doyle F. Sutherland. March 1972, iii + 7 p., 3 figs., 2 tables. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
656. The calico scallop, *Argopecten gibbus*. By Donald M. Allen and T. J. Costello. May 1972, iii + 19 p., 9 figs., 1 table. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
657. Making fish protein concentrates by enzymatic hydrolysis. A status report on research and some processes and products studied by NMFS. By Malcolm B. Hale. November 1972, v + 32 p., 15 figs., 17 tables, 1 app. table. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
658. List of fishes of Alaska and adjacent waters with a guide to some of their literature. By Jay C. Quast and Elizabeth L. Hall. July 1972, iv + 47 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
659. The Southeast Fisheries Center bionumeric code. Part I: Fishes. By Harvey R. Bullis, Jr., Richard B. Roe, and Judith C. Gatlin. July 1972, xl + 95 p., 2 figs. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
660. A freshwater fish electro-motivator (FFEM)—its characteristics and operation. By James E. Ellis and Charles C. Hoopes. November 1972, iii + 11 p., 2 figs.
661. A review of the literature on the development of skipjack tuna fisheries in the central and western Pacific Ocean. By Frank J. Hester and Tamio Otsu. January 1973, iii + 13 p., 1 fig. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
662. Seasonal distribution of tunas and billfishes in the Atlantic. By John P. Wise and Charles W. Davis. January 1973, iv + 24 p., 13 figs., 4 tables. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
663. Fish larvae collected from the northeastern Pacific Ocean and Puget Sound during April and May 1967. By Kenneth D. Waldron. December 1972, iii + 16 p., 2 figs., 1 table, 4 app. tables. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
664. Tagging and tag-recovery experiments with Atlantic menhaden, *Brevoortia tyrannus*. By Richard L. Kroger and Robert L. Dryfoos. December 1972, iv + 11 p., 4 figs., 12 tables. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
665. Larval fish survey of Humboldt Bay, California. By Maxwell B. Eldridge and Charles F. Bryan. December 1972, iii + 8 p., 8 figs., 1 table. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
666. Distribution and relative abundance of fishes in Newport River, North Carolina. By William R. Turner and George N. Johnson. September 1973, iv + 23 p., 1 fig., 13 tables. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
667. An analysis of the commercial lobster (*Homarus americanus*) fishery along the coast of Maine, August 1966 through December 1970. By James C. Thomas. June 1973, v + 57 p., 18 figs., 11 tables. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
668. An annotated bibliography of the cunner, *Tautoglabrus adspersus* (Wilbaum). By Fredric M. Serchuk and David W. Frame. May 1973, ii + 43 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
669. Subpoint prediction for direct readout meteorological satellites. By L. E. Eber. August 1973, iii + 7 p., 2 figs., 1 table. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
670. Unharvested fishes in the U.S. commercial fishery of western Lake Erie in 1969. By Harry D. Van Meter. July 1973, iii + 11 p., 6 figs., 6 tables. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
671. Coastal upwelling indices, west coast of North America, 1946-71. By Andrew Bakun. June 1973, iv + 103 p., 6 figs., 3 tables, 45 app. figs. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

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**U.S. DEPARTMENT OF COMMERCE**

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**National Marine Fisheries Service**

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National Marine Fisheries Service, Special Scientific Report - Fisheries

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## References

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A Bibliography of the Literature of the Distribution of the *Chironomus tentans* Group, with a Key to the Distribution of the Group and a List of the Species

### INTRODUCTION

The Bibliography contains 230 references on the extensive distribution, life history and biology of the chironomid genus *Chironomus tentans* Latr.

Arrangement of the references is alphabetical by author's surname. With multiple authors, the name is read only under the surname of the first author. Works are listed chronologically by year of publication, and those published in the same year are given alphabetical sequence by title. Anonymous works are listed by the name of the journal or the reporting agency.

Only one instance of the initials of the publication that apply in the short-form citation are included here. The exception is that *A. J. S.* is included when initials of the author are given in the short-form citation of the reference that can be obtained from these initials.

In the task of reviewing the vast amount of material referred to in this bibliography, I was assisted and aided from many individuals. Thanks go to the Director of the Marine Biological Laboratory at Woods Hole, Mass., and to the Director of the Museum of Comparative Zoology at Harvard University, for their permission to draw papers and illustrations at hand. I acknowledge the help I received from Miss Kinross and Miss DeLaney, members of the department charged with general library recovery work.

I wish to give special thanks to the Smithsonian Marine Biological Laboratory students who helped throughout the preparation of this Bibliography, especially Susan Park, Janet Hall, Jr., and Michael Murphy. And finally, I thank the grant, late husband.

### BIBLIOGRAPHY

ALEXANDER, A. B.  
1903. Studies on the Biology of the New England Chironomids. *Rep. U.S. Geol. Surv.* 25:1-240-258.

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1912. *Chironomus tentans* Latr. *Trans. Am. Ent. Soc.* 14:1-10.

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Cocke and North, *Chironomus tentans* Latr. *Trans. Am. Ent. Soc.* 14:1-10.

### ABBREVIATIONS

U.S. Government, *United States Geological Survey*, U.S. Geol. Surv. *Trans.* 25:1-240-258.

The chironomid *Chironomus tentans* Latr. is listed as *Chironomus tentans* Latr. in the Department of the Interior, *Bureau of Land Management*, *Chironomus tentans* Latr. *Trans.* 25:1-240-258.

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An adult *Chironomus tentans* Latr. from the Hudson River is listed as *Chironomus tentans* Latr. in the Department of the Interior, *Bureau of Land Management*, *Chironomus tentans* Latr. *Trans.* 25:1-240-258.

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1974. *Chironomus tentans* Latr. *Trans. Am. Ent. Soc.* 14:1-10.

# Annotated Bibliography and Subject Index on the Shortnose Sturgeon, *Acipenser brevirostrum*

JAMES G. HOFF<sup>1</sup>

## ABSTRACT

A bibliography that consists of 165 references on the classification, distribution, abundance, life history, and ecology of the shortnose sturgeon, *Acipenser brevirostrum*. Brief annotations and a subject index are included for this rare and endangered species.

## INTRODUCTION

This bibliography consists of 165 references on the systematics, distribution, life history, and ecology of the shortnose sturgeon, *Acipenser brevirostrum* LeSueur.

Arrangement of the references is alphabetical by author's surname. With multiple authors, the entry is made only under the senior author's name. Each author's works are listed chronologically by year of publication and those published in the same year are given alphabetical sequence by title. Anonymous articles are listed by the name of the journal or the originating agency.

Brief annotations of the contents of the publications that apply to the shortnose sturgeon and its scientific name are given. This annotation is not done to make value judgments of the papers but to give clearer descriptions of the contents than can be obtained from their titles.

In the task of examining the vast number of scattered references in the ichthyological literature, I have received aid from many individuals. Thanks go to the librarians at the Marine Biological Laboratory at Woods Hole, Mass., and to the librarians at the Museum of Comparative Zoology at Harvard University. My indebtedness to those persons and institutions is great. I acknowledge the help I received from Brian Kinnear and Mike Dadswell, comembers of the shortnose sturgeon endangered species recovery team.

I wish to give special thanks to the Southeastern Massachusetts University biology students who helped throughout the preparation of this bibliography, notably Susan Faria, James Hoff, Jr., and Michael Murphy. And finally, I thank the typist, Rita Sasseville.

## BIBLIOGRAPHY

ALEXANDER, A. B.

1905. Statistics of the fisheries of the New England states. Rep. U.S. Comm. Fish. 1904:245-326.

<sup>1</sup>Southeastern Massachusetts University, North Dartmouth, MA 02747.

Catch and market statistics for sturgeon in Maine, New Hampshire, Massachusetts, and Connecticut are given. Since species are not mentioned, the shortnose sturgeon is probably included.

ANONYMOUS.

1975. Threatened wildlife of the United States. U.S. Fish Wildl. Serv. Resour. Publ., 289 p.

The shortnose sturgeon is listed as being endangered and a recommendation was made by the Department of the Interior to locate and protect shortnose sturgeon spawning sites.

APPY, R. G., and M. J. DADSWELL.

1978. Parasites of *Acipenser brevirostrum* LeSueur and *Acipenser oxyrinchus* Mitchell (Osteichthyes: Acipenseridae) in the Saint John River Estuary, N. B., with a description of *Caballeronema pseudoargumentosus* sp. n., (Nematoda: Spirurida). Can. J. Zool. 56:1382-1391.

Shortnose, juvenile Atlantic, and mature Atlantic sturgeons have distinct parasite faunas which may reflect their contrasting life histories.

ATZ, J. W., and C. L. SMITH.

1976. Hermaphroditism and gonadal teratoma-like growths in sturgeon (*Acipenser*). Bull. South. Calif. Acad. Sci. 75:119-126.

An adult *Acipenser brevirostrum* from the Hudson River exhibited ovotestes. This teratoma-like structure may have been the result of the abnormal development of a parthogenetic or self-fertilized egg.

BAIRD, S. F.

1873. List of fishes collected at Woods Hole. Rep. U.S. Comm. Fish. 1871-1872:823-827.

The shortnose sturgeon was collected in 1871 at Woods Hole. A complete collection of the 121 fish species was deposited in the U.S. National Museum.

BEAN, T. H.

1897. Notes upon New York fishes received at the New York Aquarium, 1895-1897. Bull. Am. Mus. Nat. Hist. 9:327-375.

A single shortnose sturgeon from Gravesend Bay was brought to the aquarium on 13 May 1896. It had taken food regularly, and was living (7 December 1897). The species proved to be well adapted to aquarium life.

1901. Catalogue of the fishes of Long Island. Rep. Forest Fish Game Comm. N.Y. State 1900:251-260.

Range and differentiation from the common sturgeon is provided.

1902. Food and game fishes of New York. Rep. Forest Fish Game Comm. N.Y. State 7:251-260.

The shortnose sturgeon is only positively recognized in the Delaware and Gravesend Bay. In 1817, it was brought in the shad season to Philadelphia and sold from 25 to 75 cents each.

1904. Catalogue of the fishes of New York. Bull. N.Y. State Mus. 60, 784 p.

Includes an erroneous description of shortnose sturgeon spawning and feeding habits, misquoted directly from Ryder (1888).

BERG, L. S.

1904. Zyr systematik der Acipenseridae. Zool. Anz. 27:665-667.

A taxonomic account of the shortnose sturgeon is given.

1940. Classification of fishes both recent and fossil. Applied Scientific Research Corporation of Thailand, Bangkok (1965):346-517.

Comments on Acipenserini: *Acipenser* L., Upper Cretaceous (scutes) to recent; Europe, Asia, N. America.

BERTIN, L.

1939. Revision des Stromiatiformes (Téléostéens, Isopondyles) du muséum. Bull. Mus. Hist. Nat., Paris 2(11):378-382.

The article includes a synonymy of *Acipenser brevirostrum*.

BIGELOW, H. B., and W. C. SCHROEDER.

1936. Supplemental notes on fishes of the Gulf of Maine. Bull. U.S. Bur. Fish. 48:319-348.

A 30-inch specimen, taken at Provincetown about 1907, now in the collection at the Museum of Comparative Zoology, was the only reliable record for the Gulf of Maine. This record was omitted from "Fishes of the Gulf of Maine" (Bigelow and Welsh 1925).

1953. Fishes of the Gulf of Maine. U.S. Fish Wildl. Serv., Fish. Bull. 53, 577 p.

A description, life history, and coastal distribution of the shortnose sturgeon. The only locality records given are from Provincetown and Waquoit, Mass.; from the Hudson River, N.Y.; from the Delaware Bay and River; and from Charleston, S.C.

BLAIR, W. F., A. P. BLAIR, P. BRODKORB, F. R. CAGLE, and G. A. MOORE.

1957. Vertebrates of the United States. 2d ed. McGraw-Hill Book Co., N.Y., 616 p.

A brief description and range for *A. brevirostrum*.

BOWERS, G. M.

1907. Statistics of the fisheries of the New England states for 1905. Rep. U.S. Comm. Fish. 1906:1-93.

Catch and market statistics for sturgeon in Maine, Massachusetts, and Connecticut are given. Since species are not mentioned, the shortnose sturgeon is probably included.

BOYLE, R. H.

1969. The Hudson River, a natural and unnatural history. W. W. Norton and Co., N.Y., 304 p.

According to the Interior Department, all recent catches of shortnose sturgeon, except for one Florida specimen, have been from the Hudson. Occasional specimens exceed the published record size in the scientific literature. In 1965 and again in 1969, a hermaphroditic specimen was caught. Information on their natural history, caviar preparation, cooking, and demand at aquariums is provided.

BREDER, C. M., Jr.

1938. The species of fish in New York Harbor. Bull. N.Y. Zool. Soc. 41(1):26-28.

The shortnose sturgeon is included in a list of fishes inhabiting the New York harbor.

1948. Field book of marine fishes of the Atlantic coast, from Labrador to Texas. G. P. Putnam's Sons, N.Y., 332 p.

The shortnose sturgeon is briefly described with its range.

#### BRICE, J. J.

1898. A manual of fish-culture, based on the methods of the United States Commission of Fish and Fisheries. Rep. U.S. Comm. Fish. 1897:1-340.

Experimental work indicates that there are no insurmountable obstacles in the way of extensive artificial propagation, although the work presents some unusual difficulties.

#### BUMPUS, H. C.

1898. The breeding of animals at Woods Hole during the months of June, July and August. Science 8:850-858.

*Acipenser brevirostrum* was occasionally taken in June, the females bearing ripe eggs.

#### CHUTE, W. H.

1944. Guide to the John G. Shedd Aquarium. 4th ed. Shedd Aquarium, Chicago, 236 p.

The shortnose sturgeon is one of the species held in the Shedd Aquarium.

#### COBB, S. N.

1900. The sturgeon fishery of the Delaware River and Bay. Rep. U.S. Comm. Fish. 1899:369-380.

Both species are found in the Delaware River, but only the common sturgeon is put to commercial use. *Acipenser brevirostris* rarely exceeds 3 ft and therefore is not gilled. Some are taken at the shore seine fisheries and in the shad gill nets.

#### COLLINS, J. W., and H. M. SMITH.

1892. Report on the fisheries of the New England states. Bull. U.S. Fish. Comm. 10:73-176.

The common sturgeon is included as one of the products of the fisheries of Massachusetts. Since size was not mentioned, it is possible that shortnose sturgeons were processed also.

#### COMMITTEE ON NAMES OF FISHES.

1970. A list of common and scientific names of fishes from the United States and Canada. 3rd ed. Am. Fish. Soc. Spec. Publ. 6,150 p.

*Acipenser brevirostrum* is listed.

#### COMMITTEE ON RARE AND ENDANGERED WILDLIFE SPECIES.

1966. Rare and endangered fish and wildlife of the United States. U.S. Dep. Inter. Res. Publ. 34, var. pag.

Information for the shortnose sturgeon is presented on distinguishing characteristics, present distribution, former distribution, endangered status, estimated numbers, fecundity, reason for decline, protective measures already taken, measures proposed, number in captivity, and culture potential in captivity.

#### COPE, E. D.

1883. The fisheries of Pennsylvania. Rep. State Comm. Fish. 1881 and 1882:103-183.

Sturgeon are sold in the markets of Philadelphia and adjacent cities. Numerous fishing boats are engaged in taking them in strong nets, the catch is often very large.

#### CUERRIER, J. P.

1947. Quelques indications sur la taille de maturité la fréquence des pontes et la saison de ponte de l'Esturgeon de lac. Annals ACFAS 13, 100 p.

The article deals with *Acipenser* spawning season and size at maturity.

1951. The use of pectoral fin rays to determine age of sturgeon and other fish species. Can. Fish Cult. 11:10-18.

The aging method is applicable to shortnose sturgeon.

#### CURRIAN, H. W., and D. T. RIES.

1937. Fisheries investigation in the lower Hudson River IV. In A biological survey of the lower Hudson watershed, p. 125-145. Rep. N.Y. State Conserv. Dep., Suppl. 26 (11).

Ninety-five shortnose sturgeons ranging in length from 450 to 884 mm were examined. The diet of sturgeon in the lower Hudson included insects, crustaceans, mollusks, and annelids.

#### DADSWELL, M. J.

1975. The biology and resource potential of certain fishes in the St. Johns Estuary. (Mimeogr.) A report to the Department of Environment, Canada, from the Huntsman Marine Laboratory, 98 p.

The shortnose sturgeon is included as a potential fisheries resource in the St. Johns River.



1976. Biology of the shortnose sturgeon (*Acipenser brevirostrum*) in the St. John River estuary, New Brunswick, Canada. Trans. Atl. Chap. Can. Soc. Environ. Biol. Annu. Meet. 1975:20-72.

Information on growth, length-weight relationships, food, fecundity, population estimates, and migrations.

DAHLBERG, M.

1975. Guide to coastal fishes of Georgia and nearby states. Univ. Georgia Press, Athens, 186 p.

A brief description and range of the shortnose sturgeon and a note that it is commonly caught in gill nets in the Altamaha River.

DEAN, B.

1894. Recent experiments in sturgeon hatching on the Delaware River. Bull. U.S. Fish Comm. 13:335-339.

Fish size is not mentioned, some shortnose sturgeon may have been used in the experiments.

1895. Fishes, living and fossil. An outline of their forms and probable relationships. Macmillan and Co., N.Y., 161 p.

A review of the internal and external anatomy of *Acipenser* is given. *Acipenser brevirostrum* is included in the classification.

DEES, L. T.

1961. Sturgeons. U.S. Fish Wildl. Serv., Fish. Leaflet 526, 8 p.

A review of the general life history and commercial value of sturgeons along with a brief description and more specific life history of each species, including the shortnose sturgeon.

DeKAY, J. E.

1842. Zoology of New York or the New York fauna. Part III. Reptiles and Amphibia. Albany, N.Y., 415 p.

The description given by LeSueur agrees with the Hudson River species. DeKay had seen it also in the markets of Norfolk, Va.

DIVISION OF LANDS AND FORESTS AND FISH AND GAME (New York).

1913. Third annual report of the conservation commission. J. B. Lyon Co., Albany, N.Y., 366 p.

Snails make up a large part of the food of the shortnose sturgeon in one of the ponds at the Linlithgo Hatchery.

DUMÉRIL, A.

1867. Prodrôme d'une monographie des esturgeons et description des espèces de l'Amérique du Nord qui appartiennent au sous genre *Antaceus*. Nouv. Arch. Mus. Hist. Nat., Paris, p. 131-188.

Notes are presented on the general characters, distribution, and other points of sturgeon natural history. He adopts six subgenera, with *Huso*, *Acipenser*, and *Antaceus* forming a group "Mésocentres."

1870. Histoire naturelle des poissons ou ichthyologie générale. Tome II. Ganoides, Dipnés, Lophobranches. Librairie Encyclopédique de Roret, Paris, p. 170-173.

The shortnose sturgeon is described.

EDDY, S.

1957. How to know the freshwater fishes. Wm. C. Brown Co., Dubuque, Iowa, 286 p.

A brief description and range of the shortnose sturgeon is given.

EVERMANN, B. W., and B. A. BEAN.

1896. Indian River and its fishes. Rep. U.S. Comm. Fish. 1897:227-248.

The shortnose sturgeon is recorded from the Indian River.

EVERMANN, B. W., and W. C. KENDALL.

1900. Check-list of the fishes of Florida. Rep. U.S. Comm. Fish. 1899:35-103.

The occurrence of sturgeons in Florida is cited in three references: St. John's River as *Acipenser* sp. (Goode 1879), Key West as *Acipenser* sp. (Jordan 1884), and Indian River as *Acipenser brevirostris* (Evermann and Bean 1896).

1902. An annotated list of the fishes known to occur in the St. Lawrence River. Rep. U.S. Comm. Fish. 1901:217-225.

The occurrence of the shortnose sturgeon in the St. Lawrence is erroneously cited in two references: in the St. Lawrence and streams flowing into it (Fortin 1864) and in the St. Lawrence and lacs St. Pierre, St. Louis, and St. Froid (Montpetit 1897).

FEGELY, T.

1977. Taking a closer look: Pennsylvania's endangered cold-blooded animals. Pa. Angler 46(12):4-5.

The shortnose sturgeon is on both state and federal endangered lists. A picture is included.

species. Proc. Acad. Nat. Sci. Phila. 104:89-151.

The shortnose sturgeon is listed with its range.

FORTIN, P.

1864. Continuation of the list of fish of the Gulf and River St. Lawrence. Annu. Rep. Fish. Append., p. 60-72.

The first occurrence of the shortnose sturgeon in the St. Lawrence River is recorded. Vladykov and Greeley (1963) report that this record is *A. fulvescens*.

FRIED, S. M., and J. D. McCLEAVE.

1973. Occurrence of the shortnose sturgeon (*Acipenser brevirostrum*), an endangered species, in Montsweag Bay, Maine. J. Fish. Res. Board Can. 30:563-564.

Thirty-one shortnose sturgeons were caught in the summers of 1971 and 1972. Of nine fish preserved for study, six were stated to be longer than any previously documented and four exceeded the maximum total length previously postulated, but they overlooked Gorham's (1971) report of a 1,295-mm specimen. These specimens represent the second population of this species found in the Gulf of Maine.

FOWLER, H. W.

1905. The fishes of New Jersey. Rep. N.J. Mus., 477 p.

Fowler to date had not collected it from New Jersey. He reports a record from shallow water at the island by Trenton in the Delaware.

1910. Notes on chimaeroid and ganoid fishes. Proc. Acad. Nat. Sci. Phila. 62:603-612.

The article gives a list of the species collected with descriptions and location where found. Three examples of *A. brevirostrum* were examined.

GEOLOGICAL SURVEY OF NEW JERSEY.

1890. Final report of the state geologist. Vol. II. Mineralogy. Botany. Zoology. The John L. Murphy Publishing Co., Trenton, N.J., p. 668-669.

The shortnose sturgeon is found in the Delaware in proportion to the common sturgeon at about 5 to 1.

1912. Records of fishes from the middle Atlantic states and Virginia. Proc. Acad. Nat. Sci. Phila. 64:34-59.

The shortnose sturgeon is reported at Torresdale, Philadelphia County. The author also found one at Bristol, Bucks County, in May 1908.

GILL, T.

1862. Catalogue of the fishes of the eastern coast of North America from Greenland to Georgia. Proc. Acad. Nat. Sci. Phila. 13(Suppl.):1-63.

*Acipenser brevirostrum* is included.

1919. Notes on New Jersey, Pennsylvania, and Virginia fishes. Proc. Acad. Nat. Sci. Phila. 17:292-300.

The shortnose sturgeon is included.

1920. A list of the fishes of New Jersey. Proc. Biol. Soc. Wash. 33:139-170.

The shortnose sturgeon is listed as occurring at Burlington, Cape May, Mercer, and Gloucester counties.

1873. Catalogue of the fishes of the east coast of North America. Rep. U.S. Comm. Fish. 1871-1872:779-814.

The shortnose sturgeon is listed with its range.

GOODE, G. B.

1879. Catalog of the collections to illustrate the animal resources and the fisheries of the United States. Bull. U.S. Natl. Mus. 14, 64 p.

*Acipenser brevirostrum* is included in a list of animals of North America which are beneficial or injurious to man.

1945. A study of the fishes of the Southern Piedmont and coastal plain. Wickersham Printing Co., Phila., 408 p.

The shortnose sturgeon is known in the Potomac, Neuse, and St. John's Rivers.

GOODE, G. B., and T. H. BEAN.

1879. A list of the fishes of Essex County including those of Massachusetts Bay. Bull. Essex Inst. 11, 351 p.

The species is represented in the museum of the Essex Institute by a stuffed skin obtained at Rockport.

1952. A list of fishes of New Jersey, with off-shore

GOODE, G. B., and a Staff of Associates.

1884. The fisheries and fishery industries of the United States. Sec. I. Natural history of useful aquatic animals. Gov. Print. Off., Wash., D.C., 895 p.

The shortnose sturgeon is described along with a brief natural history. The sturgeon's ability to leap out of the water is mentioned. Plate 243 is from a drawing from a photograph of a specimen of shortnose sturgeon collected from Woods Hole, Mass., 1871.

1887. The fisheries and fishery industries of the United States. Sec. V. History and methods of the fisheries. Gov. Print. Off., Wash., D.C., 881 p.

Sturgeon are included in a review of the river fisheries of the Atlantic States. Size and species were not mentioned and the shortnose sturgeon is probably included.

GORDON, B. L.

1960. The marine fishes of Rhode Island. The Bait and Tackle Shop, Watch Hill, R.I., 136 p.

A 2.5-ft shortnose sturgeon was taken in May 1956 in the traps at Point Judith. A 28-in fish believed to be a shortnose sturgeon was taken in Narragansett Bay in 1957.

GORHAM, S. W.

1965a. Distributional checklist of the fishes of New Brunswick. New Brunswick Museum, Canada, p. 1-32.

The shortnose sturgeon is included with a locality record.

1965b. Notes on the fishes from the Browns Flat area, Kings County, New Brunswick. Can. Field-Nat. 79:137-142.

Eight specimens were collected using salmon nets.

1971. The shortnose sturgeon, *Acipenser brevirostrum*, an endangered species in New Brunswick? Mus. Mem. N.B. Mus. 3:13-15.

The article presents new records of specimens in the St. John system and data on length and weight. The longest specimen is recorded to this date.

GORHAM, S. W., and D. E. McALLISTER.

1974. The shortnose sturgeon, *Acipenser brevirostrum*, in the Saint John River, New Brunswick, Canada, a rare and possibly endangered species. Natl. Mus. Nat. Sci., Syl. 5:5-16.

The paper provides new information for a series of specimens from the St. John system on distribution, length, and weights. A taxonomic description of the Canadian population is given for the first time. Pictures are included. A new maximum size, greater than that reported by Gorham (1971), is reported.

GREELEY, J. R.

1937. Fishes of the area with annotated list. In A biological survey of the lower Hudson watershed, p. 45-103. Rep. N.Y. State Conserv. Dep., Suppl. 26(11).

The article includes information on length-weight relationships, spawning times, growth, and distribution in the Hudson River estuary.

GRUNCHY, C. G., B. PARKER, and D. E. McALLISTER.

In press. Shortnose sturgeon. In D. S. Lee, C. R. Carter, D. E. McAllister, J. R. Stauffer, C. H. Hocutt, R. E. Jenkins, and J. McCann, Atlas of North American freshwater fishes. J. N.C. State Mus.

A spot distribution map, illustration, and species account of shortnose sturgeon is given.

GRZIMEK'S ANIMAL LIFE ENCYCLOPEDIA.

1973. Polypterids, sturgeons and related forms. Van Nostrand Reinhold Co., N.Y., Vol. 4, 531 p.

A very brief description of *A. brevirostrum* with a comment on its commercial value.

GÜNTHER, A.

1870. Catalogue of the fishes of the British Museum. Taylor and Francis, Lond., Vol. 8, 549 p.

A taxonomic description is given.

HALKETT, A.

1913. Checklist of the fishes of the Dominion of Canada and Newfoundland. King's Printer, Ottawa, 138 p.

*Acipenser brevirostrum* is contained in the list, with its general range of distribution including the erroneous St. Lawrence record.

HARKNESS, W. J. K.

1923. The rate of growth and the food of the lake sturgeon (*Acipenser rubicundus* (LeSueur)). Publ. Ont. Fish. Res. Lab. 18:13-42.

The author found the earstones or otoliths of the sturgeon to form growth lines. Technique for ag-

ing was employed later for the shortnose sturgeon.

HARKNESS, W. J. K., and J. R. DYMOND.  
1961. The lake sturgeon. Ont. Dep. Lands Forests, 97 p.

*Acipenser brevirostrum*, with its range, is included in a list of the sturgeons of the world.

HILDEBRAND, S. F., and W. C. SCHROEDER.  
1928. Fishes of Chesapeake Bay. Bull. Bur. Fish. 43, 366 p.

The shortnose sturgeon is discussed from published accounts and a specimen taken off Provincetown, Mass., now in the Museum of Comparative Zoology, Cambridge, Mass., is described.

HOFF, J. G.  
1965. Two shortnose sturgeon, *Acipenser brevirostris*, from the Delaware River, Scudder's Falls, New Jersey. Bull. N.J. Acad. Sci. 10:23.

A ripe shortnose sturgeon of each sex was examined.

HOLLAND, B. F., Jr., and G. F. YELVERTON.  
1973. Distribution and biological studies of anadromous fishes offshore North Carolina. N.C. Dep. Nat. Econ. Res., S. S. R. No. 24, 132 p.

Between 1968 and 1971, eight shortnose sturgeon were caught offshore between Cape Fear, N.C., and Cape Henry, Va.

HOLLY, M.  
1936. Pisces 4. Ganoidei. Das Tierreich (67), Berlin, 65 p.

A systematic review of the sturgeon family.

HOVEY, H. C.  
1883. The sturgeon fishery. Bull. U.S. Fish Comm. 4:346-348.

Information on the sturgeon fishery of the Delaware River is given along with the sturgeon's preparation for market and the table.

JENKINS, R. E., and J. A. MUSICK.  
In press. Fishes. In D. Linzey (editor), Threatened and endangered plants and animals of Virginia. Va. Polytech. Inst.

Shortnose sturgeon endangered animal of Virginia.

JEROME, W. C., Jr., A. P. CHESMORE, and C. O. ANDERSON, Jr.

1968. A study of the marine resources of the Parker River-Plum Island Sound Estuary. Division of Marine Fisheries, Department of Natural Resources, The Commonwealth of Massachusetts, 79 p.

An Atlantic and a shortnose sturgeon were taken by Bill Sibley on the *Peggybell* in Ipswich Bay near the mouth of Plum Island Sound in 1966. A picture of the shortnose sturgeon is included.

JORDAN, D. S.

1876. Manual of the vertebrates of the northern United States, including the district east of the Mississippi River, and north of North Carolina and Tennessee, exclusive of marine species. 1st ed. Jansen, McClurg and Co., Chicago, 342 p.

A brief description and range is given.

1878, 1880, 1884. Manual of the vertebrates of the northern United States, including the district east of the Mississippi River, and north of North Carolina and Tennessee, exclusive of marine species. 2d, 3rd, 4th ed. Jansen, McClurg & Co., Chicago.

A brief description and range is given.

1886. Notes on fishes collected at Beaufort, North Carolina, with a revised list of the species known from that locality. Proc. U.S. Natl. Mus. 9:25-30.

Shortnose sturgeon is included in the list.

1887. A catalogue of the fishes known to inhabit the waters of North America north of the Tropic of Cancer, with notes on the species discovered in 1883 and 1884. Rep. U.S. Comm. Fish. 1885:789-973.

The shortnose sturgeon is listed.

1897, 1899, 1904. A manual of the vertebrate animals of the northern United States including the district north and east of the Ozark Mountains, south of the Laurentian Hills, north of the southern boundary of Virginia, and east of the Missouri River, inclusive of marine species. 7th, 8th, 9th ed. A. C. McClurg and Co., Chicago.

A brief description and range is given.

1929. Manual of the vertebrate animals of the northeastern United States inclusive of marine

species. 13th ed. World Book Company, N.Y., 446 p.

Description and range are given.

JORDAN, D. S., and B. W. EVERMANN.

1896a. A checklist of the fishes and fish-like vertebrates of North and Middle America. Rep. U.S. Comm. Fish. 1894:207-584.

The range of the shortnose sturgeon is given.

1896b. The fishes of North and Middle America. Bull. U.S. Natl. Mus. 47, 3313 p.

The shortnose sturgeon is described with its range. The specimen described is from South Carolina.

1904. American food and game fishes. Doubleday, N.Y., 572 p.

The range is from Texas to Cape Cod and the habits are similar to the common Atlantic.

1937. American food and game fishes. Doubleday, N.Y., 512 p.

The shortnose sturgeon is included with a brief description and distribution.

JORDAN, D. S., B. W. EVERMANN, and H. W. CLARK.

1930. Check list of the fishes and fishlike vertebrates of North and Middle America, north of the northern boundary of Venezuela and Colombia. Rep. U.S. Comm. Fish. 1928 (Part 2), 670 p.

Shortnose sturgeon is included in the checklist.

JORDAN, D. S., and C. H. GILBERT.

1882. Synopsis of the fishes of North America. Bull. U.S. Natl. Mus. 16, 1018 p.

A description and range is given.

KENDALL, W. C.

1908. Fauna of New England. 8. List of the Pisces. Occas. Pap. Boston Soc. Nat. Hist. 7, 152 p.

The shortnose sturgeon is recorded in New England.

KILBY, J. D., E. CRITTENDEN, and L. E. WILLIAMS.

1959. Ichthyological notes: Several fishes new to Florida freshwaters. Copeia 1959:77-78.

The shortnose sturgeon was incorporated in

Florida's faunal list in 1896. In recent years authors have been inclined to exclude Florida from the range of the species. However, one adult shortnose sturgeon was taken in 1949 by commercial seine from the St. John's River and donated to the University of Florida collections.

KIRSCH, P. H., and M. W. FORDICE.

1889. A review of the American species of sturgeons (Acipenseridae). Proc. Acad. Nat. Sci. Phila. 41:245-257.

A review of the American Acipenseridae, based on species belonging to the Museum of the University of Indiana.

KOSKI, R. T., E. C. KELLEY, and B. E. TURNBOUGH.

1971. A record-sized shortnose sturgeon from the Hudson River. N.Y. Fish Game J. 18:75.

A shortnose sturgeon measuring 932 mm in total length was caught in January 1970 in the Hudson River (from Tappan Zee Bridge to Bear Mountain Bridge).

LEACH, G. C.

1920. Artificial propagation of sturgeon. Part 1. Review of sturgeon culture in the United States. Rep. U.S. Comm. Fish. 1919:3-5.

A review of the attempts and drawbacks in sturgeon culture in the United States is provided. Species were not mentioned; however, this material is applicable to the shortnose sturgeon.

LEIM, A. H., and L. R. DAY.

1959. Records of uncommon and unusual fishes from eastern Canadian waters, 1950-1958. J. Fish. Res. Board Can. 16:503-514.

The first authentic Canadian record is given for the shortnose sturgeon. The specimen, 69 cm long, was caught by the MV *Harengus* in the Long Reach, Saint John River, N.B., on 20 May 1957. Identification was made by V. D. Vladykov.

LEIM, A. H., and W. B. SCOTT.

1966. Fishes of the Atlantic Coast of Canada. Bull. Fish. Res. Board Can. 155, 485 p.

A general description and natural history of the shortnose sturgeon is given.

LELAND, J. G., II.

1968. A survey of the sturgeon fishery of South Carolina. Contrib. Bears Bluff Labs. 47, 27 p.

The history and present situation of the sturgeon fishery of South Carolina is presented. Individual species were not mentioned; however, it is stated that there is practically no market for small sturgeon (3-12 pounders) and that these are not taken in the sturgeon nets. They do become enmeshed in shad nets and are killed by the shad fisherman. These small sturgeon may include shortnose sturgeon.

LeSUEUR, C. A.

1818. Description of several species of Chondropterygious fishes of North America, with their varieties. Trans. Am. Philos. Soc. 1:383-395.

The author gives the original description of the species, with three varieties, from specimens caught in the Delaware River.

MacCALLUM, G. A.

1921. Studies in helminthology. Zoopathologica 1:137-284.

Three individuals of the trematode *Nitzschia superba* were found on the gills of a male and female shortnose sturgeon from the New York Aquarium on 22 September 1915.

MAGNIN, E.

1959. Répartition actuelle de *Acipenseridae*. Revue Trav. Inst. (Sci. Tech.) Pêch. Marit. 23:277-285.

A distribution of the *Acipenseridae* is presented.

1963. Notes sur la répartition, la biologie et particulièrement la croissance de l'*Acipenser brevirostris* LeSueur 1817. Nat. Can. (Que.) 90:87-96.

Magnin presents data on the age, length, and biology of 10 specimens from the St. John River near Fredericton, N.B.

1964. Croissance en longueur de trois esturgeons d'Amérique du Nord: *Acipenser oxyrinchus* Mitchell, *Acipenser fulvescens* Rafinesque, et *Acipenser brevirostris* LeSueur. Verh. Int. Verein. Theor. Angew. Limnol. 15:968-974.

A growth comparison of three eastern North American species is presented.

MASSMANN, W. H.

1958. A checklist of fishes of the Virginia waters of Chesapeake Bay and its tidal tributaries. Va. Fish. Lab., Fin Fish Prog. Rep. 60, 14 p.

The shortnose sturgeon is on the checklist.

McALLISTER, D. E.

1960. List of the marine fishes of Canada. Bull. Natl. Mus. Can. 168, 8 p.

Shortnose sturgeon is included in the list.

1970. Rare and endangered Canadian fishes. Can. Field-Nat. 84:5-8.

At this time, shortnose sturgeon is known only in the lower St. John River, N.B., from the mouth to Gagetown. Increasing pollution and a hydroelectric dam may be of significance in their survival.

McALLISTER, D. E., and C. G. G. GRUNCHY.

1977. Status and habitats of Canadian fishes in 1976. In T. Mosquin (editor), Canada's threatened species and habitats, 185 p. Canadian Nature Federation, Ottawa.

Listed shortnose sturgeon as rare with moderate population in St. John River, N.B. Unanswered questions on its spawning and population trends.

McCleave, J. D., and S. M. FRIED.

1974. Three unusual shortnose sturgeon (*Acipenser brevirostrum*) from Montsweag Bay, Me. Can. Field-Nat. 88:359-360.

Three unusual specimens were captured: one with only one barbel, one with forked barbels, and one bilaterally blind. The blind specimen appeared to be in good condition and it is noted that blind, dark, healthy shortnose sturgeon have also been observed.

McCleave, J. D., S. M. FRIED, and A. K. TOWT.

1977. Daily movements of shortnose sturgeon, *Acipenser brevirostrum* in a Maine estuary. Copeia 1977:149-157.

The daily summer movements of 15 shortnose sturgeon in Montsweag Bay were studied by ultrasonic telemetry.

McLANE, W. M.

1955. Fishes of the St. John's River System. Ph.D. Thesis, Univ. Fla. Tallahassee, 367 p.

Both common and shortnose sturgeon are reported to be extremely rare on the Atlantic coast of Florida.

MEEHAN, W. E.

1896. Fish, fishing and fisheries of Pennsylvania. Rep. State Comm. Fish. 1895, 245 p.

Chapter 5 is entitled *The Sturgeon Fisheries of the Delaware*.

1910. Experiments in sturgeon culture. Trans. Am. Fish. Soc. 39:85-91.

The shortnose sturgeon used in the experiment were from the Delaware River. The experiment showed that shortnose sturgeon can be carried from year to year in ponds 200 or more feet long and proportionately wide and deep, and their eggs can be taken safely in sufficient number to warrant fish cultural work.

METH, F. F.

1971. Ecology of St. John River Basin II. Catalogue of estuary fish species for the Saint John River. Environment Canada (Mimeogr. rep.), 28 p.

Shortnose sturgeon recorded for the Saint John River.

1972. Ecology of Saint John River Basin V. Status of estuary fisheries. Environment Canada (Mimeogr. rep.), 6 p.

Shortnose sturgeon recorded for the Saint John River.

1973. Sport and commercial fisheries of the St. John estuary. Rep. St. John River Basin Board 76:1-70.

The paper includes a general account of the shortnose sturgeon.

MIGDALSKI, E. C., and G. S. FICHTER.

1976. The fresh and salt water fishes of the world. Alfred A. Knopf, N.Y., 316 p.

Its range and differentiation from the common sturgeon are given.

MILLER, R. R.

1972. Threatened freshwater fishes of the United States. Trans. Am. Fish. Soc. 101:239-252.

Connecticut, Delaware, Maryland, Massachusetts, New Jersey, and Pennsylvania list shortnose sturgeon as being an endangered species.

MONTPETIT, A. N.

1897. Les poisson d'eau douce du Canada. Montreal, 553 p.

The shortnose sturgeon is erroneously reported as occurring in the St. Lawrence and lacs St. Pierre, St. Louis, and St. Froid.

NEW YORK MARKET INDEX AND JOURNAL.

1880. Report for 1879 and 1880 of the sale of fish in Fulton Market, New York. Bull. U.S. Fish Comm. 3, 426 p.

It is reported that 70,633 pounds of sturgeon were sold between March 1878 and March 1879 and 68,858 pounds between March 1879 and March 1880. Species and size were not mentioned; therefore, shortnose sturgeon may be included in the sale.

NICHOLS, J. T.

1918. Fishes of the vicinity of New York City. Am. Mus. Nat. Hist. Handb. Ser., No. 7, 118 p.

A small sturgeon, *Acipenser brevirostris*, that reaches a length of 2 ft occurs in the New York City area.

NICHOLS, J. T., and C. B. BREDER, JR.

1927. The marine fishes of New York and southern New England. Zoologica (N.Y.) 9, 192 p.

The shortnose sturgeon is briefly described with its distribution.

OFFICE OF ENDANGERED SPECIES AND INTERNATIONAL ACTIVITIES.

1973. Threatened wildlife of the U.S. U.S. Dep. Inter. Res. Publ. 114, 289 p.

This is a revision of Resource Publication 34 (1966) (see Committee on Rare and Endangered Wildlife Species (1966)).

PERLMUTTER, A.

1961. Guide to marine fishes. New York Univ. Press, 431 p.

A short description of the color, distribution, size, general information, and economic importance of the shortnose sturgeon is provided.

PRATT, H. S.

1935. A manual of land and fresh water vertebrate animals of the United States (exclusive of birds). 2d ed. P. Blakiston's Son and Co., Inc., Phila., 416 p.

A brief description of the species is given.

PROVANCHER, L'ABBÉ.

1876. Faune canadienne. Les poissons. Nat. Can. (Que.) 7:361-363.

Fortin's erroneous record of the shortnose sturgeon in the St. Lawrence River is cited.

RICHARDSON, J.

1836. Fauna boreali-Americana, or the zoology of the northern parts of British America. Part III. The fish. Richard Bentley, Lond., 278 p.

The shortnose sturgeon is described.

ROSTLUND, E.

1952. Freshwater fish and fishing in native North America. Univ. Calif. Press, Berkeley, 248 p.

The range is given for the shortnose sturgeon.

RYDER, R. A.

1888. The sturgeons and sturgeon industries of the eastern coast of the United States, with an account of experiments bearing upon sturgeon culture. Bull. U.S. Fish Comm. 8:231-328.

This is the first diagnosis of the species since LeSueur's original description in 1817. From specimens caught in the Delaware River, the author gives distinctive characters by which the species might be recognized. He also notes that the species is always small, confirmed by the fact that sexual maturity is reached much earlier than in the common form.

SCHAEFER, R. H.

1967. Species composition, size and seasonal abundance of fish in the surf waters of Long Island. N.Y. Fish Game J. 14:1-46.

One shortnose sturgeon was caught off Fire Island, N.Y., in 1962.

SCHRENKELSEN, R.

1938. Field book of the freshwater fishes of North America north of Mexico. Putnam, N.Y., 312 p.

A general account of the shortnose sturgeon is presented.

SCHWARTZ, F. J., W. W. HASSLER, J. W. REINTJES, and M. W. STREET.

1975. Endangered and threatened plants and animals of North Carolina: Marine fishes. Proceedings of the symposium on endangered and threatened biota of North Carolina. 1. Biological concerns. N.C. State Mus. Nat. Hist., p. 250-264.

These are unconfirmed reports of the shortnose sturgeon from offshore; once sporadically known from Albemarle and Pamlico Sounds, and other North Carolina waters, but today it is believed extirpated.

SCHWARTZ, F. J., and G. W. LINK, JR.

1976. Status of Atlantic, *Acipenser oxyrinchus*,

and shortnose, *Acipenser brevirostrum*, sturgeons in North Carolina (Pisces, Acipenseridae). ASB (Assoc. Southeast. Biol.) Bull. 23:94.

The shortnose sturgeon is believed extinct in North Carolina.

SCOTT, W. B.

1954, 1967. Freshwater fishes of eastern Canada. 1st, 2d ed. Univ. Toronto Press.

Distribution in Canada for the shortnose sturgeon and variation from the common sturgeon is provided.

SCOTT, W. B., and E. J. CROSSMAN.

1959. The freshwater fishes of New Brunswick: A checklist with distributional notes. R. Ont. Mus. Life Sci. Contrib. 51, 37 p.

The only shortnose sturgeon caught in Canada up to this date is Vladkyov's catch in 1957 in the St. John River.

1973. Freshwater fishes of Canada. Bull. Fish. Res. Board Can. 184, 966 p.

A more detailed description and natural history than Leim and Scott (1966) is given. It is noted that the largest shortnose sturgeon on record was a 1,006-mm female from the Connecticut River.

SCOTT, W. B., and M. G. SCOTT.

1965. A checklist of Canadian Atlantic fishes with keys for identification. R. Ont. Mus. Life Sci. Contrib. 66, 106 p.

The shortnose sturgeon is included in the list and a key to the family Acipenseridae is provided.

SLASTENENKO, E. P.

1958. The freshwater fishes of Canada. Kiev Printers, Toronto, 383 p.

A general account of the shortnose sturgeon.

SMITH, H. M.

1891. Report on the fisheries of the South Atlantic states. Bull. U.S. Fish Comm. 11:269-356.

Size is not reported; therefore, shortnose sturgeon may have been caught. The sturgeon fishery is noted as having the most noticeable decline in the river fisheries of the South Atlantic States during the past decade. A decrease of 80% in the yield of sturgeon during the past 10 yr is reported.



1892. Economic and natural-history notes on fishes of the northern coast of New Jersey. Bull. U.S. Fish Comm. 12:365-380.

Only the common sturgeon is cited. However, in its discussion it is mentioned that small fish called "moose" are sold whole; the name appears to be a corruption of "mammoose" which is current in Delaware Bay, and is applied to young fish that are too small to dress and are usually sold whole. These small sturgeon may be the shortnose species.

1894. A statistical report of the fisheries of the middle Atlantic states. Bull. U.S. Fish Comm. 14:339-467.

The common sturgeon is included in a list of the important fishes of the middle Atlantic states. However, the species is broken into three groups: sturgeon, mammoose—Delaware River, and moose (young)—New Jersey. The latter two groups most likely include the shortnose sturgeon.

1897. Fishes found in the vicinity of Woods Hole. Bull. U.S. Fish Comm. 17:85-111.

The shortnose sturgeon is found in company with the common sturgeon but is less numerous than the latter. It is taken in traps.

1907. The fishes of North Carolina. N.C. Geol. Econ. Surv. 2, 445 p.

Actual records of its occurrence in North Carolina are rare.

1914. Passing of the sturgeon. Rep. U.S. Comm. Fish. 1913:66-67.

A review of the overfishing of the sturgeon, which is applicable to the shortnose sturgeon.

1915. Report of the commissioner of fisheries for the fiscal year ended June 30, 1914. Sturgeon Fishery of Delaware River. Rep. U.S. Comm. Fish. 1914, 81 p.

Some sturgeon with large roe are caught as late as September, but a large portion of such fish are of the smaller species (*A. brevirostrum*), locally called "bottlenose."

SMITH, H. M., and B. A. BEAN.

1899. List of fishes known to inhabit the waters of the district of Columbia and vicinity (1898). Bull. U.S. Fish Comm. 18:179-187.

Shortnose sturgeon are found in this area but

are not as abundant as the common sturgeon and have undergone the same decrease in recent years. It is probably not recognized by fishermen as a different species.

STORER, D. H.

1846. A synopsis of the fishes of North America. Mem. Am. Acad. Sci., New. Ser. 2(7):253-550.

A brief description of the shortnose sturgeon is presented.

SUMNER, F. B., R. C. OSBURN, and L. J. COLE.

1911. A biological survey of the waters of Woods Hole and vicinity. Part II. Bull. U.S. Bur. Fish. 31:549-794.

The common sturgeon is listed, however the shortnose sturgeon is included in its references. When listing parasites of the common sturgeon, it is noted that the spiny-headed worm, *Echinorhynchus attenuatus*, is listed for the shortnose sturgeon.

SYRYABINA, E. S.

1974. Gel'minty osetrovykh ryb (Acipenseridae Bonaparte, 1831). Moscow, USSR; Izdatel'stvo "Nauka," 168 p.

This is a monograph on the helminth fauna of acipenserid fish of the world based on data from the literature and on the author's examination of his own collection of eight fish from waters of the U.S.S.R. The 22 species of Acipenseridae known are parasitized by 95 helminth species, 27 of which are specific to this group.

TAUBERT, B. D., and R. J. REID.

1978. Observations of the shortnose sturgeon (*Acipenser brevirostrum*) in the Holyoke pool of the Connecticut River, Massachusetts. Progress Report to NEUSC. Mass. Coop. Fish Unit, Amherst, Mass., 14 p.

Spawning site and larvae description are identified in the Connecticut River.

TOWER, W. S.

1908. The passing of the sturgeon: A case of the unparalleled extermination of a species. Pop. Sci. Mon. 73:361-371.

A history of the sturgeon fishery and the extermination of the sturgeon is provided. Species are not mentioned.

TOWNSEND, C. H.

1901a. Statistics of the fisheries of the middle

Atlantic states. Rep. U.S. Comm. Fish. 1900:195-310.

Catch and market statistics for sturgeon in New York, New Jersey, Pennsylvania, Delaware, Maryland, and Virginia are given. Species are not mentioned.

1901b. Statistics of the fisheries of the New England states. Rep. U.S. Comm. Fish. 1900:311-386.

Catch and market statistics for sturgeon in Maine, Massachusetts, and Connecticut are given. Since species are not mentioned, the shortnose sturgeon is probably included.

TRACY, H. C.

1906. A list of the fishes of Rhode Island. Rep. Comm. Inland Fish. R.I. 36, 176 p.

The shortnose sturgeon is briefly described along with its occurrence in Rhode Island.

TRITES, R. W.

1960. An oceanographic and biological reconnaissance of Kennebecasis Bay and St. John River Estuary. J. Fish. Res. Board Can. 17:377-408.

Additional occurrence of shortnose sturgeon is recorded in the St. John River, N.B.

TRUITT, R. V., T. H. BEAN, and H. W. FOWLER.

1929. The fishes of Maryland. Bull. Md. Conserv. Dep. 3, 120 p.

A general account of the shortnose sturgeon is given.

UHLER, P. R., and O. LUGGER.

1876. List of fishes of Maryland. Rep. Comm. Fish. Md. 1876:67-176.

The shortnose sturgeon inhabits the Potomac River. This individual, represented by a few strips of skin is USNM #26273. It was collected 19 March 1876.

U.S. CONGRESS.

1973. House of Representatives Endangered Species Act of 1973. Public Law 93-205, December 28, 1973.

Shortnose sturgeon are included on the list.

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Shortnose sturgeon are said to be abundant in the North, New, and Neuse Rivers.

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