



FISH POPULATIONS OF SANDUSKY
BAY INFERRED FROM MUSEUM RECORDS

Prepared by

Charles F. Willis

Prepared for

American Electric Power Service Corporation
New York, New York

CENTER FOR LAKE ERIE AREA RESEARCH
THE OHIO STATE UNIVERSITY
COLUMBUS, OHIO

May 1974

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INTRODUCTION

Records of cataloged collections at the Ohio State University Museum of Zoology and distribution record taken from The Fishes of Ohio (Trautman, 1957) were examined to determine the past and present fish community composition in Sandusky Bay on Lake Erie in northern Ohio. It was found that there has been a continuous reduction in the abundance of species in the Bay since the early 1900's. In particular, the present diversity of common species in the Bay is greatly reduced from what it was only fifteen years ago, in the late 1950's.

METHODS

Records of cataloged collections of fishes taken from Sandusky Bay dating from 1896 to 1972 were examined. A list of the species recorded from the Bay (Table 1) was compiled. Also listed were the dates of the earliest and latest collections on record and the total number of collections cataloged for each species.

An examination of the text and distribution maps in The Fishes of Ohio (Trautman, 1957) revealed records of a number of species taken from Sandusky Bay for which there were no cataloged collections present in the Ohio State University Museum of Zoology. In most of these cases, cataloged collections are on file at other recognized institutions such as the Michigan State University Museum of Zoology. A list of the species recorded from Sandusky Bay according to The Fishes of Ohio (Trautman, 1957) can be found in Table 2. The species are grouped according to their relative abundance as of 1957.

Finally, Dr. Ted M. Cavender, Curator of Fishes at the Ohio State University Museum of Zoology, and the author compiled a composite list of the species which were felt to be present in Sandusky Bay at the present time (Table 3). This list contains a few species for which there are no known representative cataloged collections on file at a recognized institution. Nevertheless, personal experience from previous fieldwork in the Sandusky Bay area establishes the presence of these species.

The species in Table 3 are listed in groups according to their relative abundance and the trend in population size dynamics is given in some cases. This information is based upon data obtained from

collections of the various species throughout the western basin of Lake Erie rather than solely from collections taken from Sandusky Bay.

RESULTS

Seventy-four species are listed in Table 3. Thirty-four species are commonly found in the Bay area; twelve of which are found in abundance. An additional forty species may be uncommonly or rarely found in the Bay. Of these species, the spotted gar, mooneye, silver chub, blackchin shiner, blacknose shiner, lake chubsucker, burbot, Iowa darter and blue pike have probably been completely exterminated from the Bay. Only the blue pike, however, is considered to be an endangered species. Two of the species listed, the coho and chinook salmon, are stocked in or near the area by the Ohio Division of Wildlife and should be considered merely transient members of the fish community.

CONCLUSIONS

A comparison of Tables 2 and 3 shows the great changes which have taken place in terms of relative species abundance and, hence, community diversity in Sandusky Bay in recent years. In general, the abundance of many species has diminished greatly and the community diversity has been reduced.

A few species, however, have greatly increased in abundance in recent years. These include the gizzard shad, emerald shiner, spottail shiner, spotfin shiner and white bass. The orange spotted sunfish has only recently been introduced into the Sandusky Bay area and seems to be increasing in abundance annually. The walleye, once perhaps the most important commercially sought after fish in Lake Erie, seems also to be increasing in numbers after a long period of depressed population size.

The author would like to stress the fact that the greatest value of this report is in its ability to establish what the fish community of Sandusky Bay has been like in past years. To gain an accurate understanding of what that community is like at the present time, a substantial amount of fieldwork is necessary. Commercial fishing interests are often willing to help biological investigators by allowing them to analyze their daily catches. This simple but effective means of quickly surveying an area to establish the fish community composition should not be overlooked.

TABLE 1

RECORDS OF FISH COLLECTIONS TAKEN FROM SANDUSKY BAY
ON FILE AT THE OHIO STATE UNIVERSITY MUSEUM OF ZOOLOGY

<u>Common Name</u>	<u>Scientific Name</u>	<u>Earliest Collections Recorded</u>	<u>Latest Collections Recorded</u>	<u>Total # Collections Recorded</u>
Silver lamprey	<u>Ichthyomyzon unicuspis</u>	1931	1950	3
Sea lamprey	<u>Petromyzon marinus</u>	1950	1950	1
Spotted gar	<u>Lepisosteus oculatus</u>	1931	1947	3
Longnose gar	<u>Lepisosteus osseus</u>	1939	1939	2
Bowfin	<u>Amia calva</u>	1939	1967	20
Gizzard shad	<u>Dorosoma cepedianum</u>	1939	1968	10
Mooneye	<u>Hiodon tergisus</u>	1928	1949	6
Rainbow smelt	<u>Osmerus mordax</u>	1966	1966	2
Northern pike	<u>Esox lucius</u>	1951	1951	2
Muskellunge	<u>Esox masquinongy</u>	1941	1951	2
Stoneroller	<u>Campostoma anomalum</u>	1926	1926	1
Goldfish	<u>Carassius auratus</u>	1939	1949	3
Carp	<u>Cyprinus carpio</u>	1939	1949	3
Silver Chub	<u>Hybopsis storeriana</u>	1939	1939	2
Golden shiner	<u>Notemigonus crysoleucas</u>	1939	1949	6
Emerald shiner	<u>Notropis atherinoides</u>	1929	1949	9
Spottail shiner	<u>Notropis hudsonius</u>	1928	1949	9
Spotfin shiner	<u>Notropis spilopterus</u>	1939	1949	9
Mimic shiner	<u>Notropis volucellus</u>	1928	1949	3
Bluntnose minnow	<u>Pimephales notatus</u>	1939	1949	3
Quillback	<u>Carpiodes cyprinus</u>	1939	1968	5
White sucker	<u>Catostomus commersoni</u>	1939	1968	3
Lake chubsucker	<u>Erismyzon sucetta</u>	1922	1922	1
Northern hog sucker	<u>Hypentelium nigricans</u>	1939	1939	1
Bigmouth buffalo	<u>Ictiobus cyprinellus</u>	1939	1968	6
Silver redhorse	<u>Moxostoma anisurum</u>	1948	1948	1
Golden redhorse	<u>Moxostoma erythrurum</u>	1939	1948	2
Shorthead redhorse	<u>Moxostoma macrolepidotum</u>	1939	1968	4
Black bullhead	<u>Ictalurus melas</u>	1939	1939	3
Brown bullhead	<u>Ictalurus nebulosus</u>	1939	1939	1
Channel catfish	<u>Ictalurus punctatus</u>	1939	1948	6
Tadpole madtom	<u>Noturus gyrinus</u>	1939	1939	1
Banded killifish	<u>Fundulus diaphanus</u>	1972	1972	1
Brook silverside	<u>Labidesthes sicculus</u>	1929	1949	7

TABLE 1 CONT.

RECORDS OF FISH COLLECTIONS TAKEN FROM SANDUSKY BAY
ON FILE AT THE OHIO STATE UNIVERSITY MUSEUM OF ZOOLOGY

<u>Common Name</u>	<u>Scientific Name</u>	<u>Earliest Collections Recorded</u>	<u>Latest Collections Recorded</u>	<u>Total # Collections Recorded</u>
White bass	<u>Morone chrysops</u>	1929	1960	10
Rock bass	<u>Ambloplites rupestris</u>	1939	1960	2
Green sunfish	<u>Lepomis cyanellus</u>	1896	1896	1
Pumpkinseed	<u>Lepomis gibbosus</u>	1896	1960	7
Bluegill	<u>Lepomis macrochirus</u>	1939	1960	4
Longear sunfish	<u>Lepomis megalotis</u>	1896	1922	2
Smallmouth bass	<u>Micropterus dolomieu</u>	1948	1948	1
Largemouth bass	<u>Micropterus salmoides</u>	1939	1949	5
White crappie	<u>Pomoxis annularis</u>	1929	1948	7
Black crappie	<u>Pomoxis nigromaculatus</u>	1929	1948	6
Johnny darter	<u>Etheostoma nigrum</u>	1939	1949	3
Yellow perch	<u>Perca flavescens</u>	1939	1960	6
Logperch	<u>Percina caprodes</u>	1929	1949	8
Channel darter	<u>Percina copelandi</u>	1929	1949	2
Blackside darter	<u>Percina maculata</u>	1939	1939	2
Sauger	<u>Stizostedion canadense</u>	1928	1939	2
Walleye	<u>Stizostedion v. vitreum</u>	1939	1968	6
Freshwater drum	<u>Aplodinotus grunniens</u>	1939	1954	9

Note: A number of these fishes, such as the carp and goldfish, interbreed to give hybrid crosses. Hybrids recorded for the Sandusky Bay include: goldfish-carp, bigmouth buffalo-smallmouth buffalo or bigmouth buffalo-black buffalo, and pumpkinseed-bluegill.

TABLE 2

SANDUSKY BAY FISHES

(from The Fishes of Ohio, Milton B. Trautman, 1957)Abundant

Silver lamprey	<u>Ichthyomyzon unicuspis</u>
Longnose gar	<u>Lepisosteus osseus</u>
Gizzard shad	<u>Dorosoma cepedianum</u>
Goldfish	<u>Carassius auratus</u>
Carp	<u>Cyprinus carpio</u>
Emerald shiner	<u>Notropis atherinoides</u>
Spittail shiner	<u>Notropis hudsonius</u>
Spotfin shiner	<u>Notropis spilopterus</u>
Bluntnose minnow	<u>Pimephales notatus</u>
White sucker	<u>Catostomus commersoni</u>
Bigmouth buffalo	<u>Ictiobus cyprinellus</u>
Black bullhead	<u>Ictalurus melas</u>
Brown bullhead	<u>Ictalurus nebulosus</u>
Channel catfish	<u>Ictalurus punctatus</u>
Brook silversides	<u>Labidesthes sicculus</u>
White bass	<u>Morone chrysops</u>
Rock bass	<u>Ambloplites rupestris</u>
Pumpkinseed	<u>Lepomis gibbosus</u>
Largemouth bass	<u>Micropterus salmoides</u>
White crappie	<u>Pomoxis annularis</u>
Black crappie	<u>Pomoxis nigromaculatus</u>
Johnny darter	<u>Etheostoma nigrum</u>
Yellow perch	<u>Perca flavescens</u>
Logperch	<u>Percina caprodes</u>
Sauger	<u>Stizostedion canadense</u>
Walleye	<u>Stizostedion v. vitreum</u>
Freshwater drum	<u>Aplodinotus grunniens</u>

Common

Sea lamprey	<u>Petromyzon marinus</u>
Bowfin	<u>Amia calva</u>
Northern pike	<u>Esox lucius</u>
Stoneroller	<u>Campostoma anomalum</u>
Silver chub	<u>Hybopsis storeriana</u>
Golden shiner	<u>Notemigonus crysoleucas</u>

TABLE 2 CONT.

SANDUSKY BAY FISHES

(from The Fishes of Ohio, Milton B. Trautman, 1957)

Mimic shiner	<u>Notropis volucellus</u>
Quillback	<u>Carpionodes cyprinus</u>
Northern hob sucker	<u>Hypentelium nigricans</u>
Spotted sucker	<u>Minytrema melanops</u>
Golden redhorse	<u>Moxostoma erythrurum</u>
Shorthead redhorse	<u>Moxostoma macrolepidotum</u>
Yellow bullhead	<u>Ictalurus natalis</u>
Stonecat	<u>Notrus flavus</u>
Tadpole madtom	<u>Noturus gyrinus</u>
Brindled madtom	<u>Noturus miurus</u>
Trout perch	<u>Percopsis omiscomaycus</u>
Green sunfish	<u>Lepomis cyanellus</u>
Bluegill	<u>Lepomis macrochirus</u>
Smallmouth bass	<u>Micropterus dolomieu</u>
Channel darter	<u>Percina coplandi</u>
<u>Uncommon</u>	
Lake sturgeon	<u>Acipenser fulvescens</u>
Spotted gar	<u>Lepisosteus oculatus</u>
Mooneye	<u>Hiodon tergisus</u>
Alewife	<u>Alosa pseudoharengus</u>
Lake whitefish	<u>Coregonus clupeaformis</u>
Rainbow smelt	<u>Osmerus mordax</u>
Central mudminnow	<u>Umbra limi</u>
Grass pickerel	<u>Esox americanus vermiculatus</u>
Muskellunge	<u>Esox masquinongy</u>
Common shiner	<u>Notropis cornutus</u>
Silver redhorse	<u>Moxostoma anisurum</u>
Borbot	<u>Lota lota</u>
Banded killifish	<u>Fundulus diaphanus</u>
Greenside darter	<u>Etheostoma blennioides</u>
Blackside darter	<u>Percina maculata</u>
Blue pike	<u>Stizostedion vitreum glaucum</u>

TABLE 2 CONT.

SANDUSKY BAY FISHES

(from The Fishes of Ohio, Milton B. Trautman, 1957)

Rare

Blackchin shiner
Blacknose shiner
Lake chubsucker
Longear sunfish
Iowa darter

Notropis heterodon
Notropis heterolepis
Erimyzon sucetta
Lepomis megalotis
Etheostoma exile

TABLE 3

COMPOSITE LIST OF SPECIES PRESENT IN SANDUSKY BAY

		<u>Population Trend</u>
<u>Abundant</u>		
Gizzard shad	<u>Dorosoma cepedianum</u>	increasing
Goldfish	<u>Carassius auratus</u>	
Carp	<u>Cyprinus carpio</u>	
Emerald shiner	<u>Notropis atherinoides</u>	increasing
Spottail shiner	<u>Notropis hudsonius</u>	increasing
Spotfin shiner	<u>Notropis spilopterus</u>	increasing
Bluntnose monnow	<u>Pimephales notatus</u>	
Channel catfish	<u>Ictalurus punctatus</u>	
White bass	<u>Morone chrysops</u>	increasing
White crappie	<u>Pomoxis annularis</u>	
Yellow perch	<u>Perca flavescens</u>	
Freshwater drum	<u>Aplodinotus grunniens</u>	
<u>Common</u>		
Longnose gar	<u>Lepisosteus osseus</u>	decreasing
Alewife	<u>Alosa pseudoharengus</u>	
Rainbow smelt	<u>Osmerus mordax</u>	decreasing
Golden shiner	<u>Notemigonus crysoleucas</u>	
Mimic shiner	<u>Notropis volucellus</u>	
White sucker	<u>Catostomus commersoni</u>	
Shorthead redhorse	<u>Moxostoma macrolepidotum</u>	decreasing
Black bullhead	<u>Ictalurus melas</u>	
Yellow bullhead	<u>Ictalurus natalis</u>	decreasing
Brown bullhead	<u>Ictalurus nebulosus</u>	
Stonecat	<u>Noturns flavus</u>	decreasing
Trout perch	<u>Percopsis omiscomaycus</u>	decreasing
Brook silverside	<u>Labidesthes sicculus</u>	
Rock bass	<u>Ambloplites rupestris</u>	
Green sunfish	<u>Lepomis cyanellus</u>	
Pumpkinseed	<u>Lepomis gibbosus</u>	
Orangespotted sunfish ¹	<u>Lepomis humilis</u>	increasing
Bluebill	<u>Lepomis macrochirus</u>	
Longear sunfish	<u>Lepomis megalotis</u>	
Largemouth bass	<u>Micropterus salmoides</u>	
Black crappie	<u>Pomoxis nigromaculatus</u>	decreasing

TABLE 3 CONT.

COMPOSITE LIST OF SPECIES PRESENT IN SANDUSKY BAY

		<u>Population Trend</u>
Logperch	<u>Percina caprodes</u>	decreasing
<u>Uncommon</u>		
Sea lamprey	<u>Petromyzon marinus</u>	
Lake sturgeon	<u>Acipenser fulvescens</u>	decreasing
Bowfin	<u>Amia calva</u>	decreasing
Coho salmon ²	<u>Oncorhynchus kisutch</u>	
Chinook salmon ²	<u>Oncorhynchus tshawytscha</u>	
Central mudminnow	<u>Umbra limi</u>	decreasing
Grass pickerel	<u>Esox americanus vermiculatus</u>	decreasing
Muskellunge	<u>Esox masquinongy</u>	decreasing
Stoneroller	<u>Campostoma anomalum</u>	
Common shiner	<u>Notropis cornutus</u>	
Sand shiner ¹	<u>Notropis stramineus</u>	
Fathead minnow ¹	<u>Pimephales promelas</u>	
Quillback	<u>Carpoides cyprinus</u>	decreasing
Northern hog sucker	<u>Hypentelium nigricans</u>	
Bigmouth buffalo	<u>Ictiobus cyprinellus</u>	decreasing
Spotted sucker	<u>Minytrema melanops</u>	decreasing
Golden redhorse	<u>Moxostoma erythrurum</u>	
Tadpole madtom	<u>Noturus gyrinus</u>	decreasing
Brindled madtom	<u>Noturus miurus</u>	decreasing
Banded killifish	<u>Fundulus diaphanus</u>	decreasing
Smallmouth bass	<u>Micropterus dolomieu</u>	
Greenside darter	<u>Etheostoma blennioides</u>	
Johnny darter	<u>Etheostoma nigrum</u>	decreasing
Walleye	<u>Stizostedion v. vitreum</u>	increasing
<u>Rare</u>		
Silver lamprey	<u>Ichthyomyzon unicuspis</u>	decreasing
Spotted gar	<u>Lepisosteus oculatus</u>	decreasing
Mooneye	<u>Hiodon tergisus</u>	decreasing
Lake whitefish	<u>Coregonus clupeaformis</u>	decreasing
Northern pike	<u>Esox lucius</u>	decreasing

TABLE 3 CONT.

COMPOSITE LIST OF SPECIES PRESENT IN SANDUSKY BAY

		<u>Population Trend</u>
Silver chub	<u>Hybopsis storeriana</u>	decreasing
Blackchin shiner	<u>Notropis heterodon</u>	decreasing
Blacknose shiner	<u>Notropis heterolepis</u>	decreasing
Lake chubsucker	<u>Erimyzon sucetta</u>	decreasing
Silver redhorse	<u>Moxostoma anisurum</u>	
Burbot	<u>Lota lota</u>	
Iowa darter	<u>Etheostoma exile</u>	decreasing
Channel darter	<u>Percina coplandi</u>	
Blackside darter	<u>Percina maculata</u>	
Sauger	<u>Stizostedion canadense</u>	decreasing
Blue walleye	<u>Stizostedion vitreum glaucum</u>	decreasing

- 1 These fishes should be present although there are no formal records for them.
- 2 These fishes are transient members of the community present only during certain times of the year.