

**COMMERCIAL FISH PRODUCTION IN
THE GREAT LAKES 1867-2020
NOTES ON STATISTICS**

The report and supplement of the International Board of Inquiry for the Great Lakes Fisheries (U.S. Government Printing Office, 1943) is the source for production statistics up to and including 1940.

Sources of production data for the period 1941-1977 were

1. Fishery Statistics of the United States. Published annually by the Bureau of Commercial Fisheries prior to 1968. Thereafter, the National Marine Fishery Service, Department of Commerce, assumed responsibility for publishing Great Lakes harvest data tabulated by the U.S. Fish and Wildlife Service.
2. Tabulations of the Bureau of Commercial Fisheries Biological Laboratory (then the U.S. Fish and Wildlife Service Great Lakes Fishery Laboratory), Ann Arbor, Michigan.
3. Annual Reports of the Ontario Ministry of Natural Resources and detailed tabulations of its Fish and Wildlife Division.
4. The Canadian Commercial Fisheries of the Great Lakes--Basebook on Fishery Statistics No. 2, Markets and Economics Service, Department of Fisheries of Canada. 1955.
5. New York State Annual Reports.
6. Previously unpublished data, which separates historical Lake Superior chub catches from those of Cisco (formerly Lake Herring). (Compiled by Ralph Hile and Stanford H. Smith, both formerly of the U.S. Fish and Wildlife Service.)

Sources of production data for the period 1978-1999 were

7. U.S. Geological Survey, Great Lakes Science Center, Ann Arbor, Michigan.
8. Annual Reports of the Ontario Ministry of Natural Resources.
9. Great Lakes Indian Fish and Wildlife Commission.
10. State of Minnesota.
11. Fisheries Department, Red Cliff Band of Lake Superior Chippewas.
12. New York State Department of Environmental Conservation.

Sources of production data for the period 2000-2015 were

13. U.S. Geological Survey, Great Lakes Science Center, Ann Arbor, Michigan.
14. Ontario Ministry of Natural Resources and Forestry.
15. Great Lakes Indian Fish and Wildlife Commission.
16. Natural Resources Department, Red Cliff Band of Lake Superior Chippewas.

Sources of production for the period 2016-2020 were

17. Chippewa Ottawa Resource Authority.
18. Ontario Ministry of Natural Resources and Forestry.
19. Michigan Department of Natural Resources.

20. Minnesota Department of Natural Resources.
21. Ohio Department of Natural Resources,
22. Annual Report of the New York Department of Environmental Conservation,
23. Grand Portage Band.
24. Fisheries Department, Red Cliff Band of Lake Superior Chippewa.
25. Lake Superior Technical Committee.
26. Great Lakes Indian Fish and Wildlife Commission.
27. Pennsylvania Department of Natural Resources

The 2022 update to technical report 3 was a substantial deviation from past updates. Data was not obtained from the U.S. Geological Survey, Great Lakes Science, rather, commercial production was obtained directly from each state, provincial, or Native American natural resource agency where possible for the years 2000-2020. Commercial production for Native American tribes or aggregations of tribes (Chippewa Ottawa Resources Authority) were combined with state-licensed commercial production for Lakes Superior, Huron, and Michigan, for the years 2013-2020 to create totals for state waters therefore the current production totals will be different than previous versions. Additional production data incorporated into Technical Report 3 for the 2022 update were:

Lake Superior

- Grand Portage Band in 1854 ceded waters State of Minnesota
- Red Cliff Band of Lake Superior Chippewa 1854 ceded waters State of Wisconsin
- Bad River Band of Lake Superior Chippewa 1854 ceded waters State of Wisconsin
- Inter-Tribal fishery in 1842 ceded waters State of Michigan
- Chippewa Ottawa Resource Authority 1836 ceded waters State of Michigan

Lake Huron

- Chippewa Ottawa Resource Authority 1836 ceded waters State of Michigan, lake proper

Lake Michigan

- Chippewa Ottawa Resource Authority 1836 ceded waters State of Michigan, Green Bay
- Chippewa Ottawa Resource Authority 1836 ceded waters State of Michigan, lake proper

In the 2022 update, commercial production by state-licensed fisheries was summed with Tribal production information to generate State jurisdiction totals and this is what is reported for the years 2013-2020 for Lakes Superior, Huron, and Michigan and combined with Native American commercial production to create totals for each state. Information on lake and agency specific production in the 2022 update are outlined below.

Lake Ontario

New York waters

Production for the state of New York licensed commercial fishery from Lake Ontario was taken from Section 17, Table 2 of the New York Department of Environmental

Conservation 2020 Annual Report, Bureau of Fisheries, Lake Ontario Unit and St. Lawrence River Unit to the Great Lakes Fishery Commission's Lake Ontario Committee. The citation is:

Legard and LaPan. 2021. Lake Ontario commercial fishery summary, 2000-2020. New York Department of Environmental Conservation, report to the Lake Ontario Committee.

Ontario waters

Production data for the Ontario Ministry of Natural Resources and Forestry provincial-licensed commercial fishery from Lake Ontario was provided in the form of an EXCEL spreadsheet titled *Superior_Huron_Erie_Ontario Ontario provincial harvest 2013-2020*. All production information was provided in round kilograms, so the data was converted to pounds using the EXCEL command "convert."

Lake Erie

New York waters

Production data for the state of New York licensed commercial fishery from Lake Erie was provided in the form of an EXCEL spreadsheet titled *Erie New York state harvest 2013_2020*. Production data was provided in round pounds. Only three fish species were reported harvested from New York waters; yellow perch, burbot, and lake whitefish.

Ontario waters

Production data for the Ontario Ministry of Natural Resources and Forestry provincial-licensed commercial fishery was provided in the form of an EXCEL spreadsheet titled *Superior_Huron_Erie_Ontario Ontario provincial harvest 2013-2020*. All production information was provided in round kilograms, so the data was converted to pounds using the EXCEL command "convert."

Michigan waters

Production data in round pounds for the State of Michigan licensed commercial fishery from Lake Erie was provided in the form of an EXCEL spreadsheet titled *Superior_Michigan_Huron_Erie Michigan state harvest 2001_2020*.

Ohio waters

Production data for the State of Ohio licensed commercial fishery from Lake Erie was provided in the form of an EXCEL spreadsheet titled *Erie Ohio state harvest 2011_2020*. All production data was provided in round pounds.

Pennsylvania waters

Production data for the State of Pennsylvania licensed commercial fishery from Lake Erie was provided in the form of an EXCEL spreadsheet titled *Erie Pennsylvania state harvest 1996_2020*. All production data was provided in round pounds.

Lake Huron

Ontario waters

Production data for the Ontario Ministry of Natural Resources and Forestry provincial-licensed, and some First Nation commercial fisheries, was provided in the form of an EXCEL spreadsheet titled *Superior_Huron_Erie_Ontario Ontario provincial harvest 2013-2020*. All production information was provided in round kilograms, so the data was converted to pounds using the EXCEL command "convert." Data for Ontario waters was

subsequently summarized for the main basin, Georgian Bay, and North Channel regions and entered into the technical report for each spatial region.

Michigan waters

Chippewa Ottawa Resource Authority 1836 treaty-ceded area

Production data for the Chippewa Ottawa Resource Authority tribally-licensed commercial fishery in the main basin of Lake Huron was provided in the form of an EXCEL spreadsheet titled *Superior_Michigan_Huron CORA tribal harvests 2000_2020*. The data represents the production in round pounds by tribal members licensed by the Sault Ste. Marie, Bay Mills, Grand Traverse Band, Little Traverse Bay Band, and the Little River Band governments. To be consistent with previous reporting, Chippewa Ottawa Resource Authority production was included in the US Huron Proper production column.

State of Michigan

Main basin

Production data for the State Michigan from main basin waters of Lake Huron outside of Saginaw Bay was provided by the Michigan DNR in the form of an EXCEL spreadsheet titled *Superior_Michigan_Huron_Erie Michigan state harvest 2001-2020*. All data was provided in round pounds and represented the entire production by the state-licensed fishery from Michigan waters of Lake Huron including Saginaw Bay. To estimate only the main basin production, production from Saginaw Bay in whitefish management unit WFH-07 was subtracted from the total production in Michigan waters. To be consistent with previous reporting, State of Michigan license production was included in the US Huron Proper production column.

Saginaw Bay

Production data for the State of Michigan from Saginaw Bay waters of Lake Huron was provided by the Michigan DNR in the form of an EXCEL spreadsheet titled *Huron_Saginaw Bay Michigan state harvest 2013-2020*. The data represents the production by commercial fishermen licensed in round pounds by the State of Michigan from whitefish management unit WFH-07. The data was provided in the form of a database in EXCEL with each record representing the daily catch of an individual fisher in WFH-07.

Lake Michigan

Wisconsin waters

Production data for the state of Wisconsin licensed commercial fishery from Green Bay and the main basin of Lake Michigan was provided in the form of an EXCEL spreadsheet titled *Michigan Wisconsin state harvest 2013-2020.xlsx*. Production data for lake whitefish, lake trout, burbot, siscowet, cisco, and chubs were provided as dressed weight so data for these species were converted to round weight as described in the *Fish Weight Conventions* document.

Michigan waters

Chippewa Ottawa Resource Authority 1836 treaty-ceded area

Production data for the Chippewa Ottawa Resource Authority tribally-licensed commercial fishery from Green Bay and the main basin of Lake Michigan was provided in the form of an EXCEL spreadsheet titled *Superior_Michigan_Huron CORA tribal harvests 2000_2020*. The data represents the production in round pounds by tribal members licensed by the Sault Ste. Marie, Bay Mills, Grand Traverse Band, Little Traverse Bay Band, and the Little River Band tribal governments. The spreadsheet contained production information in round pounds organized by whitefish management units for lake whitefish, lake trout, deepwater cisco (chubs), Pacific salmon, menominee (round whitefish), yellow perch, walleye, and herring (cisco), and others. The 2015-2018 CORA production of lake trout from the main basin included estimates of mortality due to discards from the fishery and these values were included in the final CORA production estimates. The estimates of discard mortality of lake trout from the CORA fishery was 65,540 lb in 2015, 107,738 lb in 2016, 112,550 lb in 2017, and 55,192 lb in 2018. To be consistent with previous reporting, CORA production was included with Green Bay (MI) or Mich. Proper (MI) production column.

State of Michigan

Production data for the state of Michigan licensed commercial fishery from Green Bay and the main basin of Lake Michigan was provided in the form of an EXCEL spreadsheet titled *Michigan_GB & MB Michigan state harvest 2013_2020*. Production of all species was provided in round weight except chubs, which were reported in dressed weight. Chub production was converted to round weight as described in the *Fish Weight Conventions* document and was included in the Green Bay (MI) or Mich. Proper (MI) production column.

Illinois waters

There was no reported commercial fishery production from the Illinois waters of Lake Michigan during 2013-2020.

Indiana waters

There was no reported commercial fishery production from Indiana waters of Lake Michigan during 2013-2020.

Lake Superior

Michigan waters

Inter-Tribal Fishery 1842 treaty-ceded area

Production data for the tribally-licensed commercial fishery from the 1842 ceded waters in the state of Michigan water of Lake Superior was provided by the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) in Odanah, Wisconsin in the form of an EXCEL spreadsheet titled *Superior Tribal 1842 ceded waters harvest 2000_2020*. The data represents commercial production made by members of the Keweenaw Bay, Red Cliff, and Bad River tribal governments in Michigan waters of the 1842 ceded waters. Only the data for 2001-2020 was entered into the GLFC commercial fishery database since it corresponded to that provided by the state of Michigan for Lake Superior. Production values were reported as dressed weight for lake trout, whitefish, siscowet, round whitefish, chubs, cisco, salmon,

brown trout, rainbow trout, and burbot and converted to round weights as described in the *Fish Weight Conventions* document. Walleye, yellow perch, smelt, northern pike, and suckers were reported as round weight. To be consistent with previous reporting, GLIFWC production was included in Michigan (MI) production.

Chippewa Ottawa Resource Authority 1836 treaty-ceded area

Production data for the Chippewa Ottawa Resource Authority tribally-licensed commercial fishery was provided in the form of an EXCEL spreadsheet titled *Superior_Michigan_Huron CORA tribal harvests 2000_2020*. The data represents the production by tribal members licensed by the Sault Ste. Marie, Bay Mills, Grand Traverse Band, Little Traverse Bay Band, and the Little River Band tribal governments and was reported as round weight. To be consistent with previous reporting, CORA production was included in Michigan (MI) production.

State of Michigan

Production data for the state of Michigan licensed commercial fishery from Lake Superior was provided in the form of an EXCEL spreadsheet titled *Superior_Michigan_Huron_Erie Michigan state harvest 2001-2020*. Data were provided in round weight except for chubs and cisco, which were provided in dressed weight. Dressed weight data for chubs and cisco were converted to round weight as reported in the *Fish Weight Conventions* document. To be consistent with previous reporting, GLIFWC production was included in Michigan (MI) production. To be consistent with previous reporting, State of Michigan license production was included in the Michigan (MI) production column.

Wisconsin waters

Production data was updated for 2000-2020 because the previous version did not contain all the tribal production data from 2000 onward. The production data was updated for 2000 onward by including data from the Bad River Band and Red Cliff Tribe in Wisconsin waters where it appeared the data had not previously been included in the total production from Wisconsin waters of Lake Superior.

State of Wisconsin

Production data for the state of Wisconsin licensed commercial fishery from Lake Superior was provided by the Wisconsin Department of Natural Resources in Bayfield, Wisconsin in the form of an EXCEL spreadsheet titled *Superior Wisconsin state harvest 2000_2020*. Production values for lake whitefish, lake trout, siscowet, burbot, chubs, and cisco were provided as dressed weight, so for these species the dressed weights were converted to round weight as described in the *Fish Weight Conversions* document. Dressed weight production values for rainbow smelt and suckers were not converted to round weight. To be consistent with previous reporting, State of Wisconsin license production was included in the Wisconsin (WI) production column.

Red Cliff Band of Lake Superior Chippewa 1854 treaty-ceded area

The Red Cliff Tribe's commercial production data from Wisconsin waters of Lake Superior was provided by the Red Cliff Band's Treaty Natural Resources Division in the form of an EXCEL spreadsheet titled *Superior Red Cliff Tribal harvest 2000_2020*. Production values for lake whitefish, lake trout, siscowet, and cisco were provided as dressed weight, so for those species the dressed weights were converted to round weight as described in the *Fish Weight Conversions* document.

Production values for other species were reported as round weight. To be consistent with previous reporting, the Red Cliff Tribe's production was included in the Wisconsin (WI) production column.

Bad River Band of Lake Superior Chippewa 1854 treaty-ceded area

The Bad River Tribe's commercial production data from Wisconsin waters of Lake Superior was provided by Mike Seider of the U.S. Fish and Wildlife Service, Fish and Wildlife Conservation Office, Ashland, Wisconsin in the form of an EXCEL spreadsheet titled *Superior Bad River Tribe harvest 1990_2020* after numerous attempts to contact a person at the Bad River Band failed. Fortunately, the Lake Superior Technical Committee had completed an initiative to summarize all the commercial and recreational fishery production data from Lake Superior and Mike Seider of the USFWS Ashland Fishery Conservation Office is the contact person for the technical committee production database. All commercial production data for the Bad River tribe were converted from dressed to round weight in the database. Only data for 2000-2020 was added to the GLFC database. To be consistent with previous reporting, the Bad River Tribe's production was included in the Wisconsin (WI) production column.

Minnesota waters

State of Minnesota

Data for the state of Minnesota licensed commercial fishery from Lake Superior was provided by the Minnesota DNR office in Two Harbors, MN in the form of an EXCEL spreadsheet titled *Superior Minnesota state harvest 2000-2020*. All production data were expressed in round pounds. To be consistent with previous reporting, State of Minnesota license production was included in the Minnesota (MN) column.

Grand Portage Band 1854 treaty-ceded area

Data for the Grand Portage tribally licensed commercial fishery from reservation waters of Lake Superior was provided by the Lands Department for 1998_2020 in the form of an EXCEL spreadsheet titled *Superior Grand Portage Band harvest 1998_2021*. Production data in round pounds for the entire 1998-2020 time period was provided only for lean and siscowet lake trout. Production data for cisco, round whitefish, and Pacific salmon covered the years 2008-2021, and data for the lake whitefish production covered the years 2007-2021. To be consistent with previous reporting, the Grand Portage Band's production was included in the Minnesota (MN) column.

Ontario waters

Production data for the Ontario Ministry of Natural Resources and Forestry provincial-licensed, and some First Nation commercial fisheries, was provided in the form of an EXCEL spreadsheet titled *Superior_Huron_Erie_Ontario Ontario provincial harvest 2013-2020*. All production information was provided in round kilograms, so the data was converted to pounds using the EXCEL command "convert."

In all updates prior to 2022, where production figures differed, preference was given to the statistics collected by the same agency over the greatest number of consecutive years. By consulting more than one source, it was also possible to correct or reduce the extent of certain

obvious errors in both published and unpublished statistics to obtain the most reliable record from the available data. For example, Chaumont Bay catches found to be missing from previously reported Lake Ontario catches (1913, 1918, 1951) have been included in this report, after comparison with New York Annual Reports.

The 2022 update corrected omissions and errors for 1991-1993 in Lake Michigan that included omission of 1993 data for chubs and round whitefish in Wisconsin waters of Green Bay and Lake Michigan proper, omission of 1991-1992 data for all species in Wisconsin waters of Green Bay and Lake Michigan proper, omission of 1991-1992 data for Lake Whitefish in Michigan waters of Green Bay and Lake Michigan proper, and omission of 1991-1992 data for state of Michigan in Saginaw Bay and Lake Huron proper.

As in the original Technical Report No. 3, production tables for Rock Bass in Lake Ontario and Lake Trout in Lake St. Clair and Lake Erie prior to the 2022 update have been omitted because the small catches shown for these species in early years have long since ceased to be significant. Tables have been added to show the increasing production of Pacific salmon and White Perch since 1960, as well as that of Rainbow Smelt and Alewife, which were first described in the 1962 edition.

In the original Technical Report No. 3, it became possible to identify production from certain areas of Lakes Huron (Saginaw Bay, Georgian Bay, and the North Channel) and Michigan (Green Bay). However, Green Bay production is not distinguishable from Lake Michigan totals prior to 1953.

For updates made prior to 2022, production from each jurisdiction in a lake were rounded to the nearest thousand pounds after sums were calculated. Readers should understand because of this rounding the sum of rounded amounts from the various jurisdictions will not necessarily correspond to the rounded total for the entire lake. A blank indicates no reported production. A lake total for the species in question is not computed when the lack of a catch report is assumed attributable to zero catch. Note that Lake Superior production in Michigan during 1985-2015 and in Wisconsin during 1980-2015 includes productions by tribal fishers from the 1842 treaty-ceded waters (state of Michigan; Great Lakes Indian Fish and Wildlife Commission) and from the waters around the Apostle Islands (state of Wisconsin; Natural Resources Department, Red Cliff Band of Lake Superior Chippewas) whereas productions by tribal fishers from these two areas are not included in tabulations of the Great Lakes Science Center (<https://www.sciencebase.gov/catalog/item/57769db6e4b07dd077c8763cd>). Also note that production amounts do not include fish categorized as “returned to water” in the Center’s data file.

In the 2022 update all production was entered to the nearest pound. Consequently, all production was converted to round pounds divided by 1,000, and then entered in the database to the nearest 0.001. For example, production of one million pounds was entered as 1,000, production of 100,000 lb was entered as 100, production of 10,000 lb was entered as 10, production of 1,000 lb was entered as 1, production of 100 lb was entered as 0.1, production of 10 lb was entered as 0.01, and production of 1 lb was entered as 0.001.

Confusion as to fish names and the combining of catches of species that are in the same market category or that resemble each other introduced considerable uncertainty into the statistics for many of the early years. For example, Round Whitefish and species of large chubs were included with Lake Whitefish, and small chubs were included with Cisco (formerly Lake Herring). Northern Pike, Sauger, Blue Pike, and Walleye have been variously combined and catches of Channel Catfish and various bullheads were combined rather consistently for many years. These instances, where known, are noted in the tables. Distinction between species that resemble each other closely, e.g. Yellow and Brown Bullhead, or the various species of chubs and suckers, is still not practical. Species and species groups for which catch statistics are given follow. They are arranged in phylogenetic order here, but in the catch tables they are listed alphabetically by common name.

Lake Sturgeon	<i>Acipenser fulvescens</i>
Bowfin	<i>Amia calva</i>
Alewife	<i>Alosa pseudoharengus</i>
Gizzard Shad	<i>Dorosoma cepedianum</i>
Chubs or deepwater ciscoes	<i>Coregonus</i> spp.
Cisco (formerly Lake Herring)	<i>Coregonus artedii</i>
Lake Whitefish	<i>Coregonus clupeaformis</i>
Round Whitefish or Menominee	<i>Prosopium cylindraceum</i>
Lake Trout	<i>Salvelinus namaycush</i>
Pacific salmon	<i>Onchorhynchus</i> spp.
Pink Salmon	<i>Oncorhynchus gorbuscha</i>
Coho Salmon	<i>Onchorhynchus kisutch</i>
Chinook Salmon	<i>Oncorhynchus tshawytscha</i>
Rainbow Smelt	<i>Osmerus mordax</i>
Northern Pike	<i>Esox lucius</i>
Goldfish	<i>Carassius auratus</i>
Carp	<i>Cypyrinus carpio</i>
Minnows	Cyprinidae
Suckers	<i>Catostomus</i> and <i>Moxastoma</i> spp.
Buffalo	<i>Ictiobus</i> spp.
Quillback	<i>Carpiodes cyprinus</i>
Bullheads	<i>Ictalurus</i> spp.

Channel Catfish	<i>Ictalurus punctatus</i>
American Eel	<i>Anguilla rostrata</i>
Burbot	<i>Lota lota</i>
White Perch	<i>Morone americana</i>
White Bass	<i>Morone chrysops</i>
Rock Bass	<i>Ambloplites rupestris</i>
Sunfish	<i>Lepomis spp.</i>
Smallmouth Bass	<i>Micropterus dolomieu</i>
Crappie	<i>Pomoxis spp.</i>
Yellow Perch	<i>Perca flavescens</i>
Sauger	<i>Sander canadensis</i>
Walleye	<i>Sander vitreus</i>
Blue Pike	<i>Sander vitreus glaucum</i>
Freshwater Drum or sheepshead	<i>Aplodinotus grunniens</i>