

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, Bureau of Fisheries, Region 7

1285 Fisher Avenue, Cortland, NY 13045-1012

P: (607) 753-3095 | F: (607) 753-8532

www.dec.ny.gov

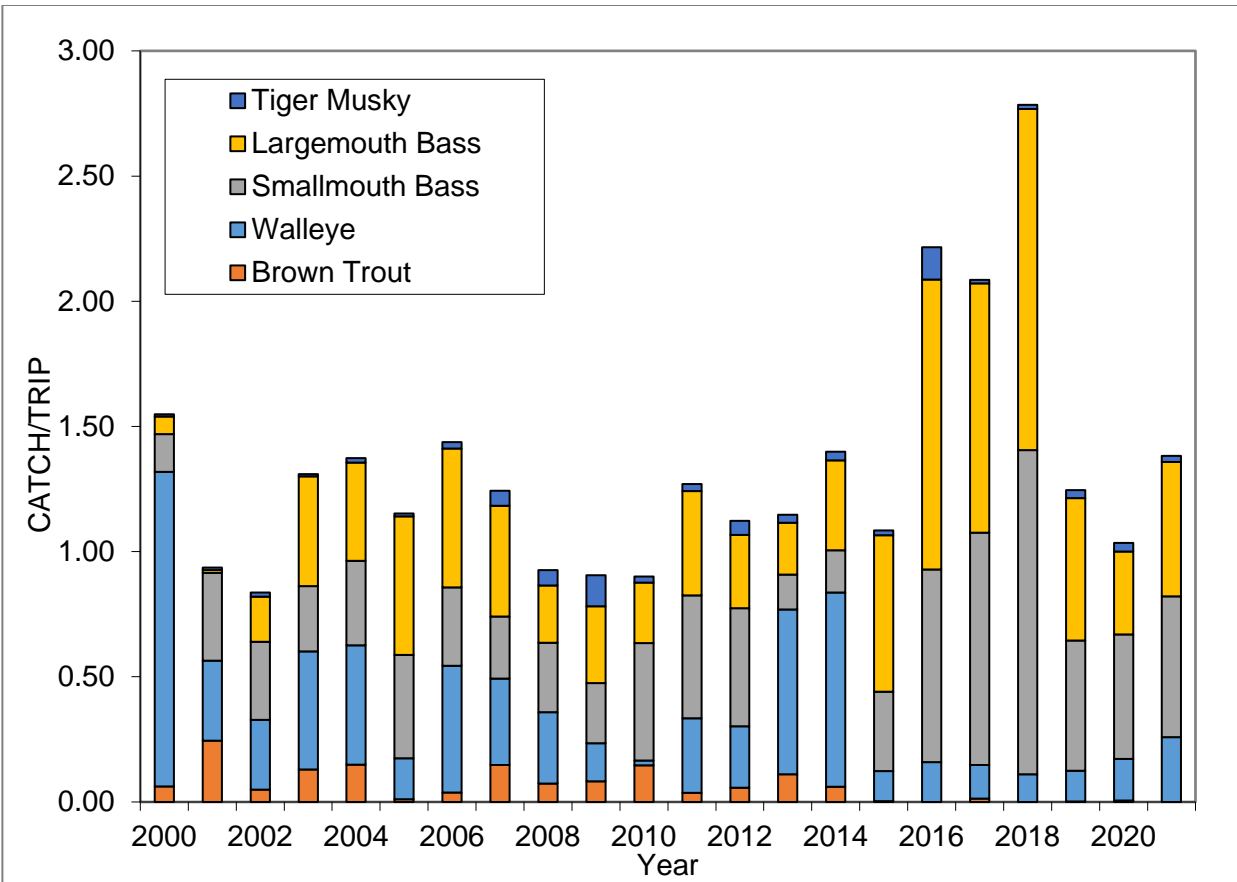
Monday, February 28, 2022

To: **Otisco Lake Volunteer Angler Diary Cooperators**

Dear Fellow Anglers:

As we all know 2021, though not as unusual as 2020, was still another strange year as we continue to deal with Covid-19 and your efforts to keep recording your trips during all this craziness is greatly appreciated. We had a drop in Otisco Lake cooperators in 2021, from 16 to 12. Cooperators recorded 88 outings (an outing is a record of a cooperator's trip not including members of their party), which amounted to 162 angler trips (includes all participants) totaling 526 hours of fishing effort. On average, it took 2.4 hours to catch one legal gamefish in 2021, which is above the ten-year average of 2.7 hours. Anglers targeting tiger musky comprised 33% of the total cooperator effort (173 out of 526 hours) in 2021. Effort geared at walleye was 26% (138 hours) followed by bass with 24% (125 hours). Details on species specific catch rates and effort are included in the discussion below.

There are some graphs included in the Appendix that cooperators may find useful/interesting. The graphs consist of frequency of catch by target, area, type, number of trips by day of week and total fish caught by year. They include angler diary data from 1993 to 2021. If there is other information you would be interested in seeing from the angler diary data in future reports, please let me know by including a comment when you return your diaries next winter.



The above graph shows the long term catch rates by species for all legal sized gamefish. This includes all reported trips regardless of what anglers were fishing for.

Walleye

Cooperators caught 49 walleye in 2021, 42 of which were legal length (18-inches or greater). Walleye are highly prized table-fare and cooperators harvested the majority (91%) of the legal fish caught. The largest walleye caught in 2021 was 29.0 inches, while the average length was 20.7 inches. Area 4 (see map) accounted for most of the walleye catch with 30 fish, Area 3 provided 15, and Area 2 the remaining four. Fishing in July produced most of the walleye, 26 of the 49, followed by May with 13 landed. Boat anglers caught most of the walleye (48) and one was caught by a shore angler.

Anglers specifically targeting walleye caught 46 of the 49 recorded walleye. The resulting targeted catch rate was 1 fish every 3.0 hours (0.33 walleye per hour) which is the best targeted catch rate since 2014 (0.38 walleye per hour). As mentioned in the past, targeted catch rates of one fish every 4 to 10 hours (0.25 to 0.10 fish per hour) are considered “very good to good” for New York walleye fisheries while those approaching 1 fish every 2 hours (0.5 fish per hour) are considered “excellent” (Festa et al. 1987).

Otisco was stocked with 32,000 walleye on June 29, 2021. We understand that there is still concern from walleye anglers about the stocking change that took place in 2014, going from an annual to bi-annual stocking. As mentioned in previous diary reports we will continue to monitor this. But keep in mind that since 2002 there have only been three non-stocking years, 2007, 2014 and 2016. We also have evidence that some natural reproduction has occurred in recent years based on otolith ages. Plus, some walleye are living a long time on Otisco. In 2014 we had a 22-year-old walleye and in 2018 we had walleye up to age-16. As such, there are a lot of walleye year classes currently out there in Otisco Lake.

Tiger Muskellunge

In 2021, 36 tiger muskies were recorded by cooperators. Lengths ranged from 18 to 40 inches with an average length of 28.0 inches. Of the total caught in 2021, four were legal length (36-inches or greater) and all were released. Those specifically targeting tigers caught 22 of the 36 reported (61%), and two of the four (50%) legal length tigers. Anglers targeting bass caught 7 tigers and walleye anglers caught 5, including the other two legal length fish. Cooperators specifically targeting tiger muskies completed 32 trips and logged 173 angler-hours. The 2021 targeted catch rate for tiger musky was 1 fish every 7.9 hours (0.13 per hour). This was above the 5-year average of 1 fish every 8.6 hours (0.12 per hour). Catch rates of muskellunge from diary programs on the St. Lawrence River yielded a rate of 1 fish every 25 hours (0.04 fish per hour) (Farrell et al. 2006). Creel survey data for Chautauqua Lake show average muskellunge catch rates of 1 fish every 20 hours (0.05 fish per hour) (McKeown and Einhouse 2000). The Otisco Lake angler success rate for tiger musky appears to be well above these renowned muskellunge fisheries.

All of the tiger musky caught in 2021 were landed by boat anglers. Area 3 produced the majority of the tiger muskies with 23, nine came from Area 2 and four from Area 4. June was the most productive month for tiger muskies accounting for nine, followed by July with eight and August with six.

Since tiger muskellunge are sterile hybrids (a cross between muskellunge and northern pike), the fishery is supported entirely by stocking. Otisco Lake received a stocking of 5,000 tiger musky on 8/4/21 from the Oneida Lake fish hatchery, and 6,400 on 9/15/21 from the South Otselic Hatchery. This was the first-year that tiger musky were raised at Oneida, traditionally they have been raised at South Otselic. It seemed successful so in 2022 all tiger musky will be raised at Oneida. Tiger musky are highly vulnerable to predation by bass, walleye and other tiger musky during their first 6-8 months in the lake. Although there is no formal assessment, survival following stocking is believed to be low but variable. Despite this, many tigers ultimately do survive and prosper in Otisco, as evidenced by the monster tiger that was caught and released in October 2019 by Demetrio Ascoti. That fish was 50 inches long and would have likely been a new state record. Not to mention the three large tiger muskies caught by hard-water anglers in 2021 (45.5, 45.75 and 47 inches).

Tiger Musky Tagging Cooperative

Anglers belonging to the Central New York (CNY) Chapter of Muskies Inc. approached DEC Region 7 Fisheries staff in 2019 about conducting a tiger musky tagging study on Otisco Lake. Tiger musky are often difficult to collect during routine DEC sampling efforts and angling can often be a more effective means of collecting information on them. Because of this regional staff felt that a well-designed cooperative study with the Muskies Inc. Chapter could provide useful information to inform future management of the tiger musky fishery of both Otisco Lake and other tiger waters. This is a cost-effective way of collecting data given the minimal DEC staff time required and available.

Because of the nature of the project, CNY Muskies Inc. members were required to obtain a special license from the DEC to conduct the tagging. The four CNY Muskies Inc. members involved in the tagging were also required to take part in a tagging training session.

The project plan calls for a four-year tagging study, two years of tagging (2019 and 2020), which has been completed, and then two years to monitor for tag returns (2021 and 2022). So, if you catch a tiger musky please look for a Floy tag (looks like a gray piece of spaghetti) near its dorsal fin. If releasing the fish DO NOT remove the tag but please write down the date, tag number, length of the fish and approximate location caught. If keeping the fish, the same information would be needed but you could remove the tag. Contact our office at 607-753-3095 X 401 or email the tagging information at fwfish7@dec.ny.gov

The late season license issuance resulted in a narrow tagging window for CNY Muskies Inc. in 2019, but four tiger musky were tagged. Members were able to get a much earlier start in 2020 with the first tiger musky caught and tagged on May 12. A total of 47 tiger musky were caught and tagged in 2020. Water temperatures in the summer of 2020 were at or above 80°F for an extended period. Because of the high-water temperature CNY Muskies Inc. members stopped tagging tiger musky in July and August as they didn't want to add extra stress to the fish. So, it's highly likely the overall number of tagged tiger musky would have been greater in 2020 if not for this "break".

Overall, a total of 51 tiger musky were tagged by CNY Muskies Inc. members with an average length of 30.7 inches. Age-4 fish were the most frequently tagged. Of the tagged tiger musky five were ≥ 36 inches, the legal length for Otisco Lake, while 30 were ≥ 30 inches, the statewide legal length.

There were 7 recaptures reported in 2020; surprisingly two of those fish were recaptured twice, and six recaptures were reported in 2021 by anglers. One of those had a tag number that didn't correspond with any of the recorded tags and was likely an error. One tagged tiger musky was caught by the DEC during the Big Panfish Initiative trap netting in May 2021 and four more tiger musky were tagged by the Department during that survey. One of those DEC tagged tiger musky was recaptured by an angler and reported. If we exclude those second captures in 2020 and the two DEC associated

captures in 2021, 11 out of 51, or 22% of the tiger musky tagged by the CNY Muskies Inc. were recaptured. This recapture rate is above the 18% reported by Wilkinson (1993) for a 1979 to 1991 Niagara River Chapter of Muskies Inc. muskellunge angler-tagging study on the Niagara River, NY. Similarly, the average angler recapture rate reported by Richards and Ramsell (1996) when comparing six muskellunge angler-tagging studies conducted by Muskies Inc. Chapters in multiple states (including four years of the Niagara River study mentioned above) was 17%. These recapture rates do indicate that angler caught tiger musky (and muskellunge) can survive if released. All but one of the Otisco Lake recaptures, where a site was reported, took place within a neighboring site of the initial tagging. The one exception was recaptured six sites away (Table 1). So far growth rates from the date tagged to recapture have ranged greatly from negative three to five inches with an average of 1.0 inches. Number of days between tagging and recapture have also ranged greatly from 4 to 505 days with an average of 161 days.

Table 1. Initial tagging and recapture data for tiger musky tagged by CNY Muskies Inc. members on Otisco Lake that were reported as recaptures.

Initial Tagging					Recapture				
Tag	Date	Site	L (in)	Age	Date	Site	L (in)	Growth (in)	Days
JR01488	5/14/2020	2	31.50	4	5/29/2020	4	31.50	0.00	15
JR01488					6/27/2020	2	32.00	0.50	44 (29)
JR01490	5/14/2020	3	28.50	4	5/30/2020	3	28.00	-0.50	16
JR01315	6/16/2020	3	35.50		6/20/2020	3	35.50	0.00	4
JR01469	5/17/2020	1	29.50	4	6/24/2020	2			38
JR01675	5/17/2020	3	21.00		6/28/2020	4	18.00	-3.00	42
JR01675					11/1/2020	4	26.00	5.00	168 (126)
JR01673	9/6/2020	4	33.50		2/21/2021	4	33.50	0.00	168
JR01313	6/18/2020	3	40.00		3/9/2021	9	41.00	1.00	264
JR?							40.25		
JR01498	9/19/2020	3	32.00	4	8/8/2021	2	34.00	2.00	
JR01673	9/6/2020	4	33.50		9/5/2021		36.00	2.50	364
JR01489	5/4/2020	3	29.25	4	10/1/2021		32.25	3.00	505
JR01320*	6/12/2020	3	33.00	4	5/18/2021	2	33.40	0.40	340
JR01218**	5/19/2021	12	26.90	3	9/18/2021	11	29.25	2.35	122

? Tag number did not match any reported tags.

*Caught by the department during a trap netting survey.

** Fish was tagged by the department during the trap netting survey.

Black Bass

Overall, a total of 206 bass (107 smallmouth and 99 largemouth) were caught by Otisco Lake cooperators in 2021. Most bass recorded were legal sized (12+-inch) smallmouth (92%) and largemouth (88%). The harvest rate was 11% (19 of the 178 legal bass),

which is above the five-year average of 6%. The average length of smallmouth bass caught was 15.8 inches and 14.8 inches for largemouth bass. The largest smallmouth and largemouth bass were 21.0 and 23.4 inches, respectively.

Cooperators specifically targeting bass took 57 trips for a total of 125 angler-hours in 2021 which was well below the five-year average of 293 angler-hours. Those targeting bass caught 146 overall, 132 (90%) of which were legal length. This equates to a targeted overall catch rate of one bass every 51 minutes (1.17 bass per hour) and a targeted legal catch rate of one bass every 57 minutes (1.06 legal bass per hour). These bass catch rates are well above the statewide average of one every two hours (0.51 bass per hour) for all sized bass and one every 3.9 hours (0.26 per hour) for legal length bass (Green et al. 1986).

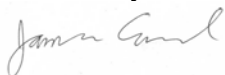
Boat anglers accounted for most of the bass catch with 99% of smallmouth bass and 77% of the largemouth bass. Area 2 produced the most smallmouth bass with 61, followed by Area 3 with 32. The most productive region for largemouth bass was Area 2 with 75 caught, while Area 3 and 4 accounted for 12 each. For smallmouth bass, May was once again the top producer (63) followed by June (17) and August (15). July was the big month for largemouth bass (40) followed by Oct (23) and Sept (16).

Brown Trout

In 2021, no angler cooperators made trips specifically targeting brown trout. This is the fifth consecutive year with zero angler diary cooperator brown trout effort.

In closing I want to again thank all the cooperators who work so hard to maintain the diaries for us. As always, I encourage anyone who fishes any of our Finger Lakes to consider becoming a diary cooperator. If you know of someone who fishes any of these lakes, please let them know about our program. **Good luck fishing in 2022!**

Sincerely,



James Everard
Biologist 1 (Aquatic)

Literature Cited

- Green, D.M., B.J. Schonhoff, III and W.D. Youngs. 1986. The New York State bass study, 1977- 1980: Use of angler collected data to determine population dynamics. New York State Department of Environmental Conservation, Albany, NY.
- Farrell, J.M., R. Klindt, J.M. Casselman, S.R. Lapan, R.G. Werner, and A. Schiavone. 2006. Development, implementation, and evaluation of an international muskellunge management strategy for the upper St. Lawrence River. *Environ. Biol. Fish* (2006).
- Festa, P.J., J.L. Forney, and R.T. Colesante. 1987. Walleye Management in New York State. New York State Department of Environmental Conservation, Albany, NY.
- McKeown, P. E., and D.W. Einhouse. 2000. The Chautauqua Lake Creel Survey 1998-1999. New York State Department of Environmental Conservation, Albany, NY
- Richards, K., and R. Ramsell. 1986. Quantifying the Success of Muskellunge Catch and Release Programs: A Summary of Cooperative Angler Tagging Studies. *American Fisheries Society Special Publication* 15: 309-315.
- Wilkinson, M. 1993. Summary of Upper Niagara River Muskellunge Angler Cooperator Activities from 1979 to 1985. New York State Department of Environmental Conservation. Buffalo, NY.

Otisco Lake Fishing Diary Summary

Year	Total # Angler Trips	% Trips Successful ¹	Average Hours/Trip	Total Legal Gamefish Caught					Average Length of Fish Caught (in)					Hours to Catch 1 Legal		# of Cooperators
				BT	WAE	SMB	LMB	TGR	BT	WAE	SMB	LMB	TGR	Gamefish	Cooperators	
1979*	174	63	4.0	2	165	26	--	--	16.8	23.1	14.3	--	--	6.0	8	
1980*	43	32	4.6	--	17	18	--	--	--	22.4	13.3	--	--	11.8	4	
1981*	40	43	4.2	--	--	17	5	--	--	--	14.5	14.9	--	9.1	7	
1982*	27	33	3.1	--	3	13	--	--	--	24.0	13.0	--	--	8.1	4	
1983*	36	55	7.3	7	13	9	1	--	13.9	24.0	13.2	14.0	--	7.3	9	
1984*	40	18	4.0	5	1	6	--	--	19.8	23.6	13.1	--	--	29.6	8	
1985*	18	22	4.9	5	--	--	--	--	19.1	--	--	--	--	20.6	5	
1986*	6	84	5.6	1	--	3	--	--	23.3	--	13.7	--	--	14.2	2	
1987*	21	38	2.8	--	9	--	--	--	--	24.3	--	--	--	4.5	4	
1988	10	29	3.4	--	2	--	--	--	--	24.4	--	--	--	6.3	2	
1989	9	50	3.3	--	3	1	--	--	--	25.8	16.5	--	28.5	7.4	2	
1990	96	21	5.8	11	2	1	1	7	20.7	26.3	10.8	9.7	28.8	30.1	7	
1991	506	27	4.1	27	10	45	68	20	18.0	23.7	13.0	13.4	29.2	24.0	15	
1992	434	49	3.1	123	4	61	75	14	15.5	16.3	14.3	13.8	29.2	5.5	21	
1993	328	45	3.9	34	14	43	25	18	17.2	24.0	15.3	13.5	29.7	9.6	19	
1994	397	34	4.0	29	7	45	27	12	13.9	23.2	14.3	14.1	27.1	11.9	27	
1995	277	45	3.7	42	51	62	40	15	16.4	25.1	13.5	14.7	28.7	4.9	23	
1996	213	48	4.0	11	59	47	65	31	15.1	23.4	14.4	14.2	29.9	4.0	15	
1997	149	50	4.5	11	36	39	52	15	17.2	24.1	14.3	13.1	31.8	4.4	11	
1998	179	62	4.9	12	71	41	64	38	16.6	21.4	13.5	14.0	34.6	3.9	11	
1999	139	71	5.0	14	71	40	66	14	18.4	20.7	14.7	15.5	36.6	3.3	14	
2000	113	71	5.0	7	142	17	8	1	15.7	20.1	14.1	14.9	36.0	3.3	6	
2001	94	65	5.4	23	30	33	1	1	15.8	19.6	14.2	12.0	40.0	5.7	10	
2002	61	53	4.6	3	17	19	11	1	17.2	20.1	14.0	15.0	26.5	5.5	8	
2003	123	71	3.9	16	58	32	54	1	14.8	20.3	13.1	13.4	34.0	3.0	11	
2004	107	72	4.3	16	51	36	42	2	15.2	21.0	14.2	14.1	26.2	3.0	11	
2005	92	63	4.2	1	16	38	51	1	13.8	20.3	13.7	14.7	28.3	3.6	11	
2006	316	69	3.5	35	162	99	175	8	15.4	21.1	14.7	13.8	24.9	2.3	16	
2007	367	71	4.2	54	127	90	162	22	14.9	21.2	14.2	14.8	27.1	3.4	18	
2008	162	71	3.5	12	46	45	37	10	15.0	20.2	13.9	14.2	29.9	3.8	13	
2009	316	68	4.1	26	48	76	97	39	14.9	21.3	13.2	13.5	28.2	4.6	16	
2010	211	76	3.8	31	4	99	51	5	14.8	15.7	12.4	12.1	25.5	4.2	10	
2011	326	72	3.9	12	97	160	136	9	13.4	20.3	13.8	13.5	26.3	3.1	19	
2012	106	65	3.7	6	26	50	31	6	13.7	22.0	14.5	14.8	24.2	3.3	12	
2013	381	62	3.5	42	251	53	79	12	13.8	22.6	15.5	14.3	29.7	3.1	18	
2014	379	60	3.6	23	294	64	136	13	14.3	22.6	14.4	14.3	30.2	2.6	16	
2015	259	52	3.7	1	31	82	162	5	17.0	21.4	15.1	14.2	28.8	3.4	16	
2016	195	65	2.3	0	31	150	226	25	--	21.9	16.1	14.6	31.2	2.3	16	
2017	223	73	3.7	3	30	207	222	3	15.0	22.3	15.4	13.7	29.2	1.8	16	
2018	190	71	3.6	0	21	246	259	3	--	21.2	14.9	14.1	27.6	1.3	14	
2019	411	61	4.3	1	50	214	234	13	20.0	22.5	14.8	14.0	28.2	3.5	20	
2020	320	56	3.9	2	53	159	106	11	12.5	21.7	16.4	13.8	28.4	3.8	16	
2021	162	68	3.2	0	42	91	87	4	0.0	20.7	15.8	14.8	28.0	2.3	12	

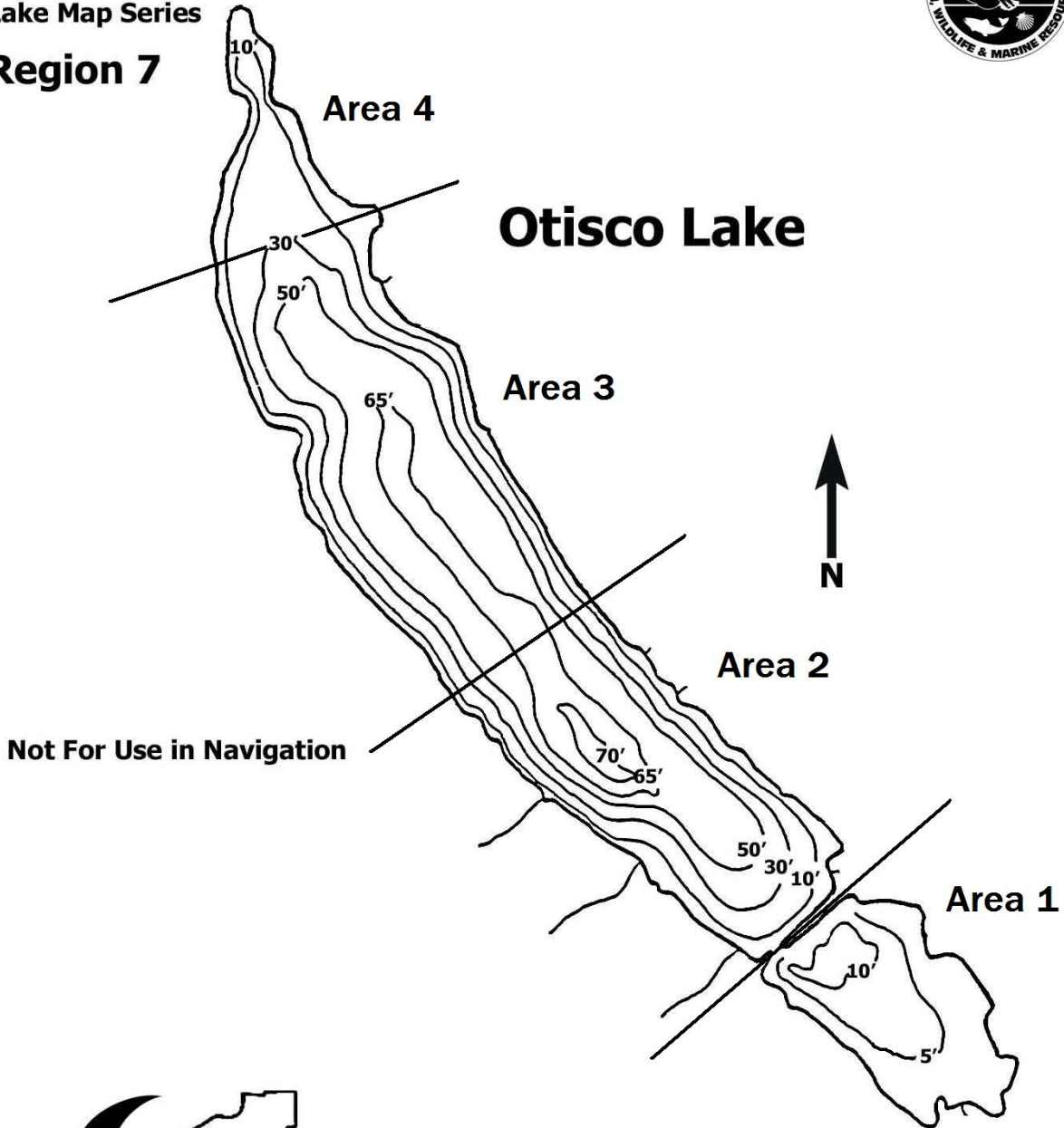
1 - Success = One or more legal target fish caught.

* 1979-1987 Lengths are from kept fish only.

Gamefish = BT-Brown Trout, WAE-Walleye, SMB-Smallmouth Bass, LMB-Largemouth Bass, TGR-Tiger Musky.



Region 7



Otisco Lake

County: Onondaga **Town:** Otisco, Spafford

Surface Area: 2,236 Acres

Fish Species Present: Tiger Muskellunge, Smallmouth Bass, Largemouth Bass, Yellow Perch, Black Crappie, Walleye, Common Carp, White Sucker, Bluegill, Pumpkinseed

Scale: 0 3655 ft

Appendix

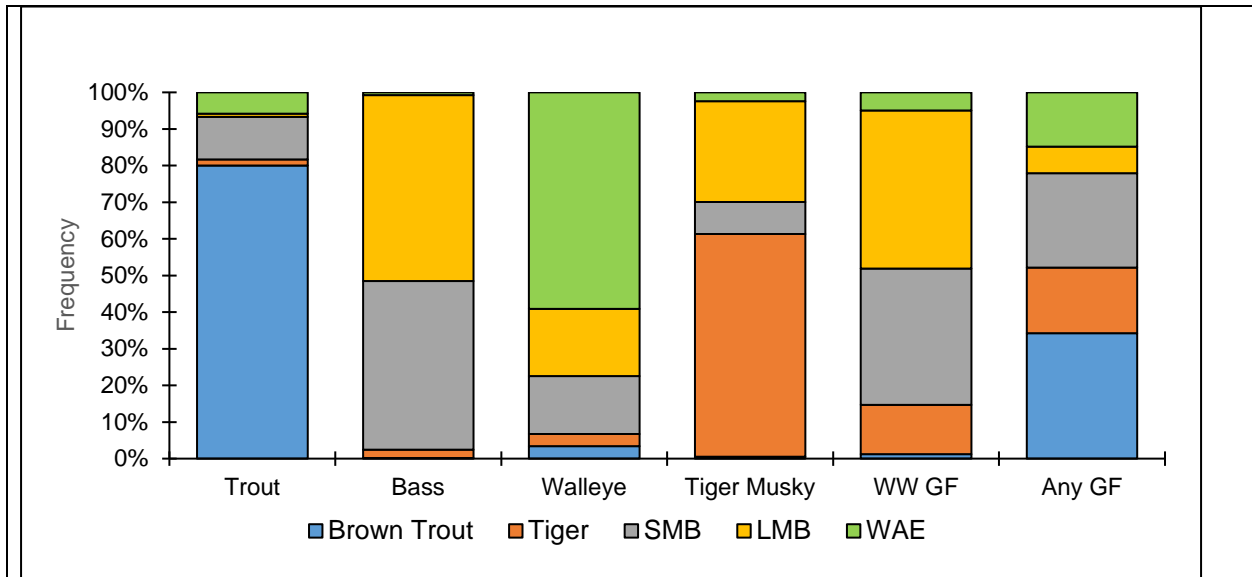


Figure 1. Frequency of catch by target for Otisco Lake angler diary cooperators from 1993 to 2021 (Basically, if you want to catch something target it). WW GF-warm water gamefish, Any GF-any gamefish.

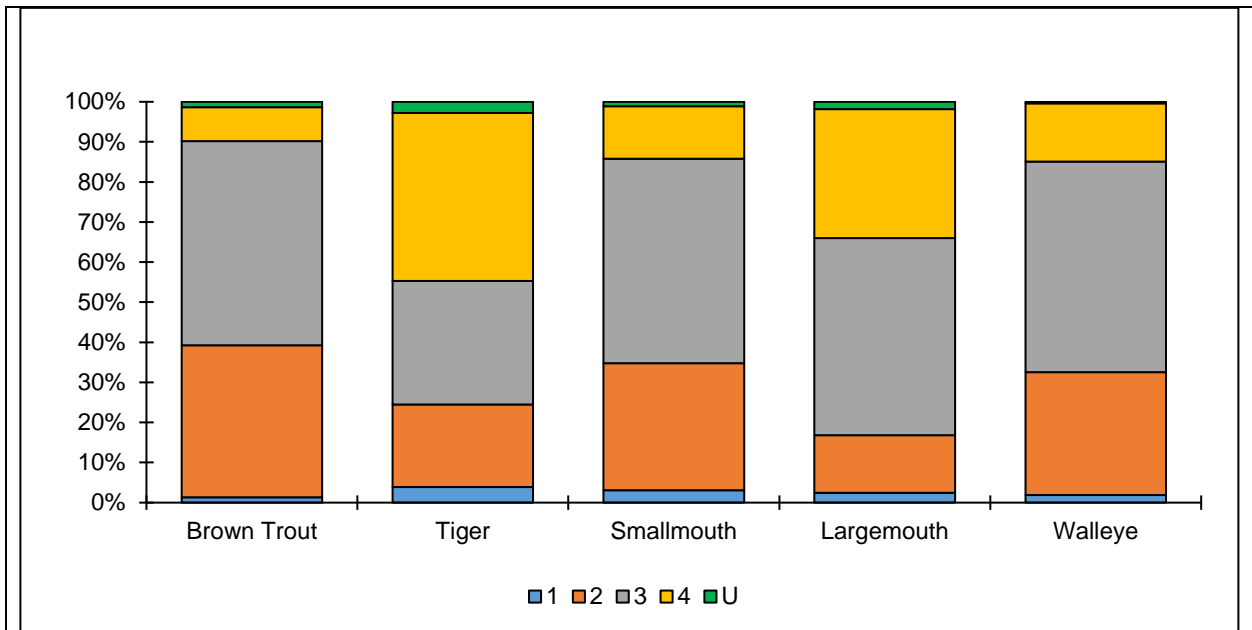


Figure 2. Frequency of catch by area (see map) for Otisco Lake angler diary cooperators from 1993 to 2021. U-Unknown.

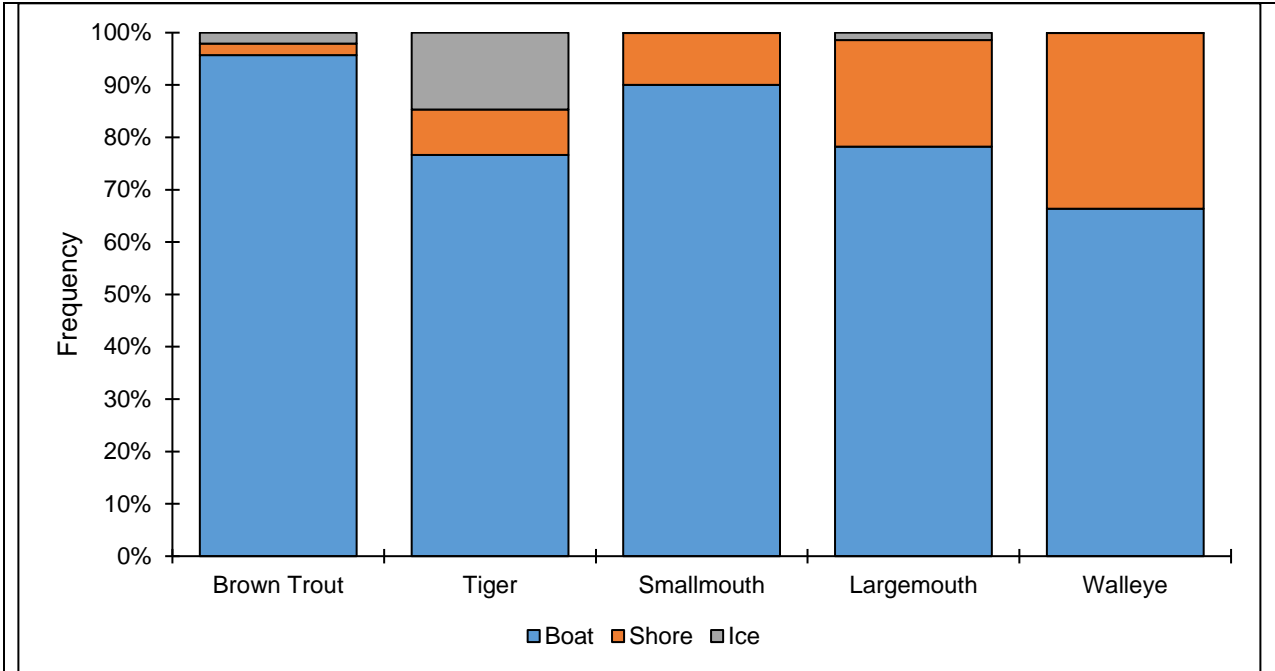


Figure 3. Frequency of fish caught by species and type of fishing by Otisco Lake angler diary cooperators from 1993 to 2021.

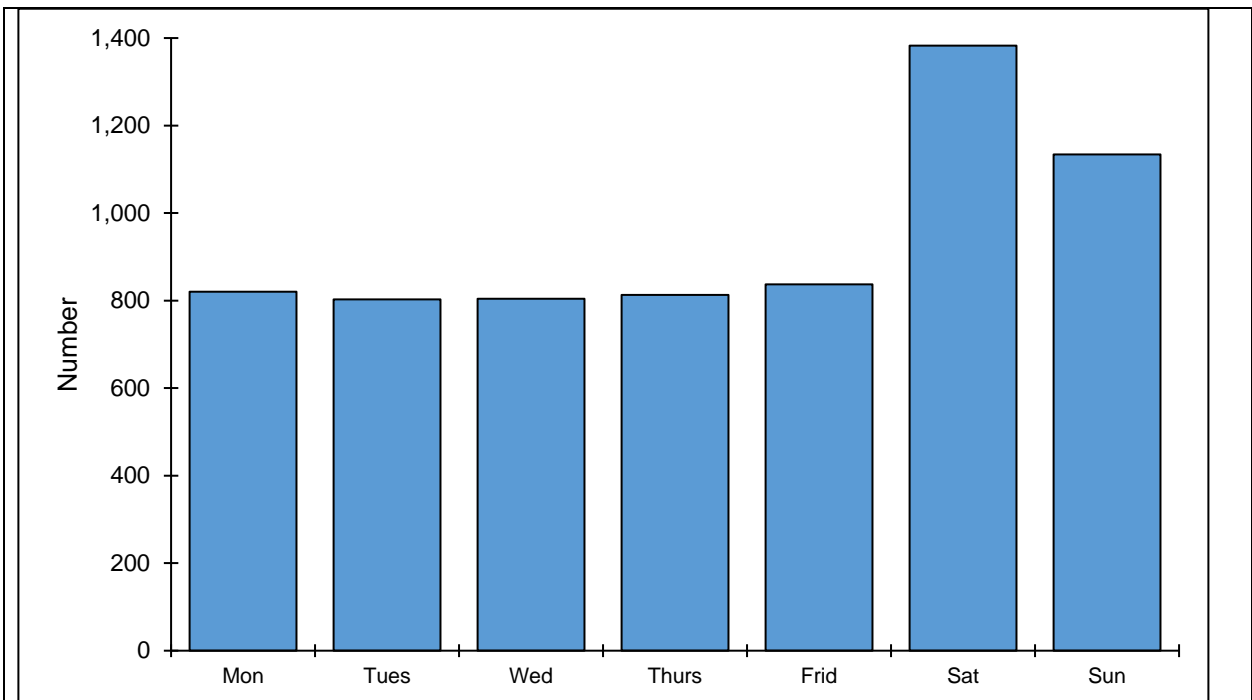


Figure 4. Total trips by day of week for Otisco Lake angler diary cooperators from 1993 and 2021.

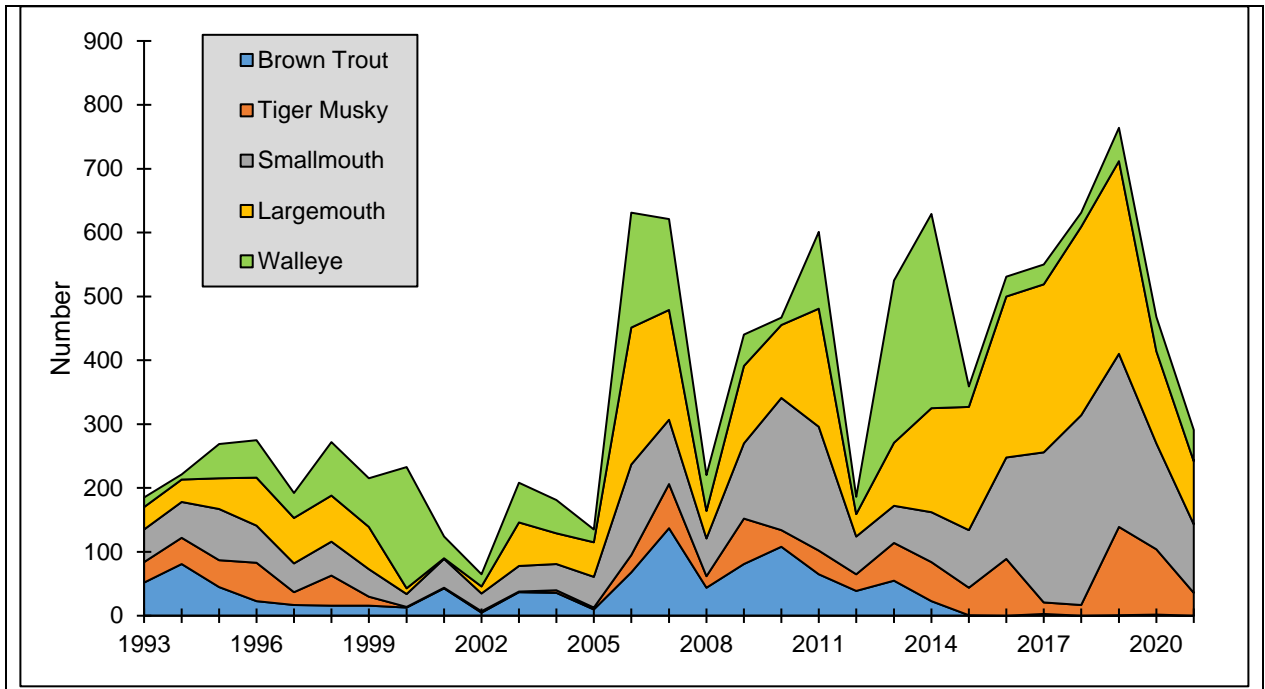
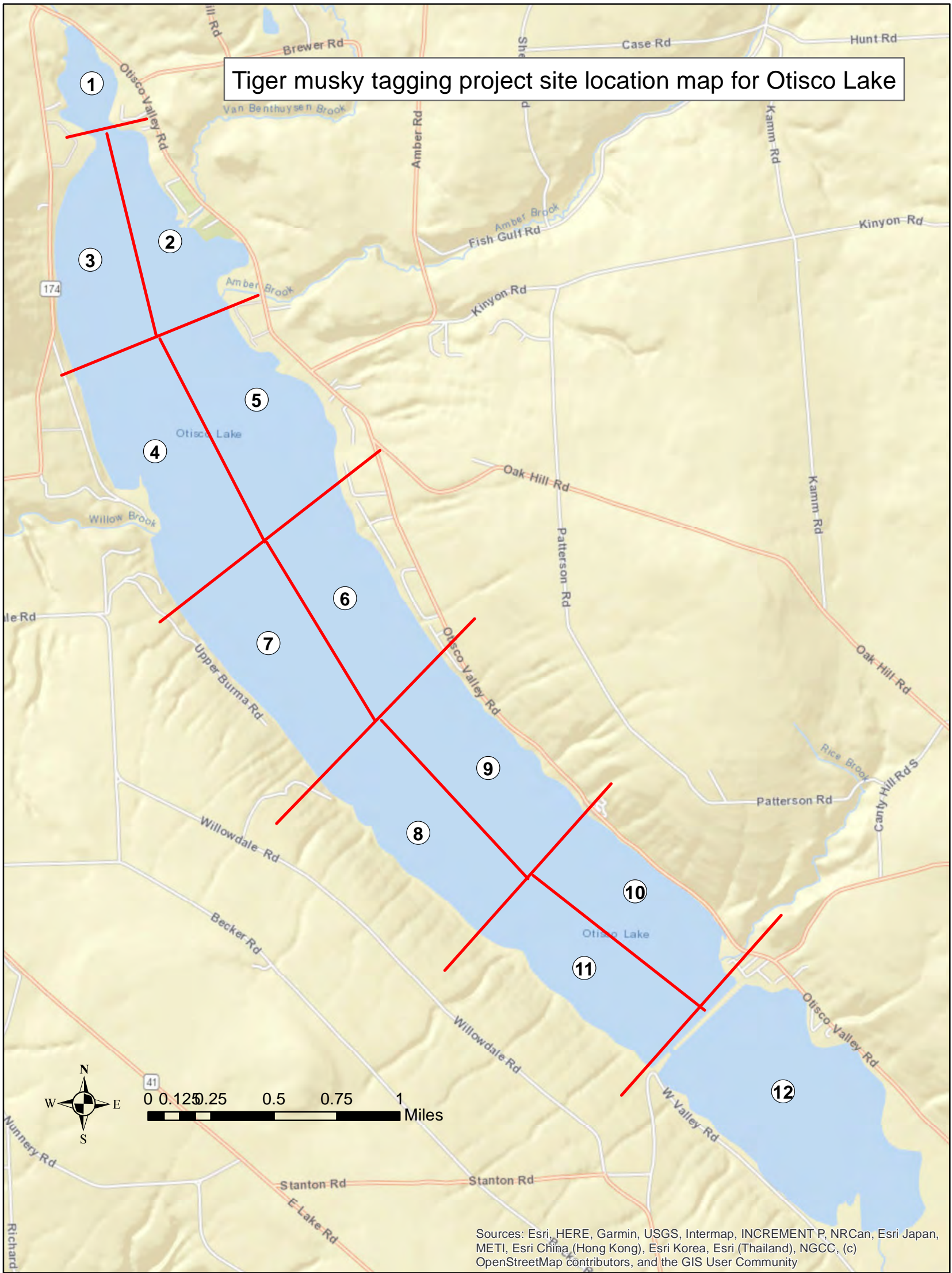


Figure 5. Number of fish caught by year for Otisco Lake angler diary cooperators from 1993 to 2021.

Tiger musky tagging project site location map for Otisco Lake



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community