Inland Seas Angler

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Highlights of the Annual Lake Committee Meetings

Great Lakes Fishery Commission proceedings, Ypsilanti, MI

This first of a series of annual special reports is an extensive summary of the Lake Erie annual Lake Committee. These lake committee reports are from the annual Lake Committee meetings hosted by the Great Lakes Fishery Commission of March 2011. We encourage reproduction with the appropriate credit to the GLSFC and the agencies involved. Our thanks to the staffs of the GLFC, OMNR, USFWS, NYSDEC and the Ohio DNR for their contributions to these science documents. Thanks also to the Great Lakes Fishery Commission, its staff, Chris Goddard & Marc Gaden, for their efforts in again convening and hosting all the Lake Committee meetings in Ypsilanti.

Lake Erie

Index of Reports

Key
DFO = Department of Fisheries, Oceans
FWS = U.S. Fish & Wildlife Service
LEC = Lake Erie Committee
USGS = U.S. Geological Survey
CPE = Catch per effort
GB = (Granular Bayluscide)
1 kiloton (kt) (1 kt = 1000 metric tons)

2011 yellow perch and walleye levels similar to last year

YPSILANTI, MI – The Lake Erie Committee, a binational board of fishery managers from MI, NY, OH, ON, and PA, recommended a 2011 total allowable catch (TAC) of 12.651 million lbs of yellow perch and 2.919 million walleye. The yellow perch and walleye TACs are similar to last year's levels. These recommendations are based on extensive biological assessments and analyses by Canadian and American fishery agencies. For both yellow perch and walleye, the committee is moving forward on a revision of fisheries policies and guidelines for the future. The intent is to fully engage all stakeholders throughout that process.

Yellow Perch

Overall, yellow perch stocks in Lake Erie are on the decline, though the stocks are stronger in the lake's eastern part than in other areas of the lake. For 2011, the Yellow Perch Task Group estimates the presence of 130 million yellow perch in Lake Erie, a 28% reduction from 2010 and

a reduction from more than 400 million fish in the mid-2000s. The decline is due to a weak year class in 2009. The fishery is currently sustained by older fish from some good recruitment during the past decade.

Given the state of the Lake Erie yellow perch fishery, the committee recommended a 2011 TAC of 12.651 million pounds, a small decrease from last year's allocation of 13.137 million pounds. The consensus among committee members is that weak year classes may lead to lower allocations in some management units in the future.

The five jurisdictions on the lake divide the lakewide allocation of yellow perch based on allocation formulas by management unit. For 2011, Ontario's allocation is 6.182 million pounds, Ohio's allocation is 4.991 million pounds, and Michigan's allocation is 0.188 million pounds. New York and Pennsylvania will receive 0.246 million pounds and 1.044 million pounds, respectively. In 2010, actual lakewide yellow perch harvest was 9.69 million pounds or 74% of the TAC.

Walleye

The Lake Erie Committee recommended a binational TAC for walleye in 2011 of 2.919 million fish, compared to the TAC of 2.200 million fish in 2010. Actual walleye harvest in 2010 was approximately 2.0 million fish, or 91% of the TAC. The Committee's Walleye Task Group—comprising scientists and field biologists—reported that walleye recruitment in recent years has been moderate, particularly the 2007 year class. Fish from the 2007 year class and the exceptional 2003 hatch remain the major contributors to the fishery. The increased TAC recommendation for 2011 reflects the committee's consensus that walleye status in Lake Erie appears better than previously forecasted.

The TAC is recommended by the Lake Erie Committee and is allocated to Ohio, Michigan and Ontario by an area-based sharing formula of walleye habitat within each jurisdiction in the western and central basins of the lake. Under a 2011 TAC of 2.919 million fish, Ohio will be entitled to 1.492 million fish, Ontario 1.257 million fish, and Michigan 0.170 million fish. The walleye fisheries of eastern Lake Erie remain outside the quota management area and harvest limits in that area are established by Ontario, Pennsylvania, and New York. ✧

Lake Erie Walleye & Yellow Perch Bag Limits, 2011

Walleye, Yellow Perch, Smallmouth Bass, Steelhead and White Bass Limits

Ohio's walleye and yellow perch bag limits were set after the March 25, 2011, LEC quota announcement, and will go into effect May 1, 2011. As a result of the 2011 quota allocation, the walleye bag limit will be six from May 1, 2011 to February 29, 2012, and four from March 1, 2012 to April 30, 2012. A 15-inch minimum size limit is in effect during the entire season. The daily bag limit for walleye remains four fish per person during April 2011.

As a result of the 2011 quota allocation, the yellow perch bag limit will be 30 perch per angler in all Ohio waters from May 1, 2011 to April 30, 2012. There is no minimum size limit on yellow perch. Lake Erie anglers can find walleye and yellow perch bag limit information at ODNR offices, in special publications at bait and tackle shops, and on the Web at wildohio.com.

Walleye

Ohio walleye anglers will catch fish mostly from the 2007 and 2003 hatches, with some contributions from the 2001, 2005, 2006, and 2008 hatches. Walleye from the moderate 2007 hatch will range from 17-22 inches long and will complement the larger 22- to 28-inch fish from the strong 2003 hatch as the major contributors to the Ohio catch. Fish from the fair 2005 hatch should be in the 20- to 25-inch range. Fast growing fish from the 2008 cohort will begin to contribute to the fishery. Large walleye from strong hatches in the mid-1990s still persist in the population, providing "Fish Ohio" award (greater than 28 inches) opportunities.

"Fish from the 2007 hatch grew faster than expected last year and showed up prominently in our fishery in 2010, and they should dominate the Western Basin catch this summer," said Knight. "The 2003 hatch is still out there, and it will likely contribute many fish in the Central Basin fisheries, particularly as the waters warm up and large fish migrate eastward to cooler waters."

Yellow Perch

Perch anglers should encounter fish ranging from 7- to 13-inches from the 2007, 2008, 2005, and 2003 hatches in this year's fishery. Lake wide, yellow perch numbers should be similar to levels observed in 2010 in the Western and Central basins. Small fish from the weaker 2009 hatch are not expected to contribute much to the fishery.

"Overall, we expect to have good perch fishing in 2011, with the largest fish coming from the eastern part of the Central Basin," said Knight. ✧

Ohio's Lake Erie Other Fisheries, 2010

Smallmouth Bass

Smallmouth bass fishing in 2011 is expected to be fair. Although bass abundance remains below desired levels, those caught should be of excellent size (15 to 22 inches, weighing 2 to 6 pounds). Some small fish may be encountered from recent good hatches and must be released as quickly as possible. Bass fishing is best in areas with good bottom structure, which is available across much of the entire Ohio near-shore area. A closed season remains in effect from May 1 through June 24, 2011, during which all black bass (smallmouth and largemouth) must be immediately released. Beginning June 25, 2011, the daily bag limit for bass will remain at five fish, with a 14-inch minimum length limit.

White Bass

White bass will continue to provide excellent seasonal fishing opportunities in the Maumee and Sandusky rivers and in the open lake. The catch will be dominated by hatches from 2007 and 2008, which will include 13- to 16-inch fish. The moderate 2009 and strong 2010 hatches should contribute many 10- to 14-inch fish to the fishery. Anglers should focus on major Western Basin tributaries during May and June and near-shore areas of the open lake during summer months. There is no daily bag or size limit on white bass.

Anglers are also advised of numerous fishing opportunities in the bays and harbors on the Ohio shoreline. These inlets offer excellent fishing for panfish including crappie and bluegill, as well as largemouth bass. In early spring, anglers may also catch an occasional Northern pike or muskellunge in vegetated areas.

Anglers are reminded that fishing conditions on Lake Erie can change hourly and adjustments are often necessary to improve success. Anglers should take into account factors such as water temperature, cloud cover, water clarity, boat traffic, wave action, structures, currents, and the amount of baitfish in the area. Anglers are also reminded to carefully monitor Lake Erie weather and to seek safe harbor before storms approach.

During the season, updated Lake Erie fishing reports are available online at www.wildohio.com and by calling 1-888-HOOKFISH. Wildlife staff members are available from 8 to 5 PM. weekdays at our research station facilities at Fairport Harbor (440-352-4199) for Central Basin information and at Sandusky (419-625-8062) for Western Basin information.

Lake Erie Salmonid Stocking

A total of 2,304,095 salmonids were stocked in Lake Erie in 2010. This was a 2% decrease in the number of yearling salmonids stocked compared to 2009, but near the long-term average from 1989-2009. By species, there were 272,939 yearling lake trout stocked in NY, PA, and Ontario waters (the highest number of lake trout stocked in the 31-year time series); 102,127 brown trout stocked in NY and PA waters, and a total of 1,929,029 steelhead/rainbow trout stocked by all five jurisdictions

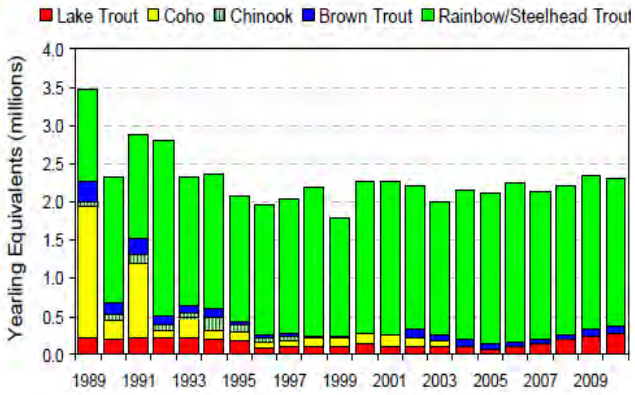


Fig 1-Lake Erie Salmonid Stocking

Steelhead

All agencies stocked yearling steelhead/rainbow trout in 2010. A total of 1,929,029 yearling rainbow/steelhead trout were stocked in 2010, accounting for 84% of all salmonids stocked. This represented a 4% decrease from 2009, but remained 6% above the long-term average. The increase above the long-term average is primarily a result of the increased emphasis of rainbow trout/steelhead in jurisdictional fisheries and the elimination of other pacific salmon (Coho and Chinook salmon) over the last decade.

A summary of rainbow trout/steelhead stocking in Lake Erie by jurisdictional waters for 2010 is as follows: PA (1,085,406; 56%), OH (433,446; 22%), NY (310,194; 16%), MI (66,536; 3%) and ON (33,447; 2%). Overall steelhead stocking numbers (1.929 million in 2010) represented a 6% increase above the long-term average but a 4% decrease from 2009. Annual stocking numbers have been consistently in the 1.7-2.0 million range since 1993.

Year	Ohio	Pennsylvania	New York	Ontario	Michigan	Total
1999	20,396	7,401	1,000	13,000	100	41,897
2000	33,524	11,011	1,000	28,200	100	73,835
2001	29,243	7,053	940	15,900	3	53,139
2002	41,357	5,229	1,600	75,000	70	123,256
2003	21,571	1,717	400	N/A*	15	23,703
2004	10,092	2,657	896	18,148	0	31,793
2005	10,364	2,183	594	N/A*	19	13,160
2006	5,343	2,044	354	N/A*	0	7,741
2007	19,216	4,936	1,465	N/A*	68	25,685
2008	3,656	1,089	647	N/A*	39	5,431
2009	7,662	857	96	N/A*	150	8,765
2010	3,911	5,155	109	N/A*	3	9,178

Fig 2-Steelhead harvest by open lake boat anglers, 1999-2010

Steelhead anglers should enjoy another year of good fishing in Ohio's Lake Erie open waters and in tributaries throughout the fall, winter, and spring months. Peak summer steelhead action on Lake Erie can be found offshore from June through August between Vermilion and

Conneaut, with catches measuring 17 to 29 inches. Most Lake Erie anglers troll for steelhead in deep waters using spoons with dipsy divers or downriggers until fish move close to shore in the fall. The daily bag limit remains at five fish per person from May 16 to August 31, and two fish per angler between September 1 and May 15, with a 12-inch minimum size limit throughout the year.

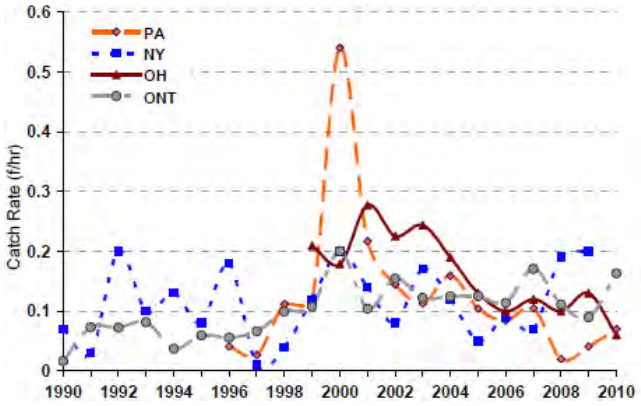


Fig 2-Steelhead catch rates (fish/angler hour) by open lake boat anglers in Ohio, Pennsylvania, New York and Ontario

The summer open lake fishery for steelhead was again evaluated by OH, PA and NY. Open lake harvest was estimated at 9,178 fish, summed for all reporting agencies. This was a 5% increase over the 2009 harvest and the second consecutive increase since a record low harvest (5,431 fish) in 2008. Open lake steelhead harvest increased in both NY and PA waters, but decreased in OH and MI waters. Overall harvest was 60% below the ten-year average. Catch rates in the open water fishery were mixed as well in 2010 and were less than half of the long-term average.

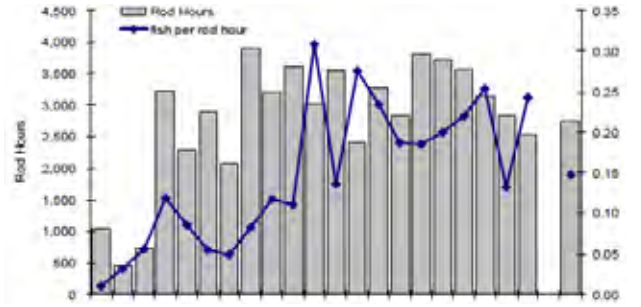


Fig 3-Steelhead effort and catch rates in west central basin by open Lake boat anglers in Ontario.

Based upon creel surveys, the majority (>90%) of the fishery effort targeting steelhead occurs in the tributaries from fall through spring. Results from the second consecutive year of creel survey in Ohio tributaries were similar to the first year with catch rates of 0.35 fish/hour with an estimated total effort of 283,107 angler-hours. Harvest rates remained around 10%. Catch rates by tributary anglers in the New York cooperative diary program declined in 2009 to 0.69 fish/hour, but remained well above the long-term average of 0.47 fish/hour.

Assessment of Steelhead Natural Reproduction

Nearly all of the rainbow trout (or steelhead) stocked in Lake Erie originated from naturalized Great Lakes strains. A Lake Erie strain accounted for 56% of the strain composition, followed by a Lake Michigan strain (26%) and a Lake Ontario strain (17%); less than 1% of the rainbow trout stocked in Lake Erie were miscellaneous strains including a Finger Lakes strain (0.01%), a domestic strain (0.6%), and a golden rainbow trout strain (0.01%). There were no fin clipped rainbow trout stocked in 2010

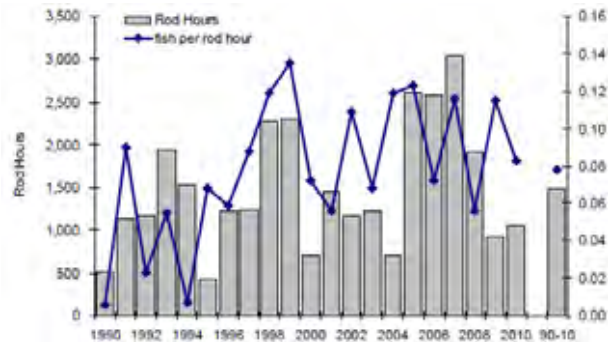


Fig 4-Steelhead effort and catch rates in east central basin by open Lake boat anglers in Ontario

In anticipation of a fish passage project scheduled to be completed in 2010 on a series of dams in Chautauqua Creek (NY), a comprehensive survey of the fish community and assessment of juvenile production of steelhead both below and above the two existing fish barriers was conducted in 2007, 2008, and 2009 by the NYSDEC. The results of these surveys showed the impact of the two dams on the passage of steelhead and the overall fish community. Abundance of YOY steelhead was 3-4 times higher below the dams compared to sites above the dams, and composition of non-trout species differed as well. These results indicate that while some steelhead do make it over both barriers and are able to migrate upstream to spawn, the bulk of the fish are stopped and spawn in the riffle areas below the dams.

Fig 5-Salmonid catch rates (fish/angler hour) in Lake Erie Tributaries by New York anglers, 1987-2009

Weather conditions play a large role in production and migration upstream with greater abundances of YOY

steelhead above the dams in high flow years and greater survival in cool and wet summers. The abundance of YOY steelhead in Chautauqua Creek was comparable to fall densities found in higher quality Michigan streams. However, densities were lower than Spooner Creek (3,245 fish/acre), which is considered the top steelhead producing stream in New York's Lake Erie watershed. Further studies need to be conducted to determine if this production is contributing to the adult steelhead population of this stream.

Brown Trout

Brown trout stocking in Lake Erie totaled 102,127 yearlings in 2010. This was a 1% decrease from 2009, but a 21% increase from the long-term average. Most of this increase is attributed to the stocking of yearlings and advanced fingerlings in NY and PA. The purpose of these efforts is the development of a trophy brown trout fishery to compliment and diversify the stream and offshore trout fisheries. Brown trout stocking is expected to continue at this rate for 2011 for NY and PA. Most (76%) of the brown trout were stocked for the purposes of providing a put-grow- take (PGT) trophy brown trout fishery for offshore boat anglers and seasonal tributary anglers.

Some brown trout (24%) are stocked to provide adult trout for the opening day of trout season in Pennsylvania. Between April 22-30 the NYDEC stocked 37,490 yearling brown trout in Cattaraugus Creek, Barcelona Harbor, 18-mile Creek and Dunkirk Harbor. An additional 40,000 spring fingerlings were stocked on July 1 in Barcelona harbor. The NYSDEC began re-emphasizing brown trout stocking in place of domestic rainbow trout in 2002 for the purposes of diversifying their tributary trout/salmon fishery and for maintaining migratory behavior of their Salmon River steelhead strain.

Pennsylvania also stocked brown trout in the Lake Erie watershed. Between April 16-29 22,084 adult brown trout (mean length = 267mm) were stocked to provide catchable trout for the opening of PA trout season. Yearling and fall fingerling brown trout were also stocked in PA waters in support of a PGT brown trout program started in 2009. Various NGO's stocked 39,700 yearling brown trout in May which were adipose clipped. The PFBC stocked an additional 41,059 fall fingerlings between 28 September and 7 October. 10,750 (26%) were stocked in Presque Isle Bay, the remaining 30,300 (74%) were stocked in nursery streams. ✧

Walleye Task Group Report, 2011

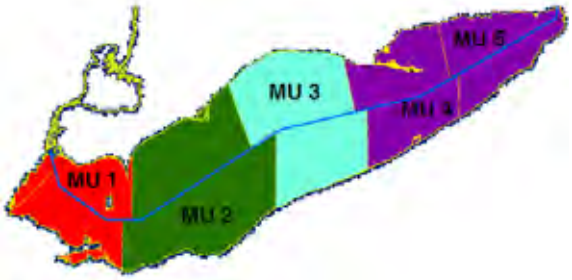


Fig 1-Lake Erie Management Units

2010 Fishery Review

The total allowable catch (TAC) in quota area waters of the west and central basins for 2010 was 2.200 million fish. This allocation represented a 10% decrease from the 2009 TAC of 2.450 million fish. In the TAC area, the total harvest was 1.997 million fish, or 91% of the quota (Table 1). Harvest in the non-TAC area of the eastern basin amounted to 115,057 fish. Lake-wide walleye harvest was estimated at 2.112 million fish for 2010. Sport fishery (1.153 million fish) and commercial fishery (0.962 million fish) harvest levels seen in 2010 were both below the long-term (1975-2010) means (2.458 and 2.107 million fish, respectively)

in number of fish	TAC Area (MU-1, MU-2, MU-3)				Non-TAC Area (MU-4 & MU-5)				All Areas
	Michigan	Ohio	Ontario	Total	NY	Penn.	Ontario	Total	Total
TAC	128,260	1,124,420	947,320	2,200,000	-	-	-	-	2,200,000
TAC % Share	5.83%	51.11%	43.06%	100.00%	-	-	-	-	100.00%
Harvest	55,248	958,366	983,397	1,997,011	36,683	55,050	23,324	115,057	2,112,068

Table 1- Summary of walleye harvest by jurisdiction, 2010

	MU1 - MI	MU1 - OH	MU2 - OH	MU3 - OH	MU4&5 - PA	MU4&5 - NY
Effort (1000s hrs)	226	1,403	652	219	170	140
change from 2009	-27%	32%	-16%	-24%	37%	40%

Table 2-Summary of sport fishery effort reported in thousands of hours for 2010

Sportfish/Commercial Harvest

Total commercial walleye fishery effort decreased in 2010 compared to 2009. Commercial gill net effort declined in all MUs with the largest decreases from 2009 in MU 1 and MUs 4&5 (46% and 48% respectively). The total commercial effort of 4,937 km fished was the lowest recorded since 1975, representing 25% of the long-term average (19,596 km). Commercial effort was greatest in the west basin, declining eastward in the lake. Sport fishery effort in 2010 decreased from 2009 by 27% in MI waters and increased by 32% in OH waters of MU1. Sport effort in other parts of Ohio waters decreased: MU2 by 16% and

MU3 by 24%. Sport effort was increased by 37% and 40% for PA and NY respectively (**Table 3).** In comparison to the years since 2000, lake-wide sport effort remained on par in 2010. Over the long-term since 1975, however, Lake Erie walleye sport effort in 2010 (2.810 million angler hours) represented 51% of the average.

	MU1	MU2	MU3	MU4&5
Effort (km)	1,918	1,371	1,401	247
change from 2009	-46%	-37%	-20%	-48%

Table 3-Ontario walleye gillnet effort in 2010

Lake-wide catch rates in 2010 declined for the sport fishery, but increased for the commercial fishery, expressed as harvested fish per hour or per kilometer of net fished, respectively, but catch rates remained near (sport) or above (commercial) long-term averages. Compared to 2009, sport catch rates by MU decreased by 16% in MU1, and increased by 7% in MU2, and 18% in MU3. Gill net CUEs increased from the previous year across all MUs, with increases of 59%, 37%, 36%, and 63% in MU1, MU2, MU3, and MUs 4 and 5, respectively.

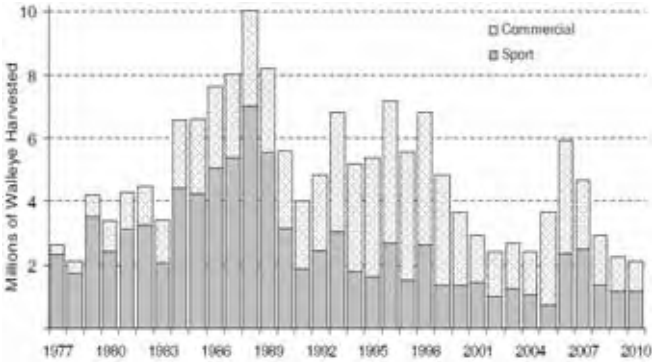


Fig 2- Lake-wide Walleye harvest by sport and commercial fisheries, 1977-2010

Age distribution of fish in the harvest was dominated by ages 7-and-older fish (including the 2003 year class); lake-wide, they comprised 36% of the commercial fishery and 63% of the sport fishery. The 2007 year class (age-3 walleye) represented 42% of the commercial harvest and 21% of the total sport harvest. Age 3 (2007 year class) and ages 7-and-older (includes the 2003 year class) contributed 51% and 31%, respectively, to the total lake-wide harvest.

Catch-at-Age Analysis & Recruitment for 2011

The WTG continued to use the Automatic Differentiation Model Builder (ADMB) catch-at-age analysis to estimate walleye population abundance from 1978 to 2010. The model includes fishery data from the Ontario commercial fishery (west and central basins) and sport fisheries in Ohio (west and central basins) and Michigan (west basin). In addition to fishery data, this model includes assessment data from two index gill net surveys from: Michigan- Ohio (west and west-central basins combined) and Ontario (west, west-central, and east-central basins combined). Lambda values for fishery and survey gears were set external to the model by an Expert Opinion WTG and MSU-QFC exercise completed last year. Age-2 fish in 2010 (2008 year class) were estimated using a regression of ADMB age-2 estimates and trawl index data. The 2010 west-central population estimate from the WTG 2011 model was 26.697 million ages 2 and older walleye. There were an estimated 9.643 million ages 4 and older walleye in 2010. The 2007 year class was estimated to contribute approximately 13.323 million age-3 fish to the population in 2010.

Fig 2-Estimate of Lake Erie walleye ages 2 and older, 1978-2010, and projections for 2011 and 2012

2011 Population Abundance

Stock size estimates for 2011 (ages 4 and older) were projected from ADMB catch-at-age analysis estimates of 2010 population size and age-specific survival rates in 2010. Age-3 abundance was estimated from the recruitment regression age-2 estimate for the 2008 cohort and age-specific survival rate in 2010. Projected age-2 recruitment from the 2009 year class added to the 2011 population estimate for ages 3 and older fish produces the total standing stock in 2011 of 21.243 million fish. Statistical uncertainty surrounding population estimates is expressed as one standard error around the stock size estimate as in Table 4 for the standard model output.

2010 Harvest Strategy and Recommended Allowable Harvest (RAH)

With the implementation of the Walleye Management Plan in 2005, yield strategies and RAH are linked to ages 2 and older walleye levels of abundance. Using results from the WTG 2011 model, and based on the sliding-F scale harvest policy and selectivity values from the current fisheries, an RAH of 2.919 million fish was calculated for 2011 with a range of 1.832- 4.202 million fish. Please refer to the complete 2011 WTG report for a more detailed explanation of the population abundance projections and RAH derivation.

Table 4. Annual Lake Erie walleye total allowable catch (TAC, top) and measured harvest (Har; bottom, bold), in numbers of fish from 1980 to 2010. TAC allocations for 2010 are based on water areas: Ohio, 51.11%; Ontario, 43.06%; and Michigan, 5.83%. New York and Pennsylvania do not have assigned quotas but are included in annual total harvest.

Year	TAC Area (MU-1, MU-2, MU-3)				Non-TAC Area (MUs 4&5)				All Areas
	Michigan	Ohio	Ontario [a]	Total	NY	Penn.	Ontario	Total	Total
1980 TAC	261,700	1,558,600	1,154,100	2,974,400				0	2,974,400
Har	**183,140**	**2,169,800**	**1,049,269**	**3,402,209**				**0**	**3,402,209**
1981 TAC	367,400	2,187,900	1,620,000	4,175,300				0	4,175,300
Har	**95,147**	**2,942,900**	**1,229,017**	**4,267,064**				**0**	**4,267,064**
1982 TAC	504,100	3,001,700	2,222,700	5,728,500				0	5,728,500
Har	**194,407**	**3,015,400**	**1,260,852**	**4,470,659**				**0**	**4,470,659**
1983 TAC	572,000	3,406,000	2,522,000	6,500,000				0	6,500,000
Har	**145,847**	**1,864,200**	**1,416,101**	**3,426,148**				**0**	**3,426,148**
1984 TAC	676,500	4,028,400	2,982,900	7,687,800				0	7,687,800
Har	**351,169**	**4,055,000**	**2,178,409**	**6,584,578**				**0**	**6,584,578**
1985 TAC	430,700	2,564,400	1,898,800	4,893,900				0	4,893,900
Har	**460,933**	**3,730,100**	**2,435,627**	**6,626,660**				**0**	**6,626,660**
1986 TAC	660,000	3,930,000	2,910,000	7,500,000				0	7,500,000
Har	**605,600**	**4,399,400**	**2,617,507**	**7,622,507**				**0**	**7,622,507**
1987 TAC	490,100	2,918,500	2,161,100	5,569,700				0	5,569,700
Har	**902,500**	**4,433,600**	**2,688,558**	**8,024,658**				**0**	**8,024,658**
1988 TAC	397,500	3,855,000	3,247,500	7,500,000				0	7,500,000
Har	**1,996,788**	**4,890,367**	**3,054,402**	**9,941,557**	**85,282**			**85,282**	**10,026,839**
1989 TAC	383,000	3,710,000	3,125,000	7,218,000				0	7,218,000
Har	**1,091,641**	**4,191,711**	**2,793,051**	**8,076,403**	**129,226**			**129,226**	**8,205,629**
1990 TAC	616,000	3,475,500	2,908,500	7,000,000				0	7,000,000
Har	**747,128**	**2,282,520**	**2,517,922**	**5,547,570**	**47,443**			**47,443**	**5,595,013**
1991 TAC	440,000	2,485,000	2,075,000	5,000,000				0	5,000,000
Har	**132,118**	**1,577,813**	**2,266,380**	**3,976,311**	**34,137**			**34,137**	**4,010,448**
1992 TAC	329,000	3,187,000	2,685,000	6,201,000				0	6,201,000
Har	**249,518**	**2,081,919**	**2,497,705**	**4,829,142**	**14,384**			**14,384**	**4,843,526**
1993 TAC	556,500	5,397,000	4,546,500	10,500,000				0	10,500,000
Har	**270,376**	**2,668,684**	**3,821,386**	**6,760,446**	**40,032**			**40,032**	**6,800,478**
1994 TAC	400,000	4,100,000	3,500,000	8,000,000				0	8,000,000
Har	**216,038**	**1,468,739**	**3,431,119**	**5,115,896**	**59,345**			**59,345**	**5,175,241**
1995 TAC	477,000	4,626,000	3,897,000	9,000,000				0	9,000,000
Har	**107,909**	**1,435,188**	**3,813,527**	**5,356,624**	**26,964**			**26,964**	**5,383,588**
1996 TAC	583,000	5,654,000	4,763,000	11,000,000				0	11,000,000
Har	**174,607**	**2,316,425**	**4,524,639**	**7,015,671**	**38,728**	**89,087**		**127,815**	**7,143,486**
1997 TAC	514,000	4,986,000	4,200,000	9,700,000				0	9,700,000
Har	**122,400**	**1,248,846**	**4,072,779**	**5,444,025**	**29,395**	**88,682**		**118,077**	**5,562,102**
1998 TAC	546,000	5,294,000	4,460,000	10,300,000				0	10,300,000
Har	**114,606**	**2,303,911**	**4,173,042**	**6,591,559**	**34,090**	**124,814**	**47,000**	**205,904**	**6,797,463**
1999 TAC	477,000	4,626,000	3,897,000	9,000,000				0	9,000,000
Har	**140,269**	**1,033,733**	**3,454,250**	**4,628,252**	**23,133**	**89,038**	**87,000**	**199,171**	**4,827,423**
2000 TAC	408,100	3,957,800	3,334,100	7,700,000				0	7,700,000
Har	**252,280**	**932,297**	**2,287,533**	**3,472,110**	**28,599**	**77,512**	**67,000**	**173,111**	**3,645,221**
2001 TAC	180,200	1,747,600	1,472,200	3,400,000				0	3,400,000
Har	**159,186**	**1,157,914**	**1,498,816**	**2,815,916**	**14,669**	**52,796**	**39,498**	**106,963**	**2,922,879**
2002 TAC	180,200	1,747,600	1,472,200	3,400,000				0	3,400,000
Har	**193,515**	**703,000**	**1,436,000**	**2,332,515**	**18,377**	**22,000**	**36,000**	**76,377**	**2,408,892**
2003 TAC	180,200	1,747,600	1,472,200	3,400,000				0	3,400,000
Har	**128,852**	**1,014,688**	**1,457,014**	**2,600,554**	**27,480**	**43,581**	**32,692**	**103,753**	**2,704,307**
2004 TAC	127,200	1,233,600	1,039,200	2,400,000				0	2,400,000
Har	**114,958**	**859,366**	**1,419,237**	**2,393,561**	**8,400**	**19,969**	**29,864**	**58,233**	**2,451,794**
2005 TAC	308,195	2,988,910	2,517,895	5,815,000				0	5,815,000
Har	**37,599**	**610,449**	**2,933,393**	**3,581,441**	**27,370**	**20,316**	**17,394**	**65,080**	**3,646,521**
2006 TAC	523,958	5,081,404	4,280,638	9,886,000				0	9,886,000
Har	**305,548**	**1,868,520**	**3,494,551**	**5,668,619**	**37,161**	**151,614**	**68,774**	**257,549**	**5,926,168**
2007 TAC	284,080	2,755,040	2,320,880	5,360,000				0	5,360,000
Har	**165,551**	**2,160,459**	**2,159,965**	**4,485,975**	**29,134**	**116,671**	**37,566**	**183,371**	**4,669,346**
2008 TAC	209,530	1,836,893	1,547,576	3,594,000				0	3,594,000
Har	**121,072**	**1,082,636**	**1,574,723**	**2,778,431**	**29,017**	**74,250**	**34,906**	**138,173**	**2,916,604**
2009 TAC	142,835	1,252,195	1,054,970	2,450,000				0	2,450,000
Har	**94,048**	**967,476**	**1,095,500**	**2,157,024**	**13,727**	**42,422**	**27,725**	**83,874**	**2,240,898**
2010 TAC	128,260	1,124,420	947,320	2,200,000				0	2,200,000
Har	**55,248**	**958,366**	**983,397**	**1,997,011**	**36,683**	**55,050**	**23,324**	**115,057**	**2,112,068**

Table 5-Annual harvest (thousands of fish) of Lake Erie walleye by gear, management unit, and agency. Means contain data from 1975 to 2010

	Sport Fishery															Commercial Fishery					
	Unit 1				Unit 2			Unit 3			Units 4 & 5					Unit 1	Unit 2	Unit 3	Unit 4		Grand
Year	OH	MI	ON[a]	Total	OH	ON[a]	Total	OH	ON[a]	Total	ON[a]	PA	NY	Total	Total	ON	ON	ON	ON	Total	Total
1975	77	4	7	88	10	--	10	--	--	--	--	--	--	0	98	--	--	--	--	0	98
1976	605	30	50	685	35	--	35	--	--	--	--	--	--	0	720	113	44	--	--	157	877
1977	2,131	107	69	2,307	37	--	37	--	--	--	--	--	--	0	2,344	235	67	--	--	302	2,645
1978	1,550	72	112	1,734	37	--	37	--	--	--	--	--	--	0	1,771	274	60	--	--	334	2,106
1979	3,254	162	79	3,495	60	--	60	--	--	--	--	--	--	0	3,555	625	30	--	--	655	4,211
1980	2,096	183	57	2,336	49	--	49	24	--	24	--	--	--	0	2,409	953	40	--	--	993	3,402
1981	2,857	95	70	3,022	38	--	38	48	--	48	--	--	--	0	3,108	1,037	119	3	--	1,159	4,268
1982	2,959	194	49	3,202	49	--	49	8	--	8	--	--	--	0	3,259	1,077	134	2	--	1,213	4,470
1983	1,626	146	41	1,813	212	--	212	26	--	26	--	--	--	0	2,051	1,129	167	80	--	1,376	3,427
1984	3,089	351	39	3,479	787	--	787	179	--	179	--	--	--	0	4,445	1,639	392	108	--	2,139	6,584
1985	3,347	461	57	3,865	294	--	294	89	--	89	--	--	--	0	4,248	1,721	432	225	--	2,378	6,627
1986	3,743	606	52	4,401	480	--	480	176	--	176	--	--	--	0	5,057	1,651	558	356	--	2,565	7,622
1987	3,751	902	51	4,704	550	--	550	132	--	132	--	--	--	0	5,386	1,611	622	405	--	2,638	8,024
1988	3,744	1,997	18	5,759	584	--	584	562	--	562	--	--	85	85	6,990	1,866	762	409	--	3,037	10,026
1989	2,891	1,092	14	3,997	867	35	902	434	80	514	--	--	129	129	5,542	1,656	621	386	--	2,663	8,206
1990	1,467	747	35	2,249	389	14	403	426	23	449	--	--	47	47	3,148	1,615	529	302	--	2,446	5,595
1991	1,104	132	39	1,275	216	24	240	258	44	302	--	--	34	34	1,851	1,446	440	274	--	2,160	4,011
1992	1,479	250	20	1,749	338	56	394	265	25	290	--	--	14	14	2,447	1,547	534	316	--	2,397	4,844
1993	1,846	270	37	2,153	450	26	476	372	12	384	--	--	40	40	3,053	2,488	762	496	--	3,746	6,800
1994	992	216	21	1,229	291	20	311	186	21	207	--	--	59	59	1,806	2,307	630	432	--	3,369	5,176
1995	1,161	108	32	1,301	159	7	166	115	27	141	--	--	27	27	1,635	2,578	681	489	--	3,748	5,384
1996	1,442	175	17	1,634	645	8	653	229	27	256	--	89	39	128	2,671	2,777	1,107	589	--	4,473	7,143
1997	929	122	8	1,059	188	2	190	132	5	138	--	89	29	118	1,505	2,585	928	544	--	4,057	5,563
1998	1,790	115	34	1,939	215	5	220	299	5	304	19	125	34	178	2,641	2,497	1,166	462	28	4,153	6,793
1999	812	140	34	986	139	5	144	83	5	88	19	89	23	131	1,349	2,461	631	317	68	3,477	4,827
2000	674	252	34	961	165	5	170	93	5	98	19	78	29	125	1,354	1,603	444	196	48	2,291	3,645
2001	941	160	34	1,135	171	5	176	46	5	51	19	53	15	87	1,449	1,004	310	141	20	1,475	2,924
2002	516	194	34	744	141	5	146	46	5	51	19	22	18	59	1,000	937	309	146	17	1,409	2,409
2003	715	129	34	878	232	5	237	68	5	73	2	44	27	73	1,261	948	283	182	14	1,427	2,688
2004	515	115	34	664	272	2	274	72	0	72	2	20	8	30	1,040	866	334	175	11	1,386	2,426
2005	374	38	27	438	110	2	112	126	0	126	2	20	27	49	725	1,878	625	401	15	2,920	3,645
2006	1,194	306	27	1,526	503	2	505	170	0	170	2	152	37	191	2,392	2,137	784	545	66	3,532	5,924
2007	1,414	166	27	1,607	578	2	580	169	0	169	2	116	29	147	2,502	1,348	450	333	35	2,167	4,669
2008	524	121	44	689	333	2	335	225	0	225	2	74	29	105	1,354	954	335	241	35	1,565	2,919
2009	553	94	44	691	287	2	289	128	0	128	2	42	14	58	1,166	705	212	135	28	1,079	2,244
2010	587	55	44	686	257	2	259	114	0	114	2	55	37	94	1,153	607	184	147	23	962	2,116
Mean	1,632	286	40	1,958	282	11	289	171	13	180	9	71	36	56	2,458	1,454	449	295	31	2,107	4,565

✧

Yellow Perch Task Group Report, 2011

2010 Fisheries Review

The lakewide total allowable catch (TAC) in 2010 was 13.137 million lbs. This allocation represented a 9.4% increase from a TAC of 12.012 million lbs in 2009. For yellow perch assessment and allocation, Lake Erie is partitioned into four Mgmt Units (Units, or MUs**; Fig 1).** The 2010 allocation by Mgmt Unit was 2.094, 4.000, 6.251, and 0.792 million lbs for Units 1 through 4, respectively.

Fig 1-Yellow Perch Management Units (MUs) of Lake Erie

The lakewide harvest of yellow perch in 2010 was 9.689 million lbs, 73.8% of the 2010 TAC. This was a 6.1% increase from the 2009 harvest of 9.137 million lbs. Harvest by Lake Erie Mgmt Units 1 through 4 was 1.853, 3.347, 3.965, and 0.526 million lb, respectively (**Table 1).** The portion of TAC harvested was 88.5%, 83.7%, 63.4%, and 66.3% in MUs 1 through 4, respectively. In 2010, Ontario harvested 6.606 million lbs, OH (2.824 million lbs.), PA (138,000 lbs), MI (84,000 lbs), and NY (38,000 lbs).

Targeted gill net effort in Ontario waters in 2010 increased 3.1% in MU1, 41.9% in MU3, 71.0% in MU4, but decreased 31.8% in MU2 from 2009. U.S. angling effort increased in 2010 from 2009 in MU1 (31.4%), MU2 (20.3%), but decreased in MU3 (37.8%) and MU4 (49.9%). U.S. trap net effort (lifts) in 2010 increased in MU2 (6.1%), MU3 (82.4%), and MU4 (33.5%) compared to 2009. Trap netting returned in MU1 in 2010 following a two year absence (2008-2009). Fishing effort by jurisdiction and gear type is presented in **Table 2**.

Table 1. Lake Erie yellow perch harvest by jurisdiction and gear type for 2010

MU	Harvest by jurisdiction (lbs)								Total (lbs)
	Michigan	Ontario	Ohio		Pennsylvania		New York		
	sport	all commercial*	sport	commercial trap net	sport	commercial trap net	sport	commercial trap net	
1	83,725	879,358	693,838	195,674					1,852,595
2		1,888,876	522,207	935,616					3,346,699
3		3,370,099	323,711	153,097	81,614	36,026			3,964,547
4		467,612			19,989	0	25,958	11,772	525,331
Total	83,725	6,605,945	1,539,756	1,284,387	101,603	36,026	25,958	11,772	9,689,172

Table 2. Lake Erie yellow perch fishing effort by jurisdiction and gear type for 2010

MU	Effort by jurisdiction							
	Michigan	Ontario	Ohio		Pennsylvania		New York	
	sport (angler hours)	commercial (km gill net)*	sport (angler hours)	commercial (trap net lifts)	sport (angler hours)	commercial (trap net lifts)	sport (angler hours)	commercial (trap net lifts)
1	132,852	3,152	798,240	2,607				
2		3,783	502,507	6,701				
3		5,747	182,485	972	84,171	128		
4		1,227			23,248	0	35,526	287
Total	132,852	13,909	1,483,232	10,280	107,419	128	35,526	287

ADMB Catch-at-Age Analysis and Recruitment Estimate for 2011

Population size for 1975 to 2010 for each management unit was estimated by catch-at-age analysis using modeling software Auto Differentiation Model Builder (ADMB). Stock size estimates for 2011 (ages 3 and older) were projected from catch-at-age analysis estimates of 2010 population size and age-specific survival rates in 2010. Age-2 yellow perch recruitment in 2011 was predicted by linear regression of juvenile yellow perch trawl indices against catch-at-age analysis estimates of two-year-old abundance in each management unit. Trawl index values of age-0 yellow perch in 2009 were among the lowest seen in the time series, and estimates of age-2 recruitment for 2011 (the 2009 year class) were below average in all MUs.

Projected age-2 yellow perch recruitment from the 2009 year class was added to the 2011 population estimate for older fish in each Unit, producing the total standing stock in 2011. Estimated abundances of age-2- and-older yellow perch in 2011 are lower by 14%, 14%, 36%, and 34% than the 2010 abundances in Management Units 1 to 4, respectively. Abundance projections for 2011 were 11.7, 22.7, 49.3, and 19.5 million age-3-and-older yellow perch in Mgmt Units 1 through 4, respectively. Using weight-at-age information from assessment surveys, in 2011, biomass estimates for age-2-and-older declined from 2010 in MU 1 to 4 by 9%, 22%, 15%, and 9%, respectively.

Recommended Allowable Harvest (RAH) for 2011

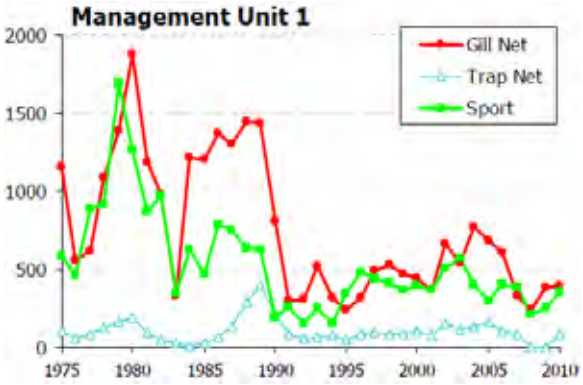
Population estimates were calculated for each age in 2010, and following estimated survival from catch-at-age, for 2011. Descriptions of *min*, *mean*, and *max* population were estimated using age-specific estimates minus or plus one standard deviation. Proposed target fishing rates for RAHs in 2011 are the same as 2010, and RAHs are presented in **Table 4** for Mgmt Units 1-4.

MU1	MI	9.1%	OH	50.3%	ONT	40.6%
MU2	OH	54.4%	ONT	45.6%		
MU3	OH	32.4%	PA	15.3%	ONT	52.3%
MU4	NY	31.0%	PA	11.0%	ONT	58.0%

Table 3-Allocation of TAC by Mgmt Unit/Jurisdiction, 2011

MU	Fishing Rate	Recommended Allowable Harvest (millions lbs.)		
		MIN	MEAN	MAX
1	0.670	0.803	1.437	2.071
2	0.670	1.515	2.526	3.537
3	0.700	2.985	4.996	7.006
4	0.300	0.399	0.952	1.506
Total		5.702	9.911	14.120

Table 4. Lake Erie yellow perch fishing rates; (RAH; in millions of lbs) for 2011 by Management Unit



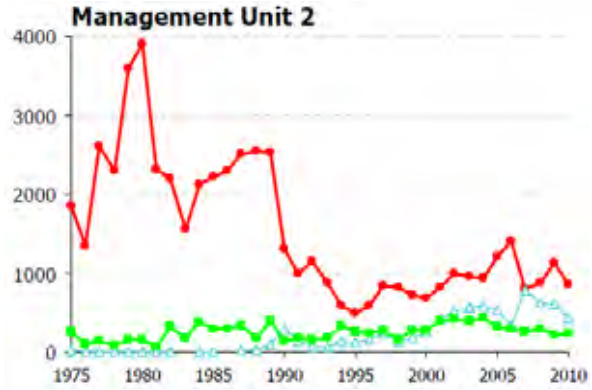
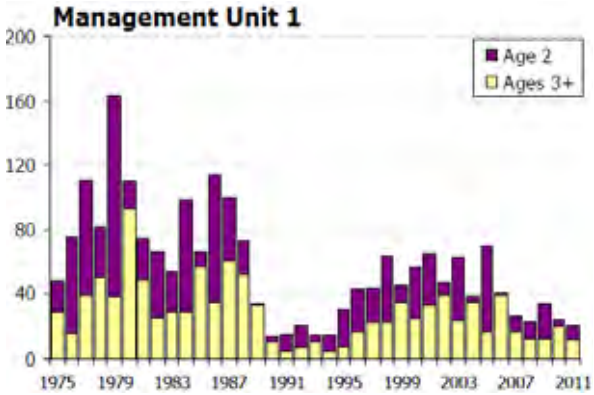
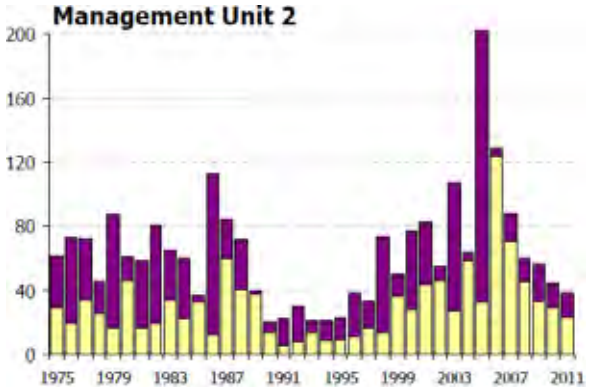
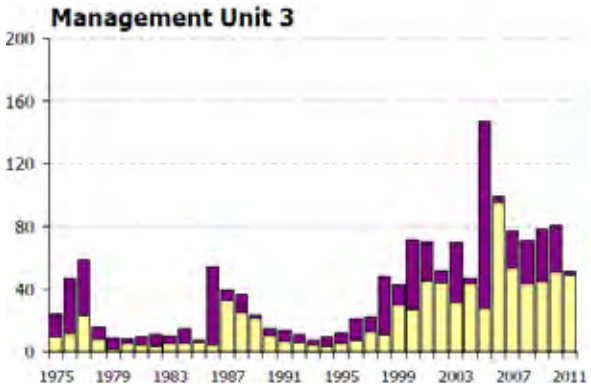


Fig 2-Yellow perch harvest (metric tons) by management unit and gear type







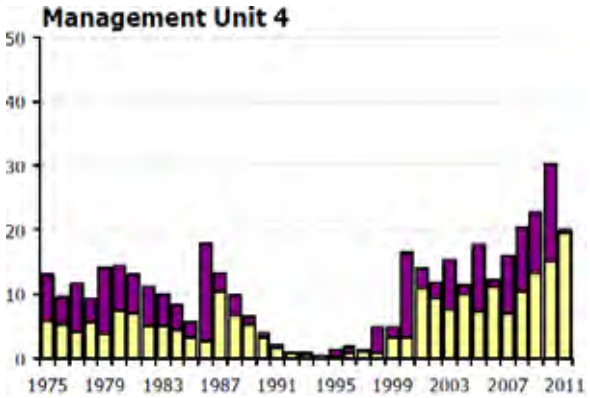


Fig 3- Yellow perch population estimates by management unit for age 2 (dark bars) and ages 3+ (light bars)

Table 5. Projection of the 2011 Lake Erie yellow perch population

MU	Age	2010 Mean Stock Size (millions fish)	Fishing Mortality (F)	Survival Rate (S)	2011 Mean Stock Size (millions fish)	Mean Weight in Population (kg)	Stock Biomass 2010 (millions kgs)	Stock Biomass 2011 (millions kgs)	Stock Biomass 2011 (millions lbs)
1	2	4.419	0.068	0.626	8.990	0.073	0.283	0.656	1.447
	3	13.598	0.330	0.482	2.767	0.128	1.441	0.354	0.781
	4	3.127	0.500	0.407	6.553	0.161	0.488	1.055	2.326
	5	1.430	0.531	0.394	1.271	0.214	0.279	0.272	0.600
	6+	1.549	0.576	0.377	1.147	0.238	0.367	0.273	0.602
	Total	*24.123*	*0.320*	*0.487*	*20.729*	*0.126*	*2.858*	*2.611*	*5.756*
2	2	15.535	0.073	0.623	15.487	0.074	1.150	1.146	2.527
	3	14.329	0.267	0.513	9.680	0.134	1.906	1.297	2.860
	4	5.305	0.505	0.405	7.354	0.179	0.865	1.316	2.903
	5	2.856	0.569	0.379	2.146	0.211	0.697	0.453	0.998
	6+	6.624	0.602	0.367	3.516	0.255	1.928	0.897	1.977
	Total	*44.649*	*0.277*	*0.508*	*38.184*	*0.134*	*6.545*	*5.109*	*11.265*
3	2	30.406	0.019	0.658	2.099	0.058	1.794	0.122	0.268
	3	22.660	0.078	0.620	19.998	0.115	2.447	2.300	5.071
	4	12.104	0.175	0.563	14.050	0.164	1.707	2.304	5.081
	5	5.501	0.209	0.544	6.811	0.210	1.177	1.430	3.154
	6+	10.094	0.220	0.538	8.422	0.274	2.846	2.308	5.088
	Total	*80.764*	*0.094*	*0.610*	*51.380*	*0.165*	*9.971*	*8.464*	*18.662*
4	2	15.172	0.007	0.666	0.389	0.093	1.305	0.036	0.080
	3	6.359	0.043	0.642	10.099	0.178	1.056	1.798	3.964
	4	4.376	0.074	0.623	4.083	0.240	1.103	0.980	2.161
	5	2.489	0.086	0.615	2.724	0.281	0.787	0.765	1.688
	6+	1.788	0.091	0.612	2.625	0.315	0.576	0.827	1.824
	Total	*30.184*	*0.035*	*0.647*	*19.921*	*0.221*	*4.825*	*4.406*	*9.716*

Table 6-Estimated 2010 Lake Erie yellow perch harvest by age and numbers of fish by gear and management unit (Unit)

Gear	Age	Unit 1 Number	Unit 1 %	Unit 2 Number	Unit 2 %	Unit 3 Number	Unit 3 %	Unit 4 Number	Unit 4 %	Lakewide Number	Lakewide %
Gill Nets	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	2	70,544	2.5	179,821	3.4	31,503	0.3	9,871	0.9	291,738	1.6
	3	1,233,588	43.0	1,691,030	31.9	726,117	8.1	317,186	28.8	3,967,922	21.7
	4	826,618	28.8	1,199,374	22.6	2,416,781	26.8	391,586	35.6	4,834,359	26.4
	5	266,339	9.3	619,035	11.7	1,800,366	20.0	272,059	24.7	2,957,799	16.2
	6+	473,698	16.5	1,613,707	30.4	4,036,500	44.8	110,366	10.0	6,234,271	34.1
	Total	2,870,787	*43.5*	5,302,967	*55.9*	9,011,266	*85.5*	1,101,068	*88.4*	18,286,089	*65.6*
Trap Nets	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	2	0	0.0	65,299	2.5	11,019	2.2	193	0.7	76,511	2.0
	3	132,754	20.7	515,072	19.8	95,916	19.1	1,545	5.3	745,287	19.7
	4	102,859	16.0	480,099	18.4	97,598	19.4	5,214	18.0	685,770	18.2
	5	165,182	25.8	619,605	23.8	120,227	23.9	7,531	26.0	912,546	24.2
	6+	240,173	37.5	924,449	35.5	177,348	35.3	14,483	50.0	1,356,453	35.9
	Total	640,968	*9.7*	2,604,524	*27.4*	502,108	*4.8*	28,967	*2.3*	3,776,567	*13.5*
Sport	1	3,218	0.1	4,973	0.3	0	0.0	0	0.0	8,191	0.1
	2	423,704	13.7	188,470	11.9	61,975	6.0	8,229	7.1	682,378	11.7
	3	2,035,290	65.8	818,719	51.7	381,168	37.2	29,410	25.5	3,264,586	56.1
	4	260,695	8.4	185,973	11.7	198,511	19.4	39,573	34.4	684,753	11.8
	5	126,792	4.1	136,195	8.6	102,330	10.0	15,411	13.4	380,728	6.5
	6+	245,045	7.9	248,603	15.7	280,743	27.4	22,521	19.6	796,912	13.7
	Total	3,094,744	*46.8*	1,582,933	*16.7*	1,024,726	*9.7*	115,144	*9.2*	5,817,548	*20.9*
All Gear	1	3,218	0.0	4,973	0.1	0	0.0	0	0.0	8,191	0.0
	2	494,248	7.5	433,590	4.6	104,497	1.0	18,293	1.5	1,050,627	3.8
	3	3,401,632	51.5	3,024,821	31.9	1,203,201	11.4	348,141	28.0	7,977,795	28.6
	4	1,190,173	18.0	1,865,446	19.7	2,712,890	25.7	436,373	35.0	6,204,882	22.3
	5	558,313	8.5	1,374,835	14.5	2,022,923	19.2	295,001	23.7	4,251,073	15.2
	6+	958,916	14.5	2,786,759	29.4	4,494,590	42.7	147,370	11.8	8,387,636	30.1
	Total	6,606,499	23.7	9,490,424	34.0	10,538,101	37.8	1,245,179	4.5	27,880,203	100.0

Table 7-Lake Erie yellow perch harvest in pounds by management unit (Unit) and agency, 2000-2010

		Ontario*		Ohio		Michigan		Pennsylvania		New York		Total
	Year	Harvest	%	Harvest	%	Harvest	%	Harvest	%	Harvest	%	Harvest
Unit 1	2000	980,323	47	1,038,650	50	67,010	3	--	--	--	--	2,085,983
	2001	813,066	45	915,641	51	70,910	4	--	--	--	--	1,799,617
	2002	1,454,105	50	1,316,553	45	147,065	5	--	--	--	--	2,917,723
	2003	1,179,667	44	1,406,385	53	84,878	3	--	--	--	--	2,670,930
	2004	1,698,761	59	1,090,669	38	94,732	3	--	--	--	--	2,884,162
	2005	1,513,890	60	965,231	38	49,485	2	--	--	--	--	2,528,606
	2006	1,325,464	54	1,055,378	43	62,854	3	--	--	--	--	2,443,696
	2007	727,678	41	982,677	55	62,815	4	--	--	--	--	1,773,170
	2008	580,050	56	409,705	39	47,934	5	--	--	--	--	1,037,689
	2009	853,137	61	463,564	33	87,319	6	--	--	--	--	1,404,020
	2010	879,358	47	889,512	48	83,725	5	--	--	--	--	1,852,595
Unit 2	2000	1,484,125	56	1,169,234	44	--	--	--	--	--	--	2,653,359
	2001	1,794,275	51	1,747,069	49	--	--	--	--	--	--	3,541,344
	2002	2,190,621	52	1,986,730	48	--	--	--	--	--	--	4,177,351
	2003	2,107,639	50	2,113,285	50	--	--	--	--	--	--	4,220,924
	2004	2,051,473	48	2,246,264	52	--	--	--	--	--	--	4,297,737
	2005	2,666,231	59	1,843,190	41	--	--	--	--	--	--	4,509,421
	2006	3,102,269	69	1,393,732	31	--	--	--	--	--	--	4,496,001
	2007	1,847,139	45	2,244,656	55	--	--	--	--	--	--	4,091,795
	2008	1,990,237	50	2,005,000	50	--	--	--	--	--	--	3,995,237
	2009	2,495,611	58	1,801,978	42	--	--	--	--	--	--	4,297,589
	2010	1,888,876	56	1,457,823	44	--	--	--	--	--	--	3,346,699
Unit 3	2000	771,646	62	443,250	36	--	--	32,613	3	--	--	1,247,509
	2001	999,450	64	464,811	30	--	--	91,211	6	--	--	1,555,472
	2002	1,192,691	60	640,104	32	--	--	140,821	7	--	--	1,973,616
	2003	1,667,133	72	481,558	21	--	--	177,516	8	--	--	2,326,207
	2004	1,453,419	62	659,447	28	--	--	244,063	10	--	--	2,356,929
	2005	1,771,800	75	457,593	19	--	--	142,028	6	--	--	2,371,421
	2006	3,451,499	90	271,144	7	--	--	106,260	3	--	--	3,828,903
	2007	2,997,101	84	391,285	11	--	--	193,065	5	--	--	3,581,451
	2008	2,200,168	74	629,366	21	--	--	155,014	5	--	--	2,984,548
	2009	2,266,727	74	597,214	20	--	--	190,742	6	--	--	3,054,683
	2010	3,370,099	85	476,808	12	--	--	117,640	3	--	--	3,964,547
Unit 4	2000	35,686	73	--	--	--	--	10,950	22	2,458	5	49,094
	2001	35,893	60	--	--	--	--	8,337	14	15,319	26	59,549
	2002	87,541	54	--	--	--	--	46,903	29	26,903	17	161,347
	2003	84,772	60	--	--	--	--	39,821	28	16,511	12	141,104
	2004	98,733	49	--	--	--	--	46,344	23	54,862	27	199,939
	2005	195,347	67	--	--	--	--	42,226	15	53,468	18	291,041
	2006	230,226	69	--	--	--	--	57,005	17	48,107	14	335,338
	2007	185,954	78	--	--	--	--	25,859	11	25,935	11	237,748
	2008	240,270	77	--	--	--	--	31,325	10	40,809	13	312,404
	2009	272,579	72	--	--	--	--	37,991	10	70,030	18	380,600
	2010	467,612	89	--	--	--	--	19,989	4	37,730	7	525,331
Lakewide Totals	2000	3,271,780	54	2,651,134	44	67,010	1	43,563	<1	2,458	<1	6,035,945
	2001	3,642,684	52	3,127,521	45	70,910	1	99,548	1	15,319	<1	6,955,982
	2002	4,924,958	53	3,943,387	43	147,065	2	187,724	2	26,903	<1	9,230,037
	2003	5,039,211	54	4,001,228	43	84,878	1	217,337	2	16,511	<1	9,359,165
	2004	5,302,386	54	3,996,380	41	94,732	1	290,407	3	54,862	<1	9,738,767
	2005	6,147,268	63	3,266,014	34	49,485	<1	184,254	2	53,468	<1	9,700,489
	2006	8,109,458	73	2,720,254	24	62,854	<1	163,265	1	48,107	<1	11,103,938
	2007	5,757,872	59	3,618,618	37	62,815	<1	218,924	2	25,935	<1	9,684,164
	2008	5,010,725	60	3,044,071	37	47,934	<1	186,339	2	40,809	<1	8,329,878
	2009	5,888,054	64	2,862,756	31	87,319	1	228,733	3	70,030	<1	9,136,892
	2010	6,605,945	68	2,824,143	29	83,725	1	137,629	1	37,730	<1	9,689,172

Table 8-Harvest, effort and harvest per unit effort for yellow perch in Mgmt Unit 1 (Western Basin) by agency and gear type, 2000-2010.

		Unit 1				
		Michigan	Ohio		Ontario Gill Nets*	
	Year	Sport	Trap Nets	Sport	Small Mesh	Large Mesh**
Harvest (pounds)	2000	67,010	240,541	798,109	980,323	--
	2001	70,910	179,234	736,407	711,745	101,321
	2002	147,065	337,829	978,724	1,359,637	94,468
	2003	84,879	250,456	1,155,929	1,151,358	28,309
	2004	94,732	289,136	801,533	1,637,488	61,273
	2005	49,485	357,182	608,049	1,402,523	111,082
	2006	62,854	235,852	819,526	1,264,370	61,094
	2007	62,815	200,818	781,859	671,536	56,142
	2008	47,934	0	409,705	484,409	49,378
	2009	87,319	0	463,564	728,012	125,024
	2010	83,725	195,674	693,838	815,170	64,188
Harvest (Metric) (tonnes)	2000	30	109	362	445	--
	2001	32	81	334	323	46
	2002	67	153	444	617	43
	2003	38	114	524	522	13
	2004	43	131	364	743	28
	2005	22	162	276	636	50
	2006	29	107	372	573	28
	2007	28	91	355	305	25
	2008	22	0	186	220	22
	2009	40	0	210	330	57
	2010	38	89	315	370	29
Effort *(a)*	2000	122,447	4,026	965,628	6,741	--
	2001	97,761	1,518	720,923	2,167	2,142
	2002	190,573	2,715	900,289	4,546	739
	2003	121,638	2,213	1,182,694	3,725	395
	2004	206,902	4,351	833,690	6,052	901
	2005	98,429	3,903	816,959	5,170	1,182
	2006	118,628	3,517	683,994	5,194	787
	2007	181,698	2,951	823,624	2,230	1,125
	2008	95,925	0	519,050	1,653	899
	2009	130,556	0	578,303	3,058	1,680
	2010	132,852	2,607	798,240	3,152	845
Harvest Rates *(b)*	2000	2.2	27.1	3.0	66.0	--
	2001	2.9	53.5	3.4	149.0	21.5
	2002	2.5	56.4	3.4	135.6	58.0
	2003	2.4	51.3	3.5	140.2	32.5
	2004	1.6	30.1	3.0	122.7	30.8
	2005	1.7	41.5	3.1	123.0	42.6
	2006	1.7	30.4	4.2	110.4	35.2
	2007	1.0	30.9	3.4	136.6	22.6
	2008	1.5	--	2.7	132.9	24.9
	2009	2.7	--	3.1	108.0	33.8
	2010	2.3	34.0	3.4	117.3	34.4

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Habitat Task Group Report, 2011

Habitat Project Documentation

Information pertaining to habitat related initiatives taking place throughout the Lake Erie and Lake St. Clair basins is compiled and made available as an interactive "clickable map" which allows for geographic sorting of projects (by watershed or lake basin). You can access the spatial inventory of projects at: www.glfc.org/lakecom/lec/spatial_inventory/inventoryindex.htm. Details of some notable projects can be found in the HTG Full Annual Report. The next steps for this charge include integration of project information into a query-able database.

Lake Erie GIS

The Great Lakes GIS, in 2011-2012, plans to develop an online data viewer and data download portal. Current maps will be updated, including substrate and habitat maps, harvest and research survey summary maps. Lastly, cooperative ecosystem and food web modeling work initiated by scientists at University of Michigan, NOAA GLERL, and several other regional resource agencies and universities will be incorporated. The HTG encourages all interested individuals and groups to visit the GLGIS website www.glfc.org/glgis and consider how you might be able to use or contribute to this inventory.

Identifying Potential Lake Trout Spawning Habitat

As part of its commitment to work with the Cold Water Task Group, the HTG continues to make progress toward identifying potential lake trout spawning habitat in Lake Erie. Actions on this charge in 2010 focused on data validation, the completion of north shore substrate interpretation, the standardization of substrate and habitat classifications, the development of a method for comparing sites, and, lastly, the comparing of methodologies.

Fig 1-Areas of Lake Erie surveyed with Sidescan and Roxann Technologies, 2006-2009; solid areas represent coverage by Sidescan sonar; Red, areas represent coverage by Roxann

Identify metrics related to walleye habitat

The fishery quota for Lake Erie walleye is currently allocated based on a sharing formula (% surface area) that defines walleye habitat as nearshore water (<13m deep) in MI, OH and ON (Mgmt Units 1-3**; Fig 2**).

Fig 2 -Present quota sharing allocation (< 13m; light blue) by jurisdiction (red).

With the assistance of the Walleye Task Group and lead by researchers at the U of Windsor, we utilized a logistic regression approach to establish the relationships between a variety of abiotic conditions and the probability of occurrence of walleye (presence / absence) from a set of fishery and environmental variable linked datasets (Ontario Partnership Index Gillnet). This species-habitat model for adult walleye uses environmental variables that were not only deemed appropriate for walleye but also for which datasets currently exist and provide somewhat broad-scale (location and time) coverage, including temperature, dissolved oxygen, and light attenuation (Secchi depth).

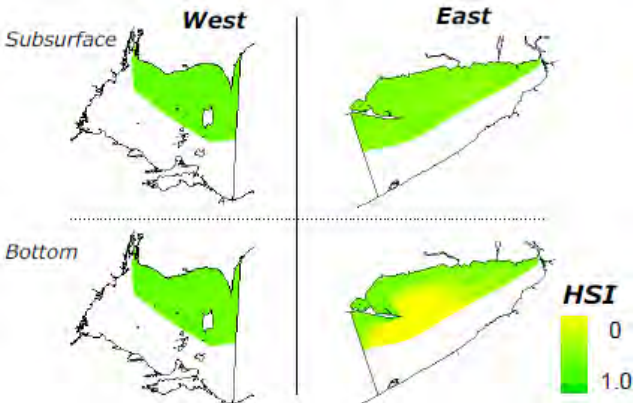

Fig 3-Habitat Suitability Index (HSI) maps derived from the species-habitat model for adult walleye, in Ontario waters of the West and East basins; maps represent the average HSI over three years (2006-2008), ranging from 0 (unsuitable) to 1 (suitable)

Consistent with the literature, the probability of encountering walleye increased in shallower, warmer and more turbid waters. Continuous, rasterized (interpolated) maps for each environmental variable for the Ontario waters of the east and west basins were generated. A walleye suitability index (0 to 1) was calculated for each cell (50 m) using the species-habitat model and the total area of weighted walleye habitat for each region was derived. In general, the west basin had more suitable habitat than the east basin. There was less of habitat in epibenthic waters compared to subsurface waters in the east, but there was little difference in the west (**Fig 2).**

To date, a lakewide analysis, including examination of seasonal and inter-annual dynamics that may result in changes in the amount of habitat by jurisdiction, is difficult without the availability of a comprehensive database of the necessary abiotic variables. Over the next year, we will work towards collating various databases in order to make them more readily-available for such use.

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Forage Task Group Report 2011

East Basin Status of Forage

Low (Ontario) to moderate (New York) abundance of eastern basin forage fish species during 2010 was largely attributable to rainbow smelt. Age-0 smelt abundance increased in 2010, were captured in greater numbers than yearling-and-older (YAO) smelt and densities of both age groups were higher in NY than in ON trawl assessments. Size of age-0 and age-1 smelt increased in 2010. The contribution of non-smelt fish species to the forage fish community of eastern Lake Erie was dominated by trout-perch, round goby, emerald shiner, and age-0 white perch. Round goby densities decreased throughout eastern Lake Erie, reaching the lowest level observed in Ontario and second lowest in NY since 2000. A moderately strong showing of age-0 yellow perch in 2010 marks a significant improvement from last year's very weak year class.

Predator diets were dominated by fish species, primarily rainbow smelt and round goby. Predator growth remains good. Age-2 to -6 smallmouth bass were above average size in sampled east basin populations. Lake trout size-at- age remains stable and among the highest observed in the Great Lakes.

Central Basin Status of Forage

Overall forage abundance here was low to moderate throughout the basin during 2010. Recruitment of age-0 forage species was generally higher than in 2009. However, YAO indices declined due to poor recruitment of most forage species in 2009. The only notable increases in forage indices were for age-0 rainbow smelt in western Ohio and age-0 and YAO emerald shiner in eastern Ohio. Round goby abundance is above average in western Ohio and below average in eastern Ohio. Walleye and white bass diets continue to be comprised of gizzard shad, rainbow smelt and emerald shiners. Gizzard shad and emerald shiners, when combined, contributed 92% of the diets in western Ohio and 77% of the diets in eastern Ohio. Smelt comprised the remaining proportion of walleye diets. Round gobies continue to be important diet items to white bass and yellow perch in June and August, and are a primary component of smallmouth bass diets sampled in the fall. Mean size of walleye and white bass collected in 2010 was above average for fish up to age-3. Mean size of most forage species remains above average.

West Basin Status of Forage

Low levels of dissolved oxygen at the bottom of the water column during the August survey affected 13 of 71 trawl locations in the west basin survey. Indices for most species declined in 2010. There were dramatic decreases in abundance of gizzard shad and smelt relative to 2009. Age-0 yellow perch, emerald shiner and YAO emerald shiner also decreased from 2009 and were below average. Age-0 walleye abundance increased from 2009 but was below average. White bass recruitment declined slightly from 2009, but was above average. Age-0 smallmouth bass abundance was the fourth highest in the time series. Age-0 white perch increased to the sixth highest index since 1988.

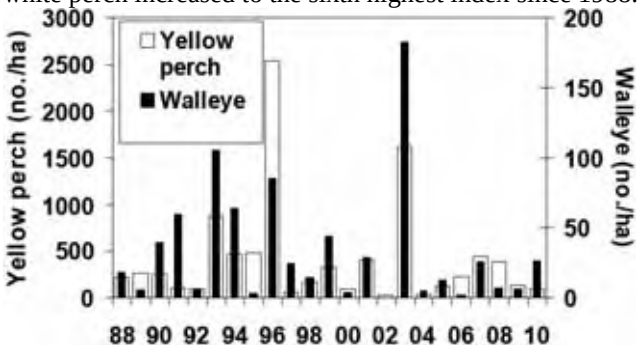


Fig 1-Density of age-0 yellow perch and walleye in western basin, 1988-2010

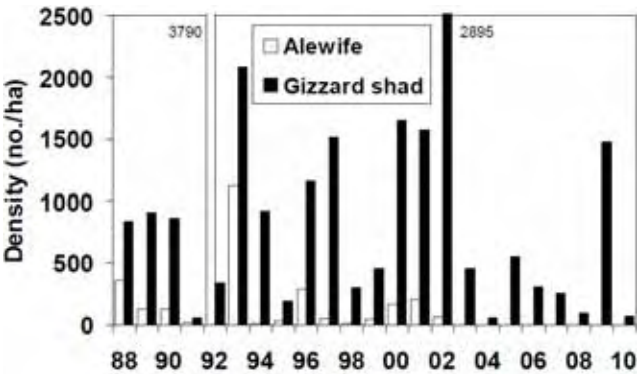


Fig 2-Density of age-0 alewife and gizzard shad in western basin, August 1988-2010

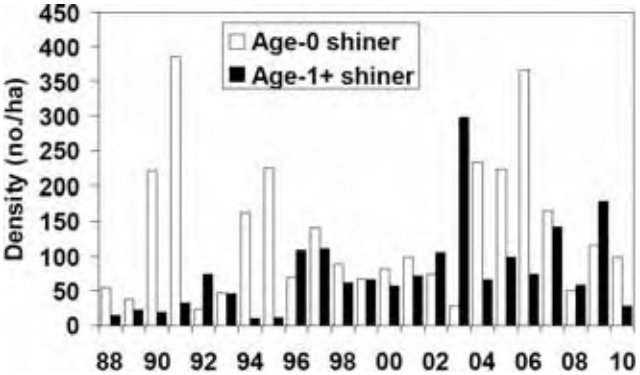


Fig 3-Density of age-0 and age-1+ shiners in western basin, August 1988-2010

Round Goby abundance decreased for the third consecutive year and was the lowest since 1997, the first year of occurrence in the west basin. Size of age-0 walleye, yellow perch, white bass, white perch, and smallmouth bass is above average. Walleye diets were predominantly gizzard shad and emerald shiner. Benthic invertebrates were the primary component of yellow perch diets in spring and fall.

Interagency Standardization

Forage Task Group members from the east and central basin began planning a trawl comparison exercise for assessment vessels in either 2011 or 2012. This exercise would be similar to the one that took place in 2003 for west and central basin agencies, with the goal of developing fishing power correction formulas to standardize assessment catches lake-wide.

Hemimysis anomala

The Forage Task Group continued to record sightings of this exotic invertebrate in 2010. Native to the Black and Caspian Seas, this recent invader was first located in Lake Erie in 2006, and has the potential to alter lake foodwebs as both a food item and a consumer of zooplankton resources.

In 2010, Hemimysis anomala continues to be found in the diets of white perch and rock bass, although consumption rates declined in 2010. Hemimysis anomala was also found for the first time in white bass and walleye samples from Long Point Bay. Two new occurrences of H. anomala were found in yellow perch, one each in the central and west basins. Also in 2010, H. anomala was found in the diet of a white perch east of Pelee Island, the first occurrence in open water.

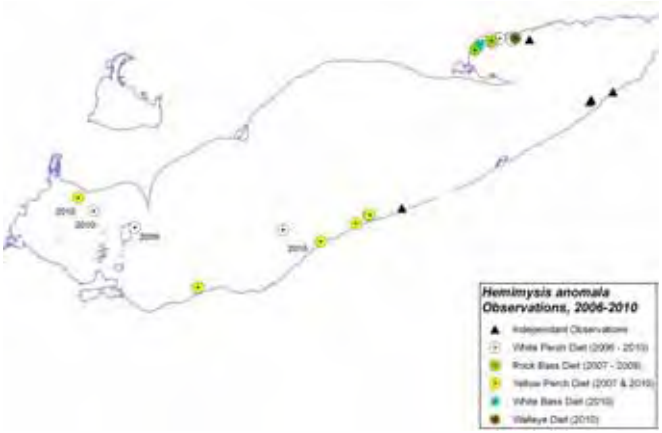


Fig 4-Distribution of Hemimysis anomala observations, 2006 – 2010

Hydroacoustic Assessments

Recent year hydroacoustic basin surveys have been accomplished as independent, concurrent summer-time efforts during the new-moon phase in July. Participation in each basin acoustic survey has been shared among jurisdictional agencies with support from the USGS.

Interagency Lower Trophic Level Monitoring

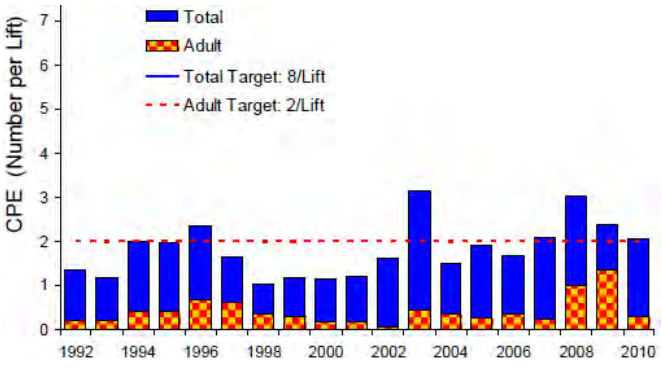
The lower trophic level monitoring (LTLA) measures nine variables at 18 stations around Lake Erie to characterize ecosystem change. The last 12 years of data are summarized. The 2010 median surface temperature was below the long-term median in the west basin and slightly above the long-term median in the central and east basins. The central basin hypolimnion continues to have very low oxygen levels in August and
September. Mean total phosphorus increased in all basins in 2010. The fish community objective for phosphorus was exceeded in the west, central and offshore east basins, but within target for the nearshore east basin. Zooplanktivory, a measure of zooplankton predation by fish, was high throughout Lake Erie historically, but has been low in the west and central basins for the last three years. ✧

Coldwater Task Group, 2011

Lake Trout

A total of 338 lake trout were collected in 93 lifts across the eastern basin of Lake Erie in 2010. Young cohorts (ages 1-4) dominated catches with lake trout ages 9 and older only sporadically caught. Basin-wide lake trout abundance declined for the second consecutive year in 2010 and remains well below the rehabilitation target of 8.0 fish/lift. Adult (age 5+) abundance declined sharply (77%) in 2010 and also remains well below target. Recent estimates indicate very low rates of adult survival. Klondike and Finger Lakes strain lake trout comprise the majority of the population. Successful natural reproduction has yet to be documented in Lake Erie despite more than 30 years of restoration efforts.

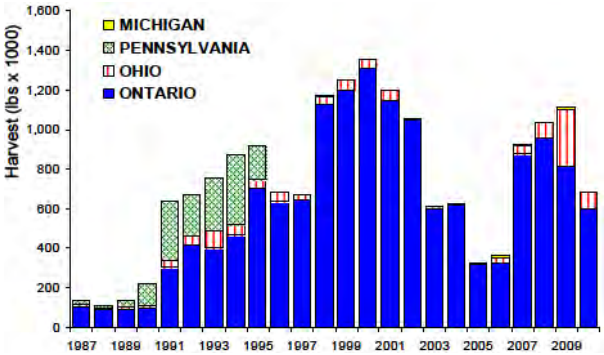
Basinwide Lake Trout Abundance



Whitefish

Lake whitefish harvest in 2010 was 683,567 lbs, distributed among ON (88%), OH (12%), MI (<1%) and PA (<1%) commercial fisheries. The 2003 year class (age 7) dominated the harvest and population age structure in 2010. Ages present in the 2010 population ranged from 3 to 21 with no evidence of young-of-the-year or yearlings in surveys lakewide. With weak to moderate recruitment occurring, abundance is declining. Some recruitment of age 4 and 5 whitefish (2007, 2006 year classes) to fisheries can be expected in 2011, but these year classes may be moderate at best.

Fisheries in 2011 will continue to rely on the 2003 year class followed by the 2005 cohort with some contribution from other weaker year classes. In 2010, mean condition factor of mature (ages 4+) whitefish did increase compared to 2009. For females, mean condition was above the historic average, while mean condition factor of males was near or above the historic average, depending on the agency data source.

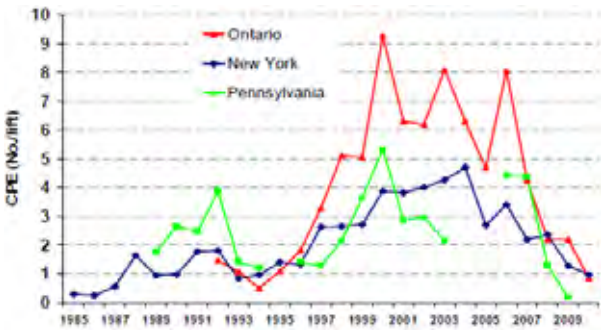


Commercial Lake Whitefish Harvest

Burbot

Total commercial harvest of burbot in Lake Erie during 2010 was 3,186 lbs, a 33% decrease from 2009. Burbot abundance and biomass from annual coldwater gillnet assessments continued to decline throughout the east basin after time-series maxima were observed during the early- to mid-2000s. 2010 burbot abundance measures were at or near the lowest level seen in agency assessment programs since the mid-80s. Declining catch rates of burbot in assessment surveys, combined with increasing mean age of adults and persistent low recruitment, signal an impending population collapse. Round gobies and smelt continue to be the dominant prey items in burbot diets in eastern Lake Erie.

East Basin Burbot Abundance by Jurisdiction

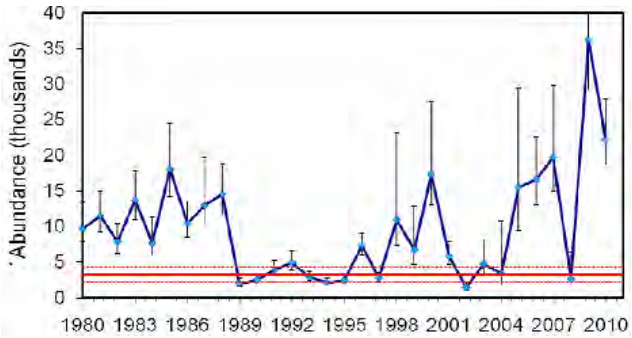


Sea Lamprey

The A1-A3 wounding rate on lake trout over 532 mm was 12.8 wounds per 100 fish in 2010. This was a 33% decline from the 2009 wounding rate of 19.3 wounds per 100 fish. Despite the decline, the wounding rate is still over two times higher than the target rate of five wounds per 100 fish. Wounding rates have been above target for 15 of the past 16 years. Large lake trout over 736 mm continue to receive the highest percentage of the fresh wounds, but high wounding rates were found in all size categories greater than 532mm. A4 wounding rates slightly increased in 2010 to 55.8 wounds/100 fish, the third highest wounding rate in the 25-year time series.

The estimated number of spawning-phase sea lampreys decreased from a time series high of 35,635 in 2009 to 22,179 in 2010. However, this is the second highest population estimate in the time-series. A two-year experiment of back-to-back lampricide treatments in the nine major sea lamprey producing streams began in spring 2008. These same streams were treated again in fall 2009 with treatment results expected to be seen in 2011.

Spawning-phase Sea Lamprey Abundance



Cisco

Ciscos are considered extirpated in Lake Erie; however, commercial fishermen report them periodically. Captures have been reported in 9 of the last 14 years, with 4 reports in 2010. Genetic testing of recent catches found them to be most related to the historic Lake Erie stock, indicating the possibility that a remnant Lake Erie stock still exists. Preparation of a Cisco management plan began in 2007 with the goal of rehabilitating Cisco in Lake Erie. In recognizing that stocking is a possible management decision, disease testing of potential brood stock was started. Lake Superior and Lake Ontario populations were tested, and a need identified to investigate Lake Huron and Lake Michigan stocks as a brood-stock source.

Several outstanding issues have moved the CWTG into future broader consultation with Cisco experts around the Great Lakes. These include methods of investigation into the extant population size, genetics and potential constraints, implications of stocking and brood stock selection. The final draft is expected to be completed in 2011. ✧

Fisheries Research Lake Erie Biological Station, 2010 (USGS)

Western Basin Forage Fish Assessment

Abstract

The USGS Lake Erie Biological Station completed its seventh consecutive year of a multi-agency assessment of fish populations throughout the western basin of Lake Erie in 2010. The objectives of this evaluation were to provide estimates of densities and biomasses of key forage and predator species in Michigan and Ontario waters of the western basin of Lake Erie.

We sampled 25 stations in Ontario and Michigan waters with bottom trawls in June and September 2010. We calculated density and biomass for 15 species in western Lake Erie. We also examined stomach contents from age-2 and older white perch and yellow perch. Many species continued trends of increasing abundance of young- of-year (YOY). Densities of YOY spottail shiner, white bass and walleye were the highest in our seven-year time series.

Young-of-year gizzard shad, trout perch, white perch,, yellow perch, and freshwater drum continued increasing trajectories. Emerald shiner and rainbow smelt YOY had decreasing 7-year trajectories. Densities of YOY rainbow smelt and age-l silver chub were lowest for the time series. The non-native bloody red shrimp *Hemimysis anomala* was found in the diets of one white perch and one yellow perch northwest of Pelee Island. This is the second consecutive year *Hemimysis* was found in diets of white perch and the first confirmed instance of *Hemimysis* in the diet of yellow perch in western Lake Erie.

Yellow Perch Diets

We collected 92 yellow perch stomachs during spring. Most of the stomachs contained benthic invertebrates (88%). *Hexagenia sp.*, Chironomidae, and *Dreissena sp.* accounted for the majority of occurrences of the benthic invertebrates. Yellow perch consumption of zooplankton, especially *Daphnia retrocurva,* occurred in 70% of stomachs during spring. Fish were present in 24%, and although most fish remains were unidentified, round goby occurred in 9%. We collected 84 age-2 and older yellow perch stomachs during autumn sampling. Most of the stomachs contained benthic invertebrates (88.7%). Consumption of zooplankton decreased in autumn samples to 26.8% of stomachs. Fish were present in 25.3% of autumn stomach samples, with round goby occurring in 11.3% of stomachs.

We collected 56 age-2 and older white perch stomachs during spring. Most of the white perch stomach samples included zooplankton. For the zooplankton found, *Daphnia retrocurva* occurred in 83 % of samples. Benthic invertebrates occurred in 61 % of spring stomach samples. Similar to yellow perch, fish were found in the lowest proportion of white perch stomachs for spring (20%). Of the fish remains that were identifiable, emerald shiners were found in 9% of the samples. We collected 42 age-2 and older white perch stomachs during autumn. Many of the autumn samples contained benthic invertebrates (84%). Chironomidae was the prey item most often found in the autumn stomach samples at 74%. For autumn samples, the percentage of stomachs containing zooplankton decreased to 59%. Similar to spring samples, fish were found in the lowest proportion of autumn white perch stomachs at 23% with 5% of the identified fish being emerald shiners.

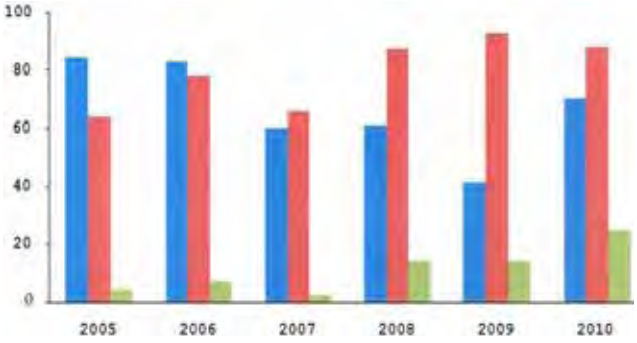


Fig 1-Percent frequency of occurrence of zooplankton, benthic invertebrates, and fish in the diet of age-2 and older yellow perch collected in spring in Ontario and Michigan waters

Across years for yellow perch, a higher proportion of stomachs contained zooplankton in spring (>60% in 5 of 6 years) than in autumn «30% of stomachs) **(Fig 1**). For white perch, a similar pattern of zooplankton occurrence was observed with zooplankton in >40% of stomachs during autumn in 4 of 6 years. Benthic prey always composed an important component of the diet, occurring in >50% of yellow perch stomachs regardless of season and in >30% (autumn) or >50% (spring) of white perch stomachs in any given year. Across years, both species had a greater percentage of stomachs containing fish prey in the autumn samples than in the spring samples. In the autumn samples, a peak in the proportion of stomachs with fish prey is evident for 2007 (**Fig 1)** for both species. *Hemimysis anomala,* a non-native shrimp, was found in the diet of one yellow perch and one white perch from two trawling stations northwest of Pelee Is. (**Fig 1**).

The strong reproductive success of several prey and predator species continues the trend from 2009. The species with the greatest success with respect to previous years and the 7-year time series were white bass and walleye, which had not only the strongest reproductive success in the time series but were also triple the 7-year mean yay density. While these predator species fared well, three of their key prey species, emerald shiner, gizzard shad, and rainbow smelt all had comparatively poor reproductive success. Only spottail shiner, a comparatively minor forage species for walleyes and white bass, had an above-average year class.

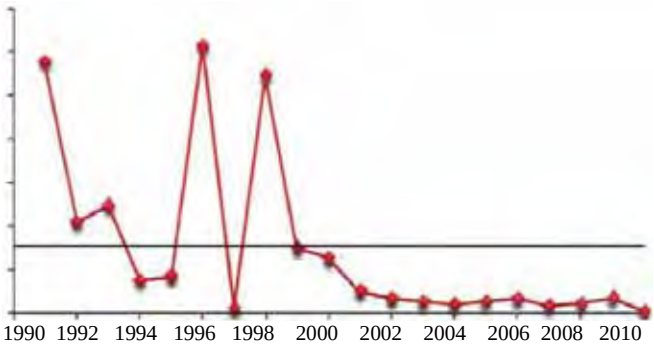


Fig 2-Density for young-of-year gizzard shad in western Lake Erie during autumn 1991-2010; horizontal bars represent 20-year means

The lower reproductive success of gizzard shad and rainbow smelt may reflect an effect of adult density on reproduction following very strong 2008 and 2009 year classes. There were mass mortality events for both species this spring, particularly for smelt, which died in large numbers around the time of spawning. It is possible that poor adult condition resulted in poor quality eggs, hence poor hatching success, and death of adults following spawning. High densities of YOY walleye and white bass may have also resulted in high mortality of smelt and gizzard shad due to predation.

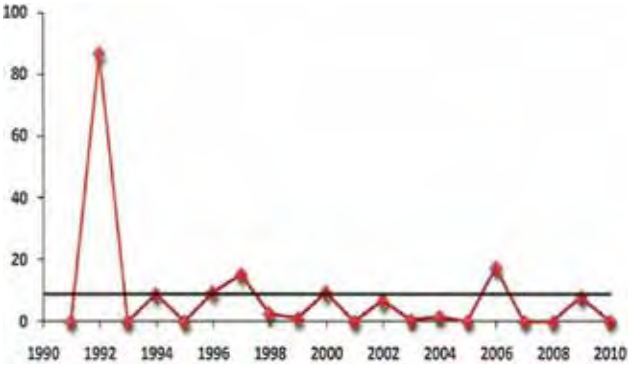


Fig 3-Density for young-of-year rainbow smelt in western Lake Erie, during autumn 1991-2010; horizontal bars represent 20-year means

Although there is evidence consistent with the interpretation of density-related effects of previous year classes on spawning success in 2010, there is little evidence in support of density- related effects on growth. Only yellow perch and smelt had lower YOY density but higher total length compared to 2009, but the magnitudes of the differences suggest minimal density-related effects. Density of YOY yellow perch decreased 38% from 2009 but total length increased just 2%. Similarly, YOY smelt density decreased 95%, but total length increased just 4%.

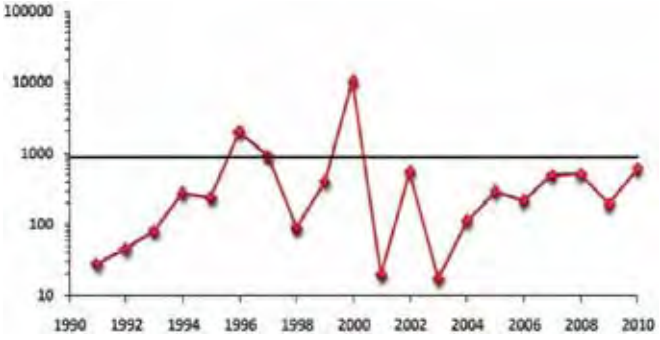
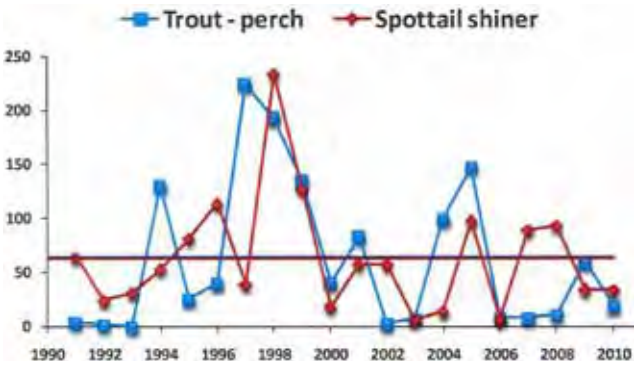


Fig 4-Density for young-of-year emerald shiner in western Lake Erie, during autumn 1991-2010; horizontal bars represent 20-year means

For gizzard shad the difference in mean total length between 2009 and 2010 is caused in part by multiple 'cohorts' being produced in 2010. In autumn 2009, the length distribution of YOY gizzard shad was unimodal, with a mean TL of 103.5 mm. In 2010, the length distribution of gizzard shad was strongly bimodal; the earlier-spawned fish had a mean length of 127 mm TL, while the later-spawned fish had a mean length of 57. 1 mm. Mean TL of the first cohort in 2010 was 23% higher than the mean TL of the single 2009 cohort. Warmer spring and summer temperatures in 2010 not only increased fish growth, but in the case of gizzard shad may have also contributed to production of the second cohort by providing the conditions for gizzard shad to spawn a second time.



2010 was the second consecutive year in which we observed *H anomala* in the diet of age-2-and-older white perch in western Lake Erie. The station at which the Hemimysis- consuming white perch was captured was several km northwest of the location of last-year's sample, suggesting a westward expansion of *Hemimysis* in western Lake Erie. To the best of our knowledge this is the first record of *Hemimysis* in the diet of yellow perch in western Lake Erie. ✧

OMNR 2010 Status of Major Stocks, 2011

Lake Erie Management Unit

The Lake Erie Management Unit of the Ontario Ministry of Natural Resources is responsible for managing the fishery resources of the Ontario waters of Lake Erie, as well as the upper Niagara River, the Detroit River, Lake St. Clair, and the St. Clair River. Lake Erie's fishery resources are managed cooperatively by Ontario and the four U.S. states – New York, Pennsylvania, Ohio and Michigan - bordering the lake through a process set out by the Great Lakes Fishery Commission and the Joint Strategic Plan for Management of Great Lakes Fisheries.

Status Of Major Species

Walleye

In 2010, the fishery was maintained by the strong 2003 year class and the moderate 2007 year class. Lakewide fall surveys also indicated a strong presence of age 3 and age 7 fish in 2010, suggesting the 2007 and 2003 year classes will contribute the most to spawner biomass in 2011. The 2007 year class will also contribute strongly to fisheries in 2011 along with the 2003 year class. Interagency trawling conducted in August indicated a moderate 2010 year class, which will not recruit to fisheries until 2012. According to trawl and gill net survey data, the 2008 and 2009 year classes were relatively weak and are not expected to strongly influence fishery performance in 2011.

Population abundance continues to decline due to lower recruitment following the 2003 year class. The policies and exploitation rates described within the WMP are currently undergoing a 5 year review process by the LEC. In 2010, this process included facilitated stakeholder consultation on objectives and exploitation policies that will continue in 2011. In addition to continued research and improvements to the population model, an updated WMP will help to support fisheries management on Lake Erie and promote quality and sustainability of the sport and commercial fisheries well into the future.

The walleye population in eastern Lake Erie consists of mixed stocks including those originating from east basin shoals, the Grand River, and immigrants from the rest of the lake. Representation of older walleye is typically greater in eastern Lake Erie compared to other lake areas.

Yellow Perch

Yellow perch populations in Lake Erie have undergone large fluctuations in recruitment and survival over the last several decades. Recent moderate to strong year classes include the 2007 year class in the western and central basins (statistical districts 1, 2 and 3) and the 2008 year class in the east.

The 2007 year class dominated the west and west central basin (statistical districts 1 and 2) fisheries in 2010, while the 2003 and the 2006 cohorts were better represented in the east central basin. The 2006 and 2007 year classes were also strongly represented in east basin harvest. Fisheries in 2011 will benefit from the 2007 year class in the west and central basins, and from the 2008 and 2003 year classes in the central and east basins.

Interagency trawling conducted in August indicated a weak 2009 year class, which will not contribute much to fisheries in 2011. The 2010 year class, recruiting to the fishery in 2012, was moderate in the central and eastern basins; however, it was poor in the western basin. As for walleye, the LEC yellow perch management plan in development will incorporate input from 2010 and continued stakeholder consultation in to 2011.

Lake Whitefish

In 2010, the 2003 year class (age 7 fish) of lake whitefish still dominated index catches; however, the 2005 year class (age 5 fish) was also caught in moderate numbers. In 2010, the majority of the commercial harvest also came from these year classes. The 2003 and 2005 year classes will continue to contribute to fisheries in 2011. Older lake whitefish were observed in the 2010 Ontario fisheries (up to age 18) and population assessment (up to age 21), reflecting the survival of older year classes.

SPORT FISHERY

Lake Erie Angler Diary Program

The Lake Erie Sport Fishery Diary Program entered its 27th year in 2010. Volunteer anglers complete a page in a diary for each trip taken. Fishing location, fishing duration, numbers of fish kept and released and biological information are also recorded. In 2010, 60 volunteers completed diaries. There were twenty-four less participants than in 2009. Of these volunteers, 50 (83%) have been participating in the program for three years or more. Thirty six participants (60%) have been involved in the program for twelve years or more and 18 participants (30%) have been involved in the program for twenty or more years. Results of the report are limited to non-charter boat anglers due to the small sample size of charter boat operator participants.

West-Central Basin

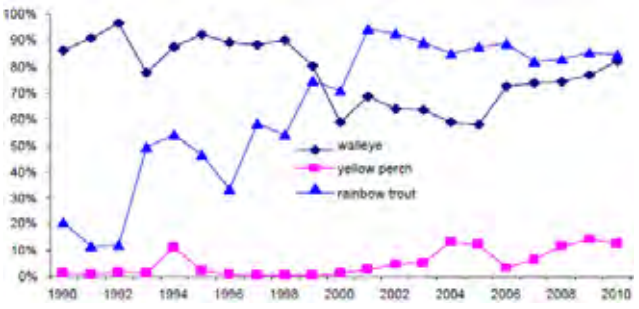


Fig 1-Western Basin Angler Percent Area Effort, Sport Diary Program, 1990-20100

Sixty-seven percent of diary participant effort in the Western Basin was directed towards walleye **(Fig 1),** while 38% was directed towards yellow perch. Walleye and yellow perch were the main species sought by diarists in the Western Basin during the 2010 season. Diary participants submitted 23 walleye scale samples and 55 total lengths from their catches in the Western Basin. This was insufficient data to calculate age group composition of the catch. Diary participants submitted 29 yellow perch scale samples and 631 total lengths from their catches in the Western Basin. This was insufficient data to calculate age group composition of the catch.

East-Central Basin

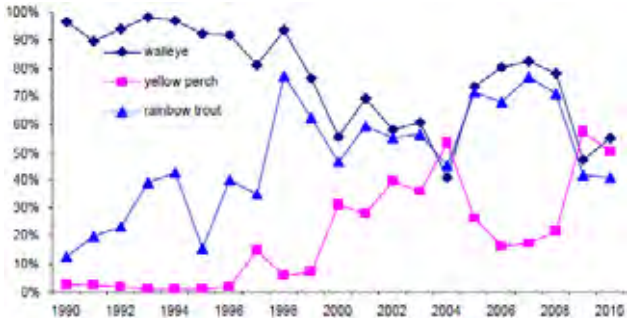
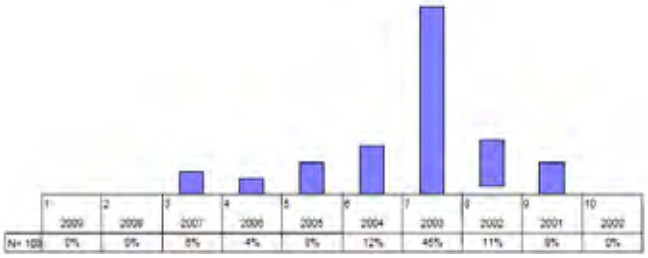


Fig 2-East-Central Basin Angler Percent Area Effort, Sport Diary Program, 1990-2010

The majority of diary angling effort in the East-Central Basin was directed towards walleye (55%), rainbow trout (41%) and yellow perch (50%). Walleye and rainbow trout percentage of angler effort had been following a similar trend since 1998. Rainbow trout increased while the fraction of effort directed at walleye decreased in 2010. Yellow perch percent effort decreased slightly in 2010, but remains high **(Fig 2).** Walleye catch rates increased by 85% in 2010, Rainbow trout catch rates decreased by 28% and Yellow perch catch rates decreased by 50%.

Central Basin
(West-Central and East-Central Basins Combined)



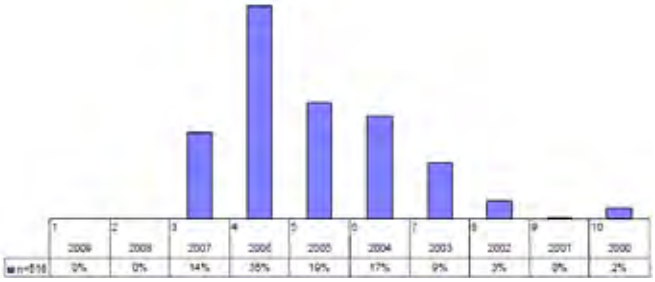


Fig 3-Perch (above) and Walleye (below), age distribution, L Erie Sport Diary, 2010

Diary participants submitted 109 walleye scale samples and 144 total lengths from their catches in the Central Basin for 2010. All fish were combined in a Length Age Composition Key (L.A.C.K.) for age distribution. The mean age was 6.9 (109 fish) and the mean total length was 23.0 inches (58.5 cm, 114 fish). Age 7 (2003 year class) represented 45% of sampled fish from the Central Basin of Lake Erie, **(Fig 3**).

Diary participants submitted 12 rainbow trout scale samples and 100 total lengths from their catches in the Central Basin. The mean total length was 24.7 inches (62.7 cm, 100 fish). Seventy-two yellow perch scale samples and 535 total lengths were submitted. All fish were combined in a L.A.C.K. for age distribution. The mean age was 4.9 (516 fish) and the mean total length was 9.0" (22.9 cm, 535 fish). Age 4 ('06 year class) represented 35% fish, age 5 (2005 year class) represented 19% of sampled fish from the Central Basin of Lake Erie, (**Fig 3**).

Long Point Bay
The majority of diary angling effort in Long Point Bay was directed at northern pike (40%), and smallmouth bass (60%), (Table 3.5). Rainbow trout and walleye were not sought in 2010, while preference for smallmouth bass and northern pike increased (Figure 3.8).
Smallmouth bass catch rates increased by 53% from those in 2009. Northern pike catch rates from 2009 (Table 3.5) were almost 4 times catch rates in 2009.

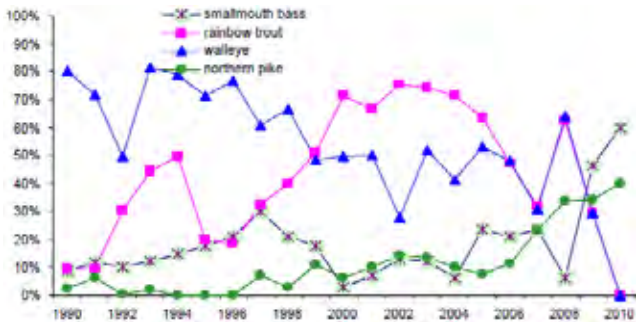


Fig 4-Long Point Bay Angler Percent Area Effort, Sport Diary Program, 1990-2010

Table 1-Angler success rates (CPUE) of non-charter boat anglers, Western, West-Central and East-Central Basin survey areas, Lake Erie, 1990-2010.

Western Basin (Area 05)

Year	Total Rod Hours	Walleye				Yellow Perch			
		Trips	Rod Hours	CPUE	% Total Effort	Trips	Rod Hours	CPUE	% Total Effort
1990	2,304	212	1,924	0.542	84%	5	25	6.240	1%
1991	2,405	211	2,259	0.459	94%	2	33	10.738	1%
1992	3,087	203	1,591	0.591	52%	15	135	1.574	4%
1993	2,220	279	1,887	0.510	85%	9	44	2.689	2%
1994	885	126	734	0.339	83%	4	22	0.090	2%
1995	1,204	136	1,036	0.479	86%	3	18	0.333	1%
1996	2,428	213	2,097	0.223	86%	12	71	1.275	3%
1997	1,499	91	1,131	0.169	75%	10	54	3.258	4%
1998	2,016	171	1,791	0.423	89%	2	9	1.347	0%
1999	1,071	91	919	0.457	86%	1	5	0.188	0%
2000	729	64	613	0.405	84%	8	117	3.641	16%
2001	833	66	657	0.594	79%	24	175	5.383	21%
2002	809	54	486	0.362	60%	13	183	5.197	23%
2003	1,508	102	1,087	0.534	72%	60	609	5.158	40%
2004	2,663	114	1,499	0.717	56%	93	1,187	6.325	45%
2005	2,638	173	2,254	1.020	85%	42	588	3.505	22%
2006	1,375	68	735	0.679	53%	44	604	5.082	44%
2007	929	56	624	0.954	67%	39	326	7.012	35%
2008	768	39	529	0.512	69%	42	260	10.360	34%
2009	2,618	93	2,068	0.519	79%	64	687	6.490	26%
2010	955	33	642	0.340	67%	44	362	5.963	38%
0-10 Avg.	1,508	109	1,155	0.514	76%	29	296	4.072	14%

West-Central Basin (Area 06)

Year	Total Rod Hours	Walleye				Rainbow Trout				Yellow Perch				Coho			
		Trips	Rod Hours	CPUE	% Total Effort	Trips	Rod Hours	CPUE	% Total Effort	Trips	Rod Hours	CPUE	% Total Effort	Trips	Rod Hours	CPUE	% Total Effort
1990	5,020	328	4,326	0.642	86%	54	1,031	0.010	21%	11	59	0.659	1%	154	2,274	0.013	45%
1991	3,841	287	3,488	0.366	91%	26	441	0.032	11%	4	27	0.679	1%	146	1,854	0.002	48%
1992	6,104	410	5,886	0.501	96%	54	733	0.056	12%	10	96	0.385	2%	183	2,945	0.010	48%
1993	6,537	395	5,081	0.308	78%	231	3,217	0.118	49%	14	94	1.521	1%	146	2,112	0.028	32%
1994	4,190	279	3,670	0.373	88%	172	2,271	0.086	54%	20	466	2.923	11%	69	922	0.007	22%
1995	6,248	348	5,768	0.215	92%	150	2,893	0.055	46%	11	130	6.243	2%	74	1,223	0.001	20%
1996	6,200	244	5,543	0.213	89%	89	2,070	0.049	33%	6	50	5.500	1%	29	611	0.010	10%
1997	6,691	201	5,912	0.077	88%	122	3,909	0.083	58%	4	36	9.103	1%	45	1,229	0.018	18%
1998	5,879	224	5,298	0.076	90%	138	3,191	0.117	54%	4	18	3.611	0%	52	1,172	0.012	20%
1999	4,826	146	3,865	0.033	80%	140	3,611	0.110	75%	2	20	11.150	0%	46	1,363	0.021	28%
2000	4,251	124	2,498	0.011	59%	154	3,013	0.308	71%	5	46	2.863	1%	75	1,575	0.028	37%
2001	3,769	82	2,596	0.016	69%	131	3,554	0.136	94%	9	99	5.088	3%	0	0	0.000	0%
2002	2,594	75	1,656	0.013	64%	121	2,402	0.275	93%	14	126	3.852	5%	3	88	0.182	3%
2003	3,690	126	2,343	0.046	63%	161	3,288	0.234	89%	16	186	4.047	5%	1	29	0.175	1%
2004	3,322	74	1,951	0.037	59%	118	2,827	0.187	85%	37	442	6.117	13%	2	92	0.043	3%
2005	4,351	86	2,525	0.069	58%	132	3,812	0.185	88%	38	520	4.215	12%	0	0	0.000	0%
2006	4,207	91	3,058	0.215	73%	118	3,733	0.200	89%	9	145	5.253	3%	0	0	0.000	0%
2007	4,374	95	3,220	0.149	74%	106	3,578	0.220	82%	30	274	7.935	6%	0	0	0.000	0%
2008	3,799	98	2,814	0.160	74%	110	3,149	0.254	83%	48	433	7.277	11%	0	0	0.000	0%
2009	3,322	74	2,553	0.071	77%	85	2,841	0.132	86%	46	466	2.088	14%	0	0	0.000	0%
2010	2,990	74	2,451	0.053	82%	75	2,526	0.243	85%	40	370	4.464	12%	0	0	0.000	0%
0-10 Avg.	4,581	184	3,643	0.174	78%	118	2,766	0.147	65%	18	195	4.523	5%	49	833	0.026	16%

East-Central Basin (Area 07)

Year	Total Rod Hours	Walleye				Rainbow Trout				Yellow Perch				Coho			
		Trips	Rod Hours	CPUE	% Total Effort	Trips	Rod Hours	CPUE	% Total Effort	Trips	Rod Hours	CPUE	% Total Effort	Trips	Rod Hours	CPUE	% Total Effort
1990	4,195	385	4,045	0.559	96%	40	517	0.006	12%	11	110	1.091	3%	83	938	0.016	22%
1991	5,719	415	5,133	0.367	90%	88	1,138	0.090	20%	8	134	2.111	2%	104	1,288	0.026	23%
1992	5,070	358	4,757	0.410	94%	70	1,169	0.023	23%	12	77	0.978	2%	91	1,233	0.023	24%
1993	4,995	396	4,912	0.304	98%	153	1,945	0.055	39%	7	44	0.182	1%	126	1,391	0.017	28%
1994	3,583	310	3,475	0.309	97%	131	1,521	0.007	42%	2	37	0.270	1%	67	892	0.000	25%
1995	2,762	249	2,547	0.326	92%	39	426	0.068	15%	5	27	5.704	1%	31	349	0.017	13%
1996	3,100	190	2,853	0.176	92%	72	1,231	0.059	40%	9	57	1.035	2%	29	444	0.009	14%
1997	3,573	143	2,902	0.115	81%	54	1,241	0.088	35%	69	514	3.426	14%	21	410	0.005	11%
1998	2,953	138	2,767	0.088	94%	103	2,278	0.119	77%	24	161	0.567	5%	44	774	0.001	26%
1999	3,708	133	2,825	0.069	76%	97	2,302	0.135	62%	38	252	2.803	7%	39	864	0.013	23%
2000	1,522	52	840	0.037	55%	41	708	0.072	47%	61	470	5.291	31%	12	226	0.004	15%
2001	2,457	67	1,697	0.048	69%	58	1,455	0.056	59%	70	684	4.199	28%	8	76	0.026	3%
2002	2,108	55	1,217	0.061	58%	52	1,160	0.109	55%	91	828	4.101	39%	0	0	0.000	0%
2003	2,190	65	1,329	0.110	61%	55	1,231	0.068	56%	71	784	1.534	36%	0	0	0.000	0%
2004	1,556	38	632	0.019	41%	40	698	0.119	45%	66	831	2.475	53%	0	0	0.000	0%
2005	3,669	109	2,688	0.116	73%	101	2,617	0.123	71%	76	957	2.829	26%	1	57	0.035	2%
2006	3,803	124	3,054	0.262	80%	100	2,571	0.072	68%	47	615	3.221	16%	1	27	0.037	1%
2007	3,960	115	3,255	0.170	82%	107	3,040	0.116	77%	48	680	3.722	17%	0	0	0.000	0%
2008	2,697	81	2,102	0.186	78%	72	1,913	0.056	71%	33	583	4.431	22%	0	0	0.000	0%
2009	2,198	40	1,041	0.123	47%	34	912	0.115	41%	69	1,253	7.683	57%	0	0	0.000	0%
2010	2,561	53	1,406	0.228	55%	40	1,044	0.083	41%	66	1,287	3.856	50%	0	0	0.000	0%
0-10 Avg.	3,256	167	2,642	0.194	77%	74	1,482	0.078	47%	42	494	2.929	20%	31	427	0.011	11%

Long Point Bay (Area 09)

Year	Total Rod Hours	Rainbow				Walleye				Northern Pike				Smallmouth Bass			
		Trips	Rod Hours	CPUE	% Total Effort	Trips	Rod Hours	CPUE	% Total Effort	Trips	Rod Hours	CPUE	% Total Effort	Trips	Rod Hours	CPUE	% Total Effort
1990	4,304	22	397	0.048	9%	265	3,456	0.205	80%	9	101	0.446	2%	32	381	0.855	9%
1991	2,793	22	266	0.098	10%	160	2,005	0.125	72%	13	174	0.189	6%	28	330	1.074	12%
1992	3,829	89	1,170	0.143	31%	141	1,909	0.046	50%	2	9	0.000	0%	28	380	0.708	10%
1993	3,685	113	1,631	0.072	44%	222	3,006	0.164	82%	6	76	0.132	2%	47	450	1.044	12%
1994	2,005	70	997	0.022	50%	112	1,581	0.089	79%	0	0	0.000	0%	29	293	1.453	15%
1995	1,949	24	390	0.067	20%	87	1,389	0.086	71%	0	0	0.000	0%	31	345	1.216	18%
1996	1,713	20	321	0.044	19%	78	1,316	0.105	77%	0	0	0.000	0%	43	361	1.528	21%
1997	1,642	24	536	0.030	33%	49	998	0.028	61%	11	116	0.586	7%	39	492	1.229	30%
1998	2,776	61	1,114	0.069	40%	101	1,849	0.051	67%	9	83	0.545	3%	40	586	0.843	21%
1999	2,008	65	1,021	0.094	51%	56	974	0.024	49%	16	224	0.869	11%	28	357	1.160	18%
2000	2,313	100	1,647	0.241	71%	73	1,148	0.017	50%	16	144	3.395	6%	8	70	0.892	3%
2001	1,791	82	1,196	0.135	67%	56	903	0.050	50%	22	182	2.764	10%	11	128	0.476	7%
2002	1,531	87	1,157	0.079	76%	35	424	0.012	28%	20	217	0.661	14%	20	200	0.802	13%
2003	979	50	729	0.064	74%	34	509	0.016	52%	16	130	0.559	13%	12	118	0.834	12%
2004	818	40	583	0.067	71%	24	338	0.012	41%	10	82	0.540	10%	8	53	1.268	7%
2005	1,030	50	658	0.059	64%	41	548	0.055	53%	8	77	0.506	7%	20	244	0.775	24%
2006	644	18	306	0.095	47%	17	310	0.132	48%	8	74	0.952	11%	16	136	1.547	21%
2007	363	8	117	0.232	32%	6	112	0.099	31%	8	84	1.485	23%	9	86	1.291	24%
2008	463	17	290	0.007	62%	15	298	0.024	64%	26	157	0.712	34%	4	29	0.655	6%
2009	390	6	115	0.000	29%	6	115	0.000	29%	11	133	0.278	34%	16	181	0.838	46%
2010	265	0	0	0.000	0%	0	0	0.000	0%	10	106	1.349	40%	12	159	1.279	60%
)-10 Avg.	1,776	46	697	0.079	43%	75	1,104	0.064	54%	11	103	0.760	11%	23	256	1.036	18%

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New York Lake Erie Fisheries Program Highlights, 2010

This document shares a few of the highlights from the 2010 program year. The complete annual report will be available on the DEC website at http://www.dec.ny.gov/outdoor/32286.html, or by contacting the DEC Lake Erie Unit office.

Walleye

Lake Erie's eastern basin walleye resource is composed of local spawning stocks, as well as contributions from summertime movements from western basin spawning stocks. The annual movement of western basin stocks is now well known via long-term tagging studies conducted throughout the lake. Walleye fishing quality in recent years has generally been very good and largely attributable to excellent spawning success observed in 2003. However, the dominant 2003 year class has now begun to wane.

Nevertheless, walleye fishing activity as well as walleye fishing quality was very good in 2010. Our most recent juvenile walleye surveys indicate average to good spawning success occurred from 2005 to 2008, but lower spawning success occurred in 2009, suggesting the decline of the adult population might somewhat moderate from the peak observed just a few years earlier.

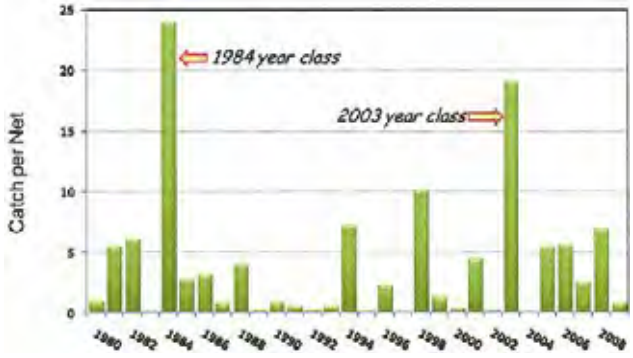

Fig 1-Age-1 Walleye Index

Smallmouth Bass

Lake Erie supports New York's, and perhaps the country's - finest smallmouth bass fishery. Generally stable spawning success, coupled with very high growth rates and good survival to old ages, produces high angler catch rates and frequent encounters with trophy-sized fish. However, the most recent bass monitoring program has found small mouth bass abundance measures trending downward to slightly below long-term average abundance levels, with approximately average recruitment expected to the adult population during the near future.

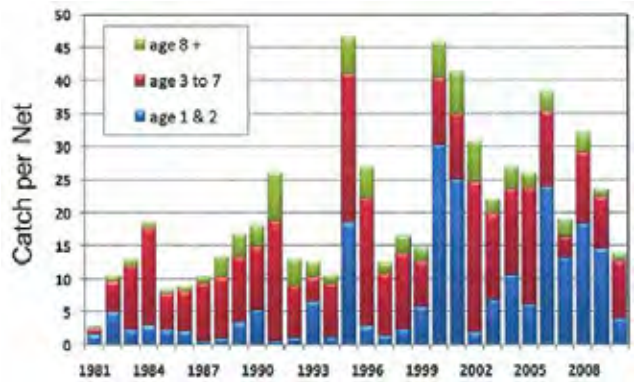

Fig 2-Smallmouth Bass Index

Yellow Perch

A large adult yellow perch population continues to produce good angler catch rates, especially during spring and fall seasons. Measures of juvenile perch abundance from 2005 to 2008 were especially high, below average during 2009, and near average in 2010. Overall, this pattern of recruitment suggests the recent large and more stable abundance of yellow perch will extend at least another few years.

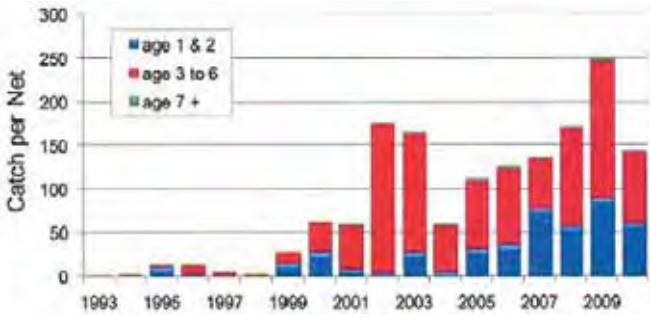

Fig 3-Gill Net Catches of Yellow Perch

Lake Trout

A revised lake trout rehabilitation plan was completed in 2008 and will guide future recovery efforts. Abundance of lake trout in the New York waters of Lake Erie has declined since the time-series high in 2008. Lakewide abundance estimates still remain well below targets. Adult abundance (age 5+) exhibited a sharp decline (75%) over the past year and is at its lowest level since 2002. Natural reproduction has not been detected in Lake Erie, and continued stocking and effective sea lamprey control are needed in order to build adult lake trout populations to levels where natural production is viable.

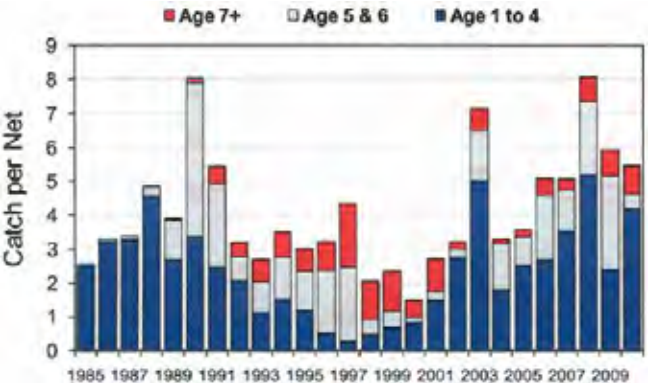

Fig 4-Gill Net Catches of Lake Trout

Salmonid Stocking

New York annually stocks around 270,000 steel head and 35,000 brown trout into Lake Erie and its tributaries to provide recreational opportunities for both lake and stream anglers. Tributary angling for steelhead, assessed through an angler diary program, continues to show excellent fishing with average catch rates exceeding 0.50 fish/hour.

Wild reproduction of steel head also occurs which contributes to the fishery as well. Fall juvenile assessment programs conducted since 2001 confirmed substantial numbers of young-of-year steel head present in many tributaries. Pre-construction monitoring is occurring on Chautauqua Creek in anticipation of a fish passage project that will hopefully improve natural reproduction in this stream. Fishing quality is expected to remain good in the near future.

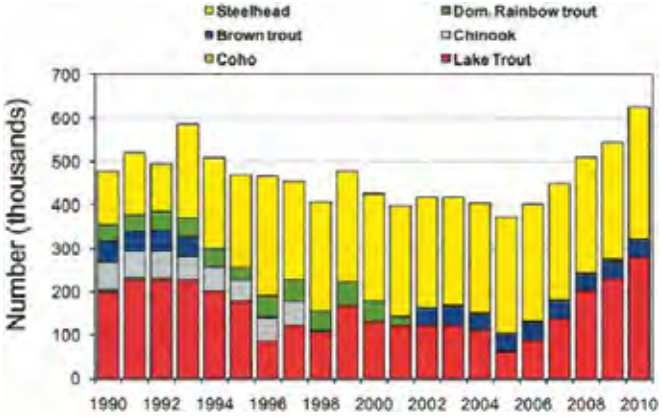

Fig 5-Trout & Salmon Stocking in NY

Sea Lamprey

Annual monitoring of Sea Lamprey consists of observations of sea lamprey wounds on lake trout and other coldwater fish species, and lamprey nest counts on standard stream sections. Both wounding rates and nest counts decreased in 2010 compared to 2009 but still remained above target levels. Consecutive lampricide treatments of all key Lake Erie tributaries occurred in 2008 and 2009, and the results of these treatments are expected to reduce sea lamprey wounding to below target levels beginning in 2011.

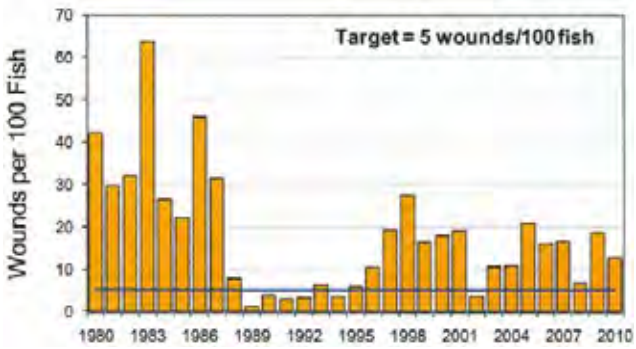

Fig 6-Sea Lamprey Wounding Rate on Lake Trout >21"

Prey Fish

A variety of prey fish investigations beginning approximately 19 years ago found rainbow smelt as the dominant component of the open lake forage fish community. In more recent years there has been a notable increase in prey species diversity accompanied by somewhat lower smelt abundance, and especially high abundances of round gobies and emerald shiners were encountered in both prey fish collections and predator diets. However, the most recent 2010 surveys found overall prey fish abundance trending somewhat downward, and particularly the contribution by gobies has declined in trawl surveys. Over time we expect these investigations to be useful in furthering our understanding of factors shaping the fish community.

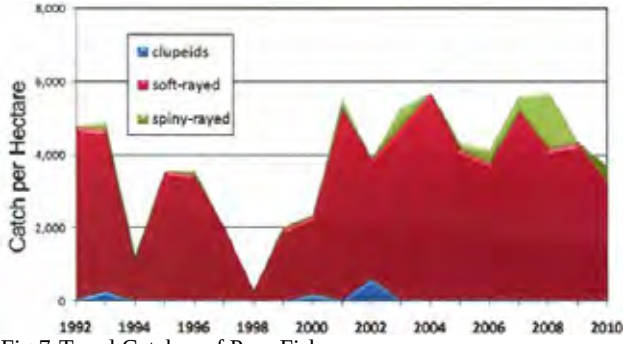

Fig 7-Trawl Catches of Prey Fish

Management of Sea Lampreys in Lake Erie, 2010

Spawning-phase sea lamprey abundance in Lake Erie was 22,179 during 2010, which is less than the previous year and greater than the target range of 3,000.

Tributary Information

Lake Erie has 842 tributaries (525 Canada, 317 U.S.). Twenty-two tributaries (11 Canada, 11 U.S.) have historical records of larval sea lamprey production. Of these, 11 tributaries (5 Canada, 6 U.S.) have been treated with lampricides at least once during 2001-2010. Eight tributaries (2 Canada, 6 U.S.) are treated on a regular cycle. In addition, larval production has been documented in the St. Clair River, three of its U.S. tributaries, and two tributaries to Lake St. Clair (1 Canada, 1 U.S.), none of which have required treatment during 2001-2010.

Fig 1-Tributary treated (one location)

Lampricide Control

South Otter Creek was treated in 2010 completing the second year of the whole lake large scale treatment strategy designed to suppress and maintain abundance at or below the lakewide target of 3,000 spawning-phase sea lampreys. No sea lamprey larvae were collected or observed during the treatment.

Operation and Maintenance

● Routine maintenance, spring start-up, and safety inspections were performed on six Canadian barriers, but did not include the Normandale Creek barrier which was reconstructed in 2010.

● Repairs or improvements were conducted on two barriers in Canada:

• Big Creek – A new air hoist was installed to lift the sea lamprey trap and a hole under the east section of wall was repaired. To prevent water seepage around the east abutment and to ensure blockage during periods of high flows, the existing wall was raised 0.6 m.

• Little Otter – At the landowner's request, the DFO installed a fence to deter trespassing at the site.

New Construction

● Construction projects were initiated, ongoing, or completed on one Canadian tributary.

• Normandale Creek – Reconstruction of this barrier completed in late August, 2010, which had been destroyed by a 2008 flood.

Assessment

Larval assessment surveys were conducted on a total of 22 tributaries historically infested by sea lamprey (11 Canada, 11 U.S.), as well as 3 infested lentic areas (0 Canada, 3 U.S.).

● Surveys to detect new larval populations were conducted in 34 tributaries (29 U.S, 5 Canada) and no new populations were discovered.

● Post-treatment assessments were conducted in 10 (5 Canada, 5 U.S.) tributaries to determine the effectiveness of lampricide treatments conducted in 2009 and 2010. Residual sea lamprey larvae were found only in Conneaut (two larvae) and Cattaraugus (one larva) creeks.

Neither of these streams ranked for treatment in 2011.

● Larval sea lamprey recruitment was detected only in two U.S. streams, Conneaut and Cattaraugus creeks.

• Statoliths were removed from larvae collected during the 2009 treatment of South Otter Creek to estimate their age and determine the most likely timing of recruitment and metamorphosis. Poor quality of the statoliths precluding aging the majority of these larvae and the results were inconclusive.

Spawning-phase

A total of 3,929 spawning-phase sea lampreys were trapped at five sites in four tributaries during 2010.

- The estimated population of spawning-phase sea lampreys during 2010 was 22,179, which was significantly greater than the fish-community objective target range of 3,000. Mark-recapture estimates were available for only two primary tributaries and one secondary tributary and the regression model was used to estimate the lake-wide spawning-phase population.
- All spawning-phase sea lampreys captured in Canadian traps were scanned for coded wire tags in 2010 and no tags were detected, providing no evidence that any sea lampreys tagged during a multi-year study in Lake Huron tributaries migrated to Lake Erie.

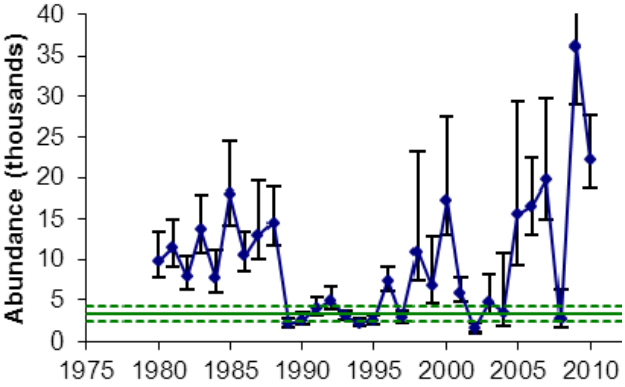

Fig 2-Estimates of spawning-phase sea lampreys during 980-2010. Target level is indicated by the solid horizontal line

Parasitic-phase

The target rate for sea lamprey marking on lake trout in Lake Erie is five fresh (A1-A3) wounds per 100 fish >533mm. Lake trout wounding data for Lake Erie are provided by the New York State DEC and the Ontario Ministry of Natural Resources, and analyzed by the USFWS Green Bay, WI Office. Past wounding data are currently being reviewed and reanalyzed which could result in changes to the information presented here.

Fig 3-A1-3 wounds per 100 lake trout. Horizontal line represents target of five wounds per 100 fish

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Other Breaking News Items:

(Click on title or URL to read full article)

Indiana DNR to air plan for building a sea lamprey trap on Trail Creek

The Indiana DNR and the U.S. Army Corps of Engineers are hosting a meeting scheduled at 7 p.m. April 14 at City Hall. For years, chemicals have been released in Trail Creek to control the numbers of sea lampreys, which prey upon popular Lake Michigan game fish such as perch, trout and …

Lake Metroparks connecting green dots to benefit steelhead anglers

Connecting green dots is a management goal that has been a formula for fishing success around the Lake Metroparks in Lake County, a world class destination for steelhead. Two of the very best steelhead trout fishing locations in the Lake Metroparks are Chagrin River Park on the Chagrin River

Corps turns on third electric fish barrier on Chicago canal

The U.S. Army Corps of Engineers has turned on a third electric fish barrier on the Chicago Sanitary and Ship Canal. The barrier is designed to prevent Asian carp and other fish from migrating between the Great Lakes and Mississippi River watersheds.

A walleye cold spell in Detroit River

Most of the walleyes in the Detroit River run come from Lake Erie, but some come downstream from Lake Huron and Lake St. Clair. Fisheries biologists believe spawning success is linked to an unusually cold spring, and if that is correct, 2011 could see another huge hatch of walleyes.

NY changes rules for carrying bait

The Department of Environmental Conservation says it's changing its regs banning the overland transport of uncertified baitfish by anglers, including baitfish that are personally collected. The changes are in response to complaints that regulations adopted in 2007 to limit the spread of fish disease were

West Michigan lawmakers propose total ban of wind turbines on Michigan's Great Lakes

Two West Michigan legislators have proposed a law to ban wind turbines in Michigan's Great Lakes. State Reps. Ray Frantz, R-Onekama, and Jon Bumstead, R-Newaygo, have introduced legislation that would also eliminate any wind testing in the state's Great Lakes.

End