New York State Department of Environmental Conservation
Division of Fish, Wildlife and Marine Resources
Bureau of Fisheries
www.dec.ny.gov/outdoor/27068.html

New York's 2014 Lake Ontario Fisheries Program Highlights

The following information summary is preliminary and selective. Comprehensive, final results will be reported in the "*2014 Annual Report of the Bureau of Fisheries Lake Ontario Unit and St. Lawrence River Unit to the Great Lakes Fishery Commission's Lake Ontario Committee*", which will be posted at www.dec.ny.gov/outdoor/27068.html **in spring 2015. Results reported below were generated through collaborative fisheries and ecosystem monitoring and research programs conducted by the NYS Department of Environmental Conservation (NYSDEC), US Geological Survey (USGS), Ontario Ministry of Natural Resources and Forestry (OMNRF), US Fish and Wildlife Service, and academic partners. For more information, contact:**

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2014 Lake Ontario Stocking

- Fish stocking in the New York waters of Lake Ontario in 2014 included approximately 1.97 million Chinook salmon, 130,000 coho salmon, 575,000 rainbow trout, 457,000 brown trout, 142,000 Atlantic salmon, 971,000 lake trout (443,00 yearling; 528,000 experimental fall fingerlings), and 8868,00 walleye.
- No coho salmon fall fingerlings were stocked in 2014 due to poor egg survival in fall 2013; however, approximately 200,000 surplus Chinook salmon were stocked at sites that normally receive coho fall fingerlings. In addition, 40,000 surplus yearling coho salmon were stocked (130,000 instead of 90,000) in 2014.
- Fall 2014 Chinook egg collections exceeded targets, and survival of eggs and fry has been good. Fall 2014 coho salmon egg collections exceeded targets; however, fry survival has been low and will impact fall fingerling stocking in 2015.
- A multi-agency, international effort to rehabilitate native ciscoes in Lake Ontario continued in 2014 with the stocking of approximately 20,000 fall fingerling bloaters by the US Geological Survey (USGS) and 50,000 yearling bloaters by the Ontario Ministry of Natural Resources and Forestry. Bloaters are one of four extirpated species of deepwater ciscoes that once dominated Lake Ontario's forage base. In addition, USGS also reared lake herring and stocked approximately 145,000 into Irondequoit Bay in 2014 in an effort to re-establish spawning populations in south shore embayments. Lake herring are a shallow-water form of cisco that exists only at remnant levels.

2015 Sportfishing Regulation Proposals

- The following Great Lakes fishing regulations will take effect on April 1, 2015:
    - Lake Ontario tributaries - Extend prohibition of weight added below the hook, currently in force on the Salmon River and Cayuga/Oswego County tributaries, to all Lake Ontario tributaries.
    - With the exception of the Salmon River, allow multiple single, double or treble hooks attached to floating lures on all Lake Ontario tributaries.
    - Expand the area of the lower Genesee River that is subject to Lake Ontario tributary regulations to include the section from the State Route 104 bridge upstream to the lower falls.
    - Increase minimum size limit for muskellunge in Great Lakes waters to 54".

Sportfishery Assessments

Open Lake Fishing Boat Survey

- The Lake Ontario Fishing Boat Survey was initiated on April 15 and ended September 30, 2014. The following results cover the April 15-September 30 period for each year 1985-2014.
- Lake Ontario's diverse trout and salmon fishery provides anglers with outstanding angling opportunities. Total trout and salmon fishing success (fish caught per charter boat angler hour) in 2014 was the 6th highest in the 30-year data series (highest occurred 2009-2014). During 2003-2014 anglers experienced some of the highest species-specific catch rates on record (Figure 1).
- Chinook catch rates indicated that across much of the NY shoreline, fishing quality was good to excellent from April through the second half of June, relatively poor from mid-June through mid-August, and then improved during the second half of August. Overall, Chinook salmon fishing quality remained above the long term average for the 12th consecutive year (2003-2014). The 2014 catch rate of Chinook salmon was 36% above the long-term average, and more than two times higher than the 1985-2002 average.
- Chinook salmon growth and condition were below average during summer 2014.
- Fishing quality for brown trout was near record high levels in recent years (2011 was the highest). Brown trout catch rate in 2014 remained well above average (+16%).
- Coho salmon fishing quality was excellent for 5 of the past 9 years, however, in 2014 was 28% below average.
- Anglers experienced the 7th consecutive year of record or near record high angling success for rainbow trout, with catch rates above average along the entire NY shoreline.
- Lake trout catch rates improved each year (2008-2013) from the 2007 record low, and declined slightly in 2014.
- Atlantic salmon catch rates remained relatively high, and were 11% above average in 2014.
- Total trout and salmon catch (200,763 fish) and harvest (106,880 fish) were dominated by Chinook salmon (38% and 44%, respectively) and brown trout (22% and 19%, respectively).

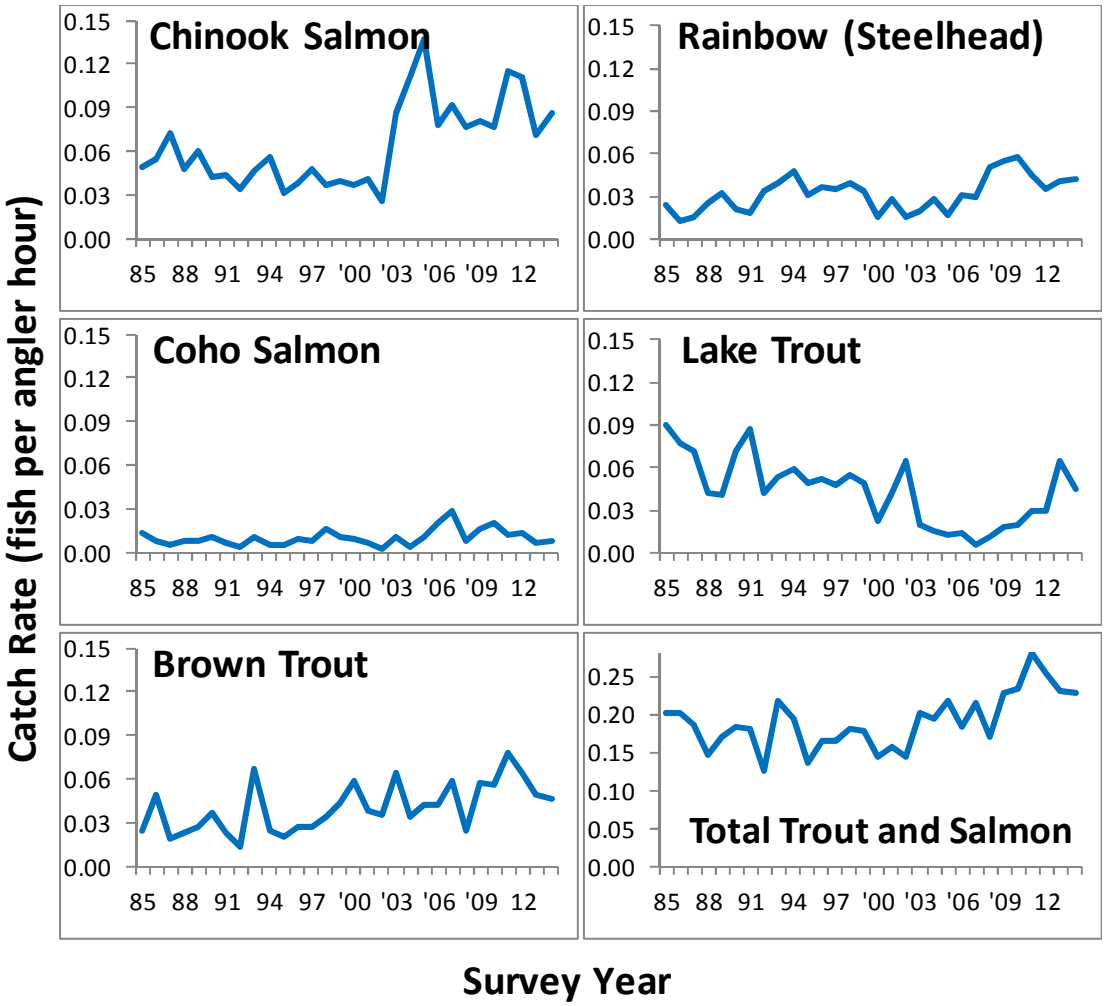
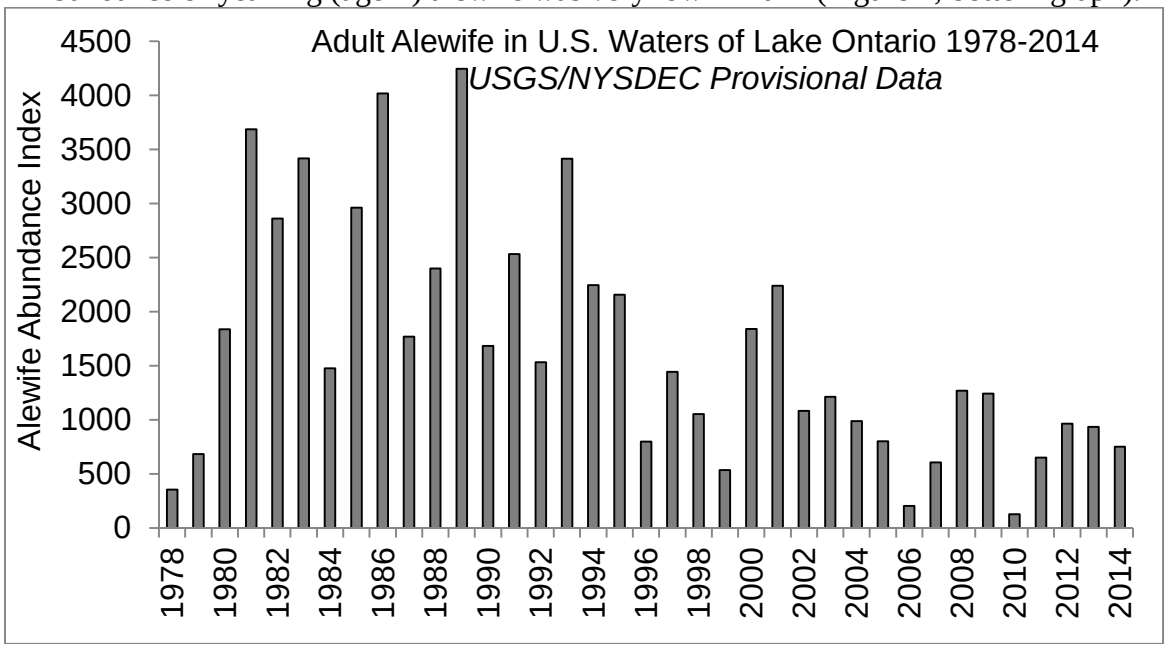


Figure 1. Trout and salmon fishing quality (fish caught per angler hour=catch rate) for charter boats fishing the open waters of Lake Ontario April 15- September 30, 1985-2014.

- Fishing effort directed at trout and salmon has remained relatively stable for more than a decade. An estimated 49,434 boat trips targeted trout and salmon from April 15-September 30, 2014 (84% of all fishing trips).
- The number of lamprey observed per 1,000 trout and salmon caught was estimated at 15 in 2014, a 23% decrease compared to the previous 5-year average and a 66% decrease compared to the 2007 record high.
- The estimated number of fishing boat trips targeting smallmouth bass during the traditional open season (3rd Saturday in June through September 30 when the creel survey ends) was 6,878 bass trips in 2014, the highest since 2009. Fishing quality for smallmouth bass peaked in 2002, declined to its lowest level in 2010, then increased each year 2011-2013. Fishing quality in 2014 was 0.57 bass per angler hour, which was similar to 2013.

Results of Alewife Bottom Trawl Surveys

- Abundance of adult (age-2 and older) alewife in spring 2014 bottom trawling surveys was slightly below 2013 levels (Figure 2; top graph).
- Abundance of yearling (age-1) alewife was very low in 2014 (Figure 2; bottom graph).



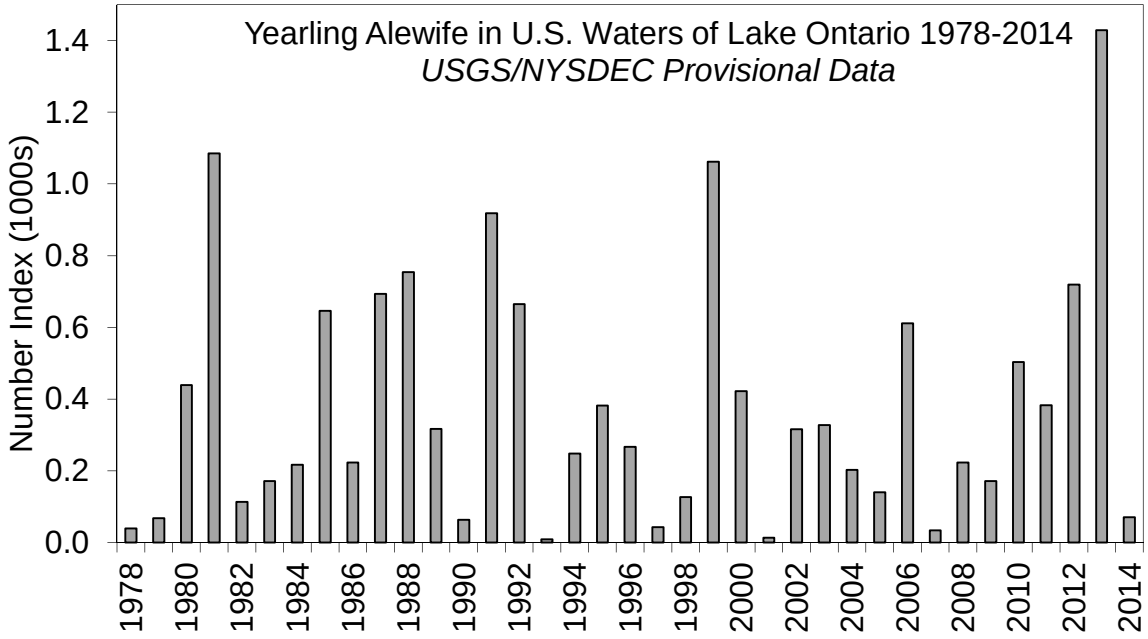


Figure 2. Bottom trawl abundance indices for adult (age-2 and older; top graph) and age-1 (yearling; bottom graph) alewife. Abundance is the number of alewife captured per 10 minute bottom trawl tow.

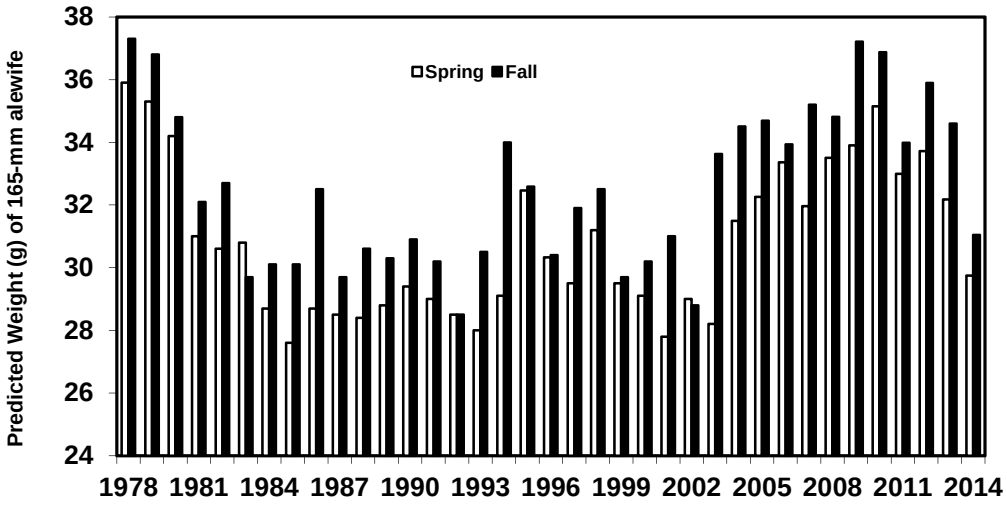


Figure 3. Relative body "condition" (weight of a 6.5 inch adult alewife) of adult alewife in spring (white bars) and fall (black bars) (USGS/NYSDEC provisional data).

- In recent years, the relative body condition or "plumpness" of alewife has been high during both spring and fall. Alewife body condition during both periods in 2014 declined considerably compared to the past ten years and was slightly below average (Figure 3).

Growth and Condition of Chinook Salmon at the Salmon River Hatchery

- The average weight of age-1 Chinook males (jacks) sampled in 2014 remained near average.
- Age-2 males were 0.3 pounds below average (13.1 pounds), and age-2 females were 1.9 pounds below average (12.9 pounds; Figure 4).
- Age-3 males were 2.0 pounds below average weight, and age-3 females were 3.1 pounds below average (17.2 and 16.0 pounds, respectively). (Figure 5).
- The condition or relative "plumpness" of Chinook salmon (based on the predicted weight of a 36 inch long Chinook salmon) in 2014 was 16.5 pounds, which is also the historical average (Figure 6).

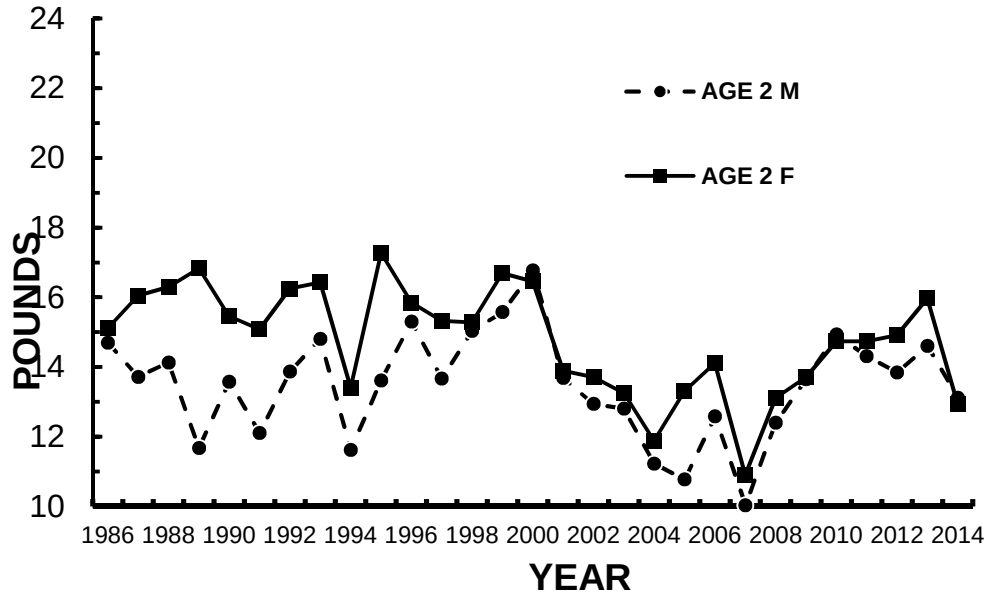


Figure 4. Fall weights of age-2 Chinook salmon measured at Salmon River Hatchery, 1986-2014 (M=male, F= Female).

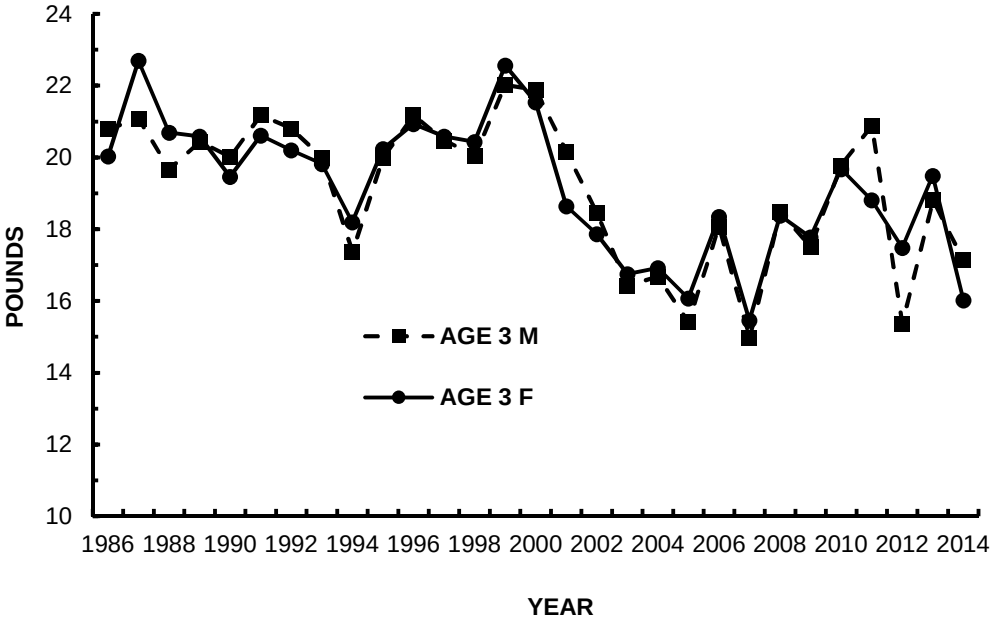


Figure 5. Fall weights of age-3 Chinook salmon measured at Salmon River Hatchery, 1986-2014 (M=male, F= Female).

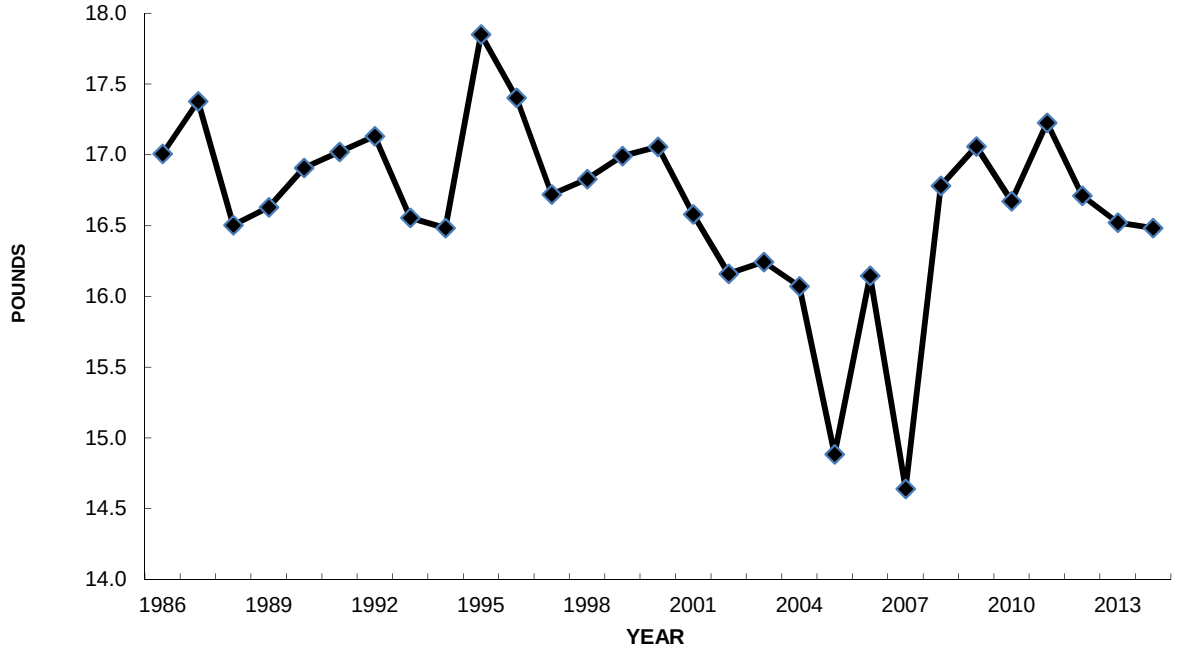


Figure 6. Estimated weights of a 36-inch Chinook salmon (body "condition") from the NYSDEC Salmon River Hatchery fall (October) collections 1986-2014.

Chinook Salmon and Steelhead Pen-rearing Projects

- Spring 2014 was the 17th year of volunteer-based pen-rearing projects for steelhead and Chinook salmon. Pen rearing projects were initiated with the intent of improving survival and/or homing of pen-reared fish when compared to traditional, shore-stocked fish.
- Approximately 505,900 Chinook salmon fingerlings were reared at eight pen sites comprising 26% of NYSDEC's 2014 Chinook stocking allotment.
- Approximately 60,400 steelhead (Washington strain) yearlings were reared at eight sites, representing 7% of NYSDEC's 2014 steelhead stocking allotment.

Chinook Salmon Marking Projects

- In 2008, NYSDEC purchased an automated fish marking trailer (AutoFish) which is capable of adipose clipping and/or applying coded wire tags (CWTs) to salmon and trout at high speed and accuracy. To determine the proportions of wild and hatchery Chinook salmon in Lake Ontario, all Chinook salmon stocked by New York and Ontario from 2008-2011 were marked with an adipose fin clip. Percentages of wild Chinook salmon in Lake Ontario varied by year class and age and among regions from 2009-2014. Overall, wild Chinook were an important component of the Lake Ontario fishery averaging 47% of the age 2 & 3 Chinooks harvested in the lake.
- To determine the degree of homing and straying to the NYSDEC Salmon River Hatchery (SRH), all Chinook Salmon stocked at the Salmon River received adipose fin clips and CWTs

from 2008-2010. Straying of Chinooks stocked other sites to the SRH from 2009-2014 varied with year class and age, but was generally low with straying rates averaging about 10%.

- To evaluate the relative contributions of pen-reared vs. traditional shore-stocked salmon, Chinook salmon were marked and tagged at 8 sites in New York in 2010, 2011 and 7 sites in 2013. Tags were recovered from salmon from 2011 to 2014. Preliminary results from the 2010 and 2011 stockings (year classes) suggest that pen stocked salmon provide relatively higher contributions to the lake harvest than shore-stocked salmon (about 2:1).

Salmon River Wild Young-of-Year (YOY) Chinook Salmon Seining Program

- Seining is conducted annually to index wild YOY Chinook salmon production in the Salmon River, the largest source of wild Chinook in New York. High flow events the first week of May and the last week of June in 2014 prevented surveys during those weeks but did not influence the three peak weeks we use to index relative annual production. The mean peak catch in 2014 of 327 YOY per haul was slightly above the survey average of 280 YOY per haul.

Progress Toward Lake Trout Restoration

- Following low population levels during 2005-2007, adult lake trout abundance increased for the 7th consecutive year, nearing the levels observed during the late 1990s.
- The number of fresh sea lamprey wounds on lake trout (1.7) was below the target of 2 wounds per 100 lake trout >17 inches long examined.
- Wild lake trout were collected each year from 1994-2014, representing 20 year classes of wild production. Catches of wild lake trout in 2014 were the highest recorded since restoration efforts began over 30 years ago.
- A Management Strategy for the Restoration of Lake Trout in Lake Ontario, 2014 Update (NYSDEC and Ontario Ministry of Natural Resources and Forestry document) is available on-line at:
  http://www.glfc.org/lakecom/loc/Lake%20Ontario_Lake_Trout_Strategy_Nov_2014.pdf

Eastern Basin Warmwater Fish Assessment

- Since 1976, the Department has conducted an annual index gill net survey to evaluate the status of warmwater fish populations in Lake Ontario's Eastern Basin.
- Water temperatures were, on average, colder than those measured in recent years, particularly in the deepest waters sampled (51-100 ft.).
- Each year from 1995-2013, smallmouth bass and yellow perch dominated catches in the survey. In 2014, however, catch was dominated by white perch (highest catch rate since 1989).
- The 2014 smallmouth bass catch rate declined to the lowest level since 2004 (37% below the 2009-2013 average).
- Yellow perch catches can be highly variable compared to other species, likely due to their schooling nature and the influence of temperature, which may have contributed to the substantial decreased catch in 2014 (record low and 87% below the 2009-2013 average).
- The 2014 walleye catch rate increased (16%) from 2013, and was similar to rates observed over the last 10 years. Strong year classes produced from the 2003, 2005 and 2008 spawning periods remain well represented in assessment netting. Ontario Ministry of Natural Resources and Forestry data indicate relatively strong natural reproduction in 2011 and 2014; therefore, the walleye population is expected to remain stable for several more years.

- Lake sturgeon catches were extremely rare in this assessment prior to 1997; however, at least one lake sturgeon was collected in 12 of the last 17 years, suggesting improved population status. There were no lake sturgeon captured during 2014 netting.
- Round gobies remain an important component of smallmouth bass diets in the eastern basin. Round gobies have also been observed in stomachs of walleye, brown trout, lake trout, lake whitefish, yellow perch, white perch, and rock bass.

Sea Lamprey Control

- The estimated lake-wide population of adult sea lampreys during 2014 was 19,482, 33% lower than the 2013 abundance and below target abundance.
- Sea lamprey control agents from Fisheries and Oceans Canada, contractors for the Great Lakes Fishery Commission, conducted sea lamprey control treatments in the following NY tributaries in 2014: Lindsey Creek, Salmon River (Trout, Orwell and Beaverdam brooks), Little Salmon River, Ninemile Creek, Sandy Creek (Monroe County) and Oak Orchard Creek.
- NY streams scheduled for sea lamprey control in 2015 include: Black River, Snake Creek, Catfish Creek, Eightmile Creek, Sterling Creek, Red Creek and Sodus Creek.
- A total of 49 tributaries (27 Canada, 22 U.S.) were assessed for the presence of larval lamprey. Abundance of larval sea lampreys was estimated in 9 tributaries (5 Canada, 4 U.S.). An additional 7 tributaries were surveyed to detect the presence of new larval populations, none were detected.

Lake Ontario Natural Resources Damages Settlement Projects

www.dec.ny.gov/outdoor/40068.html

Projects Completed in 2013

- **Salmon River Hatchery**. A final draft report including recommendations for building a water treatment/re-circulation system for fish production at the Salmon River Hatchery will be submitted in March 2015. The conceptual design project phase will begin in April. (Cost $80,185)
- **Slater Creek Fishing Access.** All site improvement tasks were completed in October 2014, at which time The Town of Greece took over the operation and maintenance of the site through a cooperative maintenance agreement. This site now features a newly paved 40 car parking area and accessible fishing platform enhancements. (Cost $33,620)
- **Deepwater Cisco (Bloater) Reintroduction in Lake Ontario.** The NYSDEC, in partnership with the Great Lakes Fishery Commission (GLFC), the Ontario Ministry of Natural Resources and Forestry, the U.S. Geological Survey and the U.S Fish and Wildlife Service, is continuing efforts to re-establish self-sustaining bloater populations in Lake Ontario. In support of ongoing bloater egg collections in Lake Michigan, a contract was executed in July 2014 that contributes $50,000 in NRD funds to the project.
- **Salmon River Hatchery Aquaria and Interpretive Displays.** This project will be completed in March 2015, and included the installation of new display aquariums and fish ladder observation monitors at the Salmon River Hatchery. (Cost $100,000).
- **Locating lake trout spawning areas in the Lower Niagara River** is the goal of this research partnership between NYSDEC and the U.S. Fish and Wildlife Service. Telemetry equipment, used to identify the location of lake trout wearing a transmitter tag during the spawning season, has been purchased to be used in this study. (Cost $48,221)

Ongoing Projects

- **Improve the NYSDEC Salmon River Fish Hatchery**. Pipeline inspection and valve replacement: Department engineers will complete the video inspection of a portion of the pipeline that was not able to be viewed in the last inspection. The upper pipeline valve will also be replaced.
- **Four fishing access related projects in New York State Parks of the Niagara Region.** These access improvement projects include Artpark's river trails as well as trails associated with the Whirlpool area and the Schoelkopf ruins site. A Memorandum of Understanding with the New York State Office of Parks, Recreation and Historic Preservation has been executed, and all projects are in the final design phase or nearly ready to be tendered for bid. Work is set to begin in the 2015 construction season. The combined NRD funding for these projects is $425,000.
- **Sandy/North Pond boat launch acquisition.** The DEC acquired a parcel suitable for the construction of a waterway access site located on Sandy/North Pond in the Town of Sandy Creek, Oswego County. This acquisition used $210,000 in NRD funds. The remaining dollars allocated to this project ($290,000) will fund facility construction in 2015.
- **Lake Ontario Watershed Display at the Aquarium of Niagara.** A State Assistance Contract has been executed and this project is currently under construction. (Cost $300,000)
- **Irondequoit Creek Stream Bank Stabilization Project.** In partnership with the US Fish and Wildlife Service and the NYSDEC, the County of Monroe Parks Department will improve over 2,000 lineal feet of stream bank and stream habitat. A State assistance contract has been executed, and work is tentatively scheduled for summer/fall 2015. (Cost $250,500)
- **Cape Vincent aquaria and interpretive display improvements.** Placards describing life histories for each fish species on display at the aquarium have been installed. Two video display terminals have been purchased and will be installed in 2015, enabling visitors to view educational videos and selected internet content. A phased approach for the development of additional display elements is currently underway. (Cost $40,000)

Potential Projects for planning/implementation in 2015-16

- Cranberry Creek Marsh (Jefferson County) water control structure. Design/construct new water level control structure and fish passage system to improve spawning habitat quality and access.
- Upgrade hatchery pond complex at Lisbon, NY.
- Walleye spawning habitat enhancement in the Black River at Dexter.