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 2013 Lake Ontario Fisheries Program Highlights

The following information summary is preliminary and selective. Comprehensive, final results will be reported in the *"2013 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 2014. 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 (OMNR), US Fish and Wildlife Service, and academic partners. For more information, contact:**

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- Fish stocking in the New York waters of Lake Ontario in 2013 included approximately 1.76 million Chinook salmon, 220,600 coho salmon, 627,000 rainbow trout, 331,000 brown trout, 128,000 Atlantic salmon, 522,800 lake trout, and 133,200 walleye.
- Disease-related losses of brown trout at the NYSDEC Rome Hatchery in 2012 impacted 2013 yearling stocking statewide leading to a 14% reduction in the number of brown trout yearlings stocked into Lake Ontario (reduced from 385,000 to 331,000). The disease also spread to brook trout at the hatchery, affecting inland stocking targets.
- In spring 2014, 40,000 surplus yearling coho will be stocked (130,000 instead of 90,000).
- Fall 2013 Chinook egg collections exceeded targets, and survival of eggs and fry has been good.
- Fall 2013 coho salmon egg collections also exceeded targets; however, egg and fry survival was low. All coho salmon produced from the 2013 egg-take will be stocked at the Salmon River as yearlings in spring 2015 to maintain coho salmon runs to the hatchery for egg collections. Approximately 155,000 surplus Chinook salmon will be stocked in spring 2014 to compensate for coho losses.
- Stocking of lake trout in 2013 was above target levels.
- A multi-agency, international effort to rehabilitate native ciscoes in Lake Ontario continued in 2013 with the stocking of approximately 7,300 fall fingerling bloaters by the USGS and 16,500 yearling bloaters by the OMNR. In addition, USGS also reared lake herring and stocked approximately 9,000 fall fingerlings into Irondequoit Bay in December 2013 in an effort to re-establish spawning populations in south shore embayments. Bloaters are one of four extirpated species of deepwater ciscoes that once dominated Lake Ontario's forage base, and lake herring are a shallow-water form of cisco that exists only at remnant levels.

2015 Sportfishing Regulation Proposals

- The following Great Lakes fishing regulation proposals are being considered, and include:
    - 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.
    - Add the Genesee River from the State Route 104 bridge upstream to the lower falls as subject to seasonal regulations for Lake Ontario tributaries.
    - Increase minimum size limit for muskellunge in Great Lakes waters to 54".

- A 45 day public comment period on these and other regulation proposals will begin in early August, and approved regulations will become effective on April 1, 2015. Comments can be submitted to the address below, or via e-mail to: *fwfishlo@gw.dec.state.ny.us*

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Sportfishery Assessments

Open Lake Fishing Boat Survey

- The Lake Ontario Fishing Boat Survey was initiated on April 15 and ended September 30, 2013. The following results cover the April15-September 30 period for each year 1985-2013.
- Total trout and salmon fishing success (fish caught per charter boat angler hour) in 2013 was the 4th highest in the 29-year data series (highest occurred in 2011 and 2012). During 2003-2013 anglers experienced some of the highest species-specific catch rates on record (Figure 1).
- Anglers have experienced 11 consecutive years of excellent Chinook salmon fishing quality. The 2013 catch rate of Chinook salmon was 13.2% above the long-term average and was nearly 1.6 times higher than the 1985-2002 average. Chinook salmon growth remained above average during summer 2013.
- Fishing quality for brown trout was near record high levels in recent years (2011 was the highest). Brown trout catch rate in 2013 remained well above the long-term average (+21.8%).
- The coho salmon catch rate was excellent for 5 of the past 8 years, however, in 2013 was 32% below the long-term average.
- Anglers experienced the 6th consecutive year of record or near record high catch rates for rainbow trout in 2013.
- Lake trout catch rates improved each year from the 2007 record low. The 2013 catch rate was the highest since 2002 and the 9th highest in the 29-year data series.
- Atlantic salmon continued to appear in angler catches; however, the 2012 and 2013 seasonal catch rates were lower than the record high rates experienced in 2010 and 2011.
- Total trout and salmon catch (168,837 fish) and harvest (100,047 fish) were dominated by

Chinook salmon (37.1% and 38.3%, respectively) which have dominated angler catch each year since 2003. Typically, brown trout are the 2nd most commonly caught salmonid (previous 10-year average = 20.1%), however, in 2013 brown trout was the 4th most commonly caught species (16.5% of catch). In 2013, lake trout was the 2nd most commonly caught species (21.0% of total salmonid catch), representing the largest contribution since 2002 (previous 10-year average = 7.5%).

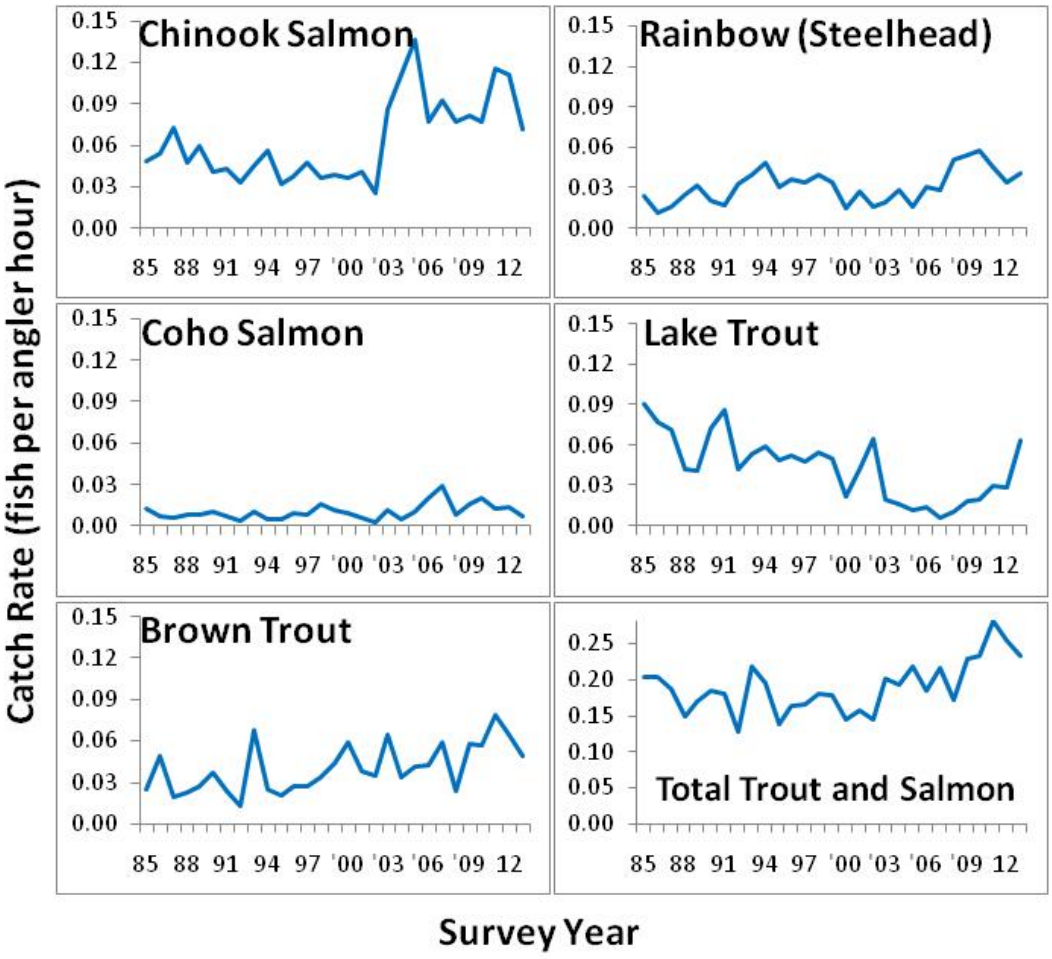

Figure 1. Trout and salmon catch rates (fish caught per angler hour) for charter boats fishing the open waters of Lake Ontario April 15- September 30, 1985-2013.

- Fishing effort directed at trout and salmon has remained relatively stable for more than a decade. An estimated 47,520 boat trips targeted trout and salmon from April 15-September 30, 2013 (87.0% of all fishing trips).
- The number of lampreys observed per 1,000 trout and salmon caught was estimated at 17.3 in 2013, a 14.7% decrease compared to the previous 5-year average.
- 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 the

lowest in the data series (4,273 bass trips in 2013). Fishing quality for smallmouth bass peaked in 2002, declined to its lowest level in 2010, but has since increased for 3 consecutive years (69.5% increase compared to the 2010 record low).

Results of SpringAlewife Bottom Trawl Survey

- Abundance of adult (age-2 and older) alewife in spring 2013 bottom trawling surveys was very similar to 2012 levels (Figure 2). Yearling (age-1) alewife abundance was above average (post-1994, zebra/quagga mussel invasion) for the fourth consecutive year, reaching a record-high level in 2013.

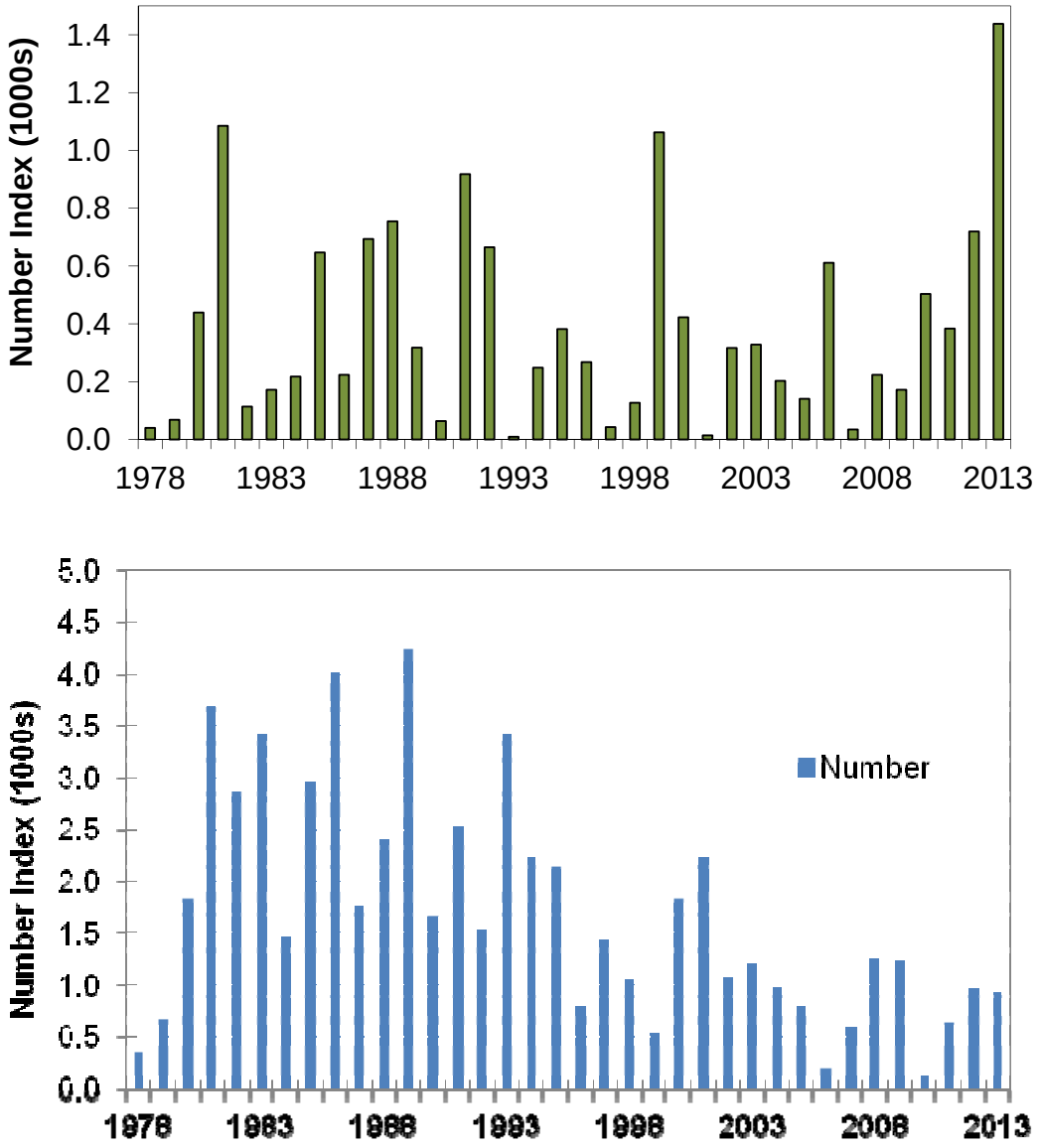

Figure 2. Bottom trawl abundance indices for yearling (age-1; top graph) and adult (age-2 and older; bottom graph) alewife. Abundance is the number of alewife captured per 10 minute bottom trawl tow.

Growth and Condition of Chinook Salmon

- At Salmon River Hatchery, the mean weight of age-1 Chinook males (jacks) sampled in 2013 was very near the long term average.
- Age-2 males and females were 1.1 pounds above average (14.6 lbs and 16.0 lbs, respectively) (Figure 3).
- Age-3 males were 0.4 lbs below average (18.8 lbs), but were 3.4 lbs heavier than in 2012. Females were very near the long term average (19.5 lbs) (Figure 3).
- The condition or relative "plumpness" of Chinook salmon (based on the predicted weight of a 36 inch long Chinook salmon) in 2013 was 16.5 pounds, which is also the historical average (Figure 4).

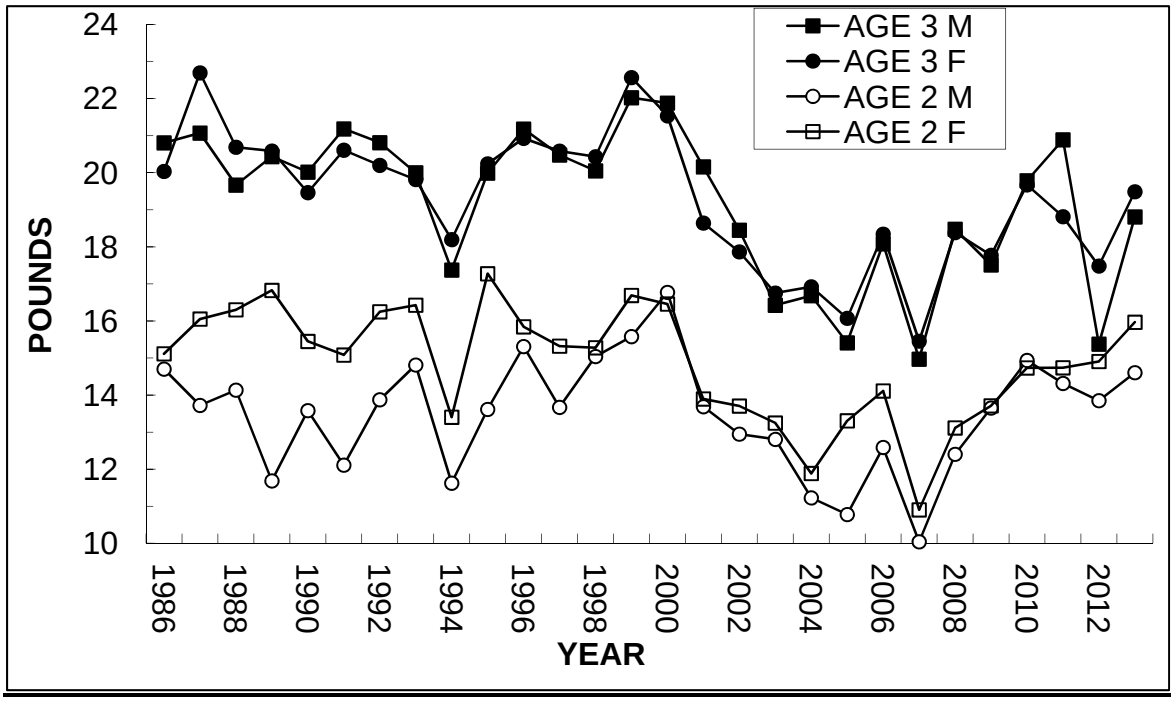

Figure 3. Fall weights of age-2 and age-3 Chinook salmon measured at Salmon River Hatchery, 1986-2013.

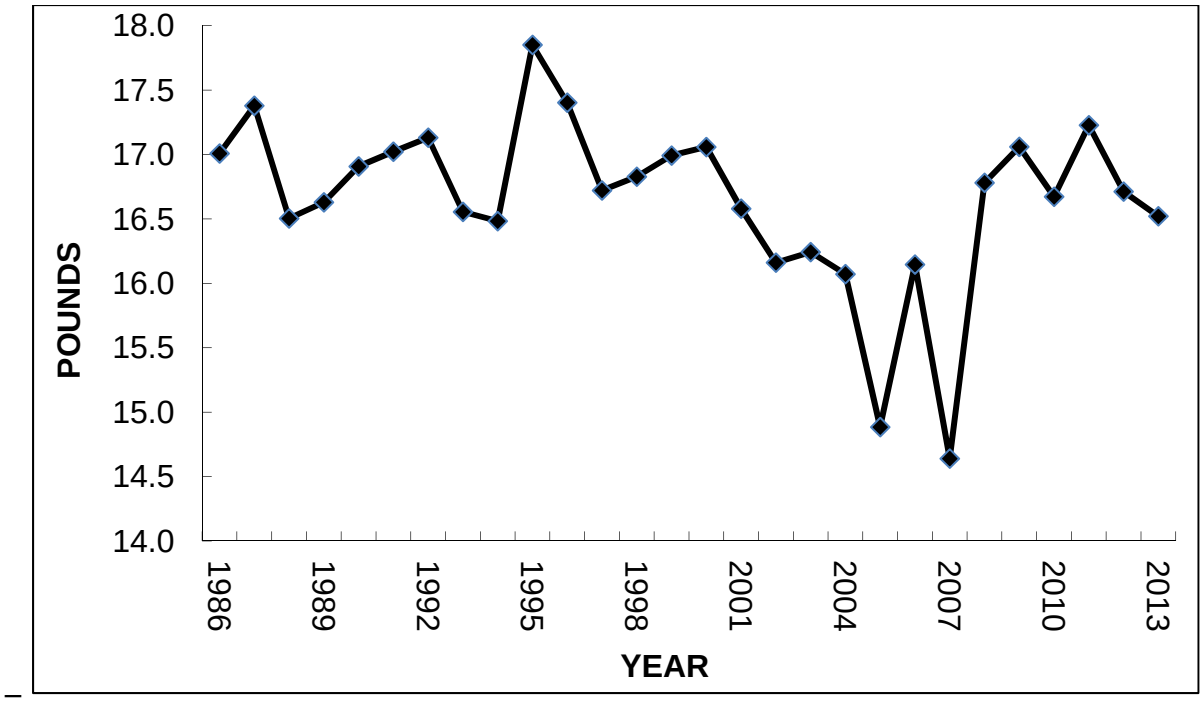

Figure 4. Estimated weights of a 36-inch Chinook salmon (body "condition") from the NYSDEC Salmon River Hatchery fall (October) collections 1986-2013.

Chinook Salmon and Steelhead Pen-rearing Projects

- Spring 2013 was the 16th 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 450,800 Chinook salmon fingerlings were reared at seven pen sites comprising 26% of NYSDEC's 2013 Chinook stocking allotment. One site that normally raises Chinook did not because of warming stream conditions.
- Approximately 40,690 steelhead (Washington strain) yearlings were reared at six sites, representing 7.5% of NYSDEC's 2013 steelhead stocking allotment. Three sites that normally raise steelhead did not due to warming and/or low flow stream conditions.
- Chinook salmon were marked and tagged for a 3rd and final year in 2013 to evaluate the relative contributions of pen-reared and traditional shore-stocked Chinook salmon to sportfisheries, and recoveries of marked Chinook in the open lake and at pen sites will continue through 2016.

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. In 2013, 61% of the Chinook salmon harvested in New York waters of Lake Ontario were wild-origin excluding age-1 salmon which were not part of the study (i.e., 33% of age-2 and 70% of age-3). The proportion of wild Chinook salmon observed in most New York tributaries varied by fish age but was generally low (i.e., 7-20%), except in the

Salmon River, where approximately 76% of angler-caught Chinook salmon (excluding age-1) were wild.

- 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 fish from other sites to the SRH from 2009-2013 has varied with year class and age, but has been generally low with straying rates of 6-13%.
- 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 2013. Tags were recovered from salmon from 2011 to 2013. Preliminary results from the 2010 year class suggest that pen stocked salmon provide relatively higher contributions to the lake than shore-stocked salmon.

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. In 2013, mean peak catch of YOY Chinook salmon was 249 fish per haul, slightly below the 2001-2012 survey average. Water flow in the Salmon River remains an important variable for explaining wild YOY Chinook production.

Progress Toward Lake Trout Restoration

- Following low population levels during 2005-2007, adult lake trout abundance increased for the 6th consecutive year, returning to levels observed in the early 2000s.
- The number of fresh sea lamprey wounds on lake trout (2.26) was near the target of 2 wounds per 100 lake trout >17 inches long examined.
- Wild lake trout were collected each year from 1994-2013, representing 19 year classes of wild production.

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.
- Each year since 1995, smallmouth bass and yellow perch dominated catches in the survey. In 2013, yellow perch and smallmouth bass represented 31.2% and 23.2% of the catch, respectively.
- Double-crested cormorant management in waters of the Eastern Basin continues to have a positive impact on smallmouth bass and yellow perch populations, which were greatly reduced by cormorant predation during the late 1990s and early 2000s. The 2013 smallmouth bass catch rate was comparable to those of recent years (-6.9% compared to previous 5-year average). Although still well below pre-cormorant levels, this was substantially higher than the period of heaviest cormorant predation pressure. The 2013 yellow perch catch rate was a 27.2% decrease compared to the previous 5-year average (i.e. the years of the highest catches since the mid-1980s).
- Walleye abundance has remained relatively stable for more than a decade. The 2013 index of Abundance in 2013 declined 36.2% compared to the previous 10-year average. Three relatively strong year classes (2003, 2005 and 2008) continue to be well represented in assessment netting. Ontario Ministry of Natural Resources data indicate relatively strong

natural reproduction in 2011; therefore, the walleye population is expected to remain stable for several more years.

- Reports of chain pickerel in Lake Ontario embayments began in the late 2000s, indicating range expansion for this species. In 2008, the species was documented for the first time during the NYSDEC Lake Ontario Fishing Boat Survey. The same year, the Ontario Ministry of Natural Resources documented the first ever collection of chain pickerel in the Province of Ontario. It later appeared in the upper St. Lawrence River. This year, three chain pickerel were captured for the first time during the Eastern Basin Warmwater Fish Assessment.
- 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 16 years, suggesting improved population status.
- 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.

Diets of Double-crested Cormorants in Eastern Lake Ontario and the St. Lawrence River

Little Galloo Island

- Round gobies continued to be the major prey fish consumed by cormorants at Little Galloo Island and made up 91% of the diet in 2013.
- Cormorants at Little Galloo consumed 22.9 million fish in 2013, 20.8 million of which were round goby.
- Cormorant population management measures (egg oiling and culling of adult birds) at Little Galloo began in 1999. Management successfully reduced population size, as measured by cormorant feeding days, to below and near target levels for eight consecutive years (2006-2013).

St. Lawrence River

- Cormorants at three St. Lawrence River colonies (Griswold, McNair, and Strachan Islands) consumed 16.2 million fish in 2013.
- Round gobies were the major fish consumed by cormorants at St. Lawrence River colonies (68% of the diet), followed by yellow perch (16%), and rock bass (7%).

Lake Ontario Natural Resources Damages Settlement Projects

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

Projects Completed in 2013

- Infiltration well development at the Salmon River Hatchery – A new infiltration well was completed and is supplying the hatchery with an additional 150 gallons of water per minute.
- The Lake Ontario boat launch/fishing access site at the Isthmus (Jefferson County) was opened to the public in May 2013. This site features a double-lane boat launch with floating docks, parking for 25 cars with trailers, and an additional 10 parking spaces for shore anglers.
- Improvements to the Village of Morristown boat launch (St. Lawrence Co.) including a new ramp were completed in May 2013.
- The re-designed NYSDEC Great Lakes Fishing brochure was completed and is currently being distributed.

Ongoing Projects

- Improvements to the NYSDEC Salmon River Fish Hatchery water supply:
    - Salmon River reservoir main pipeline: a video inspection of the pipeline interior, conducted May 2013, revealed a biofilm covering the inside of the pipe. Planning to clean the pipeline to improve flow capacity has begun.
    - The well field survey and maintenance report suggested there are two wells that are underutilized. The production enhancements currently under consideration could yield 200 - 250 gpm of additional ground water supply.
    - The feasibility of installing a recirculation system at the hatchery is also being explored.
- A contract with Monroe County Parks to improve stream habitat and stabilize shoreline in a portion of Irondequoit Creek has been developed and is awaiting final approvals.
- A contract to install new aquaria and interpretive displays at the Salmon River Hatchery visitor's center was awarded and the installation is expected to be complete by October 2014.
- The Great Lakes Fishery Commission (GLFC) constructed a sea lamprey barrier on Orwell Brook (Oswego County) that began operation in 2013. A contract has been developed, and is awaiting final approvals to cost share with the GLFC on the barrier and to support ongoing efforts to re-establish deepwater ciscoes in Lake Ontario.
- A Memorandum of Understanding with the NYS Office of Parks, Recreation and Historic Preservation is in the final stages of development that will fund four (4) fishing access improvement projects on the Lower Niagara River.

Planning efforts for 2014-15

- New interpretive displays at the Cape Vincent Fisheries Station visitor's center (Jefferson County).
- Construction of a new water control structure on Cranberry Creek (Jefferson County).
- Enhance walleye spawning habitat in the Black River (Jefferson County).
- Fishing access acquisition on Sandy Pond (Oswego County).
- Installation of a Lake Ontario Watershed display at the Aquarium of Niagara (Niagara County).