

Bureau of Fisheries 2013-2014 Annual Report

State of New York



DEPARTMENT OF



ENVIRONMENTAL CONSERVATION

www.dec.ny.gov

Inland Fisheries Management



Great Lakes Fisheries Management



Public Use and Outreach



Fish Culture



New York State Department of Environmental Conservation

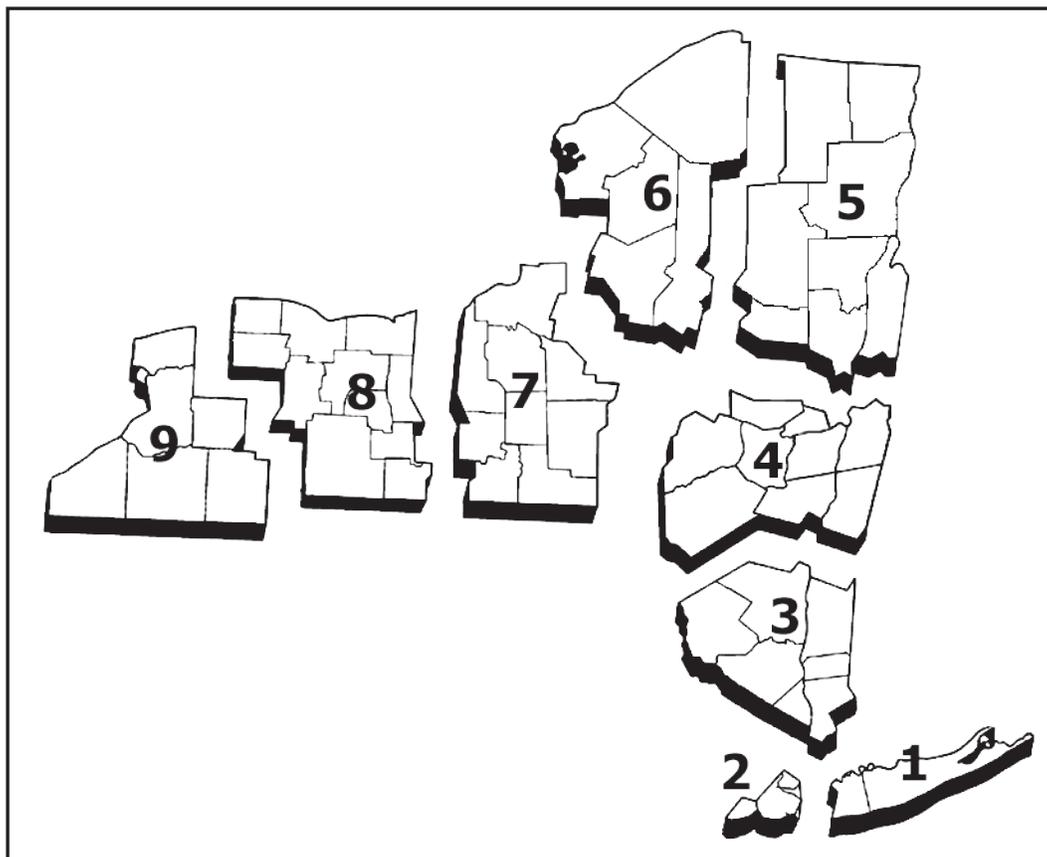
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2013-14 Annual Report

New York State Department of Environmental Conservation
Bureau of Fisheries
Philip J. Hulbert, Chief

Introduction

The New York State Department of Environmental Conservation, Division of Fish, Wildlife and Marine Resources, Bureau of Fisheries delivers a diverse program and annually conducts a wide array of activities to accomplish its mission:

Conserve and enhance New York State’s abundant and diverse populations of freshwater fishes while providing the public with quality recreational angling opportunities.

This report provides a summary of significant activities completed during fiscal year 2013-2014 by Bureau of Fisheries staff located in 9 regional offices, 2 research stations, 12 fish hatcheries, 1 fish disease laboratory, as well as the DEC Central Office in Albany. Activities are categorized according to the major objectives of the Division of Fish, Wildlife and Marine Resources.

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2013-14 Annual Report

Common Acronyms, Definitions and Units of Measure

Common Acronyms

CPUE or CUE: catch per unit of effort - such as the number of fish caught per hour or fish caught per net.

OMNR: Ontario Ministry of Natural Resources

PFR: Public Fishing Rights.

USGS: United States Geological Survey.

USFWS: United States Fish and Wildlife Service.

YOY: young of year - typically a fish that is captured by sampling in the same year it was hatched.

Definitions

Bottom trawl: a sampling technique where a net is dragged along the bottom of a water body behind a boat.

Creel Survey: a survey where anglers are interviewed about their catch.

Conductivity: the ability of water to conduct an electric current. Waters of low conductivity are low in dissolved minerals.

CROTS: Catch-Rate-Oriented-Trout-Stocking - the model used by the Bureau of Fisheries to develop stocking rates for trout streams that takes into account biological measures of the stream, stream carrying capacity, angling pressure and wild trout abundance.

Electrofishing: use of electricity to temporarily stun fish, allowing them to be captured.

Extirpated species: a species that no longer exists in the wild in a certain country or area.

Fyke Net: a trap style net that is composed of a number of hoops surrounded by netting and usually has netted wings and a leader that direct fish into the net.

Gill Net: a vertical wall of netting that is typically set in a straight line and entangles fish as they try to swim through it.

Hazing - to discourage an animal from frequenting a waterbody.

HUC: Hydrologic Unit Code. A categorization of watershed boundaries from the basin to the sub (small) watershed level (HUC12).

Hydroacoustic survey: use of sound and reflected echoes from schools of fish or plants to estimate abundance or distribution.

Lentic: associated with still water such as a lake or pond

Littoral: the nearshore shallow water area of a waterbody

Lift - difference in license renewals between the control and treatment group.

Mesotrophic - an intermediate stage of lake productivity lying between oligotrophic (nutrient poor) and eutrophic (nutrient rich).

Oligotrophic - a water body that is low in nutrients.

Pen reared: raising hatchery salmon or trout in a pen to “imprint” those fish to the pen rearing site. In theory, this will cause the fish to return to the pen rearing site to spawn.

PIT Tag- an implanted tag that is used when an individual fish needs to be identified. The tag contains a series of numbers and letters that can be obtained by passing a “PIT Tag reader” over the implanted tag.

PSD: proportional stock density - describes the portion of a fish population or sample that exceeds a size threshold. For example, the PSD for largemouth bass is the proportion of 12 inch and larger bass in the sample of largemouth bass that were stock size (8 inches and larger).

Reclamation: the removal of non-native fish and restoration with native fish. Traditionally done to restore pond brook trout populations.

RSD 15: relative stock density greater than 15 inches - describes the proportion of fish larger than 15 inches in a population or sample of all fish exceeding a size threshold. For example, the RSD 15 for largemouth bass is the proportion of 15 inch and larger bass in a the sample of all largemouth bass that were stock size (8 inches and larger).

Seining: using a seine net - a net with weight on the bottom and floats on the top that is dragged through the water to capture fish.

Trap Net: similar to a fyke net but usually larger and rectangular in shape.

VHS/VHSv: Viral hemorrhagic septicemia - a serious disease of fish (not humans) recently introduced into New York State.

Year Class: a group of fish spawned during the same year.

Units of Measure

°C: degrees Celsius - to convert from c to fahrenheit (f) = (f - 32) x 5/9.

ha: hectare - a metric system unit of area; 1 hectare = 2.47 acres.

hr: hour.

in: inch.

kg: kilogram - a metric system unit of weight; 1 kg = 2.2 pounds.

km: kilometer - a metric system unit of length; 1 km = 0.62 miles or 3,281 feet.

m: meter - a metric system unit of length; 1 meter = 3.28 feet.

mm: millimeter - a metric system unit of length; 100 mm = 3.94 inches.

ppm/ppb: part per million/parts per billion - describes the density of a substance in another solid, liquid or gas (typically water, air).

µg/l: micrograms per liter; equivalent to ppb,



SPECIES CONSERVATION & MANAGEMENT

Monitoring Fish Movement in the Carmans River

The two year study to assess the movement of brown and rainbow trout, brook trout, alewife, and American eel in the Carmans River continued in 2013. Significant findings from year two of this study include:

The majority of stocked trout (60.1% of yearling brown trout and 63.4% of yearling rainbow trout) remained at their stocked location with the remaining fish moving downstream (Fig.1).

The native brook trout in the river did not venture far from their capture location and did not move downstream to the tidal section of the River. Brook trout movement was primarily limited to moving into the known spawning section of the river in September, October, and November for both 2012 and 2013.

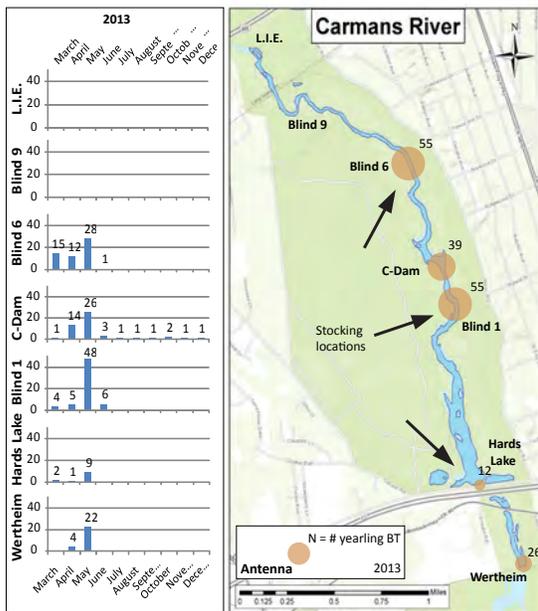
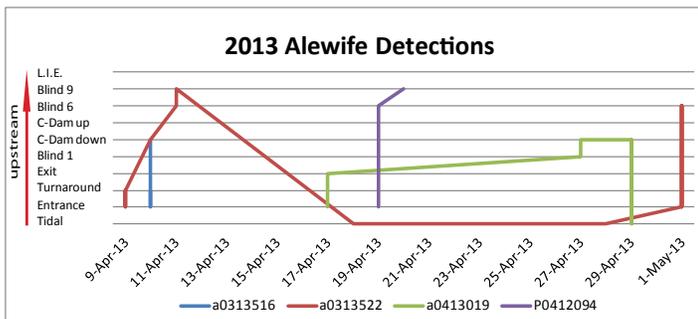


Figure 1. Movement of Pit Tagged Brown Trout

Twenty three percent of the alewife tagged in 2013 were detected at the fish ladder entrance. Only four alewife were detected at upstream antennas, one of which was originally transplanted from the Peconic River in 2012. Although the number of alewife detected upstream of the fish ladder increased slightly, numbers remained low, indicating that additional work will be required to improve alewife passage.



American eel were caught during electrofishing surveys, tagged and moved downstream to the tidal section of the Carmans to determine their homing capabilities as well as if they were able to navigate the fish ladder. Forty five percent of the American eel transplanted in 2012 and 2013 returned to the upstream section via the fish ladder. Also documented was the seaward migration of 21 American eel who were last detected in the tidal section during the months of October and November in both 2012 and 2013.

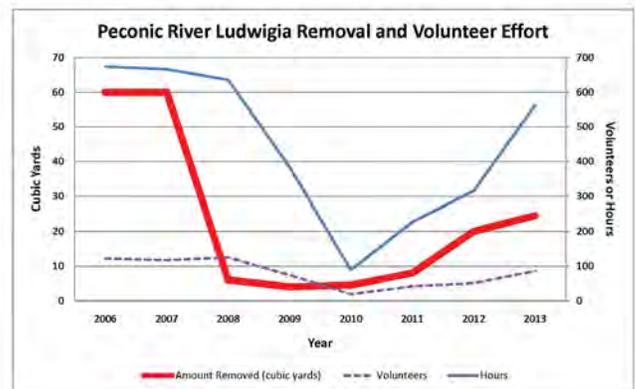
Massapequa Creek Brook Trout Restoration

In a continuing effort to restore brook trout to Massapequa Creek, Long Island Trout Unlimited (LITU) stocked 400 yearling and 50 two year old brook trout purchased from Cold Spring Harbor Fish Hatchery and Aquarium in April. The success of this stocking was assessed via an electrofishing survey conducted by the Region One Fisheries Unit in September. The survey was conducted downstream of the location stocked and three species of trout were caught: 14 brook trout, five brown trout and one rainbow trout. The brook trout ranged from 8.9 to 11.1 inches and were found as far as 1.5 miles downstream of the stocked location. The five brown trout averaged 10.9 inches, and the rainbow trout measured 9 inches. Both the brown and rainbow trout were likely previously stocked into the downstream reservoir. This past winter Cold Spring Harbor Fish Hatchery and Aquarium donated 500 yearling brook trout to the restoration effort. An additional stocking is planned for the Spring of 2014.

HABITAT CONSERVATION

Peconic River Ludwigia Control

The Ludwigia control operation started out strong in 2013. All known infestations were mapped with a Trimble GeoExplorer 6000 at the end of May and the first pull on June 8th was able to concentrate resources on the mapped areas with canoes and kayaks hitting the less dense infestations and jon boats going to the more dense areas. In one day 20 volunteers were able to remove about 2.5 cubic yards of Ludwigia covering all of the mapped infestations. Starting early in the season greatly reduced the volume of plant matter that needed to be removed.



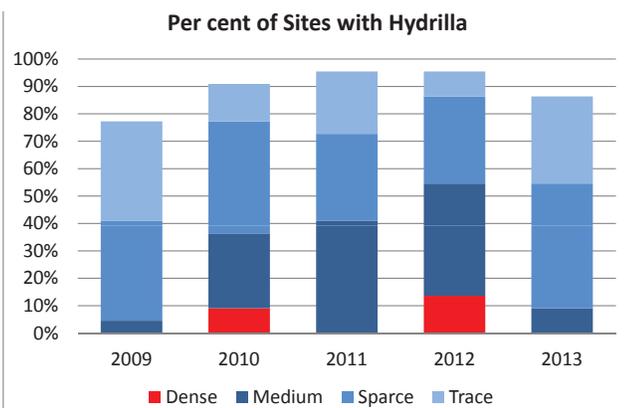
Unfortunately, a previously unknown infestation upstream from all earlier known infestations was found in early July and most of the removal effort in the following three pulls was spent on this infestation. In total, 86 DEC Staff and volunteers spent 563 hours pulling Ludwigia and managed to remove 24.5 cubic yards of the invasive plant from the Peconic River. This was the most number of pulls and the most vegetation removed since the first two years of the program in 2006 and 2007. Because the upstream infestation was found later

in the season, not all of it could be removed which will necessitate further efforts in 2014.

Hydrilla in Lake Ronkonkoma and Blydenburgh Lake

The Hydrilla infestation in Lake Ronkonkoma declined substantially from previous years. In 2012 over 50% of the sites surveyed had moderate or dense Hydrilla and 95% of all sites had some Hydrilla, while in 2013 there were no dense Hydrilla stands found and less than 10% of the sites surveyed had moderate infestation levels (see Figure). The fraction of sites where Hydrilla was found dropped from 95% in 2012 to 85% in 2013.

The density of Hydrilla also declined in Blydenburgh Lake. Dense infestations dropped from nearly 80% of the sites surveyed in 2012 to about 40% in 2013. The Region 1 Fisheries Unit will continue to monitor these infestations and work with stakeholders to prevent the spread to other waters.



Water Chestnut Removal in Massapequa Creek System

Water chestnut was first discovered in Massapequa Lake, the lowest impoundment in the system in 2011. Water chestnut was documented in Massapequa Reservoir, the next impoundment up in 2013. The extent of the spread in the Reservoir is not near what it is in the Lake and is so far limited to a few locations on the eastern shoreline. Region One Fisheries Unit hand removed approximately 10 large garbage bags of the plant and seeds in September. This effort should reduce the spread of the aquatic plant in 2015. Nassau County has obtained a permit to remove the plant from Massapequa Lake with a harvester and hand-pulling and the permit has been modified to include upstream areas as well. Region One Fisheries will continue to assist Nassau County as needed.



PUBLIC SERVICE & CONSTITUENT SUPPORT

I FISH NY Long Island

The total number of fishing clinics and summer camp programs increased in 2013. Although overall numbers declined due to lower at-

tendance at the major spring and fall Fishing Festivals, the I FISH NY Program reached nearly double the number of local residents (950) at fishing clinics as compared to 2012 (500). This significant increase in this number is owed to the addition of three fishing clinics. Two events were open to the public and were held at Fire Island National Seashore and Town of Brookhaven's West Meadow Beach. An additional clinic open to Village of Valley Stream residents was held on Free Fishing Weekend at the Village of Valley Stream Community Center A.J. Hendrickson Park Pond, reaching over 450 beginner anglers. Due to the major success of these clinics, all are scheduled to take place again in FY2014.



In FY2013, 11 of 16 newly rewritten I FISH NY lesson plans were posted on the DEC website for teachers and the public to utilize. They can be accessed at www.dec.ny.gov/education/89975.html.

Region 1 Fisheries staff participated in the statewide I FISH NY train-the-trainer program, a fishing training for summer camp counselors, at two 4H camps on the eastern end of Long Island. Freshwater fishing equipment was supplied by DEC's central office, while saltwater equipment was loaned by Region 1 for use by the campers. In order to receive free equipment, summer camps must report their fishing clinic numbers to DEC at the end of the summer camp season. The camp's fishing classes were very popular and well attended.

Students from Riverhead High School's Women in Science and Engineering (WISE) Program joined an all female crew led by the Region 1 Fisheries Unit on the Carmans River in early June for some hands-on experience in the field. Project WISE is an after school program that is geared to introduce female students who show an interest in science, math, and engineering, to the variety of careers in science through special projects and field trips. The all female crew, that included DEC Fisheries and Wildlife staff as well as Cornell Cooperative Extension staff, conducted an electrofishing survey of the Carmans River as part of the ongoing fish movement study being conducted on the river. DEC staff also demonstrated the gear and processes involved with running a fisheries survey and showed students some of the fish and insect species found in the river.



2013-14 Region 1 Fisheries Staff

Charles Guthrie	Biologist 2 (Aquatic)
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Corey Calby	Intern
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SPECIES CONSERVATION & MANAGEMENT

Warmwater Fishery Surveys

Golden Pond, Crocheron Park, Queens

Golden Pond in Crocheron Park, Queens was surveyed after receiving a report of a dead northern snakehead on the pond's shoreline. Staff used a backpack shocker, fyke net and seine to capture as many fish as possible. No snakeheads were captured but black crappie and largemouth bass were noted.



Harlem Meer, Central Park, New York

A boat electrofishing survey of the Harlem Meer, a ten-acre water body in the northeast corner of Central Park, Manhattan was conducted on April 30. This was the fourth DEC electrofishing survey of the Meer and was performed to determine fish species composition and the ecological balance of Meer fish populations. This survey also provided information on the extent of the population of the invasive fish species which were previously reported from the pond in 2008 and 2012. A total of 814 fish were captured in 78 minutes of electrofishing time. Three all-fish runs and one gamefish-only run were completed. The entire shoreline was covered twice during the survey and species captured consisted of largemouth bass, black crappie, yellow perch, golden shiner, pumpkinseed, bluegill and green sunfish. No American eel or northern snakehead were observed. Catch per hour (CPUE) of all fish was 810 and CPUE of largemouth bass was 223, the highest of any NYC water body surveyed to date. PSD of largemouth bass was 8.8, RSDp was 2.2; indicating an over-abundance of smaller-size fish.

Baisley Pond, Jamaica, Queens

A boat electrofishing survey of Baisley Pond, a 28-acre water body in Jamaica, Queens was conducted on May 9. Previous DEC electrofishing surveys of Baisley Pond were performed in 2001 and 2008. A total of 570 fish were captured in 94 minutes of electrofishing time. High turbidity and overgrowth of aquatic vegetation limited shoreline access in several areas. Species captured were largemouth bass, brown bullhead, pumpkinseed, bluegill, mummichog, black crappie and yellow perch. While young-of-the-year (YOY) bass were captured, most were over 200 mm and many were over 300 mm as reflected by the high PSD and RSDp values: 86 and 46, respectively. Catch per hour (CPUE) of all bass was 36, CPUE for stock size was 22, CPUE for quality size was 19 and CPUE for preferred size was 10. These numbers all increased from the 2008 survey.

Van Cortlandt Lake, Bronx

On May 30th, a boat electrofishing survey of Van Cortlandt Lake, an 18-acre water body in Van Cortlandt Park in the Bronx was conducted. A total of 345 fish were collected in 71 minutes of electrofishing time. Species captured were golden shiner, brown bullhead, white sucker, pumpkinseed, bluegill, largemouth bass, black crappie and yellow perch. Catch per hour (CPUE) of all largemouth bass was 55, CPUE for stock size bass was 47, CPUE for quality size bass was 19 and CPUE for preferred size bass was 6. These numbers were all greater than for a previous survey of Van Cortlandt Lake performed in 2009. Largemouth bass PSD and RSDp of 39 and 13, respectively, and sunfish PSD of 55 suggest the fish population of this lake is relatively balanced.

Long Pond, Staten Island

On September 16th and 17th a fisheries survey of Long Pond on Staten Island was conducted using a backpack shocker, 8' x 25' seine and a fyke net. Long Pond is a small (approximately 1.5 acres), shallow pond within a wooded area and is part of a park preserve, atypical for New York City. Not many fish were captured on the backpack electrofishing run: 20 fish were captured in 40 minutes of electrofishing time, none were over 70 mm. Conductivity was very low and might have been a reason for the low catch rate but small numbers and sizes of fish were also captured during two seine hauls. The overnight fyke net set captured four fish, all larger than those caught at the previous sites: three largemouth bass (345, 310 and 323 mm) and one bluegill (122 mm). Long Pond has been observed to have an extremely low water level during dry seasons which may contribute to low numbers and sizes of fish.

Martling's Pond, Clove Lake Park, Staten Island

On September 26th a boat electrofishing survey of Martling's Lake within Clove Lakes Park Staten Island was conducted. This was the first electrofishing survey of Martling's Lake, the middle of three lakes in Clove Lakes Park. A total of 328 fish were captured in approximately 60 minutes of electrofishing time which included an eighteen minute gamefish only run. Fish species captured were golden shiner, brown bullhead, pumpkinseed, bluegill, largemouth bass and black crappie. Eight common carp were observed. Catch per hour (CPUE) of all bass was 50, CPUE of stock size bass was 21, CPUE of quality size was 8 and CPUE of preferred size was 2. Bass PSD and RSDp were 38 and 9.5, just under generally accepted stock density index ranges for balanced fish populations. Brown bullhead CPUE was 104, relatively large for an electrofishing survey. CPUE of bluegill was 137 and CPUE of pumpkinseeds was 54 but all were relatively small in size. The largest bluegill or pumpkinseed captured was 166 mm.

Kissena Lake, Flushing, Queens

A boat electrofishing survey of Kissena Lake was conducted after Fisheries staff received information of the potential introduction of the invasive Asian swamp eel. A recent algal bloom limited visibility but out of nearly 700 fish captured, none were Asian swamp eels. A large number of young-of-the-year (YOY) yellow perch and black crappies were captured; other species caught or observed included largemouth bass, pumpkinseeds, bluegills, common carp and American eels. Catch per hour (CPUE) of all sizes of largemouth bass was 52; however, CPUE of bass 100 mm and over was relatively low and most were YOY. CPUE of stock size bass was 7.6, CPUE of quality

size bass was 4.2 and CPUE of preferred size bass was 1.7. The largest black crappie capture was 305 mm but most captured were small. Black crappie PSD was 33.33 and RSDp was 11.11, CPUE of these fish over 130 mm was 13 per hour. CPUE of crappies less than 100 mm was 236. Past surveys have indicated good size-classes of black crappies in Kissena and this could occur again in a few years if these smaller fish are allowed to continue growing.

Northern Snakehead Monitoring, Meadow and Willow Lakes, Queens

Annual snakehead monitoring in Meadow and Willow Lakes in Flushing Meadows Corona Park, Queens, continued as both lakes were surveyed by boat electrofishing in Fall, 2013. Catch per hour of snakeheads did not change significantly from previous years nor did catch per hour of other fish species in these waterbodies, although the number of American eels increased: 701 of these fish were counted in 2013. The next highest number was 286 in 2010. Water clarity in 2013 was better than in previous years which likely contributed to the observation of eels and other fish species. Numbers of largemouth bass continue to be found, although to a lesser degree in Meadow Lake, for the third consecutive year since 2010. Largemouth bass had not been found during any surveys of the two lakes between 2006-2010.

PUBLIC SERVICE & CONSTITUENT SUPPORT

NYC I FISH NY Program

R2 Fisheries staff conducted programs in 59 elementary and middle school classrooms, reaching a total of 1,565 students. An additional 476 people were reached through 13 outreach events.

New Photo Program Launched

In an attempt to gather feedback from the over 1,500 students participating in the I FISH NY in-school program, staff implemented a photo program in which every student who catches a fish receives a photo of their catch in an I FISH NY graphic photo frame which contains DEC contact information should the child and their parent/guardian wish to fish again on their own. Many parents/guardians attend the fishing field trips with their children but many more do not and the photo serves as a reminder of the trip the children can take home to parents/guardians who may be prompted to take their child fishing on their own. Students who do not catch a fish receive a framed photo of their class at the fishing site.



Other Fishing Outreach and Training

- Oasis Children’s Summer Science School, Van Cortlandt Lake, Bronx
- City of Water Day, Governor’s Island, NY
- Staten Island Greenbelt Summer Camp, Willowbrook Lake, SI
- Harlem YMCA, 125th St. Pier, NY
- Little Red Lighthouse Festival, Ft. Washington Park, NY
- Bronx River Flotilla with Rocking the Boat, Bronx
- MS Society, NYC Chapter fishing clinic, Williamsburg, Brooklyn
- Harbor School Summer Camp, Governor’s Island, NY
- Raritan Bay Festival, Conference House Park, SI
- Prospect Park Lake Clinic and Fishing line clean-up, Brooklyn



A happy angler at the MS Society Clinic



2013-14 Region 2 Fisheries Staff

- | | |
|-----------------|-----------------------------------|
| Melissa Cohen | Biologist 2 (Aquatic) |
| Steven Wong | Environmental Education Assistant |
| James MacDonald | Environmental Education Assistant |
| Khary Booker | Seasonal Laborer |



SPECIES CONSERVATION & MANAGEMENT

Hudson River Largemouth Bass and Walleye Telemetry Study

In 2013, a pilot study was conducted to surgically implant Lotek CART tags into largemouth bass and walleye in the tidal Hudson River to track their seasonal movements and habitat preference. A total of 13 largemouth bass >15" were collected and tagged (7 from the tidal Rondout Creek and 6 from the tidal Esopus Creek) and 11 Walleye >18" were collected and tagged (10 from the tidal Rondout Creek and 1 from the tidal Catskill Creek). The Lotek CART tags (dual mode tags) allowed both our Hudson River Fisheries Unit and our Inland Fisheries Unit to successfully track these fish. With information gained from this pilot study we will be able to make some modifications to our study efforts in 2014/2015. Our sampling efforts for 2014/2015 will include tagging an additional 50 largemouth bass and 50 walleye using Lotek radio only tags for the largemouth bass and Lotek CART (acoustic/radio dual mode) tags for the walleye.



White Pond Walleye Assessment

A boat electrofishing survey was conducted on 10/8/13 to assess an experimental Walleye stocking program funded by the Sportsmen of Putnam County. Approximately 750 yearling walleye have been stocked annually. With 1.83 hours of on-time the Region 3 fisheries unit was able to cover the whole shoreline. A total of 8 walleye were collected. Results were presented to the Sportsmen. A total of 156 Largemouth Bass were also collected. Of those 156 largemouth bass only 3 fish were over 12 inches. The fisheries unit is going to further assess the largemouth bass population and determine if a special regulation will be needed.

Lake Minnewaska (Ulster County) Fisheries Survey

This State Park lake was sampled by night boat electrofishing in June 2013, with the purpose of documenting the fish species present in Lake Minnewaska, as well as updating the status of the largemouth bass population which was documented in 2012. Historically acidic for at least 80 years, golden shiner were reported to be present by Park personnel in 2008, and largemouth bass were reported present in early 2012. A total of 120 golden shiner and 44 largemouth bass were collected, with no additional fish species noted. We plan to return to Lake Minnewaska fairly regularly to document how the lake's fish population develops.

Rio Reservoir (Sullivan County) Walleye Assessment

Rio Reservoir was stocked with walleye advanced fingerlings in late summer 2012 as the first stocking in a five-year experimental stocking program, with the objective of establishing a walleye population. Walleye were not stocked in 2013 due to problems with the hatchery supply, however, fingerling stocking is scheduled to resume in 2014 for five additional years. The reservoir was electrofished in October 2013 roughly following the percid plan, with the objective of documenting survival of the 2012-stocked walleye, as well as the presence of any additional walleye. In 2.6 hours of electrofishing 18 age 1+ walleye were captured (the age class which would have been stocked in 2012), along with nine older walleye up to age 6+.



Swinging Bridge Reservoir (Sullivan Cty.) Walleye Assessment

Swinging Bridge Reservoir was electrofished in October 2013 roughly following the protocols of the Bureau of Fisheries' percid plan. The objective of this survey was to document survival of any naturally spawned walleye from the 2013 year class. No young-of-year walleye were collected, indicating a lack of survival of the 2013 walleye year class. Nine older walleye were sampled, representing an age range of 4+ to 7+. Only two white perch were sampled, which may indicate that this invasive species has not yet gained a foothold in this reservoir. Somewhat difficult wind, weather, and visibility conditions the night of this survey likely hampered sampling efficiency, so these results may not be entirely representative of the reservoir in October of 2013. A creel survey is currently (2014 season) being conducted on this reservoir, partly in response to anecdotal angler reports indicating that the walleye fishery may be declining here

Ashokan Reservoir (Ulster County) Fisheries Survey

A gillnet survey of Ashokan Reservoir was conducted in late summer 2013 with the objective of updating our data on the brown trout, rainbow trout, and walleye populations here. A total effort of 42 gillnet-nights was expended on the reservoir (both basins), fishing a combination of bottom variable mesh net, midwater fine mesh net (targeted at alewife), and midwater variable larger mesh net (targeted at pelagic predators). The majority of the sets were midwater larger-mesh midwater nets.

Fifteen fish species were collected, including the three "target" fish

species. Walleye and brown trout catch per net-night was roughly similar to gillnet surveys conducted in 1988 and 1999 (the last years surveyed), while Rainbow Trout catch per net-night was an order of magnitude less than the previous two surveys. One new species was documented (white perch), which is a new introduction to this reservoir. It is speculated that this species may have ultimately come into Ashokan Reservoir from Schoharie Reservoir via the Shandaken Tunnel/Esopus Creek. White perch were first documented in Schoharie Reservoir in 2002. White perch were the second most abundant species collected in the gillnets, after alewife.

It is currently unknown if the decline in rainbow trout abundance is related to competition with white perch for forage, a decline in rainbow trout spawning/nursery habitat due to recent flood damage to the Esopus Creek and its tributaries, or other factors.

West Br. Croton River (West Br. Croton Reservoir Outlet) Brown Trout Assessment

This survey was conducted on 10/1/13 to monitor the brown trout population during a period of lower than historical flows. Two 300 foot sections of stream were sampled using stream electrofishing gear. A total of 700 brown trout were collected. Of those brown trout collected, 487 were young of the year and 197 were yearlings. One of the main concerns over the past 2 years was the effects that the low flows may have on spawning. Although we did not collect many “large” spawning brown trout, it was apparent from our collection that the trout have been successful spawning over the past 2 years.

Ridgebury Lake Northern Snakehead Surveillance

In 2008 and 2009, a two mile section of Catlin Creek (including four small private ponds and a 49 acre wetland) as well as Ridgebury Lake (28 acres), were treated with rotenone in an attempt to eradicate northern snakehead. If northern snakeheads were to have dispersed downstream from this treatment area, the fish could have traveled through a series of streams (Rutgers Creek – Wallkill River – Rondout Creek) and ultimately to the Hudson River.



To confirm that all northern snakehead have been removed from this watershed, and to document fishery restoration, follow-up fisheries surveys have been conducted. In the Fall of 2013, Ridgebury Lake was sampled by boat electrofishing. With a little over 1 hour of electrofishing on-time (0.6 hours collecting only gamefish) 12 black crappie up to 10.6 inches, 5 yellow perch up to 10 inches, 30 largemouth bass up to 15 inches, 50 bluegill, 9 yellow bullhead up to 14 inches, and one golden shiner were collected. No northern snakeheads or common carp were seen or collected. Despite stocking a total of 720 triploid grass carp from 2009 to 2012 for aquatic vegetation control, no triploid grass carp were seen or collected. Due to dense Eurasian milfoil and thick duckweed and watermeal on the surface of the water, this fish collection was very difficult and many fish were probably not visible to collect. Follow-up electrofishing will be needed in 2014 to do a more thorough job of assessing this fishery.

To further verify the presence or absence of northern snakehead in the Ridgebury Lake watershed, a collaborative effort with The Nature Conservancy (at Notre Dame University) and researchers from Cen-

tral Michigan University to take water samples to test for the presence of northern snakehead environmental DNA (eDNA). A total of 260 2L water samples were collected throughout this watershed, including locations upstream of the treatment area and downstream to the tidal portion of the Rondout Creek at the Hudson River. These samples are being analyzed using a species specific PCR (polymerase chain reaction) marker and traditional PCR techniques. The results of these tests will become available in 2014. The samples that were already taken, as well as any additional samples collected from this watershed, will also be screened using digital PCR. The digital PCR method is more sensitive than traditional PCR and will also be used to help verify results.

HABITAT CONSERVATION

Tappan Zee Bridge Replacement

Region 3 fisheries staff provided on site monitoring during 2013 and 2014 for the Tappan Zee Bridge Replacement Project. Fisheries staff remained heavily involved in the environmental review of all aspects of the project. Numerous revisions in project design were negotiated with the Thruway Authority as well as a mitigation project totaling approximately \$8 million. Since the DEC permit for the project was issued in January 2013 fisheries staff have reviewed and approved numerous plans and submissions required by the DEC permit. The Tappan Zee Constructors, the consortium of companies that won the contract to construct the new twin-span bridge, have now started the construction of the new bridge. Fisheries Staff will continue to monitor work at the bridge site to confirm that all DEC permit requirements are being met.

PUBLIC SERVICE & CONSTITUENT SUPPORT

Outreach and Education

The Region 3 I FISH NY program conducted 7 fishing festivals reaching 640 people, 14 fishing clinics reaching 710 people, 5 summer camp programs reaching 210 campers and 4 school programs reaching 305 students. A total of 30 programs were delivered with over 1,865 people going fishing or receiving fishing information this year from the Region 3 I FISH NY Program.

Staff also participated in a statewide “train the trainer” program where I FISH NY staff provides selected summer camps with fishing equipment and teaches the camp counselors how to fish, so they can teach the kids during camp.

Region 3 Fisheries staff set up and staffed a booth at the Suffern Sportsman Show in Rockland County. From February 27 through March 2, 2013, thousands of anglers attended the show. People who visited the booth were able to talk fishing with our staff, receive literature, and view mounts of our state record fish. The kids were entertained while playing velcro-fishing. Due to the switch to a new licensing system earlier in the month license sales were not available at this year’s show.

2013-14 Region 3 Fisheries Staff

Mike Flaherty	Biologist 2 (Aquatic)
Bob Angyal	Biologist 1 (Aquatic)
Larry Wilson	Biologist 1 (Aquatic)
Ryan Coulter	Biologist 1 (Aquatic)
Linda Wysocki	Fish & Wildlife Technician 3
Tim McNamara	Fish & Wildlife Technician 2
Dustin Dominesey	Seasonal Fish & Wildlife Technician
Indie Bach	Seasonal Fish & Wildlife Technician



SPECIES CONSERVATION & MANAGEMENT

Mohawk River Blueback Herring Assessment

Region 4 Fisheries teamed up with numerous interested parties again in 2013 to monitor the unique spawning run of blueback herring in the lower Mohawk River. Day electrofishing commenced in the Hudson River in 2013 below the Troy Dam



to document fish use of the adjacent Federal Lock as it first opened for the season in late April. Sites in the Mohawk River expanded from below Canal Corp. Lock E2, above Lock E6 (Waterford Flight) and a repeat of 2012 sites upriver below Locks E7, 9, 11, 15. The survey continued into June but high water led to the unscheduled raising of several temporary Canal Corp. dams in our sampling reaches, thus ending our survey for the year. Total effort included 11 shocking runs over six days at six different sites on the main stem (2-4 sites/day) and ~3.5 hours of shocking (0.3 h avg/site).

Despite the shortened sampling season, 33 species and ~3000 individual fish (602 captured, 2359 observed) were documented in the Lower Mohawk River in this survey. Blueback herring were by far the most numerous fish species recorded (221 captured, 1578 observed) comprising almost 37% of the total catch and 67% of all fish observed but not netted. Spottail shiner, spotfin shiner, and smallmouth bass were also abundant. Data from the 2013 blueback herring assessment will be used in a graduate study advised by Dr. K. Limburg at SUNY ESF.

Otsego Lake

This popular 2-story lake has been sampled every other year by Region 4 Fisheries to assess the walleye population after their reintroduction in 2000. In September, gill nets were set at five different sites plus another two sets in November. Effort at these 12 sites lakewide resulted in a total soak time of 273.7 h (mean 22.8 h/net). Walleye were captured at 11 of 12 sites and 53% were of legal size for anglers ($\geq 15''$ or 380mm TL). CPUE of .22 per hr and 5 per net indicate a moderate to high abundance of walleye. Multiple year classes of walleye were found indicating good survival of young. Very few walleye were captured at the south end of the lake (especially adults) versus the middle section and north end of the lake.

Canadarago Lake

This popular lake has been sampled every fall along the west shoreline in cooperation with Cornell University to assess the warmwa-

ter fishery (mostly Percids). A particular concern is the survival of stocked walleye fingerlings in the presence of alewife, an invasive species common to many inland lakes in NYS. The lake now receives a maintenance stocking of advanced fall fingerling walleye that are too large for adult alewife to consume.

Relatively poor weather conditions during the October 2013 survey actually resulted in increased catches of adult gamefish versus previous surveys. A total effort of 1.5 h produced 16 species of fish with yellow perch being the most numerous (N = 586). However, only 9% of yellow perch were of desirable size ($\geq 8''$). Only three smallmouth bass were captured (one over 12''). Fourteen of the 32 largemouth bass captured were $\geq 12''$ (legal size) with some adults weighing up to about five pounds. Good numbers of chain pickerel were found this fall but only 17% were of legal size ($\geq 15''$). A total of 17 walleye (11 fish/hr) with 88% of them $\geq 15''$ (legal size).

The percid fishery in the lake appears out of balance in recent years with an abundance of juvenile yellow perch, few larger perch, very few juvenile walleye and a top heavy population of older walleye. Walleye recruitment remains problematic, despite the larger size at stocking. However, the lake remains a very productive warmwater fishery for a variety of species. DEC will continue to stock walleye to maintain the species for angler harvest and we expect the quality of the yellow perch population will improve as the abundant juvenile fish grow to desirable sizes.



East Sidney Reservoir

This reservoir was sampled in September 2013 with gill nets, following a 2011 electrofishing survey. The netting results were disappointing. The 188 hours (mean 23.6 h/net) of gill net effort at eight sites around the reservoir produced mostly adult golden shiner (65%). Yellow perch absent in the 2011 electrofishing effort, comprised 17% of the gill net catch with 80% of those collected considered of desirable size to anglers ($\geq 8''$ or 200mm). Unfortunately, no pumpkinseed and only 23% of the rock bass captured were of desirable size ($\geq 8''$). Similarly, only one of the seven largemouth bass and two of the 18 smallmouth bass were of legal size ($\geq 12''$ or 305mm), species that were much more numerous in the 2011 spring electrofishing survey.

The netting results reveal a number of conclusions when compared to our 2011 shocking effort and the historical catches. Golden shiner are doing well in the reservoir and seem to be providing an abundant warmwater forage base for black bass. Chain pickerel were captured in the early survey but may now be absent in the reservoir. Brown trout still utilize the reservoir proper when the waters cool in the fall, which probably lasts through the following year into May. Each black bass species may utilize different parts of the reservoir as indicated by their relative abundance in capture data for the different sites over the two sampling nights in 2011. The joint survey results indicate the reservoir is a prime candidate for walleye reintroduction. A new 5-years walleye stocking policy may commence in the fall of 2015. With available spawning habitat upstream in Ouleout Creek and an abundant forage, walleye could become self-sustaining in the reservoir and available for angler harvest in 3+ years.

Kinderhook Lake

A survey was conducted to evaluate the tiger muskellunge stocking program in effect since 2008, and to collect American eel for contaminant analysis. Both this survey and the previous survey were conducted at night under similar conditions. In 3.8 hrs of electrofishing, two northern pike (one juvenile and one 30” adult), 25 largemouth bass and 33 smallmouth bass over 12” in size and over 400 white perch were collected. No tiger muskellunge were observed during the survey. Chain Pickerel, observed during the 2010 survey, were not collected in 2013. Seven American eel were collected during this survey and submitted for contaminant analysis.

Butternut Creek stocking change assessment



Butternut Creek is a tributary to the Unadilla River that remains cooler than most local streams. This is likely due to a steady influx of groundwater and the succession of adjacent farmland to forest. In 2011 a surprisingly

high abundance of brook trout was noted (approximately 100 collected or observed), along with 19 holdover brown trout. To better protect the wild brook trout population a stocking change was implemented, terminating brown trout stocking.

In 2013 all seven sites were re-sampled during summer low flows. The numbers of brook trout recorded was down about 15% from 2011 with only 30 captured and another 16 observed. However, brook trout was still the 3rd most abundant species in the 2013 survey (9.6%) behind only cutlips minnow (12.0%) and mottled sculpin (11.2%), respectively among the 24 species and 312 individual fish captured. No brown trout were found at any of the sites but the number of burbot captured increased 37% from 2011. Burbot were common in the deeper lower reach sites. Presence of both brook trout and burbot in the lower reach of Butternut Creek reflects the persistence of this cool-water habitat.

The presence of multiple year classes of wild brook trout indicates successful recruitment, apparently with or without the presence of brown trout. It is important to note that due to major flooding in September 2011 caused by tropical storm Lee, results of this study are reflective of pre and post flooding conditions at the seven sampling sites where obvious changes have occurred to the streambed and banks. Further monitoring of this self-sustaining brook trout population is warranted to better understand the post-flooding changes in the fish community and response of brook trout in the absence of competing brown trout.

Hurricane Irene Trout Recovery Assessments

Three Region 4 trout streams impacted by Hurricane Irene in August 2011, were surveyed to determine whether their trout populations had returned to pre-storm levels. In the West Kill, 35 wild brown trout adults and numerous young of the year were noted. In the East Kill, trout numbers were also similar to pre-Hurricane numbers, indicating that recovery of the trout population is well underway. Although some segments of the Batavia Kill appear to have rebounded from Irene, trout recovery appears slower than in the East or West Kill.

PUBLIC SERVICE & CONSTITUENT SUPPORT

2014 Ice Fishing Clinics

DEC’s Bureau of Fisheries teamed up with several stakeholders to conduct two free ice fishing clinics again this winter in Otsego County. These I Fish NY events are non-competitive and geared towards kids and newcomers to the sport. DEC staff from various offices and student volunteers provided support to anglers by drilling holes and setting/baiting tip ups and jigging rods. A heated pavilion was available at both events along with an assortment of warm food and beverages. Outreach and education materials, instructions, and ice fishing gear/bait were provided by DEC and OPRHP staff.

Despite the cold breezy weather on January 25th, about 50 locals came to a fish and game club in Hartwick and ice fished, catching a handful of mostly bluegill, along with a few largemouth bass, and black crappie. Many folks took advantage of the warm wood stove in the club house while one couple in particular enjoyed catching their first ever fish (bluegill) jigging through the ice. No fish were caught on tip ups despite several flags and one bait run. Special thanks to the Otsego County Sports Federation for sponsoring this event.

Later in the winter on Feb 19th, DEC teamed up with the OPRHP for the 5th annual free ice fishing clinic held on Otsego Lake at Glimmerglass State Park. Over 60 people came out to enjoy a nice day on the ice The beach house was open to all for the first time. Snowmobiles were used to transport gear on and off the ice due to excessive snow cover. The weather was much more pleasant than previous years but the bite was slow. Overall, only a few yellow perch and chain pickerel were caught along with one keeper lake trout. Despite the low catch rates, participants enjoyed this growing recreational winter sport.



2013-14 Region 4 Fisheries Staff

- | | |
|-----------------|--|
| Chris VanMaaren | Regional Fisheries Manager |
| Dan Zielinski | Biologist 1 (Aquatic) |
| Scott Wells | Biologist 1 (Aquatic) |
| Dennis Wischman | Fish and Wildlife Technician 3 |
| Dave Cornwell | Fish & Wildlife Tech.1 (retired 12/14) |
| Tim Pokorny | Seasonal Fish & Wildlife Technician |
| Anthony Bruno | Seasonal Fish & Wildlife Technician |



SPECIES CONSERVATION & MANAGEMENT

Polliwog Pond Lake Trout Survey

Polliwog Pond, Town of Santa Clara, Franklin County, was surveyed on July 9-10, 2013, to assess survival of lake trout stocked there since 2004. The 208 acre pond has three deep basins and, historically, supported a native lake trout population. Polliwog Pond was reclaimed in the 1970's to eliminate competitive warmwater species. The reclamation did not succeed in eliminating yellow perch. Smallmouth bass were illegally introduced early in the 2000's and now dominate the inshore fishery. Polliwog Pond is stocked with brown trout and lake trout.

Fisheries staff set three gangs of small mesh gill nets (1.5"-2"-2.5") – one in each basin. These gangs are standard juvenile lake trout sampling gear and were identical to gangs used in recent surveys on Lake Placid and Lake George. A total of five lake trout were caught, ranging from 9 to 27 inches. This was a low catch rate, but does indicate survival and growth of multiple-year classes of lake trout. The largest lake trout caught had no clip, but likely originated from unclipped fish stocked as surplus in 2004. There was no evidence of natural reproduction, but it is still early in the restoration effort as most stocked fish would still be less than eight years of age (the typical maturation age for female lake trout in slow growth Adirondack lakes). Other species caught in the survey were yellow perch and white sucker. Anglers reported catching brown trout during the netting effort. Rich Preall caught numerous smallmouth bass along shore the day prior to the survey. Canoe/ kayak fishing appears to be a popular activity on Polliwog Pond.

Lake trout and brown trout stocking will be continued in Polliwog Pond although stocking numbers will be adjusted downwards. Forage for salmonids seems limited and growth of lake trout is average to below average. Water quality in this clear pond is excellent with good dissolved oxygen to at least 50 feet.

Lower Cascade Lake Round Whitefish Egg Take

The earliest ice-in conditions in many years did not hamper Fisheries and Propagation staff in gathering eggs from the endangered round whitefish in Lower Cascade Lake, Essex County. Regional staff chopped through ¾" of ice



on November 21 to set a trapnet in Lower Cascade Lake. Returning on November 22, they found the trap brimming with 246 round whitefish ranging from 8-10." Thirty pairs of fish were stripped for eggs, yielding a gross count of 18,000. The fertilized eggs were transported to the Oneida Hatchery and will be raised to fingerling

size for stocking in May 2014.

Technician Jennie Sausville lead the egg take effort. She instructed Neal McCarthy from the Chateaugay Hatchery and Matt Jackson and Adam Kosnick from the Adirondack Hatchery on where/how to set the trapnet in Lower Cascade Lake and how to take eggs from the small adults. Propagation staff will take over the round whitefish egg take effort next year. Continued cold weather lead to cancellation of plans to trapnet adult round whitefish from Little Green Pond near the Adirondack Hatchery and hold them until they spawned in a hatchery raceway. An ice thickness of 2.5" signaled the end of the 2013 field season.

Lower Sargent Pond Reclamation

Lower Sargent Pond in the town of Arietta, Hamilton County was reclaimed by Region 5 fisheries staff with the help of many others. Staff from Regions 3, 4, 6, 7 and 8 assisted with the application of Rotenone along with Central Office and Propagation staff. Lands and Forest



and Operations assisted with logistics during the application. Safety while working with the State Trooper Aviation Unit helicopter was overseen by Forest Ranger Bruce Lomnitzer. R5 Bureau of Wildlife was a great help in dealing with the extensive amount of beaver activity in the inlet. Retired fisheries biologist Leo Demong was pivotal to the success of the project from the planning to implementation.

The pond had a reputation as a great brook trout water that produced quality trout and was able to withstand high fishing pressure. Largemouth bass and golden shiners had become abundant over the last 10 years reducing the naturally sustained brook trout population to just larger individuals. The pond was last reclaimed in 1971 by the DEC and was only stocked once with Little Tupper strain brook trout. The project was a great example of the professionalism that the DEC possesses and how a large project can be accomplished with our current work force. Lower Sargent Pond will be stocked in 2014 with Little Tupper strain brook trout. The restoration project had the support of many anglers and residents in Hamilton County and beyond.

The Lower Sargent Pond reclamation was the last treatment that Rich Preall and Bill Schoch will conduct as DEC biologists. Over the past 25+ years they have both contributed extensive amounts of time and energy to brook trout restoration. Bill has been and will continue to be a great advocate for brook trout and native Adirondack lake and pond fish communities. Rich's expertise in both application and rotenone bioassay will be greatly missed. Thank you both for your years of dedication and for keeping the program going over the years.

Lake Placid/Lake Trout Survey

Fisheries staff completed a survey of Lake Placid lake trout with great results! The survey was designed to capture smaller lake trout with the use of gill nets. The netting effort lasted three nights with a total of 167 lake trout captured. A majority of the captured fish were returned to



the lake unharmed. Lake Placid has a naturally reproducing population of trout that seem to be doing just fine. A few of the larger lake trout in the lake also found their way into the nets. There were a few “lake monsters” which topped the scales at over twenty pounds. The survey also captured a handful of lake trout in excess of ten pounds, including the old male in this photo. This fish may have been a juvenile during the last juvenile lake trout survey from Lake Placid which was completed in 1992.

Saranac River Sea Lamprey Treatment

Efforts to control sea lamprey numbers continued this fall with four river treatments scheduled. On September 18 the Saranac River was treated for only the second time since the control program began in the early 90’s. Recent lamprey larval assessments by the U.S. Fish and Wildlife Service (USFWS) discovered enough lamprey to warrant this fall’s treatment. In addition to the Saranac, Putnam Creek in New York, as well as the Lamoille River and Stone Bridge Brook in Vermont, will also be treated this fall. The reduction of lamprey larval abundances will lead to improved growth and survival of salmon and lake trout.

Salmonid restoration objectives for Lake Champlain include reducing sea lamprey wounding rates to: 25 wounds per 100 lake trout in the 21-25 inch length size class; and 15 wounds per 100 salmon in the 17-21 inch size class. The 2012 lamprey wounding rate on lake trout increased from a 14-year low of 30 wounds per 100 fish in 2011 to 40 wounds per 100 fish in 2012 (Figure 1). The 2012 lakewide salmon wounding rate increased slightly from 19 wounds per 100 fish in 2011 to 21 wounds per 100 fish in 2012.

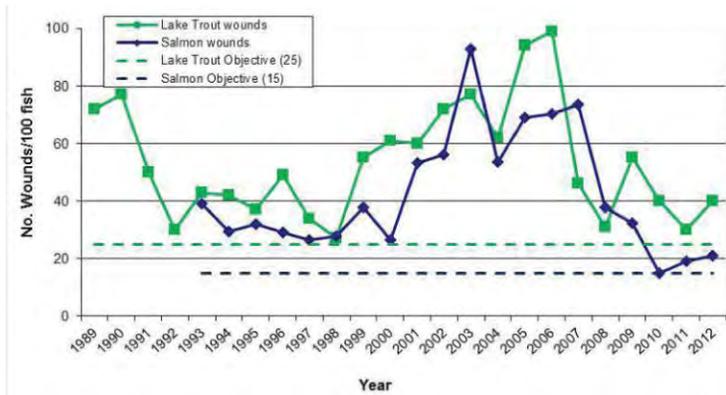


Figure 1. Sea lamprey wounding rates on 21-23 inch (total length) lake trout and 17-21 inch landlocked Atlantic salmon from Lake Champlain, 1989-2012.

Taylor Pond Juvenile Lake Trout Survey

Taylor Pond, Clinton County, was netted using standard juvenile lake trout gangs at the end of July. Six gangs were set on the bottom in deep water while a seventh gang was suspended in the thermocline for landlocked salmon. A total of 55 lake trout were captured which ranged in size from 7 -24 inches. Thirteen (25%) of these trout had fin clips which indicated they were stocked. Thus, 75% of the lake trout were wild. The catch rate of 9/gang is above average for Adirondack lakes. It appears that continued stocking of lake trout in Taylor Pond will be unnecessary. The suspended gang caught 11 landlocked salmon ranging 7-18 inches long. The salmon were in good condition and the high catch rate shows they are surviving well. Salmon stocking will be continued.

Handsome Pond Brook Trout Survey

Handsome Pond, Hamilton County, was netted in late July to assess recent stocking efforts of clipped Little Tupper strain brook trout. Handsome Pond is in the Little Tupper Lake watershed and has promise as a brood stock pond for this heritage strain. The pond is part of John Dillon Park which was developed for disabled access. A survey done in 2010 caught brook trout, but also caught largemouth bass. Members of the Handsome Pond Sportsmen’s Club, which still has access to the pond, have been actively fishing for and removing the bass. This netting caught 23 brook trout, only three of which had clips. Just two small bass were captured. Many of the unclipped brook trout were in a small size range that corresponded well with the clipped fish. There is a chance that poor fin-clip quality resulted in re-growth of fins and misidentification as wild fish. Overall, results of the netting were encouraging for future use of this pond as a brood stock water. Stocking of clipped Little Tupper will be continued, but the clip will be switched to the adipose fin only (which does not regenerate).

HABITAT CONSERVATION

Water Temperature Monitoring

A long-term temperature monitoring program for selected streams and ponds was initiated. Onset brand temperature recorders have been placed in the West Branch Ausable River (Essex County), True Brook (Clinton County), Salmon River (Franklin County, Malone), Battenkill (Washington County) and Kayaderoseros Creek (Saratoga County). In addition, the Region will visit a variety of different trout ponds in central Franklin County monthly, from May through September to collect temperature and dissolved oxygen profiles. This long-term data set may help indicate which pond and stream types could be stressed by temperature changes.

2013-14 Region 5 Fisheries Staff

- | | |
|------------------|---------------------------------------|
| Bill Schoch | Regional Fisheries Manager |
| Rich Preall | Senior Aquatic Biologist |
| Jim Pinheiro | Senior Habitat Biologist |
| Rob Fiorentino | Senior Aquatic Biologist |
| Jennie Sausville | Fish and Wildlife Technician 3 |
| Thomas Shanahan | Fish and Wildlife Technician 2 |
| Jonathan Fieroh | Seasonal Fish and Wildlife Technician |
| Dustin Dominesy | Seasonal Fish and Wildlife Technician |
| Jessie Gardner | Seasonal Fish and Wildlife Technician |
| Brett D’Arco | Seasonal Fish and Wildlife Technician |



SPECIES CONSERVATION & MANAGEMENT

Lake Sturgeon Management

Lake sturgeon (*Acipenser fulvescens*) is a Threatened species in New York State. Sturgeon restoration efforts began in 1991. A tagging study started in 2010 to acquire biological data and provide the basis for movement studies throughout Lake Ontario and the St. Lawrence River. A total of 90 sturgeon were collected in 2013 from the eastern basin of Lake Ontario and the St. Lawrence River downstream to just below the Robert Moses Power Project. Most of the fish (83) were new captures and were tagged with Passive Integrated Transponders (PIT tags). Lake sturgeon eggs (130,000) were taken in early June at the Robert Moses Power Project, Massena NY with 3 egg bearing females providing eggs. A cooperative effort between NYS DEC and the Genoa National Fish Hatchery (USFWS, Wisconsin) was successful in rearing approximately 14,000 fingerlings. Approximately 11,000 fish were stocked in the St. Lawrence, Raquette River, St. Regis River, and Salmon River (Franklin County). The remainder (~3,000) were stocked into Cayuga Lake and the Genesee River in central New York. All fingerlings received Coded Wire Tags (CWT) prior to stocking for year class survival assessments in the future.



Eastern Lake Ontario/St. Lawrence River Warmwater Fish Stock Assessments



Over one-third of fishing effort in Region 6 occurs on eastern Lake Ontario or the St. Lawrence River. Warm/coolwater fish stock assessments are conducted by Region 6 on the St. Lawrence River and by both regional and Lake Ontario units on eastern Lake Ontario. The assessments track condition of fish stocks in these waters. In the St. Lawrence River Thousand Islands area abundance of legal size smallmouth increased from record lows in 1996-2004 and has varied at moderate levels since 2006. Much of this increase has been due to faster growth and earlier recruitment of young fish (largely due to availability of round goby forage) rather than increases in the total number of individuals in the population. Northern pike abundance in the Thousand Islands remains depressed largely due to habitat changes resulting from water level regulation. For Lake St. Lawrence walleye numbers have declined from a peak in 2010 but remain above

the long term average. Abundance of legal size smallmouth bass in eastern Lake Ontario has increased substantially from record lows in 2000-2004 although it remains low relative to the levels of the 1970s, 1980s and early 1990s. Increases since 2005 have been attributed to increased growth and vulnerability of young fish to sampling. Regional cormorant management and a switch to round goby prey have reduced cormorant feeding and consumption of sport and panfish.

Brook Trout Management

Heritage strains of brook trout are genetically distinguishable from each other and other strains of brook trout and this makes them important to New York's biodiversity. Their unique adaptations also make them valuable tools in fisheries management. For a number of years, Region 6 has conducted annual heritage strain egg takes in order to further the propagation and distribution of these unique strains of brook trout. In fall 2013, egg takes for the Little Tupper strain were conducted on four waters: North Twin Lake, South Twin Lake, Boottree Pond, and Deer Pond. Fertilized eggs were transferred to the NYSDEC hatchery system. This is the sixth year that an egg take has been conducted on Boottree Pond and it produced the majority of the eggs.



Oswegatchie River Cooperative Walleye Project

Walleye brood stock were collected on the Oswegatchie River (Ogdensburg) on April 22 as part of an annual cooperative project with the St. Lawrence Valley Sportsman and Massena Fish and Game Club. Mature fish were captured by Region 6 personnel by boat electroshocking. Walleye were in various stages of spawning at the time of capture with both ripe and hard females collected. The run was difficult to evaluate due to high water and turbid conditions however it appeared typical. Approximately 2.3 million eggs were harvested and fertilized for rearing by the sportsman clubs. Progeny will be screened for diseases prior to release into the St. Lawrence River.

Walleye Fingerling Evaluation

Regional fisheries staff completed electrofishing sampling at Black Lake, Payne Lake and Red Lake in October 2013. The primary purpose of this sampling was to find evidence of survival of some of the 190,000 fifty-day fingerling walleye experimentally stocked in these lakes annually from 2009 through 2013. For the fifth year, no evidence of these walleye was found in any of the lakes. Sampling in Black Lake this year produced 17 adult walleye of the 2004 through 2008 year classes. Eight were from the 2007 year class, which was produced by natural reproduction and fry stocking only, suggesting that these sources of walleye may be appropriate for Black Lake. This possibility will be explored through further research.

HABITAT CONSERVATION

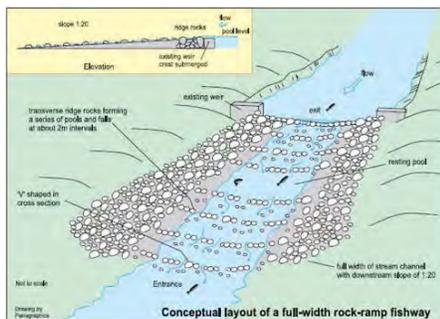
Mitigating the Impacts of Acid Precipitation

Good water quality is vital to a thriving fish population. Many fish, including brook trout (*Salvelinus fontinalis*) cannot tolerate acidic conditions. In an effort to counterbalance the effects of acidification NYSDEC conducts a pond liming program which includes monitoring water quality in vulnerable waters. During the 2013 field season,

Region 6 monitored water quality in 22 Adirondack lakes and ponds. Results for Lyon Lake which was limed in February 2013 with 80 tons of lime, indicate that the pH has improved. Water quality samples were taken in the summer and fall and the data. No pH improvement was found in Raven Lake, which is below the outlet of Lyon Lake. Hawk Pond was limed by helicopter in February 2014 with 35 tons of lime and will be monitored routinely. Region 6 staff also assisted in applying 30 tons of lime to Bear Pond in February 2014.

Fish Passage

Region 6 Fisheries personnel have been involved with reviewing fish passage designs for Emeryville, Natural Dam, and Eel Weir on the Oswegatchie River. We have encouraged the use of 'nature-like' fishways, such as the rock ramp, which are often less expensive, and more effective at passing a range of fish species, than conventional fishways. We continue to work on re-licensing efforts for the Upper and Lower Beaver Falls Hydropower Plants.



biologist from the Watertown office. The 30 minute programs introduced the students to some special life history features of lake sturgeon and reasons for the DEC recovery program that has been underway since 1993. The students also had activities with fish movements in our northern rivers and with up-close looks at sturgeon and another migratory member of this river fish community, American eel.



Flood Response

Rainfall that seemed to never end began falling on the Mohawk Valley in late June and continued until early July. Extensive flooding occurred in the valley causing massive destruction. Region 6 Fisheries staff responded to a multitude of calls from local municipalities and private landowners desperate to save their property. Contractors were busy "fixing" the streams on limited budgets. Development in floodplains exacerbated the extent of the flooding damage. Work is being done to address future flooding events in the Mohawk Valley and to minimize the property damage incurred during flooding and environmental damage due to flood response.



PUBLIC SERVICE & CONSTITUENT SUPPORT

Burdicks Crossing FAS Upgrade

The Burdick's Crossing Fishing Access Site on the Black River was upgraded to a concrete trailer launch through a Cooperative Use and Occupancy Agreement with the Town of Turin.

Outreach and Education

Regional outreach efforts included an outdoor expo in Jefferson County, conservation field days, environmental awareness days, fishing clinics, Envirothon and Earth Day events which together reached thousands of anglers, students and families and throughout the region.

Outreach Program to Ogdensburg 5th grade

Sturgeon stocking in the St. Lawrence River at Ogdensburg was accompanied with an outreach program for two classes of 5th graders at Madril Elementary School conducted by Douglas Carlson, rare fish

2013-14 Region 6 Fisheries Staff

Frank Flack	Biologist 2 (Ecology)
Russ McCullough	Biologist 1 (Aquatic)
Rodger Klindt	Biologist 1 (Aquatic)
Dick McDonald	Biologist 1 (Aquatic)
Dave Erway	Biologist 1 (Aquatic)
Dave Gordon	Fish & Wildlife Technician 2
Jonathon Russell	Fish & Wildlife Tech. 2 (trans.12/13)
Seth Love	Seasonal Fish & Wildlife Technician
Jeff Maharan	Seasonal Fish & Wildlife Technician
Chris Killough	Seasonal Fish & Wildlife Technician
Heather Bull	Seasonal Fish & Wildlife Technician
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SPECIES CONSERVATION & MANAGEMENT

Whitney Point Reservoir Summer Netting Survey

In alternate years, trap nets and gill nets are set at standardized locations throughout Whitney Point Reservoir, Broome County, to track changes in species composition, abundance, size and age structure of the fish community, particularly crappie and walleye. The July 2013 survey indicates that the fishery is doing well with abundant walleye and smallmouth bass, and average numbers of yellow perch and white crappie. Catches of walleye in both trap nets and gillnets were the highest in the history of the netting which started in 1988. Legal ($\geq 18''$) walleye comprised approximately 10% of the catch and several over 24 inches were caught. Larger white crappie, some over 13 inches, were fairly abundant and comprised the majority of the crappie sample indicating no strong year classes have been produced in the past few years. As in past years bluegills were very plentiful in the trap net sample and the majority of those captured were of a quality size. Preliminarily, the results of the netting indicate that there is no immediate need to change any regulations at Whitney Point Reservoir.

Spring 2013 Cayuga Inlet Fishway Monitoring

Operation of the Cayuga Inlet Fishway continued in spring 2013. A total of 696 rainbow trout were handled for the season. R7 Fisheries and Bath Hatchery staff worked cooperatively to collect a total of 162,250 eggs which will be used to supplement the populations of wild rainbow trout in Cayuga, Skaneateles, Owasco, Seneca, and Canandaigua Lakes. In addition, another 25,760 eggs were used to create our "hybrid" rainbow trout which are simply a cross with our male domestic rainbows from our hatchery system. These hybrids are primarily used in Skaneateles Lake. Nearly 6,000 adult lampreys were captured and killed at the Cayuga Inlet Fishway during the spring 2013 spawning run. Lamprey wounding of rainbow trout at the Fishway was 0.18 wounds per fish, in the target index group of fish in the 19.7–21.6 inch size range. The increased wounding rate on rainbow trout is a result of ongoing recruitment of the 2007 year-class of sea lamprey to Cayuga Lake. The impact of this year-class on the trout fishery of Cayuga Lake appears greater than anticipated. The high number of adult lamprey captured at the Fishway indicates that this year-class was larger than expected relative to our previous estimates of their density as ammocetes in Cayuga Inlet.

Otisco Lake Walleye Sampling

Fall night electrofishing was conducted along 3.7 miles of the Otisco Lake shoreline to determine the relative success of the 2013 stocking of 44,000 50-day walleye fingerlings. First year survival of the stocked walleye is assessed by night electrofishing in the fall. In 2013, 94 Young-of-Year (YOY) walleye were captured along with 18 older (up to age 8) walleye. Length of the older walleye ranged from 12.1 to 22.7 inches. The YOY walleye showed good growth rates with an average length of 7 inches and all were caught south of

the causeway, where the majority of the stocked walleye have been planted since 2002. Of the 44,000 stocked in June 2013, approximately 33,000 were stocked south of the causeway and 11,000 north of the causeway.

Using Serns' 1982 formula for estimating numbers of YOY walleye provides a population estimate of 3,908 in the south end of the lake below the causeway. If accurate, this estimate represents a 12% survival rate (based on the 33,000 stocked south of the causeway). The 12% estimated survival rate is the highest yet during this five year experiment at Otisco Lake. Previous survival estimates for 50-day walleye in Otisco range from 0.05 to 3% but it should be noted that our ability to sample was hampered by mechanical issues during 2009 and 2011, and by extremely low water levels in 2012. For perspective, the broad range of survival for these 50-day walleye is similar to what we observed previously from stocked "pond fingerling" walleyes.

Gamefish were the target species and in addition to walleye, 16 tiger musky (8.3-31.2 inches), 37 smallmouth bass (6.2-17.3 inches), 29 largemouth bass (5.3-16.9 inches), and one brown trout (15.7 inches) were also collected.

Eaton Brook Reservoir Sampling

Two fisheries surveys were conducted on Eaton Brook Reservoir, a 272 acre lake in Madison County. The first was a two-night electrofishing survey in June, and the second was a two-day gill netting survey in July.

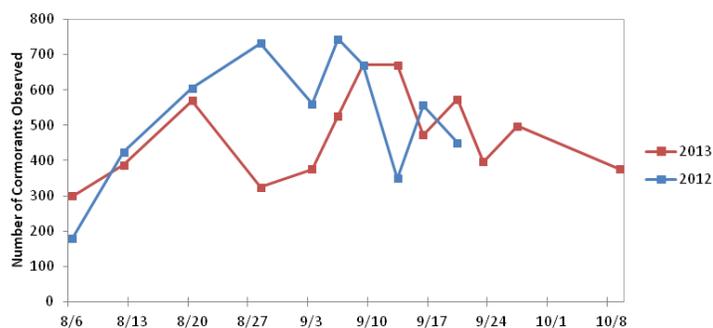
The objectives of the surveys were to evaluate age, growth, abundance, and predator/prey balance of the reservoir's sportfish community. Additional objectives were to determine if stocked rainbow trout are surviving and if recent year classes of walleye are recruiting. Eaton Brook Reservoir is stocked annually with 2,000 year-old rainbow trout and roughly a million walleye fry. In total 621 fish were caught, representing 16 species. Largemouth bass were the most numerous with 172 caught, 28% of catch, followed by 94 bluegill, 91 pumpkinseed sunfish, 66 smallmouth bass and 60 chain pickerel. Ten walleye and one rainbow trout were also caught. Walleye ranged in size from 17.2 to 27.8 inches and in age from 5 to 12 years. The only rainbow trout caught was 12.8 inches and aged at 2 years old. That would make it from the 2012 stocking, which shows there is some potential for hold-over; especially considering the warm dry summer of 2012. Overall, size range and number of most of the sportfish species collected were indicative of balanced populations. Based on the abundance and other population characteristic of the species sampled, there appears to be no need to change any regulations at this time for Eaton Brook Reservoir.



Cormorant Management on Oneida Lake

A joint DEC and volunteer cormorant hazing program was again implemented at Oneida Lake in September 2013. As in the previous three years DEC Fish and Wildlife staff and Environmental Conservation Officers (ECO's) from both Regions 6 and 7 were involved with the hazing effort. Cormorant numbers declined by roughly half following the first DEC harassment effort in late August but in-

creased in mid-September as the migration commenced. Although the number of cormorants ranged from 400 to 600 birds from mid-September through early October staff felt confident they would have been higher without the hazing effort. Most birds encountered during the latter half of September appeared naive to the hazing efforts indicating they were new birds to the lake. A total of 134 cormorants were killed in order to reinforce the hazing efforts and to collect data on what the birds were eating. Gizzard shad and emerald shiners were again an important part of the cormorant diets but adult yellow perch and panfish comprised a significant portion their diets for most of the month of September. In contrast to previous years, there was only one week (last week of September) in which gizzard shad comprised nearly the entire diet of the cormorants sampled. The size and abundance of young-of-year (YOY) gizzard shad in September appears to have a great influence on their utilization by cormorants at Oneida Lake. In past years when YOY gizzard shad were larger and more abundant they appeared to serve as a buffer against cormorant predation on other sportfish.



Number of Double Crested Cormorants Observed in 2012 and 2013

Chittenango Creek Electrofishing Survey

A two mile section of Chittenango Creek, a popular trout stream in Madison County, became a No Kill (NK) artificial lure only trout fishery in Oct 2010. On August 20, 2009, prior to implementation of the NK regulation, Region 7 Fisheries staff conducted an electrofishing survey at two sites within the proposed NK area to gather baseline data on the trout population. On August 20, 2013 fisheries staff re-surveyed those same two sites to determine whether the NK regulation has impacted the trout population in the reach. In 2009, 80 brown trout (73% wild, based on observations of deformed or eroded fins) were collected with a length range of 3.1-17.4 inches, and a mean length of 7.2 inches. The 2013 survey yielded 81 brown trout (67% wild) with a size range of 3.8-16.6 inches, and a mean length of 9.4 inches. We anticipated finding significantly more brown trout in 2013 as the result of the NK regulation but that was not the case. Despite similar numbers caught, the size distributions of the samples from the two surveys were significantly different. Increased mean size of the 2013 sample of trout was in part due to a nearly complete absence of young fish. Young-of-year trout (<4.2 in.) made up 44% of the brown trout sample in 2009 versus just 2.5% in 2013. The warm dry summer of 2012 and/or the major flooding that has occurred since may have affected survival of young trout. Increased abundance of older trout may be a result of the No-Kill policy.

DeRuyter Reservoir Walleye Assessment

Fall night electrofishing was conducted along 2.9 miles of the DeRuyter Reservoir shoreline to evaluate the relative success of the 2013 experimental stocking of 50,000 walleye fingerlings. The reservoir has historically received an annual stocking of 1.1-2.8 million

walleye fry from the Department but 2013 was the first year of an experimental walleye fingerling stocking program undertaken by the DeRuyter Reservoir Association (DRA). The DRA hoped that stocking larger walleye fingerling at an extremely high density would result in more walleye in the lake. Unfortunately, no Young-of-Year (YOY) walleye were found, but 26 older walleye were collected. These walleye ranged from 3 to 11 years old and from 14.2 - 27.0 inches. Walleye collected were on the thin side with a mean relative weight (Wr) of 82.5 ± 6.1 . A normal Wr range is 90-100. Given that no YOY were collected it would appear that there was limited success with the 2013 walleye stocking.

Jamesville Reservoir Walleye Assessment

Night-time boat electrofishing was conducted on October 10, 2013 to assess the current status of the walleye population in the reservoir as well as to attempt to assess the tiger muskellunge population which is also stocked by the Department. The entire perimeter of the lake was sampled, and 25 walleye (nine YOY) were collected, along with five tiger muskellunge. The catch rate of walleye was 13.7 fish per hour, a substantial improvement over the 2010 survey at 5.6 fish per hour, and 2011 at 4.7 fish per hour. Walleyes ranged in size from 7.1 to 26.3 inches and ranged in age from 0 to 9+ years. All the tiger muskellunge captured were less than 12.5 inches in length indicating they were part of September 2013 Department stocking of 1,700 fish. Jamesville Reservoir's history of consistent survival of stocked walleye clearly indicates that continued management of this species is warranted for the long term. Further evaluation of the success of the tiger musky stocking is necessary given the consistent lack of larger fish in our samples.

Salmon River (Redfield) Reservoir Survey

The Salmon River Reservoir in Oswego County was surveyed in June 2013 to determine the level of natural reproduction resulting from five years of juvenile walleye stocking in the reservoir (2004-2008). This survey was a replication of one completed in 2008 as a mid-project assessment. The numbers of walleye and yellow perch increased noticeably between the two studies, while the number of smallmouth bass declined considerably. Based on both the gillnet catch rate and the length-at-age results there appears to be a moderately abundant walleye population in the reservoir. Age data shows that the majority of the walleye in the population are from natural reproduction. Yellow perch numbers rose between the two surveys but are still in the low abundance range for New York State. The recent repeated droughts decreased the amount of submersed aquatic vegetation in the reservoir likely impacting the black bass population and lessening the predatory pressure on young walleye.

2013-14 Region 7 Fisheries Staff

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SPECIES CONSERVATION & MANAGEMENT

Lake Trout Assessment - Seneca Lake

Lake trout populations were assessed in Seneca Lake in July 2013, using standardized Finger Lakes gill nets. Lake trout were last surveyed in 2008. A total of 339 lake trout were collected for a catch rate of 10.3 net night, slightly higher than recent years. Based on fin clips, approximately 45% of lake trout collected were naturally reproduced, lower than in 2005 and 2008 where 65 and 60% were found to be wild fish. Overall condition of lake trout appeared to be good, with relative weights for the stock, quality, and preferred size groups at 107, 116, and 103, respectively. Lamprey wounding rates were 0.57 wounds/scars/fish in the 600-699 mm size range, which met the target rate. Rainbow smelt continue to be absent in both the gill nets and lake trout stomachs. In response to abundant lake trout populations, increased natural recruitment rates and potential negative impacts to other salmonines (i.e. rainbow trout, brown trout, and landlocked salmon), lake trout stocking rates were reduced by 33% in 2012 and harvest regulations liberalized from up to 3 to 5 lake trout/per day also in 2012.

Catharine Creek Sea Lamprey Larval Assessment

Sea lamprey larval habitat, distribution, and abundance were assessed in a 10.5 mi reach of Catharine Creek in early fall using Great Lakes Fishery Commission protocol for Great Lakes Streams. Catharine Creek was last treated for sea lamprey larvae in 2011. The stream was split into two separate reaches: upstream and downstream of a pool digger that may have developed into a sea lamprey barrier. Results from downstream of the pool digger indicated that Type I habitat, which is prime sea lamprey larval habitat, accounted for only 1.1% of the total area while Type III habitat, which is extremely poor, was nearly 89% of available habitat. Larval abundance was estimated at 9,880 larvae. Upstream of the potential barrier, no Type I habitat was found and nearly 100% was Type III. Subsequently no sea lamprey larvae were discovered. Results indicate that very little Type I habitat is found in Catharine Creek, however downstream of the barrier, anywhere Type I or Type II habitat was found, so were sea lamprey larvae. Based on the results of this survey it is recommended that Catharine Creek be treated in 2014 and that the primary application point for the lampricide be located just upstream of the pool digger.

Honeoye Lake Standard Gang Gill Netting

Staff conducted four nights (8 total nets) of gill netting on Honeoye Lake during September, 2013. This survey was conducted primarily to assess the walleye and panfish populations. Samples were also collected for fish disease testing and the Toxic Substance Monitoring Program. Honeoye Lake is well known for quality panfish and supports popular fisheries for black crappie in the spring and bluegills and pumpkinseeds throughout the open water and ice fishing seasons. The catch rate for black crappie was the highest we have had for this

type of survey on Honeoye Lake. Eighty-nine percent of the black crappie sample consisted of sub-legal (< 9 inches) fish. The large numbers of sub-legal black crappie should lead to good fishing over the next few years, as these fish reach legal size. Catch rates for bluegills and pumpkinseeds were down significantly compared to our last netting in 2008. Although abundance of bluegills and pumpkinseeds appears to be down, their size structure is much more balanced than it was in 2008.

The catch rate for walleye was down slightly from 2008. Six percent of the walleye sample consisted of sub-legal (< 15 inches) fish. This was a significant change from our last gill netting in 2008, when 40% of the walleye sampled were sub-legal. The decrease in sub-legal walleyes is concerning. We have proposed raising the size limit on walleye from 15 to 18 inches because of a low 2012 population estimate, low angler diary catch rates, and high yellow perch abundance all suggest that the walleye population is down. In the short term, the proposed regulation change will protect some walleye that are currently in the 15 to 17 inch size range, but better survival of stocked walleye is needed to sustain the fishery in the long term.

Muskellunge Assessment – Waneta Lake

The muskellunge population in Waneta Lake was assessed using Oneida style trapnets set at three standard sites from 16-26 April 2013. A total of 158 muskellunge were collected. Total length, weight, sex,



and maturity status were recorded and fish scales were collected for subsequent aging. In addition to muskellunge, information was collected on all other species of fish collected during the survey. Preliminary data analysis indicates that catch rate of 7.2 musky/net night was slightly higher than 5.5 musky/net night in 2009. Approximately 80% of muskellunge collected were > 30 inches, the current legal size limit. The largest muskellunge collected was 55 inches and weighed over 40 pounds. Natural recruitment based on fin clip examination indicated about 10% may be considered wild fish. Overall condition of muskellunge appeared to be good. Numerous quality sized yellow perch and black crappie were collected indicating a very good fishery exists for these species. Proposed statewide regulations to increase the minimum size limit for muskellunge from 30 to 40 inches should increase the potential of catching trophy size fish in Waneta Lake.

Wayne County Lake Ontario Bays Recreational Fishery Survey

From April 1, 2012 to March 31, 2013, staff conducted a recreational fishery survey on East, Port, and Blind Sodus bays in Lake Ontario. The bays support diverse warm water species and Port and Blind Sodus Bays are intensively managed for walleyes, each receiving bi-annual stockings of fingerling walleyes raised in DEC hatcheries.

Port, East, and Blind Sodus Bays provide excellent year-round panfish and bass, and good northern pike, fishing opportunities for those anglers who prefer to fish smaller, less heavily fished water bodies in Wayne County. Panfish catch rates were above those observed on other nearby Lake Ontario bays. Largemouth bass was the favorite open water gamefish target on the bays, consistent with the preferences of anglers surveyed during a recent statewide survey. The high

release rate of bass, particularly legal sized bass, observed on these bays is consistent with the “catch and release” ideology practiced by most bass anglers today. No bass were harvested from the bays during the catch and release season from December through May. The Port and Blind Sodus Bay walleye catch rates are well below the statewide objective, despite modest walleye CPUEs from assessment surveys.

Staff Assist with Irondequoit Bay Lake Herring Stocking

Re-establishing self-sustaining populations of native whitefishes in Lake Ontario is the focus of cooperative efforts between the Department, the U.S. Geological Survey (USGS), the Ontario Ministry of Natural Resources (OMNR), the U.S. Fish and Wildlife Service (USFWS), and the Great Lakes Fishery Commission, with supporting research conducted by The Nature Conservancy (TNC). On November 14 and 20, 2013, staff assisted USGS and TNC staff with stocking lake herring in Irondequoit Bay. Lake herring were once an important prey fish in Lake Ontario, and supported important commercial fisheries that collapsed in the early 1950s largely due to over-harvest. In New York waters of Lake Ontario, lake herring historically spawned in Irondequoit Bay, Sodus Bay, the Sandy Ponds, and Chaumont Bay. The juvenile lake herring that were stocked originated from eggs collected by Department staff in Chaumont Bay during November and December, 2012. Lake herring eggs were hatched and juveniles reared at the USGS Tunison Laboratory of Aquatic Science in Cortland, New York.

Stocking of Lake Sturgeon in the Genesee R.

Re-establishing self-sustaining populations of native lake sturgeon in Lake Ontario is the focus of cooperative efforts between the Department, the U.S. Geological Survey (USGS), the U.S. Fish and Wildlife Service (USFWS), the Great Lakes Fishery Commission (GLFC), and the Seneca Park Zoo. On October 2, 2014, region 8 staff assisted USGS staff with stocking 1000 lake sturgeon fingerlings into the Genesee River.



Native Mussel Distribution in the S. Lake Ontario Watershed

Region 8 Fish and Wildlife staff completed the final year of a five-year project to determine distribution, density, and status of native freshwater pearly mussel species in the Southern Lake Ontario watershed. In most of the watershed’s streams, the current status of mussels is unknown.

To date, 416 sites along 126 streams and 27 Erie Canal sites have been surveyed. Live mussels were found in 63 of the surveyed streams, with Species of Greatest Conservation Need (SGCN) confirmed in 25 streams. Mussels were documented for the first time in over 50 streams. Throughout the Erie Canal sites, both native pearly mussels and invasive bivalves were found.

Twenty-three native mussel species are represented in these surveys; 20 of the 23 species were found live, including ten SGCN. Two species found live in several waterbodies, paper pondshell and lilliput, had not been reported from NYS in over 15 years, while a third species, deertoe, was previously unknown from this watershed. Deertoe

is ranked by Natural Heritage Program as having only “5 or fewer occurrences” statewide. In addition, green floater mussel, a NYS threatened species was found at several sites along the Genesee River, as well in tributaries in the Upper Genesee and Finger Lakes basins.

PUBLIC SERVICE & CONSTITUENT SUPPORT

Fishing Pole Lending program

Two new libraries joined the Region 8 Library Fishing Pole Program in 2013, bringing the total number of libraries to seven. Regardless of the number of users, all the Librarians report the program generating a lot of positive comments.

- Dansville Public Library – Poles were checked out 34 times. Average length of each check out was 3 weeks.
- Wood Library (Canandaigua) - - Poles were checked out 62 times, each for a 3 week period.
- Pulteney Public Library - - Poles were checked out 18 times by 11 different people.
- Honeoye Public Library - - Poles were checked out 26 times, each for a 3 week period. The fishing pole lending program at the Honeoye Public Library was highlighted on National Public Radio featuring unique ways libraries nation-wide are serving communities.
- Woodward Memorial Library (LeRoy) - - Poles were checked out 23 times.
- Modeste Bedient Memorial Library (Branchport) - - Poles were checked out twice for 5 days.
- Hoag Library (Albion) - - Joined the program in the late fall, no poles were checked out.

High School Students Learn About Fisheries Management.

On October 9 and 10, 2013, for the twelfth consecutive year, Region 8 Fisheries staff cooperated with Delta Laboratories’ Adopt-a-Stream program to provide about 120 Environmental Studies students from four area high schools a hands-on demonstration of fisheries management techniques. Demonstrations were also given in boat electrofishing, fish identification, water quality, freshwater mussels, fish seining, and fish scale aging and data interpretation. Students had the opportunity to capture, handle, identify, and measure live native fish, age fish scales, and handle and identify benthic invertebrates.

Marsh Madness

For the fifth consecutive year staff cooperated with Cornell Cooperative Extension of Livingston County, to treat about 80 fourth graders from Livonia Intermediate School to live creatures from the Seneca Park Zoomobile at the Chip Holt Nature Center and an interpretive walk at the Conesus Inlet Wildlife Management Area to view northern pike and walleyes during their spawning migration runs.

2013-14 Region 8 Fisheries Staff

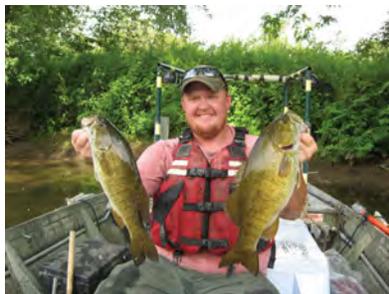
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SPECIES CONSERVATION & MANAGEMENT

Allegheny River Fish Community Survey

The Allegheny River watershed in New York State was sampled in 2013-2014 by boat and backpack electrofishing, electrified benthic trawling, and seining to assess the fish assemblage, and to evaluate the gamefish and panfish populations. A total of 319 sites were sampled within the Allegheny River watershed and resulted in the collection of 79 taxa. This included a group of 16 sportfish species, dominated by smallmouth bass and walleye, and caught primarily with boat electrofishing. Trawling proved effective in sampling the Percidae family and other small bodied channel species. Several rare, “threatened” or “endangered” species such as bluebreast darter (*Etheostoma camurum*), longhead darter (*Percina macrocephala*), and spotted darter (*Etheostoma maculatum*) were collected during this survey. In terms of species richness and diversity, the results of this survey compare favorably to the results of a 1937 survey by the New York Conservation Department; the last comprehensive survey of the Allegheny River watershed.



Quaker Lake Fisheries Survey



In the spring of 2013, Quaker Lake’s fish community was sampled by boat electrofishing to assess the status of the warmwater fishery. Comparative data was available indicating bass populations had undergone size and/or structural changes since last surveyed in 2004. Population

estimates indicate the smallmouth bass population had increased in abundance while largemouth bass abundance had remained fairly stable. The proportional stock density (PSD) of smallmouth bass indicated the population had maintained good size structure with no significant production problems. However, PSD and relative stock density (RSD380) values for largemouth bass indicate the population had become heavily skewed towards larger bass as a result of reproduction and/or recruitment problems. Evidence indicates yellow perch may be limiting largemouth bass recruitment. Supplemental evidence suggests competition with northern pike may have negatively impacted the size structure of largemouth bass as well. Analysis of all data suggests Quaker Lake’s fish community was in transition, possibly establishing a new balance between fish species. The well balanced, growing smallmouth bass population remained

as the lake’s primary predator. However, the largemouth bass population, which had become structurally unbalanced, was represented as a secondary predator in lesser numbers. The yellow perch population, which dominated the catch during the 2013 spring survey, became established as Quaker Lake’s most abundant prey species.

Chautauqua Lake Centrarchid Survey

The fish community in Chautauqua Lake was sampled during the spring of 2012, by boat electrofishing, to determine the status of the largemouth bass and smallmouth bass populations. This was the first spring electrofishing survey completed on Chautauqua Lake since 1996. Sampling effort was divided into 23 separate electrofishing runs. Thirteen runs were completed in the north basin and 10 runs were completed in the south basin. In total, 120 minutes were devoted to catching all fish and 450 minutes were devoted to catching game fish only. A total of 2,893 fish were captured during the study. Yellow perch were by far the most abundant fish collected, with largemouth bass being the most abundant game fish collected. The catch per unit effort of largemouth bass and smallmouth bass was 26.7/hr and 5.6/hr, respectively. The catch rate of largemouth bass was higher than the catch rate during the spring of 1996, and higher than averages from the New York State Bass Study. The catch rate of smallmouth bass was slightly lower than the catch rate in the spring of 1996 and lower than the statewide average. Proportional stock densities for both largemouth bass and smallmouth bass decreased since 1996, but still indicate a fairly balanced population with no significant production problems. Overall, the largemouth bass and smallmouth bass populations have either increased slightly (largemouth) or remained stable (smallmouth) since 1996 and should continue to provide quality angling opportunities.

Wild Brook Trout Stream Surveys

From June to October 2013, two seasonal Fisheries Technicians completed the fourth and final year of surveys on small streams across Region 9. Many of these streams had never been surveyed. The primary focus for this work (a part of the Eastern Brook Trout Joint Venture) was to locate undocumented



wild brook trout populations or other wild trout species. This was a Federal Aid to Sportfish Restoration project. Work in 2010 focused on the upper Genesee River watershed. Work in 2011 work occurred in the Erie-Niagara watershed, while the 2012 and 2013 work occurred mainly in the Cattaraugus and Chautauqua County portions of the Allegheny River watershed. With the identification of these wild trout populations, efforts to upgrade water classifications to afford them additional legal protection have begun. Streams will also be prioritized for future habitat restoration and potential brook trout reintroduction efforts.

During 2013, the crew assessed 202 streams. Of this total, 13 were found to be dry. In the 189 streams electrofished, they found wild brook trout populations in 35 of the streams, wild brown trout in 26 streams and wild rainbow trout in 8 streams. Wild brook trout in these streams face threats to their existence such as competition with brown trout, elevated water temperatures and poor land use practices. On the positive side, several surprisingly large specimens of both wild brook and brown trout have been found in these mostly very small streams.

In four field seasons, a total of 1,583 streams have been assessed, of which 1,322 (84%) have never been surveyed before. Wild brook trout were found in 194 streams, wild brown trout in 213 streams and wild rainbow trout in 31 streams. Of the 373 streams sampled that contained wild trout, 365 (98%) need to have their water classifications upgraded in order to offer the streams maximum protections from disturbance. Sixty three percent of streams found to support wild trout currently have no permitting requirements for stream disturbance projects. Although an ancillary part of this project, man-made barriers (mainly road culverts), potentially impassible to trout and other fish were identified on 279 streams in the surveys.

Elton Creek trout population sampling

In August 2013, Region 9 Fisheries staff along with angler volunteers completed trout population sampling in both the stocked and wild trout sections of Elton Creek, in Cattaraugus County. Six sites were electrofished, duplicating sites sampled in 1991, 2001 and 2013. In 1991 and 2001, the area where all six sites were located was being stocked with hatchery brown trout. However in 2013, only the lower two sites were in the stocked section, stocking having been removed where the upper four sites were located in 2002. Sampling in 2013 was done to monitor the wild trout population and to evaluate the effects of removal of stocking on the wild trout.



For all sampling sites combined, the estimated abundance of adult (yearling and older) wild brown trout was 164/mile, which is lower than that found in 1991 (231/mile) or 2001 (243/mile). Conversely, the abundance of wild rainbow trout in 2013 for all sites combined (525/mile) was much higher than 1991 (117/mile) or 2001 (335/mile). A similar pattern of abundance was apparent when looking at just the sites in the unstocked section. However, both species were more abundant in the unstocked than the stocked section in all years – especially rainbow trout. This was likely due to better water temperatures for the survival and growth of trout in the upstream, unstocked section.

While wild brown trout abundance declined from 1991 to 2013, biomass of wild brown trout almost doubled for all sites combined during that period (17-31 pounds/acre), indicating the population was made up of much larger individuals in 2013. In fact, in 2013, of the estimated 164 adult wild brown trout per mile, 70/mile were >10 inches and 49/mile were >14 inches. Similar increases in biomass were observed for wild rainbow trout with the biomass increasing from 4 to 21 pounds/acre, for all sites combined, from 1991 to 2013. It is likely that the reduced abundance of fall-spawning wild brown trout was due to poor spawning and rearing conditions through the fall/winter the past couple years. The increased wild brown trout biomass may be related to more trout surviving to older age/larger size, due to decreased brown trout abundance and/or due to reduced angling harvest since stocking was eliminated in the upper section of the creek. The increased abundance and biomass of spring-spawning wild rainbow trout is likely due to successful spawning and rearing conditions, decreased angler harvest following the elimination of stocking in the upper section of the creek and/or increased voluntary release of trout. This phenomenon is similar to what we have seen on other Region 9 streams in recent years.

In 2013, at the two sampling sites in the stocked section, a very low abundance of hatchery brown trout were found from the previous spring's stocking. This is similar to 1991 and 2001 sampling and indicates that water quality in that section of stream may not be conducive to survival of the stocked trout through the summer months in the lower section of the stream.

PUBLIC SERVICE & CONSTITUENT SUPPORT

Angler Outreach

Fishing Clinics: Region 9 fishing education efforts included coordination and involvement in 5 youth and family free fishing clinics, reaching 567 youth anglers and their families. Two exceptionally strong free fishing day events at Tiff Nature Preserve and Chestnut Ridge County Park were provided in cooperation with the Erie County Federation of Sportsmen's Clubs.

Summer Camp Programs

Fisheries staff provided 6 fishing education programs for youth campers at DEC Rushford Environmental Camp, covering fishing education and instruction for a total of 319 campers. In an effort to offer fishing education to more youth summer camps than DEC staff can actually visit, the Train-the-Trainer program was provided for 3 water-based summer camps. The goal is to teach fishing education to the camp counselors who will in turn provide the training to their many campers throughout the summer. A total of 21 camp counselors received fishing education training and fishing equipment from DEC staff.

Fishing Hotlines

The Lake Erie and Western New York Fishing Hotlines are updated every Friday to provide western New York anglers with current info on productive fishing locations, baits, tips and techniques. Each hotline is available on the DEC website at www.dec.ny.gov/outdoor/fish-hotlines.html or can be heard at (716) 855-FISH. During the report period, anglers visited the Lake Erie hotline page 97,949 times, Western New York hotline page 84,349 times and the automated phone lines 25,099 times. In all, these popular angler resources were visited an average of 568 times per day.

2013-14 Region 9 Fisheries Staff

Mike Clancy	Biologist 2 (Aquatic)
Scott Cornett	Biologist 1 (Aquatic)
Mike Todd	Biologist 1 (Aquatic)
Mike Wilkinson	Biologist 1 (Aquatic) retired 4/14
Chris Legard	Biologist 1 (Aquatic) hired 12/13
Jim Zanett	Fish & Wildlife Technician 3
Rob Roth	Fish & Wildlife Technician 1
Justin Brewer	Fish & Wildlife Technician 1
Amanda Wagner	Fish & Wildlife Technician 1
Tobias Widger	Fish & Wildlife Technician 1
Ashleigh Read	Fish & Wildlife Technician 1

**Inland Fisheries Section
Bureau of Fisheries
State of New York
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION**

SPECIES CONSERVATION & MANAGEMENT

Fishery Surveys Entered Into Statewide Fisheries Database

Data from a total of 820 fishery field surveys were received by the Biological Survey Unit during 2013-14. A total of 738 surveys were finalized and added into the Bureau of Fisheries Statewide Database (SWDB). A substantial number of the surveys received and processed by Central Office was a result of increased effort in recent years by some DEC Regions in conducting Eastern Brook Trout Joint Venture (EBTJV) surveys. Of the 738 surveys that were finalized 473 were EBTJV surveys. Updated copies of the SWDB containing newly entered data ("Releases") were provided and distributed three separate times, July, 2013, November 2013, and in March 2014.

New York Baitfish Use Survey

An angler survey on the use of baitfish was completed by the Cornell Human Dimensions Research Unit (HDRU). The Bureau worked closely with HDRU during the development of the survey including identifying topics to focus on. Primary purposes of the survey included obtaining more information and learning about how anglers in New York used baitfish, the species they fished for when using baitfish, where they fished, and the type of fishing they were engaged in. Secondly, the survey was utilized to obtain feedback on how the recent baitfish-fish health regulations and modifications impacted baitfish anglers, and anglers' views about the regulations.



Results of the survey show that the proportion of anglers who used baitfish while fishing in New York in the past five years is estimated to be 42%, or roughly 337,300 anglers. Of those an estimated 290,100 anglers used baitfish while fishing in New York in the past year. In addition to fishing with baitfish, almost all anglers also used artificial lures (94%) or other types of bait. Few anglers (3%) just fish with baitfish. Of those anglers who use baitfish, 77% fish from a boat, 52% ice fish and 51% fish from shore. When fishing with baitfish in New York in the past year, 25% used personally collected baitfish some of the time and 75% used only purchased baitfish. Most respondents (89%) obtained information about baitfish regulations from at least one of the four DEC sources listed in the questionnaire (i.e., fishing regulations guide, other DEC publications, DEC website, and DEC personnel). A majority also indicated they received information from the place where they purchased baitfish, making baitfish sellers an important conduit of information from DEC to anglers.

Most baitfish anglers in New York (84%) were at least slightly familiar with the 2006-2007 baitfish-fish health regulations. Far fewer (45%) were familiar with the newer 2011 regulations. Even among those who indicated that they had fished within the corridors since 2011 (which was the majority of the anglers using baitfish) only one-third were moderately or very familiar with the regulations. Just over

half (53%) of those who had personally collected baitfish in 2012-2013 were moderately or very familiar with the regulations. Some anglers (23%) indicated that they previously used baitfish but have now stopped because of the baitfish regulations. Cornell HDRU staff estimated that roughly 107,150 anglers were impacted in this way by the regulations. The majority of baitfish anglers (58%) were satisfied or very satisfied with the job the DEC Bureau of Fisheries is doing using regulations as part of their approach to prevent the spread of fish diseases in New York. Few were dissatisfied (11%).

Some anglers engaged in activities that might lead to the introduction of aquatic invasive species: 35% of those fishing from a boat placed their baitfish in a recirculating livewell; 25% used baitfish in more than one water body some of the time; and 6% moved baitfish between water bodies most or all of the time. Sixty Five percent (65%) of those who bought certified baitfish indicated that at some point they had exchanged or supplemented the water in their bait bucket with water from the water body they were fishing in.

A draft report entitled "Anglers Who Use Baitfish in New York and Their Views on Recent Regulation Changes" was completed by Nancy A. Connelly and Barbara Knuth of the Human Dimensions Research Unit, Department of Natural Resources, Cornell University by the end of the 2013-14 fiscal year and was finalized in the summer of 2014.

Exemption for the Possession and Sale of Bighead Carp

The proposed rule-making that was developed and filed during the previous year (2012-13), for the purposes of removing the exception that has existed in statewide regulation allowing for bighead carp to be sold, possessed, transported, imported and exported in NYC and immediate vicinity was finalized, and became effective in August, 2013.

This created consistency with the "Asian Carp Prevention and Control Act" which added these fish as an Invasive and Injurious Species in 18 USC 42. This federal act went into effect in December 2010, making bighead carp federally prohibited from being imported and it is a Lacey Act violation if they are transported across state lines into New York. As a result of federal action, the exceptions in the state regulations were no longer legal and needed to be repealed.

Warmwater Fisheries Management

Ecology and Management of the Fish Communities in Oneida and Canadarago Lakes

Researchers at the Cornell Biological Field Station at Oneida Lake completed their annual assessment of the fish communities in Oneida and Canadarago Lakes. Funded by a Federal Aid in Sport-fish Restoration grant, these monitoring projects are the longest running warmwater fishery assessments in New York State and continue to provide valuable insight on the complex dynamics associated with warmwater fish populations in large northern lakes.

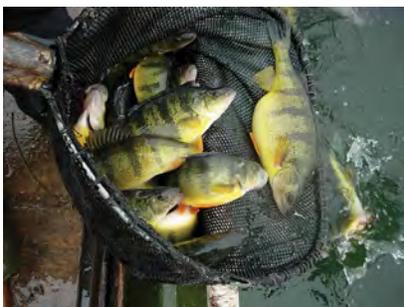


Oneida Lake

Long term fish community changes in Oneida Lake are measured by assessing standard gill net catches. There were 2,005 fish caught in the standard gill nets in 2013, the highest observed since 2002. Catches continue to be dominated by yellow perch (35% of the catch), white perch (27%), and walleye (20%). These three species represent over 80% of the catch in most years, with white perch occasionally outnumbering yellow perch.

The estimated adult (age 4 and older) walleye population abundance was 360,003 in 2013, which was a decrease from the 2012 estimate of 480,200. The decline in the adult population likely resulted from several factors, including modest year classes recruiting into the adult population since 2010 and recent increases in harvest. Predicted recruitment from the 2010 and 2011 year classes (108,500 and 81,700 fish, respectively) are above recent harvest levels (54,000 – 60,000 fish/year) and should result in an increase in the adult population over the next 2 years. Over the full course of the 57 year data series the adult walleye population has experienced a significant decrease, but has shown a significant increase in the last decade.

The adult (age 3 and older) yellow perch population was estimated to be 1.7 million fish. Over the last four years the population has been increasing, likely as a result of relatively strong year classes produced from 2005-2008, which may have been aided by limited ice fishing opportunities over recent winters and a prolonged period of low cormorant numbers on the lake. Long term trends show a significant population decline, but no trend is detectable over the last decade, suggesting a more or less stable, but much smaller population than was present in the lake in the 1960s – 1980s.



Increased water clarity due to filter feeding by zebra and quagga mussels has caused an expansion in the shoreline littoral habitat that favors species such as black bass, sunfish, and pickerel. A nearshore fyke survey was recently added to the monitoring program to account for the anticipated changes in the littoral fish community. In 2013, 25 species were caught in the fyke nets, many of which were littoral species that are not typically caught with the traditional gears used in the long term studies. The fyke net survey has provided an index of young-of-year largemouth bass production and also shows potential as an index for sunfish and chain pickerel. It also will provide valuable data on production of nesting bass and sunfish to assess potential impacts of round gobies, which were confirmed in the lake in 2013.

In 2013, both full open water roving and access site creel surveys were conducted from the opening of the walleye season (first Saturday in May) to the end of September. Effort in 2013 was 218,570 boat hours, which continued a trend of increasing effort since 2002. More than 50% of anglers sought walleye specifically, or walleye and other species. About 30% of anglers targeted black bass. The estimated catch and harvest rates for walleye were 0.2/hour and 0.1/hour, respectively. The estimated annual walleye harvest was 58,947, which was very similar to the estimated annual harvest from 2012 (59,500). The smallmouth bass harvest rate was 0.03/hr with an annual total harvest of less than 4,700 fish, which is typical for this largely catch and release fishery.

Canadarago Lake

Walleye fry continue to be low in abundance, a trend which began in 2005. The low abundance of fry is attributable to an increasing population of alewife, which are known predators of fish fry and often have dramatic impacts on walleye reproduction. This has resulted in a decline in the number of juvenile walleye captured during recent surveys and is likely to impact the adult walleye population in the future. A boat electrofishing survey by DEC Region 4 in 2013 captured 17 total walleye, 15 of which were over 15 inches, an indication of recruitment problems.



In response to the almost complete lack of successful walleye reproduction and an adult population at risk of decline, a walleye stocking program was initiated. Approximately 40,000 advanced walleye fingerlings were annually stocked from 2011-2013. The same number of 50-day walleye fingerlings will be stocked in 2014 and 2015. The goal of this program is to boost walleye recruitment by offsetting some of the losses of young walleye to alewife predation. Annual assessments of the fish community will allow up to date tracking of stocking success.

Habitat Mapping of Oneida and Canadarago Lakes

Hydroacoustic and rake toss plant surveys were conducted to assess submerged aquatic vegetation (SAV) distribution and composition in Canadarago and Oneida Lakes. In Canadarago Lake, SAV percent cover and mean plant height were high in shallow areas and declined sharply between 5 and 6 m water depth. Coontail was the dominant plant species and waterweed, eelgrass, and naiad occasionally made up substantial portions of the samples. In Oneida Lake, SAV percent cover and mean plant height declined sharply between 4.5 and 5 m water depth. The most abundant plant species were eelgrass, coontail, naiad, pondweed, and milfoil. Compared to past surveys, milfoil and pondweed have decreased, while eelgrass and coontail have increased. Information from this study can be used to help understand fish community fluctuations, especially in near shore fish such as sunfish and black bass which can be strongly affected by SAV changes. Another survey of Oneida Lake is planned for 2016, which will allow us to continue to monitor long term changes in SAV.

Statewide Black Bass Population Assessment

Black bass are the most sought after species of fish by New York anglers, but the last comprehensive statewide population assessment occurred 30 years ago. Since then, black bass fisheries have become more tournament based and catch and release angling has become more prevalent. A 3 year study funded through a Federal Aid in Sportfish Restoration Grant and conducted by the New York Cooperative Fish and Wildlife Research Unit was initiated in 2011 to compile black bass data from various large datasets and comprehensively assess population and environmental metrics. Multiple population parameters (relative abundance, growth, condition, length frequency) were summarized for inland lakes, including Oneida Lake, and Lake Erie and the eastern basin of Lake Ontario. The influence of environmental metrics (e.g., water chemistry, landscape characteristics, lake size and shape, etc.) on black bass population metrics, and spatial and temporal trends, were also assessed. This study will be completed in 2014 and will enhance our current understanding of New York's bass

populations and aid in the development of management strategies.

Stocking Evaluation of 50 Day Old Walleye Fingerlings

An experimental walleye stocking program, initiated in 2009, was continued using 50-day old tank raised fingerlings from Oneida Hatchery. Eleven lakes throughout the northern, central and western regions of the state were stocked in June with about 390,000 1.5 inch long fingerlings. Waters stocked included Loon Lake in Region 5, Black, Red, and Payne lakes in Region 6, Otisco and Otter lakes in Region 7, and Chautauqua, Redhouse and Upper, Middle and Lower Cassadaga lakes in Region 9. The success of this program is being assessed through annual monitoring in the fall, and a full walleye population assessment at the end of a five-year stocking schedule. Annual fall surveys from 2009-13 have documented survival of stocked walleye at Loon, Otisco, Redhouse and Chautauqua lakes. Full post-stocking population assessments will be conducted on Redhouse, Red, Payne, and Otisco lakes in 2014.

Sauger Conservation Management Plan



Sauger are members of the true perch family and are closely related to, and resemble, walleye. They were once prominent members of the Great Lakes and Lake Champlain fish communities, but have declined to the point where they are now considered critically imperiled in New York. A Sauger Conservation Management Plan was adopted in 2013 with a goal of establishing and maintaining sauger populations in all suitable waters of native watersheds by 2030. The objectives of the plan are to: (1) establish a self-sustaining sauger population in the upper Allegheny River watershed; (2) determine the sauger population status and document and improve habitat suitability in Lake Champlain; and (3) determine the suitability of Lake Erie's eastern basin watershed for sauger restoration. These objectives are designed to be implemented through 2020. Progress made towards meeting these objectives will serve as guidance in the selection of additional waters, and the development of new objectives and management recommendations for the period 2021 - 2030.

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Coldwater Fisheries Management

CROTS Review & Fate of Stocked Trout Study

The Bureau of Fisheries completed the third and final year of fieldwork for a multi-year statewide study to verify and update the key biological and fishery parameters used to calculate trout stocking rates under our Catch Rate Oriented Trout Stocking



(CROTS) method. This research, conducted in partnership with the Fish and Wildlife Cooperative Unit at Cornell University, produced fresh estimates of angling effort, seasonal patterns of angling effort, harvest rates, and total mortality rates of stocked trout. As an addi-

tional product of the research, these new estimates were used to build a computer model (Trout_2014) to allow biologists to evaluate current stocking policies, visualize the effect of changes, and develop new stocking rate tables.

In 2013, bureau staff completed creel surveys and population estimates on the following streams: Carmans River, Esopus Creek, Kinderhook Creek, Kayaderosseras Creek, Oriskany Creek, Big Creek, Otselic River, Meads Creek, and East Koy Creek. The data were provided to Cornell University graduate students Alexander Alexiades and Benjamin Marcy-Quay for analysis. The study results and a draft version of Trout_2014 were presented to the entire research team for review and user-testing in January 2014. The final report was submitted in March 2014. However, based on further comments received from bureau staff, some additional edits to the report and computer model are in progress.

Compared to the original CROTS parameter estimates, substantial changes were documented by this research effort. With the exception of the Carmans River and Kayaderosseras Creek, angling pressure (hours of angling/acre) was lower than documented in previous creel surveys. Over the course of the study approximately 75% of the trout caught were released by anglers; a substantially higher rate than assumed in the original CROTS model. However, the study also documented substantially higher rates of natural loss (predation, migration from stocked areas and all losses not associated with anglers) for stocked trout. The average daily natural loss rates observed in this study were 0.0147 (previously 0.002) for "A" or higher quality streams and 0.088 (previously 0.005) for "B" streams. At these rates, the density of stocked trout available to anglers decreases more rapidly after stocking than was originally modeled in CROTS and, contrary to CROTS predictions, very few stocked trout survive to the following spring. Despite these changes, the CROTS management objective of an average catch rate of one trout caught per two hours of fishing effort was met in most years for most of the streams in the study.

The next step for the Bureau of Fisheries is to use the information and the computer model produced by this research project to examine our current stocking policies and consider what adjustments should be made in order to ensure that hatchery trout provide the maximum fishing opportunity possible for the fishing license dollars invested in their rearing and distribution.

Wild Brook Trout Management Plan Revision

In 2013, work began to rewrite New York State's Wild Brook Trout Management Plan. The existing plan dates from 1979 and since then has served as a successful blueprint for the conservation and management of this species in Adirondack ponds and coastal streams. The rewrite committee, composed of Bureau of Fisheries biologists, met in September 2013 and January 2014 to identify what elements should be included in the new plan and to draft a structural outline. Input from brook trout experts beyond the agency contributed to the development and review of the outline.

Besides documenting the management actions taken by the Bureau of Fisheries under the existing plan and generally addressing advances in the relevant scientific disciplines, the new plan will include management guidance for brook trout populations in inland streams which were beyond the scope of the previous plan. In addition to providing direction for the bureau's brook trout management, the intended purposes of the plan include: promoting public understanding of the thinking behind the management policies, priorities and

strategies for brook trout, providing academic researchers with an understanding of the bureau's top priorities for scientific information, helping biologists communicate clearly with policy-makers and orienting new biologists to the evolution of brook trout management in New York State.

With the completion of the structural outline, work in 2014 will shift to writing the various components of the plan as organized by the outline. The plan is scheduled for completion by March 2016.

Delaware River Basin Gaging Stations Funded

In order to assure the availability of data essential to the management of the highly productive trout fisheries in the tailwaters of New York City's Delaware River Basin reservoirs, a total of \$52,155 was committed in 2013 to support the operation of U.S. Geological Survey stream gages at the following locations:

- Diversion from Schoharie Reservoir
- Esopus Creek at Coldbrook
- East Branch Delaware River at Harvard
- West Branch Delaware River at Hale Eddy
- West Branch Delaware River at Hancock
- Delaware River at Lordville
- Delaware River at Callicoon
- Neversink River at Bridgeville

These instruments, which transmit flow and temperature measurements in real time, would not otherwise be operated. The data they collect are particularly important because of the exceptional value of the recreational trout fishery and because they allow monitoring of the biological effects of flow management plans which are frequently altered at the direction of the Delaware River Basin Commission. The data are available at the following website: http://waterdata.usgs.gov/ny/nwis/current/?type=sw&group_key=basin_cd.

Management of Rare & Endangered Fishes

The Rare Fish Unit is assigned management of rare, endangered and declining species of fish and freshwater mussels. The Unit is composed of a Unit Leader in Albany and a Biologist and seasonal staff in the Region 6 office. Field work and planning is carried out by regional staff across the state. Active restoration is being conducted on several species and summaries are provided here and in the Regional summaries for Regions 5, 6, 8 and 9.

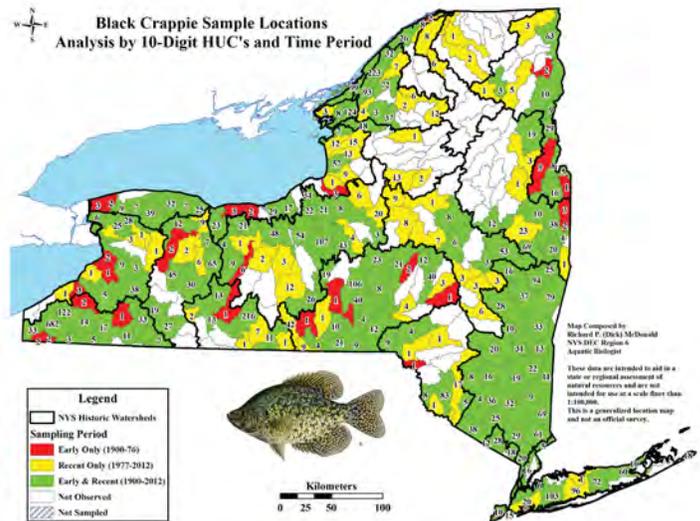
Summer Sucker Sampling

Staff are continuing to study the life history and distribution of Summer Sucker (*Catostomus utawana*) in the Adirondacks. Samples were taken from Little Moose Lake and Cowhorn Pond for genetics, morphology and age. Additional samples of an apparently new species were taken from Lower Ausable Lake, Elk Lake, Long Pond and Boreas Ponds. DEC staff are collaborating with the New York State Museum and Fordham University to clarify the status and distribution of suckers across the Adirondacks. There was a presentation of the progress to date at the annual Meeting of the New York Chapter of the American Fisheries Society.

Fish Atlas Maps Now Available on DEC Website

A review of the known current and historic distribution of New York's fish species resulted in the posting of 179 maps of the Department

website. All locations are supported by verified specimen collections and give a broad view of statewide distributions of fish before 1977 and after 1977. These maps are intended to be part of an Atlas of New York Fishes to be published electronically in partnership with the New York State Museum in the near future. The completed maps can be found at: <http://www.dec.ny.gov/animals/84622.html>.



Species of Greatest Conservation Need List Review

DEC staff and fisheries experts from across New York met for two days in November to review the status of 50 fish considered for inclusion on the Species of Greatest Conservation Need (SGCN) list. New York, along with most other states, is in the process of updating its Wildlife Action Plan as required by the federal State Wildlife Grants Program. An integral first step in the planning process is the review of the previous SGCN list and considerations of new species to be added. Information on each species' known status and trends across North America, the Northeast or Great Lakes region, adjacent states, and status within New York was reviewed. Other factors such as threats and vulnerability were also considered. Results of the review will be incorporated into the new Wildlife Action Plan for New York, scheduled for completion in September of 2015.

Paddlefish Propagation and Stocking

984 Paddlefish were stocked into Allegheny Reservoir, Conewango Creek and Chautauqua Lake in August of 2013. Eggs for the propagation originated in the Ohio River in Kentucky. Paddlefish have been stocked in Allegheny Reservoir since 1999 and the fish seem to grow and survive well there, although no natural reproduction has yet been documented. Adult fish originating from the Allegheny Reservoir are frequently reported downstream in the Allegheny River in Pennsylvania. Conewango Creek stocking began in 2006 and the fish there should begin to mature within the next couple of years.

Gilt Darter Propagation and Stocking

2013 was the last year of a State Wildlife Grant funded effort to restore state endangered Gilt Darters to New York. They are native to the Allegheny River and the last previous report of Gilt Darters captured there was 1937. Fingerling gilt darters were reared by SUNY Cobleskill and stocked into the Allegheny River and Owayo Creek. The Allegheny River was also stocked with wild fish collected in East Brady, PA. These fish were tested for diseases prior to being stocked in the Allegheny River at Carrollton, NY.

Efforts to evaluate the survival of stocked gilt darters were completed

in summer 2013 and there were two locations with re-captures. These catches were from 134 trawl efforts spread across 43 miles of river. Three juvenile gilt darters were caught and none of the hatchery fish were recovered. The only way to determine if this project was successful in restoring gilt darters to the New York watershed of the Allegheny River is with continued monitoring. Field sampling will indicate if natural reproduction is occurring if the gilt darters captured are not tagged. Future capture sites will also indicate where suitable gilt darter habitat is located, so that a more in-depth habitat analysis can be conducted.

Water	Date	Fings.	Juv.	Adults	Total
Allegheny River	11/2012	443	380		823
Oswayo Creek	11/2012	400			400
Allegheny River	11,12/2013	679	402	111	1116

Fish Community Sampling Manual

DEC staff have developed a new sampling manual aimed at documenting diversity of species and changes in fish communities over time. The manual is in its initial rounds of field testing and will be refined based on feedback from



staff. The manual calls for four types of field gear; fyke nets, gill nets, boat electroshocking and seine netting. It is anticipated that when these four gears are used in combination on a body of water, greater than 90% of all fish species present will be sampled. We hope that this sampling methodology provides a compliment to the extensive sport fish sampling that already occurs across the state and improves our understanding of community dynamics, forage base and impacts of invasive species.



2013-14 Inland Section Staff

Section Head: Shaun Keeler Biologist 3 (Aquatic)

Coldwater Unit:

Fred Henson Biologist 2 (Aquatic)

Warmwater Unit:

Jeff Loukmas Biologist 2 (Aquatic)

Rare Fish:

Lisa Holst Biologist 2 (Aquatic)

Biological Survey Unit:

Linda Richmond Agency Program Aide

Paul Sweeney Calculations Clerk 2



Lake Ontario Unit

The Bureau of Fisheries' Lake Ontario Unit (LOU), based in Cape Vincent, is primarily responsible for delivering a lake-wide fisheries assessment and research program. The mainstay of the program is the Department's 60 ton Research Vessel Seth Green,



which was out of service for two weeks in 2012 to conduct scheduled maintenance. Lake Ontario's sportfisheries have been valued at over \$112 million annually, and successful management requires that fisheries assessments and research be executed collaboratively. Delivery of our comprehensive program requires active partnerships with a number of institutions, including DEC Regions 6, 7, 8 and 9, the U.S. Geological Survey (USGS), the Ontario Ministry of Natural Resources (OMNR), the U.S. Fish and Wildlife Service (USFWS), the Great Lakes Fishery Commission (GLFC), Cornell University, and the SUNY College of Environmental Science and Forestry. Our complete annual report can be accessed at: www.dec.ny.gov/outdoor/27068.html.

SPECIES CONSERVATION & MANAGEMENT

Sportfishery Monitoring

Each year from April through September, the LOU conducts the Lake Ontario fishing boat survey at 30 access channels from the Niagara River in the west to the Association Island cut in the east. The survey tracks a multitude of trends in the open lake sportfishery, including angler effort, catch and catch rates, harvest and harvest rates, performance of stocked fish, and fish growth/condition. Lake Ontario fishing quality is best characterized by the number of trout and salmon caught per fishing boat trip (catch rate). In 2013, the catch rate for all trout and salmon combined was the fourth highest observed since this survey began in 1985. In fact, 8 of the 9 highest combined catch rates were recorded between 2003 and 2013 (Figure 1). These exceptional catch rates are largely due to record or near record-high catch rates in recent years for Chinook salmon, coho salmon, rainbow trout (steelhead), and brown trout. Open lake angler effort (937,822 angler hours) for trout and salmon has been relatively stable for over ten years (Figure 2).

Preyfish Monitoring and Predator Growth/Condition

With over 5 million trout and salmon stocked annually into Lake Ontario by New York State and the Province of Ontario, it is important to monitor the abundance of bait or preyfish that trout and salmon predators feed on, as well as growth rates and condition of predators (also see Sportfishery Research). Partnering with USGS and OMNR, the LOU monitors relative abundance of alewife, rainbow

smelt, sculpins, and round gobies. Alewife populations are of particular concern, as they are the primary food for Chinook salmon, the top predator in the lake. Adult alewife abundance and biomass indices were very similar to 2012 (Figure 3). Abundance of age-1 (yearling) alewife was above average for the fourth consecutive year, and represents the largest year class recorded since the 1980 year class collected as yearlings in 1981. Average total lengths of age-1, -2, and -3 Chinook salmon were above their respective long-term averages, suggesting prey availability was not limiting Chinook growth. Condition, or relative "plumpness", of Chinook salmon was near the long-term average in 2013. Lake Ontario continues to produce the largest Chinook salmon in the Great Lakes.

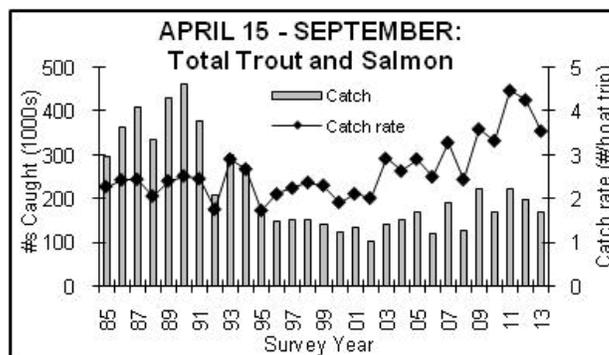


Figure 1. Total trout and salmon catch (bars) and catch rate (line/diamonds) for boats seeking trout and salmon, 1985-2013.

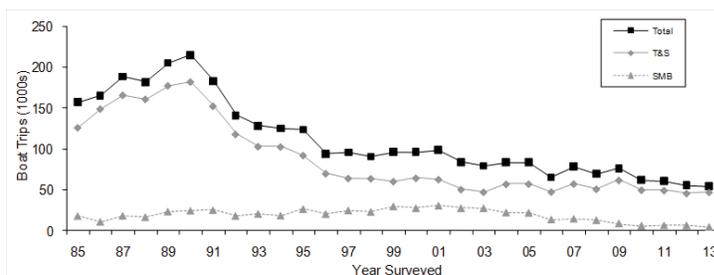


Figure 2. Seasonal estimates of total fishing boat trips, trips targeting trout and salmon (T&S), and trips targeting smallmouth bass (SMB) during the traditional open season (3rd Saturday in June-September 30 when the survey ended).

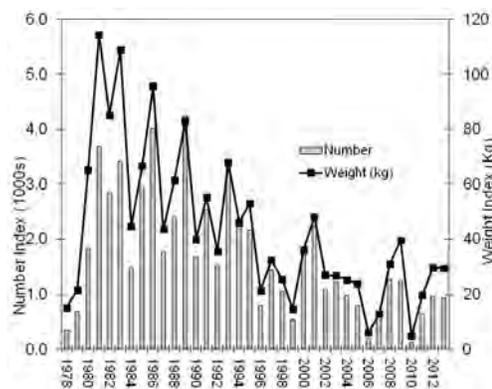


Figure 3. Abundance indices for adult (age-2 and older) alewife in the U.S. waters of Lake Ontario during late April-Early May, 1978-2013.

Sportfishery Research

Using Lake Ontario Natural Resources Damages funds, the Bureau of Fisheries purchased a \$1.3 million automated fish marking trailer ("AutoFish") in 2008 (AutoFish - PICTURES). The AutoFish sys-

tem is capable of removing a fish's adipose fin and/or inserting a coded wire tag into the snout of the fish automatically at a high rate of speed and accuracy. Fin clipping and tagging give researchers tools to answer a variety of questions regarding the relative performance of stocked and wild fish. From 2008-2011, the Department and the OMNR "mass-marked" all Chinook salmon stocked into Lake Ontario with an adipose fin clip to determine the relative contributions of naturally reproduced ("wild") and hatchery stocked Chinook salmon to open lake and tributary fisheries. Knowing the relative roles of hatchery and wild salmon in the lake is very important for fisheries managers to better understand how stocking decisions can influence Chinook salmon population dynamics and predator/prey balance in Lake Ontario. High numbers of wild Chinook salmon in addition to stocked fish are thought to have contributed to an imbalance between predators and alewife in Lake Huron, greatly reducing growth and condition of Chinook salmon and negatively impacting sportfisheries. The relative contribution (%) of wild Chinook salmon in the open lake sport fishery was approximately 50% each year 2010-2013. These preliminary results indicate that although wild fish are an important component of the Lake Ontario Chinook sport fishery, stocking remains essential for sustaining the sport fishery and managing the lake ecosystem.



Native Species Restoration

An international program to restore a naturally reproducing population of lake trout in Lake Ontario is ongoing. To measure progress, cooperative DEC/USGS bottom trawl (juveniles; July) and gill net (adults; Sept.) surveys are conducted annually at 14 sites from the Niagara Bar to Charity Shoals in the Eastern Basin. Adult lake trout abundance increased each year from 2008-2013, following historic lows observed during 2005-2007. In 2013, five age-1 and three age-2 naturally produced lake trout were collected in trawl surveys, providing first evidence of a 2012 "wild" year class and continued evidence of a 2011 year class.

Three species of deepwater coregonids (members of the whitefish family) are considered extirpated from Lake Ontario, and the LOU has been collaborating with the OMNR, USFWS, and the GLFC to re-introduce one species, bloater, into the lake. In 2013, bloater eggs were collected from Lake Michigan and reared at OMNR's White Lake Fish Culture Station and the USGS Tunison Laboratory. For a second consecutive year, bloaters were stocked into Lake Ontario. Stocking of bloaters is expected to continue annually, with a goal of restoring a self-sustaining population within 25 years.

Sea Lamprey Control

In an ongoing battle to combat the damaging impacts of sea lamprey on Lake Ontario sport fisheries, the GLFC and their sea lamprey control agents, the Department of Fisheries and Oceans Canada and the

USFWS, conducted comprehensive control and assessment activities in Lake Ontario tributaries in 2013. In the adult phase, a single parasitic sea lamprey is capable of killing as much as 40 pounds of fish. Treatments to kill larval lamprey using lampricides were completed in nine tributaries (two in Canada, seven in NY). Treatments in New York included South Sandy Creek, Lindsey Creek, Little Sandy Creek, Orwell Brook, Trout Brook, Grindstone Creek and Fish Creek. Larval assessments were conducted on 38 tributaries (18 in Canada, 20 in NY). In 2012, the first purpose built sea lamprey barrier in New York's Great Lakes waters was completed on Orwell Brook, a tributary to the Salmon River. The low-head dam is designed to block migrating sea lampreys from reaching their spawning grounds, and features removable stop logs and an integrated sea lamprey trap. Trap operation in 2013 resulted in the capture of 435 adult lamprey, much higher than anticipated.

Warmwater Fisheries Assessment

Each year the LOU conducts index gill netting to assess the status of warmwater fish populations in Lake Ontario's Eastern Basin. In 2013, smallmouth bass abundance was comparable to the previous 5-year average and well above low levels observed in 2000-2004. Walleye abundance declined 40% compared to the previous 5-year average, which may be partly attributable to water temperature and higher alewife abundance altering walleye distribution. Yellow perch catch also declined below average levels in 2013. At least one lake sturgeon has been collected in 14 of the last 19 years (1 in 2013), suggesting an increase in sturgeon abundance.

St. Lawrence River Research

Muskellunge Research

Muskellunge are the focus of a popular and economically important fishery in the Thousand Islands region of the St. Lawrence River, where the NYS record 69 pound 15 ounce muskellunge was caught in 1958. In the late 1970s, muskellunge guides raised concerns that the quality of the muskellunge sport fishery had declined dramatically. In response, the Department conducted preliminary research leading to an increase in the muskellunge minimum size limit from 32 inches to 36 inches. Using Federal Aid in Sport Fish Restoration program funding, the Department contracted with the SUNY College of Environmental Science and Forestry (ESF) beginning in 1987 to conduct St. Lawrence River muskellunge studies. In the ensuing years, studies have identified over 80 muskie spawning and nursery areas that have been afforded additional levels of protection from habitat alteration. Research documenting first spawning of females at approximately 36 inches in length (6 years old) led to increases in the minimum size limit first to 44 inches, and then to 48 inches. A muskellunge release program was instituted that rewards anglers who release a legal-size muskie with a limited edition muskie print created by a renowned local artist. By the mid-1990s, these management actions contributed to a substantial increase in muskellunge angler catch rates, which reached the management plan target rate in 1999.



More recently, large-scale mortalities of pre-spawn female muskellunge caused by the newly introduced Viral Hemorrhagic Septicemia virus (VHSV) were documented in 2005 and 2006. Spring trapnet surveys at index sites sampled each year indicated declining spawning adult abundance since 2008, however, catches in 2013 rose to their highest level since 2009. Catches of young-of-the-year (YOY) muskellunge in index seine hauls also declined since 2004, but improved slightly in 2013 (Figure 1). An angler diary program, which indexes the relative quality of muskie fishing through angler catches, also indicates that angling success remains well below the target of 1 fish caught per 10 hours of fishing. A number of potential causes may be contributing to the apparent muskellunge decline, including habitat changes (vegetative and fish communities on nursery grounds), VHSV mortality, and the presence of round goby in spawning/nursery habitats. Investigations into the cause(s) for these declines are ongoing.

Production of YOY northern pike in managed marshes was initially high, but has declined significantly since 2007. Low numbers of spawning adults, as well as a predominance of female pike, appear to contribute to low reproductive success.



The YOY muskellunge seining survey at eleven index sites produced 3 northern pike YOY from the 30' seine series in 93 hauls and 6 in the 60' seine series in 90 hauls. Twenty two upper St. Lawrence River bays were sampled by seining and 12 YOY pike were captured (N=76 hauls; CPUE=0.158). Seine hauls at Delaney Bay, downstream of a managed spawning marsh, resulted in a catch of three YOY pike. Assessment of the efficacy of excavated channels in increasing northern pike reproduction is ongoing. More detailed information on muskellunge and northern pike studies can be found in the annual report: <http://www.dec.ny.gov/outdoor/27068.html>.

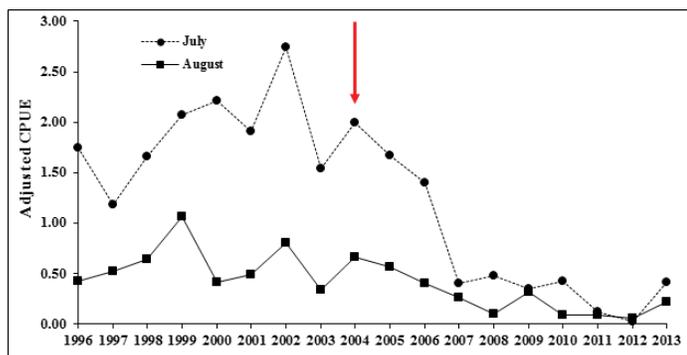


Figure 1. Catch per unit effort of YOY muskellunge captured in standardized seine hauls in eleven upper St. Lawrence River nursery sites from 1996 to 2013. A 9.14 m fine-mesh seine was used from July 15-31 and an 18.3 m large-mesh seine was used from August 15-31. The fine-mesh seine CPUE was doubled to standardize the area swept among the two gears. The arrow indicates the year prior to detection of VHSV (2004) and widespread mortality of muskellunge in the upper River.

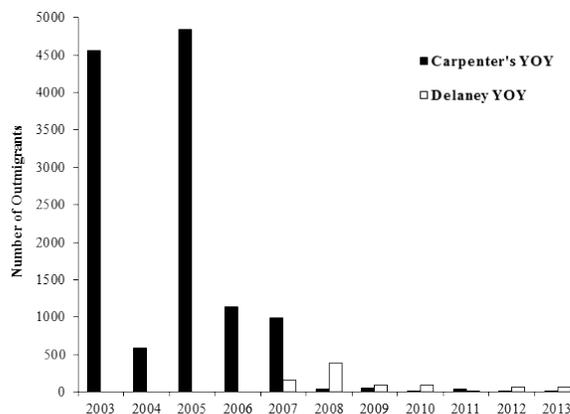


Figure 2. Number of out-migrant northern pike YOY from managed spawning marshes at Carpenter's Branch (2003 to 2012) and Delaney Marsh (2007 to 2013).

Northern Pike Research

Northern pike spawn about one month earlier in the spring than muskellunge, and are more dependent upon the presence of submerged vegetation for spawning habitat. Long-term regulation of Lake Ontario and St. Lawrence River water levels by the International Joint Commission has reduced the natural range of water levels in the system, resulting in degradation of wetland habitats required by northern pike. Similar to muskellunge studies, ESF researchers have chronicled declines in the abundance of spawning adult and YOY northern pike in the Thousand Islands region. Ongoing research has focused on developing a better understanding of water level regulation impacts on wetland habitats, and conducting experimental habitat manipulations designed to improve natural reproduction of pike. Habitat manipulations include water level control structures used to restore more natural water level regimes in managed spawning marshes, and excavation of channels through cattail mats to restore fish passage to isolated pools of quality habitat.



2013-14 Lake Ontario Research Unit Staff

- | | |
|----------------|-----------------------------------|
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Lake Erie Research Unit
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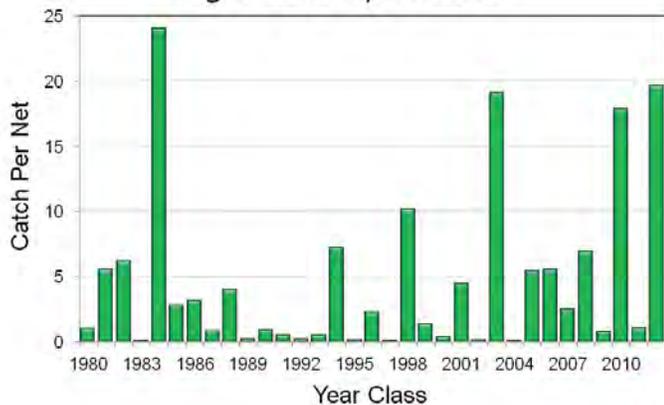


The New York State Department of Environmental Conservation's Lake Erie Fisheries Unit is responsible for fishery research and assessment activities for one of New York's largest and most diverse freshwater fishery resources. A variety of annual programs are designed to improve our understanding of the Lake Erie fish community to guide fisheries management, and safeguard this valuable resource for current and future generations. This document shares just a few of the highlights from the 2013 program year. Our complete annual report is available on DEC's website at <http://www.dec.ny.gov/Outdoor/32286.html>, or by contacting DEC's 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 and again in 2010. New York's most recent juvenile walleye survey indicates another exceptional spawning year occurred in 2012. This abundant 2012 year class will start recruiting to the sport fishery in summer 2014. Overall good recruitment through recent years, especially from 2010 and 2012, suggests adult walleye abundance in the eastern basin will be satisfactory over the next few years.

Age-1 Walleye Index

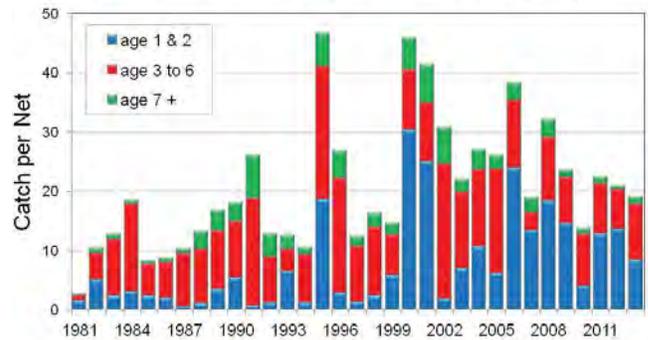


Smallmouth Bass

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 acceptable survival, produce high angler catch rates and frequent encounters with trophy-

sized fish. Our most recent data indicate a very gradual decline of abundance to near long term average measures. Our juvenile abundance measures suggest 2011 produced a moderately abundant smallmouth bass year class.

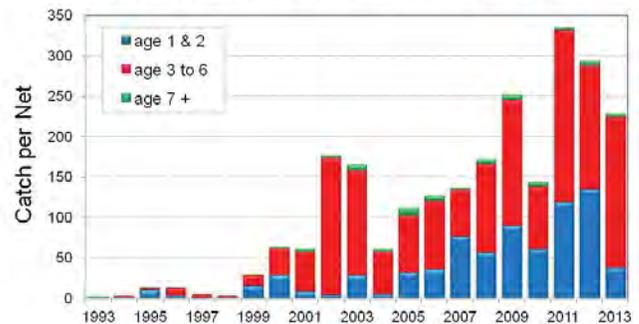
Gill Net Catches of Smallmouth Bass



Yellow Perch

Lake Erie yellow perch populations have experienced wide oscillations in abundance over the last 30 years, from extreme lows in the mid-1990's to an extended recovery that's now lasted more than a decade. A large adult population continues to produce good angler catch rates, especially during spring and fall. Elevated juvenile perch abundance resulted from the 2005 to 2008 spawning years, and record-high abundance of juvenile yellow perch occurred in 2010. Spawning success from 2011 through 2013 was average to poor. Nevertheless, overall higher and stable adult yellow perch abundance should extend at least a few more years.

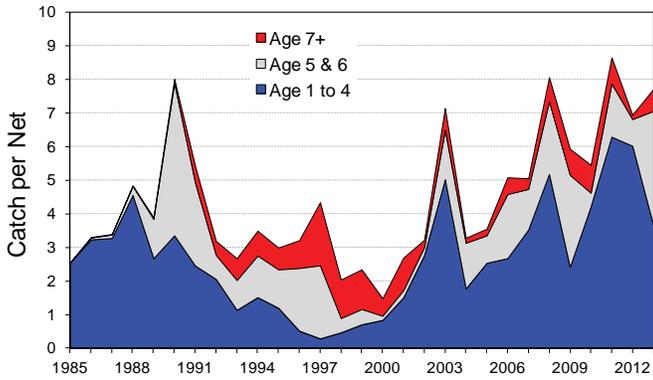
Gill Net Catches of Yellow Perch



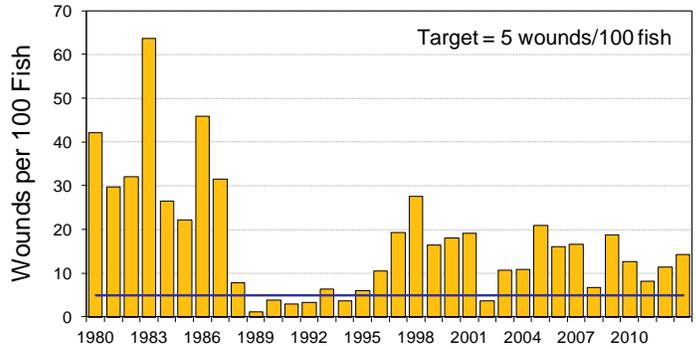
Lake Trout Restoration

Re-establishing a self-sustaining lake trout population in Lake Erie continues to be a major goal of New York's Great Lakes coldwater fisheries management program. Lake trout have been stocked annually since 1978 and assessment programs monitor progress towards restoration. A revised lake trout rehabilitation plan was completed in 2008 and guides current recovery efforts. Overall abundance of lake trout in the New York waters of Lake Erie remained high in 2013. The majority of the catch was young lake trout ages 1-4, mainly due to increased stocking levels over the past 5 years. Adult stocks (age 5 and older) increased in abundance in 2013, but lake trout age 7 and older remain relatively scarce. Survival of adults remains low, mainly due to high sea lamprey predation. Lake wide abundance estimates for all age groups still remain well below targets. Natural reproduction has not been detected in Lake Erie, and continued stocking and effective sea lamprey control are needed to build adult lake trout populations to levels where natural production is viable.

Gill Net Catches of Lake Trout



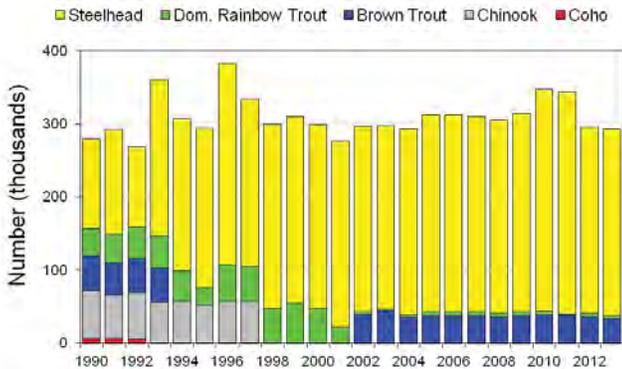
Sea Lamprey Wounding Rate on Lake Trout >21 inches



Salmonid Management

New York annually stocks approximately 270,000 steelhead and 35,000 brown trout into Lake Erie and its tributaries to provide recreational opportunities for both lake and stream anglers. Wild reproduction of steelhead also contributes to the fishery. Fall juvenile assessments conducted since 2001 confirmed substantial numbers of young-of-year steelhead present in many tributaries. Tributary angling for steelhead, assessed through an angler diary program, showed a sharp decline in fishing quality in 2010, followed by increases in 2011 and 2012. A pilot study to investigate emigration of stocked steelhead suggests stocking size may be influencing adult returns of New York stocked fish.

NYSDEC Trout & Salmon Stocking



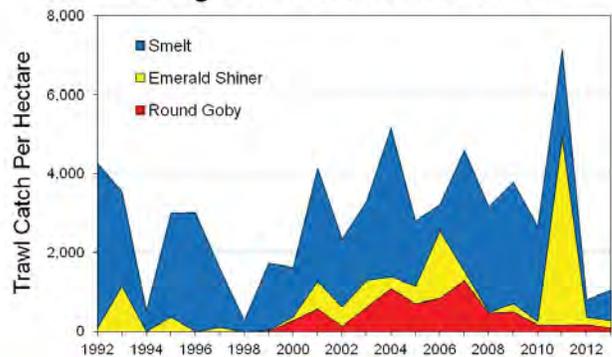
Sea Lamprey

Sea lamprey invaded Lake Erie and the Upper Great Lakes in the 1920s and have played an integral role in the decline of many native coldwater fish populations. Sea lamprey population control in Lake Erie began in 1986 in support of lake trout rehabilitation efforts, and regular treatments are conducted in an effort to reduce lamprey populations. Annual monitoring consists of observations of sea lamprey wounds on lake trout and other coldwater fish species, and lamprey nest counts on standard stream sections. Wounding rates on lake trout increased in 2013, indicative of a high sea lamprey population in Lake Erie. Inspections of sportfish species documented sea lamprey wounding on warm water species as well. Surveys conducted over the past three years indicate the largest source of Lake Erie's sea lamprey production may be the St. Clair River and not the traditionally monitored and treated Lake Erie streams.

Prey Fish

The Lake Erie Unit conducts a number of surveys to assess forage fishes and components of the lake's lower trophic level. These programs have included trawling, sonar surveys of prey fishes, predator diet studies, and lower food web monitoring. A variety of prey fish surveys beginning approximately 20 years ago identified rainbow smelt as the dominant component of the open lake forage fish community. Beginning in 2000, there has been a notable increase in prey species diversity accompanied by somewhat lower smelt abundance, and in some years especially high abundances of round gobies and emerald shiners were encountered in both prey fish surveys and predator diets. In recent years, overall prey fish abundance trended slightly downward, with notable declines of goby abundance in trawl surveys. In 2013, round goby abundance continued to decline while rainbow smelt slightly increased. Emerald shiner abundance remained stable at lower levels. Lower trophic monitoring indicated near shore eastern basin waters are currently best described as a mesotrophic environment favorable for walleye and yellow perch production. Over time we expect these investigations to be useful in furthering our understanding of factors shaping the fish community.

Forage Fish Abundance Trends



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Angler Achievement Awards

The Angler Achievement Awards Program received a total of 175 entries in 2013, a difference of only 1 entry compared to 2012. Over 77% of the entries received qualified under the Catch and Release Category, exhibiting the sound stewardship of participating anglers. Thirty-one entries were entered into the Annual Award Category (kept fish). For the 4th time in 5 years, a state record brook trout was declared. The 6 lb., 22.6" brook trout was caught by Richard Beauchamp on May 16, 2013 on a Lake Clear Wabblers from Silver Lake in Hamilton County.



An especially noteworthy story: On January 19, 2013 Richard Otty caught a 3 lb. 13 oz. crappie from Kinderhook Lake in Columbia County. Believing it was a potential new state record black crappie, he brought it to a local store for an official weight. White crappie are not common in the Upper Hudson watershed, so at quick glance it was thought to be a black crappie. Upon further examination of the physical characteristics, it became questionable as to whether it was a black crappie, white crappie, or even a hybrid. If the fish was indeed a black crappie it would have surpassed the current state record by 1 ounce. If it was a white crappie, it would have tied the current state record. A genetic analysis on the fish was performed by the NYS Museum and revealed that it was indeed a white crappie. Even though Mr. Otty's white crappie wasn't a record breaker, it was certainly an incredible catch and a provided a great story to be told.

Interpretive Signage at Boat Launch Sites

During 2013-2014, interpretive signage was designed and installed at Lake Champlain (South Bay), Cuba Lake, Fort Pond, Brant Lake and Schroon Lake. Each panel series has helpful information directed towards anglers and boaters. Content provided includes: fish species present, fisheries management actions, invasive species disinfection procedures, fishing and boating regulations and angling advice. With the increased concern over invasive species being introduced into Lake George, a number of panels were produced for installation at all Lake George boating access sites. The standard panel discusses appropriate disinfection procedures for cleaning boating and fishing gear after use. Outreach and education



have proven to be an effective means of raising awareness in combating the spread of aquatic invasive species.

Free Sportfishing Clinics

Legislation passed in 2013 allowing for an unlimited number of Free Sportfishing Clinics to be held in New York State. This was a change from the traditional 4 free fishing clinics that used to be allowed for each DEC region. From April 1, 2013 – March 31, 2014, a total of 45 free sportfishing clinics were authorized, with over 1,500 participants attending. Guidelines for conducting an event, including a downloadable application can be found at www.dec.ny.gov/outdoor/89811.html. With the limited number of DEC I FISH NY staff and their time, approving non-DEC groups and organizations to conduct free sportfishing clinics helps the program attain its primary goal to increase fishing participation in the state.

I FISH NY - Statewide Implementation

Angler education through the I FISH NY initiative continued in 2013/14. Although most DEC regions conduct some outreach efforts aimed at beginning anglers, these efforts are most prominent in the downstate region (DEC Regions 1 and 2) and the other DEC Regions containing dedicated outreach staff (DEC Regions 3, 7 and 9). Staff in DEC Central Office also conducted programs around the Capital District and the Adirondack Region.

In-School Fishing Education Programs

One hundred forty-five formal education programs were conducted between April 1, 2013 and March 31, 2014 in DEC Regions 1,2,3, 7 and 9. These included 126 in-school programs and 19 County Conservation days (schools come to go through environmental programs in a round robin fashion). Most of these programs (114) were conducted in DEC Region 2 (NYC). A total of 6,828 contacts with school aged kids were generated from these programs, including 4,760 in-school contacts and 2,068 contacts at County Conservation Days. In support of the in-school program, lesson plans have been posted on the DEC website at www.dec.ny.gov/education/89975.html.

Fishing Clinics/Festivals



One hundred twenty-one programs were conducted reaching 10,972 people, including 5,385 at fishing festivals, 3,287 at fishing clinics, 2,226 at summer camps and 74 at DEC campgrounds. People attending fishing festivals generally received little to no fishing education, although seminars were generally available to those who desired to learn more about fishing. People attending fishing clinics generally received 30 to 60 minutes of fishing education followed by an opportunity to fish.

Train-the-Trainer

The train-the-trainer program for summer camps was significantly expanded during this fiscal year to include all of New York. Twenty-three train-the-trainer programs were given to 217 counselors. At least one program was given in every DEC region. Only 10 programs were conducted the previous year. The summer camps were provided with start-up equipment,



educational materials and staff training. The camps provide the bait and the counselors to train the campers.

Isthmus at Point Peninsula Boat Launch Opens

Construction of this new boat launch providing access to eastern Lake Ontario in Jefferson County was completed in 2013. The site includes a gravel parking area for 25 cars and trailers, as well as parking for 10 cars. Additional amenities include a 2 lane launch ramp, 2 floating boarding docks a kiosk and invasive species disposal station. Accessible shoreline fishing is also provided. The project was completed using Lake Ontario Natural Resources Damages funds.



Peru Docks Boat Launch Improvements



The Peru Docks boat launch on northern Lake Champlain in Clinton County was rehabilitated in 2013. Activities included the extension of the existing 2 lane launch ramp to address power-loading issues and the renovation of the existing shoreline protection that was damaged by storms

and high water levels over the past few years.

Round Lake Boat Launch Construction Begins

Construction of a new boat launch on Round Lake in Saratoga County began in 2013. The site was cleared of trees and debris and graded and a single lane launch ramp was installed using the push-slab construction technique. This technique involves the pushing of a concrete slab formed upland into the lake using a bulldozer. Construction of this type avoids having to dewater the launch ramp location and also reduces turbidity and other problems that may occur with dewatering operations. The site is being constructed in cooperation with the Village of Round Lake who will be maintaining the site upon its completion in Spring 2014.



Great Sacandaga Lake Boat Launch Improvements

Installation of a boarding dock at the Town of Day (Saratoga County) boat launch on Great Sacandaga Lake was initiated in 2013 with the driving of steel piles that will be the primary support for the new dock. At 168 ft., this universally accessible dock will be the longest ever installed at a DEC boat launch and is necessary due to the significant seasonal water level fluctuations typical of the reservoir. The completed dock will be in place by the beginning of the 2014 boating season.

Boat Launch Modernization Plan Field Visits Continue

Field visits continued in 2013 in an effort to update the 25 year old “Strategic Plan for Modernization of Department of Environmental Conservation Waterway Access Facilities in New York State,” site visits designed to assess the current state of the 185 sites that

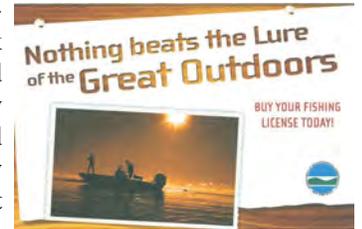
provide some form of trailered boat access were initiated. Twenty six sites were visited in DEC Regions 1, 4, 5 and 6. In total, 81 of the 137 sites that provide some degree of trailered boat access have been visited.

Direct Mail Marketing of Fishing Licenses



DEC’s participation in the Recreational Boating and Fishing Foundation’s (RBFF) Lapsed Angler Direct Mail Marketing Program continued in 2013. This cooperative effort to increase fishing license sales includes 40 states in the U.S.

A reminder postcard is mailed to anglers who have let their fishing license lapse and the response rate is assessed by Southwick Associates, a contractor working for RBFF. In 2013, one half of the treatment group comprised of 85,996 anglers were mailed a 6” x 9” full color postcard, and the other half received a 4” x 6” black and white postcard. All postcards were mailed out on April 2. The overall lift of 0.84% was the highest ever recorded for the 5 years New York has participated in this program. The black and white post card that provided a reminder to the angler that they needed to renew their license had the highest lift rate (1.15%). New York’s overall lift rate was almost double the 0.46% national average.



Aquatic Invasive Species (AIS) Spread Prevention

Extensive efforts were undertaken over the winter of 2013 in the development of new regulations designed to prevent the spread of aquatic invasive species by boaters using DEC boat launch facilities. The new regulations require boaters to drain their boats and remove all visible plant and animal material from the boat, trailer and associated equipment prior to launching or leaving DEC boat launch facilities. Responses to the over 150 comments were prepared as part of the rule-making process. *Note: The rulemaking package was approved by the Governor’s Office and the regulations were enacted on June 4, 2014.*

Additional AIS related activities included participation in regular meetings of the team updating the New York State Aquatic Invasives Species Spread Prevention Plan and an continual upgrading of information provided on the Department website and boat launch kiosks.

2013-14 Public Use Staff

- | | |
|-------------------|------------------------------|
| Edward Woltmann | Biologist 3 |
| Gregory Kozlowski | Biologist 2 |
| Joelle Ernst | Biologist 1 (Aquatic) |
| Scott Cornwell | Fish and Wildlife Technician |
| Ariel Gallo | Fish and Wildlife Technician |

Public Access Projects

Region	County	Waterbody	Description of Project
4	Albany	Normans Kill FAS	Boat slide/ bank repairs from high water event 2014 flood damage
4	Albany	Onesquethaw Creek PFR	Construction of 8 car parking lot.
4	Delaware	Susquehanna River (Southside FAS)	Improve parking lot for 6-7 cars in Coop with DOT R9 at Southside Dam
4	Delaware	West Branch Delaware (Walton) FAS	4 car parking lot completed.
4	Delaware	East Br. Delaware River (Hawk Island)	6 car parking lot completed.
4	Delaware	West Br. Delaware River (Hamden Park)	6 car parking lot, boat slide and fishing platform (built by Delaware Cty. completed.
4	Delaware	West Br. Delaware (Walton DOT pull off)	10 car parking lot, boat slide (built by Delaware County) completed.
4	Delaware	West Branch Delaware (Fitchs Bridge)	2 car parking lot completed (built by Delaware County)
4	Columbia	Queechy Lake	Damage to launch/dock repaired.
4	Greene	Basic Creek (FAS)	6 car parking lot completed.
5	Clinton	Lake Champlain (Peru Docks BLS)	Extension of ramp and shoreline stabilization completed.
5	Essex	Lake George (Mossy Point BLS)	Conversion to flush toilets, new pump out and conversion to town sewer system completed.
6	Jefferson	Lake Ontario (Point Peninsula)	Construction of a 2 lane boat ramp with floating docks; parking for 25 cars & trailers & 10 cars.
7	Madison	Chittenango Creek (off Route 13)	Construction of 6 car FPA and footpath completed.
7	Tioga	Owego Creek (Park Settlement Rd)	Construction of 8 car FPA completed in cooperation with Town of Candor.
7	Broome	Nanticoke Creek (Ames Rd.)	Construction of 6 car FPA completed.
7	Broome	Nanticoke Creek (Route 26)	Construction of 6 car FPA completed.
7	Madison	Lake Moraine	Grass island removed to improve access and decrease maintenance.
9	Erie	Eighteen Mile Creek	Construction of 12 car parking area off Basswood Drive.

Public Access Acquisitions

Region	County	Water	Acres/Miles	Cost	Date	Comments
4	Delaware	West Br. Delaware River	3.15 acres	N/A	1/31/2014	Cooperative Agreement with Town of Walton
4	Delaware	East Br. Delaware R. (Hawk Island)		N/A		MOU with DOT Region 9
4	Greene	Basic Creek		N/A		MOU with DOT Region 1
7	Madison	Chittenango Creek	0.5 eq. miles		11/13/2013	PFR
7	Tioga	E. Br. Owego Creek (Paisley Property)	0.76 eq. miles	\$20,350	2/28/14	PFR
7	Tioga	Owego Creek (Park Settlement Rd)	.175 eq. miles	\$3,937.5	12/20/13	PFR
7	Tioga	West Br. Owego Creek	12.4 acres			Donation from Finger Lakes Land Trust
7	Onondaga	Fabius Brook	.12 acres	\$1,950		PFR
7	Onondaga	Ninemile Creek	5.5 acres		8/27/2013	Donation from Onondaga County Water Authority
8	Monroe	Sandy Creek PFR/FPA	.724 eq. miles	\$36,333		PFR & FPA
9	Erie	Eighteen Mile Creek	10 acres	N/A		Agreement with Town of Hamburg

Habitat Improvement Projects

Region	Name of Water	Project	Cooperator Name	Comments
9	Upper Niagara River	Motor Island WMA Aquatic Habitat Restoration/Enhancement	New York Power Authority as required for Niagara Power Project FERC Re-licensing	Project concept was developed collaboratively with Region 9 DFWMR staff. Project consists of numerous shoreline treatments, along approximately 1,800 ft. of Niagara River riparian shoreline, to mitigate erosion and enhance shoreline habitat for fish and wildlife.
9	Upper Niagara River	Fish Attraction Structure—Boulder Field	New York Power Authority	150 Concrete blocks removed from Motor Island Project were beneficially re-used to create hydraulic cover in an area of the Niagara River that is adjacent to a popular fishing area
Lake Erie Unit	Chautauqua Creek	Fish Passage	ACoE and Village of Westfield	In July 2013 fish passage structures installed for two small dams through the Great Lakes Fisheries and Ecosystem Restoration Program (GLFER) program.



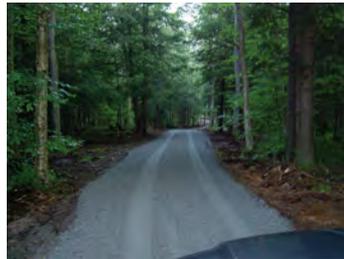


Hatchery Infrastructure Improvements

Work continued in 2013 to replace or repair aging hatchery infrastructure. Major projects included:

Catskill Hatchery

The access road to the main spring was rehabilitated by widening the road, installing new drainage culverts, and resurfacing the roadway with driveway stone. Access to the spring is needed 365 days a year and the condition of the road was becoming impassable especially during the winter months when snow would block the road due to the narrowness of it and not being able to clear the snow properly. Access has been greatly improved and it was especially tested during this past harsh winter.



Chautauqua Hatchery

A new standing seam roof is planned to be installed in the spring of 2014 for the assistant manager’s residence, along with other improvements to the home, especially to the fascia and trim.

Randolph Hatchery



A new modular residence with garage was purchased and the installation was completed in the fall of 2013. The hatchery was without a residence as it was demolished in the spring of 2012 due to the discovery of asbestos throughout the building.

A new PVC head pipe was installed to improve water flow to the “B” ponds. The old steel head trough was the original head trough and was close to 60 years old and was cracked and leaking. A new roadway was completed to the earthen ponds which included a new culvert and driveway stone.

Rome Hatchery

Repairs were made to the main spring retaining wall in the fall of 2013. The cement wall was cracked and leaking and needed to be repaired immediately before a major leak occurred. This was a temporary repair and the complete spring wall and flow boxes are anticipated to be replaced in the summer of 2014. A new municipal water line was installed for domestic water to the hatchery and pathology lab in cooperation between the NYSDEC and the City of Rome.



Salmon River Hatchery

An inspection of the reservoir water line (the main water supply to the hatchery) was completed using an underwater camera in the spring of 2013. A continual reduced water flow has been occurring for the past few years to the hatchery. A study was completed on the deep well field which provided information on gallons per minute each well produced, size of pumps, and the condition of the pump screen. A new shallow well was completed near the hatchery and is providing a good flow of water. New aquariums for the visitor center have been designed and presently a contractor is on site installing all components. The original aquaria were small and outdated. These new aquariums will also be supplied with re-use water which will save overall on the water needed to operate these three aquaria.

South Otselic Hatchery

Engineering plans are being finalized that will encompass new outlet structures for the earthen ponds where walleye fry are raised. Many ponds will be combined into larger ponds which will benefit the raising of the fish and help collect the fish more efficiently. Multiple stairways will be built to help in getting the fish onto the truck from the collection areas. More automatic feeders were installed in the main hatchery building. These feeders replace old, outdated, and very loud feeders. The new “whisper feeders” will provide reliable and quieter operation which will benefit the fish and hatchery employees.

Van Hornesville Hatchery



Phase 1 of a rehabilitation project was completed in the fall of 2013 that included new drainage tiles and black- top pathways in the pond area of the hatchery. Also, new grating was installed in the outlet areas of the ponds. These replaced very old grating and has improved the safety of workers

and visitors at the hatchery. Phase 2 of the construction will encompass further drainage piping and black top pathways to more ponds and the main spring.

Fall Egg Collections

Lake Trout from Cayuga Lake

The annual Cayuga Lake egg collection of Finger Lake strain lake trout began on October 8, 2013 at Taughannock Point on Cayuga Lake. A total of 375,000 eggs were collected over a 7 day period. Of this total, 328,000 were used for lake trout production while 47,000 were fertilized with brook trout to produce splake eggs. The egg collection was completed using personnel from South Otselic Hatchery, Bath Hatchery, and Oneida Hatchery. The lake trout hatched from these eggs will be stocked throughout the state. The splake will be stocked in the Adirondack Mountain region.

Lake Trout from Raquette Lake

The egg collection for the Adirondack strain of lake trout began on October 16, 2013 at North Point on Raquette Lake and continued until October 25, 2013. A total of 196,000 green eggs were collected. After a very successful egg hatch, the fish are doing extremely well and numbers should be adequate to fulfill the 2015 spring stocking requirements.

Salmon River Hatchery - Chinook and Coho Salmon

The annual Salmon River Fish Hatchery's chinook and coho salmon egg collection began on October 9 and ended on October 21, 2013. The coho egg collection began on October 11 and ended on October 21, 2013. Four million Chinook eggs and 1.6 million coho eggs were collected. The salmon hatched from these eggs will be used in Salmon River Fish Hatchery's stocking program for Lake Ontario.

Adirondack Hatchery - Landlocked Salmon Egg Collection

The egg collection began on November 6 and ended on November 10, 2013. A total of 1.1 million eggs were collected. There were 262,000 collected from wild brood stock from Little Clear Pond and 877,000 from captive brood stock. Target numbers were achieved so there should be enough landlocked salmon for stocking in the spring of 2015. These landlocked salmon are stocked into many Adirondack waters, as well as the Finger Lakes, and other selected waters throughout the state.

Windfall Heritage Strain Brook Trout

The egg collection of the Windfall heritage strain of brook trout took place on October 30 and November 6, 2013 in Mountain and Black Ponds in Franklin County. Personnel from South Otselic Hatchery, Chateaugay Hatchery, and the Region 5 Fish Management Unit participated in the egg collections. A total of 30,000 eggs were collected. The eggs were transported back each day to the South Otselic Hatchery. The fish from these eggs will be stocked in selected waters under the Adirondack Heritage Strain Brook Trout Management Program.

Windfall Domestic Brook Trout

The egg collection of the windfall hybrid brook trout (Windfall x Domestic) took place on November 7 and 8, 2013. A total of 145,000 eggs were collected from domestic female brook trout being held at Chateaugay Hatchery and were fertilized with male brook trout from Black Pond in Franklin County. A goal of 100,000 eggs was met and exceeded. The fish are doing very well and there are 108,000 fingerlings as of May 2014. This egg collection has occurred as a result of the continuing potential for the sale of our supplier of the Temiscamie hybrid brook trout eggs and the uncertainty for them to supply eggs to the NYSDEC in the future.

Spring Egg Collections

Salmon River Hatchery - Steelhead

Salmon River hatchery's annual steelhead rainbow trout egg collection began on April 4 and ended on April 10 for a total of 5 days, as eggs were not collected on the weekend. A total of 2 million Washington strain and 185,000 Skamania strain eggs were collected. The fish hatched from these eggs will be stocked in tributary waters of Lake Ontario and Lake Erie.

Bath Hatchery - Wild and Hybrid Rainbow Trout

An egg collection of wild rainbow trout from the Cayuga Inlet Fishway was on April 9 and April 17, 2014. A total of 208,000 wild rainbow trout eggs were collected. There were also 28,500 hybrid (wild rainbows x domestic rainbows) rainbow trout eggs taken. Target numbers were reached and should be adequate to meet future stocking targets.



Oneida Hatchery - Walleye

Oneida Fish Hatchery staff, with the assistance from other NYS hatchery staff, conducted trap netting operations for spawning walleyes between April 4th and 12th, 2013. Oneida Lake's ice completed breaking up on April 3rd, and hatchery staff began setting nets on April 4th. Nets were tended and emptied daily for seven days. Captured fish were transferred back to the facility, where eggs were collected and fertilized. Stripped walleyes were released back into Scriba Creek. Twelve trap nets were set, totaling 84 net lifts. The staff captured 21,631 walleyes, and collected 322 million eggs. A total of 4,848 females were stripped, averaging 66,460 eggs per female. A male to female ratio of 2:1 was used for fertilizing the eggs.

Chautauqua Hatchery - Muskellunge

Chautauqua Fish Hatchery's muskellunge egg take took place between April 30 and May 12. During that period six trap nets were set in Chautauqua Lake at standard index net locations. Water temperature ranged from 48 to 56 degrees Fahrenheit during the netting period. A total of 251 adult muskellunge were captured, from which we mated 43 pairs and collected 2,118,000 eggs.

Fish Disease Control

Fish Disease Control Unit Overview

The NYSDEC Fish Disease Control Unit (FDCU) at Rome Field Station oversees the fish health program for the state. The fish health program includes disease surveillance of (1) the DEC hatchery system, (2) fish living in wild rivers, streams and lakes, and (3) provide fish health care to fish in the state hatchery system.



State Hatchery Disease Testing

Each fish lot was tested from our 12 DEC hatcheries and cooperating facilities, including both production fish and parental brood stock; 56 inspections and 4,100 fish in all. From the Salmon River hatchery, *Aeromonas salmonicida* was isolated from spawning Chinook and coho salmon and *Renibacterium salmoninarum* from an adult steelhead. In 2012, an *Aeromonas salmonicida* epizootic occurred at the Rome hatchery and we were pleased that the disease was not detected there in 2013. No other program pathogens were detected in our inspections.

State Hatchery Fish Disease Epizootics

A number of common fish diseases occur periodically in our hatchery system and are managed by our staff. These events can become very serious, particularly if environmental or nutritional conditions are not optimal. The majority of our clinical investigations in 2013 (60 of 69 cases) dealt with flavobacterial diseases. We routinely encounter three different flavobacterial diseases, bacterial coldwater disease (BCWD), columnaris disease, and bacterial gill disease



Bacterial Gill Disease (BGD)

In 2013, a fourth flavobacterial disease first appeared at the Van Hornesville SFH in July. Clinical signs included skin hyperpigmentation on the tail and epithelial hypertrophy and erosion in the same area. A Flavobacterium-like organism was cultured and sequence analysis failed to identify species, only *Flavobacterium* or *Chryseobacterium* genera. Soon after the Van Hornesville discovery, the same bacterium was identified at other hatcheries receiving these fish from Van Hornesville. Losses weren't severe, but were persistent throughout the summer and early fall. Over time, it became resistant to Terramycin and topical Perox-Aid therapy was substituted with some success.



Furunculosis Abatement at the Rome Hatchery

Following the furunculosis epizootic of 2012, a two-year mitigation plan required biannual lot testing for the pathogen. Fish were tested in March and September of 2013 and no *Aeromonas salmonicida* was isolated. Two more inspections are planned in 2014 to fulfill the plan goals. At Rome Field Station, additional measures to minimize the discharge of harmful pathogens from the wet lab were pursued which include installing an ultraviolet water treatment unit, a protective curtain to minimize aerosol spread, and an assortment of disinfection methods for clothing and equipment. Once the hatchery successfully completes 4 consecutive pathogen-free inspections, then the abatement will conclude and normal hatchery operations may resume.

Wild Fish Disease Surveillance

Wild fish health is assessed annually in a cooperative program with the USFWS and the National Wild Fish Health Survey and the surveillance functions as an "early warning system" to detect harmful pathogens soon after they arrive in New York waters. We can also monitor the spread of these pathogens with continual surveillance. For this statewide survey in 2013, a wide range of fish species were collected from 27 locations (1,558 fish) and clinical testing was done at the USFWS fish health center in Lamar, PA. Epizootic Epitheliotropic Disease Virus (EEDv) was discovered in Lake Trout from two locations, Lake Ontario near Rochester, and Seneca Lake. Although Seneca Lake is connected to the Great Lakes via the Erie Canal system, this is the first inland detection of EEDv in New York. EEDv has been detected in Lake Ontario waters previously, including two locations in New York in 2012. In all cases, fish appeared healthy and no clinical disease was evident. This does raise some concern since the NYSDEC uses lake trout from nearby Cayuga Lake (Seneca strain) for egg production. Cayuga previously tested negative. The other egg source for lake trout (Adirondack strain) is Raquette Lake which also tested negative for all pathogens, including EEDv. *Nucleospora salmonis* was detected in previous years in Lake Ontario and Long Island, but we had no *N. salmonis* detections in 2013.

Other Fish Health Projects

Experimental New Animal Drug Studies

The DEC has ongoing agreements with the FDA and USFWS to use the drugs Chloramine T to treat specific bacterial diseases and Aqui-S as a fish anesthetic. In return, the FDA have applied our treatment results toward their drug approval process. Chloramine T has always been very effective and labels for use in trout, walleye and warmwater fish species were approved. The DEC continues to work toward label approvals for other important species such as tiger muskellunge

and other cool water species. We use Aqui-S for many procedures that require sedation, including fish marking, radio tagging and egg collection. And our data suggest that Aqui-S performs much better than other sedatives, and we feel confident that FDA approval will come sooner rather than later.

Furunculosis-Resistant Trout Project

The DEC's primary domestic brown and brook trout strains (Rome strain) were developed by the FDCU for disease resistance to bacterial furunculosis. Every year, fingerling Rome strain trout at Rome Field Station are challenged with a significant dose of *A. salmonicida* intended to ensure continuance of the disease-resistant trait. In 2013, Rome strain brown trout and brook trout were successfully challenged with a cocktail including eight different isolates of *A. salmonicida* from fish in Lake Ontario.

Egg Maturity Assessment for Sturgeon Propagation

Unit staff assisted in the bureau lake sturgeon propagation project by conducting an egg maturity assay during spawning to improve fertilization success. In 2013, eggs were harvested from prospective females and egg maturity was assessed to identify females having ripe eggs. Of the seven females collected, this assay targeted three ripe females for fertilization, thus doing away with needless fish handling of unripe fish. Egg fertilization and was very successful.

2013-14 Fish Culture Staff

CENTRAL OFFICE

Jim Daley Fish Culturist 6
 Dave Armstrong Fish Culturist 5
 Mary LaBoissiere Secretary 1

ADIRONDACK

Matt Jackson Fish Culturist 3
 Kenneth Klubek Fish Culturist 1
 Adam Kosnick Fish Culturist 1 (trainee II)

BATH

Ken Osika Fish Culturist 3
 Kelly Raab Fish Culturist 1
 Robert Sweet Fish Culturist 2
 Stephen Galbreth Fish Culturist 1
 Adam Haley Fish Culturist 1

CALEDONIA

Alan Mack Fish Culturist 4
 Kevin Hayden Fish Culturist 2
 Mark Krause Fish Culturist 3
 Jason Schirmer Fish Culturist 1
 Robert Stein Fish Culturist 2
 Brian Ward Fish Culturist 1
 Stephen Zenzen Fish Culturist 1
 Steven Robb Fish Culturist 1

CATSKILL

John Anderson Fish Culturist 4
 Tim Anstey Fish Culturist 1
 Joseph Gennarino Fish Culturist 2
 James Judson Fish Culturist 1
 Nathan Snyder Fish Culturist 1
 Mark Ferron Fish Culturist 1 (trainee II)
 Robert Poprawski Fish Culturist 1 (trainee II)

CHATEAUGAY

Neal McCarthy Fish Culturist 2
 Mike Disarno Fish Culturist (trainee II)
 Doug Peck Fish Culturist (trainee II)
 Mike Sicley Fish Culturist (trainee II)
 Nicole Vogt Fish Culturist (trainee II)

CHAUTAUQUA

Larry King Fish Culturist 3
 Eric Defries Fish Culturist 2
 Bradley Gruber Fish Culturist 1
 Ron Preston Fish Culturist 1

ONEIDA

Bill Evans Fish Culturist 4
 Neil Cranker Fish Culturist 1

RANDOLPH

Richard Borner Fish Culturist 3
 Trevor Brady Fish Culturist 1
 Barry Hohmann Fish Culturist 1
 Raymond Hulings Maintenance Assistant
 Jim Rambuski Fish Culturist 2
 Derek Weishan Fish Culturist 1

ROME

Kevin Balduzzi Fish Culturist 1
 John Draper Fish Culturist 1
 Steven Grabowski Fish Culturist 2
 Zach Goodale Fish Culturist 1
 William R. Hajdasz Maintenance Supervisor
 Kimberly Matt Keyboard Specialist
 Scott Wanner Fish Culturist 3
 William Woodworth Fish Culturist 2

FISH DISEASE CONTROL

Andrew Noyes Pathologist 2 (Aquatic)
 Geoffrey Eckerlin Biologist 1 (Ecology)
 Mark Batur Fish Culturist 1

SALMON RIVER

Andreas Greulich Fish Culturist 4
 Brian Boyer Fish Culturist 1
 Stephen Dolan Fish Culturist 3
 David Domachowske Fish Culturist 2
 Brian Edmonds Fish Culturist 1
 Karen Hurd Keyboard Specialist
 Robert Nelson Fish Culturist 2
 Leslie Resseguie Fish Culturist 1 (trainee II)

SOUTH OTSELIC

Pat Emerson Fish Culturist 3
 Thomas Kielbasinski Fish Culturist 2
 Bruce Ryan Fish Culturist 1
 Mike Speziale Fish Culturist 1

VAN HORNESVILLE

Larry Kroon Fish Culturist 3
 Craig DuBois Fish Culturist 2
 Lauren C. Watson Fish Culturist 1

Annual Fish Production

ANNUAL STOCKING REPORT - BY SPECIES
January 1, 2013 - December 31, 2013

SPECIES	LESS THAN 1"		1" - 4.24"		4.25" - 5.74"		5.75" - 6.74"		6.75" - 7.74"		7.75" Plus		TOTAL	
	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT	NUMBER	WEIGHT
Cold Water														
Brook Trout	-	-	138,020	2,759	50,514	1,824	5,750	231	2,200	400	191,408	43,268	387,892	48,482
Brown Trout			63,100	3,271	725	3,271	24	34,275	2,456	441,993	1,639,387	441,993	447,744	447,744
Rainbow Trout			45,000	309	58,200	5,454	209,630	19,401	26,820	4,621	390,019	102,605	520,039	112,989
Steelhead	10,000	-	580,900	24,966	209,630	19,401	140,060	9,138	556,710	51,904	77,400	12,119	800,530	44,367
Lake Trout	330	-	10,200	306	140,060	9,138	140,060	9,138	556,710	51,904	77,400	12,119	784,700	73,467
Splake									22,340	3,641			22,340	3,641
Landlocked Salmon	104,068	1,371	153,695	504	169,080	16,320	169,080	16,320	130,582	16,154	51,471	11,716	608,896	46,065
Coho			155,000	4,168			68,600	6,860					223,600	11,025
Chinook			1,769,600	19,025									1,769,600	19,025
Cold Water Total	114,398	1,371	2,261,315	26,765	704,714	30,367	652,045	57,428	772,927	79,176	2,251,585	611,701	6,756,984	806,808
Warm Water														
Walleye	216,500,000	2,887	811,067	1,703									217,311,067	4,590
Muskellunge	748,300	27	53,710	44							31,420	2,567	833,430	2,638
Tiger Muskellunge	3,600	-									108,068	14,466	111,668	14,466
Panfish											500	100	500	100
Warm Water Total	217,251,900	2,914	864,777	1,747	-	-	-	-	-	-	139,988	17,133	218,256,665	21,794
Rare/Threatened/Endangered														
Lake Sturgeon							10,100	300					13,600	689
Paddlefish	301	67											984	219
Round Whitefish	4,000	2	8,341	6									12,341	8
RTE Total	4,301	69	8,341	6	-	-	10,100	300	-	-	4,183	541	26,925	916
Grand Total	217,370,599	4,354	3,134,433	28,518	704,714	30,367	662,145	57,728	772,927	79,176	2,395,576	629,375	225,040,574	829,518

Summary of Fisheries, Creel & Angler Surveys

Survey Name	Purpose
<i>Region 1</i>	
Peconic River Tributaries	Alewife Monitoring
Alewife Creek	Alewife Monitoring
Beaver Brook	Brook Trout survey
Carmans River	Fate of Stocked Trout Population Surveys
Upper Yaphank Lake	Pre-Dredging survey
Lower Yaphank Lake	Pre-Dredging survey
Carmans River	Monitoring movement of PIT Tagged Alewife, Brook Trout and American Eel
Carmans River Creel Census	Fate of Stocked Trout Creel Census
Mud Creek	Brook Trout Survey
Four Ponds in the Carmans River Drainage	Threatened/Endangered Species Monitoring (Swamp Darter)
Connetquot River	Disease Monitoring
Smith Pond	Toxic Substance Monitoring
Hempstead Lake	Toxic Substance Monitoring
Massapequa Creek	Brook Trout Survey
Hards Lake	Alewife Monitoring
<i>Region 2</i>	
Golden Pond, Crocheron Park, Queens	Northern snakehead investigation
Harlem Meer, Central Park, Manhattan	Centrarchid survey
Baisley Pond, Baisley Pond Park, Queens	Centrarchid survey
Van Cortlandt Lake, Van Cortlandt Park, Bronx	Centrarchid survey
Long Pond, Long Pond Park, Staten Island	General biological survey
Martling's Pond, Clove Lake Pond	Centrarchid survey
Kissena Lake, Kissena Park, Queens	Centrarchid survey
Meadow and Willow Lakes, Flushing Meadows Corona Park, Queens	Northern snakehead monitoring
<i>Region 3</i>	
Esopus Creek	Fate of Stocked Trout survey
Lake Minnewaska	Assessment of golden shiner and new largemouth bass populations
Tillson Lake	Fish Community survey
Esopus Creek (below Ashokan Reservoir)	Electrofishing evaluation of release from Ashokan Reservoir
Ashokan Reservoir	Two story gill netting survey
Rio Reservoir	Percid plan, walleye evaluation
Swinging Bridge Reservoir	Percid plan, walleye evaluation
West Branch Croton River	Trout assessment
White Pond	Percid plan, walleye evaluation
Ridgebury Lake	Invasive species eradication follow-up
Kensico Reservoir	Angler diary program
<i>Region 4</i>	
Hudson River	Blueback Herring Monitoring
Mohawk River	Blueback Herring Monitoring
Manor Kill T16	Weatherfish Monitoring
Schoharie Reservoir	Toxic Substances Monitoring Program (TSMP) Collection

Pepacton Reservoir	General Biological Survey
Blazer Pond	General Biological Survey
East Branch Delaware River	Trout Population Survey
Schoharie Creek	Special Regs Evaluation
Butternut Creek	CROTS Survey
Little Pond	General Biological Survey
Otsego Lake	Percid Sampling
East Sidney Reservoir	General Biological Survey
Canadarago Lake	Percid Sampling
Shingle Hollow Brook	Spill Fish Kill NRD assessment
Kinderhook Creek	Fate of Stocked Trout Study
North and South Lake	Tiger Musky assessment
Kinderhook Lake	Tiger Musky assessment
Hoosic River	Trout assessment
West Kill	CROTS post storm assessment
East Kill	CROTS post storm assessment
Batavia Kill	CROTS post storm assessment
Normans Kill	Black Bass regulations evaluation
Ouleout Creek	Trout assessment
<i>Region 5</i>	
Whey Pond	Brook Trout stocking evaluation
Puffer Pond	Brook Trout stocking evaluation
Burge Pond	Brook Trout stocking evaluation
Oxshoe Pond	Brook Trout stocking evaluation
Chub Pond	Brook Trout stocking evaluation
Brown Pond	Brook Trout stocking evaluation
Eighth Lake Essex Chain	Brook Trout stocking evaluation
Panther Pond	Brook Trout stocking evaluation
Handsome Pond	Brook Trout stocking evaluation
Meadow Pond	Brook Trout stocking evaluation
Bear Pond	Brook Trout stocking evaluation
Grass Pond	Brook Trout stocking evaluation
Ochre Pond	Brook Trout stocking evaluation
Crane Mountain Pond	Brook Trout stocking evaluation
Lake Placid	Lake Trout juvenile evaluation
Polliwog Pond	Lake Trout juvenile evaluation
Third Lake Essex Chain	Lake Trout juvenile evaluation
Fifth Lake Essex Chain	Lake Trout juvenile evaluation
Taylor Pond	Lake Trout juvenile evaluation
Blue Mountain Pond	Lake Trout juvenile evaluation
Lake George	Lake Trout juvenile evaluation
Schroon Lake	Lake Trout juvenile evaluation
Paradox Lake	Lake Trout juvenile evaluation
Schroon Lake	TSMP
Sunrise Pond	Limed Waters

Echo Pond	Limed Waters
Black Pond	Limed Waters
Icehouse Pond	Limed Waters
Benz Pond	Limed Waters
St. Germain Pond	Limed Waters
<i>Region 6</i>	
Big Creek	Fate of Stocked Trout Population Survey
Big and Oriskany Creeks	Fate of Stocked Trout Creel Survey
Big Hill Pond	Fish Disease Investigation
Black Lake	Walleye Evaluation
Black River	Lake Sturgeon Monitoring
Boottree Pond	Brook Trout Egg Take
Boottree Pond	Limed Waters Program
Brewer Lake	Limed Waters Program
Buck Pond	Limed Waters Program
Clear Pond	Limed Waters Program
Cleveland Lake	Limed Waters Program
Deer Pond	Fish Disease Investigation
Deer Pond	Brook Trout Egg Take
Delta Lake	Fish Disease Investigation
Delta Lake	Walleye Evaluation
Erie Canal	Contaminant Collection
Evergreen Lake	Limed Waters Program
Hedgehog Pond	Limed Waters Program
Hidden Lake	Limed Waters Program
Horn Lake	Limed Waters Program
Horseshoe Pond	Limed Waters Program
Kelsey Creek	Post Clean-up Evaluation
Lake of the Woods	Disease Investigation
Lake Ontario	Warmwater Fish Stock Assessment
Lake Ontario	Lower Trophic Level Study (12 surveys)
Lake Ozonia	Fish Habitat Evaluation
Lake Ozonia	Salmonid Survey
Lake St. Lawrence	Warmwater Fish Stock Assessment
Lansing Kill	General Biological Survey
Little Hill Pond	Fish Disease Investigation
Little Otter Lake	Limed Waters Program
Long Lake	Limed Waters Program
Mohawk River	General Biological Survey
Nicks Pond	Limed Waters Program
North Twin Pond	Brook Trout Egg Take
Oily Creek	Post Clean-up Evaluation
Oriskany Ck	Fate of Stocked Trout Population Survey
Oswegatchie River	Walleye Egg Take
Payne Lake (Jefferson County)	Walleye Evaluation
Payne Lake (Lewis County)	Limed Waters Program

Peaked Mountain Lake	Limed Waters Program
Perch River	Eel Collection
Pine Pond	Limed Waters Program
Pitcher Pond	Limed Waters Program
Pitcher Pond	Brook Trout Lipids Study
Quiver Pond	Limed Waters Program
Rainbow Falls Res	Contaminant Collection
Raven Lake	Acidified Waters Survey
Red Lake	Walleye Evaluation
Round Pond	Limed Waters Program
Sauquoit Creek	Contaminant Collection
Sixberry Lake	Fish Disease Investigation
Sixtown Pond	General Biological Survey
Skinner Ck	Unit Management Plan Survey
South Twin Pond	Brook Trout Egg Take
St. Lawrence River	Lake Sturgeon Egg Take
St. Lawrence River	Contaminant Collection
St. Lawrence River	Esocid Monitoring
St. Lawrence River	Warmwater Fish Stock Assessment
Tamarack Pond	Limed Waters Program
Townline Pond	Limed Waters Program
Unnamed Water	Unit Management Plan Survey
Unnamed Water	Unit Management Plan Survey
<i>Region 7</i>	
Chittenango Creek	CROTS
DeRuyter Reservoir	Percid Sampling
Whitney Point Reservoir	Percid Sampling
Otselic River	Population estimate
Cayuga Inlet/Fall Creek/Cayuga Lake	Lake Sturgeon spawning survey
Unnamed stream	Verify trout presence before replacing culvert fish passage barrier
Eaton Brook Reservoir	Centrarchid sampling
Balsam Pond	TSMF
Salmon River Reservoir/Redfield Reservoir	Percid Sampling
Otselic River	Creel Survey
Whitney Point Reservoir	General Biological Survey
Mad Brook	Fish kill investigation
Skaneateles Lake	Fish kill investigation
Cayuga Lake	Invasive species report
Eaton Brook Reservoir	General Biological Survey
6 small streams in Chenango and Broome Counties	Potential reclassification as trout streams
Cayuga Inlet Fishway	Finger lakes strain Rainbow Trout egg take, fish passage, Sea Lamprey removal trapping
Salmon River	Steelhead Egg Take
Salmon River	Salmon Egg Take
Cayuga Lake	Lake sturgeon survey
Cayuga Lake	Lake trout Egg Take

Jamesville Reservoir	Percid Sampling
Otisco Lake	Percid Sampling
Cazenovia Lake	Percid Sampling
Rice Creek	General Biological Survey
Otter Lake	Percid Sampling
Owasco Lake	Angler Preference Survey
Region 8	
Springwater Creek	Rainbow Trout spawning run evaluation
Catherine Creek	Lamprey control evaluation / Rainbow Trout spawning run evaluation
Sleepers Creek	Lamprey Control evaluation / Rainbow Trout spawning run evaluation
McClure (Havana Creek)	Lamprey Control Evaluation / Rainbow Trout spawning run evaluation
Naples Creek	Rainbow Trout spawning run evaluation
Cold Brook	Rainbow Trout spawning run evaluation
Irondequoit Creek	Investigate fish kill
Waneta Lake	Muskie population assessment
Meads Creek	Part of state-wide survey regarding Fate of Stocked Trout
Long Pond	Investigate fish kill
Seneca Lake (lake trout derby)	Lamprey Control Evaluation/ lake trout population assessment
Seneca Lake standard gang netting	Lamprey Control Evaluation/ lake trout population assessment
Meads Creek	General salmonid survey
Honeoye Lake	Part of state-wide fish health collection.
Honeoye Lake standard gang netting	Warm water fisheries assessment
Cohocton River	Evaluation of an in-stream restoration project.
Reynolds Gully Creek	Evaluation of an in-stream restoration project.
4 Mile Creek	General salmonid survey
Region 9	
East Koy Creek electrofishing and angler use surveys	Part of FOST statewide study
548 small stream electrofishing surveys in Wyoming, Cattaraugus and Erie Counties.	EBTJV survey to document brook trout presence
N. Branch Wiscoy Creek	Fish survey prior to habitat improvement work
Quaker Lake	Warm and cool water fisheries management
Chautauqua Lake Trap netting	Evaluation of Muskie brood stock health and Hatchery egg take
Chautauqua Lake Electro-Fishing	Evaluation of post-stocking changes on game fish community
Upper Cassadaga Lake	Document stocking survival of 50-day walleye
Middle Cassadaga Lake	Document stocking survival of 50-day walleye
Lower Cassadaga Lake	Document stocking survival of 50-day walleye
Red House Lake	Document stocking survival of 50-day walleye
Lake Ontario Research Unit	
Lake Ontario Alewife Bottom Trawl Survey	Assess yearling and adult alewife in Lake Ontario
Lake Ontario Rainbow Smelt Bottom Trawl Survey	Assess yearling and adult smelt in Lake Ontario
Lake Ontario Juvenile Lake Trout Trawl Survey	Assess juvenile lake trout in Lake Ontario
Lake Ontario Warmwater Fisheries Assessment	Assess warmwater fish populations in the Eastern Basin
Status of Lake Ontario's Lower Trophic Levels	Monitor trends in Lake Ontario productivity, including nutrients, chlorophyll a, and zooplankton populations
Lake Ontario Adult Lake Trout Assessment	Assess adult lake trout populations in Lake Ontario

Lake Ontario Fishing Boat Survey	Monitor trends in angler effort/catch/harvest in the open waters of Lake Ontario
Lake Ontario Chinook Salmon Mass Marking Program	Determine contribution of wild Chinook salmon to Lake Ontario sportfisheries and evaluate success of pen-rearing projects
Northern Pike and Muskellunge Monitoring in the Thousand Islands Region of the St. Lawrence River	Monitor northern pike and muskellunge spawning and nursery areas to assess reproductive success and influence habitat changes
Lake Ontario Hydroacoustic Preyfish Assessment	Use hydroacoustic technology to develop lakewide estimates of alewife numbers and biomass
<i>Lake Erie Research Unit</i>	
Lake Erie Commercial Fishery Assessment	Sampling to characterize harvest & age composition of Lake Erie's commercial yellow perch fishery
Lake Erie Lower Trophic Monitoring Program	Index of lower trophic indicators seasonally, including zooplankton density, nutrient concentrations, temperature and water transparency
Lake Erie Open Lake Sport Fishing Survey	Creel survey measure of sport fishing catch and effort from Lake Erie's boat fisheries for walleye, smallmouth bass and yellow perch
Lake Erie Steelhead Smolt Out-migration Study	Sampling to assess size specific out-migration patterns of newly stocked steelhead in selected Lake Erie tributaries
Lake Erie Tributary Angler Diary Program	Diary index of fishing quality for Lake Erie's tributary steelhead fishery
Lake Erie Tributary Sea Lamprey Nest Density	Annual nest counts to index the concentration of sea lamprey nests in selected Lake Erie tributaries
Lake Erie Fish Cleaning Station Monitoring	Annual examination of angler caught walleye processed at cleaning stations to characterize size, age composition and stomach contents
Lake Erie Beach Seine Assessment	A pilot survey to assess abundance and distribution of near shore young-of-year fishes in eastern Lake Erie
Lake Erie Coldwater Community Assessment	Gill net index of abundance, age composition, growth, and diet of lake trout, burbot and lake whitefish
Lake Erie Warmwater Community Assessment	Gill net index of abundance, age composition, growth, and diet of walleye, yellow perch and smallmouth bass
Lake Erie Forage and Juvenile Fish Assessment	Bottom Trawl index of abundance, age composition and growth, of juvenile yellow perch and an array of forage fish species

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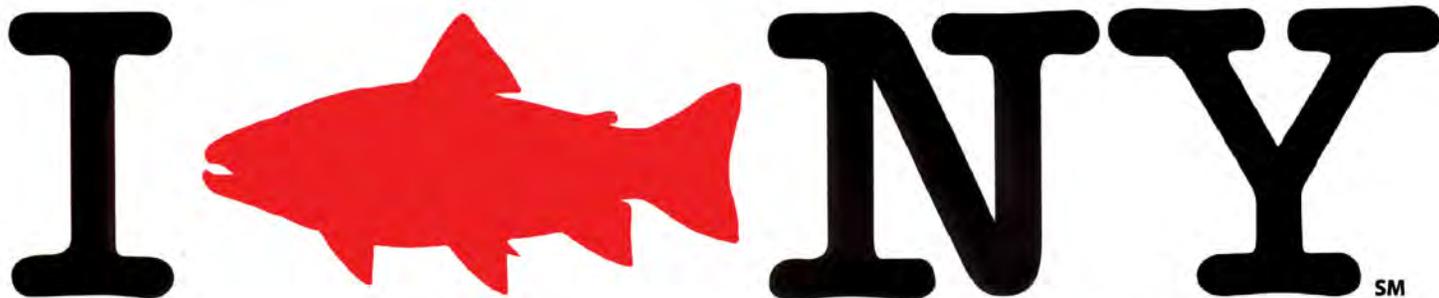
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Permits & Licenses

A summary of licenses and permits reviewed or issued by the Bureau of Fisheries

DEC REGION

Permit Name	1	2	3	4	5	6	7	8	9	CO	Total
Farm Fish Pond			4	241		3	115	75	46		484
Stocking	7		171	40	131	26	32	14	8/9		430
Tripliod Grass Carp	5		239	171	75	29	235	347/357	588/592		1703
Overland Transport of Bait			10			4	5	14	8		41
Fish Possession (over daily limit)					5		2	1			8
Piranha						3	1		2/2		6
Baitfish	3					85	92	92			272
Temporary Revocable Permit (TRP)			1	3	44	3	19	15	2		87
Article 15 Issued/Reviewed		1	454	654	15/20*	488/678	5	86	725		2623
Article 24 Issued/Reviewed	12		259		331/370						641
Pesticide Permit Review	26		26	5	12	0/6	10				85
Bass Hatchery Permits (C.O)										34	34
Trout Hatchery Permits (C.O)										31	31
License to Collect and Possess		4						20		2	26
Other:											
Trout in the Classroom									8		8
Hydropower Relicensing						0/6					6
Adopt A Natural Resource											
Fish Removal											
Commercial Fishing (Great Lakes)										9	9
Total - All Permits	53	5	1164	1114	657	843	516	674	1392	76	6494

*Issued/Reviewed