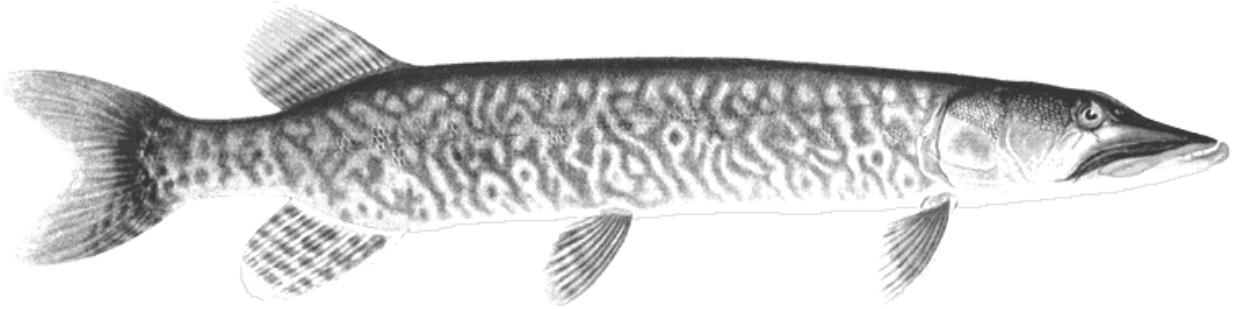
New York State Department of Environmental Conservation
Division of Fish, Wildlife and Marine Resources

Bureau of Fisheries



Annual Report
Highlights and Accomplishments 2004/2005

December 2005

George E. Pataki, ***Governor***

Denise M. Sheehan, ***Commissioner***

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***.

During the New York State Fiscal Year 2004/2005 (April 1, 2004 - March 31, 2005), the Bureau of Fisheries logged a total of 39,355 staff days of effort which was valued at more than $7.2 million. Most of this effort was provided by permanent personnel (31,405 staff days), but 7,950 staff days were provided by temporary personnel.

The Bureau of Fisheries staff efforts are categorized under five Division of Fish, Wildlife and Marine Resources program goals:

> **Ecosystem Protection** - *Protect, Enhance and Restore New York's Fish, Wildlife and Marine Resources and the Ecosystems That Support Them* (12% of Staff Effort)
>
> **Fish, Wildlife and Marine Resources Extension** - *Help Provide New York Residents and Visitors with the Knowledge to Appreciate Fish, Wildlife, and Marine Resources and Their Habitats* (5 % of Staff Effort)
>
> **Recreation, Use and Allocation** - *Provide a Wide Array of Opportunities to Enjoy Fish, Wildlife and Marine Resources* (67% of Staff Effort)
>
> **Protection of Human Health, Safety and Welfare** - *Minimize Fish, Wildlife and Marine Resource-related Negative Impacts on Natural Resources; and Human Health, Safety and Land Use*. (< 1% of Staff Effort)
>
> **Organizational Effectiveness** - *Foster and Maintain an Organization That Effectively Achieves Our Mission*. (14 % of Staff Effort).

For 2004/2005, Bureau of Fisheries activities were organized under 13 objectives which generally describe the intended outcomes from our efforts (e.g. satisfied anglers; restored, self-sustaining fish populations; healthy hatchery fish; additional public fishing access; improved aquatic habitats; confidence in the Bureau of Fisheries staff abilities) (see Table 1). The objective which accounted for the greatest amount of staff effort was

> *By 2007, 75% of surveyed anglers will indicate that they are satisfied (and 30% will indicate they are highly satisfied) with the numbers and sizes of fish they catch from New York's inland and Great Lakes waters.*

with more than 64% of total staff effort followed by

> *Maintain self-sustaining populations of 165 species of freshwater and anadromous fishes in New York waters*

with approximately 7% of total staff effort (see Table 1, following page).

Table 1. - Distribution of Bureau of Fisheries staff effort among twenty Bureau of Fisheries programmatic objectives for the state fiscal year 2004/2005.

Bureau of Fisheries Objective	Total Staff Days	Percent of Staff Days	Total Staff Costs
By 2007, based on a sample of concerned "user groups"and the opinions of Bureau staff, the percentage of responses indicated a high degree of satisfaction with the Bureau of Fisheries efforts to restore fish populations and protect aquatic habitats will exceed 60%	1,239	3.1%	$290,955
Restore five additional self-sustaining populations of New York State listed-threatened or endangered fishes by 2007.	290	0.7%	$60,713
Maintain self-sustaining populations of 165 species of freshwater and anadromous fishes in New York waters	2,745	7.0%	$465,207
Provide 30 additional fisheries supported entirely by self-sustaining populations of wild fishes in publicly accessible New York waters by 2007.	76	0.2%	$15,514
By 2007, 90% of Bureau of Fisheries staff is satisfied that the Bureau of Fisheries is conducting the most effective and efficient program it can.	807	2.1%	$219,916
By 2007, an effective and inclusive angler education techniques/programs will be established that will provide a conduit for New Yorker's of all ages to gain the necessary knowledge to become an effective and ethical angler.	275	0.7%	$52,739
By 2007, based on a sample of anglers and constituents, and opinions of all Bureau staff, the percentage of responses expressing a high degree of satisfaction with the quality of information provided by the Bureau of Fisheries will exceed 75%.	938	2.4%	$176,156
By 2007, 75% of surveyed anglers will indicate that they are satisfied (and 30% will indicate they are highly satisfied) with the numbers and sizes of fish they catch from New York's inland and Great Lakes waters.	25,337	64.4%	$4,418,963
The average health and physical condition of all fishes cultured at each DEC hatchery will meet or exceed measurable quality standards established by the Bureau annually.	1,064	2.7%	$191,475
Acquire ten miles of Public Fishing Rights (PFR) easements annually and maintain PFR network for optimal angler use and enjoyment.	455	1.2%	$95,621
Acquire new waterway access parcels as opportunities and funding permit. Complete development of three Boating Access Sites annually, while maintaining the waterway access network for optimal angler use and enjoyment.	352	0.9%	$86,664
By 2007, 90% of Bureau of Fisheries staff is satisfied that they have sufficient knowledge, skills and training to effectively accomplish their work duties and the objectives of the Bureau.	160	0.4%	$38,823
By 2010 based on a sample of anglers and opinions of all Bureau staff the percentage of responses expressing a high degree of confidence in the professionalism and ability of Bureau of Fisheries staff to manage the State's fisheries will exceed 80%.	132	0.3%	$35,170
All other Division objectives	5,485	13.9%	$1,110,422
Bureau of Fisheries Totals	**39,355**	**100.0%**	**$7,258,338**

Note: The distribution of effort by Bureau of Fisheries staff is provided as an overview of the number of staff days that were expended to delivery a quality statewide fisheries program; however the focus of this report is to describe the results of the Bureau of Fisheries 39,000-plus days of effort during fiscal year 2004/2005.

Common Abbreviations, Acronyms and Units of Measurement Used

CPUE	*catch per unit of effort* - such as the number of fish caught per hour or fish caught per net
YOY	*young of year fish* - typically, a fish that is captured by sampling in the same year it was hatched
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).
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)
RM	*river mile* - denotes the distance upstream from the river mouth
mm	*millimeter* - a metric system unit of length, 100 mm = 3.94 inches
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
ha	*hectare* - a metric system unit of area, 1 hectare = 2.47 acres
m	*meter* - a metric system unit of length, 1 meter = 3.28 feet
ppm	*part per million* - describes the density of a substance in another solid, liquid or gas (typically water, air)
ppb	*parts per billion* - describes the density of a substance in another solid, liquid or gas (typically water, air)
CROTS	*Catch-Rate-Oriented-Trout-Stocking* - the model used to develop stocking rates for trout streams that takes into account: biological measures of the stream and stream carrying capacity, trout natural reproduction, hold-over of previously stocked trout, classification of the type of trout fishery managed for, measured or assumed angler effort and targeting an angler catch rate of 0.5 trout/ hour

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Warmwater Lakes and Ponds

Central Office - Inland Section

Fish Populations in Oneida and Canadarago Lakes
Researchers at the Cornell Biological Field Station on Oneida Lake completed their annual assessment of the fish community in Oneida and Canadarago Lakes. Funded by Federal Aid to Sportfish Restoration, the two lake fishery monitoring projects are the longest running warmwater fishery assessment projects 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 - Standard sampling (gillnets, trawls, acoustics, Miller Sampler) continued in 2004-05. Miller sampling was conducted for stocked walleye fry and to estimate density of yellow perch larvae. Gillnets were used to monitor abundance of yellow perch and walleye, and to detect trends in abundance of other species. Acoustics, midwater trawl and gillnets were used to estimate the open water fish population. The nesting cormorant population was estimated by visual counts and composition of the diet determined from shot birds provided by USDA APHIS in fall 2004 (in cooperation with the Cooperative Fish and Wildlife Unit at Cornell). Work continued on analysis of food web interactions. Publications in 2004/05 included an update on the epidemiology of walleye dermal sarcoma and walleye discrete epidermal hyperplasia (Getchell et al. 2004) and an analysis of the long-term growth pattern of walleye in Oneida Lake (He et al. 2005). Results were presented at several meetings (American Fisheries Society Annual meeting – Madison, Wisconsin, International Association for Great Lakes Research- Waterloo, Ontario, World Fisheries Congress, Vancouver, BC, Symposium on Double Crested Cormorants, Quebec City, Quebec, and at invited presentations at the University of Brockport, Kalmar University (Sweden), Lake Kinneret National Laboratory, Israel, SUNY-ESF, Syracuse, and Cornell University), and in an annual report (VanDeValk et al. 2005).

Study of the walleye population at Oneida continues to be an intensive effort. A full account of the results and a discussion can be found in *VanDeValk et al. Walleye stock assessment and population projections for Oneida Lake 2004-2007*. The walleye population is currently estimated at 386,000 age 4 and older fish, and continues to increase slowly from a low of 220,000 adults in 1999. The adult population is expected to increase to over 464,000 with the recruitment of the 2001 year class in 2005 and remain around 500,000 through 2007 (depending on assumptions for fishing mortality). The recovery of the adult population to levels similar to the long term average support the NYSDEC's decision to decrease the minimum legal size from 18 to 15 inches in October 2004.

The yellow perch population was estimated at slightly less than 1 million age 3 and older fish, which is similar to the abundance measured since 1995. Zebra mussels have cleared the water but have not decreased yellow perch growth rates presumably because zooplankton production has not declined (Idrisi et al. 2001). Increased light levels should also increase foraging efficiency of perch on benthic invertebrates (Mayer et al. 2001). Abundance of larval walleye (9-day old) was 86 million in 2004, considerably higher than the long term average of 30 million. Abundance of YOY yellow perch continues to be lower than in the 1970s and 1980s.

The cormorant management strategy in 2004 included harassment and removal of nests, and egg oiling. This strategy was successful at reducing cormorant numbers to less than 200-300 birds. Cormorant predation on young walleye and yellow perch is therefore predicted to be minimal and we should return to survival rates between age 1 and adult fish observed in the 1970s and 1980s (Rudstam et al. 2004). To date, observations support the role of cormorants as percid predators. The walleye population has been increasing since 1999 and the survival from age 1 to adult has increased concomitant to the initiation of the hazing program. A paper pertaining to the choice of foraging location by cormorants was developed (Coleman et al. in press).

During 2004/05, different models were used to summarize available information on the fish and fishery in Oneida Lake. EcoPath/EcoSim (Christensen et al. 2004) was used to parameterize an ecosystem model of the lake and its fishery, including estimating abundance of other fish species in the lake, including gizzard shad and emerald shiners, and estimated diet composition of all fish species from the Oneida database (Irwin et al. submitted). In addition, a nAD Model builder based estimation model was developed to calculate age-dependent catchability in trawl and gill nets as well as the abundance of walleye age

groups not estimated by mark-recapture (age 1-3, Irwin et al. in prep.).

Ecosystem changes in Oneida Lake include clearing of the water through the filter feeding of zebra mussels (Idrisi et al. 2001, Mayer et al. 2001). The consequences of higher water clarity include changes in the distribution and species composition of aquatic macrophytes (Zhu et al. submitted, Fitzgerald et al. submitted). In 2004, seining surveys showed little change in the nearshore species composition compared to the 1960s and 1970s, but green sunfish is now present in several areas and some previously documented minnow species were not observed in 2004.

Canadarago Lake- Standard fish sampling methods (vertical gillnets, hydroacoustic, electrofishing) were used at Canadarago to assess open water fish populations and to monitor alewife. Canadarago Lake data for 2004 are presented in a report by *Brooking et al. Surveys of fish and limnology at Canadarago Lake, NY in 2004* and compared to results from the period 1990-2003. Standard gillnetting caught 157 walleye, including 14 clipped fish, the 2nd highest catch rate since 1985. Diet, sex, and age were determined on all walleye from the gillnet. Yellow perch catch in the gillnet declined to 34 fish/net. Standardized fall electrofishing caught 22.5 YOY walleye per hour, the highest catch in 10 years. Electrofishing catch of yellow perch set record highs for both YOY and adults, in contrast to lower gillnet catches of adults. The total population estimate for adult walleye was 18,667 walleye age-3+ and older. Catch of alewife in small mesh gillnets increased almost 5 fold from the previous year, and acoustic density of alewife increased approximately 6 fold, however both estimates are low compared to well-established alewife lakes. Dry to wet weight ratio of alewife, an indicator of condition, was very high (as compared with other alewife lakes). Alewife stomachs were full of large Daphnia. Zooplankton average size and densities did not indicate large differences from past years, another indication that the alewife population has not yet expanded to capacity. Water clarity reached an all time high of 8.0 m in May 2004, almost certainly a result of a well established zebra mussel population. If alewife become abundant, recruitment of walleye and perch will likely be reduced or eliminated, and growth of walleye will likely increase. Walleye and yellow perch scale ageing was brought up to date back through 1990. All sampling and data were submitted for inclusion in the Bureau's Statewide Fisheries Database.

Region 1

Pre-regulation baseline surveys completed
The Regional Fisheries Unit completed pre-regulation change baseline spring electrofishing surveys of Artist Lake and Belmont Lake using the methods described in the Centrarchid Sampling Manual. These surveys will provide the baseline information needed to assess the effectiveness of the largemouth bass Catch and Release Only regulation that went into effect on these waters October 1, 2004.

Lake Ronkonkoma Management Program Limnological monitoring
The Regional Fisheries Unit continues to monitor limnological parameters in Lake Ronkonkoma to see if the fisheries management program results in any measurable changes in these parameters. A major review of the Lake Ronkonkoma limnology data was completed in 2004 resulting in several modifications to the sampling protocol. Monthly phosphorus and nitrogen sampling was discontinued, chlorophyoll a sampling was reduced from monthly to only in August, but the number of samples was increased. Zooplankton samples in May and August were continued as well as water temperature, dissolved oxygen concentration and secchi depth in May and August.

Walleye stocking
The Region stocks 10,000 walleye fingerlings in Lake Ronkonkoma annually in late June. In 2004 the fingerlings averaged 40 mm in length. Surface water temperatures in Lake Ronkonkoma were 79° F. The water temperature in the tank was only 63°so the fish were tempered up to 72° before stocking. Despite the substantial temperature change, mortality in transit was minimal and the fingerlings behaved normally upon release.

Lake Ronkonkoma Young of the Year Production Monitoring
The Region 1 Fisheries Unit completed the annual summer beach seine sampling of Lake Ronkonkoma on August 4. This survey is designed to monitor the production of YOY bass and panfish. The combined catch rate for black bass was more than 10 fish per seine haul with most of the catch being young of the year largemouth bass. This is a substantial improvement over the 2003 catch and is very similar to the 2002 catch rate, which was the highest catch rate for YOY largemouth bass recorded since 1990. Two YOY smallmouth bass were also caught. Other species

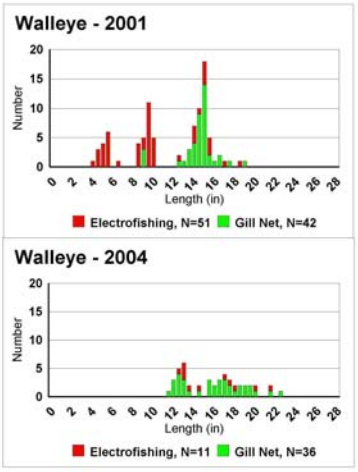
found in the 2004 survey included: white perch, yellow perch, black crappie, bluegill, pumpkinseed, golden shiner, carp and banded killifish.

Lake Ronkonkoma Walleye Assessment

The Region 1 Fisheries Unit with assistance from the Aquatic Toxicant Research Unit completed the triennial gill net and electrofishing assessment of the walleye stocking program in Lake Ronkonkoma. Gill nets were set according to the Bureau of Fisheries Percid Sampling Manual Protocol and a total of 37 walleye, ranging up to five pounds, were caught in six net nights of effort. This is a catch rate of six walleye per net night which indicates an abundant walleye population. Walleye continue to show excellent growth. The walleye that averaged 40 mm when stocked in June averaged 205 mm in late October. Most of the white perch caught were smaller than what was observed in 2001, but several larger individuals were also caught including one over 250 mm. Electrofishing catches showed little change in the white perch population from 2001 but substantial increases in the sizes of the walleye caught.

Fort Pond Walleye Assessment

The Regional Fisheries Unit completed the triennial assessment of the walleye stocking program in Fort Pond with three nights of gill netting in September and three nights of electrofishing in October.



Fort Pond Walleye length frequency distribution from gill net and electrofishing 2001 and 2004.

Walleye are stocked every other year in Fort Pond; they were not stocked in 2004. Consequently no small walleye were caught in 2004. The gill net catch rate declined slightly from 7.0 in 2001 to 6.0 in 2004. The electrofishing catch rate decreased substantially, primarily because no small walleye were caught in 2004. Preferred size walleye were caught for the first time since the walleye stocking program began in Fort Pond.

No substantial changes were observed in the largemouth bass, smallmouth bass or panfish populations.

Hempstead Lake Bass Stocking

The Regional Fisheries Unit with the assistance of staff from New York State Office of Parks Recreation and Historic Preservation, Regional Director, Peter Scully and Regional Habitat Manager Greg Kozlowski electrofished the pond in Caumsett State Park on Lloyd Neck to collect largemouth bass for stocking in Hempstead Lake. Caumsett Park Pond is not fished and is known to have a bass population while Hempstead Lake dried up in 2002 and lost its fish community. In 2003 the Regional Fisheries Unit stocked banded killifish, yellow perch, pumpkinseed and black crappie, but we were unable to find a source of largemouth bass. In one night of electrofishing (1.25 hours actual "on" time) we caught 219 largemouth bass ranging from 3 to 16.5 inches with most in the 12-14" range (Figure 1). The bass caught were all stocked in Hempstead Lake. The relative weights or condition factor of the bass caught in Caumsett Park Pond declined substantially as the bass size increased (Figure 2), indicating that the larger bass are probably food limited. These fish will find plenty of forage in the recently stocked Hempstead Lake and will provide an excellent spawning stock to repopulate the lake with largemouth bass. To insure that the fish in Hempstead Lake will be able to rebuild a healthy fish community, the fishing regulation for this lake was changed to Catch and Release only for all species effective October 1, 2004.

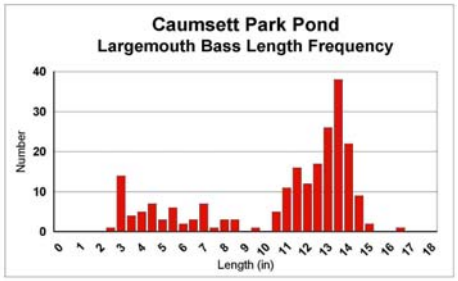
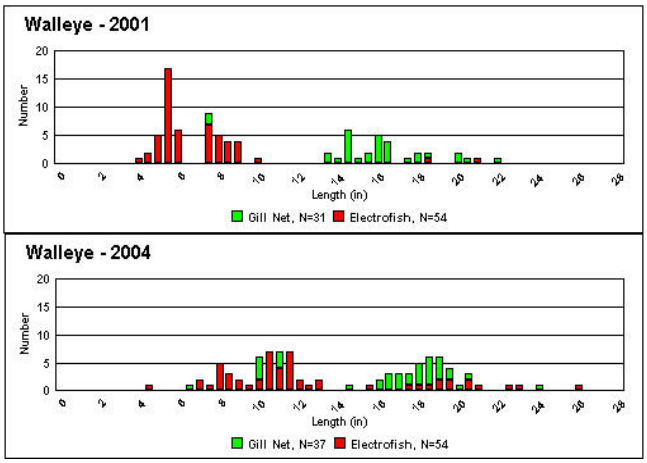


Figure 1: Length frequency distribution of largemouth bass taken from Caumsett Pond.



Lake Ronkonkoma Walleye length frequency distribution from gill net and electrofishing 2001 and 2004.

Region 3

Swinging Bridge Reservoir
This reservoir was an experimental stocking target for walleye with the objective of establishing a self-sustaining population. 20,000 pond fingerlings were stocked annually from 1993 - 1997, with an additional 5,000,000 fry stocked in 1998. No wild walleye were documented in the reservoir until 2000 and 2001, when routine fall electrofishing collected substantial numbers of wild YOY walleye.

This documentation of successful walleye recruitment for two years in a row remains both exciting and perplexing, in that it appears the original objective of the experimental walleye stocking program has been met, in spite of an historically abundant alewife population which generally precludes walleye fry survival.

Fall night electrofishing in October of 2004 collected 205 fingerling size walleye (catch rate 126 fish/hour, mean size 7.6"), which is the highest catch rate of fingerling walleye documented during this overall evaluation. Age estimation of these fingerling-size walleye (utilizing scale samples) yielded both YOY and 1+ age estimates, but these 1+ estimates are likely errors in age estimation. A similar survey in the fall of 2003 failed to collect any fingerling walleye, resulting in the conclusion at that time of a failed 2003 year class.

Future sampling will continue to document the status of this developing walleye population, while simultaneously attempting to document the dynamics of the alewife/walleye interactions that have allowed for two successful years of walleye recruitment.

Mongaup Pond
This 97 acre Sullivan County pond is the centerpiece of a popular DEC- operated campground located within the Catskill Forest Preserve. This relatively high elevation (2139' MSL) pond has often been the subject of complaints of “poor fishing”, which is not surprising considering the infertile nature of the pond, as evidenced by consistently low conductivity and alkalinity measurements. This pond was last surveyed in 1983, so we decided to resurvey it in 2004 to investigate the anglers’ complaints.

A boat electrofishing survey consisting of one complete lap of the shoreline was conducted in early June 2004. Catchable fish species sampled included pumpkinseed, yellow perch, smallmouth bass, brown bullhead, and one chain pickerel. Growth rates were near but slightly below Regional averages for pumpkinseed, yellow perch, and smallmouth bass. The capture of only one chain pickerel was somewhat surprising in light of the good pickerel habitat present in this pond, but pickerel may not have been particularly vulnerable to the electrofisher at this time of year. The smallmouth bass/panfish PSD indices indicated that these two groups were in balance.

Results from this survey indicate that this pond contains a balanced fish population, although its density is not that great due to a basic lack of fertility. The concept of artificial structure placement has been brought up by the local county Sportsmen’s Federation, and if pursued this may be of value in attracting panfish and predators to specific locations for the benefit of the angling public in this intensively utilized pond.

Region 7

Oneida Lake Creel Survey
Federal Aid to Sportfish Restoration Funds were used to support the third year of this study. Total effort estimated for the period from May 1, 2004 to March 15, 2005 was 299,120 angler-h (compared to 321,700 angler-h the previous year), 97% of which occurred during the open water season (compared to 81% the previous year). Anglers harvested 39,345 walleye (10% of the adult population present in the spring), 16,665 yellow perch, and 6,000 smallmouth bass. Harvest was up 66% for walleye, down 79% for yellow perch, and down 43% for smallmouth bass compared to the previous year. Open water targeted catch rates (#/angler-h) for walleye, yellow perch, and smallmouth bass were 0.75, 0.64, and 0.41. Targeted walleye catch rate reflects a 29% increase over the previous year. Winter targeted catch rates were 0.12 and 0.26 for walleye and yellow perch, both lower than the previous year. During the open water season, anglers caught an additional 53,425 individuals comprised of 14 other species.

Whitney Point Reservoir Sampling
Night electrofishing in October has been conducted annually since 1994 (except 1996) at four standard sites along the reservoirs shoreline. The purpose of these surveys is to assess abundance and growth of YOY and yearling walleye in Whitney Point Reservoir.

The 2004 year-class was again fairly large in number (population estimate of 37,307 using Serns (1982) methodology) but their average size was the smallest observed since sampling began. YOY walleye in 2004 averaged only 6.5 inches in October (compared to past average sizes closer to 8 inches) with many fish measuring less than 5.5 inches. Cooler than average temperatures may have contributed to the reduced growth of YOY walleye but their small size almost certainly reflects a lack of forage later in the growing season. As was the case in 2003, relatively few YOY yellow perch and almost no YOY crappie were observed during the 2004 sampling effort. The following are population estimates of YOY walleye for all the years surveyed to date:

1994 - 8,087	1998 - 2,825	2001 - 31,141
1995 - 10,437	1999 - 55,275	2002 - 1,110
1997 - 106,704	2000 - 842	2003 - 70,958
		2004 - 37,307

Good numbers of yearling (2003 year class) walleye were collected in 2004. Based on the number caught we calculated a population estimate of 4,303 yearlings. This yearling population estimate indicates that only a small percentage (6.06 %) of the 2003 yearclass remains in the lake. Although natural mortality is likely a major contributor to this decline, movement out of the reservoir is another likely factor.

Oneida Lake Management

Regional and Central Office Fisheries staff met with Cornell Fisheries Scientists to review survey work conducted in 2004 (Fisheries assessment and monitoring of Oneida lake's fish community and fishery is done by Cornell University under contract to DEC). The strong 2001 year class of walleye is forecasted to boost the adult walleye population to over 500,000 in 2005. In addition, preliminary estimates indicate that the 2002 and 2003 year classes will further increase the adult population in the coming years to levels not seen since the early 1990's. The yellow perch population outlook for the near future is not as positive. The estimated number of adult yellow perch in Oneida continues to hover around the 1 million mark, about half of the long-term average. Neither the 2002 or 2003 year class was particularly abundant and their expected contribution to the adult stock in 2005 and 2006, respectively, is only expected to maintain the population at its current level.

Other findings reported by Cornell include: white perch production has been strong in recent years and they will continue to comprise a significant portion of the fish community; survival and growth of stocked lake sturgeon has been exceptional and fish over 50 inches have been captured; estimated cormorant predation on yellow perch and walleye is believed to have been minimal due to the intensive cormorant control program which was implemented by USDA-APHIS Wildlife Services as per the population goals established for cormorants by NYSDEC; angler catch rates for walleye (0.66 walleye/angler hour), as monitored by a creel survey, were the highest ever documented on Oneida Lake.

Based on the current status of the fishery no changes in current regulations are warranted.

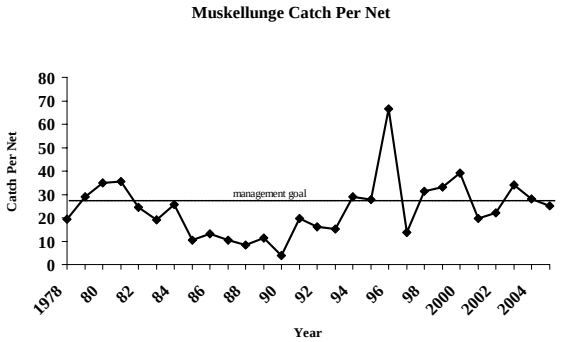
Otisco Lake Walleye Assessment

The stocking of pond raised fingerling walleye into Otisco Lake occurred again in June 2004. To assess survival and growth of these walleye, as well as those stocked in previous years, night electrofishing was conducted in October. Sampling occurred over two nights, along 3.1 miles of shoreline, in standard areas which have been sampled since the early 1990's. Only five walleye were captured, three of which were from the 2004 stocking. These are the first YOY walleye to be captured since annual stocking resumed in 2002. The two other walleye captured were both approximately 19 inches. Based on scale analysis, one fish was over 7 years old (likely a product of our stocking program prior to 1999) while the other may have been a fast growing product of the 2002 stocking (age determination was inconclusive).

Black bass and tiger musky were also collected during the survey. A total of 95 largemouth bass and 46 smallmouth bass were captured. Most of the smallmouth bass were young fish less than 9 inches long while the majority (61) of the largemouth bass were mature fish between 12 and 22 inches in length. Two tiger musky, total lengths of 19 and 26 inches, were also captured during the survey. These were the first tiger musky sampled in several years and age determination based on scale analysis indicates they were from the 2002 and 2003 stockings. The sizes of these two fish correspond with the size range of tigers reported frequently by anglers during the 2004 fishing season. Based on this anecdotal evidence it appears that survival of stocked tiger musky may have improved in recent years and we anticipate good fishing for tiger musky in the future.

Region 8

Conesus Lake Fish Stock Assessment
Standard gang gill netting was conducted on Conesus Lake from September 13-21, 2004. The purpose of the netting is to periodically (approximately 3 year intervals) assess fish stocks, particularly walleye. Previous surveys were conducted in 2001, 1997, 1994, 1991, 1988, and 1985. In 2004, 102 walleyes were caught in12 nets. The catch rate of 8.5 walleye per net is similar to the 2001 catch rate of 9.08 walleye/net and the1991 catch rate of 9.8 walleye/net, but is down from 33.1 in 1994 and 19.1 in 1997. The big story of 2004 is that 42 of the walleyes were less than 450 mm in total length, meaning they are juveniles that were stocked as fingerlings within the last four years. No juvenile walleyes were caught during the 2001 survey. This means that the recent fingerling walleye stockings



Relative abundance of adult muskellunge based on the trapnet catch

have been successful in maintaining the walleye population. Other preliminary results include: 783 total fish of 12 species were caught, a mean of 65 fish per net. Four gamefish, 5 panfish, and 3 other species of fish were caught. Panfish species bluegill sunfish, pumpkinseed sunfish, rock bass, and brown bullhead made up the majority of the catch. Fewer alewives were caught during this survey than others in the past. Nineteen northern pike and 23 smallmouth bass were caught. Only one yellow perch was caught, indicating that the yellow perch fishery remains collapsed due to alewife predation, as it has been since about 1988.

Conesus Lake Cooperative Walleye Culture
Conesus Lake was stocked on June 30, 2004 with about 20,000 2.5 inch fingerling walleyes and again on August 10 with and additional 2,000 4.0 inch walleye fingerlings, as part of the Finger Lakes Community College (FLCC) Cooperative walleye rearing program. FLCC's Mueller Conservation Field Station Ponds, with the help of many volunteers from the Conesus and Honeoye Lake Associations, FLCC interns, students, alumni and Faculty, DEC Caledonia Hatchery personnel, and Region 8 Fisheries Management personnel are partners in the program.

Waneta and Lamoka Lakes Fish Communities Evaluated
General surveys were conducted using the standard centrarchid sampling protocol to assess the fish community during year after (Waneta) and prior to (Lamoka) fluridone treatment. In the spring and fall surveys, SUNY Brockport (Dr. James Haynes and students) assisted DEC staff with fish collection using their new Smith Root EF boat concurrently with ours. Two DEC crew worked on the SUNY Brockport boat and two SUNY Brockport crew worked on the DEC boat. This provided an excellent teaching and learning exercise for both DEC and SUNY staff. Waneta and Lamoka Lakes were surveyed one night each in the spring and fall. Seventeen species of fish were captured in Waneta Lake in the spring and 19 species were captured in the fall. Sixteen species were captured in Lamoka Lake in both the spring and fall. All samples in both lakes were dominated by bluegill and pumpkinseed, and in Lamoka, yellow perch. Several quality size muskellunge, largemouth and smallmouth bass were also recorded. Data has been entered into the statewide database and full analysis by DEC and SUNY is currently underway.

Region 9

Chautauqua Lake
Regional staff assisted Chautauqua Hatchery staff with the tending of the trapnets to monitor the adult muskellunge population. Nets were fished for approximately 21 net nights and produced a catch per net index of 32 and a total catch of adult muskellunge of 285. This catch per net was above the recommended management level of 28 muskellunge per net established by the Chautauqua Lake workgroup. Redspot lesions were observed on 10% of the adult muskellunge (>32 inches). Eighty-four muskellunge (30%) greater than 40 inches were collected by trapnet.
Fall electrofishing surveys, initially conducted to evaluate short-term survival of fingerling muskellunge, were expanded in 1986 to evaluate the status of black bass and walleye populations. This assessment was further refined in 2004 as the primary assessment tool for these species in the absence of trawl and gillnet sampling (dropped due to staff

shortages and equipment deficiencies). Fisheries staff completed fall electrofishing surveys at 15 standardized sites. Primary targets were the species of primary recreational interest, muskellunge, walleye and black bass. Abundance of YOY walleye has been low since 1996 and sampling showed a population dominated by older individuals. 2004 represented the 8th consecutive year of poor walleye recruitment. To compensate for this, 75,000 yearling walleye were stocked in the north basin in 2003 with 55,000 additional yearling walleye stocked in the south basin in 2004. This stocking was followed by a second stocking of 35,000 "surplus" advanced fingerlings in September, 2004. Electrofishing showed an abundance of black bass with catch rates and stock density indices within acceptable limits (largemouth bass > 10 in= 12 per hour/PSD=60). The catch of adult and YOY walleye continued at low levels but some finclipped walleye from the 2003 stocking were collected.

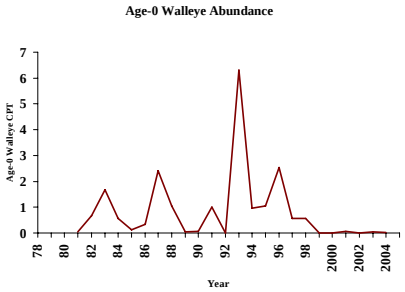
With the extensive support of the Bureau of Fisheries Biosurvey Unit, Region 9 fisheries staff continued entry of the historical data from Chautauqua Lake fisheries surveys into the statewide fisheries database. This represented the first coordinated effort to enter historical fisheries data from a large-lakes program.

Quaker Lake

Quaker Lake is a 268 acre lake in Allegany State Park which provides angling for smallmouth bass, largemouth bass, northern pike, stocked trout and several species of panfish. The lake supports an estimated 26,000 fishing trips annually. Public fishing access is provided along almost the entire shoreline and by a small trailer boat launching site. Boats on Quaker Lake are limited to electric motors. Quaker Lake was surveyed by the Region 9 Fisheries Unit in June 2004. Water quality sampling indicated that the lake was relatively low in productivity and had dissolved oxygen depletion below 15 feet by early August, limiting available habitat for stocked trout.

Bluegill, pumpkinseed and rock bass populations exhibited fast growth rates, while yellow perch, which were the most commonly sampled panfish in a 1997 survey, were represented by only three specimens in 2004 . In 2004, smallmouth bass and largemouth bass were much less abundant than in the 1997 survey. They exhibited average growth rates and good densities compared with other NY State waters. The black bass populations included large individuals (15-20 in) that were >10 years of age. Northern pike were sampled in low numbers; however anecdotal information from anglers indicates their population is relatively high. Northern pike may have been responsible for reduced electrofishing catch rates of panfish and black bass from the1997 to 2004 surveys.

Quaker Lake should be managed with smallmouth bass, largemouth bass and northern pike as the primary predators. Stocking of yearling, two year old and breeder trout should continue to provide spring and fall angling opportunities. Summer angling will primarily be provided by warmwater gamefish and panfish species. At this time, the current management strategies include statewide regulations for black bass, northern pike and panfish. To achieve an average catch



Relative abundance of age-0 walleye in Chautauqua Lake

rate for trout of 0.5 fish/hour, 4,200 brook trout yearlings, 4,200 brown trout yearlings and 400 two year old brown trout will continue to be stocked. Trout should continue to be managed with a year-round season and no minimum size limit, however only 2 fish of the 5 fish per day creel can be >12 in.

Future electrofishing and angler surveys will allow us to better evaluate the expanding northern pike population and its affects on stocked trout, black bass and panfish populations.

Silver Lake

Silver Lake was surveyed in 2004 to assess the growth rate and abundance of walleye, yellow perch, largemouth bass and various species of panfish. A walleye fingerling stocking program began in 1983 in Silver Lake to enhance a remnant population of walleye to control an abundant, stunted yellow perch population and to provide a fishery for walleye. Walleye were restored in Silver Lake using a fingerling stocking rate averaging 15 fingerlings/acre from 1983 through 1991. Fry stocking replaced fingerling stocking from 1992 through 1996, except 1995 when no stocking took place. No stocking has taken place since 1996 and all walleye from the 1997 year class to the present are naturally produced. The catch rate for adult walleye collected during early

spring electrofishing shortly after ice-out increased from 3/hr in 1985 to 355/hr in 2004.

Walleye and yellow perch growth rates indicate a balance has returned to the Silver Lake percid fishery. Four year old yellow perch averaged 202 mm in 2004 whereas in the mid-1980's, they averaged under 170 mm. Age-four walleye growth decreased as the population increased in size. Age-four walleye in 1987 averaged 467 mm and decreased to 403 mm in 2004. Yellow perch and walleye growth rates for 2004 were considered to be average for New York waters. Many studies have shown that walleye and yellow perch abundance and growth are negatively correlated and Silver Lake is no exception. Silver Lake is a very productive lake. Average yellow perch abundance in New York waters sampled by electrofishing exhibited catch rates of 15-50 perch/hr. The yellow perch catch rate in Silver Lake in 2004 was 633/hr and has averaged almost 700/hr from 1986-2004. Silver Lake has the highest yellow perch electrofishing catch rate of any water summarized in the New York Percid Sampling Manual.

Largemouth bass abundance was generally at or above what is considered average for New York State waters based on electrofishing catch rates. In 2004, the largemouth bass catch rate was 34 fish/hr during late spring night electrofishing. Largemouth bass size distribution was good with a PSD of 59% and an RSD^{15} of 32%. The largemouth bass growth rate was average for New York waters as fish reached the legal size of 12 inches in their 5^{th} summer of growth (age 4+). Bluegill and pumpkinseed have slightly above average growth rates while rock bass showed outstanding growth rates.

Coldwater Lakes and Ponds

Region 1

Trout Stocking

Region 1 Fisheries Staff coordinated the stocking of 31,310 trout in 52 locations on 27 waters across Long Island. In the spring 3,840 yearling brown trout, 5,000 two year old brown trout and 14,420 yearling rainbow trout were stocked. Another 7,550 yearling brown trout were stocked in 13 ponds and three streams in October and November. The fall stockings are designed to provide fall and winter trout fishing opportunity in these waters. Assistance was received from the Staff of the Catskill Fish Hatchery who raised and transported the fish and members of the Long Island and Art Flick Chapters of Trout Unlimited who helped with the stocking.

Region 3

Kensico Reservoir

Since 1987 the New York State Department of Environmental Conservation has been utilizing angler diary information to better understand Kensico Reservoir's trout fishery. In 2004 five diary cooperators reported on 178 trips covering 577 hours. These efforts resulted in a total of 337 trout recorded. Included in the catch were 329 lake trout and 8 brown trout. Overall catch rate was 0.58 trout per hour. This was above the average catch rate of 0.48 trout per hour achieved by cooperators fishing from 1987 to 2003.

Lake trout comprised a total of 98% of the catch in 2004 and contributed an average of 92% of the trout caught for the years 1995-2004. In 2004 average size was 18.2 inches compared to 19.0 inches in 2003. Overall catch rate was 0.57 per hour. Catch rate for legal sized lake trout (21 inch minimum) was 0.22 per hour. Cooperators reported 40% of legal size lake trout kept. The average length of harvested lake trout was 23.1 inches, similar to the averages recorded in the eleven previous years. Fin clips were recorded on 37% of lake trout caught which was similar to the 43% reported in 2003. Although now abundant at sizes up to and slightly above the 21 inch minimum size limit, a relative lack of larger lake trout suggests that Kensico Reservoir may have become over stocked with lake trout. For older fish there is a trend toward slower growth with the average lake trout not reaching the 21 inch minimum size limit until age 9^{+} in 2004 compared to age 7^{+} in 2003, and age 5^{+}(gill netted fish) in 1991.

Given the increase in lake trout abundance, it is likely that many of the approximately 10,000 nine inch brown trout yearlings stocked annually are now being consumed by lake trout. In an effort to improve growth rates for lake trout and increase the number of larger lake trout (26 inches and larger), as well as improve the survival of brown trout, the annual stocking recommendation for lake trout was reduced from 7,200 yearlings to 3,600 in 2000; 1,800 in 2003; and only 900 in 2004. Additionally, a reduction in the minimum size limit on lake trout from 21 to 18 inches will take effect October 1, 2006. The daily limit will remain 3.

Sylvan Lake

Data collected in late August 2003 indicated that the thickness of the trout zone (Dissolved oxygen >= 5 PPM and temperature <= 70^{0} F) was only 12 feet on this publicly accessible, and publicly stocked, 115 acre Dutchess County lake. A comparison of August trout zone thickness revealed a steady and dramatic reduction from 102 feet in 1936, to 45 feet in 1961, to 38 feet in 1981. To follow up on these findings additional sampling was done in 2004 during June, July, August and September. Trout zone thickness during these months was measured as 40, 16, 18 and 18 feet respectively. In 2004 the August trout zone was 18 feet thick. This represented a 50% improvement from 2003 but was still less than half the thickness of any August trout zone measured prior to 2003.

In recognition of the increasingly eutrophic state of the lake the Division of Water has been asked to add Sylvan Lake to its List of Impaired Waters.

Region 5

Adirondack Brook Trout Management

Due to the lack of Little Tupper strain fish at Warren County Hatchery in 2004, Brandon Enterprises in Paul Smiths was contacted about providing trout. Brandon has a private pond stocked with Little Tuppers provided in the past by DEC. Brandon utilized those trout to supply Little Tuppers to private landowners in the Little Tupper watershed with genetically appropriate fish. Staff at Brandon agreed to collect eggs for the state and ultimately provided about 8,000 to Warren County for rearing and stocking in 2005. The cooperative effort with Brandon Enterprises will continue.

During late fall of 2004 egg take efforts for the Windfall strain of brook trout were completed. Eggs were collected from over 50 pair of trout from Mountain Pond, Town of Brighton, Franklin County. The eggs will be reared at the Warren County Fish Hatchery for stocking in about eight other waters around the Adirondacks. Windfall strain brook trout are genetically unique - their original home water is located only a few miles away from Mountain Pond on private land.

Giant Washbowl Pond to Provide Refuge for Heritage Brook Trout

Four staff from Region 5 and Region 6, plus the Central Office Cold Water Unit Leader, worked to eliminate competitive fish species from Giant Washbowl Pond, located in the Giant Mountain Wilderness, Town of Keene. The project will pave the way to utilize Giant Washbowl as a haven for a heritage strain of Adirondack brook trout. An Adirondack Park Agency staff member was on hand to observe the treatment and participate in post-treatment observations. The project was included in the recently-approved Giant Mountain Wilderness Unit Management Plan.

Reclaimed Ponds Studied

Follow-up studies were conducted on four ponds that had been reclaimed in recent years. Of the four waters, three are trout monocultures (all competing species were successfully eradicated); and in the fourth pond, only minnow species not considered to be serious trout competitors were found in addition to trout. The four ponds include Panther Pond (Franklin County), Crane Mountain Pond (Warren County), Icehouse Pond (Hamilton County) and Moose Mountain Pond (Essex County). The waters were reclaimed during the mid to late 1990s with the fish pesticide rotenone to remove non-native competitors to native brook trout. The surveys showed the success that the Bureau of Fisheries has had in its attempts to restore native brook trout by eliminating competing species. Only Moose Mountain Pond (treated in 1995) contained non-trout species. All four waters now have exceptional populations of brook trout and should provide excellent fishing for native brook trout for many years to come.

Blue Mountain Lake Surveyed

Blue Mountain Lake in the Town of Indian Lake, Hamilton County, was netted in late June 2004 to assess its lake trout and landlocked salmon populations. Fisheries has received a number of complaints in recent years that angling success for both species has declined. Inspection of tributaries to the lake in the springs of 2002 and 2004 found a low abundance of rainbow smelt eggs, leading to suspicions of low forage abundance. Water chemistry sampling found excellent dissolved oxygen levels at all depths (max 85 feet) with the thermocline beginning at 20 feet.

Twelve sites were netted using 300 foot gillnet gangs of 1.5-2-2.5 inch mesh. Three of the twelve gangs were suspended in the thermocline to catch salmon. The other nine gangs were bottom sets in deep water targeting lake trout. The 3 suspended gangs caught 6 landlocked salmon ranging from 10-16.6 inches. That catch rate, two salmon per gang, is considered normal using this technique. The 9 bottom set gangs captured 45 lake trout ranging from 7.4-27.6 inches and 7 lake whitefish, all over 20 inches in length. The catch rate of five per gang for lake trout is below average for Adirondack waters. Examination of stomach contents for some lake trout found a few smelt. Scales were taken from the salmonids and will be aged. Blue Mountain Lake formerly had one of the highest growth rates for lake trout in Adirondack waters. Stocking and forage enhancement decisions will be made based on current growth rates

Raquette Lake Surveyed

Raquette Lake in the Town of Long Lake, Hamilton County, was also netted in late June 2004 to assess its lake trout population. The same netting gangs used in Blue Mountain Lake were employed in Raquette Lake. The lake serves as the broodstock water for Adirondack strain lake trout eggs.

Eight sites were sampled yielding a total catch of 162 lake trout ranging from 5.9 to 24.9 inches. Two lake whitefish and one landlocked salmon were also caught. The catch rate for lake trout was 20 per gang (compared to 5 per gang in Blue Mountain Lake). This high catch rate corresponds well to recent estimates of high adult population levels. About 81% (131 of 162) of the lake trout were stocked fish. In contrast, fall trap netting and angler diary returns indicate that only 40-50% of the lake trout result from stocking. Trap netting and angler returns tend to favor the larger, older lake trout, while the gill netting done in June better represents younger year classes. The low numbers of wild, immature lake trout in this sampling effort was unexpected. Scale aging of the unclipped lake trout will be done. This data will be important in making future stocking and regulation decisions for the lake trout fishery.

Lake Trout Reestablished in South Pond
South Pond in the Town of Long Lake, Hamilton County, was also netted in late June to assess an experimental lake trout stocking policy. The same gill net gangs used in Raquette Lake and Blue Mountain Lake were utilized for this effort. South Pond is 428 acres in size, hence only 4 gangs were set. These gangs captured a total of 9 lake trout or 2.2 per gang ranging from 7 to 23 inches. Thus, multiple year classes of lake trout were captured. Large numbers of yellow perch and white sucker were also caught which may have reduced the nets' effectiveness in catching additional lake trout. All the lake trout captured were clipped (stocked) fish. South Pond was known historically as a good lake trout water. Past stocking efforts with fingerling lake trout failed in this water, but yearling stocking appears to be working. It is probably too early to tell whether natural reproduction can sustain this population in the future.

Three Newly Acquired Lakes Surveyed
Region 5 Fisheries staff conducted general biological surveys of Henderson Lake as well as Lower and Upper Preston Ponds near Newcomb in Essex county. These are ponds located within the Open Space Institute's recent Tahawus acquisition with the intent to transfer them eventually to the state. The Henderson Lake netting captured only a single brook trout, along with pumpkinseed, white sucker, brown bullhead, and non-native yellow perch. Henderson Lake's temperature/dissolved oxygen profile revealed an abundance of cold, well-oxygenated water. Therefore, expectations are to begin stocking Raquette Lake strain lake trout. The netting at Upper and Lower Preston Ponds captured only brook trout. However, minnows were observed in Upper Preston Pond, indicating that pond does not contain a brook trout monoculture.

Region 6

Adirondack Pond Brook Trout Surveys
Pond populations of brook trout not only present great fishing opportunities for large brook trout but also present special challenges for fisheries management. In 2004, Region 6 put an emphasis on conducting fish surveys in many of the Adirondack ponds that are stocked with brook trout. This evaluation of the stocking success examined 23 waters and yielded mixed results. Success can be defined as a population with large numbers of trout where fish from numerous age classes are represented. Many impacts can keep a water from developing ideal trout populations including deadly hot summer temperatures, acidification, overfishing, and competition from non native species. The small size of many of these waters makes them vulnerable to these factors and continuous evaluation is needed to determine if actions need to be taken to make stocking more successful or to determine that a particular water is not suitable for stocking. Of the 23 surveys conducted in 2004 all produced brook trout of at least one year class, 5 had populations with almost all of the fish from the previous year's stocking, and 18 waters had at least two year classes well represented.

Heritage Strain Brook Trout Egg Take
Region 6 has brood waters for both the Little Tupper strain and the Horn Lake strain of brook trout. These heritage strains of brook trout are valued for their native genetics that have not been diluted by crossings from any stockings. These fish have the intrinsic value of being unique Adirondack fish and they have the potential to have evolved to be better suited to survive and sustain themselves in the conditions common to the Adirondacks. This latter characteristic has generated the DEC's interest in their propagation and stocking into waters where we are trying to reestablish wild brook trout populations. Rather than keeping brood fish of these strains in a hatchery we have established wild ponds that can be sampled in the fall to collect fish that can be "squeezed" of their gametes. These ponds allow us to maintain the wild nature of these heritage fish and also keep us from having to disturb the fish in their home waters in order to collect gametes (Little Tupper Lake and Horn Lake).

In 2004 we collected enough eggs to produce 4,500 Little Tupper strain fish and 8,500 Horn Lake strain fish. These strains, as well as other strains, are also produced in Region 5.

Brook Trout Pond Limings
To counter the effects of acid rain, five ponds were treated with agricultural lime to help raise their pH. The lime is applied during the winter while it can be spread out over the surface of the ponds' ice. The Region 6 liming program monitors a set of 21 brook trout ponds/lakes that have been deemed suitable candidates for treatment under the guidelines of the 1990 EIS on Liming. Without periodic liming these waters would have acidified to the point lethal to brook trout sustainability. With extensive help from our Operations staff we were able to lime Clear, Pine and Brewer Ponds with snowmobiles and Evergreen and Hidden Lakes using State Police helicopter. In

total 93 tons of lime was spread out over 5 ponds. Coordination of these limings takes help from not only Fish and Wildlife staff and Operations staff but also from the DEC Rangers and Conservation officers. These liming projects are a great example of the magnitude of accomplishment that can be achieved when the various aspects of the DEC come together as a team.

Chub Pond, Oneida County

A general fisheries survey of Chub Pond, Oneida County, showed a drastic change in the fish structure compared to the last survey in 1993. In the 90's, yellow perch 6-8 inches and brook trout 10-12 inches dominated the catch. The most recent survey caught only a few 4-6 inch yellow perch and no brook trout. Common suckers and chain pickerel 18-22 inches are now the dominant fish species. The pickerel most likely moved upstream from Kayuta Lake several miles below Chub Pond.

Warmwater Rivers and Streams

Central Office - Inland Section

St. Lawrence River Esocid Study

Federal Aid to Sportfish Restoration funded efforts to assess and manage Esocids (members of the pike family) continued in 2004. Researchers at the State University of New York School of Environmental Sciences and Forestry completed the following activities:

Monitoring of juvenile esocids.

Monitoring of juvenile esocids continued in 2004. Eleven bays were sampled for YOY esocids. The muskellunge total CPUE for 2004 has increased substantially compared to 2003, however northern pike relative abundance trends in study bays continue to be depressed and CPUE has not been above 0.4 fish per haul since 1996. This year, during the standard large mesh seining index, only 6 YOY northern pike were caught, for a total CPUE of 0.07. The 2004 large mesh seining index for muskellunge had a total CPUE of 0.74 .

Long-term YOY muskellunge CPUE data (1990-2004) was analyzed from each bay to determine if particular bays have greater muskellunge production relative to others. Peos and Rose bays had the greatest mean CPUE over the last 15 years and were both significantly greater than most of the other bays. Salisbury and Lindley bays had the lowest mean CPUE over the last 15 years.

Muskellunge Angler Diary Program

Eight diaries were distributed to interested guides and anglers. Five diaries were received for a return rate of 62.5 %. The overall catch rate, number of muskellunge caught, and average size for 2004 (CPUE = 0.037 fish/hour; # musky caught = 54, average length 46.5) was very similar to 2003 (CPUE = 0.039 fish/hour; # musky caught = 61, average length 46.1).

Northern Pike Spawning Marsh Management

Efforts to evaluate the use and reproductive success of northern pike in managed marshes continued in 2004. Spawning adult northern pike were captured and placed over the water level management structures since 1999 at Cranberry Creek, since 2002 at Wilson Bay and since 2003 at Carpenters Branch of French Creek. Overall 824 northern pike have entered spawning marshes since the program began; sex ratios of these fish are consistently female dominated. At Cranberry Marsh 149 adult pike were captured; these catches are considerably higher than previous years and mean size has remained relatively stable. Twelve adult northern pike were captured after going through the fish passage structure at Wilson Bay in 2004. The mean TL of northern pike from Wilson Bay was substantially larger than those in Cranberry Marsh. This is likely attributable to higher exploitation of northern pike at Goose Bay, a popular ice and open water fishing location. At Carpenters Branch 117 adult northern pike were captured. A total of 20 northern pike were caught leaving Carpenters Branch, all of which were in post spawn condition.

In addition to monitoring spawning adult northern pike, YOY northern pike have been monitored with a spillway trap at the water level management devices at Cranberry Marsh since 2000. A total of 4,333 emigrating age-0 northern pike were observed in 2004. Of these, 3,665 emigrants were LV fin-clipped and released (85%). The number of observed emigrants was significantly higher than in previous years. These numbers represent a conservative estimate of the number of age-0 northern pike emigrating from Cranberry Marsh. In addition 12 grass pickerel were captured and processed and a total of twelve fish species were caught including: black crappie, bluegill, bluntnose minnows, brown bullhead, central mudminnow, golden shiner, grass pickerel, largemouth bass, northern pike, pumpkinseed, rock bass and yellow perch.

In addition to monitoring spawning adult northern pike, YOY northern pike have been monitored since 2003 at the water control structure at Carpenters Branch. A total of 590 YOY northern pike were observed emigrating from Carpenters Branch and 564 were given LV fin-clips (96%). In addition, 20 grass pickerel were caught and processed and a total number of 10 fish species were caught including banded killifish, black crappie, bridle shiner, central mudminnow, fathead minnow, golden shiner, grass pickerel, northern pike, northern redbelly dace, and pumpkinseed.

The entire shoreline of Goose Bay was electrofished in 2001 and 2002 to recapture fin clipped northern pike (in 2003, Goose Bay could not effectively be shocked due to electroshocking boat malfunction). Sampling Cranberry Creek in 2004 resulted a catch of 10 northern pike, only 2 of which were less than 300 mm

in total length, and 7 grass pickerel. Electroshocking the shoreline of French Bay both upstream and downstream of NYS Route 12 resulted in the capture of YOY northern pike from Carpenters Branch, 25 northern pike and 1 grass pickerel (14 of the pike were less than 300 mm total length).

Fish Community and Habitat Associations in Nursery Bays

Three years of data (2002- 2004) have been collected toward this our objectives and a final report is scheduled for December 2005. Seine hauls were used and with the habitat was evaluated at the beginning, middle, and end of each haul. Habitat attributes measured included: depth, substrate type, plant species diversity, percent coverage of each dominant species, and vegetation height. All fish captured were identified, enumerated, and a subsample was measured for total length. Species co-occurrence patterns, habitat stability, and correlations between habitat and species occurrence will also be examined.

Region 7

Susquehanna River American Shad Restoration

Regional fisheries staff again assisted with the stocking of American shad fry in the Susquehanna River. On June 2, 2004 nearly 485,000 fry were picked up at the Pennsylvania Fish and Boat Commission's VanDyke Fish Hatchery and stocked in the river at Apalachin and Binghamton. This was the third year of a five year experimental American shad stocking program in the New York portion of the Susquehanna River drainage. These fish were stocked as part of a multi-state cooperative effort to restore a self-sustaining population of shad in the Susquehanna River. Because of high river flows during the summer/fall no attempts to collect juvenile shad were made by Region 7 Fisheries. High flows hampered collection efforts in Pennsylvania and Maryland and the overall catch of juvenile shad was the lowest ever.

Shad restoration efforts to date have resulted in the passage of over 110,000 adult American shad in the spring of 2004 at Conowingo Dam in Maryland, the lower-most dam on the river. This is the fourth highest passage total in the 30+ years of the shad restoration program. Unfortunately, due to high river flows during the shad spawning run only 3% (3,428) of the American shad which made it over the Conowingo Dam were able to find their way into the fish passage facility at the Holtwood Dam, the second of four large dams located on the lower river. Needless to say there still are obstacles to overcome before we can expect to see significant numbers of shad in the New York waters of the Susquehanna River drainage. Bureau of Fisheries staff from Cortland and Albany represent New York State on the Susquehanna River Anadromous Fish Restoration Cooperative (SRAFRC) which includes natural resource agencies from Pennsylvania and Maryland as well as the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the Susquehanna River Basin Commission.

Region 8

Canandaigua Outlet Stream Survey

A fisheries assessment of Canandaigua Outlet was completed during August to estimate current population parameters. The main objective was to evaluate potential impacts to fisheries resources from potential decreased flows in Canandaigua Outlet as a result of reduced minimum flow requirements for the City of Canandaigua's WWTP during late summer months. Seven sites downstream of the WWTP were surveyed. Upstream sampling did not occur because of sampling/equipment limitations due to stream conditions. Various habitat types (i.e. pools, riffles, runs, gravel, muck, cobble, bedrock bottoms) were sampled.

A total of 1,609 fish were collected. Panfish, including rock bass, pumpkinseed, and bluegills accounted for 24% of all fish collected. Smallmouth and largemouth bass were the predominant predators collected accounting for 6% and 1% of all fish collected. Size indices indicate that few large panfish are in the population. Growth of both bluegill and pumpkinseed is relatively fast early and then slows down. Size and age distribution of smallmouth bass indicate a well balanced population representing several size and age classes. Growth was average compared to other New York waters.

A total of 17 brown trout were collected at the two most downstream sample sites. These sites are within the stocked reach of Canandaigua Outlet, which begins approximately 11 miles downstream of the Canandaigua WWTP outfall. All the trout collected were stocked fish. This is primarily a put and take fishery as stream temperatures typically exceed lethal temperatures for trout during late summer months. However, summer 2004 was generally a cool wet summer, and this obviously helped with the holdover of trout throughout the summer.

Overall, the portion of Canandaigua Outlet that would be most impacted from potential flow reductions supports a fair smallmouth bass fishery. Panfish populations appear to provide limited opportunities. Reduced flows could potentially impact the smallmouth bass fishery by reducing available stream habitat such as pools and deeper runs. The trout section does contain adequate habitat providing stream temperatures do not increase above lethal temperatures for extended periods of time. Reduced flows could potentially be detrimental to this resource, however, impacts would be reduced because of the inflow of several tributaries prior to the designated trout reach.

Region 9

Buffalo River Walleye Restoration Project

Region 9 Fisheries and Lake Erie Units (LEU) worked cooperatively to implement a plan to restore walleye in the Buffalo River. In springs 2004, LEU staff collected eggs from 11 pairs of adult walleye from Cattaraugus Creek as the egg source for fingerlings to be stocked in the Buffalo River. Cattaraugus Creek walleye were chosen because AFS genetic guidelines recommend using an adjacent spawning concentration for rehabilitation efforts where the stocked fish can potentially mix with a neighboring wild population. The fertilized eggs were incubated and reared to 1 to 2 inch pond fingerlings at DEC's Chautauqua Fish Hatchery. Both surplus fry (105,000) and pond-reared fingerlings (28,000) were planted in the river. If successful, the stocked fish may return as adults to spawn in the Buffalo River as early as 2008. The stocking component of this plan will continue for approximately six more years.

The LEU began the annual evaluation component of this project in 2003 by conducting springtime boat electrofishing surveys to detect baseline densities of spawning walleye. Baseline evaluation efforts in 2003 and 2004 have not encountered spawning-phase walleye. This annual springtime boat electrofishing evaluation is expected to accompany the duration of the stocking program.

Coldwater Streams

Evaluation of Model used to Determine Stocking Numbers Completed

Target catch rates for stocked trout streams in New York State are (on average) 0.50 trout per hour for most streams, and one fish per hour for catch and release streams. The number of trout stocked into a given stream reach to meet these target catch rates is determined by taking into account fishing pressure, wild trout population numbers, stream carrying capacity, and a number of fish population dynamics parameters. This methodology is called Catch Rate Oriented Trout Stocking, or CROTS, and was formulated beginning in the 1970's and first implemented in the late 1980's. Almost all trout streams that receive stocked trout have now been through the CROTS process and stocking rates have been adjusted accordingly. Many streams have been under CROTS management for a decade or longer.

An evaluation of the underlying model and assumptions used in CROTS has recently been completed by researchers at Cornell University. The evaluation centered on three phases: (1) rewriting the original computer model using modern software; (2) an examination of the various parameters that are used by the model and determining which are most important for model output; and (3) a comparison of model outputs with what is actually observed in streams that have been under CROTS stocking for some time.

The model framework was found to be essentially sound, and no systematic biases could be found when comparing model predictions with field observations that would warrant wholesale adjustments of stocking rates at the this time. However, some of the estimates used as model inputs could be improved, such as fish mortality rates and angler creel rates. Recommendations on a methodology and data needed to improve these estimates were made. The newly rewritten model is easier to use by agency biologists than the previous version, and will be useful for predicting the results of management changes (i.e., angling regulations or stocking regime) on particular streams, or for fine-tuning stocking rates on heavily studied streams.

The results of this evaluation will be submitted for publication in professional fisheries journals.

Region 1

Trout Stocking

Region 1 Fisheries Staff coordinated the stocking of 31,310 trout in 52 locations on 27 waters across Long Island. In the spring 3,840 yearling brown trout, 5,000 two year old brown trout and 14,420 yearling rainbow trout were stocked. Another 7,550 yearling brown trout were stocked in 13 ponds and three streams in October and November. The fall stockings are designed to provide fall and winter trout fishing opportunity in these waters. Assistance was received from the Staff of the Catskill Fish Hatchery who raised and transported the fish and members of the Long Island and Art Flick Chapters of Trout Unlimited who helped with the stocking.

Region 4

Field Work Completed For The Beaver Kill Watershed Trout Study

In 2000, the New York State Department of Environmental Conservation (DEC) initiated the Beaver Kill – Willowemoc Watershed Trout Study, a five-year effort designed to collect comprehensive, up-to-date fisheries information and to lay the foundation for a long-term fisheries management plan for the watershed. All fieldwork for this project was completed during the summer of 2004.

This study has involved the cooperation of DEC staff from several offices, Trout Unlimited, researchers at Cornell University, and the New York State Department of Transportation (DOT). It is the first project in New York State to examine an entire watershed on a comprehensive basis, providing concurrent data on both the fishery and the environmental factors believed to influence trout abundance and distribution.

The primary components of the study included: (1) angler surveys to estimate the amount of fishing activity occurring, how many trout and of what size and species are being caught, and the proportion of the catch that is comprised of wild trout; (2) sampling fish populations throughout the watershed to determine species distributions and population characteristics; and (3) measuring and mapping environmental factors such as summer water temperatures, water chemistry, flow rates, and trout habitat features.

Detailed methods, analysis, and conclusions are available in separate reports prepared for these components. Information from these reports will form the basis for management options within the watershed, and a final management plan will be written after public input is recieved on management options.

Region 5

Hudson River Research Study Developed
Region 5 Fisheries and Lands and Forests staff met with personnel from the United State Geological Service (USGS) and DEC's Stream Monitoring Unit to discuss possible research activities on the Hudson and Indian Rivers in Hamilton, Essex and Warren Counties. The research would investigate impacts of summer water releases to enhance whitewater rafting. The draft Hudson Gorge Primitive Area UMP and a river management plan include provisions for additional research. USGS personnel were quite interested in the project and talks will continue on devising new flow-gauging capabilities, modeling habitat changes and surveying biological resources along the river corridors.

Kennyetto Creek Stocking May Be Resumed
Region 5 Fisheries staff conducted a stream survey of Kennyetto Creek in Fulton County. This stream had been dropped for stocking because surveys done in the 1960's showed that brown and brook trout natural reproduction was adequate to provide a fishery. This survey was conducted to assess whether the trout population in Kennyetto is still in good condition. Naturally-spawned brown trout and brook trout were captured in the survey; however, the numbers sampled seemed lower than optimal. Additional computer work will reveal whether stocking will be resumed on this stream.

Region 7

2004 Cayuga Inlet Juvenile Rainbow Trout Electrofishing Survey
During October and November 2004, the regional fisheries unit carried out an electrofishing survey on Cayuga Inlet to determine the density of wild juvenile rainbow trout. Eleven sites were sampled from the confluence with Enfield Creek upstream to Station Road in West Danby, a distance of about 8 miles. All 11 sampling sites were 100 feet long and had average widths of 12 to 28 feet. Two electrofishing runs were made at 10 of the sites and three electrofishing runs were made at one site. A total of 459 wild and 10 stocked juvenile rainbow trout were collected in the 11 sampling sites. As expected, the largest concentrations of young rainbow trout were encountered in the upstream sites. Estimates of the number of wild juvenile rainbow trout per acre for each area sampled were made using removal methods described by Seber-LeCren and Moran and Zippen. Estimates of the number of wild rainbow trout hatched in 2004 (fingerlings) averaged 556 per acre (ranging from 97 to 1,087 per acre) while estimates of the number of yearlings and older juveniles averaged 536 per acre (ranging from 31 to 1,344 per acre). These estimates compared favorably with estimates made in the 1980s and were indicative of a moderately plentiful juvenile rainbow trout population. Results of the 2004 survey suggest Cayuga Inlet has made a substantial recovery from the environmental damages caused by the 1997 diesel fuel spill and is contributing significant numbers of wild rainbow trout to the Cayuga Lake fishery.

2004 Cayuga Inlet Sea Lamprey Ammocoete Electrofishing Survey
In November 2004, the regional fisheries unit carried out an electrofishing survey on Cayuga Inlet to determine whether juvenile sea lamprey (ammocoetes) were present upstream of the Cayuga Inlet fishway. The presence of sea lamprey ammocoetes above the fishway indicates spawning adult sea lampreys from Cayuga Lake escaped over the fishway barrier during high water and spawned successfully in Cayuga Inlet. If small numbers of ammocoetes are found above the fishway there is little cause for concern but if large numbers are found there is great cause for concern. A large ammocoete population in Cayuga Inlet results in a large parasitic adult population in Cayuga Lake. As adults, sea lampreys feed by attaching to and rasping holes in the sides of large host fish like trout and salmon, drawing out blood and other body fluids. Blood loss and tissue damage often weaken or kill the host.

Cayuga Inlet was electrofished at several standard sampling sites from the fishway upstream to the NY Route 13 crossing. A total of 19 sea lamprey ammocoetes were collected in 8.6 hours of electrofishing (catch rate of 2.2 per hour). This was considered a low catch rate indicative of a small ammocoete population. In contrast, electrofishing surveys at the standard sampling sites in 1985 and 1994 yielded catch rates of 76.8 and 57.9 ammocoetes per hour, respectively. These catch rates were

indicative of large ammocoete populations. The likelihood of serious damage being caused by adult lampreys produced from the large ammocoete populations led to Cayuga Inlet being treated with lampricide (TFM) in 1986 and 1996. These treatments were successful in killing the vast majority of sea lamprey ammocoetes present at the time of treatment.

The low ammocoete catch rate found in the 2004 survey coupled with the low incidence of sea lamprey wounding on rainbow trout observed at the fishway indicates the fishway barrier and trapping operation have been effective in preventing significant sea lamprey spawning in Cayuga Inlet since the last lampricide treatment in 1996.

2004 Cayuga Lake Tributary Sea Lamprey Nest Counts

Since 1979, sea lamprey spawning activity in Cayuga Lake tributaries has been monitored by counting the number of sea lamprey spawning nests found in index sections of Cayuga Inlet, Sixmile Creek, Cascadilla Creek, Fall Creek, Salmon Creek and Yawgers Creek. The nest count information is used to follow long term changes in spawning activity and to determine whether adult lampreys from Cayuga Lake escaped over the Cayuga Inlet fishway barrier and spawned upstream.

During the 2004 nest count surveys, four nests were found in Cascadilla Creek and 56 nests were found in Sixmile Creek. No sea lamprey spawning nests were found in Fall Creek, Salmon Creek, Yawgers Creek or Cayuga Inlet. Results of these surveys suggested sea lamprey spawning activity in 2004 was low. Similar results were noted in other recent Cayuga Lake tributary nest count surveys.

It was extremely fortunate that no sea lamprey spawning nests were found above the fishway in Cayuga Inlet since this stream has the potential of producing far more sea lampreys than any other Cayuga Lake tributary. The presence of sea lamprey spawning nests in Cayuga Inlet above the fishway is an early indication that escapement and spawning have occurred and lampricide treatment to kill the resulting juvenile sea lampreys may be required.

Many years of Sixmile Creek nest count data combined with Cayuga Inlet fishway and ammocoete electrofishing data suggests sea lamprey spawning in Sixmile Creek (a tributary to Cayuga Inlet entering about 1 mile below the fishway) is influenced by the presence of sea lamprey ammocoetes upstream in Cayuga Inlet. Pheromone attractant releases from ammocoetes in Cayuga Inlet draw many spawning adult lampreys past Sixmile Creek upstream into the fishway trap. In years when there are very few or no ammocoetes in Cayuga Inlet (e.g., post lampricide treatments) spawning adult lampreys are more inclined to enter Sixmile Creek.

Genegantslet Creek Temperature Monitoring

Recording thermographs were again placed at several locations in a ten mile stretch of Genegantslet Creek from Creek Road, north of Smithville Flats, downstream to the Route 206 bridge. These thermographs were placed on the bottom, mid-channel, in riffle/run sections of stream and were set to record water temperature once every 30 or 60 minutes (depending on model) from June 10 to September 28. The purpose was to document summer water temperatures to determine the streams suitability for sustaining trout.

Air temperature, stream temperatures and flows in 2004 were similar to those observed in 2003. Maximum recorded stream temperatures exceeded 70°F on less than a dozen days at the worst site (Route 206) and on only four days at the best (Creek Road). The highest recorded temperature of 75.9°F occurred on July 5 at the Route 206 bridge. In summary, temperatures in Genegantslet Creek during the summer of 2004 were quite favorable for trout survival and growth.

West Branch Owego Creek Monitoring

As part of a monitoring plan to determine the effectiveness of a planned stream habitat improvement project, recording thermographs were placed upstream and downstream of a 0.45 mi. long segment of the West Branch Owego Creek along the Tioga/Tompkins County border. Thermographs were placed on the bottom, mid-channel, in riffle/run sections of stream and were set to record water temperature once every 30 or 60 minutes (depending on model) from June 14 to September 30, 2004. Intense dairy cattle grazing and stream bank erosion in this segment has left almost no trees or brush to shade the stream. Planned improvements in this reach include stream bank stabilization, shrub and tree planting, and fencing to restrict cattle access to a limited area of stream. The project is to be implemented by the USFWS and the Tompkins County SWCD.

In spite of the unusually cool, wet summer in 2004 stream temperature monitoring showed that daytime temperatures downstream of the reach were consistently higher than upstream temperatures. In

early July, when stream flows were at their lowest level, maximum daily water temperature at the lower end of the section was nearly 7°F warmer then the temperature at the upper end. During warm, sunny periods in August when stream flows were greater the temperature differences between the lower and upper sites were less extreme. Although these data are limited to one year, it clearly demonstrates the need to maintain a shady corridor along trout streams to help maintain suitable water temperatures for trout. Long term monitoring after the habitat improvement work is complete should allow us to track improvements in stream temperatures at the site related to the increased shading and improved habitat of the stream.

Stream Reclassification Surveys
During the summer of 2004 surveys were conducted at 22 sites on nine stream systems as part of an effort to document the presence or absence of trout in streams which are not "officially" designated as trout streams in the Environmental Conservation Law. Wild trout were documented at 16 sites and, of these, 11 had young-of-year trout as well, indicating natural reproduction is occurring. The presence of wild trout in these streams, is compelling evidence that these streams warrant additional protection. This and other data collected in recent years will be presented at future watershed reclassification hearings, when scheduled, to give them protection under Article 15 of the Environmental Conservation Law.

Region 8

Keuka Outlet Sea Lamprey Control
Sea lamprey control is an important component of maintaining salmonid populations in Seneca Lake. Two main tributaries that provide sea lamprey spawning and ammocoete rearing habitat are Keuka Outlet, which enters about mid-point on the west side of Seneca Lake and Catharines Creek which enters at the south end of the lake. Because of extremely high flows, chemical treatment of Catharines Creek was postponed until 2005.

Sea lamprey control was conducted on Keuka Outlet on 24 August, 2004. The outlet was last treated in summer 1999. Approximately 3 miles of stream were treated. The lampricide TFM was applied for 12 hrs. Concentrations $\geq$ the 9 hr minimum lethal concentration were maintained from the primary application site to Seneca Lake. Only two non-target mortalities were observed: one each stonecat and bluntnose minnow. A total of 143 ammocoetes were collected, far lower than anticipated. No transformers were observed.

Based on these results, it appears that ammocoetes, although present in the Outlet, may be more abundant in the delta area of the Keuka Outlet near Dresden. The delta was last treated in 1986. This area has prime substrate for ammocoetes. Currently, Region 5 employs a deep water electrofishing technique to assess populations on Lake Champlain. With guidance and equipment from Region 5, we will attempt to assess the ammocoete population in the Dresden delta area within the next two years.

Annual Finger Lakes Spring Rainbow Trout Spawning Run Surveys
Spring rainbow trout sampling occurred on four major Finger Lake tributaries: Springwater Creek (Hemlock Lake), Naples Creek (Canandaigua Lake), Cold Brook (Keuka Lake), and Catharine Creek (Seneca Lake). Two of the four surveys (i.e. Naples Creek and Cold Brook) are planned to coincide within one week of the 1 April trout season opener. Dates for these surveys are announced to the public in order to allow anglers the opportunity to observe and assess the current status of the trout run in anticipation of the trout opener. The Naples Creek "event" typically draws a crowd of 300-500 people. Results of the surveys are presented in the Table 1.

Table 1. Results of rainbow trout electrofishing surveys from Finger Lakes tributaries, Spring 2004.

Stream	Total Number	Max Length (inches)	Max Weight (pounds)
Springwater Creek	17	27.0	7.4
Naples Creek	45	27.5	8.0
Cold Brook	15	27.0	8.3
Catharine Creek	70	28.3	9.5

These surveys occur on one day and may not occur during the peak of the spawning run, therefore, it is difficult to assess changes in the population. Numbers collected were lower than in previous years but may be attributed more to the timing of the spawning run. General observation indicate that fish were in good condition and generally larger in size. The majority of the fish collected in all streams had not yet spawned

indicating that sampling occurred early in the spawning run. If a more detailed assessment of population parameters is required, it is suggested that a more intensive survey be conducted.

Naples Creek Rainbow Trout Production Survey Washed Out

High waters from Hurricane Charley cancelled the rainbow trout production survey in Naples Creek. The survey was about 1/3 complete when the storm waters hit. The survey is part of a check on Region 8's Finger Lakes anadromous rainbow trout population and any possible impacts from whirling disease. A cursory review of the partial data with historical survey data shows no problems in Naples Creek. The survey will be rescheduled for a future date.

Region 9

CROTS

It has been over 15 years since the Bureau instituted the updated trout stream stocking policy called CROTS (Catch Rate Oriented Trout Stocking). Region 9 has made a concerted effort to resurvey stocked trout streams for the second time using CROTS methodology. The primary objective was to determine if the streams could support a recreational trout fishery and if stocking was necessary to achieve this objective. As a result, we placed all stocked streams in Region 9 on a 7-8 year rotation for re-survey; with 10 completed per year they could be completed in about 8 years. Because of staff reductions, in 2004 we were only able to complete CROTS surveys on four streams.

Bay State Brook

Bay State Brook is a low fertility stream located in Allegany State Park where fishing pressure was high relative to other stocked trout streams in southern Cattaraugus County. Because of angler use and the lack of wild trout in the stream, it is recommended that the current stocking policy (pre-season stocking with 600 brown trout yearlings) be retained as this stream likely provides a satisfactory early season fishery for stocked trout.

Bee Hunter Creek

Bee Hunter Creek is also located in Allegany State Park. Since the last survey in 1992, Bee Hunter Creek has annually been stocked pre-season with 350 brook trout yearlings from the mouth upstream one mile. In 2004 no stocked trout were found in the stream, but numerous wild brook trout were found at the upper end of the stocked section. This stream has historically been stocked because fishing pressure was high relative to other stocked trout streams in southern Cattaraugus County. Because of the proximity (within one mile) to a very popular trout stocked lake (Red House Lake) and a stocked trout stream (Red House Brook), its small size, and the significant wild brook trout population present in Bee Hunter Creek, it will be managed for wild brook trout. In accordance with management of a wild trout fishery, the trout stocking policy for Bee Hunter Creek was removed.

Cattaraugus Creek

Cattaraugus Creek (an 11 mile section from NYS Route 16 bridge upstream through the village of Arcade to East Arcade) was electrofished at 8 sites in 2004 to evaluate the trout stocking policy as well as to monitor the wild trout population. This section lies in the southwest portion of Wyoming County. The watershed lies within the Allegheny Plateau in an agricultural region dominated by dairy farms. Large glacial deposits of gravel, sand and clay underlay the hilly topography. Gravel and cobble substrates are abundant with occasional boulders. The stream averages 40 ft in width and has a flow of about 30 cfs. About 12 miles of public fishing rights (PFR) have been purchased on Cattaraugus Creek in Wyoming County. The recommended stocking is for 8,400 yearling brown trout divided into 3 increments and 1,000 two year old brown trout divided into 2 increments.

In 2004, wild brown trout biomass averaged 29 lbs/acre or about 279 adult fish/mile while stocked brown trout biomass averaged 13 lbs/acre or 165 fish/mile. Both wild and hatchery brown trout numbers were very similar to estimated populations from a 1998 survey. In 1998, wild brown trout biomass averaged 30 lbs/acre with about 228 adults/mile while stocked brown trout averaged 11 lbs/acre with about 131 fish/mile. In 2004, wild rainbow trout biomass averaged 11 lbs/acre or 359 adult fish/mile. This was a significant increase from 1998 when wild rainbow trout biomass was 2 lbs/acre or 35 adults/mile. In the last 20 years, wild rainbow trout abundance has greatly increased in many waters in the upper Cattaraugus Creek watershed. Only 5 brown trout YOY were collected in 2004 while no rainbow trout YOY were seen. Most wild trout reproduction takes place in tributaries such as Clear Creek.

A 1997 creel survey estimated fishing pressure at 600-800 hours/acre - very heavy to extreme under the existing rating system. There is no reason to think that

fishing pressure has decreased. The 1997 survey was done during the first year of stocking of two year old fish. The two year old stocking policy has become very popular in the state, and if anything, the pressure on Cattaraugus Creek may even be higher than it was in 1997. Only six two year old stocked brown trout were collected in 2004, probably indicating that most were caught and creeled. It is recommended that the stocking policy remain unchanged and that the existing trout regulations (4/1 - 10/15 open season, any size minimum size limit, creel of 5/day with no more than 2>12 inches) be retained. To expand angling opportunities, we recommend that the season be extended from 10/16 - 3/31 as a catch and release, artificial lures only season. If approved, this regulation would begin 10/1/06.

Wiscoy Creek

The Allegany County stocked section of Wiscoy Creek was electrofished in 2004 to evaluate the existing stocking policy of 750 yearling brown trout divided into 2 increments over a mile stretch of stream. The upstream portion of Wiscoy Creek in Wyoming County has been managed as a wild brown trout fishery and has not been stocked in 25 years. The Allegany County section flows mostly through deciduous forest with some areas of agriculture, although most of the stream has good riparian vegetation. The stream averages about 40 feet in width, has a flow of about 40 cfs, generally has a cobble/rubble substrate, and has a good amount of habitat or holding water for larger brown trout in the form of deep pools formed by downed trees. In 2004, adult wild brown trout numbers averaged about 370/mile of stream or about 26 lbs/acre. Surveys in 1998 and 1991 estimated adult wild brown trout numbers at about 400/mile and about 40 lbs/acre. Since the wild brown trout population has been relatively stable in the past 15 years, stocking will be removed from the Allegany County portion of Wiscoy Creek starting in 2005 and fishing regulations will be changed beginning in October 2006 to match those of the Wyoming County section (a 10 inch minimum size limit, 3/day creel limit during the April 1 - October 15 season, and a catch and release, artificial lures only season from October 16 - March 31). Wiscoy Creek remains Region 9's best wild brown trout stream and will now be managed in its entirety with the same regulations.

Dodge Creek

Dodge Creek was electrofished at 4 sites in 2004 to evaluate the trout stocking policy of 3,700 yearling brown trout divided into 2 increments and 200 two year old brown trout over an 8 mile stretch of stream. Dodge Creek is a low gradient stream averaging about 27 feet in width, has a flow of about 15 cfs and flows through mostly abandoned agricultural land. The bottom substrate has much silt in many places, but cobble, gravel and bedrock can be found throughout the stream. Riparian vegetation is mostly scrub and grasses, but some willows are starting to take hold. Summer water temperatures are likely a limiting factor to both wild trout as well as survival of stocked trout. The stream is managed as a put and take stream and gets moderate fishing pressure, particularly from local anglers. In the 2004 survey, very few stocked fish were collected in late summer. However, several wild brown trout were collected at 3 of the 4 sites, including YOY trout. Several tributaries to Dodge Creek have small wild brown trout populations and some appear to have survived in the main stream in the relatively cool, wet summer of 2004. We expected to sample more of the stocked trout than we did, especially since we collected some wild trout, but fishing pressure on this stream may deplete the stocked numbers even with mild, wet summers that might otherwise permit better survival. Dodge Creek is one of the local streams that receives two year old brown trout in addition to yearling trout and this may increase fishing pressure and associated exploitation. It is recommended that the stocking policy remain the same for Dodge Creek.

Tributary 17 of Dodge Creek

This unnamed water, locally known as Trib 17 of Dodge Creek, was surveyed in 2004 to evaluate the trout stocking policy of 350 yearling brown trout over a 2 mile section. Trib 17 is a low gradient stream averaging about 15 feet in width with a flow of about 5 cfs. The bottom substrate is primarily cobble and gravel with some silt and the banks are generally well vegetated including deciduous forest. Summer water temperatures are likely a limiting factor to both wild trout as well as survival of stocked trout. Fishing pressure is generally low. A previous survey in 1990 collected no wild brown trout. However, wild brown trout were collected at each of the 3 sites surveyed n 2004. Interestingly, no YOY or yearling wild brown trout were collected as lengths ranged from 10 - 21 inches. Wild brown trout numbers expanded to about 60 adults/mile of stream or about 46 lbs/acre (several larger fish caused this number to be inordinately high). Stocked brown trout numbers were estimated to be about 21 fish/mile or about 6 lbs/acre. In-stream habitat can be limiting in Trib 17, but the habitat that is available seems to be taken up by a few larger fish rather than more smaller fish of several age classes. It is recommended that stocking remain the same.

Ischua Creek
Ischua Creek was surveyed in July and August 2004 at three sites near the Village of Franklinville. When the stream was last surveyed in 1997, it contained a substantial wild brown trout population in the Franklinville area. Low numbers of hatchery brown trout were also found remaining from the spring's stocking. The wild brown trout biomass estimated from the 1997 survey was 39 lbs/acre and the estimated number of wild brown trout/mile was 536 fish/mile. Extensive stream temperature monitoring work was done on all of Ischua Creek in 2002 found temperatures in the Franklinville area never exceeded 70 degrees F and overnight low water temperatures always dropped under 65 degrees F.

Because the stream supported a substantial wild trout population, had good public access and excellent water temperatures in the Franklinville area, in October, 2004 a 2.2 mile long catch and release section was instituted. The summer 2004 survey was done to obtain pre-regulation trout population data that can be compared with sampling in future years to evaluate the effects of the catch and release regulation.
In the 2004 survey, the estimated wild brown trout biomass for all three sampling sites combined was 27 lbs/acre and the estimated hatchery brown trout biomass was 9 lbs/acre. The estimated number of adult wild brown trout was 424/mile and the estimated number of hatchery brown trout was 115/mile.

Future electrofishing and angler surveys will help to determine if the catch and release section of Ischua Creek is meeting its objectives of increasing the density of wild brown trout and increasing angler catch rates.

Elton Creek
Elton Creek located in northeastern Cattaraugus County was sampled by electrofishing in August 2004. This work was done to gather fish population data on a 2,000 foot section of the stream (reference reach) where a public fishing easement is being purchased and major stream improvement work is planned. The 2,000 foot section was broken into twenty-100 foot sections and alternating sections were sampled . In addition, two-100 foot long control sections, outside the stream improvement area were also sampled. This section of Elton Creek was removed from the stocking list after 2002 due to the presence of significant numbers of wild brown trout and rainbow trout.

Water temperatures during the survey ranged from 60-69 degrees F with corresponding air temperatures ranging from 66-85 degrees F. This section of Elton Creek is underlaid by deep glacial gravel deposits which provide abundant spring water, helping to keep water temperatures in the ideal range for brown trout and rainbow trout survival.

Wild trout population estimates derived for the reference reach sites were highly correlated to the amount of instream shelter available for adult trout. Estimates for wild brown trout ranged from 0-13 adult fish per 100 foot section, and 0-49 adult fish per 100 foot section for rainbow trout. Estimates for the control sites ranged from 2-7 adult brown trout per 100 foot section and from 22-25 adult rainbow trout per 100 foot section. For all sampling sites, population estimates expanded to 189 adult brown trout/mile of stream and 921 adult rainbow trout/mile of stream. Also, for all sites combined, the biomass estimate for brown trout was 47 lbs/acre and for rainbow trout the biomass estimate was 74 lbs/acre. This is the highest biomass estimate we have ever encountered for wild rainbow trout on any stream in Region 9.

These estimates will be compared to population estimates done post-stream improvement to evaluate what effects the treatment has on the wild trout in this section of Elton Creek.

Small wild trout streams
In 2004, two small unstocked streams were sampled to see if they had wild trout populations. One stream, a tributary of Bay State Brook in Allegany State Park contained wild brook trout and the other, Storehouse Run in Chautauqua County contained a good wild brown trout population.

Two-Story Lakes and Ponds

Region 5

Lake Champlain Sea Lamprey Control

Bureau of Fisheries management efforts on Lake Champlain are directed primarily at reestablishing native lake trout and landlocked Atlantic salmon. Conducting sea lamprey control is a necessary prerequisite to establishing desirable populations of salmonids, but it is also expected to benefit other species, including walleye. Lamprey control and other management activities on Lake Champlain are coordinated with the US Fish and Wildlife Service (USFWS) and the Vermont Department of Fish and Wildlife.

Lampricide treatments were successfully completed on two New York streams (the Great Chazy River and Mount Hope Brook) and one delta (the Saranac River delta) as well as one river in Vermont (the Winooski River) during fall of 2004. Observations following the treatments indicate they were highly effective at killing ammocoetes (larval stage sea lamprey), yet caused minimal nontarget mortalities. The Saranac River delta held a particularly large population of sea lamprey larvae (estimates were in excess of 400,000 animals), and so the treatment of that delta was especially significant. Surveys determined that the Boquet River delta did not require treatment, as the previous fall's TFM treatment eliminated the vast majority of the sea lamprey on that delta.

Staff worked with the Great Lakes Fishery Commission to order the lampricide necessary for treatments in 2004. Federal funds covered most of the cost for lampricides, but additional funds from NY's Bureau of Fisheries were necessary to supplement the Federal source.

Sea lamprey wounding rates on lake trout and landlocked salmon decreased during 2004 for the first time since the long-term sea lamprey control program began in 2002. Table 1 shows that for the size classes selected for monitoring, 2004 wounding rates, while still much higher than wounding rate objectives, did decrease substantially from the record high wounding rates of 2003.

Table 1. Wounding rates on Lake Champlain lake trout and salmon during 2004.

Species	Number of lamprey wounds per 100 fish					
	Objective	Pre-control	Eight-year control	Year 2002	Year 2003	Year 2004
Lake trout[a]	25	55	38	72	90	62
Landlocked salmon[b]	15	51	22	62	85	45

[a] Lake trout in the 533-633 mm (21.0-24.9 inches) length interval. For lake trout, pre-control included 1982 - 92, while eight-year control includes 1993 - 97.

[b] Salmon in the 432-533 mm (17.0-21.0 inches) length interval. For salmon, pre-control included 1985 - 92, while eight-year control includes 1993 - 98.

Angler catches of trout and salmon, as indexed through an angler diary program, also showed signs of improvement in 2004. Brown trout and rainbow trout catches were up considerably from 2003, and lake fishing for landlocked salmon improved markedly as well. Unfortunately, fall tributary fishing for landlocked salmon was poor.

The Willsboro Fishway on the Boquet River, Essex County, was operated in trapping mode during the fall salmon run. Only a dozen adult salmon were collected in the fishway during the 2004 trapping season. The relatively low fishway catch and the poor fall tributary salmon fishing are likely indicators of negative impacts from sea lamprey on Lake Champlain's salmon population.

The continuing impacts of sea lamprey on salmonids indicate that untreated lamprey producing areas may be contributing significant numbers of sea lamprey to the lake. One such area is the Pike River system in Quebec, including its major tributary, Morpion Stream. This system is one of the most important untreated sea lamprey producers in the Lake Champlain Basin. Most of the sea lamprey production in the Pike River system is believed to occur in Morpion Stream. Therefore, construction of a low-head weir near its mouth could eliminate most of the Pike River system's sea lamprey production. The Lake Champlain Fishery Management Cooperative began technical evaluation of a low-head weir on Morpion Stream near its mouth. Funding was obtained from the Lake Champlain Basin Program for a lamprey weir hydrology and siting analysis. Field data collection necessary for siting and design was completed in 2003

and modeling of stream flows and various weir crest heights, design work, and cost estimates were completed in 2004. A final report will be written in 2005 and submitted to Quebec officials as part of a permit application for construction of the weir design preferred by the provincial authorities. Construction might begin in 2006, assuming the necessary funding and permits can be obtained.

Adult sea lamprey were trapped during their spring spawning run in Beaver Brook, south of Westport in Essex County. It is hoped that trapping on this small brook can serve as an alternative control measure to TFM treatments. Past chemical treatments of Beaver Brook have been only partially effective due to low flows, changing water chemistries and numerous beaver dams. A total of 137 sea lamprey adults were trapped and removed from the brook.

Presence/absence surveys for larval sea lamprey were conducted in 26 New York tributaries to Lake Champlain. While none of these tributaries had previously held sea lamprey populations, most had not been surveyed for over 10 years. Sea lamprey ammocoetes were found in two streams; Silver Stream, which flows into the lake near Snug Harbor, and Corbeau Creek, a tributary of the lower Great Chazy River. Neither population is large enough at this time to warrant control measures.

Lake Champlain Walleye Egg Take
Region 5 Fisheries staff and USFWS staff conducted an extensive trapnetting survey of South Bay in Lake Champlain targetting walleye and sauger in early spring 2004. During a week of netting, 149 walleye were captured, but no sauger. Ripe female and male walleye were stripped to provide eggs for the Lake Champlain Walleye Association. A total of 1,223,000 eggs were raised in the Association's portable hatchery. Surviving fry were later stocked in South Bay.

Lake Trout are Abundant, Salmon Scarce in Lake George
An Angler Diary Summary Report for the 2002 and 2003 fishing seasons on Lake George, Warren/Washington/Essex Counties, was written and mailed to cooperators. In 2002, the lake trout catch rate was the highest on record at 0.56 lake trout/hour. The 2003 catch rate was only slightly lower at 0.54/hour. The actual creel rate for lake trout was 0.02/hour in 2002 and 0.01/hour in 2003 (the minimum size limit is 23 inches in Lake George). However, if anglers had kept all legal lake trout caught the creel rate would have been 0.09/hour in 2002 and 0.07/hour in 2003. Both of the latter rates are high for Lake George.

In contrast to lake trout, the landlocked Atlantic salmon fishery in Lake George continues to decline. The 2002 catch rate was 0.03 salmon/hour and 2003 was 0.02/hour. The desired catch rate objective for legal salmon in Lake George is 0.12 to 0.18/hour. Anglers are not catching salmon in the lake and cooperator effort for this species is taking a marked decline. Fall trapnetting of adult salmon in 2002 found record growth rates for age 3+ salmon and a near record rate for age 2+ fish. However, trapnet catch rates were also low, corroborating poor survival for salmon in the lake.

Water Quality of Great Sacandaga Lake Monitored
Region 5 Fisheries staff sampled the zooplankton and water of Great Sacandaga Lake, Fulton County, in a cooperative study of the lake's water quality. The study is being funded by the Great Sacandaga Lake Advisory Council. NYSDEC is collecting the samples, which will be forwarded to the Cornell Biological Field Station on Oneida Lake for analysis and report preparation. The study was also conducted last year. Results from last year showed the lake to be in general good health. This year's study will shed light on how variable the lake's water quality is, so that if and when the study is repeated in the future, we will be better able to distinguish between real changes and what may simply be year-to-year variability.

Region 7

Cayuga Lake Inlet Fishway Monitoring
Operation of the Cayuga Lake Inlet fishway continued in the winter/spring of 2005. A total of 493 rainbow trout and 8,029 white suckers were passed upstream. In addition, 986 adult sea lampreys were trapped and killed at the fishway to prevent them from reaching their spawning grounds. Mature rainbow trout (50 males and 93 females) were sent to the Bath Hatchery for the production of Finger Lakes wild strain (152,000 eggs) and "hybrid" strain (47,000 eggs) rainbows. After spawning these adults were returned to the fishway for release back into Cayuga Inlet. All trout captured at the fishway were examined for sea lamprey attacks. The mean number of adult stage I-III wounds on our index group of rainbow trout (500-549

mm length) was 0.02, well below the threshold level for which treatment (0.27) may be necessary. The fishway was also operated during October 2004 to collect Atlantic salmon for a study on thiamine deficiency by the USGS Tunison Fish Laboratory.

Finger Lakes Zooplankton Sampling

Water Chemistry and zooplankton samples were collected in mid-May and mid-August to monitor zooplankton densities and size distribution in Cayuga, Owasco, Skaneateles, and Otisco Lakes.

Great Lakes

Lake Ontario and tributaries

Region 6

St. Lawrence River- Lake St. Lawrence
Lake St. Lawrence was sampled for the 18th consecutive year of a standardized gillnet assessment program in 2004. This index originated as a cooperative assessment program with the Ontario Ministry of Natural Resources (OMNR) in 1986 to monitor Lake St. Lawrence recreational fisheries.

Thirty two gill nets were set at standard sites in mid-September. Fish community data were analyzed with respect to CPUE, growth rates, and age distribution. Total CPUE decreased 31% from 2003 to 9.69 fish/net/night which is well below the long term average of 17.4. This was the lowest catch ever recorded for this assessment, primarily due to the decline of yellow perch. Round goby (*Neogobius malanostomus*) was recorded for the first time in 2004.

Smallmouth bass numbers remain relatively stable with the CPUE increasing slightly from 2003 to 2.22 fish/net/night. The walleye CPUE decreased approximately 44% with age-1 fish predominating in the age-frequency distribution. Yellow perch CPUE dropped precipitously to an all time low of 1.78 fish/net/night. Poor recruitment of the 2001 year class, along with consistent predation by double crested cormorants, have resulted in a depressed yellow perch population.

St. Lawrence River- Chippewa Bay
Depressed northern pike populations in the Thousand Islands have led to general angler dissatisfaction in this region. As a result, a cooperative northern pike enhancement program was established in 2001 between Region 6 fisheries staff and the Chippewa Bay Fish and Game Club. Under this 7-year experimental program, fisheries personnel acquire fertilized eggs from local genetic stocks for culture by the Fish and Game Club. Progeny are stocked as advanced fry into four wetland sites within Chippewa Bay. Stocking success is evaluated by seining for fingerlings in July/August and through monitoring of an established gill net index. The following results to date were:
1) 2001 - Stocking site evaluation of fish species composition, and habitat suitability.
2) 2002 - Approximately 5,000 fry stocked, despite problems with the culture facility.
3) 2003 - Approximately 30,000 sac fry stocked at four locations
4) 2004 - Approximately 11,000 sac fry stocked at one location, despite poor fertilization.

Due to poor production, stocking rates have been extremely low to date. Culture procedures are under constant revision and it is anticipated that future production will increase.

Thousand Islands
The warmwater fish stock assessment program on the Thousand Islands section of the St. Lawrence River provides standardized indices of abundance for major gamefish and panfish stocks, information on year class strength, and age and growth relationships of these stocks. Information obtained is used to evaluate and, if necessary, modify existing fishing regulations. It also provides baseline information for evaluation of environmental disturbances. Results of 2004 sampling with the greatest management significance include : 1) northern pike abundance continues to decline, recruitment remains relatively poor (this is probably a habitat effect) and 2) smallmouth bass abundance is still depressed (this is a recruitment issue that may be a result of cold spring water temperatures and cormorant predation).

Black River
Monitoring of the fishway is now being used as a low cost, non fishery dependent, method of monitoring the returns of lake-run salmonids, primarily chinook salmon and steelhead, to the Black River. With the advent of brown trout management in the lower Black River, the fishway may also serve to evaluate the presence of these fish in the river. This years chinook salmon run was the lowest on record as of the middle of October, but by the end of the month the number of chinook that had run was above average.

Thiamine deficiency leading to early mortality of larval salmonids has been identified as a serious potential problem in Lake Ontario salmonid management. Region Six assisted with a USGS study of Early Mortality Syndrome and thiamine in Lake Ontario steelhead. Regional fisheries staff collected a sample of steelhead from the spring spawning run in the Black River. Samples of eggs and/or muscle tissue from 20 individuals were collected and transported to the Tunison Laboratory of Aquatic Science for analysis.

Cormorant Management
The goals of cormorant management in eastern Lake Ontario are:1) restoring the structure and function of the warmwater fish community2) reducing the negative impacts of double- crested cormorants on nesting habitats and other colonial waterbird species. 3) improving the quality of smallmouth bass and other fisheries and 4) fostering a greater appreciation for Great Lakes colonial waterbird resources. Management of cormorant colonies in NY has involved egg oiling, nest removal, harassment of migrant cormorants and habitat modification. Lethal control of adults began in 2004 in eastern Lake Ontario. A total of 222 adult birds were culled on four islands. Results of egg oiling at Little Galloo Island include: 1) reduced cormorant reproductive success by 95+ % at L. Galloo I. annually since 1999; 2) reduced overall fish consumption by 6 million fish by LGI colony in 2004 and over 35 million since 1999 due to less chick feeding; 3) reduced consumption of smallmouth bass by 300,000 fish in 2003, 2 million since 1999. Continuing declines in nesting cormorant pairs are consistent with oiling effect models.

Regional fisheries staff presented and discussed issues related to St. Lawrence River warmwater fish stocks, lake sturgeon rehabilitation and cormorant management at the Lake Ontario Committee meeting in Buffalo. The Lake Ontario Committee is part of the Great Lakes Fishery Commission, an international agency established by treaty, which provides coordination of fishery management efforts on Lake Ontario. At the Lake Committee meeting U.S. and Canadian federal, state and provincial agencies, along with academic institutions assess the state of fish communities, discuss pressing issues and plan future management activities.

Region 6 participated in an Informational Public Meeting on St Lawrence River double-crested cormorants at Ogdensburg, on November 18, 2004. The meeting was hosted by the Ogdensburg Free Academy Student Council and the St. Lawrence County Fisheries Advisory Board. DEC Fisheries, Wildlife and Citizen Participation staff, along with representatives from both the U.S. Fish and Wildlife Service and the Geological Survey responded to questions from approximately 50 participants, while displaying cormorant natural history information and research findings at an informal poster session. In addition, Regional Director, Sandy LeBarron presented a brief overview of the status of cormorant management in St. Lawrence County.

Regional fisheries staff co-led (with Canadian Wildlife Service staff) a session on cormorant ecological impacts and cormorant management at the State of Lake Ontario conference in Niagara Falls, Ontario. The Lake Ontario Conference was sponsored by the Great Lakes Fishery Commission. At the Lake Ontario Conference personnel from U.S. and Canadian federal, state and provincial agencies, along with academic institutions assessed the state of fish communities, discussed pressing issues and planned future management activities. The conference was an essential part of the Process of developing updated Fish Community Objectives for the lake.

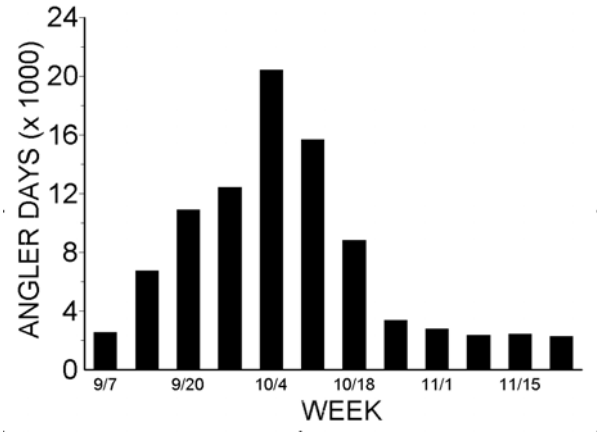
Region 7

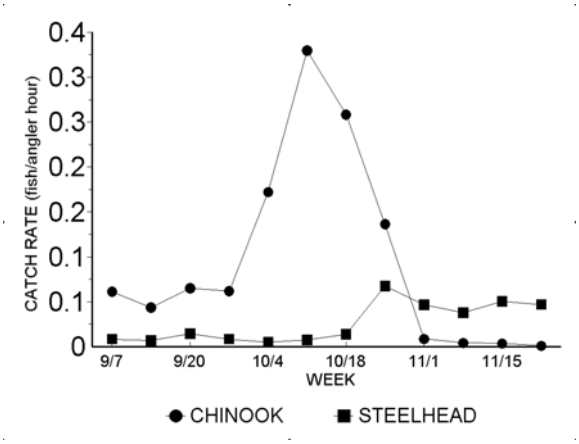
Pacific Salmon Biological Monitoring
Fall monitoring of Pacific salmon at the Salmon River Hatchery revealed very poor growth in 2004. Weights of chinook and coho salmon sampled were at or near record lows. Condition of chinook (weight relative to length) was the lowest we have seen over the 19 years we have measured it. The predicted weight of a 35.4inch fish was 15.5 lbs. The number of chinook jacks (age 1 males) that returned to the hatchery was relatively low but the harvest rate of age 1 chinook on the open lake fishery was slightly above average suggesting that the 2002 yearclass is weak to moderate in strength.

Salmon River Creel Survey
An access site creel surveywhich ran from the day after Labor Day through the last weekend in November, was conducted on the Salmon River in 2004. This was the first survey since 1992 to assess the Pacific salmon fishery on the river. We did the survey to estimate angler effort and the catch and harvest of trout and salmon species.

We sampled 25 sites to count anglers, vehicles and/or boats for our effort estimates. We interviewed 2,554 parties of anglers to estimate catch and harvest rates. The 2004 estimate for effort was 91,000 angler days which compares with 104,000 angler days in 1992. The 1992 survey captured the bulk of the fall effort but did not include November. A mid-August through November survey in 1989 estimated effort at 180,000 angler days and may represent peak effort (effort on the open waters of Lake Ontario peaked in 1990). Effort was 112,000 angler days in 1984 for the same time period as the 1989 survey.

The weekly distribution of effort in 2004 closely mirrored the catch rates for chinook salmon (see graphs) with a steady building into early October followed by a decline to a lower but relatively stable level by late October when anglers turned their attention from salmon to steelhead. The catch rate for steelhead increased in late October as the catch rate for chinook salmon declined.





Most of the effort (80%) was from shore access anglers on the main stem of the river followed by anglers in the special regulations fly fishing catch and release areas (12%). Drift boat anglers, boat fishermen in the estuary and tributary fishermen were minor components of the effort.

Non resident anglers made up nearly 2/3 of the parties interviewed. Anglers from PA, NJ and the New England states accounted for substantial portions of the effort. In all, we interviewed parties from 32 states, Canada, the Netherlands, Ireland and the Czech Republic.

Chinook salmon accounted for the majority of the catch and harvest. The catch and harvest rates for chinook salmon were 0.15 and 0.04 fish/angler hour, respectively, resulting in estimates for catch and harvest of 85,250 and 24,360, respectively. The estimated catch of chinook salmon in 2004 was very similar to the catch in 1992 (80,300) but lower than in 1989 (150,000). Steelhead was the second most abundant species in the catch (6,900 caught, 1,300 harvested). Brown trout and coho salmon were minor components of the fishery. Atlantic salmon which, along with Skamania steelhead, provide a low intensity summer fishery, were extremely rare in the fall fishery.

The catch rate was highest in the tributaries. Fish in the tributaries are generally more vulnerable than fish in the main stem of the river because the tributaries are much smaller and the fish are more visible. The special regulations catch and release fly fishing areas also had a relatively high catch rate because all of the fish caught were released to be caught repeatedly. Check http://www.dec.state.ny.us/website/dfwmr/fish/lorpt04sec10.pdf on the internet for the complete report.

Oswego Walleye Diary Program

A small angler diary program for walleye in the Oswego area of Lake Ontario was conducted for a 7th year in 2004. These fish are typically very large and set a new record for average size (28.7 inch) in 2004. The catch rate was 0.15 walleye/angler hour which was intermediate among years surveyed. Age frequencies from the last 5 years revealed that these large fish were coming from many year classes with good numbers of fish as old as age 17. We have also seen a few fish over 20 years old every year since 2001. There were 15 year classes represented in the 2004 catch. The average age was 12.0 years. The most frequent age in the catch was age 10. This is the 1994 year class which, not coincidentally, was the last large year class produced in the Bay of Quinte in Ontario. This year class has also been the youngest group to comprise at least 10 percent of the catch every year since 2000 when we started collecting age data.

Data from this program strongly suggest that the Bay of Quinte was the predominate source of walleye in this fishery. Unfortunately, walleye recruitment has declined there in more recent years due to colonization of the bay by zebra mussels and reductions in phosphorus inputs. These factors have combined to increase water clarity, which favors species such as largemouth bass and northern pike, and generally

makes walleye recruitment more difficult. Recruitment of walleye, however, now appears to have stabilized although at a lower level than in the 1980s. Despite the apparent lack of young fish recruiting to the fishery, and the fact that the anglers are harvesting very large fish, the presence of many year classes extending out to very old ages suggests that exploitation on the population is light and that harvest is not excessive.

Region 8

2004 Evaluation of Chinook Salmon Pen Rearing
Numerous organizations from Lake Ontario's western basin have contacted the NYSDEC with interest in pen-rearing salmonids. The driving force behind their interest is the belief that chinook salmon raised at the NYSDEC's Salmon River Hatchery are imprinted to the Salmon River and leave the western basin to return there in the fall. These organizations hypothesize that if chinook salmon or steelhead are allowed to smolt in western Lake Ontario tributaries they will imprint on and return to those rivers to spawn, thus providing an improved late summer and autumn fishery in the western basin. Anglers from the western basin also speculate that the discontinuation of chinook salmon culture at the Caledonia Hatchery in 1990 has had a negative impact on the western basin's fishery. To address these concerns, the NYSDEC developed a multi-year study to evaluate these concerns. There are currently four cooperative pen-rearing sites in Region 8. Sites include Sodus Bay with 50,000 chinook; Genesee River with 75,000 chinook and 10,000 steelhead; Sandy Creek with 25,000 chinook and 7,300 steelhead; and Oak Orchard Creek with 75,000 chinook and 14,000 steelhead. A four year (1999-2002) marking study was conducted to evaluate the relative performance of chinook salmon stocked at Oak Orchard Creek and Lower Niagara River. Three lots of 40,000 fin clipped fish were stocked at Oak Orchard in 1999 and 2001 and Lower Niagara River in 2000 and 2002. One lot consisted of fish raised at Salmon River Hatchery and stocked directly into the stream, the second lot was raised at Caledonia Hatchery and stocked directly, and the third lot was Salmon River reared fish stocked into net pens. The fish stocked into the pens were reared for an additional period of approximately 2-3 weeks and then released.

A multi-year creel survey was started in 2001 on both Oak Orchard Creek and Lower Niagara River, and the Salmon River Hatchery. We now have meaningful returns from all year classes stocked at Oak Orchard and Lower Niagara River. The 2001 year class, which was the final stocking of the evaluation at Oak Orchard, returned at age 3 in 2004 so evaluation there is essentially complete. Returns from both year classes stocked at Oak Orchard revealed that the pen reared fish returned to the stocking site best. Direct stocked Caledonia fish returned better than direct stocked Salmon River fish from the 1999 stocking, but the opposite was true, to a lesser degree, for the 2001 stocking. Returns to the stocking site at Niagara River are showing a very different pattern. Returns from both stockings reveal that the direct stocked fish from Salmon River are returning best, followed by the pen reared fish, and direct stocked fish from Caledonia are returning the poorest. We will need to monitor this site in 2005 to get the age 3 returns from the 2002 stocking.

Straying of these fish to the Salmon River does not appear to be a problem. Returns from the stocked lots to Salmon River Hatchery have been negligible. No fish from the study were recorded until 2002 when one fish from the 2000 yc Niagara River pen stocking and one fish from the 1999 yc Oak Orchard direct stocking of Salmon River fish appeared in the fall samples. No marked fish were sampled in 2003 or 2004.

There is sufficient straying between the stocking sites for evaluation. The chi-square tests of association for returns to the monitoring sites revealed that there were no differences ($p>0.45$) in the distribution of returns from the different stocking methods for either of the Niagara River stockings (i.e., there was no effect of stocking method on the relative amount of straying).

For both Oak Orchard stockings, however, there were significant differences ($p<0.05$) in the distribution of returns from the different stocking methods to the monitoring sites. For the 1999 year class, relatively higher numbers of direct stocked Salmon River fish strayed to the Niagara River. For the 2001 year class, relatively higher numbers of direct stocked Caledonia fish strayed to the Niagara River. For both year classes, and especially the 2001 year class, the tendency for relatively fewer of the pen reared fish to stray suggests a relatively strong homing influence for the fish pen reared at Oak Orchard.

One somewhat surprising result of the monitoring efforts is the relatively high numbers of unmarked chinook observed in the samples. This has been the case every year at both sites. For example, 77.4% of all chinook stocked at Oak Orchard in 2001 were

finclipped. In 2004, we observed 1,782 chinook salmon at the stocking site and only 68 (3.8%) of those were marked fish from that stocking. Similarly, in 2004 at Lower Niagara River, we observed 66 marked fish (8% of the sample) from the 2002 stocking. Sixty five percent of that stocking had fin clips. We did not age the unmarked fish in the samples but years of returns at Salmon River Hatchery and returns of marked fish in this study, show heavy contributions from age 2 and 3 chinook in any given spawning run. As a result, in any sampling year at either site, we were looking at roughly half the sample that was from a year class that had a high percentage of the stocking that was fin clipped. All of this considered, we would have expected to see a higher percentage of fin clipped fish in the samples. Reasons for the relatively low numbers of fin clipped fish in the samples are not known. Perhaps these sites attract a relatively large number of strays which would be unmarked. Straying of marked fish between sites in this study suggest that this may be true. Another potential source of unmarked fish could be wild fish. Finally, it is possible that fin clipped fish simply do not survive as well as unmarked fish. Despite whatever may be causing the relative scarcity of marked fish in our samples, we feel that the returns of marked fish in our study is providing a fair assessment of the relative performance of the stocked lots. If the pen reared fish were returning the most fish at both sites, one could argue that the extended period of post-clipping recovery afforded by the time in the pens was a factor. This argument fails, however, when one considers that the direct stocked fish from Salmon River have returned the most fish to Lower Niagara River.

Detailed reports of the pen-rearing and the creel survey evaluations can be found in DEC's Bureau of Fisheries Lake Ontario Unit and St. Lawrence River Unit to the Great Lakes Fishery Commission's Lake Ontario Committee - 2004 Annual Report.

2004 Evaluation of Barge Stocking

Concerns over the possible loss of shore-stocked brown trout to near shore predators in west-central Lake Ontario prompted a comparison study of traditionally shore-stocked versus barge-stocked brown trout. A detailed report can be found in the NYSDEC's Bureau of Fisheries Lake Ontario Unit and St. Lawrence River Unit to the Great Lakes Fishery Commission's Lake Ontario Committee 2004 Annual Report. Table 1 shows the number of clipped fish observed during tributaries and open water creel surveys conducted in 2004.

Table 1. Fin Clipped brown trout collected from NYSDEC and USGS sampling in 2004.

	Shore	Barge	Shore:Barge
Tributaries	147	89	1.65
Open Water	57	55	1.04
Total	204	144	1.42

Brown trout surveyed during 2004 tributary surveys revealed a 1.65 to 1 advantage of shore-stocking versus barge-stocking. In 2004, fish sampled from the open waters of Lake Ontario showed no significant difference between shore or barge-stocking ($\chi 2 = 0.04$, $p = 0.85$, df=1). Overall, brown trout traditionally stocked from shore returned fish to the creel at a rate of 1.42 to 1 compared to barge-stocked brown trout in 2004.

A Chi-square test for association revealed that the returns of brown trout in 2004 were distributed differently for the two survey methods ($\chi 2 = 4.07$, $p = 0.04$, df=1). This suggested that the methods were biased, preventing us from combining the data. A chi-square test for a 1:1 expected return ratio was performed on the 2004 tributary return data. The test revealed that the shore stocked fish returned significantly better than the barge stocked fish ($\chi 2 = 14.3$, $p = <0.01$, df=1). These results are similar to what was observed in 2002 and 2003 (Pearsall, et al. 2003, Sanderson, et al. 2004).

Cumulative returns of clipped fish observed during the tributaries and open water surveys for all years combined appear in Table 2.

Table 2. Fin Clipped brown trout collected from NYSDEC and USGS sampling in 2002, 2003, and 2004.

	Shore	Barge	Shore:Barge
Tributaries	626	287	2.18
Open Water	153	144	1.06
Total	779	431	1.81

Brown trout surveyed during the three years of tributary surveys revealed a 2.18 to 1 advantage of shore-stocking versus barge-stocking. Fish sampled from the open waters of Lake Ontario showed no significant difference between shore or barge-stocking ($\chi 2 = 0.28$, $p = 0.60$, df=1). Overall, brown trout traditionally stocked from shore return fish to the creel

at a rate of 1.81 to 1 compared to barge-stocked brown trout.

A Chi-square test for association revealed that the total returns of brown trout in 2002-2004 were distributed somewhat differently for the two survey methods ($\chi 2 = 8.8$, $p = 0.01$, $df=2$). This suggested that the methods could be biased, preventing us from combining the data. However, a chi-square test for a 1:1 expected return ratio was performed on the return data from all years. The test revealed that the shore stocked fish returned significantly better than the barge stocked fish ($\chi 2 = 100.1$, $p = <0.01$, $df=1$).

Results to date show that offshore stocking of brown trout yearlings at Sodus and Point Breeze does not result in any significant improvement in the recruitment of adults to the fishery. Barge stocking at these sites is therefore not cost effective.

The final year of stocking marked fish occurred in 2004, with the two lots of Salmon River Hatchery brown trout stocked at Point Breeze, and the two lots of Caledonia Hatchery brown trout stocked at Sodus Bay as in 2003. Data collection from the open waters of Lake Ontario is planned to continue in 2005. The chinook salmon creel survey at Oak Orchard creek will not be conducted in 2005. However, data from marked brown trout stocked from 2002-2004 will be collected during a proposed Lake Ontario south shore tributary creel survey planned for the fall of 2005.

Lake Ontario Unit

Lake Ontario Fishing Boat Census

The Lake Ontario fishing boat census provides trend through time data on angling effort and success, and performance of stocked salmonids. While the census targets the open water salmonid fishery, valuable data on other fish species are also collected. The 2004 angling season marked the twentieth consecutive year (1985-2004) that the census was conducted. Methodology has changed little over the history of the census, with sampling covering boat access channels along 190 miles of New York's Lake Ontario shoreline for the period April 1 to September 30 each year.

Trout and salmon fishing quality in 2004, as measured by catch rates (number of fish caught per fishing boat trip), decreased slightly from the 2003 record high of 2.92 fish per boat trip to 2.69 per trip. Comparisons by species show that the April-September 2004 catch rate was at a second consecutive record high for chinook salmon. Catch rates for brown trout, coho salmon, rainbow trout, lake trout and Atlantic salmon were all below their respective 1999-2003 (previous 5 year) average.

Possibly due to increases in fishing quality, particularly for chinook salmon, fishing effort rose from the record low level of 79,958 fishing boat trips in 2003 to an estimated 84,671 trips in 2004. Total fishing boat effort in 2004 was down 8.3% compared to the 1999-2003 boat trip average (previous five years), and down 60% compared to the 1990 peak. The largest reductions in yearly percent effort contributions have occurred in the months of April and May, and in the west (Niagara River to Point Breeze) and west/central (Genessee River, Irondequoit Bay) areas. Anglers targeting trout and salmon accounted for 57,872 fishing boat trips, or 68.3% of the April-September 2004 total. Anglers targeting smallmouth bass from opening day (June 15) through the end of September accounted for 22,340 fishing boat trips, or 26.4% of the April-September 2004 total.

Changes in fishing effort were in part responsible for changes in numbers of fish harvested. Total trout and salmon harvest in April-September 2004 was estimated at 87,349 fish. Chinook salmon was the most commonly harvested salmonid in 2004 (51,443 fish), comprising 58.9% of the total. The 2004 chinook harvest rate marked a 26.1% increase over 2002, and a 48.9% increase compared to the 1999-2003 average harvest. The mean length of an age-3 Chinook in August 2004 was 36.1 inches, which is up from the record low of 35.6 inches in 2003. Brown trout harvest in 2004 was estimated at 16,719, comprising 19.1% of the total harvest. This estimate represented a 25% decrease over the 2003 harvest, but a 26.8% decrease compared to the 1999-2003 average. Rainbow trout was the third most commonly harvested species, with an estimate of 11,472 fish. While this represents a 28.1% increase over 2003, it is the still among the lowest recorded harvest estimates. Coho salmon harvest in 2004 was estimated to be 3,430 fish, down from 5,079 in 2003. Lake trout harvest in 2004 declined to a second consecutive record low 4,250 fish. Many of the declines in harvest rates might be attributable to the excellent chinook salmon catch rates over the last two years. Anglers may have shifted their attention to chinooks.

In contrast to trout and salmon, effort targeting smallmouth bass has generally increased over the years censused, along with harvest. Smallmouth bass harvest in June-September 2004 was estimated at 34,380 fish, the second lowest value on record. The catch rate among anglers seeking smallmouth bass in 2004 during the open season was 7.0 bass per boat trip, the lowest catch rate observed during the study.

Eastern Lake Ontario Warm Water Fisheries Assessment

Assessment of trends in the warm water fish community of the New York waters of Lake Ontario's eastern outlet basin has been conducted annually since 1976 using a standardized gill net sampling program. During this period, the warm water fish community has undergone significant changes, declining from a high of approximately 200-250 fish per net gang/night in 1976-79, to a record low 15.7 fish per net gang in 2001. The majority of the fish species that were abundant at the start of the assessment program have all experienced significant declines in abundance.

Total catch of warmwater fish in the 2004 eastern basin index gill netting program was 19.1 fish per net gang/night. Three year moving averages provide a measure of fish abundance that is less susceptible to annual variations that might result from temperature and weather anomalies. Three year moving average catches for smallmouth bass, walleye, yellow perch are low relative to historic levels, but are increasing slightly. Continued low abundance of smallmouth bass and yellow perch can be attributed partly to predation by double-crested cormorants. Lake sturgeon, a threatened species in New York State, have been collected in eight of the last ten years, including 2004.

Impacts of Double-crested Cormorant Predation on Smallmouth Bass and Yellow Perch

Diet studies of Double-crested Cormorants (DCC) from Little Galloo Island in the Eastern Basin of Lake Ontario have been conducted each year since 1992. In 1999 these studies were expanded to include two DCC colonies in the Canadian waters of the Eastern Basin of Lake Ontario, Pigeon and Snake Islands, as well as three colonies in the Canadian waters of the upper St. Lawrence River (Griswold, McNair and Strachan Islands). In 2004, smallmouth bass and yellow perch predation by DCC's from the three Lake Ontario colonies combined totaled 520,000 and 5.6 million fish, respectively. Round gobies, an exotic fish species, were first documented in the diets of DCC from Snake and Pigeon Islands in 2002. In 2004, round gobies dominated the diets of Snake Island DCC, with an estimated 9.66 million fish consumed.

Data on smallmouth bass fishing in Lake Ontario collected from the 1985-2004 fishing boat censuses were analyzed in more detail as part of the evaluation of the impacts of DCC predation. From 1985-90, harvest rates at Henderson Harbor, adjacent to the Little Gallo Island cormorant colony, were nearly equal to or greater than the lake-wide average harvest rates and averaged 1.2 smallmouth bass harvested/angler hour. From 1991-2004, harvest rates at Henderson Harbor, were all below the lake-wide average. The Henderson Harbor site continues to be the only localized bass fishery that has experienced a decline in harvest rate.

Egg oiling on Little Galloo Island has been conducted each year since 1999, and reduced cormorant chick production by approximately 97% in 2004. These efforts reduced the number of cormorant feeding days by 638,572, resulting in a reduction in fish consumption estimated at 296,000 smallmouth bass and 1.62 million yellow perch. Estimated fish consumption from three Canadian cormorant colonies in the upper St. Lawrence River in 2004 was 6.26 million fish. Total cormorant consumption for the river islands in 2004 included 3.16 million yellow perch, 1.07 million rock bass, 480,000 cyprinids (minnows), 470,000 pumpkinseeds, and 60,000 smallmouth bass.

Lake Ontario Prey Fish Abundance

The U.S. Geological Survey and the NYSDEC have cooperatively assessed Lake Ontario prey fishes each year since 1978 using bottom trawls during spring, summer, and fall along twelve transects distributed across the New York shoreline of the lake. NYSDEC also conducts a summer hydroacoustic survey of prey fish populations cooperatively with the Ontario Ministry of Natural Resources.

Alewife and smelt are the dominant prey species for Lake Ontario salmonids. Adult (age-2 and older) alewife abundance in the spring 2004 bottom trawl surveys increased slightly relative to 2003. Catches of age-1 alewife in 2004 were lower than the previous year and 35 % below the long-term average. Numbers and biomass of age-1 and older rainbow smelt in 2004 were the highest since 1997 and 1998. This is due to a strong 2003 year-class of smelt that was produced in the lake, and not increased survival of older smelt. The ability to assess slimy sculpin, a benthic or bottom dwelling prey fish, has been compromised by the high

zebra and quagga mussel densities in Lake Ontario. Changes in gear types to address this problem have yielded inconsistent results. Experiments are planned to modify the sampling gear to regain the ability to effectively sample benthic fish such as slimy sculpin.

Lake Ontario Lake Trout Restoration

Lake Ontario Juvenile Lake Trout Assessment

Catches of age-2 and age-3 hatchery origin lake trout during trawl and gill net surveys in New York waters declined to an all time low during the period from 1996 to 1998 (1993 to1996 year classes). Catch of age-2 lake trout rebounded to 1992 levels in 1999, but fell again to a record-low level in 2000 (1998 year-class). Catch of age-2 lake trout in 2004 (2002 year class) was 2.1 times higher than 2003. Trends in numbers of age-2 lake trout caught in trawls and age-3 fish caught in gill nets for the 1975 to 1995 year classes suggested that recruitment of hatchery fish to the population was governed by survival during their first year after stocking. Subsequent to the 1995 year class, this relationship has deteriorated, suggesting increased mortality of stocked lake trout during their second year in the lake.

Lake Ontario Adult Lake Trout Abundance

A total of 685 adult lake trout were captured in the September 2004 gill net survey. Catch rates for mature lake trout remained remarkably stable from 1986 to 1998. The catch per unit of effort (CPUE) of mature fish, however, declined by 30% between 1998 and 1999. Poor survival of hatchery fish was likely responsible for declining abundance of immature lake trout since 1989 and current declines in adult numbers. In comparison to the 1986-1998 average, the CPUE for mature lake trout in 2004 was down by 43% and the average CPUE for the last six years (1999-2004) was down 36%.

Lake Ontario Sea Lamprey Wounding Rate Index

Overall sea lamprey wounding rates on lake trout remain much lower than pre-1985 levels, but have been above the planned target level of 2 wounds per 100 fish for six of the last eight years. Numbers of lampreys observed attached to lake trout caught by boat anglers participating in the boat census decreased markedly in 2003 and 2004, however , the marking rate on other trout and salmon species , particularly chinook salmon, rose dramatically.

Survival of Adult Lake Trout in Lake Ontario

Survival of Seneca strain lake trout has been about 30% to 50 % greater than that of Superior strain for 1984-1991 year-classes. Lower survival of Superior vs. Seneca strain lake trout was likely due to higher susceptibility to and mortality from sea lampreys. Survival of Lewis Lake strain lake trout in Lake Ontario, calculated for the first time in 2000, was poor (44%) and similar to survival of Superior strain cohorts from stockings in the late 1970's. Assuming constant recruitment, average age of mature females is an auxiliary measure of lake trout survival; as survival improves, a greater number of older females accumulate in the population. Average age of mature female lake trout has been increasing steadily since the mid 1980's. The average age of 9.55 years in 2001 reflected a population comprised of the oldest group of mature females since the rehabilitation program was initiated. Accurate calculation of the average age of mature, female lake trout has been impaired due to inconsistent funding for coded-wire tags (CWTs). All lake trout stocked in 2004 received CWTs.

Natural Reproduction of Lake Trout in Lake Ontario

In 2004, a total of 4 naturally produced lake trout (3.4 to 5.9 inches total length) were caught with bottom trawls. Survival of naturally produced lake trout to the fingerling stage in summer and fall occurred each year during 1993–2004. Further, survival to older ages has also been apparent. The distribution of catches of wild fish suggests that lake trout are reproducing throughout New York waters.

Annual Angler Harvest of Lake Trout from Lake Ontario

The estimated annual harvest of lake trout from U.S. waters of Lake Ontario since the slot limit (25 to 30 inches) was re-instated in 1992 has been more than 4 times lower than previous years when no size limits were in effect. The slot limit was imposed to protect adult fish during the age period of peak spawning potential. Harvest reached its lowest recorded level for the second consecutive year in 2004 with an estimated 4,250 lake trout harvested. The percentage of lake trout harvested by anglers that were of trophy size (>30 inches) declined to 22.5%, down from the record value in observed in 2003 (48.5%). The low harvest values for lake trout may be due at least in part to the excellent chinook salmon fishing that has occurred during recent years.

Lake Trout Stocking Study

A study evaluating the effect of location (onshore vs. offshore) and timing (May vs. June) of stocking on the survival of lake trout is being conducted at Olcott and Sodus, New York. Preliminary results suggest that

offshore stocking substantially enhances catches of stocked, age-1 lake trout in bottom trawl surveys, particularly May stocked fish at Olcott. Results from Sodus stockings also favor offshore stocking, but not as clearly and timing (May vs. June) does not appear to be a large factor. Catches of stocked lake trout at older ages indicate that stocking method affects distribution of fish as well as survival. Although early catches of experimental fish were encouraging, the returns at age-2 and older remain insufficient to discern with certainty which, if any, stocking method conveys the best survivorship.

Eastern Basin Lake Whitefish Spawning Study
The United States Geological Survey (USGS) is conducting an ongoing study to assess the reproductive habits of lake whitefish in the U.S. waters of the eastern basin of Lake Ontario. This study has documented larval lake whitefish present in some of the embayment areas, however, egg collection traps designed to collect eggs have not been effective in locating spawning sites to date.

In November 2004, the DEC Lake Ontario Unit deployed several trap nets in Chaumont Bay in an attempt to identify areas of lake whitefish spawning. Twelve lake whitefish and four unexpected lake herring (or cisco) were captured in the nets. All of the fish netted were mature adults that were in spawning condition. Efforts to locate specific spawning sites will continue in 2005.

Chinook Salmon Energy Content Study
Chinook salmon are Lake Ontario's dominant, large predator and highly regarded sport fish. The Lake Ontario Unit initiated a project in 2004 to monitor the energy content of chinook salmon in the lake. Energy content is a strong indicator of chinook nutritional status, which is dependent upon their ability to capture prey items with sufficient nutritional value. The topic is of interest due to potential instability in Lake Ontario alewife populations, upon which the Chinook rely.

A low energy content would suggest that either there are few prey available or that the prey they are consuming are widely dispersed and/or low in energy content. The Lake Ontario study is based on and in conjunction with studies being done on the upper Great Lakes coordinated by researchers at Michigan State University. It has been found that the traditional method of measuring a fish's condition by using the relationship between its length and weight may not be appropriate for use with chinooks. As with many pelagic or open-water fish species they need to maintain their body form to keep an efficient hydrodynamic profile for prolonged swimming. They achieve this by taking on more water in their tissues to replace unavailable fat. Therefore a fish which is low in energy content (body fat) may appear and weigh normal, while in fact they are actually retaining more water.

During the late summer and fall of 2004, tissue samples from approximately 100 chinook salmon were obtained from fish cleaning stations along Lake Ontario and the Salmon River. The fish were measured, weighed and had a small section of tissue removed from their backs. This was then returned to the lab where the percent water present in the tissue was determined. Over time it is hoped that this information will supplement the long-term prey fish assessment information that the DEC currently uses to make help make management decisions.

Lake Erie and Tributaries

Lake Erie Unit

Autumn Trawl Survey
This trawling program is conducted during October at randomly selected stations between the 50- and 100-ft depth contours in New York's portion of Lake Erie. Standard tow duration is 10 minutes.

In 2004, the most abundant species encountered in this program was rainbow smelt. Other species that made large contributions to the trawl collections included trout-perch, round goby, and emerald shiners.

The 2004 mean density estimates for age-1 and adult (age-2 and older) yellow perch were both well above the previous 12-year mean density values for these life stages of yellow perch. The YOY yellow perch abundance index remained among the lowest values recorded in this 13-year program. Trends in juvenile yellow perch growth rates have remained stable. The mean total length of YOY and age-1 yellow perch in 2004 were both high relative to the previous range of observations contained in this annual data series.

Warmwater Fish Stock Assessment
This annual, autumn gill netting survey has been underway since 1981. Four to six, 700-foot, graded mesh nets are set daily, with 40 sites sampled in 2004.

The overall abundance index for walleye in 2004 was well above the long-term average abundance since 1981. This walleye sample was composed primarily of age-1 individuals representing the exceptional 2003 year class. Also, the once dominant 1984 year class of walleye still remains detectable at age 20 in the 2004 samples. This gill net assessment has had a juvenile walleye emphasis since its inception, with age-1 and age-2 walleye comprising a large fraction of the total walleye sample each year . Yearling walleye catch rates ranked the 2003 year class as the second largest in the entire time series. The mean length of age-1 walleye in 2004 was small relative to the long term observations from the time series.

Smallmouth bass catch rates in 2004 remained above the average value for this 24-year time series. Age-2 and age-5 individuals made particularly large contributions to this 2004 sample which included 16 age groups from age-1 to age-18. The long-term recruitment indices for juvenile, age-2 and age-3, smallmouth bass rank the 2001 year class as weak in the time series. Early indications from this same juvenile recruitment index suggest the 2002 year class is more abundant as age-2 individuals. These age-2 and age-3 cohorts averaged 11.1 in and 13.2 inches total length, respectively. Both age groups were approximately an inch longer than the average for the entire time series and both remained near the longest ever observed in the 24-year time series.

In the 50 to 100 ft stratum, yellow perch continued to be represented at the high levels of abundance first observed in 2000. This deeper 50 to 100 ft stratum has only been sampled since the interagency index fishing protocol was fully implemented in New York, beginning in 1993. Yellow perch are not effectively sampled at the shallower (0 to 50 ft), long-term gill net sites. Age-3 through age-6 yellow perch were commonly encountered age groups in the 2004 collections and individuals greater than age-7 remained scarce. Only since 2000 have adult cohorts of yellow perch contributed measurably to this annual sample.

Of the remaining commonly encountered species in this 2004 gill net sample, white perch, sheepshead and channel catfish were caught in higher abundance than the long-term mean catch rate. Channel catfish catches have noticeably increased in the last 4 years. In contrast, rock bass, white sucker and stonecat catch rates all have exhibited a declining trend that has now extended for many years. Freshwater drum remain a species of particular interest due to observations of extensive fish kills especially during the summers of 2001 and 2002. The 2004 abundance index for drum was below the long term average value for the deeper (50 to 100 ft) stratum, and above the average abundance for the shallower (0 to 50 ft) stratum.

Overall walleye abundance in 2004 was above average for the time series, principally due to the presence of the dominant age-1, 2003 year class. However, abundance of older walleye (age-2+) was also the highest observed in 4 years. Also, the formerly immense 1984 walleye year class, which dominated gill net samples for more than a decade, still comprises a tiny, but detectable fraction of the annual collections as age-20 individuals. Additional contributions to New York's adult walleye resource are known to occur from a summer immigration from western basin, Lake Erie walleye spawning stocks. This annual movement remains poorly understood and is an additional factor creating difficulty for forecasting annual walleye abundance and fishing quality. Gaining this

understanding of the contributions to New York's summer walleye sport fishery by local and migratory walleye stocks ranks as a very high information need for effective walleye management in eastern Lake Erie. NYS DEC's Lake Erie Unit has been supporting three major research initiatives to address this important question.

Overall smallmouth bass abundance remains somewhat above the long term average measures. Recruitment of age-3 bass was poor, but early indications suggest the 2002 year class (age-2) will be more abundant. This recent recruitment history is receiving close scrutiny as it coincides with the emergence of high densities of round gobies in New York's portion of Lake Erie. There has been considerable concern among fishery scientists that the presence of round goby might represent a new recruitment bottleneck for smallmouth bass. The Lake Erie Unit maintains an excellent long term data series for smallmouth bass, and over time, is in a position to critically examine whether a new round goby-induced recruitment bottleneck has occurred. A recent publication by Einhouse et al. (2002) relates recruitment patterns of smallmouth bass in New York's portion of Lake Erie to mean summer water temperature. Thus far, this research predicted poor smallmouth bass recruitment would accompany the cool summer water temperatures eastern Lake Erie experienced in 2000. Similarly, this recruitment-temperature relationship predicts much better bass recruitment from 2001 and 2002 because we experienced much warmer summer water temperatures these years. Our measured recruitment during these years was poor in 2001, but improved in 2002. Smallmouth bass recruitment measures over some ensuing years should allow us to gather insight about round goby effects, with the backdrop of our long term recruitment history and a knowledge of a principal factor controlling recruitment.

The status of the yellow perch population has improved considerably in recent years. Independent gill net and bottom trawling programs continue to corroborate observations of neighboring jurisdictions that abundance of adult yellow perch has increased in eastern Lake Erie. However, it remains uncertain whether this recent increase forecasts the beginning of a long-term recovery or simply the chance occurrence of two strong year classes within three years. The trawling assessment observation of high abundance of age-1 yellow perch, representing the 2003 year class, is heartening, but given the previous decade of decline for yellow perch and the profound ecosystem changes that are still underway in eastern Lake Erie, we believe conservative harvest strategies for yellow perch should remain in effect for eastern Lake Erie.

Walleye Tagging Study

During the 15 years New York has participated in this interagency tagging study, 16,947 walleye have been tagged in New York's portion of Lake Erie. During April 2004, 268 walleye were collected in New York waters and affixed with jaw tags as a continuation of this effort to examine walleye distribution and exploitation rates. This was the lowest tagged walleye total achieved by New York since the inception of the study. The two tagging sites sampled in 2004 were Van Buren Bay and Cattaraugus Creek. Due to extended springtime ice cover in 2004, walleye for tagging were collected using only boat shocker methods. Through most of the years of this study, trap nets contributed a larger portion of the annual sample for this tagging effort.

Since the inception of this tagging study, 1,487 tag recoveries originating from the New York tagging effort have been reported by anglers and the Ontario commercial fishery. Fifty-six (56) of these recaptures occurred during 2004.

This time series of walleye tag recovery data has been annually examined using a model that estimates mean survival and recovery rates for the tagged population (Brownie et al. 1978). We excluded from analysis data for the tagging years 1990 and 1991 because we became aware of excessive tag loss from poorly affixed jaw tags (Einhouse and Haas 1995). Additional measures were taken to reduce the rate of tag loss beginning in 1992. From 1992 to 2004, several potential arithmetic mean survival rates for tagged walleye were derived from the Brownie et al. (1978) model. Differing survival estimates were obtained by employing various assumptions concerning survival and recovery patterns, and all point estimates for the annual survival rate exceeded 70 %. Over the duration of this 15-year assessment, maximum likelihood tag recovery rates ranged between 1.4 and 5.1 %. We have expanded these observed recovery rates to exploitation rates using a multiplier of 2.90 for non-reporting of recovered tags. This current, non-reporting expansion factor was developed from a 2000 reward tag study in the New York waters of Lake Erie and is adjusted annually with each year's new tag recoveries. As such, the mean exploitation rate for tagged walleye from 1992 to 2004 was estimated as 8.10 %.

Lake Trout Assessment

This standard, August gill net assessment has been employed to assess lake trout populations in the New York waters of Lake Erie since 1986. Approximately 60 sets of 500-foot, graded mesh nets are set annually in coldwater habitat.

Total unbiased gill net assessment (all gear types) of the lake trout population residing in New York's portion of Lake Erie in 2004 sampled 248 individuals in 60 lifts. Fifteen age classes, from age 1 to 20, were represented in the sample of 228 known-aged fish. Five age-1 fish were sampled including one of the new Klondike strain of lake trout stocked in the Spring 2004. Similar to the past three years, young lake trout ages 2 - 6 were the most abundant cohorts, representing the majority (91%) of the total catch. Older cohorts (age 10+) remained relatively absent. One age 20 lake trout was sampled, which was the oldest lake trout ever caught in the survey. Three age 19 fish were also caught. Both of these successful cohorts were the first stockings to benefit from sea lamprey treatments. Maturity rates remained consistent with recent years, where nearly 100% of males are mature by age 4 and females by age 5.

Mean lengths-at-age and mean weights-at-age of sampled lake trout were consistent with averages from the previous 5 years (1999-2003) up to age 10. Low sample sizes contributed to variation in mean length and weights in the older age groups. The largest lake trout sampled measured 36.5 inches and weighed 23.3 pounds. Sixty-six mature females were sampled in New York waters of Lake Erie in 2004. These fish ranged from age 4 to 19 and generated a mean age of mature females captured in our sampling of 6.3 years. This is the second consecutive year that the mean age of mature females fell below the target of 7.5 established in the Strategic Plan.

The overall trends in relative abundance of lake trout caught in standard size meshes of 1.5 - 6.0 inches decreased from a time-series high in 2003 to comparable levels to the 2002 survey. This was the first decline in overall catch rate in the past five years. With the exception of 2003, overall lake trout abundance has remained relatively level since 1992, varying between 2 and 4 fish/lift. Burbot abundance continued to increase in 2004, surpassing the time-series high established in 2003. Since 2000, the burbot population has increased from 4 to nearly 5 fish per lift. Overall, the time-series shows a large increase in burbot abundance since 1985, making them the most abundant predator in the Lake Erie coldwater community. Whitefish catches continue to be highly variable in this survey. The abundance of whitefish increased from the 2002 and 2003 surveys to 3.5 whitefish/lift in 2004. The majority of the whitefish catch occurred in two areas and was not spread out over the New York sampling area. Seven brown trout were the only other salmonids caught in the survey.

The relative abundance by age of the 2004 standard gill net assessment catch illustrates the higher abundance of the younger cohorts between the ages of 2 and 6 and the relatively lower abundance of the older age-classes up to age 20. All age classes up to age 8 were represented in the catch; older cohorts were only sporadically caught. Catch rates of lake trout ages 7-10, while present, remain lower than expected. Trends in overall abundance become apparent when looking at the percentage of each age caught over the past five years. Younger age classes predominate while lake trout moving into the age 7-9 age groups seemingly disappear, especially over the past three years. Older fish (age 10+) decreased from over 30% in 2001 to less than 5% in 2004.

The relative index of abundance for age-5-and-older lake trout of 1.55 fish/lift was a decrease compared to 2003, but was still higher than the 14 year low experienced in 2002. The decrease was not expected as the successful stockings in 1999 and 2000 begin recruiting into the spawning population. The age 1-3 relative abundance index of 1.36 fish/lift was the second consecutive decrease in juvenile abundance from the 14 year high experienced in 2002. The decrease was primarily due to the low recruitment of the 2003 stocking to age 2, which were absent as age 1 fish in the 2003 survey. This was also evident in the age 2 recruitment index, which is an index of survival to age 2 standardized for the number of stocked yearlings. Age 1 lake trout were caught for the fifth time in the past six survey years. The relative abundance of age 3 fish comprised the majority of the age 1-3 index (78%), but was still lower than expected given that this cohort had the highest recruitment to age 2 of any lake trout stocking since 1985.

Similar to the last three years, six different lake trout strains were found in the 228 fish caught with hatchery-implanted coded-wire tags (CWT's) or fin-clips. The majority of the lake trout remain Superior (SUP) strain fish, which have been the most numerous stocked strain over the last five years. The Finger Lakes (FL) strain, the second most stocked strain over

the past 5 years, was the only other strain that occurred in any significant numbers in the 2004 survey. Lewis Lake (LL), Lake Ontario (LO), Lake Erie (LE) and Jenny Lake (JL) strains comprised minor contributions to the Lake Erie stock. This was the first time a JL strain lake trout was caught since 1999. Also similar to the previous three years was the prevalence of the Superior strain in the younger cohorts, but absence in the older lake trout cohorts, despite regular stockings from 1980-1991. The majority of the older fish continue to have some connection with the FL strain.

Analysis of the stomach contents of lake trout and burbot revealed diets almost exclusively made of fish in both species. Rainbow smelt remained the main prey item in lake trout stomach samples, occurring in 77% of the lake trout stomachs. Round gobies continue to be a more prominent diet item, comprising 20% of the fish component of the lake trout diet in 2004 samples. Gobies have increased in lake trout diets over the past four years while smelt has decreased. Other prey items included emerald shiners, dreissenids, and unknown fish. Burbot diets were more diverse with 8 different fish and invertebrate species found in stomach samples. Round gobies continue to increase in burbot diets (68%) and were the dominant prey item for the second consecutive year. Smelt were also common, occurring in 19% of the burbot stomachs. All other fish and invertebrate species were rarely consumed, occurring in one percent or less of the burbot stomach samples.

Sea Lamprey Assessment

Sea lamprey invaded Lake Erie and the Upper Great Lakes in the 1920's with the opening of the Welland Canal connecting Lakes Erie and Ontario. Although not totally to blame for the ultimate demise of the lake trout population in Lake Erie, they undoubtably played an integral part in the eventual failure of the original stocks. Populations of lampreys were left untreated in Lake Erie until the Strategic Plan for Lake Trout Restoration in Eastern Lake Erie document was formulated in 1985 that pointed to the lack of lamprey treatment as a bottleneck in the establishment of a lake trout population. The Sea Lamprey Management Plan for Lake Erie followed with a set of goals to achieve lamprey control. Since 1986, the Great Lakes Fisheries Commission has conducted regular treatments of key Lake Erie tributaries to control lamprey populations and the damage they inflict on the Lake's coldwater fishery resources to accomplish these management goals.

Observed A1-A3 wounding on lake trout greater than 21 inches total length decreased from 10.4 in 2003 to 7.9 wounds per 100 fish in 2004. Although this is still above the target rate of 5 wounds per 100 fish, it is the third consecutive year that wounding rates remained relatively low compared to the higher wounding rate period of 1997 - 2001 when rates hovered around 20 wounds per 100 fish. Lake trout between 21 and 29 inches received the most fresh wounds. There were no wounds found on lake trout less than 21 inches.

Fresh A1 wounds are considered indicators of the attack rate for the current year at the time of sampling (August). A1 wounding in 2004 was 0.021 wounds per adult lake trout >21 inches. With the exception of 2002, when no A1 wounds were observed, this rate has remained steady since 2000. Three of the four observed A1 wounds occurred on fish in the 21-25 inch range. Lampreys were still attached to two lake trout brought aboard the RV ARGO.

The past year's cumulative attacks are indicated by A4 wounds. The 2004 A4 wounding rate increased for the second consecutive year to 21.7 wounds per 100 fish for lake trout greater than 21 inches. Similar to past surveys, the majority of the A4 wounds were found on fish greater than 25 inches total length.

Sea lamprey nest counts occurred on 14 and 16 June, 2004. This is the second consecutive year that sampling occurred about a week later than usual due to the slow warm-up of the streams and lack of lampreys being caught in assessment traps. The overall index for sea lamprey nesting was 13.1 nests/mile in 2004, which is a decrease over the 2003 rate of 21.7 nests/mile. Similar to the previous three years, the highest nest counts were found in the main branch of Clear Creek at 14.8 nests/mile. However, this is a 44% decrease over 2003 nesting rates for this creek. Identical nesting rates (10 nests/mile) were found on each of the other three tributaries. The biggest increase was observed in Delaware Creek, which matched its highest nesting rate since 1985.

Sport Fishery Assessment

Since 1988, a direct contact sport fishing survey has been conducted in the New York waters of Lake Erie to monitor boat fishing activity. This standard, annual program extends from May through October.

Overall 2004 open water sport fishing effort in New York waters of Lake Erie was estimated as 358,456 angler-hours. Peak fishing activity occurred during

June and the most frequently used site in 2004 was the Buffalo Small Boat Harbor. The 2004 fishing effort estimate ranks as the third lowest annual total of the 17-year time series. The lowest total occurred in 2002. During the 2004 fishing season, smallmouth bass angling was the largest component of the boat fishery with 37 percent of the overall angling effort. Walleye angling ranked second in boat fishing effort with 28 percent of the total on New York's portion of Lake Erie. Among the remaining effort, anglers fishing for yellow perch ranked 3rd with 20 percent of the overall effort, and anglers fishing for "anything" accounted for 8 percent of the total in 2004. The remaining 7 percent of the total was distributed mostly among trout specialists, and Ecosid (i.e. muskellunge) specialists returning to the Buffalo Small Boat Harbor.

The total estimated daytime walleye harvest was 8,397 fish, ranking 2004 as the lowest walleye harvest in the 17-year survey. The 2004 walleye fishing effort total that accompanied this walleye harvest was also the lowest observed in the 17-year time series. These low walleye catch and effort estimates remained well apart from all previous lows measured for this data series.

The 2004 walleye sport fishery was focused well east of Dunkirk, and extending to Buffalo, New York. The overall targeted walleye catch rate during the 2004 fishing season was 0.07 fish per hour, which was the second lowest value for the time series. The average total length of harvested walleyes in 2004 was 25.3 inches and above the average (23.8 inches) for the entire time series.

Smallmouth bass harvest was estimated as 8,687 fish, which ranks 2004 among the lowest annual bass harvests for the entire 17-year survey. Overall 2004 bass fishing effort was near the median for the time series. The 2004 smallmouth bass harvest also remained very small, relative to the bass catch by boat anglers. Smallmouth bass remained the most frequently caught species (139,798 fish) by boat anglers. The largest component of the smallmouth bass catch and harvest was attributed to anglers encountered at Buffalo's Small Boat Harbor. The 2004 overall catch rate by bass anglers was 0.95 bass per hour, and mean length of harvested smallmouth bass was 16.6 inches.

The yellow perch harvest (89,558 fish) in the 2004 sport fishery was the second highest observed in the entire 17 year survey. The 2004 yellow perch sport harvest was centered in the vicinity of Silver Creek, New York. Most other areas produced a markedly lower harvest of yellow perch. The 2004 overall yellow perch catch rate was 1.36 perch per hour and remained similar to the highest values observed in the time series. The mean length of harvested yellow perch was 10.7 inches.

Round gobies remained a frequently encountered nuisance species for anglers in 2004. Rainbow trout was the most harvested salmonid species, followed by lake trout. Brown trout were scarcely detected by boat anglers in 2004 after having made a more measurable contribution in 2003. In all, 23 species were reported caught, representing an estimated total catch of 354,944 individual fish from the 2004 angler survey. Smallmouth bass, yellow perch and walleye comprised approximately 73 percent of the total 2004 catch. These same three species accounted for 95 percent of the estimated 2004 harvest.

A notable decline in boat fishing effort, first observed in 1999, has now apparently stabilized in 2003 and 2004. Lake Erie's recent decline in fishing effort remains consistent with broad trends observed in other waters (Eckert 2001) and may be partly in response to factors independent of fishing quality. However, very poor walleye fishing quality cannot be discounted as a major contributing factor to the low overall fishing effort total in 2004.

In 2004 walleye fishing quality can be characterized as very poor. June was the peak month for walleye fishing success, followed by a decline through the rest of the year. We suspect that factors beyond low walleye abundance contributed to the poor fishing success in 2004. Especially high forage fish densities may have created conditions where walleye became less vulnerable to angling methods. In addition, 2004 produced especially cool Lake Erie summer water temperatures. Anecdotal evidence suggests mid-summer walleye fishing success in eastern Lake Erie is often less favorable during cool summers.

Overall fishing quality experienced by bass anglers has been reasonably similar among recent years, as measured by angler catch rates and average size of harvested smallmouth bass. These measures characterize Lake Erie's bass angling as an excellent quality fishing experience. Conversely, in recent years, smallmouth bass harvest totals have plummeted to the lowest observed in the time series. Part of the reason for these conflicting measures of bass fishing quality and harvest totals is found in the characteristics of

Lake Erie's boat angling community. Through recent years there has been a notable trend of increasing catch-and-release fishing preferences by bass angling specialists. In addition, much of the current annual smallmouth bass harvest from Lake Erie's sport fishery includes anglers who do not describe themselves as targeting black bass and, nevertheless, account for most of the smallmouth bass harvest. The contribution to the annual smallmouth bass harvest by anglers targeting other species, or no particular species, sometimes is as much as 70 percent of the total smallmouth bass harvest in any given year. As such, smallmouth harvest estimates for the entire sport fishery do not necessarily mirror targeted catch or harvest rates experienced by bass specialists who mostly do not harvest black bass. Since 2001 catch rates by smallmouth bass anglers have diverged from overall harvest totals for Lake Erie.

Beginning in 2001 a significant yellow perch fishery emerged and has continued through 2004. The recent increase in yellow perch fishing quality was consistent with other independent indicators that suggest the status of the yellow perch population had improved from a low ebb in the mid-1990's. The exceptionally poor walleye fishing quality in 2004 likely resulted in Lake Erie anglers re-directing fishing preferences to yellow perch.

2003/2004 Lake Erie Tributary Creel Survey

A creel survey was conducted on New York's Lake Erie tributaries to estimate overall catch, effort, and harvest of the tributary salmonid fishery from Fall 2003 through Spring 2004. This was the first year of a two-year study. Although the study covered the tributary and harbor fisheries, only results of the tributary fishery are summarized in this report.

This survey covered the eight major Lake Erie tributaries in New York stocked with steelhead. These include: Chautauqua Creek, Canadaway Creek, Cattaraugus Creek, Eighteen Mile Creek, Silver Creek, Walnut Creek, Buffalo Creek, and Cayuga Creek. Although anglers fish in other non-stocked tributaries, the 2003 Lake Erie angler diary data show 93% of the angler effort was directed at these eight tributaries. Silver and Walnut Creeks, because of their close proximity and small size, were treated as one creek. Cattaraugus Creek, because of its large size, was split into Upper and Lower Sections for sampling, but combined back into one creek for reporting results. Permission was granted from the Seneca Nation of Indians (SNI), one of the more popular angling destinations on Cattaraugus Creek, to include their lands in the creel survey. Results were included as part of Cattaraugus Creek. The sample area in each tributary varied, but the survey generally covered from the mouth upstream to the first impassible barrier. Major access spots along each creek were targeted for both car counts and angler interviews.

Creel agents conducted a total of 1,428 interviews at over 70 sites along Lake Erie tributaries between 10 September 2003 and 15 May 2004. They also drove 402 loops counting cars and anglers to obtain estimates of overall use. The majority of the interviews (1,424 or 99.7%) were from anglers targeting salmonids even though creel agents interviewed any person fishing. The most interviews were obtained from Cattaraugus Creek (Upper = 360, Lower = 264; Total = 624). High numbers of interviews were also obtained from Chautauqua Creek (262) and Canadaway Creek (243). Cayuga Creek had the least number of interviews (29).

Demographics

The fishery was almost exclusively made of male anglers (98.2%), and the 25-40 and 40-60 age groups made up 43.4% and 34.7% of the fishery, respectively. Spinning gear was the most popular gear fished (57.1%) followed by fly (26.8%) and noodle rods (16.1%). Artificial (41.3%) and bait (46.6%) were equally popular as lures.

The majority of the anglers (87.9%) fishing the New York tributaries were residents of New York. Of the NY anglers, 92.5% came from the counties bordering the Lake Erie tributaries (Erie (55.4%), Chautauqua (27.8%), Cattaraugus (9.3%). Only 3.2% of the anglers came from bordering counties to the east while 4.3% of the anglers came from other NY counties. Twenty other states and provinces were represented by interviewed non-resident anglers. Over half of the non-resident anglers were from Pennsylvania (52.1%). Ontario anglers also comprised a significant portion (21.4%) of the non-resident anglers.

Angler Effort

Total effort for anglers targeting salmonids in the NY Lake Erie tributaries was estimated at 191,294 angler-hours (*ah*). Based on a mean trip length of 2.76 hours in the tributaries as calculated from complete trip interviews (N=384), the directed trips for salmonids equaled 78,607 trips.

Of the tributary total, Cattaraugus Creek received the most directed effort (76,185 *ah*). Chautauqua (42,744 *ah*) and Canadaway (30,224 *ah*) Creeks also received considerable pressure, especially for their size. Silver/Walnut Creeks received the least amount of angler effort (2,809 *ah*).

October and November were the two months that received the most angling pressure (54,211 and 44,575 angler hours, respectively) in the tributaries. April (28,398 *ah*) and March (23,020 *ah*) were also popular fishing months.

Catch and Harvest Rates

Overall catch rates from interviewed anglers targeting salmonids in the tributaries equaled 0.66 fish per angler hour. The overall harvest rate was 0.09 fish/hour. Based on these rates, an angler caught a fish, on average, every 1.52 hours or 91 minutes. The overall catch rate for steelhead was 0.63 fish/hour and the harvest rate was 0.08 fish/hour.

Catch rates on the streams varied, with the best catch rates in the western most streams and the worst in the eastern-most streams. Chautauqua Creek registered the highest overall catch rates at 1.24 fish/hour. Canadaway Creek, just to the east of Chautauqua Creek, was slightly lower at 1.06 fish/hour. Cattaraugus Creek, the most-fished creek, came in at 0.41 fish/hour. 18 Mile Creek had the lowest tributary catch rate at 0.20 fish/hour.

Tributary catch rates by month showed an increasing rate throughout the fall to a peak in January and February, and then a sharp decrease into the spring months of March, April, and May. The peak catch rates in January and February were 1.48 and 1.35 fish/hour, respectively. High tributary catch rates were also recorded in November and December while the lowest catch rates (0.33 - 0.34 fish/hour) occurred at the beginning and end of the salmonid tributary fishing season. Interestingly, one of the lower catch rates occurred in October (0.43 fish/hour), which was the month with the highest fishing effort.

Overall Catch

Anglers caught an estimated 122,046 salmonids in the tributaries of Lake Erie. Not surprisingly, steelhead were the most caught species (113,897 or 92.9%), followed by brown trout (7,331 or 6.1%). Pacific salmon were only a minor contribution to the tributary fishery (818 or 1.0%).

Total catch by stream showed that Chautauqua Creek anglers caught an estimated 47,590 salmonids, the highest of all the Lake Erie tributaries. Canadaway Creek was second in total catch (32,939) followed by Cattaraugus Creek (29,955). Cayuga Creek had the lowest overall estimated catch (1,296 fish). The majority of the brown trout were caught in Chautauqua, Canadaway, and Cattaraugus Creeks, which corresponds with their stocking locations. These same three creeks also accounted for all of the salmon caught in the tributaries.

Overall tributary catch by month generally followed the same trend as overall effort. November, with its high angler effort and high catch rates, proved to be the most successful month for anglers with an estimated 45,768 fish caught. October ranked second (26,100 fish) followed by December with an estimated 16,684 fish caught. April (13,337 fish) and March (8,306 fish) were the top springtime months.

Overall Harvest

The overall harvest from the tributary fishery was estimated at 15,967 fish, which was 13.1% of the total catch. 89.1% of the overall harvest were steelhead with brown trout (9.2%) and salmon (1.8%) making up the rest. On a percentage of their total catch, however, salmon had the highest creel rate at 34.4% of the total catch, followed by brown trout (20%). Steelhead were creeled at the lowest rate (12.5%).

Three tributaries - Cattaraugus, Chautauqua, and Canadaway Creeks - accounted for over 93% of the tributary harvest. Minor harvests were recorded at all other sampled streams. Overall harvest was highest in October, November, and April, which followed patterns of overall effort.

Region 9

Lower Niagara River Trout and Salmon Pen-rearing Project

The sixth year of the Niagara River Anglers Association (NRAA) cooperative pen-rearing project took place in spring 2004. For the first time since 1999, the pen facility was re-located to a boat slip at Constitution Park in Youngstown. The slip was divided into two rearing spaces, one for chinook salmon and the other for steelhead, using custom-made netting and a netting support system. Supplemental water circulation was provided by a pumping system. The purpose of the pen project was to improve

imprinting and survival of anadromous trout and salmon to enhance the Lower Niagara River sportfishery.

Seventy five thousand (75,000) chinook salmon were placed into the pen facility in mid-May and released approximately 3 1/2 weeks later at the pen site in the Lower Niagara River. Chinooks were substantially larger than the target weight when released, and mortality was very low.

Seven thousand eight hundred (7,800) steelhead were placed into the facility in late April and released approximately five weeks later at the pen site. Steelhead had achieved target weight when released, and fish mortality in the pen was comparable to that observed at other pen sites.

Two batches of steelhead, one direct-stocked at Lewiston and the other pen-reared at Youngstown, were fin-clipped and coded wire tagged to allow subsequent evaluation of the two stocking methods. Volunteers from NRAA assisted with fin-clipping approximately 15,200 steelhead at the Salmon River Hatchery to facilitate the evaluation study.

A more detailed description of the NRAA Lower Niagara River pen project, as well as other pen projects along the New York portion of the Lake Ontario shoreline, is contained in Wilkinson, Sanderson and Bishop 2005.

Pen-reared Chinook Salmon in the Lower Niagara River

Chinook salmon stocking methods are being evaluated at Oak Orchard Creek (see Region 8 narrative) and the Lower Niagara River. In the Lower Niagara River, three fin-clipped lots of chinooks were stocked in 2000 and 2002. One lot consisted of chinooks from the Salmon River Hatchery that were pen-reared in the Lower Niagara. The other two lots were fish that were stocked directly into the Niagara from Salmon River and Caledonia Hatcheries. The three equal-sized lots were identified with different fin clips, and returns have been monitored by examining angler-caught salmon in the Lower Niagara River.

Chi square tests for 1:1:1 return ratios of chinook salmon stocked from the Caledonia Hatchery (Direct/CD), Salmon River Hatchery (Direct/SR) and Salmon River Hatchery fish reared in net pens (Pen/SR) at the Niagara River from 2000 to 2004 are contained in Wilkinson, Sanderson and Bishop 2005.

Returns to date at the Niagara River indicate that the direct stocked fish from Salmon River are returning best followed by the pen-reared fish (Salmon River). The direct stocked fish from Caledonia Hatchery are returning the poorest. A possible reason for better performance of direct stocked Salmon River chinooks is that they are typically stocked at a later date than Caledonia chinooks. The Niagara River is very slow to warm in the spring, and we suspect that the later stocking date for Salmon River chinooks may be advantageous to their relative survival. Age-3 returns from the 2002 stocking will be monitored in 2005.

Straying of fin-clipped salmon from the chinook evaluation at the Lower Niagara River to Salmon River Hatchery does not appear to be a problem. To date, only one fin-clipped fish from the Niagara River has been detected at the hatchery, suggesting negligible straying to the chinook culture facility. However, somewhat higher frequencies of straying from fin-clipped fish stocked at the Niagara River to Eighteenmile and Oak Orchard Creeks have been detected. A more detailed description of the Lower Niagara River chinook evaluation project is contained in Bishop, Sanderson and Wilkinson 2005.

Buffalo Harbor and Upper Niagara River Muskellunge Angler Cooperator Project

Since 1995, the Niagara River Musky Association (NMA) has been conducting an angler cooperator project on the Buffalo Harbor and Upper Niagara River. In 2004, NMA angler cooperators spent a total of 3,202 hours during 352 trips targeting muskellunge in the Buffalo Harbor and Upper Niagara River. They caught a total of 129 muskellunge in both waters for a combined catch rate of 0.04 muskellunge per hour.

The 2004 catch rate in the Upper Niagara was 0.06 muskellunge per hour. At the beginning of the angler cooperator project in 1995 to 1997, catch rates were exceptionally high ranging from 0.12 to 0.13 muskellunge per hour. However, the catch rate declined precipitously in 1998 and has remained relatively consistent since then ranging from 0.05 to 0.08 muskellunge per hour. Catch rates in the Buffalo Harbor have also declined very substantially from high rates observed early in the angler cooperator project. More recently (2001 to 2004) Harbor catch rates have ranged from 0.01 to 0.03 fish per hour. We believe that the decline in catch rates has been associated with declining aquatic productivity in Lake Erie and ecological impacts of dreissenid colonization.

The mean length of muskellunge caught in the Upper Niagara River during 2004 was 37.2 inches. Approximately 6% of the fish caught exceeded the minimum legal length of 48 inches. The mean length of muskellunge caught in the Buffalo Harbor was 37.6 inches. None of the fish caught exceeded the minimum legal length of 54 inches.

Creel and Angler Surveys

Regions 3 and 4

Hudson River Black Bass Tournament Study

A study was undertaken to gain information through recreational black bass tournament results in the Hudson River from 2004. This study was meant to complement the larger Hudson River Black Bass Study conducted from 1999-2001 and similar tournament studies conducted by DEC from1986-1998 and from 2002-2003.

A list of Hudson River bass tournament organizers was developed and used to send a questionnaire. The questionnaire asked the organizers to voluntarily provide information from their tournament records. From this information, a report was written summarizing tournament statistics such as; the number of limit catches, the weight of bass caught, bass tournament catch rate, and the ratio of smallmouth bass to largemouth bass caught. The 2004 results were then compared to data from 1986-2003. On-site monitoring of two tournaments took place in August and early November 2004. At the tournament "weigh-in," scale samples were taken for age analysis, and individual bass lengths and weights were recorded. The table below highlights some of the statistics from the voluntary data provided by the tournament organizers.

Comparison of 1986-2004 Hudson River black bass tournament weigh-in statistics.

Year	Number Trips Sampled	% Limit	Largest Bass (lbs.)	Average Number Bass per Trip	Average Number LMB per Trip	Average Number SMB per Trip	Range of Bass Per Trip	Average Percent LMB (%)	Average Weight per Bass (lbs.)
1986	1,946	16	6.8	2.1	1.84	0.27	1.25-3.17	87.4	2.06
1987	1,443	6.7	6.8	1.4	1.00	0.43	0.50-3.22	69.9	2.19
1988	1,129	15.1	5.1	1.6	1.26	0.32	0.38-3.01	79.7	2.16
1989	1,607	11.9	6.7	1.9	1.45	0.42	0.74-4.13	77.6	2.14
1990	1,725	4.2	6.3	1.3	0.88	0.40	0.74-2.38	68.8	2.00
1991	1,132	6.9	6.5	1.4	1.06	0.33	0.94-2.55	76.1	2.06
1992	679	17.5	6.0	1.8	1.44	0.39	0.42-4.17	78.5	2.29
1993	1,298	8.9	6.3	1.5	1.14	0.38	0.38-3.23	74.8	1.79
1994	769	8.3	6.8	1.7	1.23	0.46	0.38-3.45	72.8	1.99
1995	1,589	10.2	6.4	1.6	0.70	0.94	0.74-4.00	42.8	1.86
1996	1,103	8.4	6.1	1.8	1.08	0.72	1.11-4.00	60.2	1.85
1997	904	14.4	6.5	1.6	1.48	0.20	1.02-3.00	88.0	1.79
1998	909	7.6	6.1	1.7	1.15	0.48	1.22-2.60	70.8	1.89
1999	681	----	----	1.5	1.02	0.49	0.82-2.73	67.4	----
2000	1,228	----	----	2.0	1.39	0.65	0.74-3.68	68.1	----
2001	1,418	----	----	1.5	1.00	0.52	1.05-2.32	65.8	----
2002[2]	113	----	----	1.3	0.89	0.30	1.00-1.37	75.0	1.70
2003[3]	617	23.6	5.6	1.8	0.78	0.85	0.80-3.00	47.9	1.69
2004[3]	1,421	11.2	6.1	1.9	0.89	0.89	1.00-4.20	50	1.70

Note: LMB = Largemouth bass; SMB = Smallmouth bass

[1] Percent limit catch during 2003 and 2004 includes tournaments where limits were lower than the legal harvest limit. Previous tournament summaries may have excluded these lower than the legal harvest limit tournaments from this calculation.

[2] Number of trips sampled is below the NYSDEC sample size objective of 500 trips for determining tournament-catch statistics in this fishery (NYSDEC 1996).

[3] Average number of largemouth bass and smallmouth bass per trip, and average percent largemouth bass were calculated using tournament catch data from those tournaments with species-specific catch data only. Therefore, the average number of bass per trip (where all tournament data could be used) does not equal the sum of the average number of largemouth bass per trip and the average number of smallmouth bass per trip.

Fisheries management objectives for the Hudson River black bass population have generally been met over the years (such as having a tournament catch of greater than 1.4 bass/trip). However, an apparent trend of decreasing average weight per bass has existed since 1993. The decline in average weight can be partially explained in some years by a higher percentage of smallmouth bass making up the catch compared to the heavier largemouth bass. This trend will be further analyzed by comparing largemouth bass growth (using scale aging techniques) over the years.

As with the larger study conducted in1999-2001, this work was funded through The Hudson River Estuary Program, and Lawler, Matusky, and Skelly Engineers (LMS) were contracted to conduct this study for DEC. Although we still await the final 1999-2001 report from LMS, completed final reports of the 2002-03 and 2004 Hudson River Estuary Black Bass Tournament Monitoring Studies were completed in October 2004 and March 2005 respectively.

Region 6

Black Lake Creel Survey

To evaluate the 15 inch special regulation for black bass, a large scale creel survey was conducted on Black Lake from May 5, 2004 to October 31, 2004. The 15 inch regulation went into effect in Oct 1995 and a similar creel survey was conducted in 1996 to develop a baseline analysis of the fishery. During the survey period, 1,596 interviews and 437 instantaneous counts were conducted. Analysis of the two surveys found that there was approximately twice as much fishing effort in 2004 as 1996. The weather was subjectively categorized as worse on average in 1996 vs 2004, thus accounting for part of the effort differential, though even with an equalizing formulation, 2004 still was 50% greater. The average trip length per party was not significantly higher for any of the species in 2004. Monthly effort for 1996 and 2004 followed the same trend of being highest in May, June and July and dropping 20-25% per month afterwards to Oct. Catch rates were slightly higher in 2004 for bass, significantly higher for bluegill, pumpkinseed, and were around the same for crappie and yellow perch. Catch rate for bass in 2004 was .36fish/hr, largemouth .42fish/hr, crappie 1.07fish/hr. Estimated total catch for bass was significantly higher for 2004 vs 1996, based on slightly higher catch rate and double the effort. Bass were harvested at a rate of 8.8% of catch in 1996 vs 5.8% in 2004. In 2004, 38% of the catch was legal size or greater. Crappie were harvested at 62% of catch in 1996 and 40% in 2004. 2004 showed that 44% of the crappie catch was legal size or greater. Estimated total harvest for bass in 1996 was 1,190 fish vs 3,370 fish for 2004. 2004 was higher despite lower harvest percentage based on higher overall catch. Age data shows that largemouth reach 12 inches around 3.5 years, and 15inches around 6 years.

Conclusion—1996 was the first year with the 15 inch regulation and should have been representative of the population without impacts of the reg. Ideally we would have had legal size release data for 1996 such that we could have better tracked the change in percentage of large fish, but other evidence suggest that the bass fishery has improved since 1996. The main improvement can be seen by the overall higher catch and higher catch rate for bass in 2004 vs 1996. The 38% of catch being legal size in 2004 represents a high percentage of large fish by general bass management standards and we suspect that it represents an improvement over pre-15 inch regulation implementation.

Region 7

Otisco Lake Angler Diary Program

Ten cooperators logged 107 trips and caught 147 legal length gamefish. They were successful in catching at least one gamefish in 72% of their outings. Walleye action was again fair with cooperators catching a total of 58 legal fish. Legal length gamefish caught by cooperators also included 36 smallmouth bass, 42 largemouth bass, 16 brown trout and two tiger muskellunge. Of the 161 legal gamefish caught, anglers harvested only 39 walleye, seven smallmouth bass, one largemouth bass, and two brown trout.

2004 Cayuga Lake Angler Diary Program

Fifty-seven coldwater cooperators caught 1,346 legal salmonids in 749 trips for an average of 1.8 fish per trip. Legal salmonids were caught at an average rate of 2.8 hours per fish. Coldwater lake cooperators were successful in catching at least one legal salmonid in 69% of their trips. Cayuga Lake coldwater cooperators caught 1,192 legal lake trout, 33 legal rainbow trout, 67 legal brown trout and 54 legal landlocked salmon. Catch rates for these species were 1.59, 0.04, 0.09 and 0.07 legal fish per trip while harvest rates were 1.08, 0.03, 0.07 and 0.06 legal fish per trip, respectively. Lake trout comprised 88.5% of the legal salmonid

catch while rainbow trout, brown trout and landlocked salmon were 2.4, 5.0 and 4.0%, respectively.

Eleven Cayuga Lake warmwater cooperators caught 73 legal smallmouth bass, 157 legal largemouth bass, 36 legal northern pike and 46 legal chain pickerel in 148 trips for an average of 2.1 legal warmwater gamefish per trip. A total of 28 smallmouth bass, 46 largemouth bass, two northern pike and six chain pickerel were kept. The largest smallmouth bass, largemouth bass, northern pike and chain pickerel caught were 19.0, 21.0, 31.0 and 24.0 inches in length, respectively. The south end of Cayuga Lake produced most of the smallmouth bass and northern pike while the north end produced most of the largemouth bass and chain pickerel.

2004 Owasco Lake Angler Diary Program
Thirty-two Owasco Lake coldwater cooperators caught 952 legal salmonids in 348 trips for an average of 2.7 fish per trip. Legal salmonids were caught at an average rate of 1.4 hours per fish. Our coldwater lake cooperators were successful in catching at least one legal salmonid in 84% of their trips. Owasco Lake coldwater cooperators caught 909 legal lake trout, 30 legal rainbow trout, 12 legal brown trout and one legal landlocked salmon. Catch rates for these species were 2.61, 0.09, 0.03 and 0.003 legal fish per trip while harvest rates were 0.67, 0.04, 0.01 and 0.003 legal fish per trip, respectively. Lake trout comprised 95.4% of the legal salmonid catch while rainbows, browns and landlocked salmon were 3.2, 1.3 and 0.1%, respectively.

Nine Owasco Lake warmwater cooperators caught 38 legal walleye, 36 legal smallmouth bass, two legal largemouth bass and three legal northern pike in 100 trips for an average of 0.79 legal warmwater gamefish per trip. Of the 79 legal warmwater gamefish caught, 26 walleye, six smallmouth bass and two northern pike were kept. Three sub-legal walleye, seven sub-legal smallmouth bass and one sub-legal northern pike were caught and released by warmwater cooperators.

In 1996, the Owasco Lake Anglers Association initiated an annual Owasco Lake walleye fingerling stocking program which ended in 2001. In 2002, NYSDEC continued walleye stocking with fingerlings raised at the NYS Chautauqua Fish Hatchery in Mayville, NY. Walleye stocking continued in 2003, 2004 and 2005. It is clear from the success of angler cooperators that walleye stocking has added a new dimension to fishing on Owasco Lake.

2004 Skaneateles Lake Angler Diary Program
Thirty-three Skaneateles Lake coldwater cooperators caught 1,265 legal salmonids in 646 trips for an average of 2.0 fish per trip. Coldwater lake cooperators were successful in catching at least one legal salmonid in 76 percent of their trips. Legal salmonids were caught at an average rate of 1.6 hours per fish. Skaneateles Lake coldwater cooperators caught 550 legal lake trout, 511 legal rainbow trout and 204 legal landlocked salmon. Catch rates for these species were 0.85, 0.79 and 0.31 legal fish per trip while harvest rates were 0.46, 0.56 and 0.19 legal fish per trip, respectively. Lake trout comprised 43.4% of the legal salmonid catch while rainbow trout and landlocked salmon were 40.4 and 16.1% , respectively. The benefits of increased salmon stocking were noted in the 2004 lake catch. An additional 140 sub-legal salmon were caught and released which suggested good salmon fishing would likely continue in 2005.

There was no direct participation in the warmwater section of the Skaneateles Lake angler diary program in 2004. None of the Skaneateles Lake cooperators indicated in their diaries that they were fishing for warmwater species such as smallmouth bass or chain pickerel. Four smallmouth bass were caught and released by cooperators while fishing for coldwater or unspecified gamefish.

Region 8

Honeoye Lake Angler Diary 2004-05
This was the 16th year for the Honeoye Lake Angler Diary program. On average, anglers took 1.09 hours to catch one legal gamefish, slightly longer than last year's record catch rate. Largemouth bass continue to dominate the catch representing 93% of all gamefish caught. Anglers directing their effort toward any bass caught 1.22 legal bass/hour, a phenomenal catch rate and much greater than the statewide average of 0.26 legal bass/hour. Of the approximately 1,700 largemouth bass records that recorded lengths, nearly 100% were legal sized (>12 inches). Also, several trophy sized bass were reported caught with 10 fish over 20 inches creeled. Honeoye Lake remains one of the best areas in Region 8 for some great bass fishing action.

Based on the diary results, it appears that the walleye population has been reduced, as only 188 walleye were caught, the second lowest total ever. However, angler trips targeting walleye were way down and may

be another reason for the lower total catch of walleye. Anglers specifically targeting walleye caught 0.20 walleye/hour, which is the catch rate objective for New York waters. Catch of larger walleye increased for the second straight year with 30% of walleye caught >20 inches. Approximately 13% of walleye were caught through the ice. Based on this information, it appears that Honeoye Lake is providing anglers with walleye catch rates comparable to other New York waters and is starting to produce some quality sized fish.

Conesus Lake Angler Diaries 2004-2005

Fishing effort by angler diary keepers in 2004 was the lowest of the five years the Conesus Lake diary program has been in existence. The lowest number of days fished and angler trips were recorded in 2004-2005. Perhaps the cool, wet weather of the spring and summer of 2004 discouraged diary keepers from fishing. It took diary-keeping anglers 2.6 hours to catch one legal game fish. This fair catch rate is a result of an abundant largemouth bass population. For anglers targeting largemouth bass, the catch rate was 0.44 legal bass/hour, which is better than the statewide average of 0.26 legal bass/hour. Largemouth bass dominated the catch with 75% of the total game species caught. The largemouth bass catch was composed of 98% legal sized (>12 inches) fish. Of the legal largemouth bass caught, almost all (97%) were released. Although the majority of the bass were less than 15 inches, anglers did catch some memorable fish with 28 largemouths greater than 18 inches caught. Smallmouth bass comprised 13% of the total game fish catch, 90% were legal size, and all but two were released. Nine (12%) of the smallmouths caught were larger than 18 inches. Northern pike made up a smaller portion of the total game fish catch than last year (9% down from 21%). Eighty five percent were legal size, with creeled fish averaging 27.0 inches. Diary keepers caught five northerns greater than 36 inches. Tiger muskies made up only 1.0% of the game fish catch, with 7 of them caught and released by diary anglers. The tigers caught averaged 25 inches. Walleye made up only 2% of the total game fish catch with fish averaging 23.6 inches in the creel. All walleye caught were legal size. These numbers are similar to previous years. Anglers specifically targeting walleye caught 0.08 walleye per hour- less than last year's best catch rate, but similar to other years. This is about half of the New York State objective of 0.2 walleye per hour, or one legal walleye for every five hours of fishing. A total of 329 panfish were caught by diary keepers. Most were caught by anglers who were after any game fish, or not specifically targeting any species of fish. Many were caught by bass fishermen. Panfish species (i.e. perch, bluegill, pumpkinseed, and rock bass) were caught at excellent rates for those anglers who were targeting them. They caught 4.0 fish per hour. Most of the panfish catch was represented by rock bass (9%), pumpkinseed (8%) and bluegill sunfish (77%). Twelve yellow perch were reported.

Canandaigua Lake Angler Diary 2004

This was the 32th anniversary of our volunteer angler diary program on Canandaigua Lake. Catch rate of legal sized trout was at an all time high in 2004 with anglers taking only 1.3 hours to boat a legal salmonid. For comparison, diary cooperators on Keuka and Seneca Lakes' average 1.2 and 1.4 hours, respectively to catch one legal trout. Lake trout continue to be the driving force behind the coldwater fishery representing 90% of all trout caught. A total of 718 lake trout were caught with 421 being kept. Beginning in 2004, stocked lake trout started receiving various fin clips. We plan to differentially fin clip lake trout year classes over the next several years in an attempt to determine if stocked fish continue to make up the majority of lake trout in the lake or if natural reproduction is occurring at a higher rate than in previous years. Currently, the lake trout population is maintained almost entirely by stocking 24,100 fingerlings and 12,100 yearlings annually. Stocked brown and naturalized rainbow trout, although a minor component of the lake fishery, continue to diversify anglers' catch. Angler participation in the Diary Program remains low, with only 24 cooperators. Numbers of cooperators peaked at 63 in the late 70's, but have typically remained in the 30's or 40's. Since 1999, we have not had 30 or more cooperators. Efforts, such as displays at outdoor shows and derbies, are being used to recruit more cooperators.

Keuka Lake Angler Diary 2004

The Keuka Lake Angler Diary program began in 1968. During 2004, anglers experienced their best catch rate ever, averaging 1.2 hours to boat a legal salmonid. This continues the excellent catch rate anglers have experienced over the past 10 years. These catch rates are the result of a very abundant wild lake trout population with a few landlocked salmon, brown trout and rainbow trout included for diversity. Although the average size of diary caught lake trout has declined, anglers continue to creel nice sized fish that average close to 19.5 inches and 2.5 pounds. However, these excellent catch rates are probably a result of a decrease

in available forage, primarily smelt and alewives. Smelt populations are almost nonexistent and alewives appear to be spotty. It is believed that zebra mussels have negatively impacted the forage species by filtering plankton that forage species rely on. The population of wild lake trout remains high, placing an additional burden on an already stressed forage base. To reduce pressure on the forage base and compensate for the abundant numbers of wild lake trout, we may have to reduce stocking rates of for brown and landlocked Atlantic salmon. For the near future we plan on continuing the annual stocking of 22,300 landlocked salmon and 9,400 brown trout yearlings.

Seneca Lake Angler Diary 2004

The Seneca Lake Angler Diary program began in 1973. During the first 10 years of the program, catch rates ranged from 3.0 to 6.9 hours to catch 1 legal salmonid. Over the last 10 years, catch rates ranged from 1.2 to 2.2 hours to catch 1 legal salmonid, with the catch rate in 2004 being 1.4. The excellent catch rates during the last few years are a result of very hungry lake trout. Zebra mussels appear to have impacted the plankton population, which is the base of the food chain. As a result, the forage base, primarily smelt and alewives, is declining. In addition, natural reproduction of lake trout has been increasing. For the near future lake trout will be stocked at a rate of 20,000 yearlings and 40,000 fingerlings annually. All stocked lake trout are fin clipped in an effort to accurately estimate lake trout natural reproduction rates. Future reductions in lake trout stocking rates may be necessary if growth rates continue to decline and wild fish expand further.

Increased wounding rates by sea lamprey are also a contributing factor to depressed growth rates on lake trout. With the removal of phytoplankton from the water column, the water clarity has dramatically improved. Since sea lamprey are sight feeders, clear water will aid these parasites in finding their prey. Keuka Lake Outlet was treated for sea lamprey this year.

Oatka Creek Creel Census

A creel survey was conducted on Oatka creek from late March through October, 2004. It was conducted as part of the no-kill trout fishing regulation evaluation. The 2004 creel survey was the 3 years post-regulation change census. This creel census was also used to test in-field, electronic data collection using a hand held computer. Preliminary data analysis shows in 2004, like the 2000 and 2001 surveys, Oatka Creek, which has no closed season, follows the general pattern of high fishing pressure from April to July, which tapers off through October. Full data analysis has yet to determine whether the No Kill regulation induces more angler effort as predicted.

Table 1. Summary of catch and harvest data collected from Oatka creek between March 26 and October 30, 2004.

	Catch	**Harvest**
Number of Anglers	1533	1533
Number of Hours Fished	3160	3160
Mean Trip Length	2.07	2.07
Number >14" Total Length	262	56
Rate >14" Total Length	0.12	0.02
Number 14"-12" Total Length	432	137
Rate 14"-12" Total Length	0.21	0.04
Number <12" Total Length	2166	237
Rate <12" Total Length	1.01	0.08
Total Number	2810	430
Total Rate	0.87	0.15

Habitat Management, Protection and Restoration

Region 1

Spring Lake Fish Kill
Biologist Fred Henson and Seasonal Laborer Mike DiMarco conducted a fish kill investigation on Spring Lake in the community of Middle Island on May 21. Approximately 300 dead bluegill sunfish and a handful of black crappie were observed on the shores of the lake. Other species of fish, frogs, turtles, and waterfowl were observed behaving normally. Water temperature was 22°C and dissolved oxygen concentration was 8.2 mg/L. The fish observed bore lesions similar in appearance to those observed during a fish kill at the same location that was investigated on June 3, 2002. The proximal cause of that mortality was determined to be the common fish disease columnaris. Given the history of fish kills on this water and the characteristics of the fish kill currently underway, the hypothesized cause is columnaris.

Successful alewife spawning above Grangable Park Fish Ladder on the Peconic River
On November 13, YOY alewife were observed swimming downstream in the Little River, a tributary to the Peconic River. Over a two hour period that afternoon several thousand young alewife were observed swimming down the stream at the County Route 63 crossing. This is the first documentation of successful alewife spawning above the fish ladder that was installed at the Grangable Park Dam on the Peconic River in 2000. These fish were observed above a second impassable barrier that the Trustees of the Town of Southampton had refused to allow a fish ladder on. The question of how the fish got over this barrier is unanswered.

Region 3

Mercury Sampling
Region 3 staff worked with DEC Bureau of Habitat staff to collect fish for mercury testing. Regional waters where samples were taken in 2004 and 2005 were: Dutchess County— Rudd Pond, Sylvan Lake and Wappingers Lake; Putnam County— Canopus Lake and Lake Mohopac; Rockland County— Lake Welch; Sullivan County— Lake Superior, Mongaup Pond and Mongaup Falls Reservoir; Ulster County— Chodikee Lake and Sturgeon Pool; Westchester County— Mohansic Lake.

Releases from NYC's Delaware Reservoirs
Three large Delaware Basin reservoirs - Pepacton Reservoir on the East Branch of the Delaware, Cannonsville Reservoir on the West Branch, and Neversink Reservoir on the Neversink River - provide approximately half of the water supply for the City of New York and portions of Westchester County. Cold water released from deepwater intakes at these reservoirs also supplies most of the flow and summer temperature regulation in over 50 miles of tailwater on the three impounded rivers and about 18 miles of the main Delaware River below the confluence of the East and West branches. Since the 1970's, DEC staff has been working to improve conditions in these important coldwater resources. This is a complex process that requires concurrence not only from New York City but from the other three Delaware basin states as well.

In 2003, staff from DEC's Divisions of Water and Fish, Wildlife and Marine Resources succeeded in negotiating a new three-year experimental release program with all the parties (Revision 7 of the original interstate agreement). The new program more than doubled the "bank" of discretionary water available to DEC for moderating adverse conditions in the tailwaters. In addition to making increased releases to keep temperatures from exceeding 75°F at the lower end of the trout reaches, DEC could now call for extra water to maintain minimum flows above certain biologically significant thresholds in the East Branch, West Branch and Neversink Rivers.

Revision 7 took effect on May 1, 2004. DEC staff monitored conditions reported from USGS gaging stations on a daily basis to assess the need for additional releases to control flows or temperatures. Fish and Wildlife staff also developed a rigorous monitoring plan to evaluate the success of the new program. Water temperatures were continuously recorded at 22 tailwater sites from June through September. Quantitative fish sampling was conducted at 11 stations within the tributary tailwaters and at two control stations. Benthic collections were made and analyzed from six sites in the tributaries. Wherever possible, 2004 results were compared to previous data. Trout population responses to the first year of revision 7 were mixed. The four sampling stations on the West Branch produced biomass estimates generally in the mid-range of previous year's samples (24-62 pounds per acre). Two of the four East Branch samples had apparently robust population estimates (30-52 pounds per acre), but there were no prior data for these

specific locations. On the Neversink, all three sampling stations produced the highest trout biomass estimates (74-87 pounds per acre) ever obtained at those sites. Wild brown trout dominated 10 of the 11 collections, in most cases comprising 90% or more of the total trout population. Despite the generally favorable results in the 2004-05 water year, substantial flooding events occurred in September of 2004 and late March-early April of 2005 that may complicate future analyses.

Shandaken Tunnel SPDES Permit
Water releases from another part of the New York City water supply system was also an issue of concern in 2004. A law suit brought against the City in 2000 for turbidity violations in the transfer of water from Schoharie Reservoir to Esopus Creek via the Shandaken Tunnel resulted in a Court decision that this transfer constituted a "discharge" under the Clean Water Act. One of the consequences of the ruling was that DEC has to issue a SPDES permit for the discharge.

Region 3 fisheries staff have been deeply involved with the permit process. Since the Shandaken Tunnel began transferring water to Esopus Creek in 1924, there have been numerous occasions when fine particles of silt and clay in the 300 square-mile Schoharie Creek drainage have been transported to Schoharie Reservoir and eventually to Esopus Creek. Despite this chronic condition, trout populations below the tunnel discharge have been consistently among the best in the Catskills, particularly with regard to wild rainbow trout. The Shandaken discharge typically represents over 90% of the combined downstream flow, and it is evident that the positive contributions of habitat and (usually) temperature moderation more than compensate for the negative impacts of turbidity most of the time. Since the cold water volume in Schoharie Reservoir is limited, summer diversions must be carefully regulated so that the cooling potential is maintained throughout the warm weather period. Thus, the SPDES permit must be crafted so appropriate weight is given to turbidity, water temperature, ecologically significant flows and water supply. An issues conference was held in April 2004, and an adjudicatory hearing is scheduled for October.

Region 5

Starbuckville Dam Fish Ladder
Region 5 Fisheries staff reviewed building and operational plans for the reconstruction of the Starbuckville Dam on the Schroon River near the Essex and Warren county lines. The Schroon Lake Park District proposed repairing the dam to stop leakage, increase public safety, insure minimum flows and add fish passage. The new design includes a fish ladder that should permit outmigrating landlocked salmon and trout to return to Schroon Lake if they wish. An automated gate mechanism has been proposed to maintain minimum flows in the river when impoundment levels fall below crest height of the dam. Fisheries staff requested additional information on the gate control device and that the operational plan be modified to account for power outages and other emergency conditions.
Repair work on the dam commenced in July 2005.

Lake George Delta Dredging Plan Reviewed
Region 5 Fisheries staff reviewed the responsiveness report for the proposed dredging of sediments on seven (or more) tributary deltas in Lake George prepared by the Lake George Park Commission. The report answered numerous questions raised by the public and governmental reviewers at prior meetings and comment periods. Fisheries impacts are expected to be minimal for this large-scale project and adjustments have been made to dredging plans to avoid periods when spawning rainbow smelt, landlocked salmon and lake trout may be in the vicinity of the deltas.

Lake Algonquin Dredging Plan Reviewed
A draft EIS and engineering plan for removal of sediments from Lake Algonquin, Town of Wells, Hamilton County was reviewed by Region 5 Fisheries staff. This large-scale project proposes dredging ~250,000 cubic yards of sediments to improve recreational opportunities. DEC, APA, DOH and Army Corps of Engineers staff met with the applicants to review environmental and operational concerns. Significant environmental concerns were expressed by Fisheries staff over loss of fish spawning habitat and the possible spread of Eurasian watermilfoil. The applicants responded immediately with practical suggestions for mitigating these impacts and the draft plan will be modified to reflect these changes. Considerable review will still be necessary before permits can be issued for this five-year project.

Fort Covington Dam Removal Reviewed
Region 5 Fisheries staff attended a meeting to review results of fish sampling and sediment testing conducted in 2003 to evaluate the potential impacts of

removing the Fort Covington Dam on the Salmon River in Franklin County. Dr. John Cooper of SUNY College of Environmental Science and Forestry presented data concerning fish, invertebrate and aquatic vegetation sampling he conducted on the Salmon and Little Salmon Rivers. Most significantly, Dr. Cooper found good numbers of eastern sand darter - a threatened fish species in New York - both above and below the dam. Consulting engineers also presented cost estimates for removing the dam and projected how removal would change the river habitats. Sediment testing found evidence of light contamination from either old coal tar facilities in Malone or a suspected leaking gasoline storage tank in Fort Covington. More sediment testing and fish survey work was recommended by DEC staff for the 2004 season.

Boquet River Salmon Barrier Investigated
A 1995 joint NYSDEC and USFWS radio-telemetry study investigating salmon spawning migrations on the Boquet River and the Willsboro Fishway recorded an interesting behavior on the North Branch tributary. During that study, salmon proceeded only a short distance up the North Branch Boquet River before stalling at a remote location suspected to be a ledge drop. This location was known to one of the staff on the project who had kayaked that tributary during an exploratory river trip. The suspicion was that the unusually low water during that fall spawning migration prevented salmon from traversing that point and reaching prime spawning areas known to exist upstream. Since low flows often coincide with salmon runs on the Boquet, an early summer trip to that suspected low water barrier revealed that indeed an abrupt bedrock ledge and remnants of a former hydro dam, long ago breached, could very well act as a low water barrier to migrating salmon. Closer inspection in August reaffirmed that suspicion and a cooperative agreement evolved between the US Fish and Wildlife Service and the Boquet River Association to mitigate the barrier through the removal of a portion of the dam remnant there. Preliminary ownership investigations have begun and a strategy has been developed to remove the low flow barrier that sometimes keeps salmon from the best spawning locations.

FERC Relicensing of Hydroelectric Utilities
Negotiations continued on the relicensing of hydroelectric projects on the Saranac River (Clinton County) and the Salmon River (Franklin County). The parties involved with relicensing New York State Electric and Gas' four sites on the Saranac River appear to be close to agreement on several habitat, access and operational-related aspects of those sites. A settlement document specifying the agreement should be available soon. Negotiations for the Salmon River site at Macomb, operated by Brascan, are at an earlier stage. The involved parties have presented their interests, and approaches to address the various needs are still being explored.

Minimum Flow Study Done in Caroga Creek
Region 5 Fisheries staff made a site visit over a two day period to look at various minimum flow releases on Caroga Creek near Ephratah in Fulton County. The releases are part of a Reliant Energy work-plan submitted to address potential remedial actions to mitigate the water quality violations and fish kill in Caroga Creek caused by the draw-down of the Caroga impoundment. Additional discussions with Reliant Energy representatives are scheduled.

Region 6

Water District Installations
Review was done on proposed new water district installations for four municipalities in the Region: the village of Redwood in the Town of Alexandria, Vienna, Floyd, and Verona. All but the Verona district are moving ahead to provide improved drinking water for the residents.

Sauquoit Creek
Utica staff biologist Emilio Rende has been involved for the past few months on two related issues along Sauquoit Creek in Oneida County. He developed a Schedule A for remediation restoration for an illegal dredge and deposition of spoils within the floodplain of the creek and the Mohawk River, and he has also been reviewing a new flood control project for the Sauquoit. The remedial work was completed but flooding along the Sauquoit continues to be a problem for residents and all involved agencies.

Mud Lake Outlet
Bureau of Habitat and Bureau of Wildlife staff assisted Town of Alexandria in designing a solution for the outlet of Mud Lake. Long a source of problems for both Mud Lake and Clear Lake above, severe flooding occurred this past spring causing State Route 37 in the Village of Redwood to be closed for a short time. The main cause of the problem has been the inability to reduce the beaver population between the two lakes to

an acceptable level. We hope to correct the problem through the use of multiple beaver tubes.

Stream Work Permits
Fisheries staff provided review comments for 57 Article 15 permits and became involved in 17 violations of Article 15. Most violations involved working in streams without the necessary permits. Remediation and fines were collected in all instances.

DOT Road Work
Two erosion control problems with D.O.T. road jobs resulted in meetings between the agencies clarifying what construction activities are permitted, how they should be done, who should be involved and notified, and who is responsible if something goes wrong. No further incidents have occurred since the issues were clarified.

Mohawk River TSMP
The scheduled Toxic Substance Monitoring Program(TSMP) sampling of the Mohawk River took place between Little Falls and Rome. Samples of largemouth and smallmouth bass, walleye, northern pike, tiger muskies, and carp were obtained and sent to the lab at Hale Creek for analysis.

Windpower
Since mid April Regional Bureau of Habitat staff have spent approximately 5 days of time per month monitoring the Maple Ridge (Flat Rock) Wind Farm Project. Most of the monitoring was for review of minor modifications related to individual sites. We are called to answer questions regarding wetlands and classified waters on the project footprint. Through the permit/ amendment process we have been able to give additional protection to the resources on the site through avoidance of the protected habitats.

Another phase of our monitoring is the monthly attendance at compliance meetings at the project to discuss operations with the contractors, the compliance inspectors, and various State Agencies. The project sites are inspected daily and the daily log compiled by the inspectors includes any problems encountered on the site. The windmill (transmission) and transmission portions of the projects have separate teams of compliance inspectors looking at all aspects of environmental problems.

The project presently has over 20 windmills completely built and a substantial number of towers partially constructed on the project.

Mitigation-Restoration
Watertown Habitat staff and Lands and Forest staff from Brownville attended a pre bid meeting for the mitigation project at Lookout Hill State forest. The project was designed by BOF staff and is being funded by the Maple Ridge (Flat Rock) windpower project to mitigate for Article 24 wetland impacts of the windfarm project. Restoration of a dike and drop box control structure on a DEC shallow marsh project along with a new access road and small parking area are being done as part of the wind farm mitigation plan.

Enforcement/Compliance
Watertown staff is working with Law Enforcement and Lands and Forests staff to remediate a WMA/FWW boundary line fill violation. The case includes illegal fill along an access road that serves a number of cottages along Lake Ontario. A Wildlife Management Area boundary is along the opposite side of the road from the cottage road but a number of owners over the years have placed fill within the DEC property, which is also within a regulated freshwater wetland. Staff from DLE, DFW, Lands and Forests and Real Property assisted with the investigation.

Two BOF Habitat staff performed follow-up compliance inspections along the Region 6 portion of the Lake Ontario shoreline and the St. Lawrence River. One person handled this section area from the Town of Henderson to Morristown making multiple visits to over 230 Article or Article 24 Permitted projects. Inspections were also done along the Fulton Chain of Lakes visiting approximately 25 permitted sites over a one week period. Total compliance by permittees remains impressively low (>1%) for inspected sites due to the regular visits which allows staff to educate the property owners about the wealth of the area resources and the importance of compliance to design and conditions of the various activities.

Regional Habitat Staff from Utica and Watertown conducted several days of unannounced compliance inspections of the ongoing construction work at the Herkimer Oneida Solid Waste Authority Landfill site at Ava in Oneida County.

Adirondack Park Invasive Plant Program, (APIPP)

Region 6 habitat protection biologist Mark Craig is the regional representative to the Adirondack Park Invasive Plant Program. As the regional representative he serves on the APIPP program steering committee.

He attended 5-6 meetings over the past year, starting with the annual Principal Partners Meeting in Ray Brook, February 2. Presently the main focus for the APIPP in Region 6 is to train field staff in invasive plant identification.

Biologist Emilio Rende traveled to NYSDOT Central Office to accept an award for the APIPP and Region 6 involvement within the organization. The APIPP and the principal partners are receiving the award for outstanding success the group achieved over the past few years. The award is given nationally and is a tremendous honor.

Watertown Habitat staff Biologist Mark Craig is also the regional representative to the newly formed Saint Lawrence Eastern Lake Ontario (SLELO) Weed Management Area group. This group is set up similar to the APIPP group in the Adirondack Park. Both groups are focused on the ID, rapid response and eradication of Invasive species. SLELO is focused primarily on the swallowworts at the present time which are serious problems in the Eastern Basin of Lake Ontario. Other efforts over the past 2 months have included an increased effort toward locating and identifying new locations of giant hogweed.

Bureau of Habitat staff is assisting with GIS entry of data points collected for known swallowwort sites in the Town of Henderson. This past summer volunteers and staff tried to locate and record all known swallowwort sites located east of Route 3 in the Town of Henderson. Previous surveys collected information on site between west of Route 3 and along the Lake Ontario shoreline.

Region 7

Environmental Permit Reviews
Fisheries staff continue to review and comment on some Article 15 permit applications and DOT projects, but the workload is significantly smaller than in the past.

Toxic Substances Monitoring Program
Fish samples were collected for two long term monitoring programs during the fiscal year. These included 21 smallmouth and 25 largemouth bass for the Onondaga Lake Mercury Trend Analysis and 35 coho salmon and 25 chinook salmon for the Lake Ontario Contaminant Trend Analysis

Whirling Disease Sample Collections from Private Hatcheries
Collections of 60 trout samples were made from four non-DEC hatcheries in the region including: Apple Valley Trout Farm in Harpursville, Carpenter's Brook Fish Hatchery in Elbridge, Robert C. Feyl Hatchery in Camillus, and SUNY Morrisville. These samples were processed, packaged and delivered to the Rome Laboratory for analysis.

Region 8

Whole Lake Fluridone Treatment and Evaluation
According to the Lake Association, recreational use of Waneta and Lamoka Lakes is hampered by the submersed aquatic plant, Eurasian water milfoil. After reviewing a Draft Supplemental Environmental Impact Statement, DEC staff persuaded the Association to treat Waneta Lake first, and if that treatment was successful (i.e., only milfoil density reduced with little or no reduction in native aquatic vegetation), Lamoka Lake could be treated the following year. After crafting permit conditions and criteria that would form the basis of defining a successful treatment, in March of 2003 the Association received Aquatic Herbicide and Freshwater Wetlands permits to treat Waneta Lake with the systemic herbicide, fluridone (brand name Sonar). The systemic mode of action of this chemical requires that the whole lake be treated with a low dose (6-12 ppb) over a 60 day period. Under this treatment regime, fluridone apparently targets only milfoil. The treatment occurred in late April 2003. Year of treatment evaluation of the submersed aquatic vegetation community occurred in August 2003. After reviewing the evaluation results, DEC staff concluded that the plant community had not responded during the year of treatment in a way to meet the successful treatment criteria. DEC staff recommended that the proposed treatment of Lamoka Lake be delayed until Waneta Lake's submersed aquatic vegetation community recovered to meet the year after treatment criteria. Year after treatment evaluation of the submersed aquatic vegetation community occurred in August of 2004. After reviewing the 2004 evaluation results, DEC staff again concluded that the plant community had not responded during the year after treatment in a way to meet the successful treatment criteria. DEC staff recommended that the proposed treatment of Lamoka Lake be done at a much lower dose than Waneta Lake's and only in a sequestered area, rather than whole-lake. Considerable staff time was spent evaluating data, reviewing the literature,

forming the Department's position, and meeting with the Association.

Conesus Lake Watershed Management Plan
The Livingston County Planning Department had been developing a watershed management plan for Conesus Lake for several years and recently formed working groups to finalize the plan. Staff actively participated on the Lake Management Issues and Recreational Use Issues work groups. A State of the Lake Report and the final Watershed Management Plan were completed in 2002. The Plan calls for controlling aquatic vegetation using a number of integrated methods, of which herbicides were not recommended. Herbicide treatments were not recommend because of water use restrictions and Conesus Lake serves as a public water supply for several towns and villages. Algae control using alum was a high priority recommendation of the plan. In August 2004, the Livingston County Planning Department conducted a SEQRA review and prepared a Draft Environmental Impact Statement for the use of alum to control algae in Conesus Lake. Regional fisheries staff participated in the scoping process and reviewed the DEIS.

Canandaigua Lake Water Withdrawl Proposal
Regional personnel have assisted in the evaluation of a plan by the City of Canandaigua to increase their permitted annual water withdrawal from Canandaigua Lake. Plans included a potential to decrease minimum flow to Canandaigua Outlet during periods of drought or other extenuating circumstances. Impacts to the lake as a result of the proposed increase appear to be very minimal and our focus was on the outlet. As part of our participation, regional personnel sampled the fishery in Canandaigua Outlet to establish current population parameters and assess the potential to negatively impact fishery resources from decreased flows and resultant habitat changes and low dissolved oxygen conditions. Preliminary results indicate that Canandaigua Outlet has a moderate sunfish and smallmouth bass fishery. Lower portions of the outlet are managed as a put and take trout fishery with brown trout being stocked. We will continue to work with the City to meet their needs as well as protect stream resources.

Region 9

Fisheries staff assisted 3 local Trout Unlimited Chapters planting trees on 3 trout streams. With the Western New York Chapter of TU, 200 trees were planted on the upper Cattaraugus Creek. and 100 trees were planted on Wiscoy Creek. With the Red House Brook Chapter of TU, 200 trees were planted on Mansfield Creek. The Upper Genesee River Chapter of Trout Unlimited planted 1,020 trees on the Genesee River. All trees were planted on areas with public fishing rights (PFR).

Regional Fisheries staff continued to spend significant effort working on Federal Energy Regulatory Commission (FERC) re-licensing of the New York Power Authority (NYPA) Niagara Power Project, one of the largest hydropower facilities in North America. It is anticipated the FERC re-licensing settlement agreement will contain several elements including funding for: fish and wildlife habitat improvement projects, fish and wildlife habitat protection (acquisition and easements), fishing access enhancements, and fish and wildlife research activities. Regional staff expect continued participation in this process.

Whirling Disease
Fisheries staff collected wild brown trout from Elm Creek and wild rainbow trout from McKinstry Creek and Hosmer Brook to be tested for whirling disease. Fish from all 3 streams tested negative. Additionally, trout were collected from 3 regional private hatcheries. Trout from these facilities also tested negative for whirling disease.

Extension, Education and Outreach

Region 1

Girl Scout Fishing Clinic
The Regional Fisheries Unit with assistance from local sportsmen, and the Bureau of Marine Resources conducted two fishing clinic for the Suffolk County Girl Scouts at Camp Edey on May 19. Over 50 girls attended the two clinics. The girls were provided with instruction in fishing regulations and angler ethics, fish identification, and basic fishing tackle. Then the girls were set up with baited rods and given the opportunity to catch fish. Many of the girls caught yellow perch and sunfish and all of the girls had a good time. Each girl was provided with a package of information on fishing opportunities on Long Island.

Girl Scout Family Fishing Clinic
The Regional Fisheries Unit with assistance from local sportsmen, the Bureau of Marine Resources and Law Enforcement conducted two family fishing clinics at the Suffolk County Girl Scouts Camp Edey on June 9. This was one of the Region's Free Fishing Events which allows the adults to fish without a license with their children. Over 50 families attended the two clinics. The families were provided with instruction in fishing regulations and angler ethics, fish identification, and basic fishing tackle. Then they were set up with baited rods and given the opportunity to catch fish. Fish caught included, largemouth bass, yellow perch and sunfish and everyone had a good time. Each participant was provided with a package of information on fishing opportunities on Long Island.

Cub Scout Fishing Clinic at Deep Pond
The annual Father's Day Weekend fishing clinic was held at Deep Pond on June 19. The Regional Fisheries Unit with the assistance of Law Enforcement and Region 2 provided instruction in fish biology, identification, aquatic ecology, basic fishing techniques, fishing regulations and angler ethics to over 125 Cub Scouts with their fathers. After the instruction all of the Cub Scouts were provided with fishing rods and given the opportunity to fish. Nearly all of the boys caught fish and everyone had a good time.

Lake Ronkonkoma Fishing Festival
In recognition of New York States annual free fishing weekend, Region 1 Fisheries with co-sponsorship from Suffolk County Parks and Ronkonkoma Outfitters Tackle Shop, held a family fishing festival at Lake Ronkonkoma County Park on June 26. Attendance was estimated at 500 by Suffolk County Parks staff and over 200 fishing rods were loaned out to novice anglers. Periodic showers and one period of heavy rain reduced attendance, but fishing was steady with sunfish, bass, and perch caught throughout the day. DEC staff from the Regional Fisheries Unit, Law Enforcement and Quogue Wildlife Refuge and volunteers from several local organizations were on hand to assist with the fishing and provide support services. In addition to the opportunity to experience fishing firsthand, children had the opportunity to win prizes in the casting contest.

Family Fishing Clinic at Hempstead Lake State Park
The Region 1 Fisheries Unit in cooperation with Hempstead Lake State Park held the annual Family Fishing Clinic on August 21,2004. Despite a threatening forecast, 85 children along with their parents or scout troop leaders attended. The purpose of the clinic is to allow families to learn about the sport of fishing and get a chance to try it. This is an officially designated Free Fishing Event so no license is needed to participate. The Fisheries Unit provided loaner rods and bait was provided by State Parks. Before the students can actually fish, they have to first go through a series of educational stations.

The first station is Aquatic Ecology, where they learn about the food chain and local pond life. A fish tank with representative fishes from McDonald Pond was a big hit with the kids. The next station was the Fish I.D. table where the students were taught about freshwater fishes of New York State and their habits. Many were astonished to learn that a largemouth bass can eat frogs and ducklings! Then came the Angler Ethics station, which was presented by Region 1 Environmental Conservation Officers Shana Hutton and George Wilber. The students learned why a freshwater license is important, and the reason for seasons and bag limits. Respecting other anglers and the environment were also discussed. Finally, the Fishing Tackle and Techniques station where the students learn about the equipment a fisherman uses to essentially fool the fish into biting. They are taught how to tie the improved clinch knot, and also create a basic freshwater float rig. Spincasting with an emphasis on safety is taught as well. Some lucky individuals used their new skills in the casting contest, to take home tackle prizes donated by Tent City.

Fishing on McDonald Pond was very good, with sunfish, an occasional bass and one large eel providing lots of action. The students were taught how to handle the fish and unhook them, and bait the hook. All kids learned casting by the end of the clinic. Many of the youngsters had their picture taken with the film provided by The Fishing Line. The rain held off until after the clinic was over and everyone went home happy.

I FISH NY Girl Scout Fishing Program at Camp Edey completes third year

The I FISH NY Program completed the third year of working with the Suffolk County Council of the Girl Scouts to provide a fishing instruction program at Camp Edey in the Town of Islip. Camp Edey is a day camp that has programs for about 150 girls from all over Suffolk County each week for eight weeks. The fishing program was offered every other Wednesday for the duration of the camp with the exception of one week which was rained out.

The fishing program consisted of two concurrent 45 minute sessions, one covering aquatic ecology, fish biology and identification, and regulations and angler ethics; and the second covering basic fishing tackle, practice casts and actual fishing time. Two groups of about 30 girls were provided instruction and fishing time during each of six periods during the day. Over the course of eight weeks the program was presented to over 400 girls ranging in age from 6 to 12.

For many of the girls this is their first fishing experience and many of them also caught their first fish. In addition to the basic instruction and opportunity to fish, each camper is provided with literature on fishing regulations and local fishing opportunities. Both the campers and the camp counselors are very excited about the fishing program. Many of the girls attend the camp for more than one week. Most of the girls that participated in the program more than once demonstrated a clear understanding of the principles presented during the program. The last week of the program, girls who had participated before were given more advanced instruction and allowed to be Junior Fishing Instructors and help younger girls who were just getting started fishing. In addition to Region 1 Fisheries Staff, Region 2 Fisheries Staff, ECO's, sportsmen volunteers and the camp counselors also assisted with the program.

The 11th Annual Long Island Fall Festival

The Region 1 Freshwater Fisheries Unit, Environmental Conservation Officers Ver Hague and Canary and several volunteers provided information to the public about freshwater fishing resources in New York and gave children an opportunity to fish in Heckscher Park Pond. This festival is held annually in early October and attracts over 250,000 visitors from all over the Tri-state area. One of the many highlights was the "Fishing Hole", where a total of 286 children participated in the fishing activities. The pond is off-limits year round to fishing with the exception of the Fall Festival, making this a unique opportunity for all, especially for those 91 children who had their very first fishing experience. The Fisheries Unit staff, Conservation Officers and volunteers provided bait, fishing rods, casting instructions, fish identification, and handling instructions to the children who participated, giving them the skills to enjoy a lifetime of freshwater fishing.

Region 1 Hosts Fall Fishing and Children's Festival

More than 2,000 people attended the annual Fall Fishing and Children's Festival on October 23 at Hempstead Lake State Park in West Hempstead, Nassau County. DEC's Region 1 Fisheries Unit ran the festival in cooperation with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP), "The Fishing Line" radio and television shows, and Entenmann's Bakery.

This festival was a specially designated free fishing event, and no fishing licenses were required. However, fishing licenses were offered for sale as a service to participants who wished to purchase them for future use. Many took advantage of this convenience, and over $250 in fishing licenses were sold.

The festival began at 10 AM and included instruction in fishing and fly fishing, a seminar in bass fishing, loaner rods, free bait and free fish cleaning. In addition, DEC, Orvis, the Salty Dog Fishing Camp and the Atlantic Bassmasters had exhibits, and the Long Island Chapter of Trout Unlimited provided fly-casting instruction.

The Fisheries Unit loaned 200 fishing rods to more than 500 eager participants. Volunteers from the Freshwater Anglers of Long Island and the Long Island Bassmasters were continuously untangling lines to help keep the rods circulating. One youngster's mother who offered to help untangled lines herself for more than an hour.

Children's activities also began at 10 AM and included an inflatable slide, pumpkin decorating, a magic show, and face painting. In addition, a casting contest was held in which kids could "catch" a pumpkin or "hook" a prize. Prizes were provided by the Westbury Sports Authority, Hempstead Tent City, and Orvis.

This festival was the highlight of a special fall trout stocking program in Nassau and Suffolk counties. Prior to the festival, DEC and OPRHP had stocked South and McDonald ponds in Hempstead Lake State Park with 1,100 trout. In addition, DEC stocked Upper Twin Pond, Oyster Bay Mill Pond, Massapequa Reservoir, Massapequa Creek, and 12 lakes in Suffolk County with trout on October 20. The stocking provides excellent prospects for fall fishing in Nassau and Suffolk counties. DEC will do a second stocking by Veterans Day, November 11.

12th Annual National Sportfishing & Outdoor Exposition

The Division of Fish, Wildlife and Marine Resources with Sportsman Education, Environmental Conservation Officers and Forest Rangers manned an information booth at the Sportfishing & Outdoor Exposition on January 20 -23 at the Nassau Veterans Memorial Coliseum in Uniondale. Region 1 staff from Freshwater Fisheries coordinated the DEC participation in the show and managed the set up and take down. The Region 1 Wildlife Unit did not participate because the January shotgun deer season was still underway. The highlight of the DEC display was the freshwater and marine fish mounts that represented the New York State records. Sixteen fishing licenses were sold. This would have been higher but attendance to the show was hindered by the 13+ inches of snow that fell from Saturday afternoon through Sunday.

Riley Avenue Elementary School

Regional Fisheries Manager Chart Guthrie gave presentations to Mr. Apicello's Third Grade Class and Ms. Skrzypecki's First Grade Class at the Riley Avenue Elementary School in Riverhead. The presentations included identification of local freshwater fishes and aquatic invertebrates, development of a food web and a short video showing electrofishing. The students were excited and inquisitive and many stayed after the presentations to learn more about local freshwater life. This program is a pilot for developing a program in the public school systems on Long Island.

As a follow up to the in class presentation given in May, Regional Fisheries Manager Chart Guthrie took Mr. Apicello's Third Grade Class and Ms. Skrzypecki's First Grade Class on a fishing trip to Deep Pond. All of the children in both classes caught fish and learned about fishing techniques and fish identification. In addition the Fisheries Staff demonstrated how to pull a seine and showed the children some of the other fish that live in the pond.

Region 1
Fishing Outreach Summary
Participants

Fishing Clinics (4)	315
Fishing Festivals (3)	2,800
Fishing Seminars (0)	--
School Programs (2)	100
Sweet Water Angler (0)	– (Not published in FY 04-05)
Girl Scout Camp (3)	400
Sportsman's Meetings (3)	90

Region 2

"Getting Started in Fishing" Classroom Program

This program continues to gain popularity with NYC teachers. This year we were not able to accommodate all those wanting to go fishing. Over 1,300 students from kindergarten through high school were taught lessons about fish. R2 Fisheries staff brought over 900 of these students to local waters to fish throughout the five boroughs of NYC. Inland lakes and the East and Hudson Rivers were fished, with catches including striped bass, bluefish, eels and tomcod.

Fishing Clinics

Family fishing clinics were held at Canarsie Pier, Brooklyn and Gantry Plaza State Park, Queens. Several of the participants caught their first fish. Weakfish were caught off Canarsie Pier and bluefish and striped bass off Gantry Plaza State Park.

Collaboration with other organizations/groups

Regions 1, 2 and Marine Resources I Fish NY staff worked with other local groups to help students learn to fish. Staff brought fishing gear to the NYC Parks Department's Recreational Conservation Corps (RCC) end-of-the-year event at Pelham Bay Park, Bronx. High school students from the five boroughs learned about DEC's marine recreational fishing regulations and then spent time fishing for local marine species.

R2 staff assisted in catch-and-release fishing events at the Lower East Side Ecology Center (LESEC). The programs went so well LESEC was prompted to run their own regular fishing events on Friday afternoons several times throughout the season.

NY Boatshow
R2 staff participated in the NY Boatshow at the Jacob Javits Center in NYC. This year's exhibit included a Safeboat display, a saltwater aquarium with local fish species and a children's fishing game. Sixty fishing rods were generously donated by Shakespeare to be used as prizes.

NYS Fair
R2 staff brought an assemblage of marine fish to the NYS Fair in Syracuse. Fish were collected from Long Island Sound and successfully maintained by DEC Marine Resources staff. Staff from Marine Resources, Division of Public Affairs and Education and R2 and R6 Fisheries staffed the aquarium and answered questions from the public.

New Staff for I Fish New York Program
Katie Sheehan has been working as an Aquatic Educator in the I Fish NY program since July, 2004 and has been a valuable asset to the program.

Region 3

Angler Meetings
To provide updates on DEC Fisheries activities and to receive feedback from local anglers, staff attended Federation of Sportsman's Clubs meetings in Dutchess, Orange, Sullivan and Ulster Counties in the spring of 2004 and 2005. PowerPoint presentations pertaining to a variety of trout topics were given at meetings of the Catskill Mountain and Ashokan Pepacton Chapters of Trout Unlimited in the spring of 2004 and 2005.

Region 5

Round Whitefish - Cascade Lake Study Publicized
Several Region 5 Fisheries staff appeared in three Champlain 2000 television segments produced by WPTZ - Channel 5 in Plattsburgh aired between December and June. Two segments concerned round whitefish restoration efforts with one segment focusing on egg take operations on Lower Cascade Lake between Keene and Lake Placid in Essex County. The second show on round whitefish covered stocking of fingerlings into Little Green Pond in Franklin County which will be a new broodstock water for the species. The third Champlain 2000 segment focused on a road salt impact study funded by the NYS Dept. of Transportation that centers on the Cascade Lakes. These lakes border Route 73 and have undergone increases in chloride levels. Researchers from Clarkson University and Paul Smiths College are heading up the study which will continue for several more years.

Region 6

Conservation Education Days
Region 6 fisheries staff participated in 3 of the 5 counties' conservation education days and fisheries and fishing messages are taught to 6th graders in all of the counties' events. The hands on lessons are taught in an outdoor setting and repeated 12 to 17 times throughout the day. St. Lawrence County held their event at the Indian Creek Nature Center on Upper and Lower Lakes where approximately 600 students where taught how to cast and were given an interactive presentation on the local aquatic food web. Four members of the regional fisheries staff participated in Jefferson County Environmental Awareness Days at Westcott Beach State Park, coordinated by Cornell Cooperative Extension. Over 1,100 sixth graders were presented with information regarding Lake Ontario fish communities and environment. Hands on activities with live and preserved fish generated considerable interest and enthusiasm.

Fifty-four "fisher kids" attended the annual fishing clinic held on Sauquoit Creek the first Saturday in June. The four hour clinic, at which several local fish and game clubs sent people, was held under rainy skies. Prizes and snacks provided by the groups assisting at the event held the kids' interest when the fish were not biting. Nearly all the participants (adults as well as the kids) caught fish, most of which were returned to the water. The site which was heavily stocked with fish taken from the raceways at the Rome Hatchery at the end of the stocking season was heavily fished for several days after the tournament.

Envirothons
Region 6 staff prepared and delivered Envirothon questions for the Aquatics section for Lewis, Jefferson, Herkimer, Otsego, Montgomery, and Fulton Counties. Lewis and Jefferson Counties had their own individual

events, whereas Herkimer, Otsego, Montgomery and Fulton Counties combined their schools to hold one event. Each Envirothon has test sections in Aquatics, Forestry, Soils, Wildlife and a unique Current Issue section each year. Teams of up to five students work together to answer questions in all 5 sections to compete to win their county and get a chance to go to the state championship. The 2004 state championships were held in Morrisville and a team from Nassau County won.

Region 7

Public Fishing Rights Brochures
Maps showing all Public Fishing Right (PFR) holdings, parking areas, and angler footpaths for every stream in the region were finalized and made available for public distribution. The GIS files used to create the maps were also converted into pdf files and are now available for downloading from the NYSDEC public website. Creation of individual brochures for each stream with information about the stream's fishery, regulations, and stocking policies is under way.

Family Fishing Day Clinic at Carpenters Brook Fish Hatchery, Onondaga County
Held on June 5, 2004 during National Fishing and Boating Week, Regional Fisheries staff conducted a day long fishing clinic which included 15 minute lessons on each of the following: *Angler Ethics and Fishing Regulations*, *Fish Identification*, *Care of the Catch*, and *Aquatic Ecology*. After the lessons, all of the kids had a chance to participate in a casting competition and to fish in the hatchery's fishing pond. Nearly 150 kids and adults participated during the morning and afternoon sessions that were offered.

Kid's Fishing Day at Chenango Valley State Park
Held on May 8, 2004, Regional Fisheries staff attended the third annual Kid's Fishing Day event at the state park. Staff provided informational lessons on fish identification, angler ethics, fishing tackle and gear, and knot tying. A live fish display was also provided and children and adults alike found the adult sea lamprey particularly fascinating.

Falcon Sportsmen Club 52nd Annual Children's Fishing Derby
On June 13, 2004 Regional Fisheries staff provided a live fish display at this event which was attended by approximately 300 children and their families. A large aquarium was set up and filled with a variety of warmwater fish. This allowed close inspection of several fish species common to central New York. A large fish petting tank was placed on the ground giving even the youngest angler a chance to make friends with the fishes.

Willow Planting
Staff distributed 7,000 willows, raised at the New York State Nursery, to various organizations for planting along trout streams throughout the Region.

Whitney Point Reservoir Crappie Derby
Staff attended the annual "Crappie Derby" at Whitney Point Reservoir on January 29, 2005 to provide information on the reservoir's fishery and answer angler's questions. An informational paper regarding the status of the reservoir's fishery was also developed for distribution at the derby and is also available from the Region 7 Fisheries office in Cortland.

11th Annual Finger Lakes Fishing Festival
On April 24, 2004 Regional Fisheries Unit assisted the Lime Hollow Nature Center in this highly successful event which uses the "Pathways to Fishing" program to introduce young people and their parents to fish and fishing. Over 200 children attended and moved through 10 learning stations where they were instructed on everything from casting and knot tying to fish biology and regulations. After completing the Pathways stations the children got the chance to catch their first trout in a stocked pond.

New York State Fair
Several Region 7 Fisheries staff members worked at the fair helping man the Division of Fish, Wildlife and Marine Resources booth inside the DEC Aquarium Building. Thousands of hunting and fishing licenses were sold using the DECALS automated licensing system which operated with very little down time. Questions from the public were answered during the license sales process. This was a 12 day event which ran from August 26 - September 6, 2004.

Conservation Field Day at SUNY Morrisville
On October 12, 2004 the Madison County public school system held this educational event for several hundred 6th grade school children from all over the county. A Regional Fisheries Biologist and Technician provided a live fish display and gave lectures to eight classes on fish biology and conservation.

Cayuga County Conservation Field Days
This two day event was held at Emerson Park in

Auburn on September 21 and 22, 2004. A Regional Fisheries Biologist provided a live fish display and gave lectures on fish biology and conservation to over 300 6th graders who came from school districts all over Cayuga County.

Onondaga County Family Sportsmen's Days
This event was held at Carpenter's Brook Fish Hatchery on Saturday and Sunday, September 25 and 26, 2004 to commemorate National Hunting and Fishing Day. A live fish aquarium containing mostly warmwater fish and a fish petting tank were set up both days. Department brochures and posters were set out for distribution and many questions about local fishing opportunities and resources were answered.

New York National Boat Show
Held at the Jacob Javits Center in New York City, a Region 7 Fisheries Biologist helped staff the Division of Fish, Wildlife and Marine Resources booth from January 3 - 7, 2005. This high-profile event draws over 100,000 people annually and is an excellent opportunity to promote New York's fishing resources to a wide and diverse audience.

Fishing Hotline
Both telephone and Department Website versions of the Region 7 Fishing Hotline were updated on a weekly basis. The telephone version received 150 - 400 calls per week and the Website version received even greater usage.

Region 8

Over 200 students get hands-on fisheries experience
The Department's Region 8 Fisheries unit teamed up with the non-profit Delta Labs for the fourth consecutive year to bring hands-on learning to area high school biology students. In fall 2004, close to 120 students observed DEC staff retrieve a gill net set the previous afternoon on the Barge Canal, followed by an electrofishing demonstration. This allowed students to see the different type of fish collected by each method. Students collected biological data from the fish, including learning how to age fish, along with basic limnological data from the canal. This year's events were well received by students, teachers and staff.

RIT students get hands-on limnology experience
The Department's Region 8 Fisheries unit brought hands-on learning to Rochester Institute of Technology environmental biology students for the third consecutive year. In fall 2004, close to 30 students participated with DEC staff in conducting a limnological survey of Irondequoit Bay.

Lake Ontario Focus on Fishing and Tourism
Region 8 staff participated in events in Sodus Point and Auburn designed to give people a better understanding of Lake Ontario and it's opportunities as a fishing and tourism destination. Cooperators included: Assemblyman Robert Oaks, USGS, USFWS, USCG, NY Sea Grant, Cornell University, Charter Boat Captains Association, Wayne County SWCD, Wayne County Sheriff's Office, Wayne and Cayuga County Tourism Offices, and Seaway Trails.

Informational Brochures
With help from Central Office, the Region posted its second brochure series. This 10 brochure set focuses on the public boat ramp sites across the 11-county region covering sites from lakes to large rivers and the Erie Canal. Future plans include a brochure series on the Region's trout steams.

Public Information a Major Effort in Region 8
Participation in public gatherings was used to disseminate information on area fisheries resources and their management. Two events attended by Regional Staff that drew thousands of people were the Rochester Outdoor show and the Region's National Hunting and Fishing Day Celebration. Staff were also at various weigh stations during the Seneca Lake and Canandaigua Lake Trout Derbies. While the effort at Seneca Lake included biological data collection, staff interacted with derby participants about the local fisheries, management, and non-native introductions at both derbies. Staff also represented the Department at numerous meetings, including various Fish and Wildlife Management Board, Trout Unlimited Chapters, Bass Masters, Monroe County Fish Advisory Board and Federation meetings

Region 8 Hosts Conservation Fund Advisory Board
Each year the Conservation Fund Advisory Board (CFAB) holds one of its meetings in one of the Regions. In August 2004, Region 8 had the honor of hosting the CFAB meeting. In addition to hosting the meeting , staff developed a two-day tour to highlight some points of interest in the Southern areas of the Region. Sites included, Honeoye Lake Wildlife Management Area, a Naples Creek's pool digger at Mark's circle, High-Tor Wildlife Management Area, Bath Fish Hatchery, a natural gas well site, and Seneca Army Depot.

Region 9

Participation in Outdoor Sporting Shows
Fisheries staff participated in the Hamburg Outdoor Show and the Erie County Fair.

Youth Fishing Clinics and Aquatic Education Efforts
In 2004/2005, Regional Fisheries staff continued to conduct educational efforts to introduce young people to sportfishing and spark interest in aquatic ecology. The outreach events were typically conducted in partnership with local sponsors such as sportsmens' federations and local government entities. A total of three free family fishing clinics were held (Hyde Park Lake-City of Niagara Falls, Tifft Nature Preserve-Buffalo Museum of Science, Chestnut Ridge Park-Erie County Parks Dept.) in Erie and Niagara Counties in 2004/2005.

Correspondence and phone calls
Fisheries staff handled hundreds of phone inquiries regarding fishing opportunities and management, fish stocking, private pond management and especially grass carp permits.

Internships/Volunteers
Regional fisheries staff benefitted from the use of volunteers when needed, especially on stream electrofishing surveys. Volunteers represented angler groups such as Trout Unlimited or were simply interested sportsmen. In 2004, 51 volunteers contributed 87 days of service to the Region. All interns and volunteers were approved through the Regional Director with appropriate paper work completed.

Public Access and Use

Region 3

Efforts to acquire additional Public Fishing Rights (PFR) continued, resulting in acquisition of 0.789 equivalent miles of PFR. An additional 0.5 equivalent miles of PFR and a 9.2 acre parcel are under contract.

White Lake
At the request of the Town of Bethel, Sullivan County, a cooperative agreement was developed to permit the town to construct a gazebo, flower beds and a path on an unused grassy area at the White Lake boat launch. This benefits both the town and DEC in promoting stewardship of the property.

Annsville Creek at Peekskill
Under contract with the City of Peekskill and with Hudson River Estuary Program funding, a fishing pier for people with disabilities was completed on Annsville Creek in Peekskill, Westchester County.

Delaware River at Cochecton
Following a lengthy process complicated by an adjacent landowner and Department of Transportation's (DOT) request that DEC complete a Full Environmental Assessment Form, a Memorandum of Understanding was signed to allow DEC to construct a parking lot and launch for car top boats at DOT's Cochecton Bridge. A boat launch had been previously located here but was discontinued in the mid-1980s. This project is strongly supported by the Town of Cochecton and the Upper Delaware Council.

Delaware River at Narrowsburg
Reconstruction of the Narrowsburg boat launch began, but was delayed due to contractor error resulting in a requirement that DEC obtain a revised Army Corps of Engineers permit. This months long process caused further delay and rendered this launch unusable for the 2005 recreational boating season.

Flood Damage
Extreme flooding in early April, 2005 caused extensive damage to DEC fishing and boating access sites on the Delaware, Neversink, and Rondout rivers in Sullivan, Orange and Ulster Counties. One site destroyed by the flooding was an "easy access" on the Neversink River constructed just last year.

Lake Welch
Fisheries staff electrofished Lake Welch on June 9 and 29, 2004, to assess centrarchid populations, to determine whether this New York State Parks-owned waterbody meets criteria for an experimental walleye stocking policy and to collect fish for mercury analysis. During a combined 1.17 hr effort (0.41 game fish only and 0.89 all fish), catch rates for largemouth and smallmouth bass were 21/hr and 9/hr, respectively with 9/h largemouth >= 12 inches and 2/hr >= 15 inches. No smallmouth >= 12 inches were caught.

PSD and RSD_{15} were 56 and 13, respectively, for largemouth. PSD and RSD_{14} were and 50 and 0, respectively, for smallmouth. Redbreast sunfish was the most abundant panfish and panfish size was excellent; PSDs for Lepomis spp. (sunfish) ranged from 50 for bluegill (RSD_8 30) to 67 for pumpkinseed. PSDs were in the desirable range of 40 - 70 for bass and 20 - 60 for panfish and indicate a good predator-to-prey balance.

In comparison to the last survey, conducted in May 11, 1993, black bass and yellow perch catch rates declined while redbreast sunfish catch rates quadrupled and Lepomis spp PSD and RSD_8 increased. In 1993, catch rates were: 54/h for largemouth, 29/h for smallmouth, and 107/h for yellow perch. Largemouth bass PSD was 58 (RSD_{18} = 18) and smallmouth bass PSD was 54 (RSD_{14} = 9), both slightly higher than in 2004. Bluegill PSD and RSD_8 were 66 and 0, respectively; redbreast PSD was 32 and RSD_8 was 0 (CPUE = 25/h). Yellow perch and bluegill were the dominant panfish species.

Declining bass catch rates and increasing RSD_8 for Lepomis spp. indicate population declines in black bass and reduced competition with, and predation on, panfish species may have occured. Differences in catch rates from 1993 to 2004 may be due to variability in time of survey, temperature, sampling, habitats sampled, and natural fluctuations in fish abundance and other factors. There is strong interest by some anglers to establish a walleye fishery within the Palisades-Harriman park system. While centrarchid PSD and RSDx suggests a good predator-prey balance, analysis of the predator catch data suggest this water is suited to experimental walleye stocking since CPUE for largemouth bass in excess of 15 inches did not exceed 6/hr, DEC's criteria for predator abundance in waters less than 300 acres (CPUE was 9/h in 1993).

There is no suitable walleye spawning habitat, thus, any walleye fishery would be hatchery-dependent. It is recommended that this water receive walleye fingerlings in an experimental stocking program and be re-surveyed in five years to determine its continued suitability for walleye stocking.

Ten largemouth bass ranging from 12.2 - 18.3 inches (avg. 14.4 inches) and six yellow perch ranging from 8.1 - 10.2 inches (avg. 8.1 inches) were collected for mercury analysis. Results of contaminant analysis indicate that neither species warrants a special health advisory beyond the general statewide consumption advisory.

Region 5

Access for People with Disabilities
Much design work was accomplished by Bureau of Operations and Construction to make a number of Region 5 facilities accessible. Plans were drawn up to remodel toilet facilities along the Lake Champlain corridor. Plans for access modifications were developed for fishing access sites at East Pine Pond, Follensby Clear Pond and Indian Carry in Franklin county. Meetings were also held with the Adirondack Park Agency to discuss jurisdictional matters and choose suitable natural materials for these projects.

Ticonderoga Launch Work Initiated
The Ticonderoga Boat Launch, located on Fort Ticonderoga Property in the Town of Ticonderoga, has long been in need of reconstruction. The timber bulkheads were failing, sediment had accumulated in front of the ramp and the floating docks were in disrepair. The Bureau of Fisheries completed the process of obtaining the permits necessary for reconstruction, and the Bureau of Design and Construction has designed a modern facility and put the project out to bid. Bids were opened in early February and the successful bidder was William J. Keller and Sons Construction Company. Construction of the new launch began shortly after Labor Day, 2004 and continued into 2005.

Long Lake Boat Launch Repairs Initiated
Recently Governor Pataki announced that funding would be provided for a modernization of the Long Lake Boat Launch, located in the Town of Long Lake, Hamilton County. To this end, Bureau of Fisheries staff met with Division of Operations Design Staff and plans were developed for this project. The design plan called for a repositioned concrete ramp which will extend to deeper water, eliminating the current problems associated with low water conditions. The design plan also incorporates a modern floating dock system, a carry down path for canoes and kayaks, and modifications to make the facility accessible to persons with disabilities. Construction work began in late 2004 and the launch was finished in May 2005.

DEC Assists on Schroon Lake Launch Design
Late in 2003, NYSDEC's Bureau of Fisheries entered into an agreement with the Town of Schroon Lake to undertake improvements to the Town of Schroon Lake Boat Launch, located in the hamlet of Schroon Lake. Design work for this facility has been completed and all the necessary permits have been obtained. The Town of Schroon Lake began reconstruction work in 2005.

Region 6

Fisheries staff provided input to the Grass River Unit Management Plan. Unit Management Plans are required by the State Land Master Plan and provide structure to natural resource management on state owned and conservation easement land. The Grass River Unit planning area includes all or part of four towns north and east of Cranberry Lake. A total of 214 ponded waters have been identified within the planning area boundaries. Most of these are small and on private land. There are 67 waters on state land or conservation easements in the area, of which 13 are named in the NYSDEC or Adirondack Lakes Survey Corporation (ALSC) databases. Five state land or easement waters are managed as Adirondack brook trout ponds and two as warmwater fisheries. For most unit waters existing fish community data is insufficient to develop management objectives. Fish community surveys will be top priority for these waters.

Region 7

Lake Access:
Oneida Lake - Staff negotiated a Fish & Wildlife Management Act (FWMA) Agreement between the State and the new owner of Lewis Point (south shore), thus ensuring shoreline and ice fishing access at this extremely popular location. The previous owner had always allowed ice fisherman to use the site but with the change in ownership this access had been threatened.

Public Fishing Rights:
Posting Check - Regional Fisheries Technicians continued the effort to replace damaged or missing signs, document beginning and ending points of PFR sections with GPS, and note any improper landowner posting problems on Region 7's 225+ equivalent miles of stream Public Fishing Right easements.

Nanticoke Creek - Staff purchased 0.63 equivalent miles of Public Fishing Rights, one Footpath Easement and one Fisherman Parking Area along Nanticoke Creek in the Town of Maine, Broome County.

Region 8

Access gains in Region 8
Two Fishing Access Sites (FAS) were developed and added to two river trails systems in Region 8 during FY 04/05. The first is on the Genesee River on Routes 5 & 20 in the Village of Avon. This connects with the trail of four other existing FAS on the Genesee River and Black Creek. This car top site was developed by NYSDOT during their bridge replacement and turned over to DEC. The second site is on the Chemung River on Grove Street in the City of Elmira. The site is on City property within the Flood Control area and was developed under a Municipal Agreement with the City of Elmira. It has a concrete ramp for small trailered boats and connects the trail of six existing FAS on the Chemung River.

Region 9

Stream Access
In 2004, a land donation for an angler parking area on Tonawanda Creek was completed. A handicapped accessible fishing platform was constructed on the Genesee River in the Village of Wellsville in cooperation with the Village. An angler parking area was developed on Wiscoy Creek. An easement with 0.42 miles of PFR was secured on East Koy Creek in Wyoming County. Agreements for purchasing one mile of PFR on Elton Creek and 0.56 miles of PFR on East Koy Creek were signed and are in the process of being completed. Considerable effort was made to be sure PFR and FAS areas were properly signed so anglers could find these sections and to insure that access sites were in good repair.

PFR maps and website
Updates were made to the 22 brochures which show Public Fishing Areas on all 28 streams in Region 9 with Public Fishing Rights. The color brochures, which are consistent with those developed in Regions 7 and 8, were printed in the Regional office as needed. In addition, all the brochures were available on the Bureau website in PDF format. Updates will be made to the brochures yearly as new PFR is acquired and regulation and management changes occur.

Fish Culture

Fish Culture Section

Hatchery Infrastructure Needs
A report summarizing the current status of DEC's Fish Hatchery System infrastructure repair needs was completed in winter 2003 and implementation of some of the identified repair needs commenced in 2004. Concrete resurfacing of some of Rome Hatchery's East Pond raceways and repair to the head box servicing those raceways were completed, with additional raceway resurfacing planned for 2005. Progress was made in developing the specifications for a replacement backup generator at Catskill Hatchery, with installation scheduled for spring 2005. Catskill Hatchery's water supply is highly dependent upon pumped well water so its backup generator must be replaced because it is wearing out and has become difficult to maintain.

Hatchery Best Management Plans (BMP's)
To comply with new wastewater discharge permit requirements, DEC's hatcheries producing 100,000 pounds or more of fish annually were required to develop and implement BMP's designed to minimize or prevent the release of significant amounts of pollutants attributable to hatchery operations. Elements of the plan include operating procedures to accomplish the following: to remove and dispose of fish mortalities, to store fish feed and therapeutic chemicals in a manner designed to minimize the possibility of spills, to maintain the structural integrity of rearing units and wastewater treatment systems, to minimize the discharge of waste solids during inventorying and transfer of fish, and to ensure that efficient feeding practices are used and documented. The BMP's were developed for Rome, Catskill, Salmon River, and Caledonia fish hatcheries.

New Sludge Removal Truck at Adirondack Hatchery Contributes to Record Low Discharge
A new 2,300 gallon sludge removal truck was put into use at Adirondack Hatchery in 2004, replacing a heavily used truck that had begun to wear out. The waste settling system at Adirondack Hatchery is cleaned many times each year, particularly during summer and early fall, and sludge is transported for land spreading via a specialized truck. Frequent cleaning of the waste system, meticulous operating procedures, and extensive use of a state-of-the-art low phosphorus fish food diet contributed to a record low phosphorus discharge (34.6 pounds) from Adirondack Hatchery in calendar year 2004.

Adirondack Fish Hatchery
In addition to raising and stocking 280,000 yearling landlocked Atlantic salmon for more than 50 NYS waters, hatchery personnel stocked approximately 250,000 coldwater fish from other hatcheries in 2004 - 2005. Our fry program produced 338,000 fry for Lake Champlain and Schroon Lake tributaries. Other species stocked included brook, brown, lake and rainbow trout and splake. Hatchery staff also stocked 50,000 walleye in several waters. Additionally, staff at the Adirondack Hatchery have been involved in many projects. Improvements to the Hatchery Visitor's Center, the production building and the garage have been made.

The Adirondack Hatchery Visitor's Center is constantly changing and improving. With the completion of the hatchery egg take video, a DVD player was purchased so that visitors could watch the video on demand. This 10 minute video gives visitors a brief overview of our spawning operation. New displays have been added including a scale model of an Oneida Lake trap net and new pictures showing different methods of stocking fish. More mounts have been added showcasing the region's diverse fish species. Improvements were made to the underwater video camera in our brood stock pond, allowing for a clearer view of the fish.

We received our new sludge truck last year. The reliability of this vehicle has made our frequent waste treatment facility cleaning much easier. The larger tank allows for more sludge to be collected and therefore less time spent transporting it.

Two recent R&I projects, preformed by contractors, provided much needed repairs to hatchery buildings. The metal siding on the production building had been pushed in and dented by the weight of the snow in the winter. The metal siding was replaced and reinforcements were added to ensure that the snow does no further damage to the building. The metal roof on the garage building is very old and the nails that hold it down were being pulled up by the ice and snow in the winter, creating a hazard for tires in the parking lot. The nails were all pulled and replaced with screws and the roof was repainted, adding years of life.

Improvements have been made to the smelt spawning channel that flows from Little Green Pond to Little Clear Pond. In order to protect spawning smelt from predators and also stop the transmission of unwanted species to the recently reclaimed Little Green Pond, removable screen covers were made by Region 5 Fisheries staff. Hatchery staff will put these covers on in the spring during the smelt run. The screens should prevent birds from preying on smelt or inadvertently carrying smelt eggs into the new round whitefish brood stock water.

The hatchery staff were once again involved in the Eggs In The Classroom Project. Eggs were distributed to 30 schools in Clinton, Essex, Franklin, Saratoga and Onondaga counties for students to hatch, raise and then stock. Each school group received 200 eggs. Judging by the replies from teachers, students and volunteers involved in the project it has been very successful and a very good learning tool for the students.

Bath Fish Hatchery

The Bath Hatchery stocked more than 700,000 trout and salmon during the 2004 spring and fall seasons. Streams, lakes, and ponds which covered nine counties were stocked in the Finger Lakes region. Seventy-five thousand pounds of lake, brown, and rainbow trout were produced during 2004-2005. Also 600,000 brown trout, 370,000 lake trout, and 200,000 rainbow trout eggs were incubated and hatched at Bath. In addition, we incubated 34,000 splake eggs which were shipped to the Chateaugay Hatchery for rearing.

A major safety issue was resolved with the construction of a chain link fence along Cold Brook. Cold Brook is the major tributary to Keuka Lake and experiences excellent spawning runs of rainbow trout in the spring as well as brown trout and landlocked salmon in the fall. The Bath Hatchery is situated on the headwaters of this stream which flows northerly along the western boundary of the property. Erosion is controlled by sheet piling that was installed in 1991 when the hatchery was reconstructed. The drop from the top of the sheet piling to the stream bed is in excess of six feet in some spots. There was concern that visitors, especially young children, may fall and injure themselves. A 4-foot high galvanized chain link fence was installed on top of the sheet piling for a distance of 350 feet.

The majority of the water utilized at the hatchery is from springs. We have one well which pumps 70-100 gallons per minute (gpm). This well failed on January 30, 2005. The motor and pump had to be replaced. With the help of the Bath DEC Operations crew we were able to pull the unit. A new motor and pump were purchased and installed. It is now in operation and supplying us with 70 gpm of much needed water.

The Cohocton River and Cayuta Creek are two of our most heavily stocked streams. They both receive heavy fishing pressure throughout the season. They are also float stocked by two different sportsmen groups. Yearling and two-year old brown trout are distributed evenly throughout the streams to alleviate fishing pressure at the bridge sites. Rubber rafts are utilized with 55 gallon barrels lashed to the rear to hold the fish. The barrels are cut open and mesh is put on the bottom to allow water to fill the cavity. The hatchery has worked with the volunteers to establish a safe number of fish per barrel. Float stocking is suspended if the water is too warm or the flow is too low. This exercise has been a complete success.

Various projects were carried out during 2004-2005. New garage doors were installed on the residence garage to put the finishing touches on this ongoing rehabilitation project. Just a few years ago the garage was structurally unsafe. It is now an important storage area for the hatchery. Another project was the building of a bridge across the spring creek to allow access for the lawn tractor. This was a safety issue since the tractor would have to travel on the road to reach this area in the past.

Rome Fish Hatchery

Rome Hatchery produced 154,000 lbs. of brown, brook and rainbow trout from April 1, 2004 to March 31, 2005. Feed usage was 217,000 lbs. for a conversion of 1.41 and a cost of 0.45/lb.

In Spring 2004 over 200 waters were stocked by Rome Hatchery staff. Over 650,000 brown trout and another 140,000 rainbow, brook and lake trout were stocked by Rome or transferred to other state hatcheries to be stocked throughout N.Y.S. Air stocking occurs in the spring with 32 waters being stocked including the Upper Hudson River.

In Fall 2004 Rome Hatchery stocked over 190 different waters. Twenty lakes and streams were stocked with brown trout fingerlings and tiger muskies. The remaining 170 waters were stocked by pontoon planes or helicopter with Temiscamie Hybrid Brook Trout. Rome also coordinates the stocking of

Little Tupper and Horn Lake strain brook trout by helicopter.

Pond wall rehab and paving occurred in fall 2004 and summer 2005 on all of our 35 east ponds. This construction has made for a much safer environment for both employees and the public. Along with this rehab new valves were installed on our lake water pipes giving us much more control in regulating flows.

A new kiosk was constructed to display pictures describing hatchery activities and procedures. This was landscaped to really enhance its appearance. New pond covers were constructed on 8 north ponds using bird netting. This had allowed us to sample and inventory fish without disrupting netting. Domestic brook trout out of these ponds so far are completely free of bird predation.

Hatchery Fish Production Annual Summary by Species
April 1, 2004 - March 31, 2005

	Fry		1"- 4 1/4"		4 1/2" - 5 3/4"		6" - 6 3/4"		7" - 7 3/4		8" Plus		Total	
Species	**Number**	**Weight**	**Number**	**Weight**	**Number**	**Weight**	**Number**	**Weight**	**Number**	**Weight**	**Number**	**Weight**	**Number**	**Weight**
Coldwater– Trout and Salmon														
Brown Trout			193,430	2,795	550,950	3,549	37,600	3,770	5,200	855	1,708,095	529,340	2,032,675	540,309
Rainbow Trout			102,700	837	4,100	219	47,200	4,244			383,305	107,211	537,305	112,511
Rt-steelhead					574,500	23,657	186,060	14,439					760,610	38,096
Lake Trout					138,200	5,133	517,050	28,588	39,200	3,621	101,800	15,992	796,950	53,334
Splake									1,500	268	17,040	4,783	18,540	5,051
Landlocked Salmon			408,000	404	1,000	67	317,600	29,678	45,070	5,290	2,800	2,149	774,030	37,588
Coho					250,000	13,658							250,000	13,658
Chinook			1,837,220	19,469									1,837,220	19,469
Kokanee														
Total Trout & Salmon	**750**	**242**	**2,632,980**	**26,093**	**1,798,740**	**59,643**	**1,115,830**	**82,368**	**116,670**	**8,930**	**2,319,630**	**701,364**	**7,554,260**	**883,410**
Warmwater														
Walleye	207,766,000	2,768	339,555	390	380,000	9,678							208,485,555	12,836
Muskellunge	445,000	16	158,400	26	11,390	264					23,500	2,220	638,420	2,526
Tiger Muskellunge							20,000	689			86,160	8,326	106,160	9,015
Lake Sturgeon	800	70	2,210	14	1,530	23	200	10	1,200	60	2,400	204	8,340	381
Paddlesfish											840	187	840	187
Pan Fish											3,000	600	3,000	600
Total Warmwater	**208,211,800**	**2,854**	**500,165**	**430**	**392,920**	**9,965**	**20,200**	**689**	**1,200**	**60**	**115,900**	**11,537**	**209,242,315**	**25,545**
Grand Total of Trout & Warmwater	**208,212,550**	**3,096**	**3,133,145**	**26,523**	**2,191,660**	**69,608**	**1,136,030**	**83,057**	**117,870**	**8,990**	**2,457,200**	**712,901**	**216,796,575**	**909,955**

Annual Report of Fish Species Stocked by Hatchery
April 1, 2004 - March 31, 2005

	Fry		1" - 4 1/4"		4 1/2" - 5 3/4"		6" - 6 3/4"		7" - 7 3/4"		8" plus		Total	
Species	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight
Brook Trout														
Adirondack			36,850	1,083	71,800	2,367					18,040	4,823	126,690	8,273
Bath											3,800	1,349	3,800	1,349
Caledonia									400	66			400	66
Catskill											5,630	1,584	5,630	1,584
Chateaugay			52,300	1,436	2,500	167	20,760	1,649			21,920	5,656	97,480	8,908
Randolph	750	242									21,560	8,678	22,310	8,920
Rome			2,480	69	205,640	10,826			22,000	3,097	44,080	15,371	274,200	29,363
Salmon River									2,700	403	8,870	3,058	11,570	3,461
Van Hornesville									600	100	4,250	1,370	4,850	1,470
TOTALS	**750**	**242**	**91,630**	**2,588**	**279,940**	**13,360**	**20,760**	**1,649**	**25,700**	**3,666**	**128,150**	**41,889**	**546,930**	**63,394**
Brown Trout														
Adirondack					650	28					68,580	17,061	69,230	17,089
Bath			84,430	1,838	51,400	2,132					110,430	32,413	246,260	36,383
Caledonia					700	36					260,100	95,958	260,800	95,994
Catskill			59,000	592					5,200	855	335,130	132,252	399,330	133,699
Chateaugay					800	53	15,000	1,350			110,840	30,000	126,640	31,403
Randolph											163,495	53,971	163,495	53,971
Rome					34,800	1,300	19,800	2,186			303,680	78,629	358,280	82,115
Salmon River			50,000	365							221,140	50,894	271,140	51,259
Van Hornesville							2,800	234			134,700	38,162	137,500	38,396
TOTALS			**193,430**	**2,795**	**88,350**	**3,549**	**37,600**	**3,770**	**5,200**	**855**	**1,708,095**	**529,340**	**2,032,675**	**540,309**
Rainbow Trout														
Adirondack											40,350	9,942	40,350	9,942
Bath			102,700	837			44,000	3,972			42,875	12,723	189,575	17,532
Caledonia											45,020	13,869	45,020	13,869
Catskill							2,000	167			50,110	13,726	52,110	13,893
Chateaugay					1,500	60					82,480	20,829	83,980	20,889
Randolph											17,670	5,943	17,670	5,943
Rome											55,370	15,636	55,370	15,636
Salmon River							1,200	105			11,370	3,590	12,570	3,695
Van Hornesville					2,600	159					38,060	10,953	40,660	11,112
TOTALS			**102,700**	**837**	**4,100**	**219**	**47,200**	**4,244**			**383,305**	**107,211**	**537,305**	**112,511**

Annual Report of Fish Species Stocked by Hatchery
April 1, 2004 - March 31, 2005

	Fry		1" - 4 1/4"		4 1/2" - 5 3/4"		6" - 6 3/4"		7" - 7 3/4"		8" plus		Total	
Species	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight
Rainbow Trout– Steelhead														
Chateaugay					20,000	752							20,000	752
Salmon River					554,550	22,905	186,060	14,439					740,610	37,344
TOTALS					**574,550**	**23,657**	**186,060**	**14,439**					**760,610**	**38,096**
Lake Trout														
Adirondack							13,750	794	14,350	1,138			28,100	1,932
Bath					70,700	2,600	50,500	2,405			89,500	14,107	210,700	19,112
Caledonia					38,200	1,698	194,600	11,400					232,800	13,098
Catskill							9,300	650					9,300	650
Chateaugay					30,000	835	16,900	1,112	24,850	2,483	7,300	1,040	79,050	5,470
Rome							8,000	467					8,000	467
Salmon River							224,000	11,760					224,000	11,760
Van Hornesville											5,000	845	5,000	845
TOTALS					**138,900**	**5,133**	**517,050**	**28,588**	**39,200**	**3,621**	**101,800**	**15,992**	**796,950**	**53,334**
Splake														
Adirondack											3,940	940	3,940	940
Chateaugay											11,100	3,326	11,100	3,326
Rome									1,500	268	2,000	517	3,500	785
TOTALS									**1,500**	**268**	**17,040**	**4,783**	**18,540**	**5,051**
Landlocked Salmon														
Adirondack			408,000	404	1,000	67	200,830	19,161	37,400	4,418	2,800	2,149	650,030	26,199
Bath							43,000	3,886					43,000	3,886
Catskill							4,500	459					4,500	459
Chateaugay							64,630	5,739	7,670	872			72,300	6,611
Van Hornesville							4,200	433					4,200	433
TOTALS			**408,000**	**404**	**1,000**	**67**	**317,160**	**29,678**	**45,070**	**5,290**	**2800**	**2,149**	**774,030**	**37,588**
Coho														
Salmon River					250,000	13,658							250,000	13,658
TOTALS					**250,000**	**13,658**							**250,000**	**13,658**

Annual Report of Fish Species Stocked by Hatchery
April 1, 2004 - March 31, 2005

	Fry		1" - 4 1/4"		4 1/2" - 5 3/4"		6" - 6 3/4"		7" - 7 3/4"		8" plus		Total	
Species	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight
Chinook														
Caledonia			494,920	4,218									494,920	4,218
Salmon River			1,342,300	15,251									1,342,300	15,251
TOTALS			**1,837,220**	**19,469**									**1,837,220**	**19,469**
Total Trout & Salmon	**750**	**242**	**2,632,980**	**26,093**	**1,336,840**	**59,643**	**1,125,830**	**82,368**	**116,670**	**13,700**	**2,341,190**	**701,364**	**7,554,260**	**883,410**
Walleye														
Chautaqua	116,000	2	208,000	191									324,000	193
Oneida	207,650,000	2,766	125,000	2,066	231,500	6,742							208,006,500	11,574
So. Otselic			131,555	199	23,500	870							155,055	1,069
TOTALS	**207,766,000**	**2,768**	**464,555**	**2,456**	**255,000**	**7,612**							**208,485,555**	**12,836**
Muskellunge														
Chautauqua	445,000	16	158,400	26	11,390	264					23,500	2,220	638,420	2,526
TOTALS	**445,000**	**16**	**158,400**	**26**	**11,390**	**264**					**23,500**	**2,220**	**638,420**	**2,526**
Tiger Muskellunge														
So. Otselic							20,000	689			86,160	8,326	106,160	9,015
TOTALS							**20,000**	**689**			**86,160**	**8,326**	**106,160**	**9,015**
Pan Fish														
Chautauqua											3,000	600	3,000	600
TOTALS											**3,000**	**600**	**3,000**	**600**
Lake Sturgeon														
Oneida	800	70	2,210	14	1,530	23	200	10	1,200	60	2,400	204	8,340	381
TOTALS	**800**	**70**	**2,210**	**14**	**1,530**	**23**	**200**	**10**	**1,200**	**60**	**2,400**	**204**	**8,340**	**381**
Paddlefish														
Oneida											840	187	840	187
TOTALS											**840**	**187**	**840**	**187**
Total Warmwater Fish`	**208,211,800**	**2,854**	**625,165**	**2,496**	**267,920**	**7,899**	**20,200**	**699**	**1,200**	**60**	**116,030**	**11,524**	**209,242,315**	**25,545**

Endangered, Threatened, and Special Concern Species

Region 1

Banded sunfish rescue

In advance of Brookhaven Natural Laboratory initiating a restoration project on the headwaters of the Peconic River, the Region 1 Fisheries Unit directed an effort to rescue banded sunfish (*Enneacanthus obesus*) from known habitat in the restoration area prior to the dewatering of the area. The Regional Fisheries Unit used stream electrofishing equipment provided by the Region 3 Fisheries Unit to sample the downstream portion of the restoration area. In the sampling we were able to collect 51 banded sunfish. Most of the sunfish were between 20 and 50 mm in length. All were transferred in good condition into Zeeks Pond, a pond on the Lab Site with only banded sunfish in it.

During the course of our sampling we determined that the best way to collect these animals was to run a dip net through the vegetated shallows. This technique was much more effective than electofishing at collecting banded sunfish. Based upon this information we directed Brookhaven National Laboratory to complete the sampling of the restoration area using dip nets and provided them with the dip nets necessary to complete the task. Brookhaven Laboratory Staff and volunteers were able to collect another 52 banded sunfish from the restoration area.

Region 5

Endangered, Threatened, and Special Concern Species

In May 2004, Little Green Pond in the Town of Santa Clara, Franklin County, was stocked with 2,000 round whitefish fingerlings about one inch in size. Little Green Pond is part of the Adirondack Fish Hatchery grounds and is closed to fishing. The pond was reclaimed with rotenone to eliminate competitive/predatory species in August 2003. Round whitefish are an endangered species native to the Adirondacks which were once quite common in larger lakes. Eggs were collected from wild fish trapnetted in Lower Cascade Lake, Essex County, in November 2003. The eggs were hatched and reared at the Constantia Hatchery on Oneida Lake. Personnel from the Van Hornesville and Adirondack Fish Hatcheries assisted with transportation and stocking efforts. Additional eggs were taken in 2004. In late November, 10,000+ eggs were collected from 42 pairs trapnetted in Lower Cascade Lake, Essex County. An additional 50+ round whitefish were collected, but released without taking gametes. It is hoped that round whitefish will establish a broodstock population in Little Green Pond from which eggs and adult fish can be taken in the future. The fish stocked in 2004 and 2005 should mature in three to four years. Assessments made by Cornell researchers in June 2005 found fish were already averaging nearly nine inches in length.

Region 6

Conservation of rare species requires broad-reaching surveys to detect changes, and these surveys offer insight for both protection and restoration once problems are detected. Major accomplishments in 2004-05 have been possible through cooperation of many Regional DEC staff and biologists from other agencies.

1) State Wildlife Grants (SWG) program has completed its third year of planning, and three fish projects are underway. Two more are funded, but have been plagued by delays in formalizing the contracts. The Comprehensive Wildlife Management Plan (CWCS) is nearly completed.
2) Evaluation of recovery efforts for round whitefish and lake sturgeon have continued with netting in 2004-2005 in several Adirondack lakes and with netting in the St. Regis, Genesee and Black Rivers. Small round whitefish (stocked at 1 inch) were reared and stocked for the 5th year, lake sturgeon for the 11th year and paddlefish stocking continues for the 7th year. A lake sturgeon plan for the next ten years of management was developed and reviewed.
3) This was the third year of surveys of lesser-known fishes in watersheds to fill in knowledge typically not included in Regional surveys. The watershed summaries have tables showing which major waters have which species, and there are species annotations. In the Susquehanna watershed, we sampled 131 locations and summarized catches for 85 species. The Erie Niagara watershed summary was advanced with recent sampling of Cattaraugus Creek and is nearly complete. With new information from samples collected at 121 sites from 1999 to 2004, there are now annotations for the 114 species known there.

4) Exceptional catches from surveys in 2004-2005 at 286 sites include eastern sand darter from Conewango Creek, comely shiner in two locations in the Susquehanna, a second year of longear sunfish from Johnson Creek, mountain brook lamprey from Ischua and W. Br. Conewango Creeks, black bullhead from Mud Creek near Whitehall, Iowa darters from Junius Ponds and bridle shiners from Paradox Lake. Some of these were part of biomonitoring work (at 16 sites) that will be a helpful part of development of an IBI. This was done in conjunction with RIBS work on macroinvertebrates by Bob Bode's group.

The Watertown Biologist Mark Craig and Utica Biologist Emilio Rende have both been assisting the Nature Conservancy on two of their sensitive sites. Emilio has regularly been involved with the Rome Sand Plains committee and Mark has done a number of activities on the Chaumont Barrens including photography and site ID along with GPS/GIS mapping of the area and also some minor maintenance. Both of these sites are well known for a wide variety of plants which are rare to the Region.

Region 9

Paddlefish Restoration

First initiated in 1998, New York's effort to restore paddlefish entered its seventh year in 2004. Paddlefish reared at Oneida Hathchery were released into Allegheny Reservoir (1998 - 46, 1999 - 535, 2000 - 135, 2001 - 1,878, 2002-762 , 2003-778, 2004-803). Minute coded wire tags were inserted into the paddles of all paddlefish before release for subsequent identification of stocking site origin and date. Nine reports of paddlefish either observed swimming, stranded or caught angling were received in 2004 with the largest paddlfish reported at approximately 40 inches. Stocking and tag recovery information was forwarded to MICRA.

Administration

Statewide

State Wildlife Grants Program and the Comprehensive Wildlife Conservation Strategy
Bureau of Fisheries Central Office staff member, Lisa Holst coordinated the creation of the New York State Comprehensive Wildlife Conservation Strategy (CWCS), a requirement of continued funding under the federal State Wildlife Grants Program. The CWCS is a statewide effort to identify "species in greatest need of conservation," the threats to their health and habitat, and the actions needed to protect and improve their populations. The CWCS identifies over 500 species ranging from mammals to insects including 40 freshwater fish species and 51 marine and diadromous fishes. DEC Bureau of Fisheries led the effort to identify threats and remedies for these fish species with help from fisheries researchers and professionals from across the state. Freshwater fish species included in the CWCS are listed below:

Atlantic salmon	Mooneye
Banded sunfish	Mountain brook lamprey
Bigeye chub	Mud sunfish
Black redhorse	N. American ninespine stickleback
Blackchin shiner	Ohio lamprey
Bloater	Paddlefish
Bluebreast darter	Pugnose shiner
Heritage brook trout	Redfin shiner
Comely shiner	River redhorse
Deepwater sculpin	Round whitefish
Eastern sand darter	Sauger
Gilt darter	Shortjaw cisco
Gravel chub	Shortnose cisco
Iowa darter	Silver chub
Ironcolor shiner	Spoonhead sculpin
Kiyi	Spotted darter
Lake chubsucker	Streamline chub
Lake sturgeon	Swallowtail shiner
Longear sunfish	Swamp darter
Longhead darter	Western pirate perch

The CWCS recommendations are organized by the major watersheds of the state, further enabling our staff to implement the research and management of these rare fish species. Recommendations included research actions, planning needs, management and restoration actions, regulatory and legislative needs, information sharing needs, incentives to landowners, and land protection recommendations. Recommendations from the CWCS will be funded through future State Wildlife Grants. The CWCS was released for public comment in August 2005 and submitted to the U.S. Fish and Wildlife Service for approval on September 30, 2005.

Region 1

Boating Safety Training
The entire Regional Fisheries Unit, Fisheries Manager Chart Guthrie and Seasonal Laborers Mike DiMarco and Joe Cutrone, attended the two day Boat Handling and Safety Course taught by the Region 1 Marine ECO's. The course gave valuable instruction on boat handling and the rules of the road along with a full day of hands on experience**.**

Regional Fisheries Unit hires a Biologist
The Region 1 Fisheries Unit is pleased to announce the appointment of Heidi O'Riordan to the position of Biologist 1 (Aquatic) Trainee 2. Heidi has seven years of experience with the Department and will be a significant asset to the Unit. With this appointment permanent staff in the Regional Fisheries Unit is now 50% of what it was in March of 2003.

Fuvial Geomorphology/Stream Restoration Workshop
Freshwater Fisheries Biologist, Heidi O'Riordan attended a workshop given by John Parish and Dana Chapman at the Finger Lakes Resource Conservation & Development Council in Cayuga County. Fluvial Geomorphology is defined as a science that assesses the shape and form of a watercourse and the physical processes responsible for that form. It requires the integration of biological, chemical, physical and engineering disciplines. The two day introductory workshop included 1 ½ days of classroom instruction followed by a field trip to a project site at Owasco Inlet Channel where workshop attendees were able to assess and identify channel features, problem areas and natural processes that occur in a waterway from a fluvial geomorphological perspective. Flow analysis, bed and bank characteristics, storm water management, bank

stabilization, stream realignment, sediment deprivation or deposition, data collection models, and appropriate field techniques were some of the many topics discussed. Information and techniques and will be shared with Natural Resources staff and applied to any stream restoration projects within the Region.

Angler Survey Course
Regional Fisheries Manager Chart Guthrie and Biologist 1 Trainee Heidi O'Riordan attended an Angler Survey Course at the White Eagle Conference Center in Hamilton on January 11th -13th. The course was taught by Roger N. Lockwood from University of Michigan's School of Natural Resources and Environment and covered a wide array of topics including: survey types and designs, objectives, random sampling techniques, statistical methods, interviewing strategies, clerk training and supervision needs. A good portion of the course was left for presentations of past surveys and to troubleshoot specific needs or problems for ongoing or proposed surveys around the State. Lockwood and other course attendees had discussions and made suggestions to assist with any of the surveys. The course contents were especially beneficial to Region 1, as we plan to conduct a survey in Suffolk and Nassau Counties to assess our trout stocking efforts.

Storm Water Management Workshop
Fisheries Biologist 1, Heidi O'Riordan attended a Storm Water Management Workshop hosted by The Nassau County Storm Water Management Program at the Freeport Recreational Center on February 15th. The workshop provided information on erosion and sediment control to contractors, construction site managers, building inspectors, plan reviewers, code enforcement officers and engineers and. Donald Lake, Jr., Engineering Specialist from the New York State Storm Water Control Committee gave a excellent overview of erosion and sediment control practices, planning and design principles, soil loss, BMPs, operation and maintenance, and post-construction requirements. Dave Gaspar, a Storm Water Control Specialist form Region 1's Division of Water reviewed General permit GP-02-01, SWPPP (Storm Water Pollution Protection Plan) requirements and what is looked for and evaluated during site inspections. Lastly, the Nassau County Department of Public Works went over Nassau County Drainage Requirements. The workshop was a thorough overview for all that attended but mostly eye-opening to the onsite contractors as they are the responsible parties when the NYSDEC comes for an inspection. The Fisheries Unit will benefit from this training when large scale construction projects encroach on or will affect Long Island's fresh waters. Violations will be recorded and referred to the Division of Water.

Strategies for River Restoration: Fisheries Biologist 1, Heidi O'Riordan attended a River Restoration Workshop on February 2nd in Liverpool, NY. The workshop was offered by Quantitative Environmental Analysis, LLC and Kleinschmidt Associates and provided a holistic view of watershed restoration projects requiring dam removal, fish passage, water use management, and stream channel restoration. Additional topics included water quality, best management practices for road crossings, riparian buffer restoration, stake holder and community involvement, and a case study of a New Hampshire river restoration project. Both the Freshwater Wetlands Unit and the Fisheries Unit will utilize the information provided in the planning or evaluation of watershed projects.

Fundamentals of Project Management: Fisheries Biologist 1, Heidi O'Riordan attended a half day course on The Fundamentals of Project Management. The course was held in East Setauket at Marine Resources and instructed by Mary Probst from Central Office. The course enabled participants to identify the triple constraints of project management, utilize project planning tools, establish milestones that indicate the success of projects, and to conduct project meetings that produce results. There were group discussions where individuals were able to share project ideas, establish goals, and a plan to execute the project in an effective way. Also included was problem solving, ways to make adjustments, and factors that limit resources. The course was well worth the half day, extremely convenient, and provided simple project management tools that will be used time and again.

Measuring Program Performance, Results Driven Management: Regional Fisheries Manager Chart Guthrie attended a one day workshop presented by the Organization of Wildlife Planners on Measuring Program Performance. The workshop emphasized the essential need for Monitoring and Evaluation to complete the Strategic Planning process. The workshop also provided the opportunity for staff to work together to develop specific performance measures and targets for existing Bureau goals and objectives.

Region 2

New staff for I Fish New York Program
Katie Sheehan has been working as an Aquatic Educator in the I Fish NY program since July, 2004 and has been a valuable asset to the program.

Region 3

Triploid Grass Carp Stocking Permits
Region 3 staff issued a total of 289 permits (135 reissues) to stock triploid grass carp (TGC) in 2004. From 1991 through 2004 a total of 3,946 TGC permits have been issued in the region. Over one third of these were reissued permits for waters that already had permits to stock these fish in previous years. Also during this period, 137 of these permit applications required additional review following the SEQRA process given that the ponds were over 5 acres in size or had permanently flowing outlets. We estimate that over 2,400 different water bodies in Region 3 have received permits to stock TGC since 1991.

American Fisheries Society
Regional staff attended the 2005 New York Chapter meeting held in Syracuse. Leslie Surprenant continued as editor of the New Chapter Newsletter and Executive Committee member, and Mike Flaherty was elected for a 1 year term as President Elect for 2005.

Region 6

The final Environmental Impact Statement (EIS) for the proposed use of triploid grass carp to control aquatic vegetation in Otter Lake, Oneida County, was received and reviewed by regional fisheries staff. All DEC concerns were addressed in the supplement to the main EIS. The only comments received during the comment period were from the APA who has jurisdiction because of its potential impact to the lake's wetland complex. Until the APA issues its wetlands permit, regional Fisheries staff will not issue the grass carp stocking permit. Because of delays in getting information to DEC to review, and the need to repair the dam at the outlet of the lake, this permit review process has been on-going for seven years.

A Utica pet shop was found with an adult snakehead on display. The owner had the fish for several years. Recent state and federal regulation changes make it illegal to possess snakeheads in NY. Rather than destroying the fish, it was donated to the SUNY Brockport biology department where it is now used as a teaching tool as part of the preserved fish collection.

Utica staff trained 99 regional DEC staff in CPR and 38 in First Aid. He also was the lead instructor for the statewide divisional water safety class conducted at Herkimer County Community College and West Canada Creek that was attended by 23 DEC staff.

Region 7

Fisheries Database Management
A total of 29 surveys were sent into the Bio-Survey Unit during the past year and 24 Data Verification Reports were received, reviewed and returned for final inclusion into the Statewide Data Base (SWDB). A massive effort to transcribe all survey data for the Region 7 Finger Lakes from the past 20 years for inclusion in the Database also began. All data from 101 surveys related to sites, fishing gear, effort, and water chemistry were entered and verified for accuracy. Significant progress was also made in entering individual fish records from these 101 surveys.

Unit Management Planning
Staff supplied fisheries resource data and management information for several Division of Lands and Forests Unit Management Plans (UMP).

Permits and Licenses
The following number of permits and licenses were issued by the Fisheries Unit:
Bait Licenses - 62; Farm Fish Pond Licenses - 151; Triploid Crass Carp Permits - 256; Permits to stock or remove fish - 29; Piranha Permits - 0.

Region 8

Triploid Grass Carp Permits
The 397 permits issued was slightly below the previous year's record 429. It is too soon to tell if this is a start of a leveling off of grass carp requests after a steady increase each year over the previous five years.

Farm Fish Pond Licenses
The Region issued 178 farm fish pond licenses in FY 2004, a slight increase from the 164 issued in FY 2003. There is no fee for these licenses.

Stocking Permits
The Region issued 17 stocking permits during FY 2004. There is no fee associated with this permit.

Bait Licenses
The Fisheries Keyboard Specialist has the responsibility of issuing bait licenses. Eighty licenses were issued with $1,024.50 collected in FY 2004.

Piranha Permits
The Region issued one piranha permit in FY 2004. There is no fee associated with this permit.

Statewide Comprehensive Wildlife Management Strategy
Region 8 staff biologists Matt Sanderson co-chaired the Southwest Lake Ontario Watershed Team while Brad Hammers co-chaired the Susquehanna Watershed Team. Watershed review teams took the recommendations for species of greatest conservation need developed by DEC staff and helped craft conservation actions for each of the major watersheds in New York. These recommendations will appear in the CWCS submitted to the US Fish and Wildlife Service, and serve as New York's blueprint for managing species of greatest conservation need.

North East Aquatic Plant Management Society Annual Meeting
In January of 2005, Region 8 biologist Matt Sanderson attended the annual meeting of the Northeastern Chapter of the Aquatic Plant Management Society. Robert Johnson of Cornell University was on the agenda to deliver a presentation on the results of the Waneta Lake fluridone treatment monitoring. Matt attended in case a regional perspective was needed, and to interact with members of the aquatic plant management community.

New York State Tri Society Meeting
In February of 2005, Region 8 biologist Matt Sanderson and Regional Manager Webster Pearsall attended the combined annual meetings of the New York Chapters of the American Fisheries Society, the Wildlife Society, and the Society of American Foresters.

Lower Lakes Section of the Great Lakes Fishery Commission
In March 2005, Region 8 biologist Matt Sanderson attended the annual meeting of the Lower Lakes Section of the Great Lakes Fishery Commission.

Training and Staff Development
Region 8 biologists Brad Hammers and Matt Sanderson attended training courses in the following areas: Stream Restoration Workshop given by the US Army Corps of Engineers; hazard Analysis and Critical Control Points (HACCP) given by the US Fish and Wildlife Service; Creel Census given by NYSDEC Division of Fish and Wildlife; and Geographic Information Systems given by NY Chapter of the American Fisheries Society. Regional Fisheries Manager Pearsall joined in the Creel Census training.

Lake Placid AFS 2006
The DEC has been awarded the 2006 annual meeting of the American Fisheries Society. Founded in 1870, AFS is the oldest and largest organization of fisheries scientists in the world. Fisheries Manger Pearsall is Chair of the Marketing and Promotions Committee while Brad Hammers and Matt Sanderson are members of the Registration and Audio Visual committees respectively. The September 10-14, 2006 meeting is anticipated to bring over 1,500 people to the Village.

Region 9

Triploid Grass Carp Permits
The number of triploid grass carp permits issued in 2004 was 542. Numbers of new permits and renewals continue to increase each year. Grass carp have become popular with the private hatcheries and apparently have become a substantial source of income, with local distributers aggressively encouraging previous permit holders to renew their permits every two years.

Fish Stocking Permits, Farm Pond Licenses
In 2004, 16 new fish stocking permits and 80 farm fish pond licenses were issued in Region 9.

Statewide Fisheries Survey Database
The Watershed Index Numbering (WIN) system used for identifying all waters in New York State was found to be in error for about 500 waters in Region 9 - mostly small manmade ponds. This was corrected in the Waters table of the database. Additional corrections were made to a few waters in the Erie-Niagara and Ontario watersheds.

The Waters table of the database was checked to make sure all important waters had the most commonly used name for that water. The “alias” field has been removed from the Survey Cover form.

In the database on the individual fish forms, missing values for "wild or stocked" were confusing. A blank in this field was considered a "null" value, or not evaluated. Since the region recently updated the database to include over 70 surveys from Chautauqua Lake for 1988-2003, it was found that stocked muskellunge were identified as hatchery, but wild muskellunge were not identified as wild. A fish with no fin clip was left as blank on the survey forms when it should have received an "NC" for checked but no fin clip. A review of all of these surveys corrected the problem and now all muskellunge from Chautauqua Lake are identified as either wild or stocked.

In the Gear Performance forms, many errors were found for the time an electrofishing gear was fished; some errors were due to the changes in database software as the Database has evolved over time. Each of 2,000 individual lines of regional electrofishing time was checked and about 200 were corrected.

A review of the 70 Chautauqua Lake surveys recently entered into the database showed that for 10 trawling surveys, a number of fish were omitted from the individual fish forms. Approximately 20,000 fish were added to these surveys. Additionally, ages were added for about 10,000 Chautuaqua Lake fish.

Bureau of Fisheries
2004-2005 Staffing

CENTRAL OFFICE

Administration

Stang, Douglas	Biologist 4 (Aquatic)

Public Use and Extension

Woltmann, Ed	Biologist 3 (Aquatic)
Meschino, Joelle	Laborer (Seasonal)

Inland Fisheries

Keeler, Shaun	Biologist 3 (Aquatic)
Daley, James	Biologist 2 (Aquatic)
Hurst, Steve	Biologist 1 (Aquatic)
Linda Richmond	Program Aid
James Andersen	Clerk I
Miano, Jacob	Laborer (Seasonal)

Fish Culture Section

Hulbert, Philip	Fish Culturist VI
Buell, Henry	Fish Culturist V
LaBoissiere, Mary	Secretary 1

REGION 1

Guthrie, Charles	Biologist 2 (Aquatic)
Henson, Fred	Biologist 1 (Aquatic) - transferred out 5/04
O'Riordon, Heidi	Biologist 1 (Aquatic) - appointed 9/04
DiMarco, Michael	Laborer (Seasonal)
Cutrone, Joseph	Laborer (Seasonal)

REGION 2

Cohen, Melissa	Biologist 1 (Aquatic)
Levy, Amanda	Laborer
Sheehan, Katie	Laborer

REGION 3

Elliot, Wayne	Biologist 2 (Aquatic)
Pierce, Ron	Biologist 1 (Aquatic)
Angyal, Bob	Biologist 1 (Aquatic)
Surprenant, Leslie	Biologist 1 (Aquatic)
Flaherty, Mike	Biologist 1 (Aquatic)
VanPut, Ed	Fish and Wildlife Technician 3
Falk, Art	Fish and Wildlife Technician 3
Wysocki, Linda	Fish and Wildlife Technician 2
McNamara, Tim	Fish and Wildlife Technician 1 (Seasonal)
Zerlkle, Anthony	Fish and Wildlife Technician 1 (Seasonal)

REGION 4

Slingerland, Donald	Biologist 2 (Aquatic)
McBride, Norm	Biologist 1 (Aquatic)
Zielinski, Dan	Biologist 1 (Aquatic)
Sicluna, Joe	Biologist 1 (Aquatic)
Cornwell, Dave	Fish and Wildlife Technician 2
Linhart, Fred	Fish and Wildlife Technician 3
Martel, Al	Fish and Wildlife Technician 3
Collins, Kandy	Keyboard Specialist 2
Ryan, Bruce	Fish and Wildlife Technician 1 (Seasonal)
Strassenburg, Jeff	Fish and Wildlife Technician 1 (Seasonal)
Krutz, John	Fish and Wildlife Technician 1 (Seasonal)
Kenney, Jim	Laborer/ FWMA Patrolman (Seasonal)

REGION 5

Schoch, William	Biologist 2 (Aquatic)
Durfey, Lance	Biologist 1 (Aquatic)
Preall, Richard	Biologist 1 (Aquatic)
Demong, Leo	Biologist 1 (Aquatic)
Brown, Raymond	Fish and Wildlife Technician 3
Sausville, Jennifer	Fish and Wildlife Technician 2
Shanahan, Thomas	Fish and Wildlife Technician 1
Beatty, Jeannine	Secretary 1
Nettles, David	Fishery Biologist (USFWS)
Stephenson, Bethany	Environmental Educator Asst. (Seasonal)
Inglee, Jeffrey	Fish and Wildlife Technician 1 (Seasonal)
Duensing, Sara	Fish and Wildlife Technician 1 Seasonal)
Geil, Kevin	Fish and Wildlife Technician 1 Seasonal)
Brooks, Johnathon D.	Laborer (Seasonal)
Trummer, James	Laborer (Seasonal)

REGION 6

Flack, Frank	Biologist 2 (Ecology)
Carlson, Douglas	Biologist 1 (Aquatic)
Hasse, Jack	Biologist 1 (Aquatic)
Klindt, Roger	Biologist 1 (Aquatic)
McCullough, Russ	Biologist 1 (Aquatic)
VanMaaren, Chris	Biologist 1 (Aquatic)
Adams, Richard	Fish and Wildlife Technician 3
Town, Blanche	Fish and Wildlife Technician 2
Iloff, Donna	Keyboard Specialist 1(Part-time)
Farmer, Richard	Fish and Wildlife Technician 1 (Seasonal)
Gordon, Aaron	Fish and Wildlife Technician 1 (Seasonal)
Hart, Jessica	Fish and Wildlife Technician 1 (Seasonal)
Marshall, Blake	Fish and Wildlife Technician 1 (Seasonal)
Simonin, Paul	Fish and Wildlife Technician 1 (Seasonal)
Talgo, Brooke	Fish and Wildlife Technician 1 (Seasonal)
Bedard, Tom	Laborer (Seasonal)
Hopkins, Wesley	Laborer (Seasonal)
LaFlair, Aaron	Laborer (Seasonal)

Niewieroski, Greg	Laborer (Seasonal)
Spaziani, Gerald	General Mechanic (Seasonal)

REGION 7

Dan Bishop	Biologist 2 (Aquatic)
Dave Lemon	Biologist 1 (Aquatic)
Jeff Robins	Biologist 1 (Aquatic)
Russ Davall	F&W Technician 3
Jeff Eller	F&W Technician 2
Paul Moore	F&W Technician 2
Bob Rathman	F&W Technician 2
Janet Hines	Secretary 1
Shawn Fox	Seasonal - F&W Technician 1 (4/1/04 - 9/29/04)
Katherine Donahue	Seasonal F&W Technician 1 (4/15/04 - 5/28/04)
Melissa Neely	Seasonal F&W Technician 1 (4/1/04 - 10/2/04)(12/30-04-3/31/05)
John Boudreau	Seasonal F&W Technician 1 (10/4/04 - 3/31/05)

REGION 8

Pearsall, Webster	Biologist 2 (Aquatic)
Kosowski, David	Biologist 1 (Aquatic) (Plans to retire early FY 05)
Sanderson, Matt	Biologist 1 (Aquatic)
Hammers, Brad	Biologist 1 (Aquatic)
	Biologist 1 (Aquatic) (Vacant)
Angold, Fred	Fish and Wildlife Technician 3
Olsowsky, David	Fish and Wildlife Technician 2
Verna, Marvin	Fish and Wildlife Technician 2
Richardson, Denise	Fish and Wildlife Technician 2 (half time)
	Fish and Wildlife Technician 2 (Transferred to Wildlife)
Burdett, Anna	Key Board Specialist
Deres, Bob	Fish and Wildlife Technician 1 (Seasonal)
Muhall, Daniel	Fish and Wildlife Technician 1 (Seasonal)
Webb, James	Fish and Wildlife Technician 1 (Seasonal)
Welch, Timothy	Fish and Wildlife Technician 1 (Seasonal)
Newman, Dawn	Fish and Wildlife Technician 1 (Seasonal)
Sowinski, Michael	Fish and Wildlife Technician 1 (Seasonal)

REGION 9

McKeown, Paul	Biologist 2 (Aquatic)
Evans, Joe	Biologist 1 (Aquatic)
Wilkinson, Mike	Biologist 1 (Aquatic)
Cornett, Scott	Biologist 1 (Aquatic)
Pachla, Matthew	Fish and Wildlife Technician 1 (Seasonal)
Frost, Josh	Fish and Wildlife Technician 1 (Seasonal)
Busch, Karen	Fish and Wildlife Technician 1 (Seasonal)
Adams, Connie	Fish and Wildlife Technician 1 (Seasonal)
Jason Telecky	Fish and Wildlife Technician 1 (Seasonal)

LAKE ERIE UNIT

W. Culligan	Principal Aquatic Biologist 3
D. Einhouse	Senior Aquatic Biologist 1
J. Markham	Senior Aquatic Biologist 1
D. Zeller	Fisheries Research Vessel Captain
R. Zimar	Senior Fish & Wildlife Technician 2
B. Beckwith	Senior Fish & Wildlife Technician 2
M. Szwejbka	Secretary 1
J. Guinn	Seas. Fish & Wildlife Technician
S. Robb	Seas. Fish & Wildlife Technician
M. Todd	Seas. Fish & Wildlife Technician
D. LaRusso	Seas. Fish & Wildlife Technician (Tributary Creel)
M. Pachla	Seas. Fish & Wildlife Technician (Tributary Creel)

LAKE ONTARIO UNIT

Balduzzi, Kevin	Fish and Wildlife Technician 1 (Seasonal)
Bearup, Nicole	Fish and Wildlife Technician 1 (Seasonal)
Buker, Curtis	Fish and Wildlife Technician 1 (Seasonal)
Deline, Aurthur	Green Thumb Staff
Eckert, Thomas	Fish and Wildlife Technician 1 (Seasonal)
Edmonds, Brian	Fish and Wildlife Technician 1 (Seasonal)
Fairbanks, Alan	Research Vessel Captain
Grant, Beverly	Secretary 1
Haller, Ralph	Green Thumb Staff
Holland, Douglas	Fish and Wildlife Technician 1 (Seasonal)
Holland, Derek	Fish and Wildlife Technician 1 (Seasonal)
King, M. Ellen	Laborer (Seasonal)
LaPan, Steven	Biologist 2 (Aquatic)
Larkins, Mike	Laborer (Seasonal)
Massia, Gaylor	Maintenance Assistant
Prindle, Scott	Biologist 1 (Aquatic)
Scofield, Jennifer	Laborer (Seasonal)
Stercho, Johnathan	Fish and Wildlife Technician 1 (Seasonal)

ADIRONDACK HATCHERY

Grant, Edward	Fish Culturist 2
Miller, Douglas	Fish Culturist 1
Wallace, Michael	Fish and Wildlife Technician 1
Aldinger, Fritz	Fish and Wildlife Technician 1
Klubek, Kenneth	Fish and Wildlife Technician 1

BATH HATCHERY

Osika, Kenneth	Fish Culturist 2
Sweet, Robert	Fish Culturist 1
Klesa, Rodney	Fish and Wildlife Technician 1
Raab, Kelly	Fish and Wildlife Technician 1
Schirmer, Jason	Fish and Wildlife Technician 1

CALEDONIA HATCHERY

Mack, Alan	Fish Culturist 3
Stein, Robert	Fish Culturist 1
Zenzen, Stephen	Fish and Wildlife Technician 1
Kelley, Charles	Fish Culturist 1
Hubbard, Bruce	Fish Culturist 1
Krause, Mark	Fish Culturist 2
Hayden, Kevin	Fish and Wildlife Technician 1
Ward, Brian	Fish and Wildlife Technician 1

CATSKILL HATCHERY

Covert, Scott	Fish Culturist 3
Anstey, Timothy A.	Fish and Wildlife Technician 1
Judson, James L	Fish and Wildlife Technician 1
Anderson, John	Fish Culturist 2
Gennarino, Joseph	Fish Culturist 1
Speziale, Michael	Fish and Wildlife Technician 1
Sherwood, Steven	Fish and Wildlife Technician 1

CHATEAUGAY HATCHERY

Brue, Peter	Fish Culturist 2
Armstrong, David	Fish Culturist 1
Jackson, Matthew	Fish and Wildlife Technician 1
Ventiquattro, Thomas	Fish Culturist 1
Gordon, David	Fish and Wildlife Technician 1
Hoag, Gregory	Fish and Wildlife Technician 1

CHAUTAUQUA HATCHERY

King, Larry	Fish Culturist 2
DeFries, Eric	Fish Culturist 1
Rambuski, James	Fish and Wildlife Technician 1
Gruber, Bradley	Fish and Wildlife Technician 1

ONEIDA HATCHERY

Babenzien, Mark	Fish Culturist 3
Rathje, Carl	Fish Culturist 2
Evans, Bill	Fish Culturist 1
Dixon, Michael	Fish Culturist 1

RANDOLPH HATCHERY

Mellon, Jon	Fish Culturist 2
Kriger, Richard L.	Fish Culturist 1
Hohmann, Barry	Fish and Wildlife Technician 1
Baginski, Kenneth	Fish and Wildlife Technician 1
Borner, Richard	Fish Culturist 1
Hulings, Raymond	Maintenance Assistant

ROME HATCHERY

Lewthwaite, Robert	Fish Culturist 3
Talbot, Clifford	Fish Culturist 2
Woodworth, William	Fish Culturist 1
Wanner, Scott	Fish Culturist 1
Erway, David	Fish and Wildlife Technician 1
Grabowski, Steven	Fish and Wildlife Technician 1
Draper, John Jr.	Fish and Wildlife Technician 1
Matt, Kimberly	Keyboard Specialist.
Batur, Mark	Fish and Wildlife Technician 1
Hajdasz, William	Fish Hatchery Maintenance Supervisor
Schmidt, Ernest	Laborer (Seasonal)

FISH DISEASE CONTROL CENTER

Noyes, Andrew	Pathologist 2 (Aquatic)
Jalbert, Barbara	Keyboard Specialist (retired 5/05)
Henson, Fred	Biologist 1 (Ecology)

SALMON RIVER HATCHERY

Dolan, Stephen	Fish Culturist 2
Greulich, Andreas	Fish Culturist 3
Wrotniak, Kathleen	Fish Culturist 1
Domachowske,David	Fish and Wildlife Technician 1
Gosier, Corbin	Fish and Wildlife Technician 1
Hurd, Karen	Keyboard Specialist
Everard, James	.Fish and Wildlife Technician 1
LaShomb, Ronald	Fish Culturist I
Nelson, Robert	Fish and Wildlife Technician 1

SOUTH OTSELIC HATCHERY

Emerson, Pat	Fish Culturist 2
Kielbasinski, Thomas	Fish Culturist 1
Schara, William	Fish and Wildlife Technician 1
Ryan, Bruce	Fish and Wildlife Technician 1

VAN HORNESVILLE HATCHERY

Kroon, Larry	Fish Culturist 2
DuBois, Craig	Fish Culturist 1
Watson, Lauren	Fish and Wildlife Technician 1