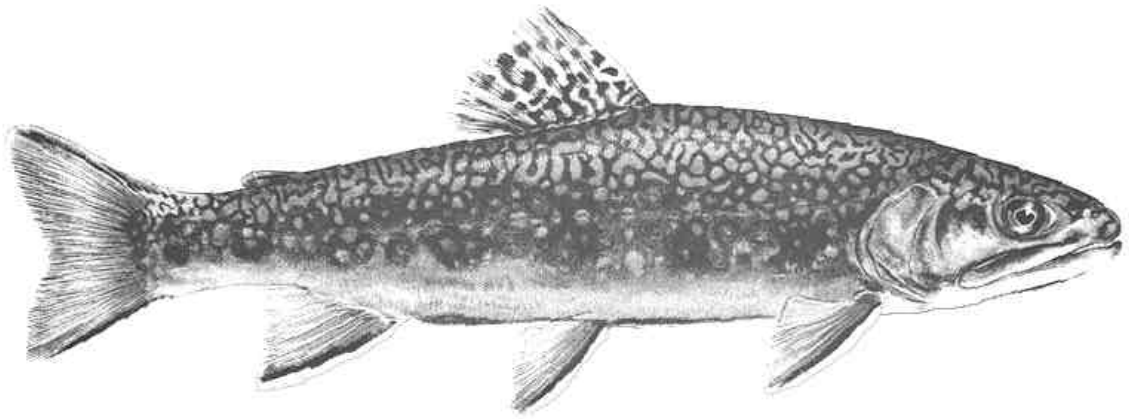
New York State Department of Environmental Conservation
Division of Fish, Wildlife and Marine Resources

Bureau of Fisheries



Annual Report
Highlights and Accomplishments 2003/2004

December 2004

George E. Pataki, *Governor*

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 2003/2004 (April 1, 2003 - March 31, 2004), the Bureau of Fisheries logged a total of 38,658 staff days of effort which was valued at more than $6.9 million. Most of this effort was provided by permanent personnel (31,327 staff days), but 7,331 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* (11% 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* (8 % of Staff Effort)
>
> **Recreation, Use and Allocation** - *Provide a Wide Array of Opportunities to Enjoy Fish, Wildlife and Marine Resources* (65% 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*. (15 % of Staff Effort).

For 2003/2004, 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 65% of total staff effort followed by

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

with approximately 5.5% 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 2003/2004.

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%	1,126	2.9%	$251,179
Restore five additional self-sustaining populations of New York State listed-threatened or endangered fishes by 2007.	387	1.0%	$73,330
Maintain self-sustaining populations of 165 species of freshwater and anadromous fishes in New York waters	2,107	5.5%	$350,373
Provide 30 additional fisheries supported entirely by self-sustaining populations of wild fishes in publicly accessible New York waters by 2007.	57	0.1%	$12,087
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.	544	1.4%	$159,421
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.	371	1.0%	$67,392
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%.	1,029	2.7%	$196,370
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.	25,127	65.0%	$4,237,492
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.	884	2.3%	$152,835
Acquire ten miles of Public Fishing Rights (PFR) easements annually and maintain PFR network for optimal angler use and enjoyment.	651	1.7%	$120,241
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.	368	1.0%	$83,943
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.	99	0.3%	$19,112
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%.	134	0.3%	$35,067
All other Division objectives	5,774	14.9%	$1,121,299
Bureau of Fisheries Totals	**38,658**	**100.0%**	**$6,880,141**

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 38,000-plus days of effort during fiscal year 2003/2004.

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)

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Warmwater Lakes and Ponds

Region 1

Hempstead Lake Restocking

Hempstead Lake dried up completely for the first time in history during the extended drought in the summer of 2002. By the spring of 2003, the lake level had recovered to historic levels. In April and May of 2003, fish were transferred from Deep Pond in Suffolk County, Prospect Park Lake in Brooklyn and St. Johns pond in Nassau County to re-establish a fish population in Hempstead Lake. Fish transferred included several thousand killifish, 400 bluegill, 100 pumpkinseed, 20 black crappie, 20 golden shiners and 10 yellow perch. Largemouth bass will be stocked in 2004.

Walleye Stocking

On July 8th, Biologist Fred Henson and seasonal laborer Michael DiMarco helped to stock 10,000 walleye fingerlings in Lake Ronkonkoma and 4,000 in Fort Pond. The fingerlings averaged 1.2 inches (48 mm) in length. Surface water temperatures in both lakes exceeded eighty degrees Fahrenheit. The water temperature in the tank reached 78 degrees. Despite these warm temperatures, mortality in transit was minimal and the fingerlings behaved normally upon release. This walleye stocking is part of an ongoing effort to restructure the food web to improve fishing and water quality in the two Long Island waters.

Lake Ronkonkoma Beach Seining

Summer beach seine sampling of Lake Ronkonkoma was conducted on August 4th by fisheries staff. A 100 foot seine net was hauled at seven sites around the shoreline to assess the abundance of juvenile game and forage fish. The combined catch rate for black bass was less than one fish per seine haul. This is a precipitous drop relative to the 2002 catch rate and, for the first time, the catch of YOY black bass consisted entirely of smallmouth. One 311 mm largemouth bass was caught during the survey and five young of the year smallmouth bass were caught. Due to dramatic changes in water level between the drought summer of 2002 and the wet summer of 2003, habitat characteristics within the standard seine sites were much less favorable for juvenile bass in 2003 and this probably explains much of the variability. In addition, the seine was obstructed by debris on three out of seven hauls compromising the catch to an unusual extent. Other species found in the 2003 survey included: white perch, yellow perch, black crappie, bluegill, pumpkinseed, yellow perch, golden shiner, and banded killifish.

Lake Ronkonkoma Walleye Sampling

Region 1 Fisheries staff conducted a pilot study during the week of March 15th to determine the effectiveness of trap nets as a gear for sampling walleye in the spring in Lake Ronkonkoma. One trap net was set at the mouth of the lake's only tributary stream for three nights. A total of seven walleye were caught. The average length was 19.8 in. The largest walleye was 23.7 in. and weighed 5.1 lb. Relative weights for this sample of walleye ranged from 90 to 100 indicating that the fish are well fed. Seven crappies were also caught during the survey. These fish averaged 10 in. (249 mm) in length. The relative weights calculated for the sample of crappie ranged from 63 to 85 suggesting that these fish were experiencing a scarcity of suitable prey. A more extensive trap net survey should be conducted when equipment and personnel are made available.

Region 3

Lake Mahopac

Lake Mahopac is a 560 acre lake located in the Town of Carmel, Putnam County. Natural in origin, it was enlarged by New York City in 1870 when a 3 foot high dam was constructed. Maximum depth is 62 feet. The lake is surrounded by private homes and two private marinas provide access and boat dockage for non riparian users of the lake. In October 1994 the Lake Mahopac Park District, under a permit granted by the New York State Department of Environmental Conservation, stocked the lake with 2,565 triploid grass carp in an attempt to control dense growths of Eurasian milfoil (*Myriophyllum spicatum*). According to a privately financed survey, the invasive plant had first been observed at the lake in the mid 1980's and by the mid 1990's covered approximately 171 acres of the lake bottom to a depth of 12-15 feet, and represented over 99% of the non filamentous algae aquatic weed biomass. At the time of stocking it was hoped that by using a stocking rate of 15 10-14 inch yearling grass carp per vegetated acre that the biomass of the exotic Eurasian milfoil would be reduced by approximately 70% in several years. To monitor the effect of the triploid grass carp lake residents agreed

to pay a consulting biologist to monitor aquatic vegetation for three years. Results of this monitoring, and several years of additional voluntary monitoring, are as follows:

Average weight of aquatic weed biomass - excluding filamentous algae

1993 - 1,784.5 grams / square meter (baseline 100%)
1995 - 489.0 grams / square meter (27% of baseline)
1996 - 252.4 grams / square meter (14% of baseline)
1997 - 17.8 grams / square meter (1% of baseline)
1998 - 0 grams / square meter (0% of baseline)
1999 - 0 grams / square meter (0% of baseline)
2000 - 0 grams / square meter (0% of baseline)
2001 - 0 grams / square meter (0% of baseline)

A review of these data reveals a dramatic reduction in aquatic weed biomass starting in 1995 and continuing through 1997 at which point virtually all aquatic weeds, except for filamentous algae, had disappeared. This level of control was far in excess of the pre-stocking target of a 70% reduction in aquatic weed biomass.

To monitor the status of fish populations at Lake Mahopac, the Region 3 Fisheries Unit conducted nighttime spring electrofishing surveys in 1994, 1997, 1999 and 2004. Each year electrofishing effort consisted of a total of from 2.03 - 2.73 hours of nighttime sampling which was done in several runs distributed around the lake's shoreline. Catch rates per hour for selected size groups of largemouth bass, the principal gamefish at Lake Mahopac, were as follows:

Largemouth bass	Total	Stock >= 8"	Quality >= 12"	Preferred >= 15"
1994	107.9	101.5	88.2	62.6
1997	94.2	91.6	60.9	37.3
1999	76.0	74.7	70.7	32.0
2004	24.9	24.9	23.4	20.1

A review of these data reveals a steady decline in catch rates of largemouth bass, especially when catch rates from 1999 and 2004 are compared. Since largemouth bass are a species generally associated with weed beds it is likely that the absence of any significant amount of any weed beds since 1997 has adversely impacted this species. Conversely the abundance of smallmouth bass, a species less associated with weed beds, remained relatively stable from 1994 through 1999 before more than doubling in 2004 according to the catch rates reported below:

Smallmouth bass	Total	Stock >= 7"	Quality >= 11"	Preferred >= 14"
1994	6.9	3.9	3.0	2.0
1997	4.9	4.0	4.0	2.2
1999	5.8	4.0	2.7	0.9
2004	16.8	13.6	8.4	2.6

To compare combined largemouth and smallmouth bass abundance the combined catch rates for both species are presented below under the size categories of total, stock, quality and preferred.

Largemouth & smallmouth bass	Total	Stock	Quality	Preferred
1994	114.8	105.4	91.2	64.6
1997	99.1	95.5	64.9	39.5
1999	81.8	78.7	73.4	32.9
2004	41.7	38.5	31.8	22.7

Ten years after triploid grass carp were introduced at Lake Mahopac, the lake remains virtually free of vascular plants which normally would provide vital habitat for largemouth bass. A likely consequence of this major habitat change is that the abundance of largemouth has declined so sharply that even a doubling of smallmouth bass abundance, the only gamefish present aside for an occasional chain pickerel, has left total bass abundance at approximately one third of pre-triploid grass carp levels.

Greenwood Lake

DEC Fisheries staff electrofished Greenwood Lake for a total 2.0 hours on May 27 and June 9, 2003 and 1.35 hours on October 7, 2003. Game fish only were collected for 1.0 hour and all fish for 1.0 hour in the spring and game fish only for the entire fall effort. Species collected in 2003 were: walleye, largemouth bass, smallmouth bass, muskellunge, tiger muskellunge, yellow perch, white perch, rock bass, bluegill, pumpkinseed, redbreast sunfish, black crappie, brown bullhead, golden shiner, and alewife. The purpose of the survey was to continue to evaluate the bass and panfish populations and to collect fish for a statewide mercury analysis.

Largemouth bass catch rate was only 5 and 7 per hour in May and October, 2003, respectively - slightly higher than in 2002 (3 per hour). Catch rates for largemouth have declined approximately 87% from 1990 when the catch rate was 31 per hour. From 1990 to 1997, the catch rated dropped approximately 30% to 22 per hour. Due to the small sample size, an accurate size distribution cannot be calculated.

Smallmouth bass have fared better than largemouth bass since the 1990s. Spring electrofishing catch rates have at least trebled from 5 per hour in 1990 to 15 to 18 per hour in three surveys conducted from 1997 to 2003. The size distribution is excellent with about 34% caught having reached legal length, of which 25 % were at least 15 inches.

Bluegill catch rates have declined from 72 per hour in the 1990's to 49 per hour in 2003. They are of good size with more than 50% exceeding 6 inches.

Walleye are thriving in Greenwood Lake. Electrofishing catch rates are in the 30 per hour to 35 per hour range suggesting a high abundance compared to other New York waters. Size is excellent with 78% at least legal minimum length (18 inch under special regulation) and approximately 52% reaching 20 inches or more. No young walleye were collected and there is no indication of natural reproduction. A habitat evaluation to determine whether there is any natural spawning habitat in Belcher Creek., the primary tributary stream, is desirable.

Two muskellunge were caught during the 2003 survey; one 44 inches (20 lbs) and the other 14 inches (0.5 lb). Catch reports from Muskies Inc suggest musky fishing is good. One recently stocked tiger musky was collected during the fall, 2003 survey. Although New Jersey collects a few tiger muskies during their annual muskellunge brood stock collection each spring, it is evident they are not performing well here, as is the case in several other southeastern New York waters.

Is interesting to note that the decrease in largemouth bass catch rates is not compensated for in the increase in smallmouth bass catch rates; the data suggest a total decline of approximately 37% in black bass catch rates from 1990 to 2003. Although sampling variability and varying strength of year classes can account for some difference in catch rates, other factors relating to the decline of largemouth bass and increase in smallmouth may be increased competition and predation by muskellunge which were less abundant in the early 1990's, and walleye, which were re-introduced in 1993 and are now highly abundant. While it is not clear why largemouth bass may have been disproportionately impacted by increasing populations of other gamefish, it may be that largemouth must compete more directly for habitat and prey than smallmouth bass. Smallmouth may have benefitted more than largemouth bass by the implementation in 1989 and 1995 of a progressively more protective regulations; first an increase in the size limit *from 9 in to 12 in* for bass and in 1995, a change from an all year open season to an April 15 to June 15 catch and release regulation during an otherwise all year open season. DEC's 1986 black bass study[1] documented an exploitation rate of 82% for smallmouth bass while fewer than 50% of largemouth bass were kept; however it is likely that a greater emphasis in "catch and release" angling in the years since this study have reduced smallmouth bass exploitation. Other factors may be subtle habitat changes that are unknown.

Greenwood Lake remains an excellent warmwater fishery; however, based on DEC survey results, the largemouth population has declined and stocked tiger musky are apparently not performing well. DEC will continue to monitor the bass and panfish populations and propose alternative management, if deemed appropriate. It is likely the tiger muskellonge stocking will be discontinued. *(note: this policy deleted effective 2005)* Angler involvement through angling diaries and tournament records could be helpful in monitoring the bass populations.

Region 4

Canadarago Lake Gill Netting

The biennial netting of the 2,000 acre Canadarago Lake in Otsego County was completed in 2003, the 11th netting since 1983. Two, 150 foot long variable mesh (1.5-4.0 inches) gill nets were fished overnight each month from June through September at random locations throughout the lake for a total of eight net sites. The objective of this study is to monitor the abundance of walleye and yellow perch. The catch of 21.6 walleye and 45.6 yellow perch per net were the highest and second lowest catches recorded to date. The netting data suggests that walleye are abundant while yellow perch abundance is declining. During the 2004 ice fishing season, many anglers complained about the poor yellow perch fishery.

During the 2003 netting effort, six alewives were also collected with another 30 alewives collected by Cornell University fisheries scientists during their fall sampling effort. Alewife were first documented in 1999 when two fish were collected. Their presence in Canadarago Lake are most likely the result of an unauthorized introduction. Although the latest sampling efforts indicate that alewife abundance

remains sparse, their growing abundance may adversely affect the lake's ecology and fishery.

To evaluate the potential impact of alewife on the lake's walleye population as well as to subsequently identify management strategies that may be needed to control alewife abundance, three new fisheries initiatives will be implemented in 2004. To monitor walleye abundance, a population estimate study will be conducted by utilizing spring netting and fall electrofishing to sample, mark, and recapture adult walleye. A multi year angling diary program will be initiated to determine the current status of the walleye, bass, and tiger musky fishery. Utilizing information from earlier and similar diary programs will determine if fishing quality for bass and walleye in Canadarago Lake have declined, improved, or remained stable. Thirdly, a post card angler survey will be run through the State boat launch to assess boat angler fishing preferences, catch rates, and the size distribution of the catch.

Dunham Reservoir Walleye Assessment
This 90 acre impoundment in Rensselaer County was electrofished and gillnetted in May and September, 2003, respectively, to assess the DEC's and the sportsmen stocking of fingerling walleye. DEC has been stocking approximately 3,600 walleye fingerlings annually since 1999. Although no walleye were collected during 2.23 hours of night electrofishing, one 18.5 inch walleye was collected in 0.47 hours of daytime electrofishing. Three walleye (15.9-22.2 in) were collected in three overnight gill net sets for an average catch of 1.0 fish per net. The absence of walleye during night electrofishing and the low gill net catch of walleye suggest that the walleye stocking program should be terminated.

Smallmouth and largemouth bass catch rates average 25.1 and 4.0 fish/hour, respectively. The catch of legal size smallmouth and largemouth bass averaged 13.5 and 2.7 fish/hour, respectively. The electrofishing catch rates suggest that smallmouth bass are abundant and largemouth bass abundance is low. In a 1993survey, largemouth bass and smallmouth bass were co-dominant with electrofishing catch of 33.6 and 30.6 fish/hour, respecitvely. The decline in largemouth bass abundance can not be explained. Although smallmouth bass abundance in 1993 and 2003 are comparable, the catch of legal size fish has increased from 5.5 fish/hour in 1993 to 13.5 fish/hour in 2003.

Smallmouth bass PSD, RSD_{12} and RSD_{14} were 74%, 56%, and 0%, respectively. The PSD and RSD_{12} indices suggest a balanced bass population. However, the absence of bass 14 inches and larger suggest that exploitation of larger fish may be a problem. A final determination can not be made until the scale samples have been aged.

Black River Pond Fish Population Survey
This 32 acre warmwater impoundment in Rensselaer County was boat electrofished at night in June, 2003. In one lap of the pond, 46 golden shiners, 56 brown bullhead, 53 pumpkinseed, and 158 yellow perch were collected. No game fish species were collected or observed. The absence of game fish species such as largemouth bass has resulted in a very poor warmwater fishery. Although 77% of the brown bullhead were catchable size ($8 in), none of the pumpkinseed and only 3% of the yellow perch were of catchable size. Catchable size for yellow perch and pumpkinseed are 8.0 and 6.5 inches, respectively. To improve the warmwater fishery, 17 smallmouth bass (3.0-15.4 inches) and 34 largemouth bass (2.5 - 10.5 inches) were stocked into Black River Pond in September and October, 2003.

Schoharie Reservoir Contaminant Fish Collections
This 1,150 acre water supply impoundment located in Delaware, Greene, and Schoharie Counties was electrofished in June, 2003, to collect fish for contaminant analyses. Previous sampling had resulted in a one meal per month fish consumption advisory for walleye because of elevated mercury levels. We were specifically requested to collect large walleye to determine if an even more restrictive fish consumption advisory was warranted. Smallmouth bass and rock bass were also collected.

The 2003 fish collection resulted in more restrictive fish consumption advisories being issued for Schoharie Reservoir. It was recommended that no walleye over 18 inches and smallmouth bass over 15 inches be eaten and that the consumption of smaller smallmouth bass and walleye be limited to one meal per month.

During the course of this sampling effort, several small schools of alewives were observed. This indicates that the alewife population is rebounding from the catastrophic crash that occurred following the January, 1996, flood event. This widespread flooding throughout the Catskills resulted in the flood of record for many area streams and rivers. Inflow into

the reservoir peaked at 52,800 cfs and resulted in the reservoir remaining highly turbid throughout much of 1996.

In a 1995 survey, alewife were extremely abundant and walleye abundance was low. No Age 0, 1, or 2 walleye were collected indicating no successful reproduction since 1993. This reproductive failure was attributed to alewife predation on pelagic walleye fry. It was anticipated that walleye stocking would be required to restore the high quality walleye fishery. Following the 1996 flood event, the alewife population crashed to very low levels. In a 1997 electrofishing survey, we collected 100 walleye including 33 Age 0 and 65 Age 1 fish in 1.54 hours. No alewife were collected or observed during this survey. Consequently the walleye population and fishery has rebounded in Schoharie Reservoir.

The increasing alewife population places the Schoharie Reservoir walleye fishery at risk. As a result, the reservoir will be netted in 2004 to obtain information on the current status on walleye abundance. In addition, the walleye fishery will be monitored through the implementation of an angler diary program. The angler diary program is expected to continue for 3 to 5 years and will provide information on walleye catch rates and the size distribution of the catch.

Region 7

Whitney Point Reservoir Sampling

Night electrofishing has been conducted annually in October since 1994 (except 1996) at four standard sites. The purpose of the surveys were to assess abundance and growth of young-of-year (YOY) and yearling walleye in Whitney Point Reservoir. A total of 855 YOY walleye were collected in 2003 resulting in a population estimate of 70,958, using Serns (1982) methodology. Growth of YOY walleye was slow (average length 6.7 in.) compared to past years at the reservoir. No yearling (2002 year class) walleye were collected by electrofishing in 2003 and thus a population estimate for age 1 walleye could not be calculated. 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

A netting survey was conducted on the reservoir in July 2003 utilizing twelve standard gillnet sites and four trapnet sites that have been used periodically since 1984. The primary purpose of the surveys is to document walleye and white crappie growth and abundance. Relative abundance of walleye is monitored using the average number caught per gillnet. In 2003, a total of 64 walleye were captured in the gillnets providing a catch rate 5.3 per net. This rate is half of the record 2001 rate (10.5 per net) but is still higher than the long term average of 4.1 walleye per net. Of the 98 walleye caught in gillnets and trapnets combined, the majority (57%) were age 6 (1997 year-class). Growth of this year-class continues to be slower than average but their mean size was 18.5 inches (range: 15.6 in. - 21.9 in.). The 1999 (age 4) and 2001 (age 2) year-classes of walleye accounted for 19% and 18% of the catch, respectively. Growth of these two year-classes is about average for the reservoir with the age 4 and age 2 fish averaging 17.5 inches and 13.7 inches, respectively. The outlook for walleye fishing in Whitney Point Reservoir is very bright as fish from the 1999 yearclass are now reaching legal length of 18 inches. The 2001 and 2003 yearclasses appear strong enough to ensure quality walleye fishing for at least the next six years.

The short-term outlook for white crappie fishing is not as promising. Crappie recruitment in Whitney Point Reservoir tends to be sporadic with moderate to strong yearclasses produced every two to four years. Evidence from recent summer surveys indicate that the modest sized 2000 yearclass has provided the only significant recruitment to the population in the past five years. The average size of these 3 year old crappie was 9.5 inches. A few large white crappie from the strong 1997 year-class (age 6) were still present and they averaged 12.5 inches in length. We anticipate that crappie fishing will be poor in 2004 and 2005 after angler harvest in the fall and winter further reduce their numbers. Note: because YOY crappie are not vulnerable to the nets used, the strength of the 2003 year-class could not be assessed. However, very few YOY crappie were observed during the October 2003 electrofishing effort described previously and this may indicate that recruitment was low.

Oneida Lake Management

Regional and Central Office Fisheries staff met with Cornell Fisheries Scientists to review survey work conducted in 2003 (Fisheries assessment and monitoring of Oneida lake's fish community and fishery is done by Cornell University under contract to

DEC). Of particular interest were results of assessment work done to predict the strength of the 2001 walleye year-class. Typically, predicted year-class strength of walleye is determined the year following their hatching but, unfortunately, the 2002 survey results were inconclusive because of sampling bias caused by the long, hot summer. The 2003 sampling proved reliable and indicated that the 2001 year-class is strong and set to add an estimated 160,000 walleye to the adult population in 2005. As a result of these findings the Department has recommended that the minimum legal length limit for Oneida Lake walleye be reduced from 18 inches to 15 inches, effective October 1, 2004. Population models predict that, with the addition of the 2001 year-class, the adult walleye population will climb to over 400,000 for the first time since 1992. The 2002 walleye year-class may also contribute up to 95,000 adults in 2006, depending on the level of cormorant predation that occurs.

Other findings by Cornell indicate that survival of an experimental stocking of 103,000 yearling walleye (2001 year-class) in the spring of 2002 was poor. Stocked fish made up only 1% of the age 2 sample in 2003. Abundance of adult (age 3 and older) yellow perch continues to hover near historically low levels. Future additions to the adult perch population from the 2001 and 2002 year-classes are expected to simply maintain the population at it's current level.

Since cormorants have had a major impact on Oneida Lake fish populations, cormorant hazing activities, conducted by USDA-APHIS, were intensified in 2003. Hazing began on August 19, two weeks earlier than in previous years, and combined with nest control work in the spring, reduced the amount of fish consumed by an estimated 15,500 pounds.

Otisco Lake Walleye Assessment
In June 2002 walleye pond fingerling stocking was resumed. This followed a period of three years in which no stocking occurred in order to assess the success of natural reproduction of walleye. Gear problems precluded sampling in October 2002 but night electrofishing was conducted in October 2003 to evaluate recruitment of fingerling walleye stocked in June of 2002 and 2003. Sampling occurred over two nights, along four and one-half miles of shoreline in areas used since the early 1990's. Unfortunately no walleye were captured on either night. Poor weather delayed sampling until later in the month and water temperatures were somewhat colder than preferred. Nonetheless, given that no walleye from either stocking were captured it is likely that survival of stocked fingerlings was low. In addition to walleye, no older (other than recently stocked) tiger muskellunge were captured during this sampling effort. This continues a recent trend of decreased catches of older tiger muskellunge in the fall sample. We suspect that the survival rate of stocked tiger muskellunge has declined and will continue to monitor the situation through both the fall sampling and the angler diary programs.

Oneida Lake Creel Survey
Federal Aid to Sportfish Restoration funds were used to support the second year of this study. The creel survey is being conducted on Oneida Lake from April 2002 through the end of the ice fishing season in 2005. The total effort estimated during 2003-04 was 321,700 angler-h,81 % of which occurred during the open season. Anglers harvested 23,700 walleye (6% of the adult population in the spring), 75,400 yellow perch, and 10,600 smallmouth bass. Open water targeted catch rates (#angler-h) for walleye, yellow perch, and smallmouth bass were 0.58. 0.68, and 0.82. Winter targeted catch rates were 0.30 and 0.79 for walleye and yellow perch. Anglers caught an additional 52,100 individuals comprised of 14 other species.

Jamesville Reservoir Fish Community Assessment
In October 2003 the entire perimeter of Jamesville Reservoir was sampled by night electrofishing to assess the success of the walleye stocking program and health of the fish community in general. Seven young of year walleye were captured which provided a population estimate of only 133 lake-wide, using Serns (1982) methodology. A total of 6,600 pond fingerling walleye were stocked in June 2003 thus the estimated 133 surviving fish in October represent only 2% of the original stocking. To put this into perspective, survival of stocked walleye is highly variable from year to year and a rate of 12% is considered good. Overall, 24 walleye were captured, nine of which were over the 18 inch legal length limit. Although the 2003 yearclass was not as strong as we would like, it still appears that the walleye stocking program in Jamesville is working. Two hundred and twenty (220) largemouth and smallmouth bass were caught, 39 of which were 12 inches or longer. The largest bass captured was just under 18 inches.

Cross Lake Walleye Fishery Development
Efforts to establish walleye as a major fishery in Cross Lake began in 1996 when 37,000 fingerlings from

Chautauqua Hatchery were boat stocked along the northwest shoreline. A stocking of 6,520 fingerlings from South Otselic Hatchery followed later that year. Since then Cross Lake has been stocked with 69,800, 43,600, 43,520 and 84,500 walleye fingerlings in 1998, 1999, 2001 and 2002, respectively.

Evaluation of Cross Lake walleye fingerling stockings by night electrofishing continued in Fall 2003. This consisted of sampling a variety of habitat types with five 30 minute runs. A total of 126 fish (17 species) were collected, of which 4 were walleye (1.6 walleye /hr). Scale aging revealed two 4 year olds and two 5 year olds possibly from the 1999 and 1998 stockings.

Previous Cross Lake stocking evaluations were carried out in Spring 1997 and Fall 2000, 2001 and 2002. The 1997 evaluation consisted of sampling the entire shoreline with eight 15-minute all fish runs and eight 30-minute gamefish only runs. A total of 1,211 fish (23 species) were collected, of which 14 were walleye (2.3 walleye/ hr). All 14 walleye collected were yearlings probably from the 1996 stocking. The 2000 evaluation consisted of two 15 minute all fish runs and six 30 minute gamefish runs. A total of 253 fish (13 species) were collected, of which six were walleye (1.7 walleye/hr). Five of the walleye collected were yearlings, probably from the 1999 stocking, and one larger walleye which may have been from the 1996 stocking. The 2001 evaluation consisted of eight 30 minute runs. A total of 251 fish (18 species) were collected, of which six were walleye (1.5 walleye/hr). All six walleye collected were fingerlings probably from the 2001 stocking. The 2002 evaluation consisted of sampling habitat types with eight 30 minute runs. A total of 250 fish (18 species) were collected, of which seven were walleye (1.7 walleye/hr). Scale aging revealed individuals from at least four age groups including two fish that may have been hatched in 2000 when no walleye were stocked.

Results of the Cross Lake walleye stocking evaluation surveys are encouraging in that all five surveys produced stocked walleye in very good condition. Since no walleye older than yearling were encountered in the 1997 survey, it is likely only a few if any walleye were present in Cross Lake at the beginning of the fingerling stocking program. The 2000, 2002 and 2003 surveys produced older walleye that could have been either stocked or naturally reproduced. Anecdotal information from anglers suggests that there has been a steady increase in walleye numbers in Cross Lake during the last three years. Cross Lake anglers reported fair to good walleye fishing in 2003, while anglers fishing the Seneca River near Cross Lake reported good to excellent walleye fishing.

Region 8

Honeoye Lake Fisheries Assessment

Honeoye Lake was surveyed in spring and fall 2003 to assess walleye population characteristics. Additionally, fall sampling yielded information on other species of importance in Honeoye Lake such as pumpkinseed sunfish, bluegills, and yellow perch. In cooperation with DEC, Finger Lakes Community College also assessed the walleye spawning run in Honeoye Inlet. A total of 991 walleyes ranging in size from 317 to 671 millimeters (mm) (12 to 26 inches) were collected in spring trap nets. Size distribution comparisons suggested a shift toward larger fish in 2003. In 2003, about 28% of walleye collected were >456 mm (18 in) compared to only 10% in 2000. Approximately 1,100 walleyes were collected in Honeoye Inlet, more than were anticipated based on past observations. Preliminary estimates put the adult walleye population around 13,000 adults, significantly lower than 33,000 adults estimated in 2000. This can be attributed to increased harvest due to the reduction in size limit from 18 to 15 inches in 2000. Current population level is similar to a 1993 estimate.

Two hundred thirty six walleye were collected in fall gill nets. Size frequency distributions indicated few walleye less than 375 mm (15 inches) were collected. A PSD of 95 substantiates this finding and indicates potentially weak year classes in recent years. Age and growth has not yet been evaluated but should provide more evidence concerning some of these younger age groups. Relative condition has generally increased for walleye less than 510 mm (20 in). Examination of walleye stomachs revealed that sunfish continue to make up the majority of the walleye diet. The number of yellow perch collected was more than 50 percent lower than recent surveys, however average size and condition have increased. Bluegill (n=526) and pumpkinseed sunfish (n=255) were more abundant than previous samples. Population characteristics indicate a relatively fast growing, excellent condition sunfish population. Greater than 40% of bluegills and 60% of pumpkinseeds collected were greater than 200 mm (8 in) in length with 0.75 to 1 lb fish not uncommon.

The objective of reducing the adult walleye population by lowering the size limit has been met and has resulted in a population consisting of larger and better conditioned fish. However, there is some concern about the strength of recent year classes and continued monitoring is warranted to determine if fry stocking remains viable. The yellow perch population continues to be depressed and has not immediately rebounded from the reduction in adult walleyes. However, more time is needed for yellow perch to react positively to the decreased walleye population.

Conesus Lake Walleye Fingerling Stocking
Nighttime electrofishing for juvenile walleye was conducted during June. The purpose of the survey was to evaluate the success of fingerling walleye stocking that occurred in the summers of 2001 and 2002. On July 1, two age 1+ walleye from the 2002 and one age 2+ walleye from the 2001 stocking were captured. These are the first walleyes less than 400mm (16 inches) in total length to be captured in Conesus Lake since 1998. Gill netting is scheduled for the fall of 2004 to further evaluate fingerling stocking success.

Sodus Bay Walleye Fingerling Stocking
Electrofishing for walleyes was conducted in accordance with the percid sampling manual on June 17, 2003. The purpose of the survey was to evaluate the success of fingerling walleye stocking that occurred in the from 1993 to 2000 and potential naturally produced fish. No walleye were captured during 1.25 hrs of electrofishing. Gill netting should be scheduled for the future to further evaluate fingerling stocking and natural reproduction success.

Waneta and Lamoka Lakes Fish Communities
General surveys were conducted using the standard centrarchid sampling protocol to assess the fish community during year of (Waneta) and prior to (Lamoka) fluridone treatment. In the fall survey, State University of New York (SUNY) Brockport (Dr. James Haynes and students) assisted DEC staff with fish collection using their new Smith Root Electrofishing 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 Lake was surveyed during two nights in May and both Waneta and Lamoka Lakes were surveyed one night each in the fall. Seventeen species of fish were captured in Waneta Lake in the spring and 21 species were captured in the fall. Sixteen species were captured in Lamoka Lake in the fall. All samples were dominated by bluegill and pumpkinseed sunfish. 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.

Mendon Ponds Fish Communities Evaluated
General biological surveys of four urban park ponds with high use were conducted in July. There is the potential to develop an urban fisheries program with Monroe County Parks Department. Boat electrofishing, beach seines, and gill nets were used to collect fish. Data has been summarized as follows: Nine species of fish were captured from Deep Pond, five species from Round Pond, three from Lost Pond, and nine from Hundred Acre Pond. Pumpkinseed and bluegill sunfish, and yellow perch dominated the catches. Data has been entered into the statewide database and full analysis is currently underway.

Survey of Walleye Spawning Activity and Habitat
On April 14, 2003, visual observations were made at various sites in Sill, Salmon (Maxwell), First, Second, Third, Sodus, and Wolcott creeks in the Sodus and Port Bay watersheds. The intent was to document walleye spawning in these creeks. Anecdotal reports on this activity have been received in the past, but has not been confirmed. It would not be unusual to find walleye spawning activity in this area, because Sodus Bay was stocked with between 20,000 and 83,000 pond fingerlings annually from 1993 to 2000 (except 1994 and 1995). Port Bay was stocked with 10,400 pond fingerlings annually between 1993 and 1997. Walleye fingerling stocking success has never been evaluated in Sodus Bay, and Cornell University evaluated the Port Bay stocking success from 1993 to 1999. No walleye spawning activity was observed in any of these creeks during our survey. One possible explanation for this lack of spawning activity would be that cooler than average temperatures during the early spring could have delayed spawning activity. Another would be that on April 4 and 5, 2003, the Rochester area was hit with an ice storm. Wayne County was the hardest hit. Nearly every tree observed had some degree of ice storm related damage. Many stream-side trees had fallen into the water or limbs sheared from trees landed in the stream. This created numerous potential blockages to fish movement.

Region 9

Chautauqua Lake Warmwater Surveys
Regional staff assisted Prendergast Hatchery 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 34 and a total catch of adult muskellunge of 305. This catch per net was above the recommended management level of 28 muskellunge per net established by the Chautauqua Lake workgroup. The contribution of ages 4 to 6 cohorts was estimated (actual ages have not been determined due to a backlog of scale samples) from fin clips and lengths. The age-5 cohort was stocked at a length of 8.4 inches and made up 40% of the total catch while ages 4 and 6, stocked at lengths of 7.6 and 6.8 inches respectively, contributed to 7%. Redspot lesions were observed on 7% of the adult muskellunge (>32 inches). Fifty-nine muskellunge (19%) greater than 40 inches were collected by trapnet.

Fisheries staff completed fall electrofishing surveys targeting muskellunge, walleye and black bass. Abundance of age-0 walleye has been low since 1996 and sampling showed a population dominated by older individuals. 2003 represented the 7th consecutive year of poor walleye recruitment. To compensate for this, 75,000 yearling walleye were stocked in the north basin with the expectation of stocking additional yearling walleye in 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).

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

Cuba Lake
Cuba Lake was surveyed in 2003 to assess the growth rate and abundance of walleye, smallmouth bass, yellow perch and rock bass. Relative abundance was also determined for largemouth bass, northern pike, bluegill and pumpkinseed. Zooplankton were collected and analyzed, and water chemistry measurements were taken.

Surveys indicated that walleye and smallmouth bass were the co-dominate predators in the lake. Walleye growth was slow, a characteristic that has gone unchanged for at least 50 years. Walleye fry stocking was discontinued in 1999 and natural reproduction has maintained an abundant walleye population as indicated by the night time spring electrofishing catch rate of 39 walleye/hr. The night spring electrofishing catch rate for smallmouth bass indicated a high population density (39 fish/hr). Growth rates are fast as 4 year old fish easily reached the minimum legal size limit of 305 mm (12 in). The largemouth bass population has declined in abundance in the last 10 years. One possible explanation may be interspecific competition with northern pike. Northern pike, a recent introduction (illegal) in the early 1990s, have reproduced successfully for nine years. If the northern pike population increases, largemouth bass abundance may continue to decline.

Cuba Lake showed a high predator/panfish ratio (0.57) in 2003. This may be one explanation for the slow walleye growth rates, but is contradicted by the fast smallmouth bass growth rates. Rock bass and yellow perch were the two most abundant panfish in the lake followed by bluegill and pumpkinseed. Historically, rock bass were the fourth or fifth most abundant panfish through the 1980s. However, by 1991, rock bass were more numerous than other panfish. Average to fast growth rates for rock bass and yellow perch as well as low catch rates for bluegill and pumpkinseed indicated moderate to low panfish populations. This is confirmed not only by the high predator/panfish ratio, but also by the large average zooplankton size and species composition.

Cassadaga Lakes Warmwater Surveys
To increase growth rates and length distributions of black bass and panfish, a 12-15 inch protected length limit (slot) was imposed for black bass in 1994. Electrofishing in spring, 2003 continued to show an increased abundance of black bass within and exceeding the protected slot with acceptable recruitment of bass below the slot. Previous analysis of creel survey data indicated that angler catch rates for preferred and quality length bass exceeded levels considered high from selected waters in New York State. The creel survey also indicated that few bass less that 12 in TL were harvested by anglers. The Cassadaga lakes are scheduled for resurvey in 2009.

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 fish sampling (gillnets, trawls, Miller sampler, acoustics) continued during 2003-04, primarily to monitor the abundance of yellow perch and walleye, and to detect trends in the abundance of other species. The nesting cormorant population was estimated by visual count and composition of the diet determined from regurgitates (in cooperation with the Cooperative Fish and Wildlife Unit at Cornell). Work continued on analysis of food web interactions (Rudstam et al. 2004, Stang et al. 2003). Results were presented at several meetings (American Fisheries Society New York Chapter meeting, AFS National meeting – Quebec City, International Association for Great Lakes Research- Chicago, Percis III, Madison, Wisconsin).

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 2003-2006*. The walleye population is currently estimated to be 365,000 age 4 and older fish, which continues to be lower than the long-term average. However, the adult population is expected to increase to over 464,000 with the recruitment of the 2001 year class in 2005. A recovery of the adult population to this level warrant a return to a 15 inch size limit.

The yellow perch population was estimated at slightly less than 1 million age 3 and older fish from gill net catches; similar to the abundance measured since 1995. Zebra mussels have cleared the water but not affected 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 22 million in 2003, close to the long term average of 30 million. However, catches in fall trawls were low. Abundance of YOY yellow perch continues to be lower than in the 1970s and 80s.

Cormorant predation on adult yellow perch is similar to angler catch rates, but cormorants also feed on sub-adults. For adult walleye, anglers are the more important predator (VanDeValk et al. 2002). Current management actions include limiting cormorant nesting success and harassment during the fall migration. 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. Analysis of these population trends through the 1990s and an analysis of the cormorant effects on walleye and yellow perch are presented in Rudstam et al. (2004, "*Effects of double-crested cormorants on walleye and yellow perch populations in Oneida Lake, New York"*) and summarized in Stang et al. (2003 *"Double-crested cormorant impacts to fisheries resources in New York: Science-based evaluations that refute a natural resource dogma"*).

Three other publications were submitted in 2003/04 on Oneida Lake fish. Lantry et al. *(Estimating energy density of gizzard shad, yellow perch and walleye, across life stages)* summarized the energy content of larval and juvenile walleye, yellow perch and gizzard shad. He et al. (*Long-term patterns in growth of Oneida Lake walleye: a multivariate and stage-explicit approach for applying the von Bertalanffy function*) analyzed the growth pattern of walleye since 1958 and showed increased first year growth and decreased older growth rates over time in the lake. Getchell et al. (*Prevalence of walleye discrete epidermal hyperplasia by age class in walleyes (*Sander vitreus*) from Oneida Lake, New York*) presented an analysis of the transmission rates of walleye dermal sarcoma and walleye epidermal hyperplasia.

Canadarago Lake. Standard fish sampling methods (vertical gillnets, hydroacoustic, electrofishing) were used on at Canadarago during 2003-04 to assess open water fish population in 2003 to monitor alewife. Limnological and zooplankton samples were also collected. Results of fish and limnology collections were analyzed and presented at a special meeting with DEC in January to discuss potential management alternatives.

Canadarago Lake data for 2002 and 2003 are presented in a report by *Brooking et al. Surveys of fish and limnology at Canadarago Lake, NY in 2002-03* and compared to results from the period 1990-2001. Fall electrofishing indicates moderately low recruitment of naturally spawned young-of-the-year (YOY) walleye in 2002 (1.7/h) and in 2003 (2.8/h). The last large year-class was in 2001 (8.0/h), and large year classes have generally occurred every 2-3 years. Adult walleye numbers in gillnet catches (21.6/net) in 2003 were the highest since 1983, though electrofishing catch of adult walleye decreased from 28.5/h in 2001 to 12.8/h in 2003. Walleye growth is faster now than in 1991, and high compared to other NY waters. Annual mortality of walleye between age-4+ and age-8+, estimated from the adjusted gillnet catch curve, was 35%.

Yellow perch numbers remained moderately high in electrofishing (120-190 adults/h) and gillnetting (45.6/net), with large numbers of YOY in 2002 electrofishing (650/h) and 2003 electrofishing (444/h). Small-mesh alewife nets set in October of 2002 caught no alewife, however in 2003 caught 30 YOY alewife that averaged 128 mm TL. Standard summer gillnetting captured 6 alewife between 177-201 mm TL, which were not aged but were likely adults. Zebra mussels were confirmed in Canadarago Lake in August 2002 by SUNY Oneonta Biological Field Station staff.

Coldwater Lakes and Ponds

Region 1

Trout Stocking
Region 1 Fisheries Staff coordinated the stocking of 30,950 trout in 52 locations on 27 waters across Long Island. In the spring 3,550 yearling brown trout, 4,850 two year old brown trout and 15,050 yearling rainbow trout were stocked. Another 7,500 yearling brown trout were stocked in 13 ponds and three streams in October and November. The fall stockings were 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.

Species	Number Caught	*Size Range (inches)*
Lake trout	0	
Landlocked salmon	4	11.1 - 18.0
Yellow perch	88	5.7 - 11.5
Brown bullhead	22	9.8 - 14.5
Rainbow smelt	3	4.1 - 6.4
Pumpkinseed	2	6.9 - 7.3
Smallmouth bass	6	9.3 - 11.1

Region 5

Taylor Pond Lake Trout
A Bureau of Fisheries crew surveyed Taylor Pond in Clinton County. This survey was conducted to verify a finding from the 1995 survey that indicated the lake trout population is self-sustaining and no longer requires stocking. This premise was borne out by the survey, with virtually all the lake trout handled being of natural origin. Accordingly, Taylor Pond will no longer be stocked with lake trout. In the recent survey, landlocked salmon were surprisingly abundant and no kokanee salmon were captured. Another surprise was the moderate catch of rainbow smelt since no smelt were captured in the 1995 survey. Smelt appear to be moderately abundant now, and many of the captured salmonids had been feeding on smelt.

Upper St. Regis Lake Survey
Upper St. Regis Lake in Franklin County, was surveyed during July 2003 to assess its lake trout and landlocked salmon stocking policies. This 742-acre lake is the headwater of the St. Regis Chain of lakes. Many private homes line its shores, but state land and public boating access is available. A total of 2,100 feet of gill net was set at seven sites ranging from 5-42 feet deep with water temperatures ranging from 44-64E Fahrenheit. The netting results were:

Water chemistry sampling found limited dissolved oxygen below 40 feet in Upper St. Regis Lake. This factor probably accounts for the poor lake trout survival. The four landlocked salmon were captured in suspended nets set in the thermocline. Upper St. Regis Lake was a historic lake trout and brook trout water, but can no longer support either species. The lake trout stocking policy will be cut for this lake. Further review is necessary for judging whether landlocked salmon stocking should continue.

Lake Eaton Salmonid Fishery
Lake Eaton, Town of Long Lake, Hamilton County, was surveyed during the first week of June to assess its salmonid stocking policies. This 576-acre lake is stocked with rainbow, brown and lake trout along with landlocked Atlantic salmon. Proximity to the village of Long Lake and a DEC campground on the lake shore combine to make this water a popular fishery. A total of 1,750 feet of gill net was set at five sites ranging from 20-30 feet deep with water temperatures ranging from 47-55E Fahrenheit. The netting results were:

Species	Number Caught	*Size Range (inches)*
Lake trout	9	6.6 - 27.6
Landlocked salmon	8	13.4 - 19.2
Brown trout	5	16.4 - 17.1
Rainbow trout	7	7.3 - 10.2
Brook trout	1	9.7
Yellow perch	19	5.7 - 12.6
White sucker	18	18.0 - 21.1
Brown bullhead	5	11.2 - 13.3
Rainbow smelt	1	5.1
Pumpkinseed	1	5.7
Smallmouth bass	1	16.4

Six of the nine lake trout and all the rainbow trout were recently-stocked yearlings. Three lake trout were large and only one of these was clipped (i.e. stocked). All of the salmonids were in good condition. Yellow perch and smallmouth bass collected in this survey were given to the Adirondack Lakes Survey Unit for mercury analysis. Regional staff also inspected the various tributaries of Lake Eaton to assess their rainbow smelt spawning habitat. Local anglers have requested that the lake be open to dipnetting for smelt. However, the best stream found was located on DEC campground property and is so small that smelt could not escape netters. A visual inspection of the lake's shoreline for smallmouth bass spawning habitat found many suitable areas, but bass were not yet spawning due to unusually cool water temperatures. Lake Eaton appears to have a good coldwater fishery; stocking rates for the salmonid species will be reviewed once growth rates are analyzed.

Adirondack Strain of Lake Trout
Raquette Lake in Hamilton County serves as the brood stock water for the Adirondack strain of lake trout. A modified Schnabel population estimate was calculated for spawning adult lake trout in Raquette Lake based on trapnetting and clipping data gathered during the October egg take. This year's estimate was 3,725 adults, which is well above the long-term average for the lake, but considerably below the 2002 peak of 5,473 fish. The average size of 6-year-old spawners (an index of growth used for this lake) was 18.5 inches. This value reflects an improvement of 0.4 inches over the 2002 average of 18.1 inches and corresponds to hatchery staff comments that the lake trout they collected eggs from seemed to be in larger and better condition. The 18.5 inch average falls within the target growth range specified in the 1990 Raquette Lake report and is the best growth rate seen in the lake since 1999.

Adirondack Brook Trout Management
Brook trout were historically much more abundant in Adirondack lakes and ponds than presently. Acid deposition and the introduction of nonnative fishes have contributed to declines in both distribution and overall abundances. The Bureau of Fisheries manages brook trout in a subset of Adirondack ponds, with activities that include pond reclamations, limings, stocking and management of native, "Heritage" strains.

Broodstock for Little Tupper Lake
The Warren County Fish Hatchery has provided outstanding assistance for the management of Heritage strains of brook trout by raising Heritage strain fish for stocking. The hatchery maintains a broodstock for the Little Tupper strain, but due in part to a problematic fungal infection, much of the brood stock was lost. Bureau of Fisheries staff undertook an effort to fortify the hatchery's supply of Little Tupper Lake strain broodstock. With assistance from NYS police aviation, 44 Little Tupper Lake strain brook trout were captured in a remote pond and transferred to the hatchery for future egg production. Also, Dr. Andy Noyes, the pathologist for the Bureau of Fisheries, has visited the Warren County hatchery to help stem the disease problem.

Barnes Pond Reclaimed
Barnes Ponds in Essex County was reclaimed with rotenone. Barnes Pond, a formerly excellent brook trout water, had become dominated by non-trout competitors including golden shiners, creek chubs and brown bullheads. The project was undertaken in July and the pond was stocked with brook trout during the fall.

Sunrise Pond to be relimed.
Sunrise Pond, an eight-acre trout pond in Franklin County, is part of the DEC pond liming program. Waters in this program have received applications of pulverized limestone to mitigate the impacts from acid

deposition. Sunrise Pond was last limed in 1984 in cooperation with the Franklin County Federation of Fish and Game Clubs. Recent water chemistry information shows that Sunrise Pond is now in need of another lime application to continue suitable conditions for trout. The Bureau of Fisheries is again working with the Franklin County Federation to apply lime to the pond. The Federation has agreed to provide lime and volunteers to undertake the treatment of Sunrise Pond. Currently, Fishery staff are working with the Federation to implement the project.

Adirondack Heritage strains of brook trout
Eggs were collected from the Little Tupper and Horn Lake strains of brook trout for stocking. Fisheries staff collected Little Tupper strain eggs from a private pond in Essex County as per a cooperative agreement with the landowner. A total of about 14,200 eggs were taken from ten pairs of trout netted in this pond. Another 7,100 eggs were taken from 15 pairs of younger Little Tuppers being raised at the Warren County Hatchery, for a grand total of 21,300 eggs. Fisheries staff also flew into Fishbrook Pond near Lake George to collect Horn Lake strain brook trout eggs. A total of 19,600 eggs were taken from 26 pairs of trout over the five-day effort. Assuming normal egg survival rates, both the Little Tupper and Horn Lake strains will have sufficient numbers of fingerlings for 2004 stocking plans.

Region 6

Pond Liming
With the cooperation of the Division of Operations and Forest Rangers, Region 6 Fisheries staff treated Round Pond, Town of Forestport, Oneida County on March 10. An application of 13 tons of agricultural lime was spread across the ice on this easily accessible brook trout pond. This pond is one of approximately 25 current and potential liming waters in Region 6 that we monitor the status of pH levels and Acid Neutralizing Capacities on an annual basis for use in developing our liming and reliming plans. The pond is stocked with 500 fall fingerlings yearly.

Region 6 Operations and Fisheries staff recently completed removal of beaver debris from the new French Creek Fish Passage Structure in Jefferson County. The structure, put into operation in April 2003, is part of a cooperative research initiative with SUNY ESF to model the effectiveness of managed marshes for fish and wildlife enhancement along the St. Lawrence River. Beaver activity in the impoundment peaked in October with the filling of resting pools with approximately 3 cubic yards of organic materials. Without the use of heavy machinery, cleaning debris would not have been practical and the structure would become useless for fish passage. The first season of operation was deemed a success. Forty nine northern pike adults entered the 30 acre marsh via the structure in the spring. Approximately 5,000 fingerling pike were monitored leaving the impoundment in August. Continued operational success of this structure will depend upon this type of cooperation within our agency.

Fulton Chain of Lakes
As part of the routine monitoring program of the Fulton Chain of Lakes, netting was conducted in mid-summer. Lake trout continued to show good survival to the desired catch size, with stocked fish still making up most of the catch. No rainbow trout were captured. This fishery has collapsed for unknown reasons. At first, anglers were complaining, but they have now switched their effort to land-locked salmon and the coolwater species. The average size of land-locked salmon was 17 inches with numbers being consistent with past catch rates. Smallmouth bass and yellow perch sizes remained constant but there was a noticeable increase in the northern pike catch. A few tiger muskies averaging 34 inches were sampled.

South Lake
South Lake in Herkimer County was one of the lakes hard hit by acid rain and by the early 1970's was nearly devoid of fish life. By the early 1990's native brook trout were reported being caught. DEC surveys in the mid-90's showed the resurgence of the brook trout population which was accomplished mostly using surplus fish. The 2003 survey showed a balanced catch of brook trout in the 6 to 18 inch size range.

Brandy Lake
Brandy Lake in Oneida County was surveyed for brook trout. This stocked pond only contained brook trout and bullheads. Most brook trout were 8 to 12 inches with a catch rate of three trout per net.

Trout and Little Trout Ponds
Trout and Little Trout Ponds, south of Tupper Lake, were netted to monitor the survival of whitefish and lake and brook trout. Little Trout did not yield any whitefish though they were present last year. A few brook trout about 12 inches were the only salmonids captured. Trout Pond yielded salmonids and whitefish only from nets set deeper than 40 feet. All whitefish were mature and contained nearly ripe eggs or swollen testes as did the brook and lake trout. Lake trout were 20 to 25 inches, brook trout were 8 to 20 inches.

Region 7

Heiberg Memorial Forest
Stocking policies for two Cortland County ponds were initiated in 2003. Padget Pond (6 acres) and Sargent Pond (3.5 acres), located in the SUNY College of Environmental Science and Forestry's Heiberg Memorial Forest in Truxton, were scheduled to be stocked with fall fingerling trout beginning in 2004. Water chemistry data taken by the college in 2003 indicated water temperatures and dissolved oxygen levels are suitable for trout. Padget Pond will receive an annual stocking of 1,200 fall fingerling rainbow trout while Sargent Pond will receive 700 fall fingerling brook trout annually. Padget Pond received 2,800 surplus fingerling rainbow trout from NYSDEC's Van Hornesville Hatchery in July 2003. Both ponds are open to public fishing during the regular trout season (April 1 through October 15).

Region 8

Oatka Creek Electrofishing Survey
This is the sixth and last year of a wild brown trout population assessment to evaluate the effects of a "no kill" trout fishing regulation. The September 2003 survey represents the third post-regulation change survey. On October 1, 2000, the trout fishing regulations in a special regulations area of the stream was changed from 12 inch minimum size, three trout per day creel limit to no kill. The season remains year round and only artificial lures can be used. Data analysis is still underway, but late season standing crop estimates are quite variable between the three years preceding the regulation change and the three years post regulation change. Comparisons will be made with a similar study of Oatka Creek that was done in the early 1970's.

Mill Creek Electrofishing Survey
Mill Creek was surveyed using single pass back pack electrofishing gear in late summer to determine population characteristics of the wild brown trout fishery. A total of 193 brown trout and 2 brook trout were collected from three sites. Brook trout were collected in the upstream most site and provide evidence that brook trout are still present in the headwaters of Mill Creek, although numbers are low. Density of 0+ and 1+ and older trout was estimated at 151.9 and 336.7 trout/acre respectively. Biomass of 0+ and 1+ and older trout was estimated at 1.1 and 80.4 lb/acre respectively. Four year classes of brown trout were collected. Growth was comparable to other regional wild brown trout streams with trout averaging almost 9 inches by age 2 and 12 inches by age 3. At the site where most of the trout were collected, no other fish species were found. Reasons for this occurrence are unclear. The other sites upstream and downstream of this site contained abundant populations of blacknose dace.

Mill Creek has no closed season and a daily limit of 5 trout of which only 2 >12 inches may be harvested. Based on standing crop estimates, it does not appear that the liberal year round open season is negatively impacting the wild brown trout population. Anecdotal information suggests that fishing pressure is relatively low and may explain why impacts have been negligible. Mill Creek remains an excellent choice for anglers looking to get away from the crowds while providing good opportunities for wild brown trout.

Canoga Creek Electrofishing Survey
Canoga Creek, a relatively small tributary in the northwest corner of Cayuga Lake, was surveyed in late July to determine if trout were present and/or if water quality and habitat was conducive trout survival. This stream was stocked with brook trout from the 1950's - 70's with good success (i.e. excellent growth and use) however stocking was discontinued in 1974 as a result of extensive posting of waters. The lower portion of the creek flows through a DEC Wildlife Management Area (WMA) and is currently accessible to the public, though stream access is difficult because of extensive riparian vegetation. Renewed interest from a local Trout Unlimited Chapter prompted the survey. Two sites were surveyed, with no trout collected. Habitat in the upstream site, located on private property, was generally poor with little shelter and few pools, however water temperature at 55 F was

very favorable for- trout survival. The downstream site, located within the Canoga Marsh WMA, had numerous pools and undercut banks, substantial amounts of woody debris, and a water temperature of 61 F. However, this section had abundant populations of brown bullheads and sunfish, along with a few largemouth bass and yellow perch and is probably influenced by being approximately one mile from Cayuga Lake. Results of this survey suggest that trout stocking could still provide successful fishing opportunities as it did from the 1950's - 1970's. The area upstream of the WMA is still privately owned, however the local TU group is in the process of approaching landowners to determine willingness to allow fishing permitted signs on their property. Based on this survey and if landowner permission can be acquired, TU is considering applying for a stocking permit to stock brown trout. If stocking is successful and public fishing is allowed, DEC will submit a request to renew a stocking policy for brown trout in Canoga Creek.

Irondequoit Creek CROTS Surveys

In the late summer of 2003, Irondequoit Creek was surveyed at five locations within stocked reaches utilizing the CROTS methodology to update it's stocking policy. Most of the Region's stocked trout streams were originally surveyed under CROTS in 1990-1992, meaning they haven't been re-examined in about a decade. We estimate that trout densities ranged from approximately 0 to 31 wild young of year, 0 to 58 wild yearling, and 3 to 42 wild 2 year old brown trout per acre, along with 0 to 33 hatchery yearling and 0 to 47 hatchery two year old brown trout per acre.

Post Creek CROTS Survey

Post Creek was surveyed using single pass back pack electrofishing gear July 30-31, 2003, to re-evaluate the current CROTS stocking policy. Current stocking rates are based on survey information collected in 1985 and fishing pressure estimated at 450 h/ac. Based primarily on an increase in stream acreage available to trout stocking, Post Creek stocking policy will be increased.

Finger Lakes Wild Rainbow Trout Evaluation

During late March 2004, the Region's four Finger Lake tributaries were surveyed to evaluate wild rainbow trout spawning. Springwater Creek was surveyed on March 22. Seventeen adult rainbow trout were caught. Only 3 adult rainbow trout were caught in 2003, due to cold water temperatures and moderately high flows. This year's survey numbers were more similar to 2001 and 2002 when 22 and 17 adult rainbows were caught, respectively.

Growth rates for rainbow trout in Catharine Creek has shown a slight decline when compared to data collected for the past 20 years. Age 5 (21 inches) and age 6 (23 inches) year old fish continue to dominate the spawning sample. The 2004 sample did have greater numbers of sea lamprey transformers attached to them than seen in previous years and should be reflected in a greater wounding rate in 2005.

For a third year in a row the numbers of rainbow trout sampled during the one-day sampling was depressed. Not much can be inferred by looking at yearly fluctuations however, as weather and natural variance will have a great impact on the number of fish collected from any one-day survey. However, there may be a general trend of declining numbers of returning rainbows to spawn in Cold Brook. Continued monitoring will be carried out. The Region has applied for Bond Act monies to enhance the stream habitat.

High flows negatively affected the sampling effort on Naples Creek in 2004. The event was still a success as up to 400 to 500 people come out to watch the sampling.

Warmwater Rivers and Streams

Region 3

Tiger Muskellunge Stocking in Ulster County
Tiger muskellunge have been stocked annually in the following Ulster County waters: lower Rondout Creek since 1981, lower Esopus Creek since 1981, and Onteora Lake since 1992. Despite repeated electrofishing surveys by DEC in each of these waters, no legal tiger muskellunge have been collected over this period. Some tiger musky catches were reported by anglers fishing downstream of our stocked reaches in Rondout Creek and Esopus Creek in the late 1980's and early 1990's. However angler reports over the last ten years indicate very few tiger muskellunge are being caught. Due to the apparent poor survival of these fish, the decision was made to discontinue stocking tiger muskellunge in these waters starting in 2004.

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 2003. 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 21% from 2002 to 14.0 fish/net/night. Smallmouth bass numbers continue to remain relatively stable although the CPUE dropped slightly from 2002 to 2.06 fish/net/night. The walleye CPUE remains above the long term average although no strong upcoming year classes are apparent . Yellow perch CPUE remained relatively unchanged from 2002 at 4.34 fish/net/night.

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 August and through monitoring of an established gill net index. The following results to date were:

- 2001 - Stocking site evaluation of fish species composition, and habitat suitability.
- 2002 - Approximately 5,000 fry stocked, despite problems with the culture facility.
- 2003 - Approximately 30,000 sac fry stocked at four locations

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 5, 2003 nearly 500,000 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 second 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. Efforts by Region 7 Fisheries staff to collect juvenile shad from the river in September yielded no fish but collections made in Pennsylvania and Maryland revealed that survival and growth of shad fry stocked in New York were good.

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. On-going shad restoration efforts resulted in the passage of over 130,000 adult American shad in the spring of 2003 at Conowingo Dam in Maryland, the lower-most dam on the river. This is the third highest passage total in the 30+ years of restoration work by SRAFRC.

Unadilla River Black Bass Collection
Region 4 and 7 fisheries staff cooperated in a collection effort for smallmouth bass from the Unadilla River to determine whether the current 10 inch minimum size limit for bass is still appropriate. Analysis of the data gathered indicates that the bass population size structure, growth rate, and abundance are similar to or better than other rivers and large streams in New York State. The special regulation, which was established in 1977, was apparently in response to data that indicated growth of smallmouth bass was slow and few fish over 12 inches were present. Our recent surveys suggest that this is no longer the case. Consequently, we have proposed that the special regulation for black bass in the Unadilla River be eliminated and that future management be based on the statewide, 12 inch, regulation.

Region 9

Buffalo River Walleye Restoration Project
Region 9 Fisheries and Lake Erie Units are working cooperatively to develop and implement a plan to restore walleye in the Buffalo River. DEC staff are working in partnership with an advisory committee that includes representatives from Bison City Rod and Gun Club, Erie County Department Environment and Planning, Erie County Federation of Sportsmen's Clubs, Erie County Fishery Advisory Board and Southtowns Walleye Association. The goal of the plan is to restore a self-sustaining, river-spawning population of walleye in the Buffalo River. It is anticipated that if adequate numbers of spawning-phase walleye are collected in Cattaraugus Creek in spring 2004, the eggs will be incubated and reared to fingerlings at the Chautauqua Hatchery. Under this scenario, the first stockings of walleye fingerlings, dedicated to restoring this species in the Buffalo River, will occur in spring 2004.

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) in the St. Lawrence River continued in 2003. Researchers at the State University of New York School of Environmental Sciences and Forestry completed the following activities:

Monitoring of Juvenile and Adult esocids.
Monitoring of juvenile esocids continued in 2003. Eleven bays were sampled for YOY esocids. Both northern pike and muskellunge total CPUE for 2003 were low relative to other recent index years. 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. The 2003 large mesh seining index for muskellunge had a total CPUE of 0.34, the lowest since 1993. This was a contrast to the record high catch of spawning adults during the spring trap-net monitoring.

Long-term young of the year muskellunge CPUE data (1990-2003) 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 14 years and were both significantly greater than most of the other bays. Salisbury and Lindley bays had the lowest mean CPUE over the last 14 years.

Spawning adult muskellunge were also monitored, in May and June, 2003. A total of 22 females and 21 males were caught. A total of 37 muskellunge were tagged with dart tags and 6 fish were tagged with FLOY T-tags. Six muskellunge tagged during previous surveys were recaptured in 2003, all recaptures caught again at the site of their original tagging with the exception of A87, tagged at Peos Bay and recaptured at neighboring Millen's Bay five years later.

Muskellunge Angler Diary Program
Diaries were distributed to 12 willing guides/anglers and three participants returned a diary (25% return rate). Each diary recipient was contacted by mail and twice by phone to encourage participation and diary returns. This past season (CPUE = 0.039) showed a marked improvement over the low catch rate observed in 2002, but did not reach previous 1997-2000 level catch rates. The mean size of fish caught has remained relatively steady over all years. There was a 100% release rate for the second consecutive year.

Northern Pike Spawning Marsh Management
Efforts to evaluate the use and reproductive success of northern pike in managed marshes continued in 2003. Spawning adult northern pike were captured and placed over the water level management structure since 1999 at Cranberry Creek and since 2002 at

Wilson Bay. Overall 551 northern pike have entered spawning marshes since the program began; sex ratios of these fish are consistently female dominated. Northern pike began use of a new spawning marsh at Carpenters Branch of French Creek in 2003. Adult traps (hoop and trapnets) were installed in April 2003, at all sites. Thirteen adult pike were captured at Cranberry Marsh. There has been a decline in the number of spawning fish at Cranberry Marsh since monitoring began (preliminary data indicates catches have rebounded in 2004); mean size has remained relatively stable. Twenty six adult northern pike were captured after going through the fish passage structure at Wilson Bay in 2003. 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 48 adult northern pike were captured. Several fish were observed using the fish ladder at Carpenters Branch the day prior to the trap being installed.

In addition to monitoring spawning adult northern pike, YOY northern pike have been monitored for emigration at Cranberry Marsh since 2000. Over 4,000 emigrant northern pike were observed in 1999 but more specific data are not available. A total of 302 emigrating age-0 northern pike were observed in 2003 (77 were fin-clipped). Prolonged periods of exceptionally high flows prohibited our sampling for a period of time during emigration. Age-0 northern pike have also been monitored at Wilson Bay Marsh since 2002. In 2003 only two northern pike were caught between June 11-13. Emigrating age-0 northern pike were abundant leaving Carpenters Branch with a total of 4561 captured with 3738 given LV fin-clips (82%). These numbers are also conservative due to periods of high water flow that prevented effective sampling during large storm events. The contribution of Age-0 northern pike from Cranberry Marsh to Goose Bay and from Carpenters Branch to French Bay is also being examined via a study, initiated in 2001. However in 2003, Goose Bay was unable to be effectively shocked due to a malfunction in the electroshocking boat. Electrofishing the shoreline of French Bay to capture age-0 northern pike resulted in the catch of 12 northern pike and 4 grass pickerel.

Fish Community and Habitat Associations in Nursery Bays

Seining efforts continued, for the purposes of helping identify species community assemblages and habitat associations contributing to esocid nursery bays. Habitat attributes measured included: depth, substrate type, plant species diversity, percent coverage of each dominant species, and vegetation height. This preliminary analysis focused on the large-mesh August seining efforts from nine bays: Rose, Peos, Millen's, Boscobel, Lindley, Frink's, Hoffman's, Cobb Shoal, and Garlock (Deer and Salisbury not included).

A total of 16,137 fish were captured in 2003 (90 hauls included) during the large mesh seining series. Fish were placed into seven broad categories for preliminary analyses. Fish communities were very similar in 2002 and 2003 with yellow perch and the sunfishes dominating the nearshore zone in both years. Esocids were the least abundant group of fishes in the study areas; as a group, however, the esocids did not differ among sites.

Coldwater Streams

Region 1

Native Brook Trout Restored to Nassau County
Biologist Gregory Kozlowski and a crew of DEC staff and volunteers completed a biological survey confirming the survival of brook trout stocked into Beaver Brook in 2001 to restore this native species to a stream it once called home. Fourteen adult brook trout were caught during the survey but no juveniles. While the number of fish was lower than expected the fish were in excellent condition. During the survey DEC staff noticed unusually high quantities of loose sand in the stream. Because excessive sand can smother trout spawning habit and fill in pools used by trout, another survey of the watershed will be scheduled to find the source of sand and identify feasible corrective measures. Additionally, it is recommended that brook trout fry be stocked into Beaver Brook during the next three years (2004, 2005, and 2006). The source of the fry will be the Cold Spring Harbor Fish Hatchery, the source of the brook trout caught this year.

Trout Survival in Carlls River
The DFWMR recreational use strategy calls for the collection of adequate biological data to make informed management decisions. To fulfill this strategic imperative, electrofishing surveys were completed on September 30, 2003 and March 8, 2004 on the Carlls River. The survey objectives were to assess summer survival of the spring stocked trout and overwinter survival of brown trout stocked in October of 2003. Four brown trout were captured in the fall survey indicating that despite very warm summer temperatures in most of the river, there are some coldwater refuges which trout can utilize. Twenty-one brown trout were captured during the spring survey, representing 21% of the total fall stocking. Considering the likelihood that some trout migrated downstream of the area covered by the survey and that some trout evaded capture, the recapture rate indicates very good over winter survival. The average relative weight of the trout recaptured in the spring was 96, suggesting that they were finding sufficient food in the stream to maintain their weight. All trout were returned to the stream at the conclusion of the surveys.

Region 3

Brown trout stocking on Neversink Reservoir
Honoring a long-voiced sportsmen's desire, a brown trout stocking policy was written and enacted on 1500 acre Neversink Reservoir beginning in the spring of 2004. This New York City-owned reservoir has always contained some wild brown trout which recruit from the tributaries, in addition to both stocked and limited wild landlocked Atlantic salmon. Implementation of this 3700 fish brown trout policy should increase the trout catch rate from this reservoir.

Region 4

Catskill Creek CROTS Survey
A CROTS survey was conducted on the middle section of Catskill Creek and included five sites within the stocked reach of the stream and two sites in the upper, wild trout portion. Trout numbers and biomass were compared to nine previous surveys conducted over the last 28 years. Note that only this survey and the survey conducted in 1975 included all seven sites.

The numbers of wild brown trout yearlings were about the same in 2003 as seen, on average, over the previous nine surveys. The best site in the upstream section had 58 wild brown trout yearlings per acre in 2003. Rainbow trout yearling numbers were, however, down from previous surveys. The best site had 77 wild rainbow trout yearlings per acre in 2003, where in previous years the number of rainbow yearlings was in the hundreds with a peak of 957 in 1975 and 233 as recently as 1998. Total trout biomass in 2003 was, on average, about the same as the previous surveys with the uppermost site being a notable exception. This site was heavily influenced by the decrease in numbers of rainbow trout. At other sites, a small increase in the number of older trout would balance any decrease in numbers of rainbow yearlings. The best site in 2003 had 78.5 lbs per acre of wild trout.

Though 2003 was a good summer for trout with high water levels in Catskill Creek, water temperatures in the lower sections of the creek were still surprisingly high. There is also evidence of bank erosion along many sections and this may explain some of the problems for trout in the upper reaches of the stream.

BEAMOC Fisheries Project

In 2000, NYSDEC initiated a five year fisheries study on the 300 mi^2 Beaver Kill watershed. The goal of this effort is to maximize the capacity of the Beaver Kill watershed to produce and sustain wild trout populations and high quality trout fishing opportunities. Since it is believed that the tributary system is important to the recruitment of wild trout populations in the mainstem Beaver Kill and Willowemoc Creek, it was necessary to determine the current status of trout populations in these streams. Consequently, all tributaries to the Beaver Kill, Willowemoc Creek and Little Beaver Kill were surveyed by electrofishing. Secondly another study was implemented on selected tributaries to determine yearly trout abundance.

Fish Distribution Survey

A total of 166 tributaries were surveyed from 2000 to 2003, of which 110 were inhabited by trout. Brook trout were the most widely distributed trout species and were found in 104 streams. Brook trout were the only species present in 54 streams. Brown trout were found in 56 streams including six solely inhabited brown trout. Rainbow trout were found in 12 streams.

In the Beaver Kill, 68 of the 88 mainstem tributaries were inhabited by trout. Brook trout were found in 63 streams including 31 streams in which they were the only trout present. Brown trout and rainbow trout were found in 37 and 10 tributaries, respectively. On Willowemoc Creek, 30 of the 58 tributaries were inhabited by trout. Brook trout were found in 29 streams including 17 in which they were the only trout species present. Brown trout and rainbow trout were present in 13 and 2 tributaries, respectively. On the Little Beaver Kill, 12 of the 28 tributaries were inhabited by trout. Brook trout were found in 12 streams and brown trout in six. Rainbow trout were absent in the Little Beaver Kill drainage.

The widespread abundance of brook trout was surprising. Despite their widespread distribution, the contribution of brook trout to the mainstem fishery of the Beaver Kill and Willowemoc Creek is relatively minor. Since brook trout can not be used to meet the goal of the Beaver Kill-Willowemoc Creek management effort of providing a high quality trout fishery for these two rivers, directed management efforts to enhance brook trout populations in the tributary system should not be undertaken. Nevertheless, the 54 tributaries inhabited solely by brook trout warrant protection on their own merits as unique environments and should be excluded from any efforts to enhance brown and/or rainbow trout in these streams to benefit the mainstem fisheries.

The growing population of rainbow trout in the Beaver Kill drainage is a relatively recent event believed to have occurred in the late 1980's or early 1990's. Although rainbow trout were found in 12 streams, permanent populations have only been established in five streams. It is anticipated that rainbow trout populations will continue to expand into all suitable tributaries throughout the Beaver Kill drainage. The issue is whether this spread should be facilitated through trap and transfer operations of wild fish or allowed to expand naturally.

Brown trout were found in only 56 of the 166 mainstem tributaries to the Beaver Kill, Willowemoc Creek, and Little Beaver Kill. When stream size is taken into consideration, all first order streams (streams with no sub-tributaries) should be excluded from directed management efforts to enhance brown trout abundance because of their small size. As a result, only 32 tributaries remain where management efforts to enhance wild brown trout abundance should be directed. Enhancement methods have yet to be identified but a simple recommendation that could be implemented quickly and cheaply would be to control beaver populations where they exist. A costly recommendation would be to implement stream restoration efforts to return geomorphically unstable streams to a stable form. The range of available management options have yet to be determined.

Trout Population Sampling in Selected Tributaries

Depletion sampling population surveys in 2003 were completed on five Beaver Kill tributaries and two Willowemoc Creek tributaries for a total of 14 sites. This study is a five year effort to determine trout abundance (numbers and biomass) by species and age group (fingerling, yearling, and older trout) and to examine year to year variability. Over the course of this study, population estimates are being conducted on six Beaver Kill and eight Willowemoc Creek tributaries with streams being sampled annually or every other year.

For the five Beaver Kill tributaries sampled, trout biomass ranged from 3.0 to 84.8 lbs/acre. Notable

changes from 2002 to 2003 were the major declines in trout abundance at the lower study sites in Horton Brook, Spring Brook, and Shin Creek. In Horton Brook, trout biomass declined from 156.2 lbs/acre to 18.3 lbs/acre; 75.9 lbs/acre to 14.7 lbs/acre in Spring Brook, and 95.0 lbs/acre to 32.5 lbs/acre in Shin Creek. The declines were probably the result of a wet summer in 2003 which resulted in higher than normal stream flows and trout dispersed throughout the stream. The summer of 2002 was hot and dry with low stream flows which may have caused trout to concentrate in areas with good holding habitat which the lower stream reaches have. Rainbow trout were absent in Shin Creek where they were collected for the first time in 2002.

For the two Willowemoc Creek tributaries, trout biomass ranged from 18.9 to 80.4 lbs/acre. Major changes from 2002 to 2003 was the absence of rainbow trout in the two streams sampled. In 2002, rainbow trout were collected for the first time in Stewart Brook and Abe Wood Brook. The 2002 collections were also the first time rainbow trout were collected in Willowemoc Creek tributary system. Trout biomass in the lower study reach for both streams declined by almost 50% from 2002 to 2003.

At least one major finding of this study is that rainbow trout appeared to have displaced both brown and brook trout. Brown trout and brook trout abundance have declined in Trout Brook, Horton Brook, and Spring Creek where rainbow trout have become permanently established. Another preliminary finding is that a strong year class of fingerling trout does not automatically mean a strong year class of yearling trout the following year. Older trout (Age 2 and older) are generally scarce. Thus, it appears that emigration from the tributary system into the mainstem Beaver Kill or Willowemoc Creek probably occurs during the spring. This study will be completed in 2004 with a draft report completed by late spring, 2005.

Region 5

West Branch Ausable River Surveyed
The West Branch Ausable River was electrofished during the week of July 21, 2003. The overall abundance of trout, and the abundance of trout longer than 12 inches, indicate a very desirable fishery. The West Branch Ausable is an extremely popular trout fishing river near Lake Placid. Fishing on the Ausable generates an estimated $3.7 million in at-location expenditures annually; and in the 1996 Statewide Angler Survey, the river received the highest satisfaction rating of waters in the state. The objectives of the electrofishing survey were to evaluate the current status of the fish resources in the river and to evaluate the biological effects of the catch-and-release regulations. The river had last been surveyed in the early 1990s, prior to enacting the catch-and-release regulations.

Brown trout in the 2003 sample averaged substantially larger than in the early 1990s. Considering yearling and larger trout, 41 percent were longer than 12 inches in 2003 compared to only 4 percent in the earlier period. The increased average size was observed in both the catch-and-release section and the areas where harvest is allowed. The largest brown trout collected was 19 inches long. Overall, 23 percent of the yearling and older brown trout were wild, which was very similar to the 22 percent wild observed in the early 1990s. However, wild fingerling trout (young-of-the-year trout) were several times more abundant in 2003 than previously, which indicates increased natural reproduction The increased abundance of wild fingerlings occurred in both the catch-and-release and in the harvest-allowed sections. Qualitative observations indicated that the abundance of fines (sand) in the substrate had decreased substantially since the early 1990s, which could explain the increased natural reproduction. Also, ice conditions on the river the previous winter were favorable for over-winter survival of trout and trout eggs.

Region 7

Genegantslet Creek Temperature Monitoring
Recording thermographs were again placed in a ten mile stretch of the 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 July 29 to September 29. The purpose was to document summer water temperatures to determine the stream's suitability for sustaining trout.

In 2003, air temperatures were significantly cooler and flows were much higher than in 2002. As a result stream temperatures at all sites were cooler in 2003. The highest temperature recorded at any site in 2003 was 74.5EF at the Route 206 bridge (2002 high was 80.8EF at Route 206) and overall there were very few days above 70EF at any of the sites. In summary, 2003 temperatures in Genegantslet Creek were very favorable for trout survival and growth.

Region 9

CROTS

It has been almost 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; with10 completed per year they could be completed in about 8 years. Because of additional staff reductions in 2003, we were only able to CROTS sample seven streams. Stocking policies remained unchanged for Quaker Run, Black Creek, Tonawanda Creek, Canaseraga Creek and Farrington Hollow. Mill Creek's stocking decreased due to posting. The stocked section on Mansfield Creek (see additional information) was reduced due to the presence of high numbers of wild trout in the upper section of the stream.

Elm Creek and The Ram

Elm Creek, located near the Village of Randolph in west-central Cattaraugus County, supports a fishery for wild brown trout, *Salmo trutta*. In 1991, 1997 and 2000, Region 9 staff sampled trout by electrofishing at three sites on Elm Creek to evaluate wild trout populations and trout stocking policies. The 1991 survey indicated a wild brown trout biomass of 47 lbs/acre (360 trout $age 1 per mile) and an annual stocking of 1,000 hatchery yearling brown trout was recommended.

In late 1996, Stillson's Pond, a shallow 15 acre impoundment on the major tributary of Elm Creek, "The Ram" was drained because of a dam failure. Survey data on "The Ram" in 1991 indicated that surface discharge from the pond had been warming the stream substantially, which in turn was having adverse temperature effects on Elm Creek below its junction with "The Ram". A survey of "The Ram" in 1997 showed drastically improved water temperatures following the draining of Stillson's Pond. The 1997 survey on Elm Creek showed wild brown trout populations had increased to 73 lbs/acre (635 trout $age 1 per mile). In the 2000 survey of Elm Creek, the wild brown trout population remained stable (79 lbs/acre and 650 trout $age 1 per mile). Based on the abundance of wild brown trout, the trout stocking policy was eliminated beginning with the 2001 season.

Sampling in 2003 was done to evaluate the condition of the wild trout population following the cessation of trout stocking. The 2003 survey of Elm Creek showed another large increase in the wild brown trout population (127 lbs/acre and 1,010 trout $age 1 per mile), likely due to a combination of improved water temperatures in "The Ram" and the cessation of trout stocking in Elm Creek. Elm Creek is scheduled to be surveyed again in late summer of 2008 to monitor the status of the wild brown trout population. However, because of a pending Article 15 Protection of Waters permit application to rebuild Stillson's Pond, additional surveys may be carried out before 2008.

Mansfield Creek

Mansfield Creek, located in central Cattaraugus County was sampled at five sites in August 2003. Through 2003 the stream had been stocked in the lower 5.5 miles with 2,400 yearling brown trout. The stream also supported a substantial wild brown trout population. Wild rainbow trout have been increasing in abundance since a small number of wild fish were stocked there by DEC Region 9 staff in 1995, 1996 and 1997.

Electrofishing surveys had previously been done in 1992, 1995, 1997, 1998 and 1999. In each year except 1999, biomass and abundance estimates for wild brown trout exceeded the previous sampling estimate. Wild brown trout biomass increased from 15 lbs/acre in 1992 to 67 lbs/acre in 2003. Rainbow trout estimates have also continued to increase since they were introduced in 1995-1997. In 1995 there were an estimated 54 yearling and older rainbow trout (3 lbs/acre) and by 2003 there were an estimated 190 yearling and older rainbow trout (15 lbs/acre). Harvest of hatchery trout appeared to be fairly low as the 2003

estimate for hatchery brown trout remaining in late August was 23 lbs/acre.

Based on the high wild trout biomass (RT and BT) in 2003 (82 lbs/acre), stocking was eliminated from all but the lower 2.4 miles of the stream. In this lower section, summer water temperatures exceeded 75 degrees F and few wild trout were found. Mansfield Creek is scheduled to be sampled again in 2008.

Small wild trout streams
In 2003, one small unstocked trout stream was sampled to confirm the status of its trout population. Fenton Brook was sampled again this year after a wild rainbow trout population was found there in 2002. Good numbers of wild rainbow trout were again sampled in 2003 as well as exceptional numbers of wild brown trout, equaling those found in 2002 (73 lbs/ac).

Central Office - Inland Section

New Regulation Prohibits Angling in Beaver Kill Thermal Refuge Areas
The Bureau of Fisheries proposed (and eventually adopted) a regulation that will prohibit all fishing in the Beaver Kill from the Iron Bridge at Horton downstream to the first Route 17 overpass (a distance of approximately 600 yards) from July 1-August 31. This regulation will provide protection for trout at the Horton Brook thermal refuge area during the months when trout are most likely to congregate there. The regulation will also protect trout at two other secondary refuges (the "Acid Factory Wall" site, and the mouth of Spooner Brook). The Horton Brook thermal refuge is the most important thermal refuge in the system, with hundreds of fish observed congregating near the mouth of Horton Brook during particularly stressful periods.

Although a recent creel survey has shown that voluntary approaches, such as the posting of signs at refuge areas and word of mouth at local fly fishing shops, have been highly effective at reducing fishing at the Horton Brook refuge, a number of organized groups and some vocal individuals have lobbied the Bureau for a regulation that would provide greater protection for trout in thermal refuges during critical times of the year.

Before implementing the regulation, we conducted a mail survey to assess the attitude of anglers who fish the Beaver Kill towards the regulation. The survey was mailed to 532 individuals. Five hundred of the recipients were drawn at random from our database of Beaver Kill and Willowemoc anglers collected during a three-year creel census (2000 - 2002). The remaining 32 recipients were contacts acquired at a Beaver Kill public meeting held on May 10, 2003 near Roscoe, N.Y.

Of the 532 surveys that were mailed, 39 were returned undeliverable, leaving 493 surveys that are presumed to have reached intended survey recipients. Of these, 244 (49.5 %) surveys were completed and returned. Of the 244 surveys returned, 215, or 88.1% supported the new regulation. The 95% confidence interval around the mean ranged from 84.1% to 92.2%. Twenty-five (10.2%) of the respondents were opposed to the regulation, and 4 (1.6 %) had no opinion. Of the respondents who indicated that they were opposed to the regulation and who included comments on their survey form, the majority felt that either the regulation was not needed (e.g., voluntary measures and/or enforcement of current laws should be adequate), or that the regulation should be flexible (i.e., only in effect when water temperatures are high).

Based on this survey, it was clear that the overwhelming majority of Beaver Kill/Willowemoc anglers supported the new regulation. The regulation was subsequently adopted and takes effect on October 1, 2004.

Radio-telemetry Study on Stocked Brown Trout
Initial analysis has been completed for the first year of a radiotelemetry study on stocked brown trout. The study was conducted on the Beaver Kill and Willowemoc during the spring and summer of 2003, with the primary purpose of determining dispersal patterns and mortality rates. The study included 89 yearling and 47 two-year old brown trout. Most of the tagged fish remained close to the point at which they were stocked. For example, at 28 days post-stocking 62% of the fish still in the study were within 1 mile of where they were stocked, and 80% were within 2 miles of where they were stocked. Five fish were known to have been preyed upon by mergansers (telemetry signals were detected coming from inside of mergansers in each case), including a two-year-old that was 12.8 inches when stocked. It is likely that

many of the 34 fish that vanished during the study were also preyed upon by mergansers, indicating the merganser predation is a significant source of mortality. The second year of the study will take place during 2004.

Two-Story Lakes and Ponds

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 2003 five diary cooperators reported on 201 trips covering 611.5 hours. These efforts resulted in a total of 422 trout recorded. Included in the catch were 419 lake trout and 3 brown trout. Overall catch rate was 0.69 trout per hour. This was well above the average catch rate of 0.46 trout per hour achieved by cooperators fishing from 1987 to 2002.

Lake trout comprised 99% of the catch in 2003 and contributed an average of 90% of the trout caught for the years 1995-2002. In 2003 average size was 19.0 inches compared to 19.5 inches in 2002. Overall catch rate was 0.69 per hour. Catch rate for legal sized lake trout (21 inch minimum) was 0.29 per hour. In both cases, these were the highest catch rates ever recorded in the diary program. Cooperators kept 28% of legal size lake trout caught. The average length of harvested lake trout was 22.7 inches, similar to the averages recorded in the ten previous years. Fin clips were recorded on 43% of lake trout caught which was similar to the 40% reported in 2002. Although now abundant at sizes up to and slightly above the 21 inch minimum size limit, a relative lack of larger and older 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 7^{+} in 2003 compared to 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, increase the number of larger lake trout (26 inches and larger), and 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 is currently being proposed to take effect on October 1, 2006. The daily limit would remain 3.

New Croton Reservoir
From 1998 to 2002 DEC annually stocked the upstream one third of 2,304 acre New Croton Reservoir with 3,800 fall fingerling tiger musky. This stocking was done with the permission of the New York City Department of Environmental Protection and was designed as a five year experimental program. As part of the program DEC conducted electrofishing surveys of the reservoir in 2001 and 2003 and solicited catch reports from local tackle shops and anglers.

Unfortunately, both electrofishing surveys failed to capture any tiger musky. Additionally no verifiable reports of legal sized tiger musky were ever received from tackle shops or area anglers. Based on these results, the stocking policy was terminated prior to the fall 2003 stocking.

Region 4

Pepacton Reservoir Gill Netting
Pepacton Reservoir is a 5,700 acre water supply impoundment in Delaware County known for its brown trout fishery. Although the reservoir is stocked with approximately 10,000 brown trout yearlings annually, it has a large wild fish component with most trout 20 inches and larger wild fish. In June, 2003, eleven 450 foot long gill net gangs were set overnight at standardized sties to monitor brown trout populations and to collect fish for contaminant analyses. This was the 11^{th} such netting since 1969.

A catch of 6.0 brown trout per gill net gang was recorded which is the second highest catch on record. The record catch of 6.2 trout per net occurred in 1969. The high catch in 2003 was due to the large number of brown trout 20 inches and larger which comprised 45% of the 66 brown trout caught.

Brown trout and yellow perch were found to have elevated mercury levels. As a result, health advisories for the consumption of these fish were issued. For brown trout over 24 inches and all yellow perch, it was recommended that fish consumption be limited to one meal per month.

Region 5

Lake Champlain

Bureau of Fisheries management efforts on Lake Champlain are directed primarily at reestablishing the native lake trout and landlocked Atlantic salmon. Conducting sea lamprey control is a necessary prerequisite to establishing desirable populations of salmon and trout. 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 (VDFW)

Lampricide Control- Lampricide treatments were successfully completed on two streams in New York (the Boquet River and Beaver Brook) and one delta (the Ausable River delta) during 2003. High river flows required several treatment postponements on the Boquet River but with persistence, the treatment was finally completed. Also, the label for the newest batch of TFM (the chemical used for stream treatments) contained erroneous, very problematic wording. A collaborative effort by several agencies resulted in the label being corrected in time for the treatments.

Observations following the treatments indicate that the Boquet River and the Ausable Delta treatments were highly effective at killing ammocoetes (larval stage sea lamprey), yet caused minimal nontarget mortalities. The Beaver Brook treatment was only partially effective due to low stream flows and variable water chemistries.

A scheduled TFM treatment of Mt. Hope Brook was cancelled due to high flows. Several attempts to reschedule the treatment were unsuccessful, so the treatment was postponed until fall 2004. The Vermont Department of Fish and Wildlife was unable to obtain permits authorizing the 2003 TFM treatment of the Winooski River. One issue was the Vermont Department of Health did not identify their desire for more data on impurities present in TFM formulations until it was too late to have the TFM tested for a 2003 treatment. The Winooski River treatment will be deferred to 2004, pending a permit being issued.

The Adirondack Park Agency (APA) issued a wetlands permit for the long-term sea lamprey control program in Lake Champlain. The APA wetlands permit was required prior to any sea lamprey control treatments within the Adirondack Park. A majority of the sea lamprey-producing streams on the NY side of Lake Champlain are located within the Park.

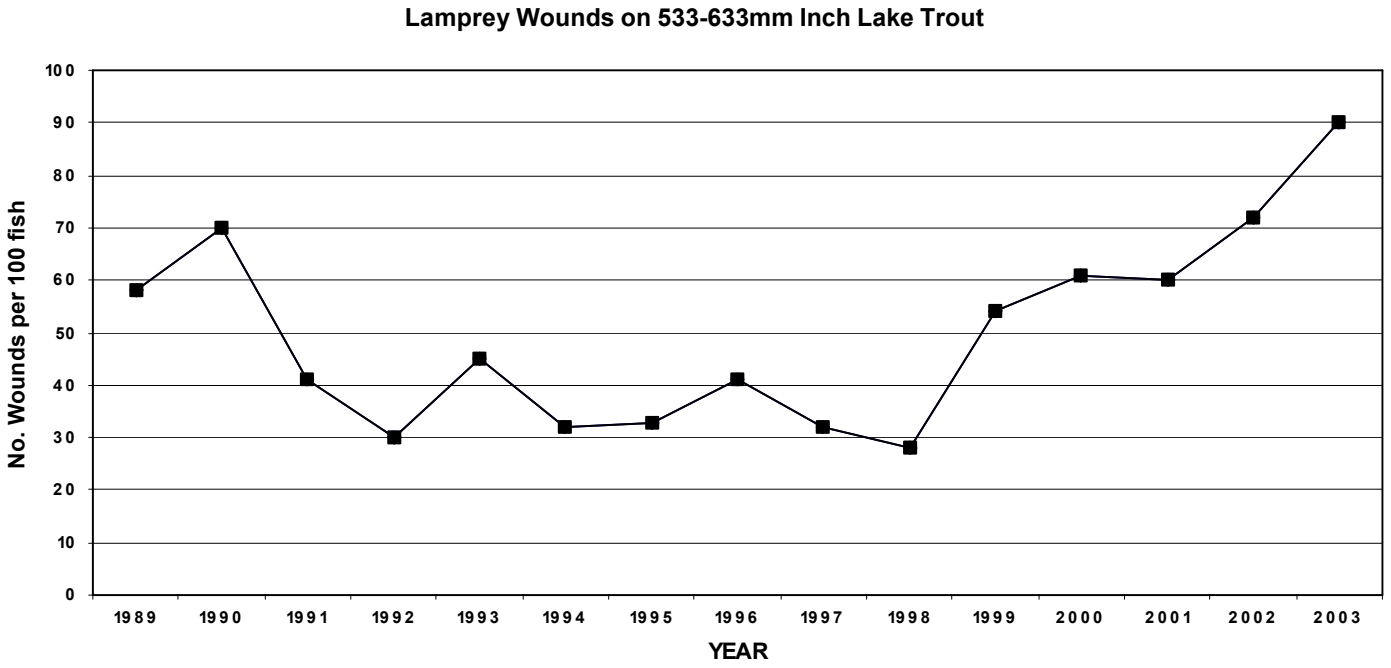
Trapping and Barriers- As part of the cooperative program between NYSDEC, the USFWS, and the VDFW, the USFWS conducted an expanded sea lamprey trapping program during spring 2003. Traps were used to collect sea lamprey during their spawning migration on 17 tributaries to Lake Champlain during spring 2003 (Table 1). On nine of those tributaries, portable traps were installed as the primary method of sea lamprey control. Trapping has been implemented as a control technique on small streams where capture efficiencies are thought to be high, and where suitable trapping sites exist downstream of the spawning habitat. In the Great Chazy River, trapping is part of an integrated approach to controlling sea lamprey that includes lampricides in the lower river and trapping at the upstream barrier to limit their redistribution.

Table 1. Number of migratory-phase sea lamprey captured during 2003 in Lake Champlain tributaries where traps were deployed as part of the long-term control program.

Stream	Number of migratory-phase sea lamprey captured
Great Chazy River [a]	373
Trout Brook [a]	165
Malletts Creek [a]	146
Morpion Stream	89
Salmon River	59
Lewis Creek	38
Stone Bridge Brook [a]	31
Mt. Hope Brook	31
Mill Brook	15
Little Ausable River	12
Pond Brook [a]	10
Sunderland Brook [a]	7
Youngman Brook [a]	1
Mullen Brook [a]	1
Pike River	1
Indian Brook [a,b]	0
Allen Brook [a]	0

[a] Streams where trapping was implemented as a potential control measure.

[b] Data suggest that trapping has eliminated sea lamprey production from Indian Brook.



Pike River System-The Pike River system in Quebec, including its major tributary, Morpion Stream, 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 during 2003. 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 during the summer. Modeling of stream flows and various weir crest heights, design work, and cost estimates will be completed during 2004. Trapping was implemented on Morpion Stream as part of the sea lamprey tagging study and to assess the potential for trapping spawning sea lamprey as a control measure. A local citizen was contracted by the USFWS to monitor traps in both Morpion Stream and the Pike River.

Status of the Lake Champlain Fishery- Sea lamprey wounding rates on lake trout and salmon were high during 2003 despite recent lamprey control efforts. Table 2 shows that for the size classes selected for monitoring, 2003 wounding rates were much higher than the wounding objectives, and were even substantially higher than average wounding rates for several years prior to the experimental control program. Annual wounding rates for lake trout from 1989 through 2003 show a substantial reduction in wounding during the experimental control program, and a rebound in recent years (Figure 1).

Table 2. Wounding rates on Lake Champlain lake trout and salmon during 2003.

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

[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.

Staff completed a report on the Lake Champlain salmonid angler diary program for the 2002 fishing season. Lake trout catch rates improved in 2002 from the previous year, but landlocked salmon fishing results were mixed. While the catch rates for lake fishermen were down somewhat from the previous year, the average size was up. Tributary landlocked salmon fishermen had catch rates identical to those from the previous year. A report summarizing the 2003 fishing season will be prepared in 2004.

The Willsboro Fishway on the Boquet River, Essex County, was operated in trapping mode during the fall salmon run. No adult salmon were collected in the fishway during 2003, an indication of the continuing impacts of sea lamprey on Lake Champlain's salmon population.

Salmon and lake trout were sampled by electrofishing during November, 2003. The abundance of lake trout and salmon appeared to be low, and sea lamprey attack rates continue to be high. For lake trout, the frequency of lamprey wounds was about four times the rate established as a goal for the control program. Similarly, the frequency of wounds on salmon was several times the goal established for the program. The electrofishing results, the lack of returns to the Willsboro Fishway, and angler reports all indicate that sea lamprey are continuing to have substantial adverse impacts on trout and salmon in Lake Champlain.

Preparations for Lake Champlain Sea Lamprey Control in 2004- Deepwater surveys for sea lamprey ammocoetes were conducted on the Saranac and Boquet River deltas during 2003 to determine treatment locations for 2004. Surveys indicate that nearly the entire Saranac delta is infested with sea lamprey larvae, with an estimated population of between 400,000 and 500,000 individuals. Therefore, treating the Saranac Delta may well be a critical step to reducing the impacts of sea lamprey in Lake Champlain. Larvae were found outside the original treatment boundaries, so staff submitted a request to the Bureau of Pesticides for a modified permit that would allow for a larger treatment area on the Saranac River delta. The Saranac River delta has not been treated since 1995. Boquet infestations were located near the river mouth and in two areas to the south. Staff expect to conduct additional surveys during summer of 2004 to refine treatment areas on both deltas.

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

Walleye Trap-Netting Conducted in South Bay, Lake Champlain- Trap nets were set in South Bay of Lake Champlain during the spring of 2003 to evaluate current walleye and sauger abundances. Efforts were also intended to provide eggs and sperm for a Lake Champlain Walleye Association portable incubation system. Five female walleyes were caught; however, four of them weren't ready to spawn. The lack of males in the catch made viable egg collection impossible. The USFWS provided most of the staff for the netting effort. The netting was conducted overnight April 9-10 and yielded 495 fish of 21 species. Ice had not completely melted by the time of the survey, so netting efforts were concentrated in the open water portion of the outer bay.

Region 7

2003 Owasco Lake Standard Gang Gill Netting

During late August and early September 2003, the regional fisheries unit surveyed the coldwater fish community of Owasco Lake using Finger Lakes standard gang gill nets and standard netting sites. This was the ninth time the lake was surveyed using this technique. Previous surveys were carried out in 1976, 1977, 1979, 1982, 1985, 1988, 1991 and 1994. The primary purpose of the 2003 survey, as in previous years, was to assess lake trout abundance and growth. A total of 20 nets were set at regular intervals around the entire lake (the Finger Lakes standard gang is 350 ft long, eight ft high and consists of 50 ft panels of 1.5, 2.0, 2.5, 4.0, and 5.0 inch stretched multi-filament nylon netting arranged randomly with a 25 ft panel of 1.0 inch stretched mesh attached to either end). Each net was set on bottom below the thermocline either perpendicular or oblique to shore depending on the steepness of the lake bottom at the net site. An effort was made not to exceed 150 ft maximum net setting depth because lake trout become less abundant at greater depths. The average inside net set depth, outside net set depth and inside net set water temperature of the 20 net sets were 62 ft, 105 ft and 49.5EF, respectively.

A total of 519 fish were collected including 176 lake trout, 85 yellow perch, 81 white sucker, 72 alewife, 65 rainbow smelt, 30 longnose sucker, five walleye, three brown trout and two rainbow trout. Of the 176 lake trout collected, 173 had a hatchery fin clip. Since all lake trout stocked in Owasco Lake have a fin clip, only the three without a fin clip could have been wild fish. The number of fin clipped lake trout in the 2003 survey and in previous surveys was indicative of a fishery maintained entirely by stocking.

An average of 8.8 lake trout were caught per net in the 2003 survey. The surveys carried out in 1976, 1977, 1979, 1982, 1985, 1988, 1991 and 1994 averaged 7.9, 7.0, 7.2, 8.6, 4.0, 10.7, 12.8 and 24.4 lake trout per net, respectively. The numbers of lake trout caught in these surveys were consistent with increases in the numbers and sizes of lake trout stocked during the 1980s. Increased stocking of larger fish created a level of lake trout abundance that was detrimental to the recruitment of other trout species and led to a 50 percent reduction in lake trout stocking in 1992.

Growth of lake trout collected in the 2003 survey was slower than in previous surveys. This was likely the result of added competition for available forage from walleye and, indirectly, from changes in the food web caused by zebra mussels. Both species were established in Owasco Lake after the 1994 survey.

The number of lake trout caught in the 2003 survey coupled with the Owasco Lake angler cooperator lake trout catch rate indicates the current Owasco Lake lake trout stocking policy of 5,500 yearlings and 10,500 fall fingerlings is sufficient for maintaining the lake's excellent lake trout fishery.

Cayuga Lake Inlet Fishway Monitoring

Operation of the Cayuga Lake Inlet fishway continued in 2004. In the spring a total of 261 rainbow trout and 6,086 white suckers were passed upstream. Also in 2004, 1,015 adult sea lampreys were trapped and killed at the fishway to prevent spawning. Adult rainbow trout (41 males and 100 females) were sent to Bath Hatchery for the production of Finger Lakes wild (194,000 eggs) and hybrid (38,000 eggs) strains of rainbows. After spawning these adults were returned to Cayuga Inlet. All rainbow trout were examined for sea lamprey wounds to assess the level of impact sea lamprey had on trout and salmon populations in the lake. There were no adult stage (I-III) wounds observed on rainbow trout in the 500-549 mm size range, the length group which our wounding index is based upon. When wounding rates on rainbows in this size class reach or exceed 0.27 wounds per fish, a chemical treatment to kill ammocoetes (juvenile sea lamprey) in the Cayuga Inlet may be required. Yearly wounding rates on rainbow trout examined at the fishway are presented in the chart (next page). The fishway was also operated during October 2003 to collect Atlantic salmon for a study by the U.S. Geological Survey on thiamine deficiency.

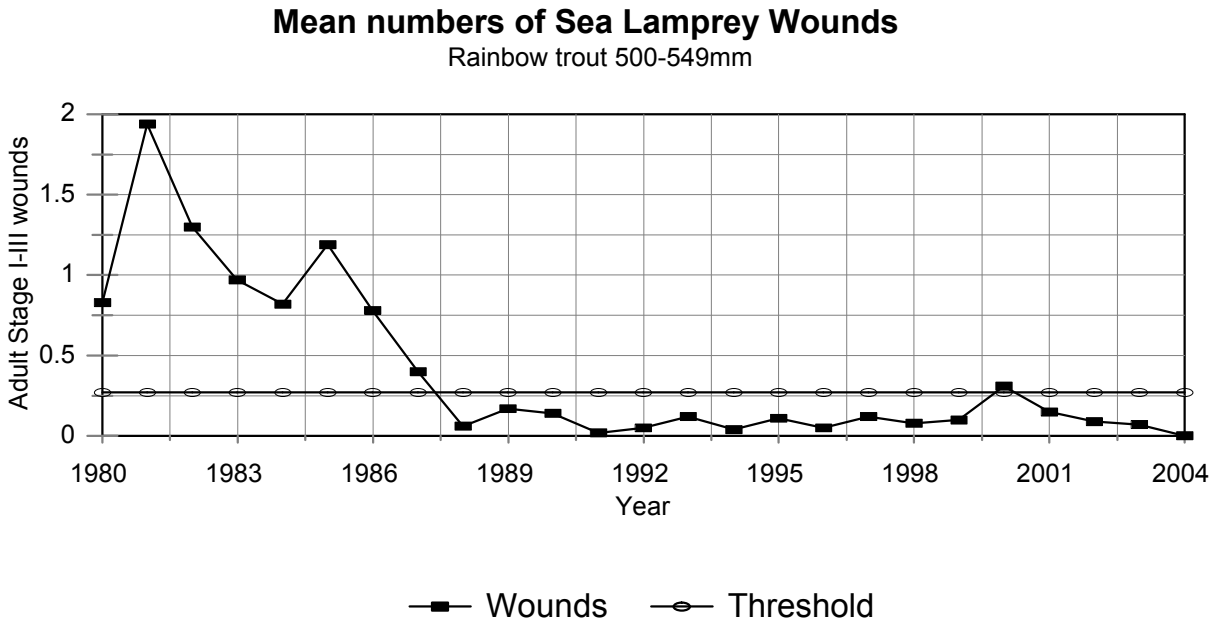
Region 8

Lake Trout Assessment in Canadice Lake

Lake trout populations in Canadice Lake, the smallest Finger Lake, were assessed with Finger Lakes standard gang gill nets in Summer 2003. Canadice Lake was last surveyed in 1990. A total of 143 lake trout were collected in 12 net nights for a catch per unit effort (CPUE) of 11.9 fish/net night, similar to surveys conducted in 1984, 1987, and 1990. The by-catch was negligible with only seven rainbow smelt, four sculpin, two white suckers, and one smallmouth bass. Seventy-eight percent of lake trout collected were greater than the current 15 inch minimum size limit. Lake trout from 12 age groups were collected with 32% of lake trout being age 6 and from the 1997 year class. Overall growth was similar to estimates from previous surveys. Lake trout recruit to harvestable size around age 4. The majority of lake trout do not mature until age 6, therefore are able to be harvested prior to spawning. Fish condition appears to be good. Of the 116 lake trout stomach contents examined, 76 were empty. Unidentified fish remains and smelt were the most common contents found in stomachs that were not empty.

Research in the 1960's and 1970's found that the lake trout fishery did not benefit from supplemental stocking. However, increases in smelt abundance and subsequent predation on lake trout fry and eggs and decreases in lake trout abundance as evidenced by gill net surveys in the late 1970' s and early 1980's, resulted in new stockings of yearling and fingerling lake trout. Fingerling stocking was discontinued in 1993 after surveys found they did not contribute to the lake fishery. Based on preliminary data analyses, it does not appear that population characteristics of lake trout have significantly changed since fall fingerling

stocking was discontinued in 1993. Current stocking rates of 2,100 lake trout yearlings, 2,500 brown trout yearlings and 2,500 rainbow trout yearlings should continue with monitoring occurring every 5 years. Additionally, a creel census should be conducted to evaluate contribution of other trout stockings as well as other species of interest.



Great Lakes

Lake Ontario and tributaries

Region 6

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 approximately 300 adults, in eastern Lake Ontario, began in 2004). Results of egg oiling at Little Galloo Island include: 1) reduced cormorant reproductive success by 95+ % at Little Galloo Island annually since 1999 2) reduced overall fish consumption by 6.4 million fish by the Little Galloo Island colony in 2003 and over 29 million since 1999 3) reduced consumption of smallmouth bass by 340,000 fish in 2003, 1.7 million since 1999. Recent declines in the number of nesting cormorant pairs are consistent with oiling effect models.

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 2002 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).

Eastern Basin Chinook Study
The major objectives of this study are to examine the homing, straying and return-to-the-creel of morpholine exposed versus non-exposed chinook and non-exposed cage reared versus direct released (normally stocked) fish. Secondarily we monitor some characteristics of walleye and smallmouth bass populations in the Snowshoe Bay/Association Cut area and the steelhead run in the Black River at Dexter. Generally, indications are that chinooks exposed to morpholine in cages and those that were caged only, return to the creel better than the average chinook stocked in Lake Ontario. Both treatments stray to the Black River at similar rates. This suggests that survival is above average for both caged treatments. Fish released directly into Snowshoe Bay returned to the creel at near average or less than average rates. Although "soft release" effects may contribute to this improved survival, the major advantage of caging may be to release larger fish without sacrificing imprinting on the receiving water. The greater return to the Snowshoe Bay area of fish exposed to morpholine in cages relative to caged-only fish is consistent with the hypothesis that morpholine exposure improved the homing performance of these fish. Data on returns of chinooks exposed to morpholine in hatchery tanks suggests that tank exposure has no greater effect than direct stocking without exposure. Since 2000 there have been poor returns of both experimental and control fish, which may indicate that under current water clarity and predation levels, Snowshoe Bay may no longer be a favorable location for chinook stocking.

Region 7

Lake Ontario Net Pen Evaluations
Steelhead
We are well into the evaluation phase of the steelhead pen rearing experiment at Oswego. Paired stockings occurred annually from 1998-2000. One group of fish was stocked directly into the river and the other group was pen reared for an additional period of weeks prior to release. The fish were adipose fin clipped and coded wire tags were implanted to later determine which stocking they came from. Returns to date suggest that pen rearing steelhead at Oswego is extremely advantageous.

Site Returned	Year Stocked	Returns by Method Pen	Direct
Lake Ontario	All	3	1
Salmon River	All	40	4
Oswego River	All	25	7
All	1998	21	3
All	1999	26	3
All	2000	21	6
Total		68	12

Returns have come from angler caught fish at the Oswego River and Lake Ontario, and our annual monitoring of the steelhead run at Salmon River Hatchery. To date, we have recovered 80 tags, 68 of which were from pen-reared fish. Note the high number of fish returning to Salmon River but do not interpret this as more fish returning to Salmon River than to Oswego. This only occurs because the Salmon River is sampled much more intensively than the other return sites. We look at thousands of steelhead in the hatchery at Salmon River every spring and there are going to be some strays. Young steelhead in the hatchery always have a lot of variability in growth and some of the bigger ones are already imprinted before they are shipped to the stocking sites. These fish return to the hatchery at maturity. We would have had more returns from the Oswego River but most of the fish caught there were released by anglers. Anyway you look at it, the pen fish have outperformed the direct stocked fish by a convincing margin. On the basis of what we have learned from this evaluation, we now pen rear all of the steelhead stocked at Oswego. We started a similar evaluation for steelhead in the lower Niagara River in 2004.

Chinook Salmon

Chinook salmon are currently being evaluated at Oak Orchard (OAK) and the lower Niagara River (NR). Three lots of fish were stocked at the sites in alternating years from 1999-2002. One lot was fish from the Salmon River Hatchery which were pen reared (pen/SR). The other two lots were fish that were stocked directly into the water from Salmon River (direct/SR) and the Caledonia Hatchery (direct/CD). The lots were identified with different fin-clips. Returns have been monitored at the stocking sites. Returns to date suggest that pen rearing chinook is advantageous at Oak Orchard but that there is no apparent advantage to pen rearing chinook at the lower Niagara River. Individual pies in the chart (next page) represent cumulative returns from a given year's stocking by the portion returned from each lot.

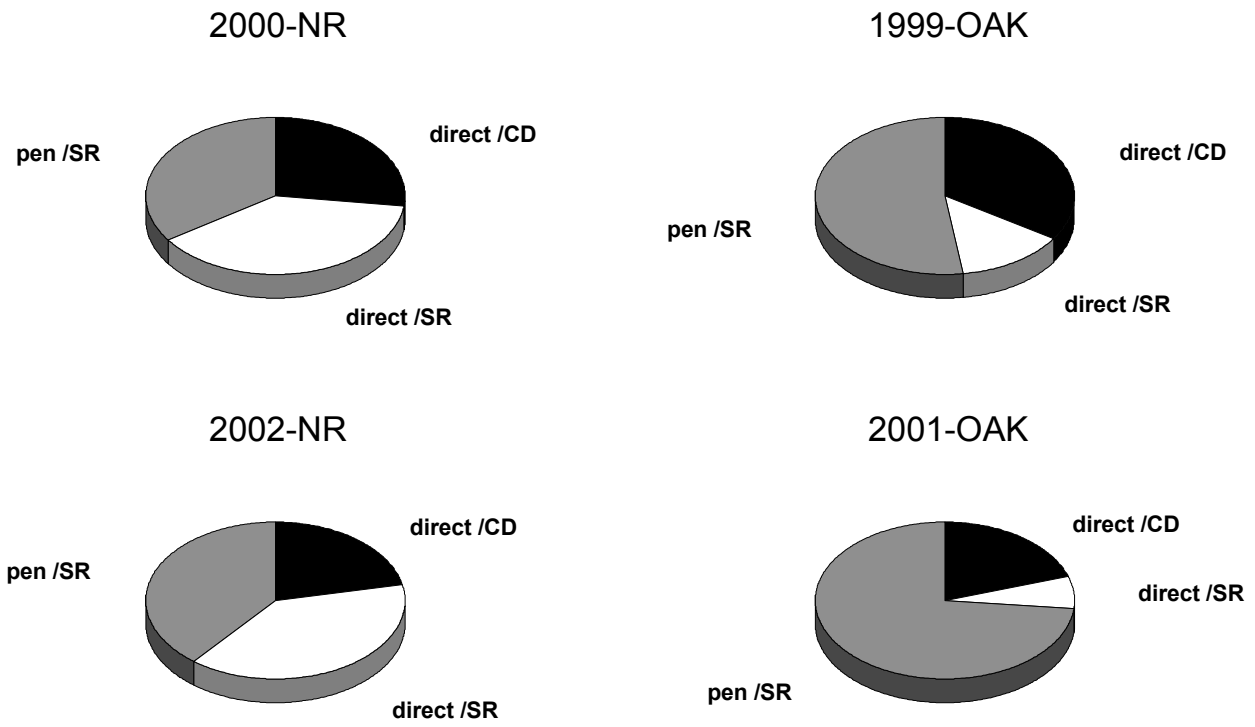
Also of interest is that at Oak Orchard, direct stocked fish from Caledonia seem to have an advantage over the direct stocked fish from Salmon River. Note that the opposite is true at the Niagara River. The hatchery water at Caledonia is warmer during the winter than at Salmon River so the fish grow faster and reach stocking size earlier in the spring. The Oak Orchard site warms up relatively quickly in the spring and we suspect that the fish from the Caledonia Hatchery, which must be stocked earlier, can take advantage of the faster warming water. In contrast, the Niagara River is very slow to warm and we suspect that the later stocking date for the fish from Salmon River may be an advantage to their relative survival at that site. Also worth noting is that we have seen very few of these fish returning to Salmon River. Growth of chinook in the hatchery is much less variable than with steelhead (i.e., the chinook are much more uniform in size). As a result, all the fish are stocked as pre-smolts which means that they are not imprinted on the hatchery before they are stocked.

Pacific Salmon Biological Monitoring

Fall monitoring of Pacific salmon at the Salmon River Hatchery revealed very poor growth in 2003. Weights of chinook and coho salmon sampled were at or near record lows. Condition of chinook (weight relative to length) was also low. Recruitment of chinook, however, appeared to be strong. Chinook jack (age 1 males) returns to the hatchery are a good indicator of year class (yc) strength. The 2002 yc appears to be very strong with 2,794 jacks returning to the hatchery in 2003. This was the third highest number on record. Only the 1996 yc (2,806) and the 1999 yc (3,196) returned in higher numbers.

Salmon River Steelhead Creel Survey

A creel survey was conducted on the Salmon River for steelhead fishermen during the fall of 2003. This was the 7th year for the survey which has been conducted annually since 1997. Anglers fished an estimated 6,183 angler days from October 20 through the end of November. This was the lowest level of effort measured since the surveys began. Chronic high water conditions throughout the survey probably caused the decline. The catch rate was 0.054 steelhead/angler hour which was relatively good compared with the other years. The estimates for catch and harvest were



1,960 and 357, respectively. As in previous years, nonresidents accounted for about 2/3 of the effort.

Oswego Walleye Diary Program
A small angler diary program for walleye in the Oswego area of Lake Ontario was conducted for a 6th year in 2003. As in previous years, the average size of walleye caught was very large (28.2 inches). The catch rate was 0.21 walleye/angler hour which was relatively good among years surveyed. Age frequencies from the last 4 years revealed that these large fish were coming from many year classes with good numbers of fish as old as 17. We have also seen a few fish over 20 years old every year since 2001. There were 15 year classes represented in the 2003 catch. The average age was 12.2 years. The most frequent age in the catch was age 9. 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 15 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 dramatically 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. 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

2003 Evaluation of Chinook Salmon Pen Rearing
Numerous organizations from Lake Ontario's Western Basin have contacted DEC with interest in pen-rearing salmonids. The driving force behind their interest is the belief that chinook salmon raised at DEC'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, DEC 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.

Table 1. Chi square tests for 1:1:1 return ratios of chinook salmon stocked from the Caledonia Hatchery (direct/CD), the Salmon River Hatchery (direct/SR) and Salmon River Hatchery fish reared in net pens (pen/SR) at Oak Orchard 1999-2001

Year Class	Year Returned	direct CD	direct SR	pen SR	p
1999	2001	20	4	27	<.01
	2002	18	9	31	<.01
	2003	0	2	0	- - -
All		38	15	58	<.01
2001	2002	1	0	1	- - -
	2003	8	3	32	<.01
All		9	3	33	<.01

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 both the 1999 and 2001 stockings at Oak Orchard. Returns from the 1999 year-class revealed that the pen reared fish returned to the stocking site best, direct stocked Caledonia fish returned at an intermediate level, and direct stocked Salmon River fish returned the poorest (Table 1). Returns from the 2001 stocking showed the same pattern. Strays to the Niagara River from these stockings did not show any difference between the lots of fish. Chinook stocked at Niagara River are showing a very different pattern, see Region 9 under this section. Returns from both cohorts stocked at Oak Orchard suggest that pen rearing significantly increased survival at that site. Returns from the Niagara River stockings, however, show little difference between direct stocked and pen reared fish from Salmon River but do suggest that direct stocked fish from Caledonia have poorer survival. Monitoring in 2004 and 2005 will be necessary to complete the analysis. Chinook reared at Caledonia may be at a disadvantage at cold water stocking sites like Niagara River because they must be stocked earlier than Salmon River fish to avoid smolting in the hatchery. This occurs because the water at Caledonia is warmer and the fish grow faster than at Salmon River. Salmon River fish may do better at this site because of the later stocking date, additional warming, and associated increase in productivity that has occurred by the time the fish are stocked. Conversely, the Caledonia fish may have an advantage at sites like Oak Orchard which warm up much quicker in the spring. 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 year-class Niagara River pen stocking and one fish from the 1999 year-class Oak Orchard direct stocking of Salmon River fish appeared in the fall samples. No marked fish were collected at the Salmon River Hatchery in 2003.

Detailed reports of the pen-rearing and the creel survey evaluations can be found in the DEC's Bureau of Fisheries Lake Ontario Unit and St. Lawrence River Unit to the Great Lakes Fishery Commission's Lake Ontario Committee - 2003 Annual Report.

2003 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 DEC's Bureau of Fisheries Lake Ontario Unit and St. Lawrence River Unit to the Great Lakes Fishery Commission's Lake Ontario Committee 2003 Annual Report. Table (1) shows the number of clipped fish

observed during tributaries and open water creel surveys conducted in 2003.

Table 1. Fin Clipped brown trout collected from NYSDEC sampling in 2003.

	Shore	Barge	Shore:Barge
Tributaries	305	110	2.77
Open Water	43	50	0.86
Total	348	160	2.18

In 2003, brown trout surveyed during the chinook creel census revealed a 2.77 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 (?2 = 0.53, p = 0.47, df=1). Overall, brown trout traditionally stocked from shore returned to the creel at a rate of 2.18 to 1 compared to barge-stocked brown trout. A Chi-square test for association revealed that the returns of brown trout in 2003 were distributed differently for the two survey methods (?2 = 26.2, p = <0.01, 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 tributary return data. The test revealed that the shore stocked fish returned significantly better than the barge stocked fish (?2 =91.6, p = <0.01, df=1). These results are similar to what was observed in 2002 (Pearsall, et. al. 2003). Table (2) shows the number of clipped fish observed during the tributaries and open water surveys for 2002 and 2003 combined.

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

	Shore	Barge	Shore:Barge
Tributaries	479	198	2.42
Open Water	96	89	1.08
Total	575	287	2.00

Brown trout surveyed during the two years of chinook creel censuses revealed a 2.42 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 (?2 = 0.27, p = 0.61, df=1). Overall, brown trout traditionally stocked from shore return fish to the creel at a rate of 2 to 1 compared to barge-stocked brown trout. A Chi-square test for association revealed that the total returns of brown trout in 2002 and 2003 were not distributed differently for the two survey methods (?2 = 1.8, p = 0.18, df=1). This suggested that neither method was biased, allowing us to combine the data. A chi-square test for a 1:1 expected return ratio was performed on all of the return data from both years. The test revealed that the shore stocked fish returned significantly better than the barge stocked fish (?2 = 96.2, p = <0.01, df=1).

The final year of stocking marked fish is planned for 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 is planned to continue through 2007.

Region 9

Lower Niagara River Trout and Salmon Pen-rearing Project

The fifth year of the Niagara River Anglers Association (NRAA) cooperative pen-rearing project took place in spring 2003. NRAA volunteer workers took delivery of approximately 10,000 pre-smolt steelhead in early May and successfully reared the fish in pens for a period of 30 days. The pens were located at Williams Marine on the Lower Niagara River at Youngstown, where the steelhead were released after penning. The purpose of the pen project was to improve imprinting and survival of anadromous trout and salmon to enhance the Lower Niagara River sportfishery.

This year (2003) was the first year since the project started in 1999 that Chinook salmon were not pen-reared. Later-than-normal delivery of Chinooks, resulting from slow winter/spring growth in the hatchery, prompted a decision to directly stock the Chinooks rather than risk potential conflicts with marina operations.

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 (2004).

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 2003 angling season marked the nineteenth consecutive year (1985-2003) that the census was conducted. Methodology has changed little over the history 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, as measured by catch rates (number of fish caught per fishing boat trip) increased to a record high 2.92 fish per boat trip. Comparisons by species show that the April-September 2003 catch rate was at a record high for chinook salmon and brown trout. Catch rates for coho salmon, rainbow trout, lake trout and Atlantic salmon were all below their respective 1998-2002 (previous 5 year) average.

In spite of increases in fishing quality, fishing effort declined to a second consecutive record low estimate of 79,958 fishing boat trips. Total fishing boat effort in 2003 was down 15.8% compared to the 1998-2002 boat trip average (previous five years), and down 63.3% 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 47,873 fishing boat trips, or 59.9% of the April-September 2003 total. Anglers targeting smallmouth bass from opening day (June 15) through the end of September accounted for 27,754 fishing boat trips, or 34.7% of the April-September 2003 total.

Changes in fishing effort were in part responsible for changes in numbers of fish harvested. Total trout and salmon harvest in April-September 2003 was estimated at 71,854 fish. Chinook salmon was the most commonly harvested salmonid in 2003 (31,525 fish), comprising 43.9% of the total. The 2003 chinook harvest rate marked a 72.2% increase over 2002, and a 24.2% increase compared to the 1998-2003 average harvest. The mean length of an age-3 chinook in August 2003 was 35.6 inches, a record low in the history of the census. Brown trout harvest in 2003 was estimated at 16,811, comprising 23.4% of the total harvest. This estimate represented a 32.5% increase over the 2002 harvest, but a 6.8% decrease compared to the 1998-2002 average. Rainbow trout was the third most commonly harvested species, with an estimate of 8,245 fish. While this represents a 20.1% increase over 2003, it is the 2nd lowest recorded harvest estimate. Following a record low harvest in 2002, coho salmon harvest increased in 2003 to 5,079 fish. Lake trout harvest in 2003 declined to a record low 4,711 fish.

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 2003 was estimated at 65,633 fish. The catch rate among anglers seeking smallmouth bass in 2003 during the open season was 13.7 bass per boat trip, the 2nd highest catch rate observed.

Eastern Lake Ontario Warm Water Fisheries

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 15.73 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 2003 Eastern Basin index gill netting program was 22.92 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 is associated with predation by double-crested cormorants. Lake sturgeon, a threatened species in New York State, have been collected in seven of the last nine years.

Impacts of Double-crested Cormorant (DCC) Predation on Smallmouth Bass and Yellow Perch
Diet studies of DCCs 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 2003, smallmouth bass and yellow perch predation by DCC's from the three Lake Ontario colonies combined totaled 620,000 and 6.73 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 2003, round gobies dominated the diets of Snake Island DCC.

Data on smallmouth bass fishing in Lake Ontario collected from the 1985-2003 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 1.16 smallmouth bass harvested/angler hour. From 1991-2003, 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 98% in 2003. These efforts reduced the number of cormorant feeding days by 690,000, resulting in a reduction in fish consumption estimated at 340,000 smallmouth bass and 1.19 million yellow perch.

Estimated fish consumption from three Canadian cormorant colonies in the upper St. Lawrence River in 2003 was 6.35 million fish. Total, combined consumption in 2003 included 3.49 million yellow perch, 990,000 rock bass, 710,000 cyprinids (minnows), 520,000 pumpkinseeds, and 40,000 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.

Adult (age-2 and older) alewife abundance in spring 2003 bottom trawl surveys increased slightly relative to 2002. Catches of age-1 alewife in 2003 were above the long-term average, and similar to 2002. Several observations, however, suggest that the prognosis for the alewife population is questionable. Near record-low condition of alewife in the spring likely contributed to a spring die-off, and a summer hydroacoustic survey indicated that alewife numbers were approximately 1/5th of the average for the previous five years. Reduced alewife abundance is also supported by a record high rate of increase in condition from spring to fall, and the presence of *Bythotrephes* in alewife stomachs in the fall of 2003. The presence of this large, exotic zooplankter is an indicator of fewer plankton predators, such as alewife, in Lake Ontario. Numbers and biomass of age-1 and older rainbow smelt in 2003 fell to a new, record low level. Slimy sculpin abundance at depths >230 feet was slightly lower than in 2002, and abundance remains well below the peak observed in 1991.

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 to 1996 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 2003 (2001 year class) was the third lowest on record. 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 702 adult lake trout were captured in the September 2003 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. The CPUE for mature lake trout in 2003 increased, but remains 34% below the 1986-98 average.

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 five of the last seven years. The length of A1 marked fish (freshly wounded) in 2003 ranged from 23 to 30.3 inches (mean = 27.5 inches). Numbers of lampreys observed attached to fish caught by boat anglers participating in the boat census in 2003 increased by 98% relative to 2002.

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 the 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 2003 received CWTs.

Natural Reproduction of Lake Trout in Lake Ontario
In 2003, a total of 6 naturally produced lake trout (4.25 to 16 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 1993–2003. 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 in 2003 with an estimated 4,711 lake trout harvested. The percentage of lake trout harvested by anglers that were of trophy size (>30 inches) reached a record high 48.5% in 2003.

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, however, catches 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.

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 2003, the most abundant species encountered in this program was rainbow smelt, but several other species made large contributions to the trawl collections, including trout-perch, round goby, emerald shiners and juvenile yellow perch.

The 2003 mean density estimates for YOY, and adult yellow perch were both well above the previous 11-

year values for these life stages of yellow perch. The YOY yellow perch abundance index was the highest value ever recorded in this program, and exceeded the previous high value in the series by nearly 5 fold. However, the age-1 index for yellow perch remained as the 3rd lowest value observed in the 12-year time series. The mean total length of YOY and age-1 yellow perch in 2003 were well within the range observed in this data series.

This 2003 trawl survey also commonly encountered YOY walleye and YOY lake whitefish for the first time in the 12-year program. Prior to 2003, walleye were only scarcely detected in 2 of the previous 11 years of autumn trawling. Lake whitefish were scarcely detected in 3 of the previous 11 years of this program. However, in 2003 both species were generally well represented and broadly distributed in trawl samples.

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 2003.

The overall abundance index for walleye in 2003 remained below the long-term average abundance since 1981. The age composition of this walleye sample was composed primarily of the age-2 and age-5 cohorts representing the 2001 and 1998 year classes respectively. Also, the once dominant 1984 year class of walleye still remains detectable at age 19 in the 2003 samples. This gill net assessment has had a juvenile walleye emphasis since its inception, with age-1 and age-2 walleyes comprising a large fraction of the total walleye sample each year. Yearling walleye catch rates ranked the 2002 year class as weak relative to the entire time series. Age-1 and age-2 walleye mean lengths in 2003 both remained very near the long term average values of the time series.

Smallmouth bass catch rates in 2003 remained slightly above the average value for this 23-year time series. Age-4 individuals made particularly large contributions to this 2003 sample which included 16 age groups from YOY to age-16. The long-term recruitment indices for juvenile, age-2 and age-3, smallmouth bass rank the 2000 year class as weak in the time series. Early indications from this same juvenile recruitment index also suggest the 2001 year class is not particularly abundant. These age-2 and age-3 cohorts averaged 11.1 and 13.4 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 50 to 100 ft stratum, yellow perch continued to be represented at 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-2 through age-5 yellow perch were all commonly encountered age groups in 2003 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, only channel catfish were caught in higher abundance than the long-term mean catch rate. Channel catfish catches have increased each of the last four years and the 2003 value is the highest in the 23-year series. In contrast, rock bass catch rates have declined four consecutive years and the 2003 rock bass abundance index was the lowest observed. Freshwater drum remain a species of particular interest due to observations of extensive fish kills especially during the summers of 2001 and 2002. The 2003 abundance index for drum remained near the long term average value for the deeper (50 to 100 ft) stratum, and only slightly below average abundance for the shallower (0 to 50 ft) stratum.

Walleye Tagging Study

During the 14 years New York has participated in this interagency tagging study, 16,679 walleye have been tagged in New York's portion of Lake Erie. During April 2003, 630 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. The two tagging sites sampled in 2003 were Van Buren Bay and Cattaraugus Creek. Walleye tagged for this study were collected by trap nets and boat shocker.

Since the inception of this tagging study, 1,431 tag recoveries originating from the New York tagging effort have been reported by anglers and the Ontario commercial fishery. Eighty-nine (89) of these recaptures occurred during 2003.

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 data from analysis 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 2003, 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 percent. Over the duration of this 14-year assessment, maximum likelihood tag recovery rates ranged between 1.4 and 5.1 percent. We have expanded these observed recovery rates to exploitation rates using a multiplier of 2.80 for non-reporting of recovered tags. This current, non-reporting expansion factor was developed from a year 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 2003 was estimated as 8.08 percent.

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 of the lake trout population residing in New York's portion of Lake Erie in 2003 sampled 550 individuals in 60 lifts, which was the most lake trout ever sampled during this survey. Seventeen age classes, from age 2 to 19, were represented in the sample of 491 known-age fish. No age 1 fish were sampled for the first time in the last five years. Similar to the past few years, young lake trout ages 2 - 5 were the most abundant cohorts, representing the majority (83%) of the total catch. There was good representation of older (age 10+) cohorts which were absent in the 2002 survey. The five age 19 fish caught in the survey were stocked in 1985, which was the first stocking to benefit from sea lamprey treatments, and are the oldest lake trout sampled since lake trout rehabilitation began in Lake Erie. Maturity rates remained consistent with recent years, where males are nearly 100% 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 (1998-2002). The largest lake trout sampled measured 39 inches and weighed 28 pounds. One hundred and four mature females were sampled in New York waters of Lake Erie in 2003. These fish ranged from age 4 to 18 and generated a mean age of mature females captured in our sampling of 6.2 years. This is the first time since 1997 that mean age of mature females fell below the target of 7.5 established in the Strategic Plan (Lake Trout Task Group 1985). It also reflects the prevalence of the younger age-classes in the Lake Erie lake trout population at this time.

The overall trends in relative abundance of lake trout caught in standard size meshes of 1.5 - 6.0 inches show a large increase over last year to a time-series high in 2003. It also extends the overall trend of increasing catches to three years from the low experienced during the 2000 survey. While catch rate (number per lift) of lake trout was nearly identical to rates experienced in 1990, biomass per lift was higher in 2003 and indicative of the older age classes that are present now and not at that time. Burbot abundance was also at a time series high in 2003, but has been relatively consistent since 2000 showing a slight increasing trend and averaging about 4 fish per lift. Overall, the time-series shows a steady progression of increasing burbot abundance since 1985 in the Lake Erie coldwater fish community. Whitefish abundance is highly variable in this survey and was essentially equal to the numbers found in the 2002 survey. Two brown trout and one steelhead were the only other salmonids caught in the survey.

The relative abundance by age of the 2003 standard gill net assessment catch illustrates the high numbers of the younger cohorts between the ages of 2 and 5 and the relatively lower abundance of the older age-classes up to age 19. All age classes are represented in the catch with the exception of ages 1 and 17. Catch rates of lake trout ages 6 through 10, while present, are lower than expected and are reflective of the poor recruitment and survival of these stockings to age 2. The relative index of abundance for age-5-and-older lake trout increased substantially following the 14 year low experienced in 2002. The age 5+ index of

2.13 fish/lift was the highest index since 1997 and ends a three year period of relatively low adult abundance. This increase was mainly due to the recruitment of the successful 1999 stocking to this group and is expected to show an increasing trend for at least the next 3 years due to good survival of the 2000 and 2002 stockings. The age 1-3 relative abundance index of 1.95 fish/lift was a slight decrease from the 14 year high experienced in 2002 but still ranks as the third highest age 1-3 index since 1989. This was primarily due to the high numbers of age 2 fish (2002 stocking), which registered the highest catch rates for this age class ever in the time series. There were no age 1 fish caught this year for the first time since 1998. The age 2 recruitment index, an index of survival to age 2 standardized for the number of stocked yearlings, showed a large increase in 2003 to its highest level in the time series. Returns of the 2002 stocking as age 1 and age 2 fish in our surveys indicate that this is the best survival of stocked lake trout experienced in Lake Erie since 1985.

Similar to the last two years, six different lake trout strains were found in the 491 fish caught with hatchery-implanted coded-wire tags (CWT's) or fin-clips. The majority of the lake trout were Superior (SUP) strain fish, which have been the most numerous stocked strain over the last five years. Finger Lakes (FL), Lewis Lake (LL), and Lake Ontario (LO) strains were also main contributors to the Lake Erie stock. Also similar to the previous two 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. With the exception of one age 13 SUP strain and two age 11 LL strain fish, every lake trout age 8 and older had some connection with the FL strain (either a FL strain or FL crosses).

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 76% of the lake trout stomachs. Round gobies, first found in lake trout stomachs last year, became a more prominent diet item, comprising 16% of the fish component of the lake trout diet in 2003 samples. Other prey items included yellow perch, one small whitefish, dreissenids, bythotrephes, and unknown fish. Burbot diets were more diverse with 8 different fish and invertebrate species found in stomach samples. Smelt occurred in 20% of the burbot stomachs but were replaced by round gobies (61%) as the most abundant diet item. Whitefish diets consisted entirely of invertebrates, with quagga and zebra mussels (53%), bythotrephes (32%) and tubifex worms (11%) making up most of the diet.

Sea Lamprey Assessment

Observed fresh wounding (A1-A3) on lake trout larger than 21 inches total length increased substantially in 2003 to 10.4 wounds per 100 fish. While this rate is not as high as the wounding rates found from 1997 through 2001, it does follow a year of low A1-A3 wounding (2002) when rates were below the target of 5 wounds per 100 fish. Similar to past years, almost all the fresh wounds occurred on lake trout greater than 25 inches with fish over 29 inches being the preferred host. There were some fresh wounds on the smaller size classes of lake trout as well.

Fresh wounds (A1) are indicators of the attack rate for the current year at the time of sampling (August). A1 wounding in 2003 was 0.028 wounds per adult lake trout greater than 21 inches. This rate is almost identical to the A1 wounding rates found in 2000 and 2001 but follows a year of no A1 wounds in 2002.

The past year's cumulative attacks are indicated by A4 wounds. The 2003 A4 wounding rate of 18.3 wounds per 100 fish for lake trout greater than 21 inches was similar to rates found over the past 2 years. Again, the majority of the A4 wounds were found on fish greater than 25 inches in total length.

Sea lamprey nest counts occurred on June 17 and 18, 2003. This is 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 21.6 nests/mile in 2003. This represents the second consecutive year that nest counts have increased since reaching a five year low in 2001. Similar to the past two years, the highest nest counts were found in the main branch of Clear Creek at 26.5 nests/mile. The North Branch of Clear Creek, a tributary to Clear Creek, had a similar nesting rate of 26.1 nests/mile. The largest increase in nests was found on Canadaway Creek, which saw an eleven fold increase to 15.0 nests/mile. This was the third highest nest count recorded on this creek in the time series. Only one sea lamprey nest was found in Delaware Creek.

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 2003 open water sport fishing effort in New York waters of Lake Erie was estimated as 352,128 angler-hours. Peak fishing activity occurred during July and the most frequently used site in 2003 was Dunkirk Harbor. The 2003 fishing effort estimate ranks as the second lowest annual total of the 16-year time series. The lowest total occurred in 2002. During the 2003 fishing season, walleye angling was the largest component of the boat fishery with 46 % of the overall angling effort. Bass angling ranked second in boat fishing effort with 32 % of the total on New York's portion of Lake Erie. Among the remaining effort, anglers fishing for "anything" ranked 3rd with 10 % of the overall effort, and targeted yellow perch effort accounted for 9 % of the total in 2003. The remaining 3 % of the total was distributed almost equally among trout specialists distributed among all harbors, and northern pike and muskellunge anglers returning to the Buffalo Small Boat Harbor.

The total estimated daytime walleye harvest was 27,478 fish, ranking 2003 as the 11th largest walleye harvest in the 16-year survey. The 2003 walleye fishing effort total that accompanied this walleye harvest was the 2nd lowest observed in the 16-year time series. In addition, walleye catch and harvest estimates have remained similar in 2003, suggesting nearly all the walleye boated in the sport fishery were harvested.

The 2003 walleye sport fishery was centered in offshore waters generally adjacent to Dunkirk, New York. The overall targeted walleye catch rate during the 2003 fishing season was 0.15 fish per hour, which was the modal (most common) value for the time series. This targeted walleye catch rate also increased for the second consecutive year. The average total length of harvested walleyes in 2003 was 24.0 inches and near the average (23.8 inches) for the entire time series.

Smallmouth bass harvest was estimated as 8,640 fish, which ranks 2003 with the lowest bass harvest for the entire 16-year survey. Overall 2003 bass fishing effort has been similar each of the last 3 years and near the average for the time series. Smallmouth bass remained the most frequently caught species (118,974 fish) by boat anglers by a very wide margin. The largest component of the smallmouth bass catch and harvest was attributed to anglers encountered at Buffalo's Small Boat Harbor. The 2003 overall catch rate by bass anglers was 1.06 bass per hour, and mean length of harvested smallmouth bass was 16.0 inches in 2003.

The yellow perch harvest (24,590 fish) in the 2003 sport fishery declined from a recent peak the previous year, but remained the sixth highest harvest observed in the entire 16 year survey. The 2003 yellow perch sport harvest was centered in the vicinity of Cattaraugus Creek, New York. Most other areas produced a markedly lower harvest of yellow perch. The 2003 overall yellow perch catch rate was 0.90 perch per hour and remained similar to the highest values observed in the time series. The mean length of harvested yellow perch was 10.9 inches in 2003.

Round gobies remained a frequently encountered nuisance species for anglers in 2003. Lake trout emerged as the most frequently caught salmonine species, but rainbow trout remained the most harvested salmonid. Brown trout also made a small, but increased contribution to the catch and harvest totals in 2003. In all, 22 species were reported caught, representing an estimated total catch of 241,409 individual fish from the 2003 angler survey. Smallmouth bass, yellow perch and walleye comprised approximately 74 % of the total 2003 catch. These same three species accounted for 96 % of the estimated 2003 harvest.

Walleye fishing quality in 2003 can be characterized as having been an average year, relative to recent eastern Lake Erie standards. Walleye fishing quality peaked during July and declined through August and September. Walleye harvest and fishing effort in 2003 was focused in the vicinity of a long term offshore walleye fishing zone near Dunkirk, NY. This represented a major shift from 2002 when the best walleye angling quality was found much further east than the long term pattern.

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 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 % 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. Independent indicators of the smallmouth bass population suggest the adult population remained abundant in 2003, despite observed declines in angler harvest.

Creel and Angler Surveys

Region 1

New Angler Diary Database Fully Implemented
The Region One Freshwater Fisheries Office has sponsored an angler diary cooperator program since 1978. In this program, volunteers keep a diary of their fishing results including time spent fishing, species caught, and length of each fish. Diaries are then submitted to fisheries staff for data entry and analysis. Over the past three years, biologist Fred Henson has developed a new Microsoft Access-based angler diary database. This database replaces the previous spreadsheet-based system. The new database allowed seasonal laborer Mike DiMarco to easily enter incoming 2003 angler diaries directly into the computer as they were submitted with no time consuming intermediate steps. The database stores angler diary cooperator address information, participation history, trip data, and individual fish data. The database includes a set of queries to extract the data needed for analysis in a convenient format.

Nassau County Creel Census Report
The 1999 Nassau County Creel Census Report was completed in June, 2003. While the report has been long overdue, the data collected in the report has already been used for various purposes, including regulation change justifications and providing angler use information to the public and government officials. The report is available either as a paper copy or PDF file.

Region 4

Otsego Lake Angler Diary Program
Twenty eight angler cooperators logged 558 trips on Otsego Lake totaling 2,324 hours fishing for lake trout, brown trout, and landlocked Atlantic salmon in 2003. Cooperators caught 889 lake trout, 125 brown trout, and 238 landlocked salmon for an overall salmonid catch rate of 0.54 fish per hour compared to 0.33, 0.34, and 0.42 fish per hour in 2000, 2001, and 2002, respectively. The catch of lake trout, brown trout, and landlocked Atlantic salmon in 2003 averaged 0.38, 0.05, and 0.10 fish per hour, respectively. The catch of legal size lake trout ($21 inch), brown trout ($18 inch), and landlocked Atlantic salmon ($18 inch) averaged 0.15, 0.01, and 0.03 fish per hour, respectively.

Boat anglers averaged 0.42 lake trout per hour in 2003 compared to 0.24, 0.27 and 0.30 fish per hour in 2000, 2001, and 2002, respectively. The catch of legal size lake trout was 0.16 fish per hour which is a decline from the 0.19 fish per hour recorded in 2002. The legal lake trout catch rate was 0.11 and 0.16 fish per hour in 2000 and 2001, respectively. The brown trout catch rates were basically the same for all four years at about 0.06 fish per hour. Although the landlocked Atlantic salmon catch of 0.10 fish per hour was low, it was nearly double the 0.06 fish per hour recorded in 2002 and almost six times higher than the 0.02 fish per hour recorded in 2000.

The largest lake trout, brown trout, and landlocked Atlantic salmon reported was 35, 30, and 24 inches, respectively. The percentage of lake trout 30 inches and larger caught during 2003 was 1.3% compared to 4.1% to 5.5% during the 2000-02 open water seasons. All brown trout and landlocked Atlantic salmon caught are hatchery fish. Approximately 17% of the lake trout caught were fin clipped which indicates that these fish were of hatchery origin but this should be considered a minimum estimate because not all fin clips were recognized or reported. Fin clipped lake trout caught in 2003 ranged from 8 to 32 inches. Anglers creeled 149 lake trout of which 21% were fin clipped.

It is expected that the catch of legal size lake trout will increase in 2004. There is a strong year class that measured 15 to 18.9 inches in 2003 and many of these fish will attain legal size in 2004.

Delaware Tailwaters Angler Diary Program
The West Branch of the Delaware River (West Branch) downstream of Cannonsville Reservoir, the East Branch Delaware River (East Branch) downstream of Pepacton Reservoir, and the Delaware River from Hancock to Callicoon comprise the upper Delaware Tailwaters, a unique fisheries resource in New York. Coldwater releases from Cannonsville and Pepacton Reservoirs have resulted in popular, high quality tailwater trout fisheries totaling 75 miles.

A multi-year angler diary program was established in 2002 to monitor the fishery throughout the Delaware Tailwaters. The objective of this study is to monitor trout catch rates, species composition, and size distribution for the West Branch, East Branch, and Delaware River.

During the 2003 trout season, 35 angler cooperators logged 581 trips throughout the Delaware Tailwaters totaling 1,563 hours. Cooperators throughout the Delaware Tailwaters caught 159 hatchery reared brown trout, 918 wild brown trout, 189 rainbow trout, and 24 brook trout for an overall Delaware Tailwaters catch rate of 0.83 trout per hour compared to 0.38 trout per hour in 2002.

West Branch anglers made 315 trips totaling 781 hours. Cooperators caught 508 trout of which 272 were legal size (≥12 inch). Brown trout comprised 91% of the catch. The riverwide catch rate averaged 0.65 trout per hour and 0.35 legal trout per hour. Approximately 7% and 1% of the trout caught were 18 inches plus and 20 inches plus, respectively. The West Branch is not stocked.

East Branch anglers made 206 trips totaling 574 hours. Cooperators caught 646 trout of which 326 were legal size (≥12 inch). The riverwide catch rate averaged 1.13 trout per hour and 0.57 legal trout per hour. In the upper East Branch (upstream of the Beaver Kill); anglers averaged 1.21 trout per hour compared to 0.79 trout per hour in the lower East Branch (downstream of the Beaver Kill). Approximately 4% and 1% of the trout caught were 18 inches plus and 20 inches plus, respectively. Brown trout comprised 88% of the total catch of which 24% were hatchery fish. The East Branch is stocked with approximately 4,900 yearling and 800 two year old brown trout annually.

Delaware River anglers made 60 trips totaling 208 hours. Cooperators caught 136 trout of which 98 were legal size (≥14 inch). The riverwide catch rate averaged 0.65 trout per hour and 0.47 legal trout per hour. Approximately 12% and 2% of the trout caught were 18 inches plus and 20 inches plus, respectively. The Delaware River is not stocked and rainbow trout comprised 69% of the trout catch.

Region 6

Eastern Basin Lake Ontario Creel Census

The Eastern Basin Lake Ontario angler survey in 2003 included 39 sets of aerial observations of fishing boats and 1,065 interviews at access sites during the primary survey period of May through September. Of these, 998 interviews, involving 1,701 individual angler trips, documented fishing within the limits of the Eastern Basin study area.. The extended survey in October included six sets of aerial observations and 97 interviews.

Smallmouth bass (*Micropterus dolomieui*) were the most commonly caught and harvested gamefish species in the Eastern Basin Lake Ontario fishery, with 0.54 fish/angler-hour caught, 0.20 fish/angler-hour harvested by anglers targeting bass, and total harvest of 18,984 fish. Walleye (*Sander vitreus*), which provided no detectable harvest in surveys prior to 1998 were the second most harvested game fish, with targeted rates per angler-hour of 0.09 fish caught and harvested before the opening of bass season, and 0.14 caught and 0.10 harvested during bass season. Yellow perch (*Perca flavescens*) were the most commonly harvested pan fish, with over 81,000 fish taken. Among game fish lake trout (*Salvelinus namaycush*) and chinook salmon (*Oncorhynchus tshawytscha*) and were also harvested.

The Lake Ontario Eastern Basin targeted smallmouth bass harvest rate (0.20 fish/angler hour) in 2003 was unchanged from 1998 although the catch rate was substantially lower (0.54 vs 0.69 fish/angler-hour). Both 2003 rates were lower than previous studies. The 2003 directed harvest rate was only 34% of the 1966 (lake) rate and 43% of the 1978 level, directed catch was 55% of the 1966 (lake) rate. Overall (targeted and non-targeted) catch and harvest rates were lower than for 1998 and only 33% and 36% of 1984, at which time bass were at low abundance, based on assessment netting, though not as low as in 1998 or in 2002. The decline in harvest between earlier studies and 1998 was due to lower harvest rates. The decline in smallmouth bass harvest between 1998 and 2003 was due to reduced effort.

Despite reduced smallmouth bass fishing quality (catch and harvest rates), no reduction in angler effort during the bass season was detected in 1998 relative to earlier surveys. In fact, effort appeared to have increased relative to 1978 and remained relatively unchanged compared to 1984. Estimated effort did decline by almost 150,000 angler-hours, 41%, between 1998 and 2003, however, although targeted smallmouth bass harvest rate did not change (catch rate declined).

Region 7

Otisco Lake Angler Diary Program
Eleven cooperators logged 121 trips and caught 161 legal length gamefish. They were successful in catching at least one gamefish in 71% of their outings. Walleye action picked up somewhat compared to the last two years with a total of 58 legal walleye recorded. Legal length fish caught by cooperators also included 32 smallmouth bass, 54 largemouth bass, 16 brown trout and only one tiger muskellunge. Of the 161 legal gamefish caught, anglers harvested 51 walleye, six smallmouth bass, three largemouth bass, and four brown trout.

The improved walleye fishing does not reflect upon the renewed stocking program. Surviving walleye from the 2002 stocking simply could not have grown enough to reach legal length in 2003. Instead, the improved success is a good example of how fishing quality can vary from month to month or year to year based on a variety of environmental factors that influence fish feeding behavior. However, the poor catch of tiger muskellunge in the diary catch mirrors our sampling efforts in the fall (see discussion above) and provides further evidence that the fishery has declined.

2003 Cayuga Lake Angler Diary Program
Fifty-eight coldwater cooperators caught 1,055 legal salmonids in 724 trips for an average of 1.5 fish per trip. Legal salmonids were caught at an average rate of 3.1 hours per fish. Our coldwater lake cooperators were successful in catching at least one legal salmonid in 72 percent of their trips. Cayuga Lake coldwater cooperators caught 661 legal lake trout, 15 legal rainbow trout, 129 legal brown trout and 250 legal landlocked salmon. Catch rates for these species were 0.91, 0.02, 0.18 and 0.34 legal fish per trip while harvest rates were 0.51, 0.01, 0.10 and 0.16 legal fish per trip, respectively. Lake trout comprised 63 % of the legal salmonid catch while rainbow trout, brown trout and landlocked salmon were 1%, 12% and 24 %, respectively.

Ten Cayuga Lake warmwater cooperators caught 73 legal smallmouth bass, 125 legal largemouth bass, 29 legal northern pike and 35 legal chain pickerel in 105 trips for an average of 2.5 legal warmwater gamefish per trip. Only 20 smallmouth bass and four largemouth bass were kept by our warmwater cooperators. The largest smallmouth bass, largemouth bass, northern pike and chain pickerel caught were 19.0, 21.0, 37.3 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.

2003 Owasco Lake Angler Diary Program
Thirty-nine Owasco Lake coldwater cooperators caught 984 legal salmonids in 452 trips for an average of 2.2 fish per trip. Legal salmonids were caught at an average rate of 1.8 hours per fish. Our coldwater lake cooperators were successful in catching at least one legal salmonid in 81 percent of their trips. Owasco Lake coldwater cooperators caught 911 legal lake trout, 46 legal rainbow trout, 26 legal brown trout and one legal landlocked salmon. Catch rates for these species were 2.0, 0.10, 0.06 and 0.002 legal fish per trip while harvest rates were 0.65, 0.03, 0.02 and 0.002 legal fish per angler trip, respectively. Lake trout comprised 92.6 % of the legal salmonid catch while rainbows, browns and landlocked salmon were 4.7 %, 2.6 % and 0.1 %, respectively.

Thirteen Owasco Lake warmwater cooperators caught 84 legal walleye, 39 legal smallmouth bass, one legal largemouth bass and 11 legal northern pike in 131 trips for an average of 1.03 legal warmwater gamefish per trip. Of the 135 legal warmwater gamefish caught, 67 walleye, 10 smallmouth bass, one largemouth bass and three northern pike were kept. An additional 19 sub-legal walleye, 11 sub-legal smallmouth bass and 10 sub-legal northern pike were caught and released. In 1996, the Owasco Lake Anglers Association initiated an annual Owasco Lake walleye fingerling stocking program which ended in 2001. In 2002, DEC continued stocking with walleye fingerlings from the NYS Chautauqua Fish Hatchery in Mayville, NY.

Walleye stocking continued in 2003 and is scheduled again for 2004. It is clear from the angler diaries that walleye stocking has added a new dimension to fishing on Owasco Lake.

2003 Skaneateles Lake Angler Diary Program
Thirty-six Skaneateles Lake coldwater cooperators caught 1,501 legal salmonids in 762 trips for an average of 2.0 fish per trip. Coldwater lake cooperators were successful in catching at least one legal salmonid in 79 percent of their trips. Legal salmonids were caught at an average rate of 1.6 hours per fish. Skaneateles Lake coldwater cooperators caught 577 legal lake trout, 669 legal rainbow trout and 255 legal landlocked salmon. Catch rates for these species were 0.76, 0.88 and 0.33 legal fish per trip while harvest rates were 0.44, 0.56 and 0.17 legal fish per trip, respectively. Lake trout comprised 38 % of the legal salmonid catch while rainbow trout and landlocked salmon were 45 % and 17 %, respectively. The benefits of increased salmon stocking were noted in the 2003 lake catch. An additional 174 sub-legal salmon were also caught and released which suggests there should be good salmon fishing in 2004.

Participation in the warmwater section of the Skaneateles Lake angler diary program increased to four angler cooperators. Our warmwater cooperators caught 26 legal smallmouth bass and one legal chain pickerel in 27 trips for an average of one legal fish per trip. Of the 27 legal fish caught, only 10 smallmouth bass were kept. An additional five sub-legal smallmouth bass were also caught and released. The average length of kept smallmouth bass was 11.9 inches and the largest smallmouth bass kept was 13.5 inches. The lone chain pickerel recorded was 22.0 inches in length.

Region 8

Canandaigua Lake Angler Diary 2003
This was the 31th anniversary of our volunteer angler diary program on Canandaigua Lake. As in recent years, Canandaigua Lake provided some excellent fishing in 2003. On average anglers took 1.8 hours to boat one legal trout. For comparison, diary cooperators on Keuka and Seneca Lakes' average 1.3 and 1.5 hours, respectively to catch one legal trout. Lake trout continue to be the driving force behind the coldwater fishery representing 94% of all trout caught. A total of 765 lake trout were caught with 428 being kept. Currently, it is believed the lake trout population is maintained almost entirely by stocking 24,100 fingerlings and 12,100 yearlings annually. A marking and evaluation program designed to start in 2004 will address the question of how much natural reproduction is taking place.

Perhaps the biggest change that has occurred since the diary program was initiated is the improvement in catch rates for legal-sized salmonids. This continues to be a result of a high predator density and low forage abundance. Interestingly, after reviewing previous reports from the diary program since 1978, this theme, abundant predators and moderate to low abundance of forage, has often been repeated. In the early 90's, management objectives of 2.0 - 3.0 hours to catch a legal trout have been the goal to maintain a desirable fishery. Only in recent years, have these objectives been exceeded. These recent changes are likely the result of the invasion of zebra mussels in the mid-90's resulting in a more pronounced decline in the primary forage species, smelt and alewives, hence, hungry fish more willing to strike a lure. Recent gill netting surveys have suggested a slight decrease in condition and recruitment of adult lake trout, however the changes have not been significant enough to warrant a change in the current management strategy. Potentially, lake trout may be preying on stocked fall fingerling lake trout and other young trout cohorts available, thereby reducing overall abundance but maintaining adequate condition of remaining fish. We must continue to monitor the trout fishery through the angler diary program and periodic nettings to ensure that excellent fishing continues for years to come.

Conesus Lake Angler Diaries
It took diary-keeping anglers 2.04 hours to catch one legal game fish in Conesus Lake in 2003. This good catch rate is a result of an abundant largemouth bass population. For anglers targeting largemouth bass, the catch rate was 0.30 legal bass/hour, which is slightly greater than the statewide average of 0.26 legal bass/hour. Largemouth bass dominated the catch with 63% of the total game species caught. The largemouth bass catch was composed of 88% legal sized (>12 inches) fish. Of the legal largemouth bass caught, almost all (98%) were released. Although the majority of the bass were less than 15 inches, anglers did catch some memorable fish with 64 largemouths greater than 18 inches caught. Smallmouth bass comprised

10% of the total game fish catch, 81% were legal size, and all but one was released. Seventeen (11%) of the smallmouths caught were larger than 18 inches. Northern pike made up a larger portion of the total game fish catch than 2003 (21% up from 12%), and 94 % were legal size, with creeled fish averaging 27.0 inches. Diary keepers caught thirteen northerns greater than 36 inches. Tiger muskies made up only about 1.0% of the game fish catch, with 14 of them caught and released by diary anglers. The tigers caught averaged 31.5 inches in length. Walleye made up 5% of the total game fish catch with fish averaging 24.7 inches in the creel. All but two walleye caught were legal size. These numbers are up from previous years. Anglers specifically targeting walleye caught 0.22 walleye per hour, the best catch rate recorded since the diary program began. This is nearly the New York State objective of 0.2 walleye per hour, or one legal walleye for every five hours of fishing. A total of 277 panfish were caught by diary keepers. Most were caught by anglers who were not specifically targeting any species of fish, and many were caught by bass fishermen. Panfish species (i.e., perch, bluegill, pumpkinseed, and rock bass) were caught at excellent rates (3.0 fish per hour) for those anglers who were targeting them. Most of the panfish catch was represented by rock bass (34%), pumpkinseed sunfish (8%) and bluegill sunfish(54%). Only one yellow perch was reported. Bluegill, rock bass, and pumpkinseed averaged 5.7, 7.0, and 7.0 inches, respectively.

Honeoye Lake Angler Diary 2003-04

Once again, diary cooperators topped the previous year"s catch rate, taking an average 0.97 hours to catch one legal gamefish, the best catch rate since the diary program began. Largemouth bass continue to dominate the catch representing 93% of all gamefish caught. Anglers directing their effort toward any bass caught 2.02 legal bass/hour, a phenomenal catch rate and much greater than the statewide average of 0.26 legal bass/hour. Of the approximately 3,100 largemouth bass records that had recorded lengths, 85% of largemouth bass were legal sized (>12 inches). Also, several trophy sized bass were caught with 6 fish over 20 inches in length reported. Honeoye Lake remains one of the best areas in Region 8 for great bass fishing action.

This was the third full year for the 15 inch size limit for walleye. The main objective of the reduction in size limit was to reduce the population of walleye, which in turn should result in increased walleye growth and potentially increase the yellow perch population. Based on the diary results, it appears that the population has been reduced, as only 233 walleye were caught, the second lowest total ever. Approximately 28% of walleye were caught through the ice. Anglers specifically targeting walleye caught 0.23 walleye/hour, almost half of the catch rate in recent years. However, this is still slightly greater than the New York State objective of 0.2 walleye/hour. Although catch rate has decreased, it does appear that the average size has increased. During the previous three years, catch of walleye greater than 20 inches ranged from 1 to 8% of the total catch. This year, 24% of walleye caught were greater than 20 inches. 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.

Keuka Lake Angler Diary Program

Forty three volunteer anglers returned diaries for the 2003 season. For the past ten years Keuka Lake angler diary keepers have experienced a catch rate under 2.0 hours to catch a legal salmonid. These excellent 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. Lake trout continue to exhibit good size, averaging 20.5 inches in length and 3.0 pounds in weight. However, the abundant wild lake trout population is a strain on the declining forage base with rainbow smelt becoming very scarce. To reduce the pressure on the forage base we may have to reduce the stocking rates for brown trout and landlocked salmon. For the near future we plan on continuing the annual stocking of 22,300 yearling landlocked salmon and 9,400 brown trout yearlings. The rainbow trout population is completely dependent on natural recruitment, which occurs mainly in Cold Brook.

Seneca Lake Angler Diary Program

Sixty seven volunteer anglers returned diaries during the 2003 season. For the past eight years it has taken less than two hours to creel a legal salmonid. These excellent catch rates are a reflection of very hungry lake trout willing to strike an angler's lure due to a depressed forage base. In 1999, we lowered the lake trout stocking rates by 38% to reduce the pressure on the forage base. We also fin clipped 100% of these

stocked fish in an effort to determine how much naturally reproduced lake trout are adding to the fishery. An extensive gill net survey will be conducted in 2005 in an effort to evaluate the lake trout population and their related forage species. Lake trout creeled in the diary catch continue to average approximately 21 inches in length and 3.0 pounds in weight. In addition to lake trout, wild rainbow trout and stocked brown trout and landlocked salmon add diversity to the fishery. The number of these caught by anglers continues to be low. For the near future brown trout will be stocked at the current annual rate of 21,600 yearlings and 43,000 fingerlings. Landlocked salmon are stocked at a rate of 24,000 yearlings annually.

Habitat Management, Protection and Restoration

Region 1

Peconic River Fish Kill
On the afternoon of July 3, the Region One Fisheries Unit was notified of a fish kill in progress on Donahues Pond, an impoundment of the Peconic River in eastern Suffolk County. Biologist Fred Henson investigated the kill. Approximately 100 to 150 bluegills in an advanced state of decomposition were scattered across the surface of the impoundment. Hypoxic conditions prevailed in the impoundment with dissolved oxygen content ranging from 0.6 to 2.3 mg/L. Dissolved oxygen measurements revealed a hypoxic zone extending both upstream and downstream of observed fish kill and affecting the entire upper river. As of July 15, dissolved oxygen levels in much of the upper river remain below 2.0 mg/L and somewhat depressed downstream. No dead fish have been observed downstream from the original fish kill. However, hypoxia-related stress makes further fish kills likely. Water quality data provided by Brookhaven National Lab was extremely helpful in ruling out point sources and documenting the dissolved oxygen trend this spring. The exact cause of the hypoxia is unknown, but appears to be associated with high water levels in the river. A similar kill in this section of the river was observed in June of 1998 and was also associated with low dissolved oxygen and high water levels.

Peconic River Contaminant Samples Collected
Beginning on June 16, Biologist Fred Henson and Laborer Mike DiMarco used various gear types over the course of four days to collect fish from Swan Pond and Forge Pond. The fish will be independently tested for radioisotopes and other contaminants by the NYS Department of Health and by Department of Energy Environmental Staff as part of an ongoing monitoring program to evaluate potential health risks posed by pollution from Brookhaven National Laboratory. Three categories of fish were collected: piscivores (pickerel/bass), panfish (pumpkinseed/bluegill), and benthivores (brown bullhead). Adequate samples were collected for all categories with the exceptions of the piscivore category in Swan Pond and the benthivore category in Forge Pond. Additional fish were collected for the statewide mercury monitoring program. Dustin Edwards and Eric Latremore, seasonal laborers from the Rome field station, participated in the collection effort and brought the samples back to Rome for analysis.

Regional Fisheries Staff Assist DOW in Statewide Water Quality Monitoring Program
On June 3 and 4, Biologist Fred Henson and Laborer Mike DiMarco assisted Environmental Engineer Scott Kishbaugh and his assistant Shannon with the collection of water samples from a dozen Long Island waters. On June 3 the entire crew sampled Swan Pond in Calverton to ensure consistency of methods and on the following day Fred and Mike sampled the ponds on the South Fork while Scott and Shannon sampled the North Fork. Despite heavy rains and muddy roads the sampling objectives were met. The remaining waters on western Long Island were sampled by Scott and Shannon on their way back to Albany.

Lake Capri Inspected
At the request of the Regional Director, Biologist Fred Henson investigated complaints of nuisance aquatic vegetation at Lake Capri in West Islip on July 10. Several native aquatic plant species were found growing at levels of abundance similar to other south shore impoundments of similar basin morphometry and watershed characteristics. A bloom of filamentous green algae was also evident, though it appeared to be subsiding. Dissolved oxygen levels were satisfactory and spawning fish were observed. At the time of the inspection, Lake Capri was not significantly impaired except from an aesthetic perspective.

Fisheries assists with Rotating Intensive and Biological Screening (RIBS) Sampling
On September 17, Region 1 Fisheries Manager Chart Guthrie assisted the Division of Water with the RIBS sampling of streams on Long Island. In one day the sampling team visited 10 streams in central and eastern Suffolk County collecting invertebrate and sediment samples. The sampling is designed to measure the water quality in the streams and identify factors impacting the streams.

Region One Fisheries Unit participates in Long Island stream assessment meeting
In accordance with the Division of Fish Wildlife and Marine Resources strategies of developing management plans, Biologist Fred Henson and

Regional Fisheries Manager Charles Guthrie participated in two Long Island stream assessment meetings. The meetings were held by the Long Island Chapter of the Nature Conservancy to solicit expert advice on selecting the most valuable streams on Long Island for inclusion in their ecoregional planning database. The participants in the meeting were asked to identify exceptional physical and biological characteristics of the streams under consideration and provide relevant supporting data.

Shoreline Habitat Improvement at Lake Ronkonkoma

On the evening of May 12, Biologist Fred Henson and volunteers from the Long Island Bassmasters Club planted wetland trees and shrubs at Lake Ronkonkoma to increase nearshore habitat for black bass. Three hundred willows and an equal number of swamp rose seedlings were planted at the water's edge. These woody plants will stabilize the soil while providing shade and shelter for fish.

Hempstead Lake Tree Planting

On May 14, Regional Fisheries Staff planted trees from the Saratoga State Nursery at Hempstead Lake and the tidal section of the Nissequogue River. Approximately 225 willows and 200 swamp rose were planted at Hempstead Lake. The shoreline of Hempstead Lake has receded from its tree line due to sewering. The trees will hopefully re-establish a tree line around Hempstead Lake.

Nissequogue River Tree Planting

Approximately 100 willows and a riparian pack were planted at the tidal section of the Nissequogue River upstream of State Route 25. The stream banks in this section suffer from erosion due to storm events and heavy foot use. The plantings are intended to shore up the banks. Approximately 10% to 20% of the plantings from last year survived to this year.

Peconic River Alewife Restoration

Regional Fisheries Manager Chart Guthrie is actively participating in the Peconic River Alewife Committee, an ad hoc committee of interested citizens, local, State and Federal government and local businesses dedicated to restoring alewife to the Peconic River. The Alewife Committee developed a seasonal fish ladder on the lowest barrier on the Peconic River in 2000 and that fish ladder is heavily used by alewife in March and April every year. In 2003 the Alewife Committee received a NOAA grant to install a fishway at Woodhull Dam on the Little River, a tributary to the Peconic River arising from Wildwood Lake in Southampton Town. If installed this fishway would have added over 200 acres of spawning habitat for alewife. Unfortunately, the Trustees of the Town of Southampton would not approve this project and the grant was returned. The Alewife Committee is now concentrating on the main stem of the Peconic River. The next impassible barrier is the LIPA dam (pictured). Regional Fisheries Manager Chart Guthrie and Regional Habitat Manager Greg Kozlowski met with USFWS, Riverhead Town and other Alewife Committee members on January 14 to develop plans for fish passage at the LIPA Dam. Fish passage at this location will add 60 acres of spawning habitat for alewife.

Region 3

Releases from NYC's Delaware Reservoirs

Water releases from Pepacton, Cannonsville and Neversink Reservoirs substantially influence conditions in downstream reaches of the East Branch Delaware River, West Branch Delaware River, and Neversink Rivers, respectively. Collectively, the releases affect about 70 miles of quality trout stream in the three tributaries and upper main Delaware. The system supports on the order of 50,000 angler trips per year, and the fishery is very important to the local economy.

Staff from DEC's Divisions of Water and Fish, Wildlife and Marine Resources is involved in the management, assessment and evolution of the release regulations. These three reservoirs provide about half of New York City's drinking water, so water supply considerations are an obvious constraint to proposals for moving large volumes of water out of storage. Moreover, the Delaware River also flows through the states of Pennsylvania, New Jersey and Delaware. There are many competing demands for water throughout the course of the river, and proposals to alter the distribution or timing of flows at any point are critically evaluated by the other basin parties.

In 2003, DEC staff succeeded in negotiating a new three year experimental release program among the parties and the Delaware River Basin Commission. The agreement is predicated on creation of a 20,000 cfs-day "bank" that DEC can use to maintain critical targets within the system. As before, some of this

water will be used to prevent water temperatures from exceeding 75 F at downstream stations in the tribs and the main Delaware. A new feature is that other portions of the bank will be used to maintain minimum flow targets at other specific locations. These flow targets are biologically established indicators of habitat conditions in a particular river. Trout habitat, as a function of water depth, width, velocity and bottom type, rapidly diminishes when flows drop below the target levels. Flow records from the East Branch and Neversink tailwaters indicate that these habitat targets were not met, often by a large margin, nearly 50% of the time over the last 20 years.

The 2003 agreement also has provisions for some level of protection during the three defined stages of drought (watch, warning and emergency). In most previous years, releases from the three reservoirs were significantly reduced each time combined storage fell below pre-determined levels. These periods of diminished releases often continued for months, and created conditions in the tailwaters with a high probability for ecological damage.

All told, the new experimental agreement provides the best safety net for Delaware tailwater trout populations since modern release regulations were enacted in 1978. At the same time, constraints imposed by other water interests in the basin continue to limit the ultimate productivity of the system, and allow for conditions that have potential for ecological harm. To be effective, flows and temperatures have to be monitored continuously, and special releases have to be implemented a day or more in advance of adverse conditions. Periods of high natural runoff, particularly in the lower East Branch, sometimes make thermal regulation difficult or impossible. The 20,000 cfs-day bank is calculated to be sufficient to maintain year-round temperature and flow targets only about 50% of the time. Nonetheless, if release management is conscientious and effective, it is possible that seriously adverse conditions of flow and temperature may be avoided for the entire three year period. A monitoring program has been put in place to annually assess trout biomass at 11 tailwater stations and two controls. Data will also be obtained on benthic invertebrate populations, water quality, and water temperature distribution. The biological responses to the experimental conditions, along with other research currently underway in the rivers, should provide very useful information for developing a new release strategy in 2007.

Region 4

Copake Lake Sonar Treatment Evaluation

A fishery survey of Copake Lake (Columbia County) was conducted one year after the lake was treated with an application of Sonar. The survey's purpose was to follow-up on a baseline survey conducted as the lake was being treated with Sonar during the previous year and collect data to show the impact of weed removal on resident fish populations. Copake Lake is a 410 acre warmwater lake with a mean depth of 15 ft, a maximum depth of 32 ft. A thick ring of aquatic vegetation existed around the entire lake perimeter, extending out 100-500 ft from shore, with an estimated total coverage of 130 acres. Eurasian watermilfoil, an exotic invasive plant, constituted an estimated 95% of the biomass of all rooted aquatic plants. After the treatment with Sonar in the summer of 2002, the weedbeds were eliminated almost completely and only a few plants were starting to grow back a year later when this survey was conducted.

Our sampling plan followed the centrarchid manual. Sampling was conducted over a three night period in mid May. Much of the sampling was conducted near the former weed beds, but few fish were seen during the twilight hours. Collections taken after full darkness had set in were much improved. The electrofishing catch rate for stock size (8 inch or longer) largemouth bass declined from 55 fish per hour pretreatment to 42 per hour post treatment. The largemouth PSD increased slightly from 31 to 32 and the RSD_{15} decreased slightly from 25 to 24. The catch rate for stock size (7 inch or longer) smallmouth bass also declined from 17 per hour pretreatment to 14 per hour post treatment. The smallmouth PSD increased substantially from 30 to 47 post treatment and the RSD_{14} also increased substantially from 26 to 43. The overall catch rate for legal size black bass declined slightly from 21 to 20 fish per hour. The slight variations seen could easily be explained by the changing environment within which we were electrofishing. However, the increase in the smallmouth bass PSD and RSD_{14} appear to be substantial and may demonstrate a real, if temporary, improvement. Scales will be analyzed to determine changes in growth rates.

In the post treatment survey, three walleye were captured compared to one walleye in the pretreatment survey. The most common panfish was the

pumpkinseed which increased from 383 per hour of electrofishing pretreatment to 479 per hour post treatment. In contrast, yellow perch decreased from 266 per hour pretreatment to 108 per hour post treatment. It was noticeable among all species of fish sampled that young of the year specimens were rare. Our sampling method did not allow us to sample right on the shoreline, so there may have been young fish in those locations that were missed, but we would still conclude that young of year fish numbers were down substantially from the pretreatment survey.

Region 5

Saranac River Flows
Fisheries, Adirondack Park Agency and US Fish and Wildlife Service staff participated in extensive negotiations with New York State Electric and Gas (NYSEG) related to relicensing of NYSEG's Saranac River Project in Clinton County. Preliminary agreement was reached on flows to restore fish habitat at the High Falls and Kents Falls bypasses. Minimal flows would be required in the Mill C and Cadyville bypasses due to the lesser quality of habitat in those sections. Also, an automated gate would be installed at the Kents Falls site to provide minimum flows downstream in the event of a plant trip.

Potential sediment spill avoided
A potentially damaging release of sediments on the West Branch Ausable River was avoided by cooperation between the DEC, the Town of Wilmington, and the contractor working on the Wilmington Dam. Problems were observed with a coffer dam installed to facilitate repairs to the gates in the dam. If the coffer dam failed, a large quantity of sediments would likely have flushed from behind the dam and severely impacted free-flowing habitat downstream. Agreement was reached to close the gates until the coffer dam could be modified. Within two days, heavy rain raised river levels to a point that would almost certainly have caused the coffer dam to fail.

Region 6

Aquatic Resource Protection
Utica fisheries staff provided input for aquatic resource protection into the study design, then monitored the field work of the consultants working for the Army Corps of Engineers flood and ice control project on Fulmer, Moyer, and Steele Creeks in Herkimer County. This high political profile project is a joint local, state, and federal effort to control flooding in these creeks by attempting basin wide management rather than piecemeal projects. The study phase has been completed and options are now being presented to local officials and the public. All three creeks have high quality trout fisheries even in the villages of Mohawk, Frankfort and Ilion. Steele Creek has the only wild rainbow trout resource in Region 6.

Mad River Bank Stabilization
Staff assisted the Oneida County Soil and Water Conservation District with a bank stabilization project on the Mad River in Camden. A local business was losing large amounts of property to erosive forces of the river and had asked assistance of the Soil and Water District. As part of the bank stabilization, Fisheries suggested a large deflector to throw the current away from some of the eroded area. Two days after the deflector was constructed and most of the bank stabilization work finished a severe storm caused the river to rise several feet. Much of the bank stabilization work was destroyed but the deflector was not damaged nor was the bank immediately downstream.

Seventy three Article 15 permits were reviewed, most of which were routinely commented on by Fisheries staff. Six required meetings with the applicants to "fine tune" their applications.

A poorly designed and constructed home along the West Canada Creek in Newport necessitated enforcement action when the homeowner designed and built retaining wall began collapsing into the creek. No permit had been obtained by the owner. As part of the settlement, the owner was required to have a professionally designed retaining wall. Under direction of the Herkimer County Soil and Water Conservation District, a gabion basket wall was built. Several months later this wall collapsed into the creek taking several large trees and tons of material with it while exposing the foundation of the house. After cleaning up the mess the owner then hired another engineer to design and supervise the construction of a tiered large stone bank stabilization project. The owner has spent over $60,000 on retaining walls thus far but the village has not allowed him to occupy the unfinished house because of local zoning violations.

West Canada Lakes
The West Canada Lakes Management Plan planning process was begun as a joint effort between Regions 5 and 6. This area ,which encompasses the headwaters of West Canada Creek, contains some of the most undeveloped portions of the Adirondacks. Thus far, the management team has favored a " leave it as it is" approach and based on the majority of the comments received by the general public at the public hearings they prefer this management scheme also. Most of the aquatic resources of this area consists of remote ponds requiring a bushwack hike to reach.

Stillwater Reservoir
Stillwater Reservoir was surveyed to determine the affects if any from the drastic drawdown in 2001 while the dam was repaired. The salmonid catch from the traditional salmonid areas of the reservoir consisted of splake ranging from 14 to 20 inches which is typical for this waterbody. The yellow perch catch was down slightly number-wise but the average size was bigger(8-10 inches). The most notable change was in the smallmouth bass catch with an increase in the CPU as well as the size, with many fish in the 2-4 pound class. Fishermen reported having a great year with the bass.

Region 7

Whitney Point Reservoir Habitat Improvement
In March 2004 staff worked with area sportsmen to install 28 root wad/logs fish habitat structures to the lake, bringing the total to 48. To enhance their usefulness to fish, brush-piles were built around each of the root wad structures. All of the structures were placed in areas that are covered with four to seven feet of water when the reservoir is brought back up to the normal summer pool level. How well the structures stayed in place will be evaluated in the winter of 2004/05, when the lake is drawn down.

Mill Brook Channelization Project
Staff continued discussions with representatives from the Army Corps of Engineers, Natural Resources Conservation Service (NRCS), U.S. Fish and Wildlife Service (USFWS), and Village of New Berlin in an effort to modify the existing flood control plan which has been proposed by the NRCS. The existing plan calls for putting over 800 feet of the lower end of Mill Brook (a wild brook trout stream) into a concrete culvert to alleviate flood concerns in the village. However, it is the contention of the Corps, USFWS and Region 7 fisheries staff that this project does not need to impact the stream in such a severe fashion to attain the level of flood protection needed in the village. NRCS staff are currently reevaluating the project using a more natural approach to determine if the stream channel can be reconfigured without the use of concrete culvert pipes so that this section of trout stream can be preserved and perhaps improved.

Environmental Permit Reviews
Fortunately, in 2002 Region 7 Bureau of Habitat staff levels increased allowing Region 7 Fisheries personnel to surrender the bulk of the Article 15 (Protection of Waters) application review responsibility back to Habitat staff. 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 3 long term monitoring programs during the fiscal year. These included 25 smallmouth and 25 largemouth bass for the Onondaga Lake Mercury Trend Analysis; 10 largemouth bass and 10 white suckers for the USEPA National Fish Tissue Study; and 25 chinook salmon for the Lake Ontario Contaminant Trend Analysis. All samples were transported to the Hale Creek Field Station in Gloversville for analysis.

Whirling Disease Samples from Private Hatcheries
A collection of 60 rainbow trout fall fingerlings was made at Apple Valley Trout Farm in Harpursville. This sample was processed, packaged and delivered to Andrew Noyes at the Rome Laboratory for analysis.

Region 8

Focus on Habitat
As part of the Division's goal, Regional Fisheries staff working with Bureau of Habitat staff reviewed Article 15 activities in the Region. From this list, the team developed 31 Standard Activities Permits (SAPs). Each SAP has a list of required information and a list of conditions that must be put on every permit. The SAPs will be used to expedite the review process while protecting the environment by allowing Division of Permit analysts to review and approve projects without Fisheries review. Region 8 will kick off this program in late spring 2004.

Naples Creek Aquatic Habitat Restoration Project
In July 2000, this project was awarded Clean Water Clean Air Bond Act funds during the 1999-2000 appropriation cycle. Most of the project was constructed in 2001. Some minor remedial work was needed at a few sites. In November 2003, the final main stem site was constructed. Additional funds from the Bond Act and the Great Lakes Restoration Program were awarded in 2003. An additional site on Grimes Creek that was not part of the original project, but was discovered during construction in 2002, was constructed in the late summer of 2003.

Whole Lake Fluridone Treatment and Evaluation
According to the Waneta-Lamoka Lakes 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 of 2003. Evaluation of the submersed aquatic vegetation community occurred in August. 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 a year until sampling could confirm that Waneta Lake's submersed aquatic vegetation community recovered to meet the year after treatment criteria. Considerable staff time was spent evaluating data, reviewing the literature, forming the Department's position, and meeting with the Lake Association.

Region 9

Fisheries staff assisted 2 local Trout Unlimited Chapters planting trees on 6 trout streams. With the Western New York Chapter of TU, 100 trees were planted on the upper Cattaraugus Creek, 100 trees were planted on Clear Creek and 1,900 trees were planted on Spooner Brook. With the Red House Brook Chapter of TU, 600 trees were planted on Goodell Creek, 75 trees were planted on Quaker Run and 200 trees were planted on Mansfield Creek. The trees were mostly willows, but also included red maple, dogwood, white ash and assorted other species ideal for riparian plantings.

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.

Extension, Education and Outreach

Free Fishing Days/National Boating and Fishing Week

Each year up to 4 Free Fishing Events can be designated by the Department of Environmental Conservation in each DEC region. These events not only provide an opportunity to experience fishing without the need to purchase a fishing license, but also provide a mechanism for beginning anglers to learn basic fishing techniques. Twenty events were held throughout the state in 2003 (Table 1).

Table 1. 2003 Free Fishing Events in New York State

DEC Region	Date	Location
1	04/05/03	Belmont Lake State Park
	0816/03	Hempstead Lake State Park
	10/18/03	Hempstead Lake State Park
	05/17/03	Pelton Pond
	06/07/03	Silvermine Lake
4	05/10/03	Indian Kill Preserve
	06/14/04	Cobleskill Veteran's Memorial Park
	06/22/03	Neahwa Park, Oneonta
5	06/08/03	4-H Training Center
6	05/17/03	St. Lawrence River - Wilson Hill Causeway (Town of Louisville)
	06/07/03	All waters on Fort Drum
	06/07/03	Saquoit Creek and its tributaries (Town of New Hartford)
	07/19/03	St. Lawrence and Oswegatchie Rivers within the City of Ogdensburg
7	06/07/03	Carpenters Brook Fish Hatchery
	06/08/03	Falcon Sportsman's Club
	09/27/03	Nathanial Cole Park (Town of Colesville)
9	05/24/03	Letchworth State Park
	06/07/03	Hyde Park Lake
	06/07/03	Forness Pond
	06/14/03	Tifft Nature Preserve Lake

On June 7 and 8, Bureau of Fisheries staff conducted fishing clinics in Regions 1, 5, 6, 7 and 9 in conjunction with National Boating and Fishing Week. Although the weather was less than perfect, all drew good crowds who enjoyed the opportunity to learn more about freshwater fishing in NY. These events were also popular with Bureau staff who enjoyed the opportunity to directly interact with the public.

Brochures and Publications

No new publications were produced in 2003. However, a number of popular brochures were reprinted including the Weigh Your Fish with a Ruler tip strips, Getting Started Manual and Fishing the Freshwaters of Long Island and New York City brochure. Efforts were initiated to develop a list of top fishing waters in New York which will be used on the Department website and in a new general New York freshwater fishing brochure which is targeted for completion in 2004.

Significant effort was also put forth to redesign the 2004-2006 Fishing Regulations Guide. Public Use and Outreach Section staff were responsible for the reorganization and graphic design of the guide, along with the incorporation of all of the regulation changes. For the first time, the guide will have a full color front and rear cover. The front cover will feature a scenic photo of Cranberry Lake, with the rear cover containing a color guide to the warmwater fish of New York. New information for anglers has also been provided on fish parasites, whirling disease and largemouth bass virus. Also featured in the new guide is the New York Great Angling Outdoor's photo contest. Each license year, prizes donated by Shakespeare Fishing Tackle will be provided for the first, second and third place photos that best represent the contest theme.

Lake Contour Maps

Efforts were completed to standardize and customize all of the available contour maps of New York State lakes produced by DEC regional staff over the years. Maps were scanned and customized before being converted to a PDF format to allow downloading via the DEC website. In addition to the actual lake contour map, updated species information, location, acreage and average depth details are also provided. Locations of state campgrounds, public access and

hiking trails are also included on many of the maps. In total 396 maps are now available for waters in all DEC regions, including 98 maps of Adirondack waters. Contour maps can be downloaded from the DEC website at www.dec.state.ny.us/website/dfwmr/fish/lakemaps/index.html.

Angler Achievement Awards

The Angler Achievement Award program,which recognizes anglers catching that catch trophy fish in New York waters,continues to be a very popular outreach effort. Awards and/or recognition is provided to anglers catching popular New York fish species that exceed minimum qualifying criteria. In total, 204 entries were received in 2003. Three new State Records were established in 2003: a 3 lb 7 oz fallfish caught by Jeff Weibly in the Tioughnioga River in Cortland County, a 41 lb 8 oz lake trout caught by Jesse Wykstra in Lake Erie (Cattaraugus County) and a 55 lb 0 oz striped bass caught by Dan Mangold (establishing a new state record for striped bass caught in freshwater). A summary of the award winners for the past 5 years, along with applications and entry information can be found at www.dec.state.ny.us/website/dfwmr/fish/foe4cang.html

First Fish Program

The Bureau's First Fish Program remains very popular with beginning anglers, as well as their parents and grandparents. In 2003, 846 entries were received, representing over 50 different fish species caught. Sunfish, bluegill and pumpkinseed made up the bulk of the entries, followed by largemouth bass. Entries to the first fish program receive a custom certificate, along with a letter of commendation from Governor Pataki.

Hatchery Outreach

The Public Use and Outreach Section continues to work cooperatively with the Bureau's Fish Culture Section in developing informational signage to assist the public in understanding what activities are on-going at a hatchery and what species are raised. New UV resistant color signs portraying the species raised at each hatchery, along with information specific to the rearing of each species have been developed for each hatchery. The section also assisted in the bid process involved with the development of a new educational video on Atlantic salmon culture at the Adirondack Fish Hatchery.

Lake Placid AFS 2006

The New York State Department of Environmental Conservation 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. Being selected as the host of the annual meeting is considered to be a high honor for a natural resource management agency. Taking a bit of a different approach from previous meetings, the New York meeting will be held outside of the big city in Lake Placid, NY. Planning is already underway and contracts have been signed to use many of the existing olympic venues in Lake Placid, including the Olympic Center, for various aspects of this large meeting. The September 10-14, 2006 meeting is anticipated to bring over 1,500 people to the Village. Although planning activities are currently underway, preliminary plans are to address various issues of concern to northeastern fish populations (acid precipitation, over harvest and invasive nuisance species) over the course of the meeting.

Internet

As with previous years, the Internet continues to increase in importance as a major source of information. As such, users are requesting additional materials be made available on the web. To address this, more time and effort is spent on internet activities, and less on print-based materials. Bureau staff continued to convert existing Bureau of Fisheries materials into HTML format to go on-line, plus developed additional materials for inclusion on the web.

DEC's website www.dec.state.ny.us continues its rapid growth in both content and public use. The site currently contains more than 1,500 pages of fish, wildlife and marine content. Fish, wildlife and marine content remains among the most popular on the site. In addition to updating materials currently on the site, some of the bureau information completed for the web this year includes: fish stocking lists by DEC Region; information on Public Fishing Rights; contour lake maps; lead sinker alternatives; the Angler Achievement Awards Program; and updating of the fishing regulations.

In addition, Bureau staff continued to maintain the FW FISH mailbox on the Department website (www.dec.state.ny.us). FW FISH is one of the more popular mailboxes on the Department's web-site. Over 1,500 e-mails were either directed to the Regions or

other programs for answers, or answered directly by Central Office staff. Common e-mail requests included assistance with the interpretation of fishing regulations, spring trout stocking plans and finding appropriate fishing locations for various species throughout the state. The mailbox is also a popular locations for anglers to express opinions on the overall Bureau of Fisheries program, as well as the reporting of violations of the Environmental Conservation Law.

Region 1

Spring Fishing Festival
On April 5, 2003, the annual Spring Fishing Festival was held at Belmont Lake State Park in cooperation with NYS Parks, Recreation and Historic Preservation. Approximately 500 people attended the event, the smallest turnout in years. The weather forecast for the day was rain developing in the afternoon with cold (40's) temperatures which kept people away. The rain never happened, but the cold temperatures made for a raw day. A second reason people may not have shown up in previous numbers was that the Sweet Water Angler, one of the primary avenues for announcing the festival, was not mailed out due to budgetary constraints. The people that came to the festival were given the opportunity to fish for freshly stocked trout. Loaner rods and free bait were also provided. Flyfishing instruction was available for participants. Three advanced fishing seminars were held which were surprisingly well attended. Kids attending the seminars had the opportunity to win prizes from Sports Authority. Considering the weather, the festival was considered quite a success. Volunteer sportsman were very instrumental in making the festival the success that it was.

Region 1 Fisheries Unit Carries Take your Daughter/Son to Work Day
The Region 1 Fisheries Unit hosted over a dozen youngsters in demonstrating seining techniques for take your daughter/son to work day while collecting fish from Deep Pond for stocking into Hempstead Lake. The children were excited about assisting with the seining operation and helped pull the net as well as helping catch the fish and put them in buckets to be carried to the stocking truck. While collecting the fish the children learned what characteristics make a fish and what kind of fish they were catching. Regional Fisheries Manager, Chart Guthrie then transported some representative fish back to the Regional Office and gave a presentation to the children that could not attend the morning field operation.

Envirothon
On April 9, 2003, Region 1 Fisheries Biologist Gregory Kozlowski participated in the Long Island Regional Envirothon with Forester Wes Gehres and Wildlife Biologist Mike Wasilco. Each DEC representative provided 25 questions on their area of expertise (aquatics, forestry and wildlife). Two other stations were manned by non-DEC personnel. Eleven school teams competed for the first place prize of a $500 scholarship. Farmingdale and Islip won their respective counties and will move on to the statewide Envirothon. Regional Fisheries Biologist Greg Kozlowski, a Farmingdale alumnus, was proud of his former school's showing in the event.

Suffolk County Conservation Day
At Suffolk County Conservation Day, Fred Henson and Mike DiMarco enlisted the help of fifth graders to solve the mystery of Gummi Pond. After hearing about how biologists collect samples of fish from wild populations to get the information they need to design effective fishing regulations, the kids were shown several types of NYSDEC sampling gear, and then told about the mysterious Gummi Pond inhabited by orange and green gummi fish. In order to estimate the proportion of orange and green gummi fish, Mike and Fred selected "assistant biologists" and assigned them to dip into a black fish bowl representing gummi pond and collect samples. Students learned how samples can be used to draw useful inferences about populations. The exercise was well received. However, some of the gummi fish remain missing in action.

Nassau County Conservation Education Day
On April 6, 2003, Regional Fisheries Biologist Greg Kozlowski and Seasonal Fish and Wildlife Technician Mike DiMarco participated in the annual Conservation Education Day held at the Old Bethpage Village Restoration in Nassau County. They taught six fifth grade classes (approximately 150 kids) about fishing, sampling techniques and what they could catch in Long Island waters. Each teacher was given a packet of information in order to continue the lessons learned at Conservation Education Day.

Girl Scout Fishing Clinic
The Regional Fisheries Unit with assistance from the Long Island Bassmasters, Bureau of Marine

Resources and Environmental Conservation Officers conducted a fishing clinic for the Suffolk County Girl Scouts at Camp Edey. Over 50 girls attended the clinic. The girls were provided with instruction in aquatic ecology, 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.

Sports Authority Clinic

On Saturday May 3, 2003, Regional Fisheries Biologist Greg Kozlowski set up a fisheries display at the Sayville Sports Authority. While there he answered questions on fishing locations and handed out fishing literature. He also collected angler's opinions on the proposed fishing regulations for the 2004-2006 license years. Sports Authority has sponsored regional fisheries events in the past, and asked for the "demo" day.

Lake Ronkonkoma Fishing Festival

In recognition of New York State's annual free fishing weekend, Region One Fisheries with co-sponsorship from Suffolk County Parks and Ronkonkoma Outfitters Tackle Shop held a family fishing festival at Lake Ronkonkoma County Park on Saturday, June 28. Attendance was estimated at 600 by Suffolk County Parks and over 200 fishing rods were loaned out to novice anglers. Fishing was steady with sunfish, bass, and perch caught throughout the day. DEC staff and volunteers from several local organizations were on hand to assist with the fishing and provide support services. Besides the opportunity to experience fishing firsthand, the festival offered fishing techniques seminars, an information booth, and the opportunity to win prizes in two separate casting contests. Wal-Mart made a significant contribution to the event through its Wal-Mart Kids All-American Fishing Derby Program.

Boy Scout Fishing Clinic

The annual Father's Day weekend boy scout fishing clinic was held on June 14, 2003 by Regional Fisheries Staff at Deep Pond. Approximately 100 scouts attended the event. The scouts attended four educational stations at the beginning of the clinic covering basic freshwater fishing techniques, freshwater fish identification, pond ecology, and conservation law and ethics. After the educational stations, the scouts were given the chance to fish. The fishing was excellent on that day and the average count on fish caught per child had to be in the 2 to 3 per child. Many of the parents and leaders were pleased with how the kids were doing. The sun was shining and the fish were biting and so everyone that was there seemed to have a good time. The Regional Fisheries Unit left 30 fishing rods with at the Schiff Scout Camp for use in their summer camp fishing program.

I FISH NY Girl Scout Fishing Program

The I FISH NY Program completed the second 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 Wednesday for the duration of the camp.

The fishing program was expanded from 45 minutes in 2002 to 90 minutes in 2003. In that time the girls were given 65 minutes of instruction divided between aquatic ecology, fish identification and biology, regulations and angler ethics, and an introduction to fishing tackle and how to use it. Then the girls were provided with fishing rods for 25 minutes of fishing. For many of the girls this was 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 was provided with information on fishing regulations and local fishing opportunities.

Both the campers and the camp counselors were 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. In addition to Region 1 Fisheries Staff, Region 2 Fisheries Staff, ECO's, sportsmen volunteers and the camp counselors also assisted with the program.

Cub Scout Fishing Clinic

On June 18, the Regional Fisheries Unit conducted a Fishing Clinic for Cub Scout Pack 244. The Clinic was originally planned for Randall Pond at the DEC Facility in Ridge, but high water levels put the shoreline of Randall Pond up into the surrounding vegetation, leaving no place for shoreline fishing. The clinic was moved to Deep Pond on the Schiff Scout

Reservation. A total of 39 Cub Scouts with their parents attended the clinic. The scouts attended four educational stations at the beginning of the clinic covering basic freshwater fishing techniques, freshwater fish identification, pond ecology, and conservation law and ethics. After the educational stations, the scouts were given the chance to fish. Fishing was excellent with every scout catching at least one fish. Each scout was also provided with a package of information on fishing regulations and local fishing opportunities.

New York Sportfishing Federation Fishing Clinic at Southaven County Park

The annual sportfishing clinic at Southaven County Park was held on May 31. This was an informative clinic that provided as much professional instruction as actual fishing time. Casting with spinning tackle, fly-fishing instruction, fly-tying, live bait use, boating safety, and marine fish identification was taught along with the Region 1 Freshwater Fisheries instructional station. The Region 1 Fisheries Unit was represented by I Fish NY representative Joseph Cutrone and seasonal Laborer Michael DiMarco. They set up a table with a 15 gallon fish tank, complete with a largemouth bass, bluegill and pumpkinseed to augment their fish identification seminar. The session included fiberglass reproductions of the common fishes of Long Island. A literature rack was set up to aid in answering questions regarding waters, fishes and regulations on the island. The summer 2003 *Sweet Water Angler* was handed out to all in attendance, and a S.W.A. mailing list was available for first time subscribers.

After a big lunch courtesy of the Long Island Beach Buggy Assoc., the kids were able to spend the last three hours of the clinic fishing. Seventy-five kids fished for sunfish that were very eager to bite nightcrawlers. Many kids caught their first fish, while others claimed to be the neighborhood professionals. One young fellow named Andrew was happy to offer his expertise, and help the Fisheries unit with tangles, baiting and casting. A family group was very excited to fish, and learn that the park was not the only place to fish. With their new-found knowledge, they could go to the recently stocked Yaphank lakes, just around the corner from their home!

Oyster Bay's "Bay Day" Fishing Festival

Regional Fisheries Staff, Mike DiMarco and Joe Cutrone assisted the Marine Fisheries Unit, including Steve Heins, Chris LaPorta, Byron Young and Ryan Kosiorowski, with a fishing clinic as part of the Oyster Bay "Bay Day" Celebration. This was the Region 1, National Fishing and Boating Week fishing event. The rain began within minutes of when the equipment was unloaded and continued for the entire day. Regional staff handed out information about fishing on Long Island and answered questions as the day went on. Actual fishing activities had to wait until after the "Blessing of the Fleet" by which time it was low tide and the rain had increased to a steady downpour. Despite the adverse conditions, rods were loaned to about 30 people. No fish were caught, but participants indicated that they did have a good time fishing.

Caleb Smith State Park Fishing Contest

On June 7, 2003, Regional Fisheries Biologist Gregory Kozlowski assisted Caleb Smith State Park with its annual fishing contest. Mr. Kozlowski presented safety information to the kids entered in the contest and assisted as a contest judge. Approximately 80 kids attended the event. Prizes were given for the largest game fish, largest pan fish, and most fish.

Family Fishing Clinic

On August 16, 2003, the annual Family Fishing Clinic was back at Hempstead Lake State Park. Last year's clinic was held at Belmont Lake State Park due to a severe drought that had rendered McDonald Pond un-fishable. One hundred eighteen kids attended the clinic. The kids were treated to four educational stations: Conservation Law and Ethics, Freshwater Fish Identification and Biology, Freshwater Ecology and Basic Freshwater Fishing Techniques. After the educational stations, children 12 years of age and under were given the opportunity to participate in a casting contest (three age groups) or go right to fishing. Prizes for the casting contest were donated by the Westbury Sports Authority and NYFTTA. NYSOPRHP provided bait for the event. Despite the 2002 drought that lowered the water level in McDonald Pond to one foot, most of the children caught fish. One hundred fifty pumpkinseed sunfish had been stocked into McDonald Pond prior to the event to ensure fishing success and to help the sunfish population in McDonald Pond recover from the drought. This the best attendance yet at an August Family Fishing Clinic.

St. Christopher Otterly School Fishing Clinic

Fisheries staff from Regions One and Two held a fishing clinic at Lake Ronkonkoma for approximately

250 elementary and middle school students from Brooklyn. The students, from the St. Christopher Otterly School, arrived by bus and were given basic instruction in fish identification, aquatic ecology, fishing regulations, and the use of fishing tackle before being allowed to fish in Lake Ronkonkoma. Students were also given the opportunity to participate in a casting contest with prizes donated by Ronkonkoma Outfitters. The children were very excited about the opportunity to fish and many of them caught their first fish. The number of children at the event overwhelmed the Unit's ability to provide timely one on one instruction. This, coupled with the inexperience of the children and the school staff resulted in many tangles and much frustration on the part of Unit Staff. Techniques for improving program delivery and reducing frustration are being worked out for future events like this.

Sweet Water Angler

The Fall/Winter 2003 issue of the *Sweet Water Angler* was posted on the DEC public website in mid-September, 2003. This completed the 10th season of producing the *Sweet Water Angler* for a total of 34 issues. As directed, the *Sweet Water Angler* is no longer being bulk mailed. The Summer 2003 issue announced that the Sweet Water Angler was going to be posted on the NYSDEC web site starting with the Fall/Winter 2003 issue. Subscribers were encouraged to e-mail the Regional Fisheries Unit to sign up for e-mail notification of publication of the newsletter. Subscribers without access to the internet (primarily seniors) were given the option to call the office to sign up to continue receiving the newsletter in the mail. The Summer 2003 issue was mailed to 4,695 addresses. As of the middle of September 240 people had requested e-mail notification, and 54 had called to ask that they continue receiving the newsletter in the mail because they didn't have internet access. This totals 294 addresses or 6% of the Summer 2003 issue distribution. This is not believed to be a lack of interest in the *Sweet Water Angler* because many people have informed staff that they still have to sign up for e-mail delivery, including sportsmen that praise the quality of the newsletter. The *Sweet Water Angler* is also distributed at various fishing clinics, fishing festivals and sportsman shows. In November of 2003, *Sweet Water Angler* Editor Greg Kozlowski was promoted to another Unit and his position was not backfilled in FY 2003-04. As a result publication of the *Sweet Water Angler* was suspended until this position could be refilled.

I FISH NY Presentation to the Marine Resources Advisory Council

At the request of the Marine Resources Advisory Council, Region 1 Fisheries Manager Chart Guthrie, Steve Heins from the Bureau of Marine Resources and Melissa Cohen from Region 2 Marine Resources prepared and presented an overview on the I FISH NY program. The presentation was well received, with many council members offering constructive suggestions and assistance for the program. The primary concern expressed by the council was how the program could hope to deliver the services specified in the program plan without hiring the staff that were funded under the Wildlife Conservation and Reinvestment Program grant.

Art Flick Chapter Trout Unlimited Meeting

Region 1 Fisheries Manager Chart Guthrie was invited to attend the monthly meeting of the Art Flick Chapter of Trout Unlimited. With the assistance of the Regional Fisheries Unit, The Art Flick Chapter applied for and received a grant to construct a fish ladder over the Hard's Lake Dam on the Carmans River. Mr. Guthrie answered questions on the status of the project and outlined the steps needed to complete the project.

Freshwater Anglers Presentation

Biologist Fred Henson, attended a general membership meeting of the Freshwater Anglers of Long Island on January 23rd. Fred delivered a PowerPoint presentation on the Angler Diary Cooperator Program and addressed several other regional fisheries management issues of interest to the membership. Ten new volunteers signed up to participate in the Angler Diary Program. The presentation was well received.

Twelve hundred Enjoy DEC Sponsored Fishing Festival at Hempstead Lake State Park

Approximately twelve hundred people took advantage of the opportunity to get a little help with their basic fishing skills at the eleventh annual fall family fishing festival. The DEC provided bait and loaned fishing rods to novice anglers. Representatives of several Long Island angling and conservation clubs were on hand to share their expertise with participants. Region One Fisheries staff cooperated with New York State Parks to stock the ponds with trout from the Connetquot River Hatchery prior to the event. Region One Fisheries Staff involved with the event included Regional Fisheries Manager Chart Guthrie, Biologists

Fred Henson and Greg Kozlowski, and seasonal laborers Mike DiMarco and Joe Cutrone.

Long Island Sportsman Show
The Region 1 Fisheries Unit coordinated the DEC participation in the Long Island Sportsman Show, held on the Brentwood Campus of Suffolk County Community College. Along with Fisheries, Wildlife, the Forest Rangers, the ECO's, Marine Resources and Sportsmen's Ed all helped man the DEC booth. Fishing Licenses were sold off line throughout the show and nearly $1,000 in licenses were sold. Sportsmen and women were very appreciative that licenses were available at the show. This was the first time since DECALS was initiated that licenses were available at this show.

Meeting with Southampton Town Trustees
Regional Fisheries Manager Chart Guthrie and Fisheries Biologist Fred Henson met with the Trustees of the Town of Southampton to attempt to negotiate approval for fish passage at the Woodhull Dam on the Little River. The Trustees stated at the outset of the meeting that the only way that they would favor allowing alewife in Wildwood Lake was if the New York State DEC officially declared that the State had no jurisdiction over waters in the Town of Southampton. Chart Guthrie proposed entering into a Cooperative Agreement where neither party relinquished their claim to jurisdiction, but agreed to co-manage the lake and allow non-resident anglers to utilize the State owned Fishing Access Site to access the lake for fishing (currently the Town Trustees limit fishing in the freshwaters of the Town to residents only). This proposal was rejected. The Trustees agreed that allowing alewife access to the Little River system and Wildwood Lake would be good fisheries management and benefit the local and marine ecosystems, but suggested that the Alewife Committee limit its activities to the main stem of the Peconic River which is not in Southampton Town.

Fishing Seminars
Seven seminars were scheduled during the Summer of 2003. The seminars are held during weekday evenings with instruction provided by volunteer instructors. Topics ranged from beginner bass techniques, specific bass techniques, and fly fishing. One of the seminars was cancelled due to the blackout and one due to bad weather. Approximately 10 to 15 people attended each seminar for a total of approximately 55 people. Attendees that had been at past seminars commented on how their fishing had improved since they had attended the seminars. There is usually some time devoted to giving participants a chance to try the techniques they learned during the seminar before they go home.

Fishing Outreach Summary	Participants
Fishing Clinics (6)	650
Fishing Festivals (5)	2,400
Fishing Seminars (5)	55
School Programs (3)	380
Sweet Water Angler (3)	4,695
Girl Scout Camp (8)	1,200
Sportsman's Meetings (5)	150

Region 2

***Getting Started in Fishing* Classroom Program**
Region 2 staff taught more than 60 fish-related lessons to over 1,000 school children throughout the five boroughs of NYC. Through this "Getting Started in Fishing" program, students learned about fish anatomy, adaptations, ecology and some learned about fishery management. More than half of these students participated in fishing trips to local ponds and rivers.

Teacher Workshop
On March 20, Region 2 Bureau of Fisheries staff conducted a teachers' workshop for over 15 teachers at the NY Public Library. The workshop contained a brief introduction to DEC and the I Fish NY program and presented lesson plans used by R2 staff to teach students about fish anatomy, adaptations and aquatic food webs. The teachers were each given written DEC lesson plans and assorted fishery-related DEC literature, as well as curriculum materials from the NY/NJ Harbor Estuary Program and the U.S.E.P.A. The workshop culminated in an activity involving fish identification and DEC fishing regulations. Teacher comments on the workshop were positive and we hope to be invited back to the library next year. Each teacher was provided with a packet containing DEC literature and Region 2 lesson plans.

NYC Parks Dept. Youth Recreation Program
Staff assisted the New York City Parks Department with a full-day event for high school students participating in a Parks Department's after school program. DEC staff taught approximately 50 students the basics of saltwater fishing and helped everyone to fish. New York City's NY1 local news television station covered the event.

NY Boat Show
Region 2 staff brought a 180-gallon saltwater aquarium to the NY Boat Show at the Jacob Javits Convention Center in NYC to display local saltwater fish species. Fisheries staff conducted a catch-and-release fishing contest for kids. The kids "caught" fish silhouettes, which they then attempted to identify against a board showing similar silhouettes. A fishing instruction and activity book, an "I Fish NY" bumper sticker, and a chance to win a donated Shakespeare rod and reel were the prizes awarded to successful "anglers."

NY State Fair
Region 2 staff brought a 180-gallon saltwater aquarium, with fish, to the NY State Fair in Syracuse. Staff managed the tank throughout the duration of the Fair and answered many saltwater creature-related questions.

Family Fishing Clinics
Region 2 staff held family fishing clinics at Gantry Plaza State Park, Queens, and the Ocean Breeze Pier, State Island. Both were saltwater fishing clinics and provided participants opportunities to fish and learn about fish-related topics including ecology and regulations. After signing in, clinic participants received information packets on local saltwater species, fishing techniques, regulations, and fishing-related activities. The children then visited the educational stations designed to introduce them to fish ecology and anatomy, fishing regulations, safety, and ethics. Finally, the kids received fishing poles and got a chance to test their new knowledge. Using several types of bait--including sandworms, squid and bunker--they caught a variety of fish, such as fluke, sea bass, sea robins and skates.

New York City Housing Authority Fishing Clinics
Region 2 staff helped and participated in NYC Housing Authority fishing events in each of the five boroughs. Each event was attended by close to 1,000 children. Staff trained NYCHA employees on the educational sections normally discussed in fishing clinics to enable these employees to provide this education to the attending children. All children fished and many caught (and released) fish.

Region 6

Conservation Education Days
Region 6 fisheries staff participates in 4 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. Oneida County was held on two days in consecutive weeks to a total of 1,263 students in 2003. St. Lawrence County was one day with about 300 students. The regional total for 2003 was around 3,850 sixth grade students reached with a variety of fisheries messages through these events.

Four members of the regional fisheries staff participated in Jefferson County Environmental Awareness Days at Westcott Beach State Park. The event was 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.

Fishing Dock for Boy Scouts
The Revolutionary Council, Boy Scouts of America requested assistance from Fisheries staff in designing and building a fishing dock at their facility on White Lake in Oneida County. The old fishing dock was falling apart and was too small for the number of scouts who wanted to fish from it. Utica Fisheries staff assisted the scouts in obtaining the necessary permits as well as designing the dock and supervising the construction. The new dock now allows 3 dozen scouts at a time to safely fish in the lake.

Brochure for People with Disabilitites
The Region 6 handicapped fishing brochure was revised to include several new facilities and remove two facilities that were closed. We continue to receive a steady request for information on places for handicapped people to fish safely.

Fishing Clinic
In conjunction with Utica area businesses and fish and game clubs, the Utica Fisheries staff participated in a nationwide fishing clinic program sponsored by Wal-Mart. The one day clinic held on Sauquoit Creek at

the New Hartford Town Park was staffed by area fishermen who assisted the neophytes with all the activities involved with fishing. In-spite of a steady rain, the 45 kids who showed up all caught fish including one youngster who caught 73 trout in 4 hours. All the youngsters were given bags of information and goodies and several won prizes donated by TU, DEC, Wal-Mart and the Sauquoit F&G Club.

Sportsmen Meet DEC Dinner
The first annual "Sportsman meets the DEC staff dinner" was sponsored by the Herkimer County Conservation Alliance and held at the Ilion F&G Club. After a fine meal, the sportsmen and women had a chance to talk about any topic they desired with DEC regional staff. Although there were a few controversial issues, none of them involved fisheries.

Teaching at the High School
The Utica Fisheries staff continued to present career talks to area high schools. There have been several noticeable changes the past few years. Most of the students attending the talks the last year or so have been female compared to 10 years ago when mostly males attended. The other big change is in the number of students interested in environmental careers. Only half the numbers of students are now attending the presentations. When asked about the lack of interest, the students state it is the fact there are no jobs available, not that they would not like to work in this field.

Jack Hasse Receives Environmental Educator of the Year Award
For his efforts in teaching at conservation days, envirothons. school talks, and boy scout programs, Jack Hasse was awarded the Environmental Educator of the Year Award by the Herkimer County Soil and Water Conservation District.

Region 7

Public Fishing Rights Brochures
Preliminary maps showing all Public Fishing Right (PFR) holdings, parking areas, and angler footpaths were developed for every stream in the region using GIS. These maps will eventually be incorporated into a brochure format which will be available for public distribution through the mail or on the DEC website.

Family Fishing Day at Carpenters Brook Fish Hatchery
Held on Saturday, June 7, 2003 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. Following the instructions, all of the kids had a chance to participate in a casting competition and fish in the hatchery's fishing pond. Nearly 200 kids and adults participated during the morning and afternoon sessions that were offered.

Annual Fishing Day Clinic at Rogers Environmental Center
Held on Saturday, June 28, 2003 during the NYSDEC Free Fishing Days weekend Regional Fisheries staff assisted the Rogers Center staff by providing a live fish display and instructing children and adults on the proper use of fishing tackle and gear.

National Hunting and Fishing Day Events
On Saturday, September 27 and Sunday, September 28, 2003 regional fisheries staff provided fish displays and/or information on fishing tackle and gear at the Broome County Sportsmen's Kid's Fishing Derby, at Onondaga County Family Sportsmen's Days, and at the Salmon River Hatchery.

Norwich YMCA Summer Camp Presentation
Staff conducted a Fisheries Management presentation to several dozen teenagers at the Norwich "Y" Summer Camp in Plymouth. Topics covered included required college course-work, job opportunities, job responsibilities, etc. and we conducted an electrofishing demonstration at an area trout stream.

Shad Restoration Effort Presentations
Staff spoke about the history and current status of the American shad restoration effort in the Susquehanna River at both the June 12, 2003 Susquehanna River Basin Commission meeting in Corning and the September 13, 2003 1st Annual Susquehanna River Canoe/Kayak Regatta in Owego.

Whitney Point Reservoir Crappie Derby
Staff attended the annual "Crappie Derby" at Whitney Point Reservoir on Saturday, January 31, 2004 to provide information on the reservoir's fishery and answer angler's questions.

10th Annual Finger Lakes Fishing Festival
On Saturday, April 26, 2003 Regional Fisheries Unit staff 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.

Falcon Sportsmen Club 51st Youth Fishing Derby
On Sunday, June 8, 2003 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.

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 new 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 21 - September 1, 2003.

Conservation Field Days at SUNY Morrisville
On Tuesday, October 14, 2003 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 23 and 24, 2003. A Regional Fisheries Biologist and Technician 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.

New York City Boat Show
Held at the Jacob Javits Center in NYC, a Region 7 Fisheries Biologist helped staff the Division of Fish, Wildlife and Marine Resources booth from December 27, 2003 through January 4, 2004. 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 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 Region 8 Fisheries Unit teamed up with the non-profit Delta Labs for the third consecutive year to bring hands-on learning to area high school biology students. In both the spring and fall of 2003, over 130 students observed DEC staff retrieve a gill net set the previous afternoon from 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 the largest to date and were well received by students, teachers and staff.

Pond Management Workshop
Region 8 Fisheries staff participated in a workshop sponsored by the Genesee County Soil and Water Conservation District. The focus on the workshop was the management of farm fish ponds. A power point presentation covered topics such as permitting requirements, fish stocking rates, fish harvest rates, and vegetation control.

Aquatic Habitat Requirements for Fisheries
Region 8 Fisheries staff participated in a workshop sponsored by the Wayne County Soil and Water Conservation District and Water Quality Coordinating Committee. The focus on the workshop was water quality, aquatic vegetation control, and fisheries management in Sodus Bay. A power point presentation covered topics such as fish aquatic habitat requirements and vegetation control.

RIT students get hands-on limnology experience
The Department's Region 8 Fisheries unit brought hands-on learning to Rochester Institute of Technology's Environmental Biology students for the second consecutive year. In the fall of 2003, close to 30 students participated with DEC staff in conducting a limnological survey of Irondequoit Bay.

Focus on Lake Ontario Fishing and Tourism
Region 8 staff participated in several committee planning sessions. In addition to DEC staff, committee members included Sea Grant, representatives of the Charter Boat Industry, and several County Tourism Specialists and Assemblyman Robert Oaks. The committee formed by Assemblyman Oaks was charged with educating the public on Lake Ontario issues whiles at the same time promoting the recreational activities including fishing. Several informational events were held to introduce and educate the general public to a broad range of issues affecting Lake Ontario.

Public Information a Major Effort in Region 8
Participation in public gatherings was used to disseminate information on area fisheries resources and its 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 station 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 meeting, included various Trout Unlimited Chapters, Monroe County Fish Advisory Board and Federation meetings.

Region 9

Participation in Outdoor Sporting Shows
Fisheries staff participated in the Hamburg Outdoor Show, March 7-9, 2003.

Youth Fishing Clinics and Aquatic Education
In 2003/2004, Regional Fisheries Unit 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 conservation organizations or 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. Other educational outreach efforts that staff participated in included: Rushford DEC Environmental Camp, Lake Ontario Trout and Salmon (LOTSA) Kids Fishing Project, Amherst- NY Cub Scout Fishing Clinic and Trout Unlimited clinics.

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.

SAREP Family Fishing Day at Letchworth State Park
The fourth annual Letchworth State Park SAREP Family Fishing Day event was held on Saturday of Memorial Day weekend in May 2003. Over 600 people attended the 6 hour event, including several hundred children. Regional BOF had extensive input and participation at the event, which included teaching fishing at the stocked park trout pond, providing fishing poles for those that needed them, providing presentations on fish ID, and manning a fisheries display.

Internships/Volunteers
Regional staff benefited from the use of adult volunteers when needed, especially on stream electrofishing surveys. Volunteers represented angler groups such as Trout Unlimited or were simply interested sportsmen. In 2003, 15 volunteers contributed 40 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

Public Fishing Rights Acquisitions

The public fishing rights (PFR) program continues to benefit from the consistent funding provided by the State's Environmental Protection Fund. Acquisition of public fishing easements to New York streams and development of associated parking areas and footpaths remains a high priority program within the Bureau's Public Use and Outreach Section. In 2002-2003 just over 5 equivalent miles (miles along both banks) were formally acquired, with purchase agreements signed for another 2.5 equivalent miles. New easements were purchased on the Willowemoc in Region 3; Town Brook and the Poestenkill in Region 4; Kayaderosseras Creek in Region 5; North Sandy Creek and Black River in Region 6; Chenango River in Region 7; and Catharine Creek and Sleeper Creek in Region 8. Along with the easements purchased, 17 parking areas were also purchased. Eleven of these were developed including parking areas on the Pinekill in Region 3; Catskill Creek, Butternut Creek, Town Brook and Schoharie Creek in Region 4; Kayaderosseras Creek in Region 5; East Branch Salmon River in Region 6; 3 sites on the Chenango River in Region 7; Cohocton River in Region 8 and California Hollow Brook in Region 9. PFR holdings in New York State now total over 1,300 equivalent miles on over 400 streams.

Table 2. PFR acquisitions 2003-2004

DEC Region	Program Effort (Staff Days)	Eq.-Miles Acquired	Additional Eq. - Miles Under Agreement	Fisherman Parking Areas Acquired	Fisherman Parking Areas Developed
1	0	No Program			
3	30	0.052	0.624	0	1
4	56	0.765	1.367	4	3
5	17	0.5	0.10	4	1
6	40	0.855	0	3	1
7	10	2.2892	0	3	3
8	26	0.504	0	1	1
9	24	0.057	0.42	2	1
Totals	**203**	**5.0222**	**2.511**	**17**	**11**

Access to Lakes, Ponds and Rivers

Purchase of new parcels for fishing and boating access continues to suffer from a lack of funding and the high cost of water front property. Despite this lack of funding, some progress has been made recently through cooperative agreements with sister agencies or municipalities on existing waterfront properties. This continued in 2003-2004 with new access locations acquired through agreement on Schoharie Creek in Region 4; Mohawk River at Oriskany Flats in Region 6 and the Sangerfield River in Region 7.

Although funds for acquisition of fishing and boating access sites have been lacking, a limited number of boat launch rehabilitation projects have been funded through either past years Bond Act appropriations, the New York State Environmental Protection Fund or the Federal Aid to Sportfish Restoration Program. Design work has been completed and all necessary permits have been acquired for the Narrowsburg boat launch on the Delaware River in Region 3 ($575,000) and the Ticonderoga Boat Launch on Lake Champlain ($1,200,000). Both of these projects are scheduled for start-up during the Fall of 2004.

During the 2003 fiscal year, DEC Division of Operations provided the Bureau of Fisheries with just under 3,500 hrs of design service. Prominent activities during the period include the design of various American Disabilities Act improvements to Region 5 access sites, conceptual design of the Stuyvesant (Hudson River) and Indian Lake Campground access facilities and final design efforts on the Ticonderoga and Narrowsburg Boat Launches. Significant effort was also put forth in the development of design and permit drawings for the Long Lake boat launch rehabilitation project in Region 5.

The Department was also honored to receive the State Boating Access Program Excellence Award at the 2003 meeting of the States Organization For Boating Access in Erie, Pennsylvania. The award was given for the Department's long term, efficient management and modernization of its public access network and reflects the hard work of numerous individuals within the Bureau of Fisheries, Division of Operations and other programs in DEC that assist in the maintenance and modernization of DEC boat launch facilities.

Habitat Management

Table 3 summarizes stream and lake habitat management activities. These activities traditionally

rely heavily on volunteer labor and this past year was no exception. During 2003-2004 just under 15,000 willows, dogwoods, red maples and white ash were planted for streambank stabilization and shade purposes. Plantings were conducted in cooperation with local schools, Soil and Water Conservation Districts or Trout Unlimited Chapters. In addition, regional staff also completed liming activities on Sunrise Pond in Region 5 and Round Pond in Region 6. Stream improvement projects were also completed on Naples Creek and Grimes Creek in Region 8 and Quaker Run in Region 9.

Table 3. Summary of Bureau of Fisheries Habitat Improvement Program 2003-2004.

Region – Water	Gravel bar shaping	Rip rap-new (Ft)	Log Cribbing-New Gabions	Pool Digger-new	Deflectors-repair	Deflectors-new	Dam-repair	Dam-new	Willows-dogwood Planted (1,000)	Pond Limings	Other
1 – None											
3 – None											
4–Kinderhook Cr									0.7		1 riparian packet
East Kill									0.3		1 riparian packet
Batavia Kill									0.4		1 riparian packet
Fox Creek									2.0		12 riparian packets
Cobleskill Cr.									0.5		2 riparian packets
Catskill Cr.									0.5		1 riparian packet
Stony Clove Creek									0.3		1 riparian packet
5 – Little Long Pond							x				
Clear Pond								x			
Sunrise Pond										x	
6 – Round Pond (Oneida County)										x	
7 – Indian Brook									1.5		
Factory Brook									2.5		
Cayuga Inlet									1.5		
Genegantslet Cr. & Otselic River									1.5		
8 – Naples Cr.	1	120									2-stone stream barbs
Grimes Cr.			160								
9 – Quaker Run					2	6			0.2		50 (Red Maple, White Ash)
Goodell Cr.									0.4		200 (Red Maple, White Ash)
Cattaraugus Cr.									0.05		75 (Red Maple, White Ash)
Spooner Br.									1.6		350 (Red Maple, White Ash)
Mansfield Cr.									0.2		
Clear Creek									0.05		75 (Red Maple, White Ash)

Region 2

Marine Access Brochure
Region 2 staff performed extensive field work to determine and map public fishing access sites throughout the five boroughs of NYC. This research was then compiled into a booklet entitled, "Fishing the Marine Waters of New York City". Region 2 GIS staff created the booklet which is currently undergoing revisions and will be printed in the near future.

Region 3

Neversink River
Completed "easy access" fishing site on the Neversink River at D&H Canal Park under cooperative agreement with Orange County Parks and Recreation department. Anglers with limited mobility can negotiate an otherwise difficult drop down the bank to fish an excellent deep hole just below a riffle. A wooden walkway and small dock facilitate access across the rocky shoreline.

Hudson River at Haverstraw
Completed large boat access site on Hudson River at Haverstraw under a 50-year cooperative agreement with Rockland County. The facility's amenities include a double wide concrete ramp, floating aluminum docks, and parking for 50 cars and trailers. There is no fee for launching.

Loch Sheldrake
Completed a hand launch and floating dock under an 18 year cooperative agreement with the Town of Fallsburg. This provides access to a water body which previously had no formalized public access and will have the added benefit of providing winter ice fishing access.

Lake Huntington
The existing concrete ramp, constructed of interlocking concrete slabs, is located in a shallow area and reached only to a depth of approximately one foot. This ramp was extended about 20 feet to allow launching in deeper water. In addition, an aluminum ramp was added to assist boaters in launching and retrieving their boats.

Hudson River at Peekskill
After several years of requesting the City of Peekskill to reduce it's daily launch fees at its DEC-funded

double wide concrete launch from a prohibitive $20 per day, which was never negotiated with DEC as required by the 50 year agreement signed in 1997,the City has reduced the fee to a more reasonable $15 per day.

Ten Mile River
Constructed two angler parking areas on Ten Mile River.

Loch Sheldrake
Public access to 64 acre Loch Sheldrake (Sullivan County) was realized in 2003 when a car-top Fisherman Access Site was constructed following the signing of a Cooperative Agreement with the Town of Fallsburg. A 2003 fisheries survey documented good potential for brown trout survival and growth in the lake. A stocking policy specifying 1,000 spring yearling brown trout annually was written and first enacted in spring 2004. There is no spawning habitat (tributaries) present, so the trout fishery will be entirely dependent on hatchery stock. Ice fishing and all-year harvest of trout will specifically be allowed in this newly trout-inhabited water, preserving a traditionally popular use of this lake.

Region 4

Public Access
A GPS mapping effort of the Public Fishing Rights easements and related parking areas is currently underway and is approximately 85% completed for the Catskill Park portion of Region 4. GPS datapoints are collected by regional fisheries staff and routinely uploaded to Central Office for processing. When completed, this information will greatly facilitate future maintenance of the Public Fishing Rights areas and should prove extremely useful to the angling public.

A fisherman's parking area has been built on Catskill Creek, completing a long standing effort to acquire and develop this property.

Three more Fishing Rights Agreements were signed for the West Branch of the Delaware River. One is for 0.6 equivalent miles on the east bank and the other is for 0.41 miles on the west bank. Both extend or connect gaps in the existing PFR. The third agreement for 0.22 equivalent miles is separate from the first two but also bridges a gap between existing PFR holdings.

Three Memoranda of Understanding were signed with DOT formalizing or creating access to Wharton Creek, the Unadilla River, and the Little Delaware River.

Region 5

The Department of Environmental Conservation is required to develop unit management plans (UMPs) for state land (Forest Preserve) in the Adirondack Park. UMPs must include an inventory of resources in the unit of state land, and discuss past and future management of resources in the unit. For the Bureau of Fisheries, that can mean conducting pond surveys, as well as describing and justifying any proposed limings, reclamations, and efforts to develop public access. Draft plans are provided for public review and comment. UMPs are not finalized until they are approved by the Adirondack Park Agency.

1. **Two Adirondack Park Wilderness Unit Management Plans Are Approved**
   The Dix Mountain and Giant Mountain Wilderness Unit Management Plans were approved by the Adirondack Park Agency. The plans include proposed pond reclamations to eliminate non-native fishes and restore native brook trout. With the plans approved, Fisheries staff will begin the permit application process for the reclamations. Round and Twin Ponds in the Dix unit, and Giant Washbowl are likely candidates for reclamations in 2004.

2. **New Regulations Restore Limited Helicopter Use by DEC Fisheries Staff**
   The ability to conduct pond reclamations, and other activities critical to wilderness management in the Adirondack Park, is dependent on regulations concerning Department use of helicopters. In November 2003, new regulations were passed that restore the ability for the Department to use helicopters for certain administrative purposes in designated wilderness, primitive and canoe areas. Such use had occurred for years until the regulations were reinterpreted to mean that it was forbidden. That discontinued use of helicopters for pond surveys, brook trout egg take and reclamations of ponds in wilderness, primitive, and canoe areas. With the new regulations such activities can resume, but only during the off peak periods of the year.

3. **Fisheries Input is Provided on Several Adirondack Park Unit Management Plans**
Fishery staff worked on drafts for the Jessup River Wild Forest, and the Blue Ridge Wilderness UMPs. The Jessup River Wild Forest is in southern Hamilton County near the villages of Wells, Speculator and Piseco Lake. The draft Jessup plan recommends improving public access to Mason Lake, Gilman Lake, Echo Lake, Oxbow Lake, Fawn Lake and Indian Lake. Most of the unit's lakes have warmwater fisheries, but there are some lakes with stocked trout populations. The Blue Ridge Wilderness is located in central Hamilton County between the towns of Indian Lake and Raquette Lake. This wilderness features a large, trailless interior region. There are several quality trout fisheries on the perimeter of the unit with decent trail access. The draft plan recommends reclamation of Slim Pond near Bear Pond to the south of Blue Mountain Lake.

Whitewater rafting has become a very popular activity in the Hudson River Gorge Primitive Area. However, large releases of water from the Lake Abanakee Dam for the rafting may be impacting aquatic life in the Hudson and Indian Rivers. Staff met with the Citizen Advisory Group for the Hudson Gorge Primitive Area UMP which includes representatives from environmental advocacy groups, town government, whitewater rafting outfitters, and Trout Unlimited. This group was charged with advising the DEC on issues which need to be addressed in the UMP with a focus on rafting and angling in the Hudson River. Subsequently Fishery staff helped prepare a research proposal for three projects that would supply data essential to the Hudson Gorge Plan and would contribute to an environmental impact statement for whitewater rafting. The projects include radio telemetry of large brown trout movements within the Gorge; an invertebrate and riparian habitat survey in the Gorge; and a fish community survey of Lake Abanakee in the Town of Indian Lake, Hamilton County. The proposal must still undergo an extensive review and approval process.

Work began on a draft of the Moose River Plains Wild Forest UMP in Hamilton County. The 87,000 acre Plains area includes a number of popular brook trout ponds, plus Limekiln Lake and Sixth, Seventh and Eighth Lakes of the Fulton Chain. The plan includes enhancing disabled person access at seven waters as part of the American Disabilities Act settlement for access to lands and waters in the Adirondack Forest Preserve. Also included is the Seventh Lake Boat Launch which is slated for modernization. Past fisheries management actions on unit waters have included liming, reclamation and stocking. Survey work indicates such liming and reclamation are not currently necessary on unit waters, but monitoring work may reveal future management needs. Round whitefish (an endangered species) stocking is recommended for two unit waters which supported the species historically.

Ticonderoga Boat Launch
Staff worked towards obtaining permits to modernize the Ticonderoga Boat Launch on Lake Champlain. Prior to obtaining permits for the reconstruction, State Historical Preservation Act Findings must be made, concluding that the project will not unduly impact archeological resources. During 2003, dialogue continued between DEC and OPRHP over the potential impacts on historical resources. A second issue is the need to have any dredged materials tested for contaminants. Core samples taken from the area proposed for dredging revealed that the bottom deposits would be suitable for fill for the parking area and are not considered a source of potential contamination. This finding will simplify the project, as dredged material will not require disposal and fill material will not need to be imported. The actual reconstruction work is expected to be conducted during the fall of 2004.

Long Lake Boat Launch Site
Bureau of Fisheries staff assisted Central Office Division of Operations Staff in surveying the existing Long Lake Boat Launch Site. This is a first step in drawing up a design plan for a potential upgrade of the site.

Port Douglas Boat Launch Repaired
The Port Douglas Boat Launch was damaged during a severe rainstorm. Most of the damage was in the form of rock and debris being washed onto the lawn, parking area, and ramp. Little structural damage occurred to the actual infrastructure. DEC and the Town of Chesterfield, with assistance from the Moriah Shock facility, cooperatively cleaned up the site and restored it to fully operational status. The debris was cleaned from the ramp under a nationwide US Army

Corps permit. We thank all involved for solving this unexpected dilemma

PFR Kayderosseras Creek
A public fishing rights agreement was signed by Cottrell Paper Company for stream rights in the vicinity of Rock City Falls on Kayderosseras Creek in Saratoga County. This will ensure the public's ability to continue to fish a very desirable stream stretch, which they have fished for many years due to the generosity of the Cottrell family. The agreement includes nearly ½ mile of PFR and 3 parking areas.

Region 6

North Sandy Creek Public Fishing Rights
Region 6 Fisheries staff recently completed the acquisition in fee of a five acre parcel on this heavily fished Lake Ontario tributary. Located in Jefferson County, this parcel is a peninsula with 0.4 lineal miles of stream bank. It also adjoins the Lakeview Marsh Wildlife Management Area. An existing, developed parking area is located immediately upstream. It was constructed in 2002 with the cooperation of the New York State Department of Transportation on a bridge replacement project.

Grass River
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. This Unit contains multiple parcels of Wild Forest, Easement and Unclassified State Lands.

A total of 214 ponded waters have been identified within the planning area boundaries. Most of these are small and on private land. The major flowing water resource located on State land is the South Branch of the Grass River. 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 fish community data is insufficient to develop management objectives. Fish community surveys will be top priority for these waters.

West Canada Creek PFR
A PFR agreement was instituted along West Canada Creek at Fishing Rock Road in Middleville for nearly a third of a mile. Since this parcel abutted the village park nearly a half mile of streambank would have been opened to fishing. However, the landowner became impatient waiting for the deal to close and withdrew the offer.

Mohawk River FWMA
An FWMA agreement with Waste Management of NY was renegotiated after they closed and dismantled a handicapped fishing deck along the Mohawk River without notifying the department. This facility had been built and opened with much fanfare by the company several years ago, but a change in management resulted in a lack of interest in maintaining the site. Although the deck was removed, Waste Management did agree to allow shore fishing along the nearly half mile of stream bank they own.

Region 7

NYS DOT Environmental Initiative Projects
Route 79 Reconstruction in Lisle - Staff worked with DOT to enhance a spring fed drainage ditch, located along the shoulder of Route 79, to provide brook trout spawning and nursery habitat. This spring provides a constant flow and reportedly once supported brook trout before habitat quality declined.

River Access
Susquehanna River at Nineveh - Staff requested and received funding from the Region 7 Fish and Wildlife Management Board to purchase the necessary concrete and rebar for construction of the boat ramp. DEC Operations staff completed construction of the parking lot and ramp in spring 2004.

Sangerfield River at Sherburne
Through a Memorandum of Understanding with NYSDOT a car parking area for a car-top boat launch was developed. Construction of the parking lot was done by DEC Operations staff.

Public Fishing Rights
Posting Check - Regional Fisheries Technicians traversed roughly two-thirds of Region 7's 225+ equivalent miles of stream Public Fishing Rights easements to replace damaged or missing signs, document beginning and ending points with GPS, and

note any improper landowner posting problems which need to be resolved. Work will continue in the summer of 2004 to complete all the PFR in the region.

Chenango River
Three Fisherman Parking Areas were developed in the Town of Eaton along existing sections of Public Fishing Rights.

Owasco Inlet
Staff purchased 0.43 equivalent miles of Public Fishing Rights and one Footpath easement from multiple owners along Owasco Inlet in the Towns of Groton and Locke.

Nanticoke Creek
Staff purchased 0.28 equivalent miles of Public Fishing Rights, two Footpath easements, and three Fisherman Parking Areas along Nanticoke Creek in the Town of Maine.

Region 8

Public Fishing Rights (PFR)
Region 8 acquired 0.504 equivalent miles of Public Fishing Rights on Catharine and Sleeper Creeks. A 0.542 acre Fisherman Parking Area (FPA) was also acquired from New York State Electric & Gas (NYSEG) along Catharine Creek in the Town of Montour in Schuyler County. The FPA was obtained for allowing NYSEG to place a power line along an old railroad bed owned by DEC in the Town of Cohocton in Steuben County.

Informational Brochures
With help from Central Office, the Region's popular brochure series on Public Fishing Rights (15 brochure set showing Public Fishing Rights from 20 different streams and 10 near-shore sites along Lake Ontario) is now on the Web. Following this success, the Region has started a brochure series on public boat ramps located in the 11 County Region. It is hoped that this series will be added to the Web during 2004. Future plans include a brochure series on the Region's trout steams.

Region 9

Stream Access
An easement with 0.057 mile of PFR was secured on the South Branch 18 Mile Creek, a steelhead stream in Erie County. Angler Parking Areas were purchased on Wiscoy Creek and Mansfield Creek, insuring future public access to popular fisheries for wild trout. Agreements for purchasing one mile of PFR on Elton Creek, 0.75 miles of PFR on East Koy Creek and a land donation for an angler parking area on Tonawanda Creek in Niagara County were in the process of being signed in March, 2004. 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
Twenty two brochures were developed with maps, directions, management information, and regulations for all 28 streams in Region 9 with Public Fishing Rights Areas. 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 Report
A report summarizing the current status of DEC's Fish Hatchery System infrastructure repair needs was completed in winter 2003. Input from staff at DEC's 12 hatcheries and fish disease control laboratory was compiled to identify specific repair and renovation needs, and to establish a relative priority list of repair needs that should be addressed to maintain current fish production levels. Major repair projects are typically funded by Capital Budget appropriations, but due to a wide disparity between the amount requested and the amount actually appropriated, a backlog of needs has accumulated over the past decade. Of the 13 facilities identified in the report, three are considered to be in poor condition (Randolph, Rome, and South Otselic), four need extensive repair (Caledonia, Catskill, Chateaugay, and the Rome Fish Disease Control Center), while six are in relatively good or better condition (Adirondack, Bath, Chautauqua, Salmon River, Oneida, and Van Hornesville).

Preliminary estimates indicate approximately $21,000,000 are necessary to fund the needed repairs. Examples of repair needs include replacement of the water supply line to South Otselic Hatchery, repairing and enclosing the East Pond complex at Rome Hatchery, repairing and enclosing the broodstock ponds at the Rome Fish Disease Control Center, rebuilding rearing ponds and replacing the hatchery building at Randolph Hatchery, and replacing the 130-year old hatchery building at Caledonia Hatchery.

Sludge Removal Truck Ordered
A new 2,000-gallon sludge removal truck, which will be assigned to Adirondack Hatchery upon its arrival, was ordered via State contract. The new truck will replace a heavily used and aging sludge removal truck currently assigned to Adirondack Hatchery. The frequent removal of sludge for land spreading during the prime fish growing summer and fall period is an integral part of the measures used to reduce phosphorus discharges from the hatchery. In a typical year, sludge is removed from the Adirondack Hatchery waste treatment system at least 30 times, with nearly one million pounds of material removed. Due to an increase in the maintenance and repair needs of the current sludge removal truck, it was necessary to order a new vehicle to help ensure that the desired sludge removal schedule could be met. The new truck should be in service by summer 2004.

Fish Pathogen Inspection Program
An annual fish pathogen inspection program is currently used to survey fish in the DEC hatchery system for serious diseases. In 2003, tissue samples collected from adult salmonids during egg fertilization revealed no new pathogens or diseases. Wild, adult coho and chinook salmon had a low prevalence of *Aeromonas salmonicida*, the cause of furunculosis, however, this bacterium is commonly isolated from Lake Ontario salmon and poses no new threat. A separate inspection is used to screen cultured salmonid fingerlings from all state culture facilities for the parasite that causes whirling disease, *Myxobolus cerebralis*. In 2003, no *M. cerebralis* was found from our surveys. The overall health of fish in our hatchery system is excellent and there is no current threat of disease from new pathogens.

Routine Clinical Disease Investigations
In 2003, the most common diseases in the state hatchery system were columnaris, bacterial gill disease, Ichthyopthiriasis ("Ich"), and saprolegniasis. All of these diseases are widely found throughout fish hatcheries in the world and are effectively treated with a variety of methods.

Research projects
The FDCU initiated two multi-year studies in 2003 that may lead to dramatic improvements in disease prevention. The first is collaborated with Dr. H. George Ketola from the USGS Tunnison Laboratory (Cortland, NY) to study the possible benefit of adding "immuno-enhancing" compounds to fish diet to reduce the prevalence of diseases in our hatcheries. In field trials, salmonid fingerlings and adults are fed either the standard NY diet (control) or the NY diet supplemented with beta-glucan, selenium, vitamin E and chitin and disease prevalence of fish fed the two diets will be compared. The FDCU is also collaborating with Dr. Cliff E. Starliper from the USGS National Fish Disease Laboratory (Leetown, WV) to develop an improved method for detecting a persistent pathogen in our state hatchery system, *Flavobacterium branchiophilum*, the bacterium that causes bacterial coldwater disease in salmonids

(BCWD). BCWD plagues trout hatcheries around the country and clinical diagnosis has been ineffective because current diagnostic methods are very slow. We are currently trying to develop an improved bacterial growth medium that allows rapid identification of BCWD so that fish may be treated more promptly.

Bath Fish Hatchery

Prior to the release of the Statewide Stocking Atlas, Bath Hatchery staff met with Region 7 and 8 personnel to survey stocking sites. This included streams in Broome, Chemung, Schuyler, Steuben, Tioga, Tompkins and Yates counties. This exercise was a positive experience for both parties. It was the first time many of these streams were viewed by the hatchery manager as well as the fisheries biologists.

The 1975 Nielsen fish pump received a major overhaul during the past winter. The pump motor was replaced and the entire framework was scraped and painted. This piece of equipment is an integral part of our hatchery. We use it to grade domestic brown and rainbow trout each fall, as well as to load fish for stocking in the spring.

A portable aquarium exhibit for our Living Stream was constructed for use at fairs and outdoor shows. It was tried out at the Empire Farm Days to great success.

Numerous R&I projects were accomplished the past year. The feed room received a new roof and gutters. Gutters were also installed on the garage. Aluminum boxes for the pond aerators were fabricated by the hatchery crew. The new MIG welder was invaluable for this project.

The hatchery crew worked on projects in the feed room and garage. The feed room was rewired and new fluorescent fixtures were installed. The feed room also received a new coat of paint inside and out. The garage was rewired, painted, and the concrete floor was patched.

Caledonia Hatchery

The Caledonia Fish Hatchery, the oldest fish hatchery in the western Hemisphere, continued to raise over 95% of the two year old brown trout for NYS. A large portion of the two year olds are stocked directly by Caledonia staff or driven by Caledonia staff to other hatcheries for distribution. In addition, Caledonia is responsible for stocking streams, lakes and ponds in 11 counties, including the western half of the Finger Lakes, a portion of Lake Erie, and the western basin of Lake Ontario. Chinook production at Caledonia was increased from 100,000 to 500,000 spring fingerlings.

Chateaugay Hatchery

Chateaugay Fish Hatchery produced 86,000 lbs. of trout in the 2003-2004 operating year. Rainbow trout, brown trout, Temiscamie hybrid brook trout, domestic brook trout, Raquette Lake strain lake trout and splake comprised the species reared at Chateaugay. A total of 560,000 fish weighing 80,000 lbs. were stocked by Chateagay and an additional 560,000 fish with a total weight of 42,000 lbs. were transferred to and from other facilities.

A total of 253,000 lake trout eggs were taken from lake trout netted at Raquette Lake and sent to Chateaugay to be hatched. In addition, 223,000 rainbow trout, 290,000 Temiscamie hybrid brook trout and 23,000 splake eggs were transferred to Chateaugay from other facilities. A total of 225,000 brown trout were transferred in as fingerlings from other facilities for rearing and eventual stocking.

A fire resistant enclosure for the furnace was constructed in the pole barn/shop as part of an R&I project recommended by the fire safety inspector. New raceway covers to prevent predation from birds were constructed for a number of outside raceway units to replace covers that were badly deteriorated. A significant amount of landscaping and seeding was completed to repair erosion along the entrance road to the fish hatchery, preventing further erosion and possible damage to the roadway.

Two fish transport tanks were repaired, refinished and installed on a 1-ton flatbed truck purchased in 2003. Equipment purchased in 2003-2004 included a floating aerator for the small spring to reduce nitrogen gas saturation , a rotary broom for a utility tractor, and two rotary mowers.

One Fish and Wildlife Technician was hired to replace a vacancy created by a technician who transferred to Rome Fish Hatchery. Training of the new technician began in operation of fish transport and fork lift vehicles, as well as general health and safety procedures. Assistant Manager David Armstrong held fork lift training at various facilities throughout the state, for certification of hatchery employees to operate fork lift vehicles.

Randolph Hatchery

The Randolph Fish Hatchery is currently staffed with six employees. Permanent staff consists of one Fish Culturist 2 , two Fish Culturist 1's ,two Fish /Wildlife Tech. 1's , and one Maintenance Assistant. No staffing changes have been made since 1998. A seasonal laborer was hired last fall to assist with the egg take. Two staff, the Asst. Mgr and one Fish/Wildlife Tech. 1 attended the Fish Disease workshop at Morrisville College given by Dr. John Schachte and Chris Petrie. One Fish/Wildlife Tech. 1 also attended a water safety workshop in Herkimer.. Hatchery staff also attended several retirement banquets for division staff who recently retired.

This past year the Randolph Hatchery produced 90,000 lbs of trout. Hatchery staff stocked 306,000 trout this past year. Two hundred stocking trips were made to 100 different waters in four counties and the Great Lakes. Several stocking trips to the Allegheny National Fish Hatchery in Warren, PA were also done by staff to stock lake trout into Lake Ontario. Eight hundred paddlefish were stocked into the Kinzua Reservoir . One thousand tiger muskies and 5,500 walleyes were also stocked by hatchery staff. In the fall 8,200 brood stock trout ranging in size from 10-28 inches were stocked out by hatchery staff. Hatchery staff spawned 1,200 trout for five million green eggs. Eggs were shipped to Virginia, Pennsylvania, and three county hatcheries: Carpenter Brook, Manlius , and Warren County. Eggs were also shipped to other DEC hatcheries across New York to meet egg requirements.

The Randolph Hatchery had some high mortality in our brown trout brood stock last fall. Fungus and low dissolved oxygen levels caused significant loses in both 1st and 2nd spawners. Aerators will be installed in early August to keep oxygen levels at 7-8 ppm. and treatments of hydrogen peroxide will be utilized to alleviate fungus on the brood stock to hopefully reduce mortality problems. Hatchery staff also concluded a three year whirling disease study being done here at this facility . Finger Lakes strain wild rainbow trout were placed into three isolation cages within this hatchery. One cage was placed in the tail end of one of the original infected ponds from the year 2000, one into our hatch house which was receiving straight spring water, and the last one was put into the catch basin where both creek and spring water mix before entering the hatchery. All three cages had rainbows that tested positive for whirling disease in the fall. PCR(polymerase chain reaction) tests were used to determine the presence of whirling disease in these rainbows. The PCR tests that were applied used DNA based technology which can detect the presence of the disease in lower levels than the histological confirmation tests that were used in previous years.

The Randolph Hatchery received two new stocking trucks this year. Both trucks were outfitted for spring stocking and worked out very well . The hatchery also received a new John Deere tractor this year . A representative from John Deere came and trained all staff on its proper usage and operation.

Rome Hatchery

Rome produced 170,000 lbs of brown, brook and rainbow trout from April 1, 2003 to March 31, 2004. Feed usage was 206,200 lbs for a conversion of 1.21 and a cost of $.39/lb.

In the Spring of 2003 over 160 waters were stocked by Rome Hatchery. 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.

In the Fall of 2003 Rome Hatchery stocked over 150 waters. Some fish were stocked by truck but most were hybrid brook trout stocked in remote Adirondack ponds by helicopter or pontoon planes. Rome also stocked walleyes and tiger muskies in various waters in Region 6.

New egg hatching troughs were installed and egg hatching baskets were made. Egg survival was improved with this new equipment purchased with R & I money. More pond covers were made to keep our fish stock from predation by numerous avian visitors.

New stocking maps were developed by hatchery, regional and central office staff and used by our fish culturist and technicians when stocking this spring. These statewide maps are to be updated by hatchery staff when changes are made to stocking sites such as waters being posted or public fishing rights purchased or other factors such as water quality depletion.

We were able to balance out our work load by hiring a new Fish & Wildlife Technician 1 and a new Fish Hatchery Maintenance Supervisor this spring.

Salmon River Hatchery

Production for the 2003/2004 season was slightly above normal. We produced about 142,000 pounds of fish. The numbers of fish produced were: 350,000 brown trout, 812,000 steelhead, 1.5 million chinooks and 250,000 coho salmon.

During the fall 2003 season we took 3.5 million chinook and 2.5 million coho eggs. We also provided the Ontario Ministry of Natural Resources with about 300,000 coho eggs and the Wisconsin DNR with 550,000 coho eggs.

In the Spring of 2004 we took about 2.2 million steelhead eggs and assisted the Vermont DFW with collecting about 300,000 eggs.

Improvement during the Spring of 2003 included replacing the flat river pump station roof with a peaked metal roof. We also received a new Ford F-350 flatbed truck for plowing and stocking. This truck has been outfitted with 2 stocking tanks. Our previous truck had only one tank for fish distribution.

During the Spring of 2004 we had two 1,000-gallon fuel tanks and pumps installed to accommodate our vehicle fuel needs. We also installed a 28,000 btu air conditioner in the auditorium

Van Hornesville Hatchery

This was a successful fish culture year at Van Hornesville as fish production goals were met and no medications were needed to treat fish diseases. Rainbow trout was the sole species raised at this facility. Approximately 320,000 rainbow trout of various sizes, 37,000 lbs, were produced between April 1, 2003 and March 31, 2004. Personnel at the facility also stocked another 170,000 fish of 7 other species.

More covers were constructed to cover the rearing ponds to help reduce bird predation. A new F-350 Ford truck was assigned to the Hatchery in April 2003. Technicians were quick to outfit the vehicle with new stocking tanks and get the vehicle into service, which greatly eased the pressure of stocking season. A new Chevy pick-up was also put into service in February 2004. The Fish Stocking Electronic System of the Hatchery's large stocking vehicle was upgraded in September 2003 making that vehicle more reliable. It is good to have reliable and trustworthy vehicles, and safer!

Approximately 8 power outages were experienced at the Van Hornesville Hatchery between April 2003 to March 2004. Several long outages were experienced during periods when fish loads were very close to exceeding hatchery capacity. Power outages continue to be a concern at times when the fish load is heavy.

Hatchery staff continued to assist with Trout in the Classroom. Several area schools and a college class visited the hatchery and were given tours of the facility.

Hatchery Fish Production Annual Summary by Species
April 1, 2003 - March 31, 2004

	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														
Brook Trout			195,105	3,449	231,290	10,669	600	73	16,400	2,742	130,680	40,311	574,075	57,244
Brown Trout					105,270	6,186	72,860	7,370	102,710	18,104	1,738,146	530,917	2,018,986	562,577
Rainbow Trout			215,800	1,855	1,500	98	48,100	4,530	12,800	2,200	399,930	108,191	678,130	116,874
Rt-steelhead					634,890	26,019	192,170	16,613	5,000	625			832,060	43,257
Lake Trout					70,700	3,212	462,770	31,543	142,460	12,374	132,140	21,273	808,070	68,402
Splake									6,740	1,091	11,300	2,751	18,040	3,842
Landlocked Salmon			259,000	108	9,000	525	325,300	31,351	43,830	5,863	349	2,186	637,479	40,033
Coho					155,000	7,046	95,000	7,197					250,000	14,243
Chinook			1,622,300	16,089									1,622,300	16,089
Kokanee			1,970	18									1,970	18
Total Trout & Salmon			**2,294,175**	**21,519**	**1,207,650**	**53,755**	**1,196,800**	**98,677**	**329,940**	**42,999**	**2,412,545**	**705,629**	**7,441,110**	**922,579**
Warmwater														
Walleye	201,660,000	2,686	382,380	557	98,600	2,861	97,000	5,811					202,237,980	11,915
Muskellunge	267,000	10	133,000	26	9,650	192					16,510	1,664	426,160	1,892
Tiger Muskellunge							28,000	903	10,600	573	96,310	10,485	134,910	11,961
Lake Sturgeon	820	82									1,689	187	2,509	269
Pan Fish											3,290	708	3,290	708
Total Warmwater	**201,927,820**	**2,778**	**515,380**	**583**	**108,250**	**3,053**	**125,000**	**6,714**	**10,600**	**573**	**117,799**	**13,044**	**202,804,849**	**26,745**
Grand Total of Trout & Warmwater	**201,927,820**	**2,778**	**2,809,555**	**22,102**	**1,315,900**	**56,808**	**1,321,800**	**105,391**	**340,540**	**43,572**	**2,530,344**	**718,673**	**210,245,959**	**949,324**

Annual Report of Fish Species Production by Hatchery
April 1, 2003 - March 31, 2004

	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			108,250	2,127							16,670	4,183	124,920	6,310
Bath									400	67	3,490	1,025	3,890	1,092
Catskill											8,030	2,282	8,030	2,282
Chateaugay			55,925	937							31,580	8,767	87,505	9,704
Randolph			26,000	325	15,000	536			13,000	2,167	20,005	7,203	74,005	10,231
Rome			4,930	60	214,290	10,028			3,000	508	38,855	12,420	261,075	23,016
Salmon River					2,000	105					8,150	2,976	10,150	3,081
Van Hornesville							600	73			3,900	1,455	4,500	1,528
TOTALS			**195,105**	**3,449**	**231,290**	**10,669**	**600**	**73**	**16,400**	**2742**	**130,680**	**40,311**	**574,075**	**57,244**
Brown Trout														
Adirondack					650	36					68,450	17,089	69,100	17,125
Bath					43,000	1,569	700	58			125,130	38,379	168,830	40,006
Caledonia					15,520	1,176			16,000	2,909	299,260	103,847	330,780	107,932
Catskill									7,400	1,137	365,750	139,159	373,150	140,296
Chateaugay					1,100	71	16,460	1,285			107,370	25,629	124,930	26,985
Randolph					45,000	3,334	33,100	3,436			157,610	52,774	235,710	59,544
Rome							19,800	2,305			335,516	87,513	355,316	89,818
Salmon River									79,310	14,058	132,920	27,917	212,230	41,975
Van Hornesville							2,800	286			146,140	38,610	148,940	38,896
TOTALS					**105,270**	**6,186**	**72,860**	**7,370**	**102,710**	**18,104**	**1,738,146**	**530,917**	**2,018,986**	**562,577**
Rainbow Trout														
Adirondack											41,550	10,657	41,550	10,657
Bath			68,800	588			44,000	4,171			47,020	13,441	159,820	18,200
Caledonia											75,700	18,407	75,700	18,407
Catskill							2,000	180			48,700	13,957	50,700	14,137
Chateaugay			75,000	357	1,500	98			12,800	2,200	71,630	21,223	160,930	23,878
Randolph											16,370	6,240	16,370	6,240
Rome											64,010	15,424	64,010	15,424
Salmon River											11,350	2,675	11,350	2,675
Van Hornesville			72,000	910			2,100	179			23,600	6,167	97,700	7,256
TOTALS			**215,800**	**1,855**	**1,500**	**98**	**48,100**	**4,530**	**12,800**	**2,200**	**399,930**	**108,191**	**678,130**	**116,874**

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Species	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight
Rainbow Trout-Steelhead														
Chateaugay					19,850	834							19,850	834
Salmon River					615,040	25,185	192,170	16,613	5,000	625			812,210	42,423
TOTALS					**634,890**	**26,019**	**192,170**	**16,613**	**5,000**	**625**			**832,060**	**43,257**
Lake Trout														
Adirondack							16,900	1,289	3,890	367			20,790	1,656
Bath					70,700	3,212	50,500	2,495			77,000	13,486	198,200	19,193
Caledonia							180,000	12,787	80,000	6,713			260,000	19,500
Catskill											7,890	968	7,890	968
Chateaugay							13,710	1,047	13,740	1,231	42,250	5,963	69,700	8,241
Rome							1,660	127	4,830	427			6,490	554
Salmon River							200,000	13,798	40,000	3,636			240,000	17,434
Van Hornesville											5,000	856	5,000	856
TOTALS					**70,700**	**3,212**	**462,770**	**31,543**	**142,460**	**12,374**	**132,140**	**21,273**	**808,070**	**68,402**
Splake														
Adirondack									3,940	649			3,940	649
Chateaugay									2,800	442	9,800	2,428	12,600	2,870
Rome											1,500	323	1,500	323
TOTALS									**6,740**	**1,091**	**11,300**	**2,751**	**18,040**	**3,842**
Landlocked Salmon														
Adirondack			259,000	108	9,000	525	192,900	19,237	41,230	5557	349	2,186	502,479	27,613
Bath							43,000	4,257					43,000	4,257
Chateaugay							81,000	7,033	2,600	306			83,600	7,339
Van Hornesville							8,400	824					8,400	824
TOTALS			**259,000**	**108**	**9,000**	**525**	**325,300**	**31,351**	**43,830**	**5,863**	**349**	**2,186**	**637,479**	**40,033**
Coho														
Salmon River					155,000	7,046	95,000	7,197					250,000	14,243
TOTALS					**155,000**	7,046	95,000	7,197					250,000	14,243

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Species	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight
Chinook														
Caledonia			138,000	1,050									138,000	1,050
Salmon River			1,484,300	15,039									1,484,300	15,039
TOTALS			**1,622,300**	**16,089**									**1,622,300**	**16,089**
Kokanee														
Van Hornesville			1,970	18									1,970	18
TOTALS			**1,970**	**18**									**1,970**	**18**
Total Trout & Salmon			**2,294,175**	**21,519**	**1,207,650**	**53,755**	**1,196,800**	**98,677**	**329,940**	**42,999**	**2,412,545**	**705,629**	**7,441,110**	**922,579**
Walleye														
Chautauqua			212,200	218									212,200	218
Oneida	201,660,000	2,686			98,600	2,861	59,300	3,594					201,817,900	9,141
So. Otselic			170,180	339			37,700	2,217					207,880	2,556
TOTALS	**201,660,000**	**2,686**	**382,380**	**557**	**98,600**	**2,861**	**97,000**	**5,811**					**202,237,980**	**11,915**
Muskellunge														
Chautauqua	267,000	10	133,000	26	9,650	192					16,510	1,664	426,160	1,892
TOTALS	**267,000**	**10**	**133,000**	**26**	**9,650**	**192**					**16,510**	**1,664**	**426,160**	**1,892**
Tiger Muskellunge														
So. Otselic							28,000	903	10,600	573	96,310	10,485	134,910	11,961
TOTALS							**28,000**	**903**	**10,600**	**573**	**96,310**	**10,485**	**134,910**	**11,961**
Lake Sturgeon														
Oneida	820	82									1,689	187	2,509	269
TOTALS	**820**	**82**									**1,689**	**187**	**2,509**	**269**
Panfish														
Chautauqua											2,500	500	2,500	500
Oneida											790	208	790	208
TOTALS											**3,290**	**708**	**3,290**	**708**
Total Warmwater Fish	**201,927,820**	**2,778**	**515,380**	**583**	**108,250**	**3,053**	**125,000**	**6,714**	**10,600**	**573**	**117,799**	**13,044**	**202,804,849**	**26,745**

Endangered, Threatened, and Special Concern Species

Region 1

Region One Fisheries Unit Helps Endangered Tiger Salamanders by Removing Goldfish from Breeding Ponds

Under the DFWMR strategy of limiting the negative impacts of non-native species, the Region One Freshwater Fisheries Unit, consisting of Manager Charles Guthrie, Biologist Fred Henson, and seasonal laborer Mike DiMarco, used electrofishing gear to remove goldfish that had been illegally introduced into the Calverton Ponds. The Region One Wildlife Unit provided additional staff to assist in the removal. The ponds are a known breeding area for rare native tiger salamanders and the goldfish were potential predators on salamander eggs and young. A total of 519 goldfish were removed from three ponds. No other fish species were caught. Several tiger salamander egg masses were observed during the removal project.

A population estimate for the smallest of the ponds was made using a two-pass depletion method. The resulting 95% confidence interval for the total population in that pond was between 74 and 86 goldfish. Sixty-four goldfish (approximately 80% of the population) were removed by the first pass. Capture efficiency was probably somewhat less than 80% for the other two ponds due to heavier vegetative cover.

Zeeks Pond Survey

A seine survey was conducted on May 7 at Zeeks Pond, in conjunction with Brookhaven National Laboratory, to document possible post-drought survival or re-colonization by banded sunfish, a NYS threatened species. The pond, a known banded sunfish habitat on the grounds of the Brookhaven National Laboratory, nearly dried up during the summer of 2002. During the survey it was determined that the pond had not become connected to any other surface water body so natural recolonization from another water was not possible. No banded sunfish or other fish species were captured during the survey. However, six larvae of the tiger salamander, a NYS endangered species, were captured and released during the survey.

Region 2

Stocking of Banded and Bluespotted Sunfish

Region 2 Fisheries staff attempted to retrieve banded and bluespotted sunfish from Central Park's 59th St. Pond. The fish were previously stocked there by DEC Fisheries biologists who wanted to introduce these listed species into a suitable habitat.

Region 5

Little Green Pond Reclaimed

Little Green Pond, located on the NYS Fish Hatchery Preserve in Franklin County, was reclaimed with rotenone during August, 2003. The objective of the project was to remove the abundant population of introduced rainbow smelt and to restock the pond with round whitefish, a species that is endangered in New York State. The project will hopefully establish a healthy population of this unique fish and will serve as a broodstock water so that other populations can be established.

Round whitefish eggs collected

Round whitefish eggs were collected from Lower Cascade Lake in Essex County and shipped to the Oneida Hatchery for rearing. Expectations are to stock the round whitefish fry into Little Green Pond during the spring of 2004. Local television station, WPTZ, filmed the egg take and ran a news segment covering the Bureau's efforts to restore populations of round whitefish.

Region 9

Paddlefish Restoration

2003 was the sixth consecutive year that paddlefish were released into Allegheny Reservoir (1998 - 46, 1999 - 535, 2000 - 135, 2001 - 1,878, 2002-762 , 2003-778). In 2003 the paddlefish measured 7.7 inches (eye to fork of tail) and were in good condition when released. A coded wire tag was inserted into the paddle of all paddlefish before release for subsequent identification of stocking site origin and date. Several reports of paddlefish either stranded or caught angling have been received from above and below Kinzua

Dam. Stocking and tag recovery information was forwarded to MICRA.

Statewide

The steps of progress outlined below show how a pro-active approach in conservation of rare species is being achieved with: 1) broad-reaching surveys to detect changes and 2) actions to restore and protect species once problems are detected. Activities in 2003 included: 1) developing short interpretative reports with annotations for the Oswego and Chemung watersheds, 2) securing funds for a second round of SWG projects which includes studies in western NY on longear sunfish and rare fishes of Oswayo Creek and upper Allegheny River, 3) more stocking and evaluation of round whitefish, lake sturgeon and paddlefish, 4) adding further refinements to the extensive reports on "A species inventory by watershed" and "Comparisons of fish associations in shallow areas of bays of Lake Ontario and the St. Lawrence and Niagara rivers" and 5) highlighting the unusual catches that came from sampling at 261 sites and that landmarks the progress of conservation of New York's rare fishes.

Major accomplishments for the year included:

This was the second year of the resurveys of watersheds to fill in knowledge of the lesser-known fishes in stream sections not encountered in normal Regional surveys. The watershed summaries are taking a useful form with tables showing which major waters have which species and a complete list of species annotations. In this second year we focused on the Oswego watershed and sampled 79 sites (217 samples). The Oswego watershed report summarizes catches for 110 species, which is more than found in any other Great Lakes tributary in NYS. From the comprehensive sampling of 1993-2003, we captured all but 32 of those species and 9 are known as extirpated. The Chemung watershed summary was added to, from the extensive work in 2002 and is now completed. We caught 52 of the 73 species known here.

The State Wildlife Grants (SWG) program has entered its second year of awarding money to study groups. Selected projects to start in 2004 include one on longear sunfish by SUNY Brockport and another as a survey of rare fishes of Oswayo Creek and the upper Allegheny River, by the NYS Museum. The Comprehensive Wildlife Management Plan is under development and the eastern sand darter was used as a prototype in planning for fish conservation.

Evaluation of recovery efforts for round whitefish and lake sturgeon have continued with netting in 2003. Small round whitefish (stocked at 1 inch) continue to be propagated, for the fourth year, for Adirondack lakes to gain "refugia populations", develop a brood stock water and for experiments with survival. The field investigations, a SWG project with Cornell, will get underway in May 2004. Lake sturgeon evaluations by Region 6 showed favorable survival after 5 years in the St. Regis River, where 9 gill nets in August captured 10 juveniles, up to 29 inches long. Two cooperative projects for 2004 include: a sturgeon stocking evaluation in the St. Regis River by the USGS and Akwesasne-Mohawk, and an evaluation of juvenile habitat-use in the lower Genesee River by the FWS and USGS. Paddlefish stocking in Allegheny Reservoir continues.

Exceptional catches from surveys include longear sunfish from Johnson Creek, bridle shiner from Sandford Pond outlet, comely shiner in Catharine Creek., blackchin shiner from Conesus Inlet, pirate perch from Lakeview Pond and mountain brook lamprey from W. Br. French Creek. The extensive review of old records brought forward over-looked catches of threespine stickleback from Cayuga Lake and johnny darter from Bennetts Creek of the Chemung basin.

Additional major steps forward with conservation and protection of species and habitats will come with the comprehensive wildlife conservation strategy (CWCS) of SWG.

Urban and Suburban Fisheries

Region 1

New York Housing Authority Clinics
The Region 1 Fisheries unit participated in the N.Y.C. Housing Authority Fishing clinics at Prospect Park, Brooklyn and at the Harlem Meer, Manhattan. The clinics are set up to provide aquatic education and fishing opportunity for kids age 6-10 in the I Fish N.Y. focus area. Each clinic included between 800 and 1,000 children. Students went through a series of educational stations before fishing. Cane poles were used to facilitate the operation because of the sheer number of people. Fisheries Staff rigged rods, baited hooks, and untangled lines without pause for the duration of the event.

Because of their urban upbringing most of the kids had never seen a worm or touched a fish. When a fish was caught, it generated a great deal of excitement and everyone came over to see. Although corn and bread were the supplied bait, worms caught the most. Worms could be found under the leaves, and once kids realized how well they worked, some of the groups went on worm searches. To an inner city kid, this was a totally new experience, and it seemed like they really enjoyed the worm hunt. Another example of how fishing opens up the doors to the natural world! We hope the kids can go fishing throughout their life, but even if they don't, they will be more aware of the natural world around them.

Meadowbrook Corridor Task Force Meeting
One June 10, 2003, Regional Fisheries Biologist Gregory Kozlowski attended the Meadowbrook Corridor Task Force meeting. This meeting was held to discuss a proposed access bike path/hiking path to the Meadowbrook Corridor that had been developed by Rob Smith (NYSDOT), Richard Scharry (LI Greenbelt), and Mr. Kozlowski on June 6, 2003. Of key fisheries interest to the proposed access is a trailhead/angler parking area on Freeport Reservoir. It was necessary to bring this proposal to State Parks since most of the land along the corridor is controlled by State Parks, and to focus the task force in a productive direction. After review, State Parks can make a determination if the proposal is possible or not. Meetings have occurred during the past year, but the project is still in its initial stages.

Regions 1, 2 and 3 Restore Largemouth Bass to Crotona Park Pond in the Bronx
DEC Fisheries staff from regions 1, 2 and 3 recently teamed up to stock Indian Lake in Crotona Park, Bronx County, with 40 largemouth bass. Region 3's Ron Pierce, Linda Wysocki and Tim McNamara collected the fish during an electrofishing survey of White Pond, in Putnam County. The bass that were collected for transfer were weighed, measured and fin-clipped, which will allow for later identification. Scale samples were taken so that the fish could be aged.

Region 1 staff Chart Guthrie and Mike DiMarco and Region 2 Biologist Melissa Cohen met the Region 3 team at White Pond and collected the bass for transportation downstate to the Bronx. ECO Eric Templeton and NYC Parks Ranger Anthony Archino were waiting at Indian Lake where they met the group to help with the midnight transfer of bass.

Indian Lake is a natural lake, formerly fed by a stream and presently fed by way of NYC's water system. Many small sunfish dominate the lake. The newly transferred bass are expected to feed on the sunfish, reducing the sunfish population and allowing each sunfish larger portions of food. Over time, anglers will find that the sunfish in Indian Lake are larger and more appealing to catch.

Staff from Region 2 are planning to work with the NYC Parks Urban Rangers to involve a local after school group in monitoring the progress of the fish in Indian Lake.

Region 2

Fish Transfers
In addition to the transfer of largemouth bass to Indian Lake described above, Region 2 staff, with help from Region 3, trapped and transferred fish from Region 3 to a Staten Island pond. The fish were transferred to allow for better fishing opportunities to the local community.

Administration

Statewide

State Wildlife Grants Program Participation
Biologists Fred Henson and Douglas Carlson continued to participate on the State Wildlife Grants Steering Committee. Fisheries projects funded with the federal fiscal year 2002 appropriation were moved forward into the contract process since additional staff could not be hired. Fred Henson accepted a promotion and was replaced on the committee by biologist Melissa Cohen.

In October 2003, Biologist 2 Lisa Holst was hired in the Central Office to oversee the development of the Comprehensive Wildlife Conservation Strategy (CWCS) required as part of the State Wildlife Grants Program and to chair the State Wildlife Grants Program Steering Committee. The enacting legislation of the State Wildlife Grants Program requires that each state and U.S. territory prepare a CWCS by October 1,2005 in order to remain eligible for funding. The committee assisted in developing an outline for the final CWCS document using federal guidelines for required content of the CWCS. The committee also identified stakeholder groups to involve in review of the CWCS document. The list of species of greatest conservation need developed in FY 2002-03 will be incorporated into the CWCS recommendations.

The steering committee reviewed project proposals to be included in the federal fiscal year 2003 State Wildlife Grant Applications for Federal Assistance. A total of 19 projects totaling just over $2.77 million were recommended by the committee. Staff from the committee prepared four new Applications for Federal Assistance. The applications were subsequently accepted, and the new fisheries grant includes two projects. A total of five inland fisheries projects have been funded through the State Wildlife Grants Program.

Stocking Book
The Coldwater Unit began a major overhaul of the stocking book. An effort was made to clean up the stocking book database by removing obsolete and/or redundant fields and re-establishing allowable values for required fields. A new software interface for use by regional and central office units was developed using Microsoft Access and Visual Basic software. The new interface is easy to use and ensures that data integrity is maintained as stocking data is entered or changed. The stocking book database was distributed to regional servers, and a synchronization routine was established to facilitate the compilation of regional changes into the statewide stocking book.

Due to the reformatting and effort to clean up the stocking book, many (428) stocking policies were modified. Most of these changes did not relate to a change in the number of fish stocked at a given location. In addition, 71 stocking policies were deleted and 66 new policies were added. There are a total of 2,382 stocking policies in the 2004 stocking book.

For most species, hatchery production was at or near policy number. The most notable exception was for yearling brown trout, which were allocated at approximately 80% of policy number. Fish were prorated equally across all policies. Two-year-old brown trout were allocated among regions based on the number of coldwater fishing trips in streams per Region (except for Region 1, which received 5,000 two-year-olds). Due to staff shortages at Rome and Catskill Hatcheries, the number of stocking trips to some waters were reduced (i.e. a given water may have received 1 increment instead of the normal 2), and roughly 38,600 fewer yearling trout were allocated for Region 3.

Stocking Atlas Completed
The Bureau of Fisheries completed a major effort to map fish stocking locations. Stocking locations were mapped using Geographic Information System (GIS) software. A total of 653 stream segments totaling over 3,000 miles were mapped, along with 2,875 stream and lake stocking points. Printed stocking atlases have been distributed to hatcheries and regional offices, and fish stocking locations and data will be available to staff via the Department's Geographic information system. The most immediate benefit was for new hatchery drivers during the 2004 stocking season who may not have been familiar with stocking locations.

Region 1

2006 AFS Annual Conference
On September 9 and 10, 2003, Region 1 Fisheries Biologist Gregory Kozlowski attended the initial

coordination meeting for the 2006 American Fisheries Society Annual Meeting to be held in Lake Placid, NY in September, 2006. Mr. Kozlowski's role is to be the Audio Visual chair for the meeting. During the meeting, the team visited various locations where the conference would be held.

Statewide Fisheries Database Meeting
On September 22 and 23, 2003, Region 1 Fisheries Biologist Gregory Kozlowski attended the Statewide Fisheries Database meeting in Cortland, NY. At the meeting, a variety of issues were brought up and dealt with. The major restructuring of the statewide database is complete. One of the biggest concepts of the meeting was to have the committee begin to transfer their thinking from putting data into the database to getting information out of the database. This change in thinking will be the next challenge for the database committee.

ECO Block Meeting
In fulfillment of the DFWMR strategy of enhanced communication within and between divisions, Region 1 Fisheries staff attended the Region 1ECO Block Meeting on March 10 to brief the officers on changes in the fishing regulations and law enforcement concerns likely to emerge during the coming season. Fisheries staff also provided the officers with a supply of brochures likely to be of interest to the anglers they will encounter while on patrol.

Region 3

Triploid Grass Carp Stocking Permits
Region 3 staffissued a total of 365 permits (189 reissues) to stock triploid grass carp (TGC) in 2003. From 1991 through 2003 a total of 3,665 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, 117 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 2,375 different water bodies in Region 3 have received permits to stock TGC since 1991.

Region 6

Eighty Region 6 staff were certified in CPR and First Aid as part of the annual safety training program taught by Jack Hasse. He was also the lead instructor teaching the water safety program to 25 statewide DEC staff. The two day program was taught at Herkimer County Community College and in West Canada Creek near Middleville.

Region 7

Fisheries Database Management
A total of 24 surveys were sent into the Bio-Survey Unit during the past year and 31 Data Verification Reports were received, reviewed and returned for final update into the Statewide Data Base (SWDB). A list showing all "named waters" was compiled. This was done by comparing the names in the "Rules and Regs", SWDB Waters table, maps and knowledge of regional fisheries staff. An "official name" was then designated for every body of water which had been named in one of the sources listed above.

Stocking locations
Maps were made showing all stocking locations for all waters throughout the region. These maps were prepared to assist hatchery truck drivers during stockings.

Unit Management Planning
Staff supplied fisheries resource data and management information for two Division of Lands and Forests Unit Management Plans (UMP), the Chenango Trails UMP and Shindagin Hollow UMP. Additional input was also provided on the Rogers Center UMP relative to a stream fish habitat demonstration project on the property. Also, dissolved oxygen levels were checked, through the ice, at several ponds on the Rogers Center property and all had sufficient oxygen to support fish.

Permits and Licenses
The following number of permits and licenses were issued by the Fisheries Unit: Bait Licenses - 74; Farm Fish Pond Licenses - 119; Triploid Crass Carp Permits - 194; Permits to stock or remove fish - 26; Piranha Permits - 1.

Region 8

Triploid Grass Carp Permits
A record number of triploid grass carp permits were issued in FY 2003. The 429 permits issued surpasses the previous high of 390 issued in FY 2002. The Region has seen a steady increase in the numbers of permits issued each year over the past five years.

Farm Fish Pond Licenses
The Region issued 164 farm fish pond licenses in FY 2003, a slight decrease from the 203 issued in FY 2002. There is no fee for these licenses.

Stocking Permits
The Region issued 14 stocking permits during FY 2003. There is no fee associated with this permit.

Bait Licenses
The Fisheries Key Board Specialist has the responsibility of issuing bait licenses. Eighty licenses were issued and $699.50 collected in FY 2003.

Piranha Permits
The Region issued three piranha permits in FY 2003. There is no fee associated with this permit.

Regional research vessel replaced
The Region's 24-foot fiberglass research vessel, the Stone, was replaced by a new welded aluminum boat in March 2004. A marine survey indicated that the Stone, built in 1978, needed extensive repairs to the inboard-outboard engine, transom, and deck. It was more cost effective to purchase a new boat than to repair the 25 year old Stone. Regional staff developed detailed specifications to be used in a Request For Proposals (RFP). A contract was awarded in November 2003 to American Metal Craft Marine of Clayton, NY, to construct a 24-foot welded aluminum research vessel powered by outboards. Staff worked closely with the boat builder to lay out the deck and pilot house, and to outfit the boat with a gill net puller, trawling capabilities, and electronic gear. The vessel is necessary to conduct deep water netting, trawls, hydroacoutics and other surveys on the Region's large lakes.

Northeast Aquatic Plant Management Society Annual Meeting
In January 2004, 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.

American Fisheries Society
Four members of the Regional staff attended the 2004 New York Chapter meeting held in the Region's home area. At the meeting Webster Pearsall ended his 1-year tenure as Chapter President. As Chapter President, Webster represented the Chapter at the Northeast Division and Parent Society meetings.

Region 9

Triploid Grass Carp Permits
The number of grass carp permits issued in 2003 was 562, which is the most ever issued in the region since the program began in 1991. Numbers of new permits and renewals continues 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 2003, 12 new fish stocking permits and 76 farm fish pond licenses were issued in Region 9. The number of stocking permits was average, while the number of farm fish pond licenses continued to increase. Most people are beginning to use this in place of the "stocking permit".

Inland Fisheries

Statewide Fisheries Survey Database
Biological Survey Unit (BSU) staff processed more than 500 fisheries surveys and reduced its average turn around time for processing from 85 days in FY 2002 to 71 days in FY 2003. The Modern Statewide Fisheries Database now contains more than 7,000 inland fisheries surveys referencing data collected at more than 27,000 site locations. In addition to the 600,000 individual fish records, the database also has site specific physical and chemical information on various freshwater resources.

The database has also been reformatted so fields that originally contained coded values now contain actual descriptive terms. Staff can still use the codes to quickly record data on paper forms in the field but will no longer be required to add the many look up tables previously required to run queries or produce reports.

The user interface of the database program was also expanded in 2003 for increased utility and easier usability. A search tool was added to give users the ability to select surveys based on the name of the water as well as the survey number. Survey abstracts and digital images of sampling locations are now also linked to the database. The abstracts will afford future users the ability to view a quick synopsis of the objectives and outcome of a survey while the digital images of the survey site locations will provide the user with a visual image of the characteristics of the site at the time of sampling. Standardized summary reports, which mimic the Bureau's old watershed data file reports, were also added to the application. Besides generic data table summaries, the reports include such information as catch summaries, length at age and proportional stock density indices for species collected.

The Statewide Database Committee met two times during 2003. This committee continues to play a key role in refining and maintaining the integrity of the database. Regional database coordinators continue to identify anomalies and errors found in pre-2000 legacy data and work diligently with BSU staff to correct errors that may compromise the standards of the database. Coordinators also compiled a list of official water names for every significant body of water within their region. Eliminating water name aliases (multiple parochial names) will result in more effective querying and less confusion when the data is integrated into the Department's GIS. The committee also established guidelines for fisheries survey work being done by outside contractors. Beginning in 2004, all contractors paid with Bureau funds will be required to use standard biological field forms and record data in a manner consistent with database protocol.

With assistance from the Bureau's Statewide Database Committee, the BSU will begin integrating and developing additional databases, which will link to the Modern Fisheries Database, to form a comprehensive information management system.

Under direction of the Region 9 database coordinator, 73 historic Chautauqua Lake surveys were transcribed onto biological field forms for entry into the database. This data, which was previously in different formats and files, is now completely standardized and stored cohesively in the database. Over 100,000 individual fish records were added to the database as a result of this effort.

The BSU contracted a GIS development firm to undertake a requirements analysis to determine if Watershed Index Numbers (WINs) could be assigned to the hydrographic line work found in the National Hydrography Dataset (NHD). Research conducted by the contractor reveals that assignment of WINs would be best accomplished via an automated utility tool developed in ARC GIS. Tagging the NHD with WINs is the first step toward integrating fisheries data into the Department GIS and forming a geospatial fisheries information management system.

Sportfishing Regulations

The Bureau's proposed fishing regulations (Amendment of 6 NYCRR Part 10) for 2004-06 were advanced through several steps of the review and adoption process. Information on the 77 proposed regulation changes (includes additions, modifications and deletions) were put on the DEC website early in FY 2003-04. The Notice of Proposed Rule Making was transmitted to the Department of State in early February to be further acted on by the Secretary of State and published in the *State Register*. The public comment period commenced in the beginning of March and extended into the next fiscal year (with an ending date of April 12, 2004). The nature and amount of comment received varied per proposal. Many proposals were strongly supported; comments received on some were mixed. Based on public comment a decision was made not to advance one of the proposals as part of the final package. The Assessment of Public Comment is expected to be completed and a Final Adoption Package forwarded the Department of State in the summer of 2004, enabling these regulations to become effective October 1, 2004.

Bureau of Fisheries
2003-2004 Staffing

CENTRAL OFFICE

Administration

Stang, Douglas	Biologist 4 (Aquatic)
Stegemann, Eileen	Sr. Engineering Research Editor

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)
Kozlowski, Gregory	Biologist 1 (Aquatic) - transferred out 11/04
Henson, Fred	Biologist 1 (Aquatic)
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) - promoted 6/5/03
Gordon, William	Biologist 1 (Aquatic) -promoted 6/5/03 to Biologist 2 (Wildlife)
Carlson, Douglas	Biologist 1 (Aquatic)
Hasse, Jack	Biologist 1 (Aquatic)
Klindt, Roger	Biologist 1 (Aquatic)
McCullough, Russ	Biologist 1 (Aquatic)
Adams, Richard	Fish and Wildlife Technician 3
Town, Blanche	Fish and Wildlife Technician 2
Iloff, Donna	Keyboard Specialist 1
Faville, Margery	Fish and Wildlife Technician 1 (Seasonal)

Farmer, Richard	Laborer (Seasonal)
Gordon, Aaron	Laborer (Seasonal)
Hart, Jessica	Laborer (Seasonal)
Hasse, Annaliese	Laborer (Seasonal)
Hopkins, Lucas	Laborer (Seasonal)
LaFlair, Aaron	Laborer (Seasonal)
Spaziani, Gerald	General Mechanic (Seasonal)

REGION 7

Bishop, Dan	Biologist 2 (Aquatic)
Lemon, Dave	Biologist 1 (Aquatic)
Robins, Jeff	Biologist 1 (Aquatic)
Davall, Russ	Fish and Wildlife Technician 3
Eller, Jeff	Fish and Wildlife Technician 2
Moore, Paul	Fish and Wildlife Technician 2
Rathman, Bob	Fish and Wildlife Technician 2
Hines, Janet	Secretary 1
Boudreau, John H.	Fish and Wildlife Technician 1 (Seasonal)
Donohue, Katie	Fish and Wildlife Technician 1 (Seasonal)
Fox, Shaun	Fish and Wildlife Technician 1 (Seasonal)
Neely, Melissa A.	Fish and Wildlife Technician 1 (Seasonal)
VanNederynen, Cory	Fish and Wildlife Technician 1 (Seasonal)

REGION 8

Pearsall, Webster	Biologist 2 (Aquatic)
Kosowski, David	Biologist 1 (Aquatic)
Sanderson, Matt	Biologist 1 (Aquatic)
Hammers, Brad	Biologist 1 (Aquatic)
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
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)
Holland, Douglas	Fish and Wildlife Technician 1 (Seasonal)
Newman, Dawn	Fish and Wildlife Technician 1 (Seasonal)
Speziale, 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)
Spinelli, Jim	Fish and Wildlife Technician 1 (Seasonal)
Preston, Ron	Fish and Wildlife Technician 1 (Seasonal)
Mang, Anthony	Fish and Wildlife Technician 1 (Seasonal)
Adams, Connie	Fish and Wildlife Technician 1 (Seasonal)

LAKE ERIE UNIT

Culligan, William	Biologist 3 (Aquatic)
Einhouse, Donald	Biologist 1 (Aquatic)
Markham, James	Biologist 1 (Aquatic)
Zeller, Douglas	Fisheries Research Vessel Captain
Zimar, Richard	Fish and Wildlife Technician 2
Beckwith, Brian	Fish and Wildlife Technician 2
Szwejbka, MariEllen	Secretary 1
Robb, Steven	Fish and Wildlife Technician 1 (Seasonal)
Todd, Mike	Fish and Wildlife Technician 1 (Seasonal)
Kalka, Paul	Fish and Wildlife Technician 1 (Seasonal)
LaRusso, Dave	Fish and Wildlife Technician 1 (Seasonal)
Pachla, Matt	Fish and Wildlife Technician 1 (Seasonal)

LAKE ONTARIO UNIT

LaPan, Steven	Biologist 2 (Aquatic)
Massia, Gaylor	Maintenance Assistant
Grant, Beverly	Secretary 1
Fairbanks, Alan	Research Vessel Captain - Oct 1 start
Eckert, Thomas	Fish and Wildlife Technician 1 (Seasonal)
Holland, Douglas	Fish and Wildlife Technician 1 (Seasonal)
Holland, Derek	Fish and Wildlife Technician 1 (Seasonal)
Turner, Kristen	Fish and Wildlife Technician 1 (Seasonal)
Stercho, Jonathan	Fish and Wildlife Technician 1 (Seasonal)
Ryan, James	Fish and Wildlife Technician 1 (Seasonal)
Edmonds, Brian	Fish and Wildlife Technician 1 (Seasonal)
Boyer, Brian	Fish and Wildlife Technician 1 (Seasonal)
Bearup, Nicole	Fish and Wildlife Technician 1 (Seasonal)
Scofield, Jennifer	Laborer (Seasonal)
Hinckley, M. Ellen	Laborer (Seasonal)

Larkins, Mike	Laborer (Seasonal)
Haller, Ralph	Green Thumb Staff

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
Flisnick, Cindy	Keyboard Specialist

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