

Adirondack Park Invasive Plant Program **(APIPP)**

Aquatic Invasive Plant Project **Regional Coordinated Monitoring** **2005 Report**

Aquatic Project Goals

- *Provide coordination and leadership for a "community-based" volunteer monitoring program to collect information on the location and spread of aquatic invasive plants in the Adirondack Park.*
- *Develop a central database of the current aquatic invasive plant distributions in the Adirondack Park.*
- *Disseminate information to promote an understanding of invasive species impacts and their implications for aquatic resource protection.*

Distribution Summary

- In 2001, 27 lakes were documented with aquatic invasive plants and currently 49 lakes are documented with aquatic invasive plants in the Adirondack Park (Map 1). In four seasons, 191 APIPP Invasive Plant Monitors surveyed 161 distinct waters. With your assistance, APIPP is successfully establishing baseline information about the distribution of aquatic invasive plants in the Adirondack Park. Thank you for your substantial contribution to invasive species prevention and detection!

The following objectives were set and accomplished in 2005 with the assistance of partner organizations, resident groups, and volunteers:

2005 Training

- Provided training sessions in invasive and native plant identification and monitoring techniques. Representatives who assisted the sessions included Larry Eichler, Darrin Fresh Water Institute (DFWI); Scott Kishbaugh, New York State Department of Environmental Conservation (NYS DEC); Lenny Croote, Kaitlin Stewart, and Elizabeth Mangle, Hamilton County Soil and Water Conservation District (HCSWCD); Raquette Lake Property Owners' Association; and, SUNY ESF Ranger School.

- Trained 21 participants in Bolting Landing, 27 in Raquette Lake, and 37 in Wanakena (Figure 1).
- Distributed training manuals and secondary education resources for volunteer use.

Invasive Plant Threats

- Aquatic Project volunteers surveyed for Eurasian watermilfoil, water chestnut, curlyleaf pondweed, and fanwort. In 2005, the Project also elevated awareness about other plant threats listed below. There are native look-alikes, and web links are cited for species information and identification tips. In the Adirondack Park, yellow floating heart is present in Lake Champlain, and European frog-bit is present in Lake Champlain and in the Grasse River near Lampson Falls.

European frog-bit (*Hydrocharis morsus-ranae*)

<http://plants.ifas.ufl.edu/hydmor.html>

Yellow floating heart (*Nymphoides peltata*)

<http://plants.ifas.ufl.edu/nympel.html>

Brittle or slender naiad (*Najas minor*)

<http://www.weedscience.ncsu.edu/aquaticweeds/facts/apfs006-99.pdf>

Starry stonewort (*Nitellopsis obtusa*)

<http://www.co.cayuga.ny.us/wqma/weedswatchout/plants/starrystonewort.htm>

Parrotfeather (*Myriophyllum aquaticum*)

<http://plants.ifas.ufl.edu/myaqpic.html>

Hydrilla (*Hydrilla verticillata*)

<http://aquat1.ifas.ufl.edu/hyvepic.html>

Brazilian elodea (*Egeria densa*)

<http://aquat1.ifas.ufl.edu/egdepic.html>

For a good comparison of hydrilla, Brazilian elodea, and look alike

<http://www.des.state.nh.us/wmb/exoticspecies/HydrillaLook-alikes.pdf>

Potential Plant Threats – “Watched Species”

- The plants listed below are native to the U.S. and may be native to some areas of New York. They are listed as non-native invasive species in New England, are reported in several in waters in the Park, and can grow locally aggressive.

Variable-leaf Milfoil (*Myriophyllum heterophyllum*)

<http://www.umext.maine.edu/onlinepubs/htmlpubs/2530.htm>

Southern Naiad (*Najas guadalupensis*)

<http://aquat1.ifas.ufl.edu/nagupic.html>

2005 Monitoring – This was a record-breaking year!

- Implemented protocol for regional volunteer monitoring for aquatic invasive plants.
- Surveyed 110 Adirondack waterways with assistance of Project partner staff and 132 volunteer monitors (Table 1, Figure 2).
- Accrued more than 800 volunteer monitoring hours.

2005 Management

- Assisted the planning and development of the 3rd Annual Adirondack Water Quality Conference, focus on aquatic invasive species management.
- Assembled list of lake groups in the Park managing invasive aquatic plants, techniques used, associated costs, and successes / challenges.
- Co-authored the Adirondack Park Aquatic Nuisance Species Management Plan with Paul Smith's College Adirondack Watershed Institute and Lake Champlain Sea Grant, and assisted its development and completion in cooperation with the Adirondack Association of Towns and Villages, Adirondack Council, Lake Champlain Basin Program, Lake George Association, NYS Adirondack Park Agency, NYS Department of Environmental Conservation, NYS Lake George Park Commission, The Residents' Committee to Protect the Adirondacks, and Upper Saranac Lake Foundation.

Distribution Analysis

- Collaborated with Paul Smith's College student Kate Radock and faculty member Craig Milewski who assisted a preliminary aquatic invasive plant occurrence analysis.
- Conducted preliminary analysis of the distribution of surveyed and infested waters:
 - 49 waters documented with aquatic invasive plants
 - 65 DEC launches in the Park (approximately)
 - 22 waters infested
 - 3 waters with "watched species"
 - 29 waters surveyed by volunteers, no infestations observed
 - 12 waters still to be surveyed

2005 Voucher specimens

- Collected, identified, pressed, mounted, and labeled samples of invasive plants observed in surveyed waterbodies. A voucher specimen verifies the presence of the invasive plant, serves as a comparison for additional plant samples, and aids plant research activities. A voucher specimen is needed only if invasive or suspicious plants are observed (Table 2).

Data storage and Website development

- Updated the Adirondack Park Aquatic Invasive Plant Project database. The database is a permanent record of the distribution and abundance of aquatic invasive plants in the Adirondack Park as well as management activities on individual waterbodies.
- Created digitized lake maps for waterbodies surveyed in 2005.
- Updated data, maps, and text on the Adirondack Park Invasive Plant Program website, <http://www.adkinvasives.com>. The website is best viewed on the browser Internet Explorer or the newest version of Netscape Navigator. The site

provides Program information, invasive plant descriptions, images, and survey data and maps from the Adirondack region.

- Created a comprehensive site map of waterbodies in the Adirondack Park reported with aquatic invasive plants and lakes surveyed by APIPP volunteers (Map 2).

Below is a summary of general APIPP training and outreach achievements in 2005 for both the Terrestrial Invasive Plant Project and the Aquatic Invasive Plant Project.

APIPP Training in Invasive Plant Threats, Impacts, Identification, Inventory, and Spread Prevention Techniques. Professional audiences included:

- Region 6 Fisheries staff, Environmental Conservation Officers, Forest Rangers (approximately 60 in attendance).
- Paul Smith's College Watershed Stewards.

2005 APIPP Education efforts

- Reached nearly 2,000 individuals through presentations by principal partner agency representatives.
- Collaborated with Paul Smith's College Watershed Stewardship Program to train two APIPP Scenic Byway Stewards. The Stewards interacted with 1000 lake users at the Lake Flower Boat launch.
- Included APIPP information in the Cooperative Loon Project training manual.
- Distributed APIPP educational materials with assistance from the Adirondack Council's Outreach Intern at community events.
- Developed *Invasive Plant Identification Fact Sheets* and *Native Alternatives to Invasive Ornamentals*.
- Distributed a "Clean Your Boat Before You Float" handout in cooperation with the Upper Saranac Lake Foundation for distribution at the Fish Creek and Rollins Pond Campgrounds.
- Created and distributed two online APIPP newsletters.
http://www.adkinvasives.com/documents/ROOTSSpring2005_000.pdf
http://www.adkinvasives.com/documents/ROOTSSpring2005_000.pdf
- Highlighted in numerous newspapers and newsletters, and featured in the following venues: I-87 Northbound High Peaks Welcome Center; DOT "Better Than Before" Video Series; Adirondack Museum "Great Outdoors" Exhibit; Natural History Museum of the Adirondacks; and Adirondack Park Agency Visitor Interpretive Centers.
- Collaborated with the following groups on invasive species awareness projects:
 - Department of Environmental Conservation to develop an invasive species activity to include in their Campground "Junior Naturalist Program";
 - Fulton Chain of Lakes Association and Town of Inlet to develop an Eurasian watermilfoil ALERT Fact Sheet to mail to shoreowners;

- Village of Saranac Lake, Wildlife Conservation Association, Adirondack North Country Association to organize a Village of Saranac Lake Invasive Species Awareness Day, July 9; and,
- Paul Smith's College Watershed Stewardship Program and Osgood Pond to develop a pilot project to intercept aquatic nuisance species at the Osgood Pond boat launch.

2005 Outreach efforts

- Contributed information to the NYS Invasive Species Task Force.
- Presented APIPP at the following conferences: *Northeast Aquatic Plant Management Conference, NYS Federation of Lakes Association, Paul Smith's College Water Quality Conference, Japanese Knotweed Regional Managers' meeting, NYS Turfgrass Association, and NYS Invasive Plant Conference.*
- Participated in 57 community events, workshops, and meetings.
- Sent introductory letters to Soil and Water Conservation Districts, Cornell Cooperative Extensions, Fish and Game Clubs, Private Forestry, Boy and Girl Scouts, and Academic Institutions.
- Assisted the organization of 3 grant workshops to aid citizens in the preparation of applications to the NYS DEC ANS Eradication Grant.
- Received more than 100 "cold call" inquiries from the general public.
- Updated the Adirondack Park Invasive Plant list-serve, http://groups.yahoo.com/group/Adirondack_Invasives/. The list-serve provides a forum for discussion and information exchange about invasive species issues throughout the Park.

Regional Planning

- Participated on the Lake Champlain Basin Program's Aquatic Nuisance Subcommittee to begin developing a Rapid Response Plan for aquatic nuisance species in the Basin.
- Contributed invasive plant inventory, management, and education recommendations to 10 DEC Unit Management Plans.
- Collaborated and shared resources with the Long Island Weed Management Area (LI-WMA) and St. Lawrence Eastern Lake Ontario Weed Management Area (SLELO-WMA).

2005 Research

- APIPP would like to thank the following partners who were involved in invasive species research:
Graduate: SUNY ESF, Eric Novak, Japanese knotweed management and restoration; Cornell University, Scott Perez, phragmites mapping, control and education; SUNY ESF, Annie Woods, invasive plant distribution analysis.
Undergraduate: Paul Smith's College, Kate Radock, Capstone Project - aquatic invasive plant distribution, and Amy Boduch, Capstone Project - purple loosestrife mapping, control, and education on Mirror Lake.

Highschool: Inlet, Ron Smith, teacher supervising student mapping and monitoring of Eurasian watermilfoil in 5th-7th Lakes in the Fulton Chain.

2005 Funding

- Received grant award from DOT/Federal Highway Administration, short-term funds from the Adirondack Nature Conservancy and DEC, and several private donations.
- Submitted numerous grants for additional funds.

2006 Aquatic Invasive Plant Project Objectives

- Assist the coordination and implementation of the Adirondack Park ANS Management Plan.
- Retain volunteer monitors and build volunteer base in communities with few or no volunteers. Continue collaborating with volunteers of the Adirondack Lake Assessment Program and the Residents' Committee to Protect the Adirondacks.
- Complete surveys of priority waters and assist volunteers with monitoring efforts.
- Initiate rapid response eradication of the European frog-bit infestation on the Grasse River nears Lampson Falls.
- Collaborate with Paul Smith's College Watershed Stewardship Program to further develop a Volunteer Lake Steward Program to train volunteers to intercept aquatic nuisance species at boat launches.
- Update educational materials as needed.
- Investigate opportunities to expand training program for handharvesting techniques.
- Cooperate with Paul Smith's College Adirondack Watershed Institute to sponsor a one week course in Identification of Aquatic Flowering Plants.

Please see attached document with tables, figures, and maps.

Thank You and See You on the Water in 2006!!

Table 1. APIPP lakes surveyed in 2005 and aquatic invasive plants observed.
Alphabetized by county and town. Please refer to website for detailed plant survey reports for lakes listed below, and lakes surveyed to-date. <http://www.adkinvasives.com>

Lake Surveyed	Town	County	Invasive Plants Found
Lake Champlain	Au Sable	Clinton	None Observed
Silver Lake	Black Brook	Clinton	None Observed
Chateaugay Narrows	Ellenburg	Clinton	Eurasian watermilfoil
Upper Chateaugay Lake	Ellenburg	Clinton	Eurasian watermilfoil
Lake Champlain	Chesterfield	Essex	None Observed
Mill Pond	Elizabethtown	Essex	None Observed
Murrey Pond	Elizabethtown	Essex	None Observed
Russett Pond	Elizabethtown	Essex	None Observed
Lower Cascade Lake	Keene	Essex	None Observed
Upper Cascade Lake	Keene	Essex	None Observed
Barnes Pond	Minerva	Essex	None Observed
Minerva Lake	Minerva	Essex	Eurasian watermilfoil
Newport Pond	Moriah	Essex	None Observed
Rich Lake	Newcomb	Essex	None Observed
Mirror Lake	North Elba	Essex	None Observed
Bass Lake	North Hudson	Essex	None Observed
Johnson Pond	North Hudson	Essex	None Observed
Crane Pond	Schroon	Essex	None Observed
Paradox Lake	Schroon	Essex	None Observed
Pyramid Lake	Schroon	Essex	None Observed
Schroon Lake	Schroon	Essex	Eurasian watermilfoil
Moose Pond	St. Armand	Essex	None Observed
Putnam Pond	Ticonderoga	Essex	Eurasian watermilfoil
Rock Pond	Ticonderoga	Essex	None Observed
Little Wolf Pond	Altamont	Franklin	None Observed
Lower Chateaugay Lake	Bellmont	Franklin	Eurasian watermilfoil
Barnum Pond	Brighton	Franklin	None Observed
Jones Pond	Brighton	Franklin	None Observed
Lower St. Regis	Brighton	Franklin	None Observed
Mountain Pond	Brighton	Franklin	None Observed
Osgood Pond	Brighton	Franklin	None Observed
Spitfire Lake	Brighton	Franklin	None Observed

Upper St. Regis	Brighton	Franklin	None Observed
Clear Pond	Duane	Franklin	None Observed
Deer River Flow	Duane	Franklin	Eurasian watermilfoil
Eagle Pond	Duane	Franklin	None Observed
Horseshoe Pond	Duane	Franklin	Eurasian watermilfoil
Buck Pond	Franklin	Franklin	None Observed
Kushaqua	Franklin	Franklin	None Observed
Loon Lake	Franklin	Franklin	None Observed
Rainbow Lake	Franklin	Franklin	None Observed
Bear Pond	Harrietstown	Franklin	None Observed
Lake Clear	Harrietstown	Franklin	None Observed
Lake Clear Outlet	Harrietstown	Franklin	None Observed
Lake Flower	Harrietstown	Franklin	Eurasian watermilfoil, Variable-leaf Milfoil**
Oseetah Lake	Harrietstown	Franklin	Eurasian watermilfoil
Stony Creek Ponds	Harrietstown	Franklin	None Observed
Bog Pond	Santa Clara	Franklin	None Observed
Clamshell Pond	Santa Clara	Franklin	None Observed
Fish Pond	Santa Clara	Franklin	None Observed
Hoel Pond	Santa Clara	Franklin	None Observed
Kit Fox Pond	Santa Clara	Franklin	None Observed
Ledge Pond	Santa Clara	Franklin	None Observed
Little Clear	Santa Clara	Franklin	None Observed
Little Fish Pond	Santa Clara	Franklin	None Observed
Little Long Pond	Santa Clara	Franklin	None Observed
Little Long Pond	Santa Clara	Franklin	None Observed
Long Pond	Santa Clara	Franklin	None Observed
Middle Pond	Santa Clara	Franklin	None Observed
Nellie Pond	Santa Clara	Franklin	None Observed
Unnamed Pond	Santa Clara	Franklin	None Observed
Whey Pond	Santa Clara	Franklin	None Observed
Big Wolf Lake	Tupper Lake	Franklin	None Observed
Gull Pond	Tupper Lake	Franklin	None Observed
Simond Pond	Tupper Lake	Franklin	Variable -leaf Milfoil**
West Pine Pond	Tupper Lake	Franklin	None Observed
East Caroga Lake	Caroga	Fulton	Eurasian watermilfoil
Oxbow Lake	Arietta	Hamilton	Eurasian watermilfoil

Piseco Lake	Arietta	Hamilton	None Observed
Raquette Lake	Arietta	Hamilton	None Observed
Spy Lake	Arietta	Hamilton	None Observed
Lake Durant	Blue Mountain	Hamilton	None Observed
Blue Mountain Lake	Indian Lake	Hamilton	None Observed
Eagle Lake	Indian Lake	Hamilton	None Observed
Indian Lake	Indian Lake	Hamilton	None Observed
Utowana Lake	Indian Lake	Hamilton	None Observed
5th Lake	Inlet	Hamilton	Eurasian watermilfoil
6th Lake	Inlet	Hamilton	Eurasian watermilfoil
8th Lake	Inlet	Hamilton	None Observed
Lower Brown Tract Pond	Inlet	Hamilton	None Observed
Upper Brown Tract Pond	Inlet	Hamilton	None Observed
7th Lake	Inlet	Hamilton	Eurasian watermilfoil
Lake Pleasant	Lake Pleasant	Hamilton	None Observed
Lake Sacandaga	Lake Pleasant	Hamilton	None Observed
Lewey Lake	Lake Pleasant	Hamilton	None Observed
Whitaker Lake	Lake Pleasant	Hamilton	None Observed
Brandreth Lake	Long Lake	Hamilton	None Observed
Lake Eaton	Long Lake	Hamilton	None Observed
Little Tupper Lake	Long Lake	Hamilton	None Observed
Long Lake	Long Lake	Hamilton	None Observed
Round Lake	Long Lake	Hamilton	None Observed
Lake Algonquin	Wells	Hamilton	Eurasian watermilfoil
North Lake	Ohio	Herkimer	None Observed
Shallow Pond	Webb	Herkimer	None Observed
Brantingham Lake / Lily Pond	Greig	Lewis	None Observed
Chase Lake	Watson	Lewis	None Observed
Little Long Lake	Woodgate	Oneida	None Observed
Grass River	Clare	St. Lawrence	European Frog-bit
Cranberry Lake	Clifton	St. Lawrence	Variable -leaf Milfoil*
Clear Pond	Parishville	St. Lawrence	None Observed
Eagle Crag	Piercefield	St. Lawrence	None Observed
Horseshoe Lake	Piercefield	St.	None Observed

		Lawrence	
Mount Arab	Piercefield	St. Lawrence	None Observed
Friends Lake	Chester	Warren	None Observed
Brant Lake	Horicon	Warren	Eurasian watermilfoil
Garnet Lake	Johnsburg	Warren	None Observed
Thirteenth Lake	Johnsburg	Warren	None Observed
Livingston Lake	Stony Creek	Warren	None Observed
Crane Mountain Pond	Thurman	Warren	None Observed
Pack Forest Lake	Warrensburg	Warren	None Observed

* *Myriophyllum heterophyllum*, variable-leaf watermilfoil, was observed during plant surveys in Cranberry Lake and Newton Falls Impoundment (Chaumont Pond) in 2002, and in Jenkins Bay of Tupper Lake in 2003. *Myriophyllum heterophyllum* is considered an invasive plant in New Hampshire, Maine, Connecticut, and Massachusetts. It is included as a 'watched species' in the Adirondack Park.

** Milfoil samples that may have been variable-leaf milfoil were observed but not verified in Simond Pond and Lake Flower. Samples will be vouchered in 2006.

Table 2. APIPP lakes with voucher specimens on file with the Adirondack Park Invasive Plant Program.

Lake Name	Voucher specimen
7 th Lake Fulton Chain	Eurasian watermilfoil
Brant Lake	Eurasian watermilfoil
Copperas Pond	Eurasian watermilfoil
Cranberry Lake	Variable-leaf watermilfoil
Deer River Flow	Eurasian watermilfoil
East Caroga Lake	Eurasian watermilfoil
Fifth Lake, Fulton Chain	Eurasian watermilfoil
Fish Creek	Eurasian watermilfoil
Fish Creek Pond	Eurasian watermilfoil
Floodwood Pond	Eurasian watermilfoil
Follensby Clear Pond	Eurasian watermilfoil
Franklin Falls Pond	Eurasian watermilfoil, curlyleaf pondweed
Horseshoe Pond, Duane	Eurasian watermilfoil
Grasse River	European frog-bit
Kiwassa Lake	Eurasian watermilfoil
Lake Flower	Eurasian watermilfoil, curlyleaf pondweed
Little Square Pond	Eurasian watermilfoil
Long Pond, Willsboro	Eurasian watermilfoil
Meacham Lake	Eurasian watermilfoil
Minerva Lake	Eurasian watermilfoil
Putnam Pond	Eurasian Watermilfoil
Sixth Lake of Fulton Chain	Eurasian watermilfoil
Taylor Pond	Eurasian watermilfoil
Union Falls Pond	Eurasian watermilfoil

Figure 1. Participants at training sessions for aquatic plant identification and monitoring techniques, 2002-2005.

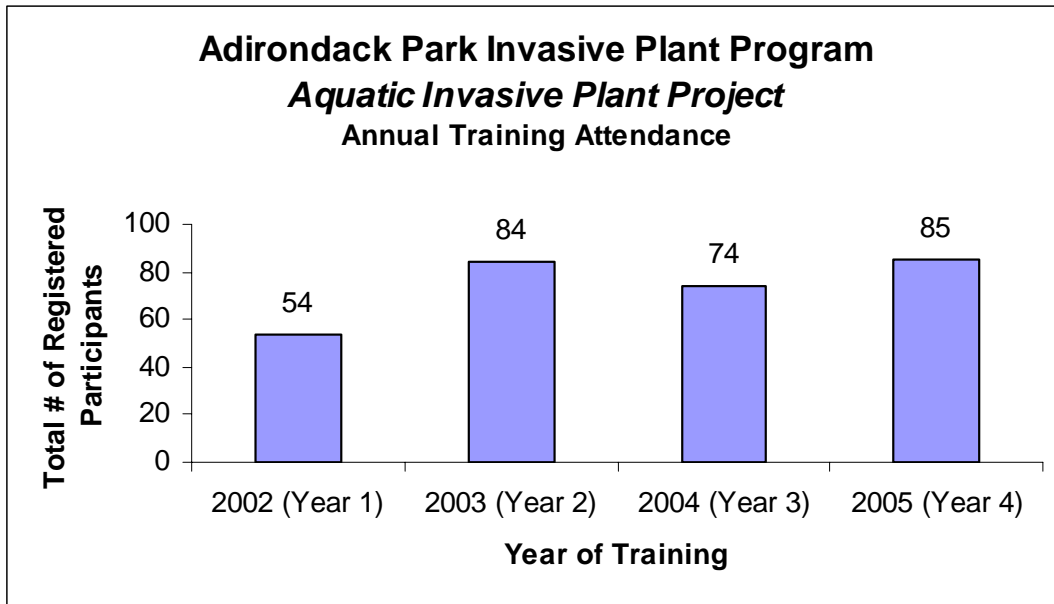
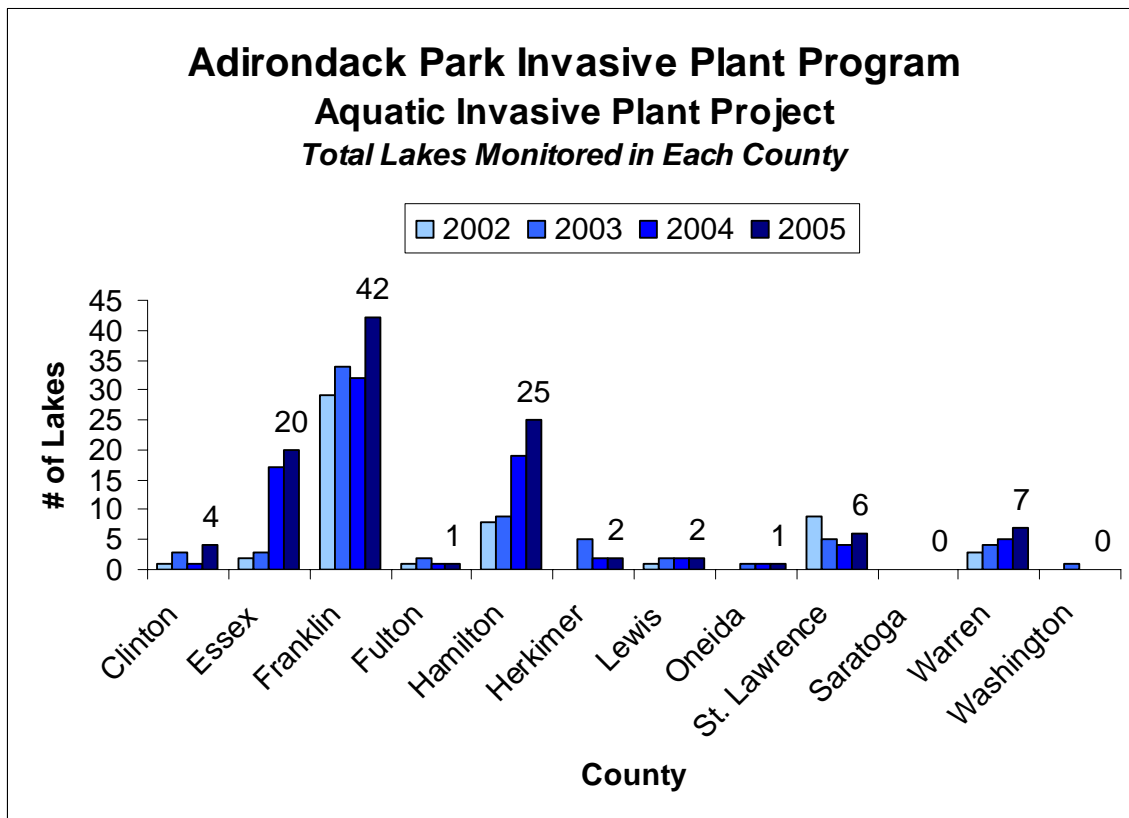
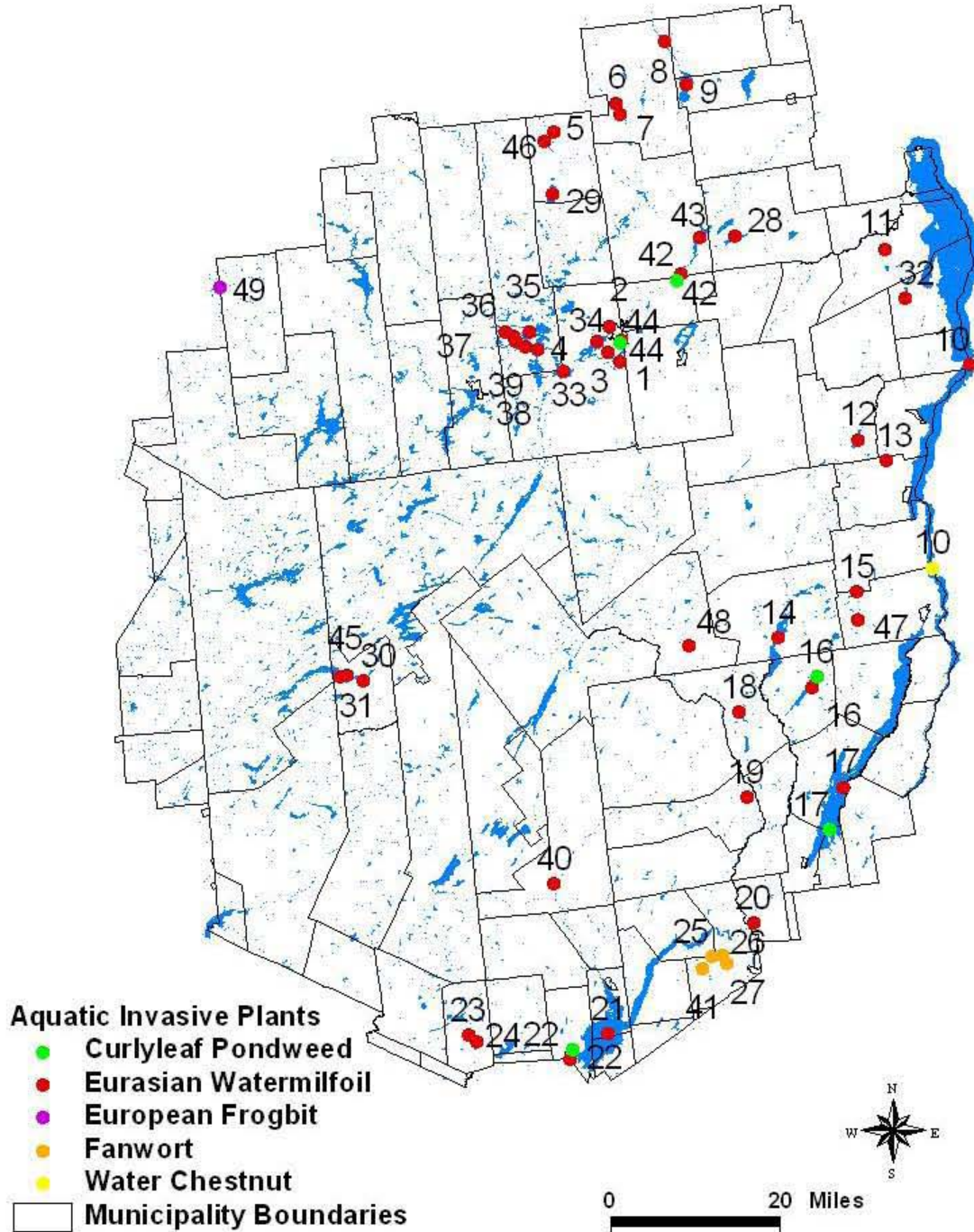


Figure 2. Distribution of lakes monitored by APIPP volunteers, 2002-2005.



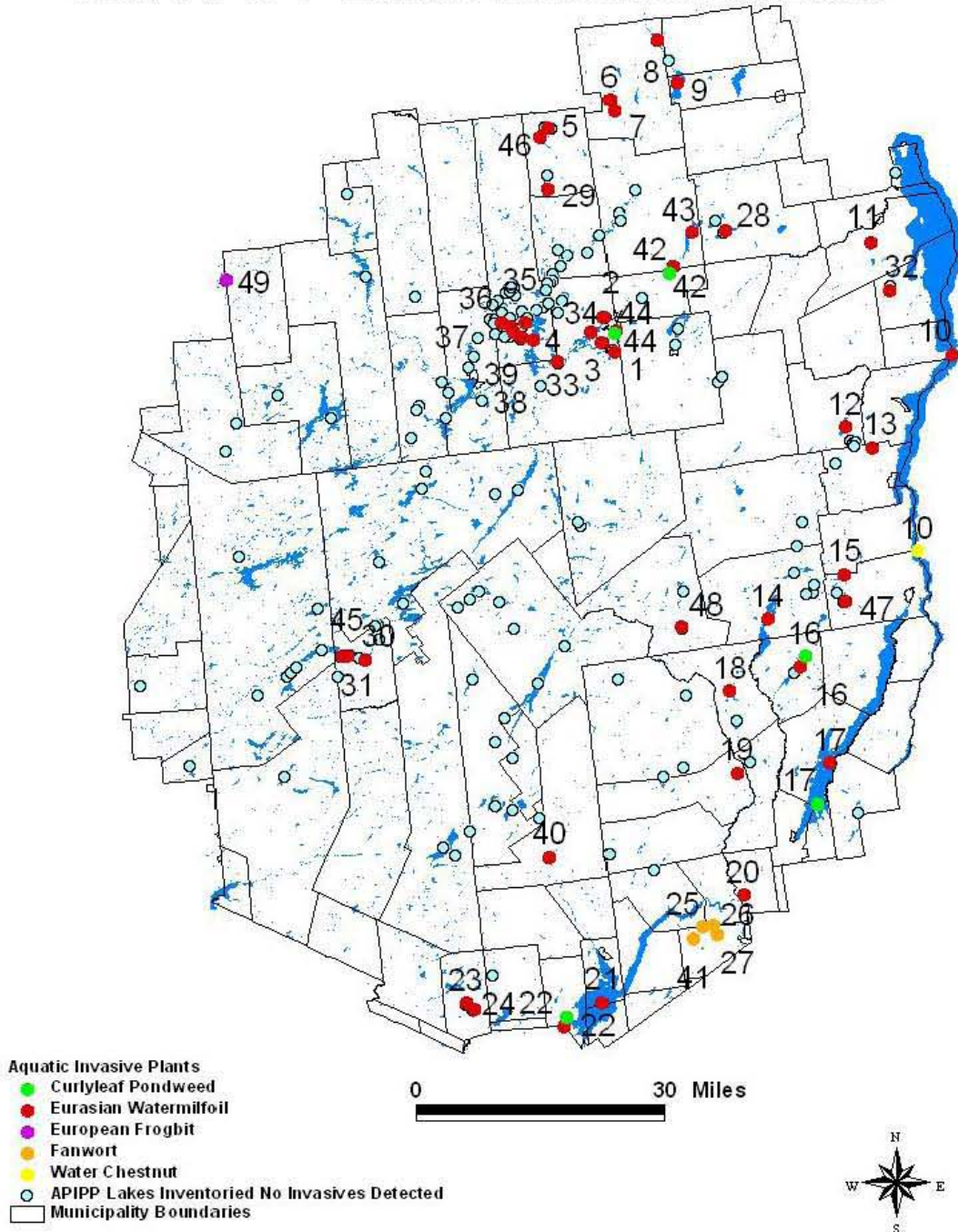
Map 1. The list of lake names corresponding to the numbers below is attached.

Distribution of Waters Infested with Aquatic Invasive Plants in the Adirondack Park, 2005



Map 2.

Distribution of Infested Lakes and APIPP Lakes Inventoried 2005



Map 1
Adirondack Park Waterbodies Reported with Aquatic Invasive Plants

A	
1	Oseetah Lake
2	Lake Colby
3	Kiwassa Lake
4	Upper Saranac Lake
5	Horseshoe Pond
6	Indian Lake
7	Mountain View Lake
8	Lower Chateaugay Lake
9	Upper Chateaugay Lake
10	Lake Champlain
11	Augur Lake
12	Lincoln Pond
13	Bartlett Pond
14	Schroon Lake
15	Eagle Lake
16	Brant Lake
17	Lake George
18	Loon Lake
19	Daggett Lake
20	Lake Luzerne
21	Great Sacandaga Lake
22	Mayfield Lake
23	West Caroga Lake
24	East Caroga Lake
25	Effner Lake
26	Jenny Lake
27	Hunt Lake
28	Taylor Pond
29	Meacham Lake
30	Seventh Lake
31	Sixth Lake
32	Long Pond
33	Middle Saranac Lake
34	Lower Saranac Lake
35	Follensby Clear Pond
36	Floodwood Pond
37	Little Square Pond
38	Fish Creek Pond
39	Copperas Pond
40	Lake Algonquin
41	Mill Pond
42	Franklin Falls
43	Union Falls Flow
44	Lake Flower
45	Fifth Lake
46	Deer River Flow
47	Putnam Pond
48	Minerva Lake
49	Grasse River at Lampson Falls

Map prepared by APIPP. Aquatic plant reports provided by a variety of plant monitoring programs and cited in the Darrin Fresh Water Institute Annual Reports.