

2010 Annual Report

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*Adirondack Park Invasive Plant Program
the Adirondack Partnership for Regional Invasive Species Management*

*Adirondack Chapter of The Nature Conservancy
Keene Valley, New York*

APIPP operates under contract with the Department of Environmental Conservation and utilizes Environmental Protection Funds which support APIPP's core coordinating services.

The Adirondack Park Invasive Plant Program (APIPP) values the contributions of more than 30 cooperating organizations and more than 300 volunteers who participate in the program and share their ideas, time, and resources to protect the Adirondacks from invasive species.

In Memoriam

On October 1st, 2010, we lost our friend and colleague Steven Flint. Steven joined the Adirondack Chapter of The Nature Conservancy in 2001 and was instrumental in building the Adirondack Park Invasive Plant Program. He was a passionate steward of lands and waters and a mentor for many. We are deeply saddened by this loss and are forever grateful for Steven's contributions.

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The Adirondack Park Invasive Plant Program is a partnership program among the Adirondack Chapter of The Nature Conservancy, New York State Departments of Environmental Conservation and Transportation, New York State Adirondack Park Agency, Adirondack communities and volunteers, and more than 30 cooperating organizations.

Mission

The Adirondack Park Invasive Plant Program (APIPP) serves as the Adirondack Partnership for Regional Invasive Species Management (PRISM) whose mission is to protect the Adirondack region from the negative impacts of non-native invasive species. Initiated in 1998 and housed by the Adirondack Chapter of The Nature Conservancy, the program coordinates two regional projects: the Aquatic Invasive Species Project and the Terrestrial Invasive Species Project.

Goals

- *Prevent new introductions of invasive species.*
- *Coordinate a region-wide early detection rapid response program to detect and eradicate new infestations.*
- *Manage existing priority infestations to mitigate impacts.*

Distribution Summary

Aquatic

- At least 80 waterways have aquatic invasive plants and animals in the Adirondack Park; and, in nine seasons, more than 472 APIPP Invasive Plant Volunteers surveyed 266 distinct waters (Map 1). With your assistance, APIPP has successfully established baseline information about the distribution of aquatic invasive plants in the Adirondack region. Thank you for your substantial contribution to invasive species prevention, detection, and response efforts!

Terrestrial

- As of 2008, at least 701 sites of APIPP's target terrestrial invasive plants were documented in the park. These sites were recorded using paper data forms. In 2010, the Terrestrial Project began using a new electronic form to better track invasive species occurrences and enable improved analysis of distribution and trends over time. The electronic form utilizes field computers with global positioning systems, geographic information systems, and the weed information management system (WIMS). Currently, a total of 219 terrestrial invasive species occurrences have been documented using this new system (Map 2). Eighty-one of those 219 occurrences also contain spatial assessments that total 7.05 gross infested acres. APIPP is currently looking into ways of incorporating the old paper-based data into the new electronic software.

Project Reports

The following activities were accomplished in 2010 through the Aquatic Invasive Species Project and the Terrestrial Invasive Species Project with the assistance of partner organizations, resident groups, and volunteers:

2010 Training sessions

Aquatic

- Provided two training sessions in invasive and native aquatic plant identification and monitoring techniques. Partners who assisted the sessions included Larry Eichler, Darrin Fresh Water Institute (DFWI); Scott Kishbaugh, New York State Department of Environmental Conservation (NYS DEC); Caitlin Stewart, Hamilton County Soil and Water Conservation District (HCSWCD), and Jennifer Dean, iMap Invasive species program. Thank you for making these sessions a success!
- Trained 60 participants in 2010 (Figure 1): 20 participants in Bolting Landing and 40 in Blue Mountain Lake.
- Invited by several lake associations to lead training sessions including Mountain Lake (14 Volunteers) and Morehouse Lake (8 Volunteers).
- Led the aquatic plant identification workshop in conjunction with the Adirondack Forum on Invasive Species hosted at Paul Smith's College.
- Offered an Invasive Plant Paddle during Awareness Week on Lewey Lake, Hamilton County (16 Volunteers).
- Offered a Eurasian Watermilfoil management workshop to the Hadlock Lake Association.
- Distributed training manuals and secondary education resources for volunteer use.

Terrestrial

- Hosted identification and survey techniques training for 20 volunteers assisting with the 2010 Terrestrial Inventory, an inventory initiative that replicated the 1998-99 roadside and backcountry inventories. Thank you to Kathleen Wiley, Keene Valley resident and Antioch PhD student, for assisting with this project!
- Attended a day-long forest pest workshop hosted by Cornell at Essex County CCE.
- Trained DEC's Student Conservation Association/Americorp team members, and the APIPP invasive species steward.
- Led the terrestrial plant identification and management workshop in conjunction with the Adirondack Forum on Invasive Species hosted at Paul Smith's College.
- Trained 5 Operations staff at Parmenter campground in garlic mustard identification and best management practices.
- Trained DEC Operations staff at forest preserve campgrounds in invasive plant ID and best management practices (BMPs) during the daily course of work.
- Trained 13 YMCA volunteers who directly assisted APIPP with invasive plant management along state routes while biking through the park.

Target Species

Aquatic Plants

- Aquatic Project volunteers surveyed for eight priority aquatic invasive plants: Eurasian watermilfoil, Variable-leaf milfoil, water chestnut, curlyleaf pondweed, fanwort, European frog-bit, yellow floating heart, and brittle naiad.

The Project continues to elevate awareness about other plant threats listed below, which have not yet been detected within the PRISM boundaries. This year didymo, also known as “Rock Snot,” was discovered in the Kayaderosseras Creek near the PRISM boundary in Saratoga County, NY. This species has continued to move north over the past three years since infesting the Battenkill River and is of particular concern to the PRISM.

There are native look-alikes to several species approaching the region, and web links are cited for species information and identification tips.

Didymo

<http://www.invasivespeciesinfo.gov/aquatics/didymo.shtml>

Starry stonewort (*Nitellopsis obtusa*)

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

Parrotfeather (*Myriophyllum aquaticum*)

<http://plants.ifas.ufl.edu/myaqp-pic.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 alikes

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

Non-plant Aquatic Species

- In July APIPP piloted a new monitoring program for the spiny waterflea (*Bythotrephes cederstroemi*). Thanks to Peter Tobiessen from Sacandaga Lake for his assistance! This program assisted in confirming the spiny waterflea in Sacandaga Lake, Hamilton County. <http://www.dnr.state.mn.us/invasives/aquaticanimals/spinywaterflea/index.html>
- In August Asian clam (*Corbicula fluminea*) was discovered in Lake George. This detection was the first reported occurrence of this species within the PRISM. Due to the severe ecological and economic impacts of this species it will be elevated in APIPP's early detection and monitoring network in 2011.
Asian Clam Fact Sheet: <http://nas.er.usgs.gov/queries/factsheet.aspx?speciesid=92>

Terrestrial Plants

- In the late 90s, Terrestrial Project partners identified four primary invasive plants present in the park that had high likelihoods of spreading into natural areas: Japanese knotweed, purple loosestrife, common reed grass, and garlic mustard. Surveys are ongoing for these and several additional species that have localized infestations in the park: yellow iris, swallow-wort spp., giant hogweed, and Indian cup-plant. For a more complete list of

invasive terrestrial plants present in the region, log on to <http://adkinvasives.com/PlantList.html>.

The Project continues to elevate awareness about other plant threats listed below, which have not yet been detected within the PRISM boundaries.

Japanese stiltgrass (*Microstegium vimineum*), not yet detected in the Park
<http://nbii-nin.ciesin.columbia.edu/ipane/icat/browse.do?specieId=12>

Mile-a-minute vine (*Polygonum perfoliatum*), not yet detected in the Park
<http://nbii-nin.ciesin.columbia.edu/ipane/icat/browse.do?specieId=13>

Non-plant Terrestrial Species

- A monitoring program for non-plant terrestrial invaders is being developed in cooperation with the Department of Environmental Conservation and Department of Agriculture and Markets. Priority species include Asian longhorn beetle, emerald ash borer, and feral hogs. Further information about impacts of non-native earthworms is also being investigated.

Potential Plant Threats – “Watched Species”

Aquatic

- 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 some regions of the U.S., are reported in several waters in the region, and can grow locally aggressive.

Southern naiad (*Najas guadalupensis*)
<http://aquat1.ifas.ufl.edu/nagupic.html>

Swollen bladderwort (*Utricularia inflata*)
<http://plants.usda.gov/java/profile?symbol=UTIN>

Terrestrial

- The plant listed below is not native to the U.S. and reported to grow aggressively in riparian settings in some New England states. One occurrence is reported in the northern Adirondacks. Additional information is required to determine its invasibility in the region.

Himalayan balsam (*Impatiens glandulifera*)
<http://nbii-nin.ciesin.columbia.edu/ipane/icat/browse.do?specieId=58>

2010 Monitoring

Aquatic Plants – 9th Season Summary

- Coordinated regional volunteer monitoring for aquatic invasive plants.
- Since the start of the Aquatic Project in 2002, the number of waters monitored annually has nearly doubled and volunteer participation has nearly quadrupled (Figure 2).

- In 2010, 206 volunteer monitors and partner staff surveyed 94 Adirondack waterways (Table 1, Figure 3).
- Accrued more than 900 volunteer monitoring hours.
- Volunteer recruitment and retention remains high (Figure 4). Since 2002, the program has retained an annual average of 72 core volunteers and recruited an annual average of 52 new volunteers.
- Collaborated with partners to map and assess milfoil infestations in Paradox Lake, Schroon Lake, and Long Lake.
- Collaborated with partners of the All-Taxa-Biodiversity-Inventory during a bioblitz to monitor Follensby Pond. Twenty-two native aquatic plant species were detected and no invasive species were observed.
- Instituted new spiny waterflea monitoring protocol for volunteers.

List of new species confirmed in new waters in 2010

- **Spiny waterflea** – Sacandaga Lake (near Speculator, NY)
- **Eurasian watermilfoil** – Forestport Reservoir, Oneida County (outside of park but watershed partially in Adirondack PRISM); Butternut Pond, Essex County; Lake Titus, Franklin County (outside of park but in Adirondack PRISM)
- **Curlyleaf pondweed** – Lower Saranac Lake, Franklin County; Chateaugay Lake (Upper and Lower), Clinton County
- **Variable-leaf milfoil** - Forestport Reservoir, Oneida County (outside of park but watershed partially in Adirondack PRISM); 6th, 7th, 8th Lakes (Fulton Chain), Hamilton County
- **Asian clam** – Lake George, NY (Southern Lake)

Terrestrial Plants

- Collaborated with and assisted NYS DEC Invasive Species Specialist, Wayne Blanchard, in inventorying, managing, and mapping the 36 DEC land-based campgrounds in the park.
- Accrued approximately 5,300 miles driven conducting early detection/rapid response activities.
- Surveyed, monitored, and mapped some or all of the following NYS DOT right of ways: State Routes 3, 30, 73, 86, 9, 9N, 28N, 28, 56, and I-87 Adirondack Northway.
- Mapped 44 common reed grass populations along State Route 3 from Saranac Lake to the western park boundary totaling 2.255 gross infested acres (Map 3).
- Monitored and mapped roads adjacent to the following NYS DEC forest preserve units: Ferris Lake, Moose River Plains, William C. Whitney, Siamese Ponds Wilderness, Taylor Pond, St. Regis Canoe Area, Black River Wild Forest, and Sargent Ponds.

Terrestrial Non-Plant

- Encouraged partners and landowners to participate in the USDA, DEC, and Ag&Mkts Beetle Detectives program.

2010 Rapid Response

Aquatic Species

- The Lake Placid Shoreowners implemented year 2 of an eradication program for variable leaf milfoil. The volume of plant material harvested decreased considerably this year compared to 2009. The 2010 report was unavailable during the writing of this report thus results are forthcoming. *In 2009, over 2 tons of milfoil was removed from the lake. In 2010, less than one bag (<20lbs) of milfoil was removed.
- The Paradox Lake Association implemented year 2 of an eradication program for Eurasian watermilfoil. The 2010 report was unavailable during the writing of this report thus results are forthcoming.
- The Darrin Freshwater Institute and partners in Lake George established the Asian Clam Rapid Response Task Force to plan a rapid response program for Asian clam in Lake George. As of December 2010 they were evaluating potential control options and the full response is scheduled for spring 2011.

Terrestrial Plants

- Assisted members of the Tupper Lake Garlic Mustard Elimination Project in their continued efforts controlling new infestations of garlic mustard in Tupper Lake.
- Validated and began formulating best management strategies for 2 new infestations of swallowwort, 2 new infestations of yellow iris, one new infestation of garlic mustard, 15 new infestations of common reed grass, and 10 new infestations of purple loosestrife within the park.
- Began mapping high priority roadway corridors in the park for new infestations of invasive species on DOT right of way and on forest preserve.

2010 Management

Aquatic

- Implemented year 4 of the European frog-bit eradication project on the Grasse River near Lampson Falls. The infestation was initially less than one quarter acre in size. Thirty-six 5-gallon buckets of plant material were harvested in 2007; seven buckets were harvested in 2008; and less than two buckets were harvested in 2009. In 2010, less than 1.5 buckets of plant material were harvested. Additional surveys and maintenance work will be conducted by the Aquatic Coordinator until no new plants are seen for three consecutive years.
- Collaborated with Paul Smith's College Adirondack Watershed Institute to implement year 3 of Eurasian watermilfoil management in Follensby Clear Pond. In year 1, divers removed 479 bags of milfoil over 21 days (582 hours). The main infestation was near the canoe launch; satellite plants were harvested at the boat ramp and Spider Creek. In year 2, divers removed 106 bags of milfoil over 76 hours. In year 3 (2010), divers removed 30 bags of milfoil over 40 hours.
- Assisted the Lake Luzerne Association with pre- and post- treatment plant monitoring associated with an herbicide treatment.
- Assisted Hadlock Lake Association with development of an Aquatic Invasive Species Management Plan.

- Offered two aquatic plant management workshops to lake associations and the general public.

Terrestrial

- Completed 30 hour certification course to become a NYS category 3a certified pesticide technician.
- Manually controlled, removed, and disposed of approximately 10,000 pounds of terrestrial invasive plant material from high priority sites on NYS DOT right of way, private property, and forest preserve.
- Worked with 15 Student Conservation Association members to manage garlic mustard, yellow iris, black swallowwort, poison parsnip, and purple loosestrife infestations.
- Conducted herbicide treatments on 16 high priority sites throughout the field season totaling approximately 1.7 infested acres. Thirteen of these sites were located on DOT right of way and included follow up management of seven sites involved in APIPP's NYS Biodiversity Research Institute Project, while the other three sites were the first herbicide treatments permitted on forest preserve (1.6 infested acres). Approximately 9.5 pints of herbicide were applied throughout the field season.
- Implemented manual management controls within the following NYS DEC forest preserve units: Moose River Plains, William C. Whitney, Sargent Ponds, Blue Mountain, High Peaks, Saranac Lakes, Taylor Pond, Siamese Ponds, Ferris Lake, Cranberry Lake, Sentinel Range Wilderness, and St. Regis Canoe Area.
- Assisted NYS DEC Operations and Invasive Species Specialist, Wayne Blanchard, with controls at five infested DEC campgrounds.
- Implemented follow-up control of all previously identified yellow iris and swallowwort infestations, primarily located within the east branch of the Au Sable River and Boquet River watersheds as well as the Siamese Ponds Wilderness Area.
- Assisted the members of Inlet's Regional Invasive Plant Program to control one Japanese knotweed infestation in Blue Mountain Lake.
- Assisted volunteers from the Wild Center and Village of Tupper Lake to control numerous garlic mustard sites along the southwest quadrant of Big Tupper Lake and Simond Pond.
- Worked with 13 volunteers from Beckett-Chimney Corners YMCA group to manage purple loosestrife along State Route 30 between Long Lake and Tupper Lake.

Distribution Analysis

Aquatic Plants

- The number of "weed-free" lakes surveyed by APIPP volunteers is nearly three times that of infested lakes (Figure 5).
- 2010 was the first year aquatic data were recorded in a GIS (Geographic Information System). This system will allow us to conduct more detailed spatial analyses on the distribution of infested and uninfested lakes in the region. These analyses will help us better prioritize where early detection surveys should occur and identify pathways for invasion.

Terrestrial Plants

- Analysis of the jurisdictional distribution of terrestrial invasive plants:
 - 23 NYS DEC Forest Preserve Units have one or more occurrences of invasive plants.
 - Of 36 land-based forest preserve campgrounds, 31 have invasive plants.
 - As of 2009, approximately 573 sites were documented within the jurisdictional right of ways of NYS DOT. The Terrestrial Project is currently working on re-mapping these right-of-ways using new electronic distribution analysis tools.

Voucher Specimens

Aquatic Plants

- 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).

Terrestrial Plants

- The Terrestrial Invasive Species Project does not maintain an herbarium of voucher specimens by site.

Data Storage and Website Development

Aquatic Plants

- Updated the Adirondack Park Aquatic Invasive Plant Project database. The database is a permanent record of the distribution and abundance of aquatic invasive plants as well as management activities on individual waterbodies in the Adirondack region.
- Finalized new GIS database for aquatic volunteer monitoring data.
- Collaborated with iMapinvasives.org to create an online invasive species map and data storage system.
- Uploaded the aquatic contributions to the Adirondack Park Invasive Plant Program website, <http://www.adkinvasives.com>. The site provides Program information, invasive plant descriptions, images, and survey data and maps from the Adirondack region.

Terrestrial Plants

- The Terrestrial Project transitioned from paper-based data records into its first year of using electronic tools to document the spread of invasive species. APIPP's weed information management system (WIMS) was updated to include all 219 occurrences from the 2010 field season. The incorporation of the old paper based records into the new system is currently being evaluated. The new electronic system will allow for the querying of results, provide beneficial spatial data, and will allow for the formulation of trends over consecutive years.

APIPP Activities

Below is a summary of APIPP's achievements in 2010 that included both the Terrestrial Invasive Species Project and the Aquatic Invasive Species Project.

APIPP Seasonal Stewardship

- Offered two seasonal stewardship positions: Brendan Quirion, Terrestrial Invasive Species Project Coordinator and Gus Goodwin, APIPP's Invasive Species Steward.
- Coordinated with DEC's Student Conservation Association team members who assisted invasive plant management during three weeks of the summer.
- Collaborated with DEC Operation's Invasive Species Specialist Wayne Blanchard.
- Facilitated the coordination of a volunteer team of Paul Smith's College students to cut down dead stems of common reed grass in Cherry Patch Ponds to prep the sites for next field season.

APIPP co-sponsored, or was invited to participate in, training sessions for the following audiences:

- Paul Smith's College Watershed Stewardship Program (WSP)
- Paul Smith's College Volunteer Lake Steward Program (VLS)
- Hadlock Lake Association
- Canada Lake Association
- Paradox Lake Property Owners' Association
- Morehouse Lake Association
- Chase's Lake Association
- Lake Luzerne Association
- Student Conservation Association team training at Whitney Headquarters

2010 APIPP Education and Outreach efforts

- Participated in more than 45 community events and workshops.
- Reached more than 1,500 individuals through presentations by APIPP staff.
- Submitted bi-weekly invasive species columns from May-October to the Adirondack Daily Enterprise and the Adirondack Express, adirondackdailyenterprise.com/page/category.detail/nav/5144/Eye-on-Invasives--by-Hilary-Smith.html.
- Celebrated the 5th Annual Adirondack Invasive Species Awareness Week, <http://www.adkinvasives.com/InvasiveSpeciesAwarenessWeek.html>.
- Promoted the USDA's Beetle Detectives website and encouraged landowners to inventory trees on their property, <http://beetledetectives.com>.
- Collaborated with specific groups on invasive species awareness projects in the following ways:

- APIPP's steward identified and visited private campgrounds in Essex and Franklin Counties to discuss forest pest threats, outline spread prevention measures, and provide educational materials.
- APIPP's steward developed a map of car- and boat-wash stations across the region for use by recreational boaters.
- APIPP's steward reached out to the Adirondack Trail Improvement Society and organized an inventory and control project for Japanese barberry, buckthorn and honeysuckle at Roostercomb and Roaring Brook trailheads.
- Participated in the 90 Miler by providing educational materials and conducting voluntary inspections at key portages.
- Contributed invasive species information to the publication, "Embark," a joint effort with the Adirondack Daily Enterprise, and the Adirondack Outdoors group that includes DEC, Wildlife Conservation Society, Adirondack Mountain Club, and the Adirondack Forest Preserve Education Partnership.
- As requested, reviewed Local Waterfront Revitalization Plans and Blueway and Scenic Byway Corridor Plans and contributed invasive species information.
- Helped partners design and distribute a new AIS "Rack Card" for Lake/River Stewards to use during education and outreach activities.
- Met with several core volunteers to provide additional assistance with aquatic plant identification and survey techniques.
- Collaborated with the Sacandaga Lake Association to begin a spread prevention program for the newly discovered spiny waterflea and initiated communication with community groups on water bodies downstream.
- Participated in the Lake Placid Roundtable to discuss AIS prevention options for the Village of Lake Placid.
- Reached out to local government groups and presented during the Adirondack Association of Towns and Villages summer meeting as well as at a monthly meeting of the Local Government Review Board.
- Met with staff of Nobelwood Park in Willsboro to assess invasive plants on the property and review identification techniques and best management practices.
- Presented to groups at the following schools: SUNY Plattsburgh, Indian Lake Highschool, Saranac Lake Highschool, SUNY Plattsburgh, and Paul Smith's College.
- Presented to 4th and 6th graders at the Essex County 4H Conservation Field Day.
- Offered AIS presentations to the following lake associations: Morehouse Lake, Peck's Lake, Lake George, Brant Lake, Little Long Lake, and Mountain Lake
- Presented during the following conferences: Adirondack Research Consortium, Adirondack Forum on Invasive Species, and Cornell Invasive Species In-Service Workshop
- Received more than 60 "cold call" inquiries from the general public.
- Distributed two newsletters:
 - <http://adkinvasives.com/documents/ROOTSSpringSummer2010.pdf>
 - <http://adkinvasives.com/documents/ROOTSFallWinter2010.pdf>
- Developed and distributed poster to partners and Scenic Byway communities:
 - <http://adkinvasives.com/documents/APIPPposter.pdf>

- Contributed underwriting messages to North Country Public Radio. Messages were advisories for Scenic Byways travelers about invasive species (funded by the Scenic Byways Program).
- Distributed two APIPP brochures, one about the program and another about our target plants.
- Highlighted in numerous newspapers and newsletters, and featured in the following venues: Natural History Museum of the Adirondacks and Adirondack Park Agency Visitor Interpretive Centers.
- Maintained website, www.adkinvasives.com.
- Utilized PRISM E-list Listserve, hosted by Cornell cce-apipp-1@cornell.edu, to reach interested audiences.
- Prepared and distributed APIPP's 2009 Annual Report.
- Contributed information to the NYS Invasive Species Council.

Regional Planning and Coordination

- Collaborated with the Adirondack Park Agency and NYS Department of Environmental Conservation to finalize the "Inter-Agency Guidelines for Implementing Best Management Practices for the Control of Terrestrial and Aquatic Invasive Species on Forest Preserve Lands in the Adirondack Park".
- Hosted a spring planning meeting among botanical experts to re-evaluate its early detection invasive plant list.
- Continued planning for regional response teams and a regional Adirondack Watershed Stewardship Program and submitted proposals for workplans and budgets.
- Collaborated with partners of the Adirondack Watershed Stewardship Program and lake associations to support the expansion of stewards at river and lake access points: at least 11 lakes had paid lake stewards this year, and the Ausable River Association hired its first-ever river steward.
- Participated in a sub-team of the Forest Preserve Advisory Committee to plan for response to emerald ash borer or Asian longhorn beetle on forest preserve.
- Assisted the Great Sacandaga Lake community with outreach to baitshops on spiny waterflea spread prevention measures.
- Continued development of the PRISM strategic plan.
- Continued defining criteria to designate Invasive Species Prevention Zones.
- Chaired the Adirondack Park Aquatic Nuisance Species (ANS) Committee and assisted the implementation of the ANS Management Plan.
- Held two aquatic committee meetings and two joint meetings of aquatic and terrestrial committees.
- Participated on the Lake Champlain Basin Program's ANS Subcommittee.
- Collaborated with other PRISMs (Partnerships for Regional Invasive Species Management) and Office of Invasive Species Coordination staff.

2010 Research

- APIPP hosted an invasive species research and management session at that Adirondack Research Consortium in May.
- APIPP appreciates research in the region conducted by the following partners which deepens understanding of invasive species' biology, impacts and/or management.

Lake Champlain Sea Grant: Assessing freshwater angler AIS awareness in New York State (Mark Malchoff (LCSG), Tyler Smith (APIPP), and Burnie Haney (B.A.S.S.))

Paul Smith's College: Eurasian watermilfoil post-treatment monitoring on Upper Saranac Lake, supported by Upper Saranac Lake Foundation, Inc. (Dan Kelting)

Paul Smith's College: Assessing the role of micro and macro scale landscape features in determining the invasive success of Japanese knotweed in Franklin County, NY (David Patrick)

SUNY ESF: Assessing Private Landowner Knowledge of and Attitudes towards Invasive Species in the Adirondack State Park (graduate student Suzanne Conrad, SUNY ESF)

SUNY ESF: Salamanders and invasive earthworms in the Adirondack Park (graduate student Caitlin Marie Snyder and Stacy McNulty, SUNY ESF AEC)

Please contact APIPP if you or others are involved in invasive species research in the Adirondacks.

2010 Funding

- In 2010, APIPP was funded in part by the US Federal Highway Administration Scenic Byways Program (administered by the DOT and managed by the Adirondack North Country Association), and the NYS Department of Environmental Conservation via the Environmental Protect Fund, and several donors of the Adirondack Chapter of The Nature Conservancy.
- APIPP helped secure \$33,593 in funding from the US Fish and Wildlife Service to continue co-implementation of the Adirondack Park Aquatic Nuisance Species Management Plan. Funding was used to aid in the continuation of the Follensby Clear Pond Eurasian watermilfoil eradication project.
- APIPP and Paul Smith's College collaborated to secure \$324,211 in funding from the Great Lakes Restoration Initiative. Funds will be directed to Paul Smith's College in 2011 to expand its boat launch program and pilot an aquatic response team in the western Adirondacks.
- Secured \$170,000 from the Wallace Research Foundation to formalize a terrestrial response team in the Adirondack region in 2011 and to fund various priority prevention and response projects in the region.

2010 Species Distribution Alerts

Information provided by the Office of Invasive Species Coordination and NY Invasive Species Research Institute

New Introductions into New York State

- No new species introductions to the state to report.

Significant Range Expansions in New York State

- Emerald ash borer, spread to 7 counties and the number of quarantined counties reached 17.
- Spiny waterflea, had been known from Erie, Ontario and Oneida; reported in Great Sacandaga Lake in 2008 and Peck Lake in 2009, and Stuarts Bridge Reservoir and Sacandaga Lake in 2010.
- Hemlock woolly adelgid, had been known from eastern NY and urban Rochester; new to central and western NY in 2008 and at Cornell Plantations in 2009; populations first reported in central and western NY may now be expanding.
- Hemimysis (bloody red shrimp), had been known in Lake Ontario; new to Finger Lakes, Oneida Lake in 2009 and Seneca Lake in 2010 (communicated from Megan Brown, Hobart & William Smith Colleges).
- Asian clam reported for the first time in the Adirondack region / Lake Champlain drainage in Lake George (had previously been detected in 2008 in the Champlain canal in the Hudson River drainage).
- Mile-a-minute (*Persicaria perfoliata*) detected in a yard in Ithaca, NY, in 2009 (population consisted of just a couple plants growing in landscaped area of a yard – plants removed 2 years (2009, 2010) in a row).

Elevated Threat

- Didymo, identified in Battenkill (WA county) and East + West branches of Delaware in 2007, mainstem Delaware in 2008 and in Esopus Cr (Ulster Co) in 2009, and the Kayaderosseras Creek in Saratoga County in 2010.

2010 Regional and Statewide Milestones

- Hired Brendan Quirion as APIPP's permanent Terrestrial Invasive Species Project Coordinator.
- Collaborated with partners to organize and host the first Adirondack Forum on Invasive Species. Nearly 150 participants attended.
- Replicated the initial roadside and backcountry inventories conducted in 1998-1999 which laid the foundation for what is today the Adirondack Park Invasive Plant Program.
- Completed site workplans, received permits, and treated three common reed grass infestations with herbicide on forest preserve for the first time.
- Lake Luzerne received the first permit in the Adirondack Park to treat Eurasian watermilfoil with herbicide.
- Six Towns in the Adirondack region passed or considered passing local aquatic transport laws making it illegal to enter or exit waterways with aquatic species attached.
- Invasives received abundant media coverage, including forest pests, terrestrial plants, boat launch stewardship, and aquatic and terrestrial management efforts.

- Invited to and attended a roundtable with Senator Kirsten Gillibrand in Lake Placid.
- Implemented year 3 of the 5-year contract with DEC for coordination of the Adirondack PRISM.
- Continued to serve as the PRISM representative on the NYS Invasive Species Advisory Committee.
- The FY10 State Environmental Protection Fund included \$3.8 million to implement the recommendations of the Invasive Species Task Force; this was reduced to \$2.977M under DEC's EPF Cash Management Plan.
- NY PRISMs continued to meet and develop regional initiatives; PRISM Leaders participated in quarterly conference calls.
- iMap invasives rolled out use of the statewide database to partners and volunteers.
- The NY Invasive Species Council approved and delivered two invasive species prevention bills to the NYS Legislature for consideration: a Regulatory System for Non-native Invasive Species, and, Aquatic Species Transport.
- The Department of Agriculture and Markets and its contractor began development of the statewide comprehensive invasive species management plan.
- The DEC finalized contracts with the Catskill Regional Partnership for Invasive Species Management and with Cornell Cooperative Extension for statewide education and outreach.
- The DEC facilitated monthly statewide invasive species conference calls.
- The New York Invasive Species Council met quarterly and the New York Invasive Species Advisory Committee met once.
- The DEC maintained four staff in the Office of Invasive Species Coordination until September when Steve Sanford retired as Director and Eric Kasza accepted a position in the Northville Office. Leslie Surprenant was hired as the new Director and Dan Gaidasz joined the team as the new Planning Coordinator.

Resources to have on the Radar

- A new documentary video, "Playing Smart Against Invasive Species: How to Enjoy and Protect the Great Outdoors," was released this fall by the USDA Forest Service as part of the National Invasive Species Threat Campaign, with support from many organizations, <http://www.fs.fed.us/invasivespecies/prevention/playingSMART.shtml>.
- DEC's baitfish regulations are currently described online at http://www.dec.ny.gov/docs/fish_marine_pdf/baitfishofny.pdf; DEC updated its website with more aquatic invasive species information <http://www.dec.ny.gov/animals/50121.html> and terrestrial invasive species information <http://www.dec.ny.gov/animals/6986.html>.
- New York Invasive Species Clearinghouse, <http://nyis.info/>.
- New York State Invasive Species Research Institute, <http://nyisri.org/>.
- iMap invasives, <http://imapinvasives.org/>.
- Past documentaries of note: The USDA, USFS, and The Nature Conservancy, among others, produced a DVD, "Lurking in the Trees," which describes the infestation and response to Asian longhorned beetle in Worcester, MA; The American Wildlife Conservation Foundation which is active in the Capital – Mohawk PRISM produced a

forest pests CD, <http://www.vimeo.com/8981916>; At the federal level, the US Forest Service produced a video on spread prevention methods for hunters and fishermen, <http://www.fs.fed.us/invasivespecies/prevention/defending.shtml>.

2011 Objectives

- Please see APIPP's 2011 Adirondack PRISM Staff Work Plan for a complete list of objectives and tasks, <http://adkinvasives.com/publications.html>.

Highlights include:

- Formalizing new principal partner involvement in the partnership
- Completing the PRISM Strategic Plan
- Piloting Regional Response Teams
- Piloting an expanded Adirondack Watershed Stewardship Program, the region-wide spread prevention program at boat launches
- Identifying Invasive Species Prevention Zones to focus early detection and rapid response efforts

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

**Thank you for your help to protect the Adirondack region from
invasive species.**

With thanks to past and present cooperating partners!

More than 300 Volunteers!

Adirondack Association of Towns and Villages
 Adirondack Cooperative Loon Program
 Adirondack Council
 Adirondack Lake Alliance
 Adirondack Lake Survey Corporation
 Adirondack Landowners' Association
 Adirondack Mountain Club
 Adirondack Museum
 Adirondack North Country Association
 Adirondack Park Agency
 Adirondack Park Agency Visitor Interpretive Centers
 Adirondack Watershed Alliance
 All Taxa Biodiversity Inventory
 Au Sable River Association
 Bass Angler Sportsmen Society
 Becket-Chimney Corners YMCA
 Boquet River Association
 CAP-21
 Clinton and Essex County Master Gardeners
 Cornell Cooperative Extension County Offices
 (Clinton, Essex, Hamilton, St. Lawrence and Warren)
 Cornell University
 Darrin Fresh Water Institute
 Department of Agriculture and Markets
 Department of Environmental Conservation
 Department of Transportation
 Essex County Garden Club
 Federal Highways Administration
 Garden Club of America
 Great Sacandaga Lake Advisory Committee
 Hamilton College
 Hamilton County Soil and Water Conservation
 District
 Hudson River Black River Regulation District
 Lake Champlain Basin Program
 Lake Champlain Sea Grant
 Lake George Land Conservancy
 Lake George Park Commission
 Lake George Watershed Conference
 Lake Placid/Essex County Visitors Bureau
 Massawepie Scout Camps
 National Grid
 Natural History Museum of the Adirondacks
 NYS Department of State
 NYS Invasive Species Council
 NYS Invasive Species Advisory Committee
 North Country School and Camp Treetops
 Paul Smith's College Adirondack Watershed Institute
 Protect!
 Regional Inlet Invasive Plant Program
 Student Conservation Association
 St. Regis Mohawk Tribe

SUNY ESF Wanakena, Newcomb
 SUNY Plattsburgh
 The Nature Conservancy
 Town of Inlet
 Town of Webb, DPW
 Trout Unlimited
 United State Department of Agriculture,APHIS/PPQ
 Village of Saranac Lake
 Warren County Soil and Water Conservation District
 Wildlife Conservation Society

Shoreowner groups including, but not limited to

6th and 7th Lakes Association
 Belmont Mountain View Indian Lakes Foundation
 Big Moose Property Owners' Association
 Big Wolf Lake Association
 Blue Mountain Lake Association
 Brandreth Lake Association
 Brant Lake Association
 Brantingham Lake Association
 Canada Lake Association
 Chateaugay Lakes Association
 Chazy Lake
 Cranberry Lake Boat Club
 East Caroga Lake Protective Association
 East Schroon Lake Association
 Friends Lake Association
 Fulton Chain of Lakes Association
 Great Sacandaga Lake Association
 Gull Pond Association
 Hadlock Lake Association
 Horseshoe Pond/Deer River Flow Association
 Indian Lake Association
 Jones Pond Association
 Lake Colby Association
 Lake George Association
 Lake Placid Shoreowners Association
 Lake Pleasant Sacandaga Association
 Lake Luzerne
 Lewis Creek Association
 Little Long Lake Association
 Livingston Lake Association
 Long Lake Association
 Long Pond Association
 Loon Lake Association
 Lower Saranac Lake Association
 Minerva Lake
 Mirror Lake Association
 Mt Arab Eagle Crag Association
 Mt View and Indian Lakes Association
 Osgood Pond Association
 Paradox Lake Association
 Piseco Lake Association

Rainbow Lake Association
Raquette Lake Property Owners' Association
Schroon Lake Association
Silver Lake Association
St. Regis Chain of Lakes Association
Star Lake Protective Association
Spy Lake Association
Upper Saranac Lake Foundation
Upper Saranac Lake Association
West Caroga Lake Association
And More!

Table 1. APIPP lakes surveyed in 2010 and aquatic invasive plants observed. Alphabetized by Lake Name. EWM=Eurasian Watermilfoil, VLM=Variable Leaf Milfoil, CLPW=Curly Leaf Pondweed, COFL=Asian Clam, SPWF=Spiny Waterflea Please refer to website for detailed plant survey reports for lakes listed below, and lakes surveyed to-date. <http://www.adkinvasives.com>

Lake	Town	County	Species
13th Lake	North River	Warren	
6th Lake - Fulton Chain	Inlet	Hamilton	EWM
6th Lake - Fulton Chain	Inlet	Hamilton	EWM, VLM
7th Lake - Fulton Chain	Inlet	Hamilton	EWM
7th Lake - Fulton Chain	Inlet	Hamilton	EWM, VLM
8th Lake - Fulton Chain	Inlet	Hamilton	
8th Lake Outlet	Inlet	Hamilton	VLM
Abanakee Lake	Indian Lake	Hamilton	
Barnes Pond	Minerva	Essex	
Barnum Pond	Paul Smiths	Franklin	
Bass Lake	North Hudson	Essex	
Big Wolf Lake	Altamont	Franklin	
Black Pond	Brighton	Franklin	
Brantingham Lake	Greig	Lewis	
Burnt Pond	Brant Lake	Warren	
Butternut Pond	Keeseville	Clinton	EWM
Canada lake	Caroga	Fulton	
Chases Lake	Watson	Lewis	
Chateaugay Lake (Lower)	Ellenberg	Clinton	EWM, CLPW
Chateaugay Narrows	Ellenberg	Clinton	EWM, CLPW
Clear Pond	Duane	Franklin	
Cranberry Lake	Clifton	St. Lawrence	VLM
Crane Mountain Pond	Johnsburg	Warren	
Eagle Crag	Piercefield	St. Lawrence	
Eagle Lake	Indian Lake	Hamilton	
Eagle Pond	Duane	Franklin	
East Pine Pond	Santa Clara	Franklin	
Echo Lake	Lake Pleasant	Hamilton	
Fish Pond	Santa Clara	Franklin	
Follensby Clear Pond	Santa Clara	Franklin	EWM
Follensby Pond	Tupper Lake	Franklin	
Forestport Reservoir	Forestport	Oneida	EWM, VLM
Garnet lake	Johnsburg	Warren	
Green Pond	Santa Clara	Franklin	
Gull Pond	Schroon	Essex	
Gull Pond	Piercefield	St. Lawrence	
Hoel Pond	Santa Clara	Franklin	
Horseshoe Lake	Piercefield	St. Lawrence	

Indian Lake	Indian Lake	Hamilton	
Jones Pond	Rainbow Lake	Franklin	
Kit Fox Pond	Santa Clara	Franklin	
Lake Clear	Harriestown	Franklin	
Lake Durant	Blue Mtn Lake	Hamilton	VLM
Lake George	Bolton	Warren	EWM, CLPW
Lake George	Lake George	Warren	COFL
Lake Kushaqua	Franklin	Franklin	
Lake Lila	Long Lake	Hamilton	
Lake Placid	North Elba	Franklin	VLM
Lake Pleasant	Lake Pleasant	Hamilton	
Lake Titus	Malone	Franklin	EWM
Lewey Lake	Indian Lake	Hamilton	
Little Clear Pond	Santa Clara	Franklin	
Little Long Lake	Woodgate	Oneida	
Livingston Lake	Stony Brook	Warren	
Lizard Pond	Johnsburg	Warren	
Long Lake	Long Lake	Hamilton	VLM
Long Pond	Santa Clara	Franklin	
Loon lake	St. Regis	Franklin	
Lower Browns Tract Pond	Long Lake	Hamilton	
Lower Saranac Lake	Harriestown	Franklin	CLPW
Marvin Pond	Brighton	Franklin	
Mill Pond	Elizabethtown	Essex	
Moose Pond	St. Armand	Essex	
Morehouse Lake	Morehouse	Hamilton	
Mountain Lake	Gloversville	Fulton	
Mt. Arab Lake	Piercefield	St. Lawrence	
Mtn Pond	Paul Smiths	Franklin	
Murray	Elizabethtown	Essex	
Newport	Elizabethtown	Essex	
Osgood Lake	Brighton	Franklin	
Oxbow Lake	Lake Pleasant	Hamilton	
Paradox Lake	Schroon	Essex	CLPW, EWM
Peck's Lake	Gloversville	Fulton	SPWF
Piseco Lake	Arietta	Hamilton	
Rainbow Lake	Franklin	Franklin	
Raquette Lake	Long Lake	Hamilton	VLM
Rich Lake	Newcomb	Essex	
Rock Pond	Ticonderoga	Essex	
Rock Pond + Outlet	Indian Lake	Hamilton	VLM
Rollins Pond	Santa Clara	Franklin	
Russett	Elizabethtown	Essex	
Sacandaga Lake	Lake Pleasant	Hamilton	
Sacandaga Lake	Speculator	Hamilton	SPWF

Sagamore Lake	Long Lake	Hamilton	
Schroon Lake	Schroon	Essex	EWM
Sprague Pond	Indian Lake	Hamilton	
Stuarts Bridge Reservoir	Hadley	Saratoga	SPWF
Tanaher	Elizabethtown	Essex	
Thayer Lake	Long Lake/Webb	Hamilton	
Tripp Lake	Chestertown	Warren	
Upper Browns Tract Pond	Long Lake	Hamilton	
Utowana Lake	Indian Lake	Hamilton	
Whey Pond	Santa Clara	Franklin	
Whitaker Lake	Lake Pleasant	Hamilton	

* *Myriophyllum heterophyllum* (Variable-leaf watermilfoil). Though native to the U.S., *Myriophyllum heterophyllum* is considered an exotic invasive plant in New England. In 2009, it was elevated from a ‘watched species’ to an invasive species in the Adirondack region when it was detected in two waters where it was previously not known to exist.

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
Chazy 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 Durant	Variable-leaf watermilfoil
Lake Flower	Eurasian watermilfoil, curlyleaf pondweed
Little Square Pond	Eurasian watermilfoil
Long Lake, Long Lake	Variable-leaf watermilfoil
Long Pond, Willsboro	Eurasian watermilfoil
Meacham Lake	Eurasian watermilfoil
Minerva Lake	Eurasian watermilfoil
Putnam Pond	Eurasian watermilfoil
Raquette Lake	Variable-leaf watermilfoil
Sixth Lake of Fulton Chain	Eurasian watermilfoil
Taylor Pond	Eurasian watermilfoil
Union Falls Pond	Eurasian watermilfoil
Stark Reservoir	Variable-leaf watermilfoil
Carry Falls Reservoir	Variable-leaf watermilfoil

Figure 1. Participants at training sessions for aquatic plant identification and monitoring techniques, 2002-2010.

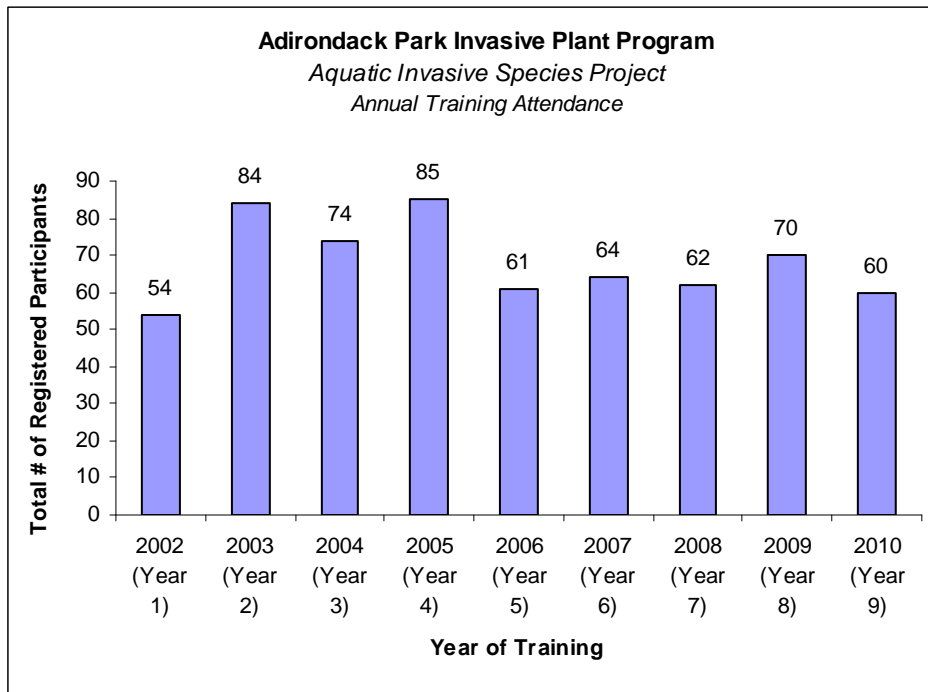


Figure 2. Number of lakes monitored and AIPPP volunteers, 2002-2010.

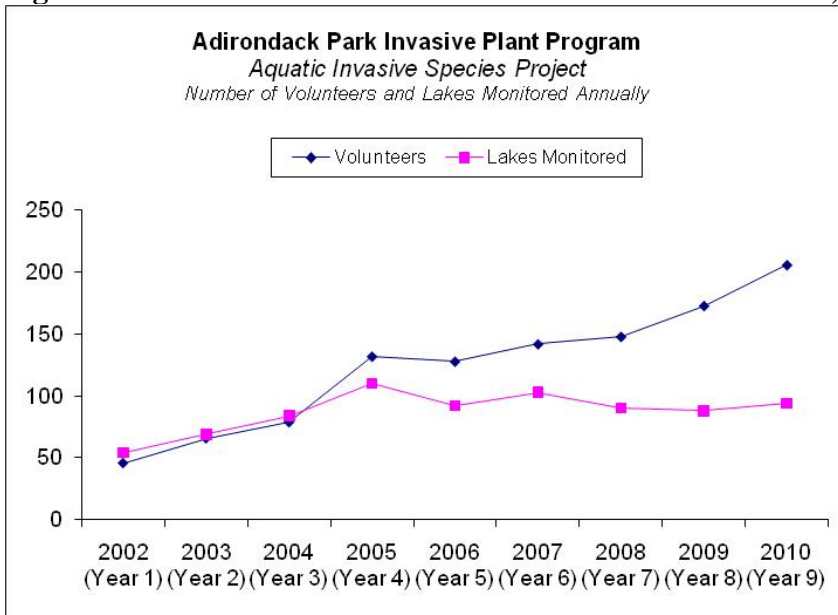


Figure 3. Distribution of lakes monitored by AIPPP volunteers, 2002-2010.

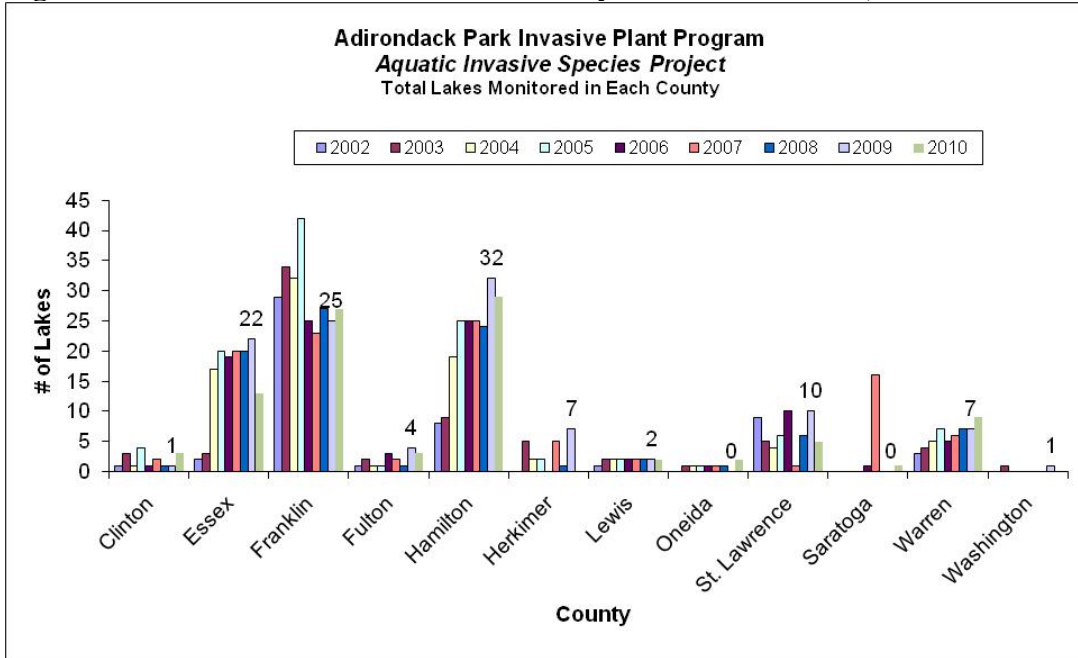


Figure 4. Number of new and returning volunteers by year.

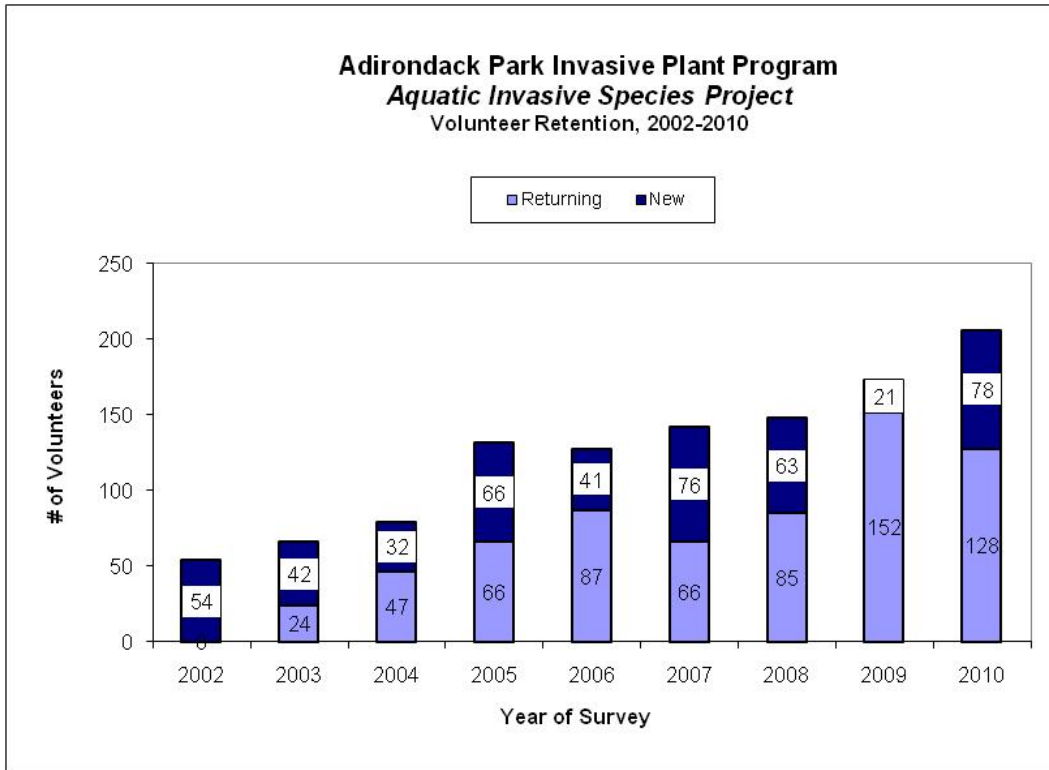
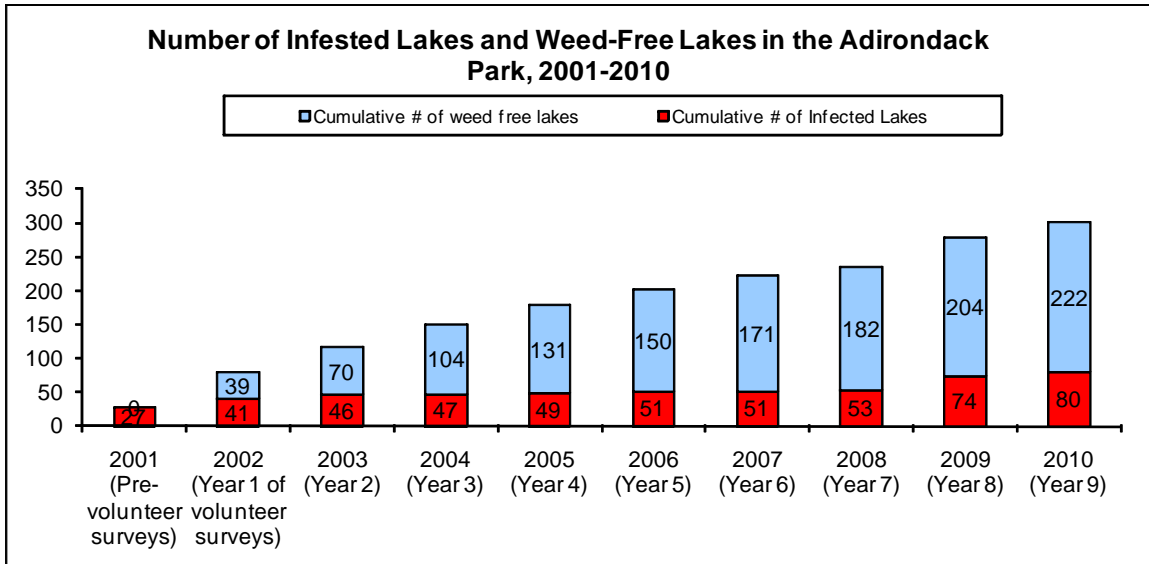
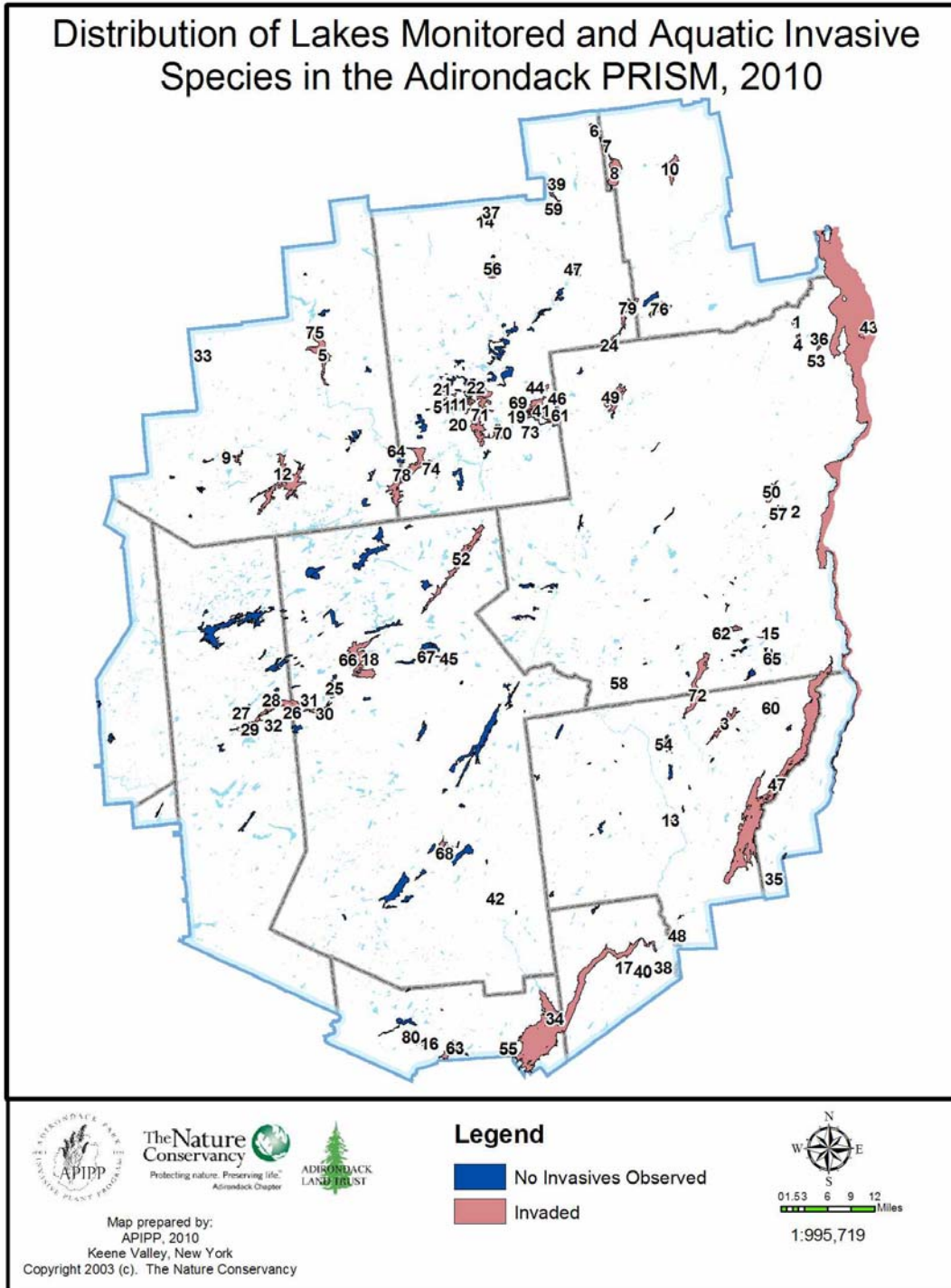


Figure 5. Cumulative number of infested lakes and lakes monitored by APIPP volunteers where no invasive plants were detected. The spike between 2001 and 2002 is accounted for by the inception of a standardized regional volunteer monitoring program. The spike between 2008 and 2009 is accounted for by the inclusion of variable-leaf watermilfoil as an invasive species, rather than as a watched species.



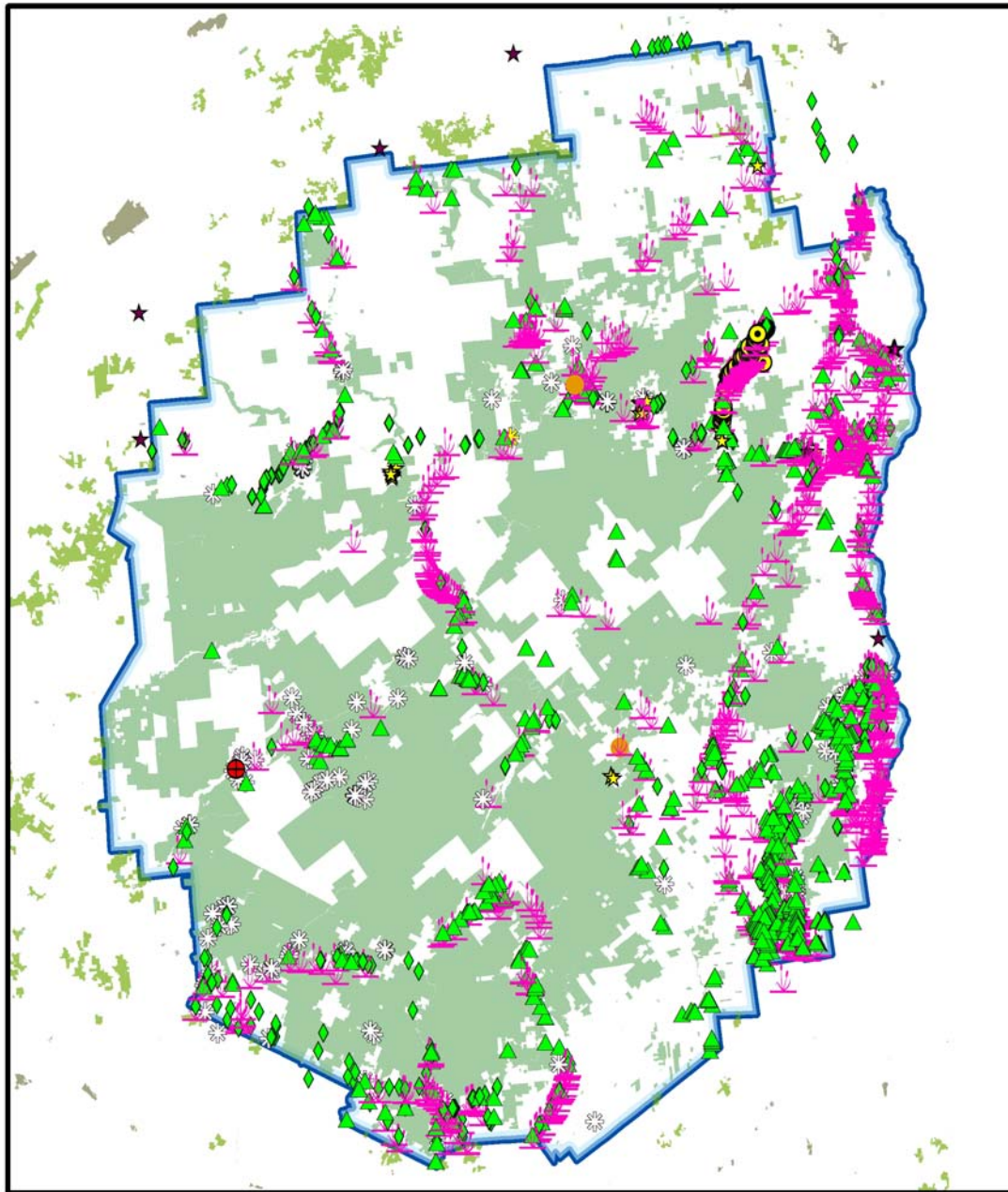
Map 1. The distribution of lakes within the Adirondack PRISM that contain aquatic invasive species.

**Please refer to the table below to find lakes that correspond to numbers on the map.*



		Key	Fan - Fanwort			WC -Water Chestnut						
			None - None Observed			ZM-Zebra Mussel	BN-Brittle Naiad					
			EWM -Eurasian Watermilfoil			EF-European Frogbit						
			VLM - Variable Leaf Milfoil			SN - Southern Naiad						
			CLP - Curlyleaf Pondweed			SWF - Spiny Waterflea						
Lake Name (Alphabetized)	#	None	EWM	VLM	CLP	WC	ZM	EF	Fan	SN	SWF	BN
Augur Lake	1		X									
Bartlett Pond	2		X									
Brant Lake	3		X		X							
Butternut Pond	4											
Carry Falls Reservoir	5			X								
Chateaugay Lake (Lower)	6		X									
Chateaugay Lake (Narrows)	7											
Chateaugay Lake (Upper)	8		X									
Chaumont Pond	9			X								
Chazy Lake	10		X									
Copperas Pond	11		X									
Cranberry Lake	12			X								
Daggett Lake	13		X									
Deer River Flow	14		X									
Eagle Lake	15		X									
East Caroga Lake	16		X									
Effner Lake	17								X			
Eldon Lake	18			X								
First Pond, Saranac River	19		X									
Fish Creek Pond	20		X									
Floodwood Pond	21		X									
Follensby Clear Pond	22		X									
Forestport Reservoir	23		X	X								
Franklin Falls Flow	24		X		X							
Fulton Chain (Eighth Lake)	25			X								
Fulton Chain (Fifth Lake)	26		X	X								
Fulton Chain (First Lake)	27			X								
Fulton Chain (Fourth Lake)	28			X								
Fulton Chain (Second Lake)	29		X	X								
Fulton Chain (Seventh Lake)	30		X									
Fulton Chain (Sixth Lake)	31		X									
Fulton Chain (Third Lake)	32			X								
Grasse River at Lampson Falls	33							X				
Great Sacandaga Lake	34		X								X	
Hadlock Pond	35		X		X	X						X
Highlands Forge Lake	36		X									
Horseshoe Pond (Franklin - Duane)	37		X									
Hunt Lake	38								X			
Indian Lake (Franklin)	39		X						X			
Jenny Lake	40								X			
Kiwassa Lake	41		X									
Lake Algonquin	42		X									
Lake Champlain	43		X	X	X	X	X					
Lake Colby	44		X									
Lake Durant	45			X								
Lake Flower	46		X	X	X							
Lake George	47		X		X		X					
Lake Luzerne	48		X		X							

Map 2. The distribution of target terrestrial invasive species occurrences within the Adirondack PRISM. *occurrences are only those recorded in our database; absence data does not necessarily represent that species are not present



**Adirondack Park Invasive Plant Program
Terrestrial Invasive Species 2010 Distribution Map**

Species

- ★ Black Swallowwort
- ◆ Common Reed
- Cup Plant
- ☼ Garlic Mustard
- Giant Hogweed
- ▲ Japanese Knotweed
- ☼ Mugwort
- Oriental Bittersweet
- ☼ Purple Loosestrife
- ☼ Wall Lettuce
- ★ Yellow Iris

- State Land
- Forest Preserve
- State Forest
- Buffer of Park
- Park Boundary

The Nature Conservancy
Protecting nature. Preserving life.
Adirondack Chapter



Map 3. The distribution of 44 sites of *Phragmites australis*, common reed grass, from Saranac Lake to the western boundary of the Adirondack Park. In 1998-99, surveys showed only three sites reported.

