

2011 Annual Report

Prepared by

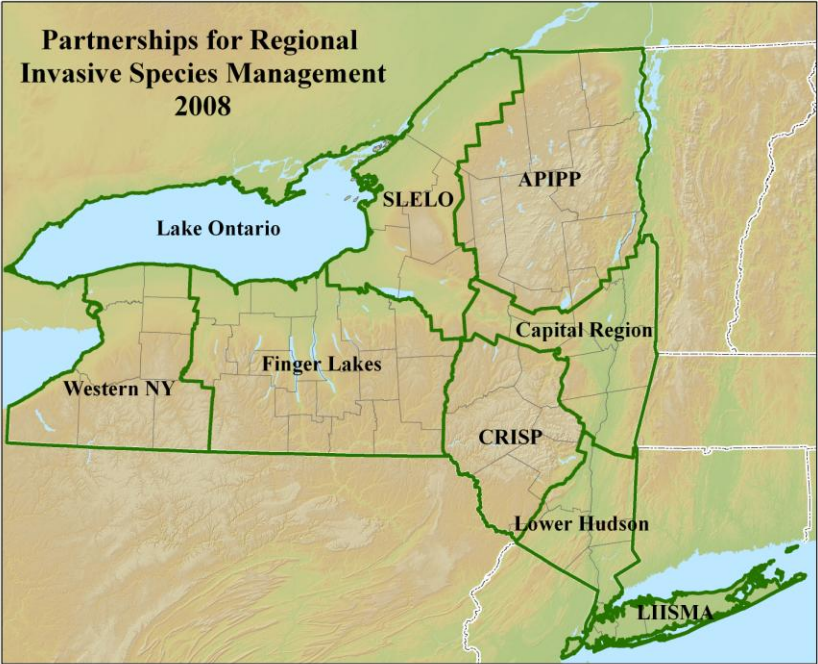
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*Adirondack Park Invasive Plant Program
the Adirondack Partnership for Regional Invasive Species Management*

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

The Adirondack Park Invasive Plant Program (APIPP) serves as the Adirondack Partnership for Regional Invasive Species Management, one of eight regional partnerships across New York, and is a partnership program among the Adirondack Chapter of The Nature Conservancy, New York State Department of Environmental Conservation, New York State Department of Transportation, New York State Adirondack Park Agency, more than 30 cooperating organizations, and more than 300 volunteers. We thank all of our partners and collaborators who participate in the program and share their ideas, time, and resources to protect the Adirondacks from invasive species.

APIPP operates under contract with the NYS Department of Environmental Conservation and is funded through the Environmental Protection Fund.



Year in Review

And what a year it was! Thanks to the many champions across the region, we are putting into place safeguards against the rampant spread of invasive species. With your help, we reached many milestones this year. Here is a snapshot of highlights:

APIPP and partners leveraged unprecedented funding levels that enabled the implementation of key regional and local efforts. We piloted the first ever Terrestrial Response Team - a seasonal 4-person crew dedicated to the daily detection and management of priority plants across the region. Paul Smith's College launched the first Aquatic Response Team that conducted surveys and control efforts in waters in the western Adirondacks. And, coverage by boat launch and river stewards reached an all-time high – nearly 30 stewards across the region reminded boaters and anglers about “Check, Clean, Dry” practices for watercraft and gear.

In March, we thanked Tyler Smith and wished him well as he stepped down from serving as APIPP's Aquatic Invasive Species Project Coordinator, and, in September, we welcomed Meghan Johnstone into the position.

APIPP was also deeply honored to receive the Adirondack Council's Conservationist of the Year Award, which recognized the contributions of many partners to protect the resources of the region from the harmful impacts of invasives.

We coordinated our 10th volunteer monitoring season for aquatic invasive plants, formalized a long-term monitoring plan for terrestrial infestations to evaluate management and restoration success over time, and designed new educational materials for landowners to provide them with guidance about identification and management of invasives.

Community-based initiatives also gained traction in the region: the Regional Inlet Invasive Plant Program expanded knotweed inventory and treatments to 14 communities; Raquette Lake Property Owners installed an innovative spread technology at their boat launch to remind boaters about best cleaning practices; and, partners in the Champlain Basin received more than \$200,000 to implement local priority invasive species projects.

The Lake George Asian Clam Rapid Response Task Force undertook the largest response effort for a new invasive species to the region. And, elected officials voiced their support for prevention by passing several village, town, and countywide local aquatic species transport laws.

Each of these actions, and many others too, helped protect the region in 2011. Read on for more information about the great work underway!

The APIPP Team



Hilary Smith reviews aquatic plant identification with Denise Griffin and other volunteers at APIPP's annual aquatic plant training session.



Brendan Quirion leads Ramah Camp volunteers from Long Island to remove invasive shrubs at trailheads.



Meghan Johnstone talks with kids and parents at Adirondack Waterfest about invasive species.

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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 79 waterways have aquatic invasive plants and animals in the Adirondack Park; and, in ten seasons, more than 531 APIPP Invasive Plant Volunteers surveyed 273 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 database to better track invasive species occurrences and enable improved analysis of distribution and trends over time. The electronic database utilizes field computers with global positioning systems (GPS), geographic information systems (GIS), and the weed information management system (WIMS). A total of 553 terrestrial invasive species occurrences have been documented using this new system (Map 2). 386 of those 553 occurrences also contain spatial assessments that total 44.98 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 2011 through the Aquatic Invasive Species Project and the Terrestrial Invasive Species Project with the assistance of partner organizations, resident groups, and volunteers:

2011 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) and Scott Kishbaugh, New York State Department of Environmental Conservation (NYS DEC). Thank you for making these sessions a success!
- Trained 67 participants in 2011 (Fig. 1): 37 participants in Bolting Landing and 30 in Wanakena.
- Invited by Hadlock Lake Association to lead a training session.
- Distributed training manuals and secondary education resources for volunteer use.

Terrestrial

- Trained Terrestrial Regional Response Team crew members, DEC's Student Conservation Association/Americorp team members, and APIPP's Natural Resource Protection Steward.
- Trained DEC Operations staff at forest preserve campgrounds in invasive plant ID and best management practices (BMPs) during the daily course of work.
- Trained 30 youth camp volunteers who directly assisted APIPP with invasive plant management at DEC trailheads.
- Trained 40 DOT Region 1 pesticide applicators in proper identification and treatment of Japanese knotweed and common reed.

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. In 2010, didymo, also known as "Rock Snot," was discovered in the Kayaderoseras Creek near the PRISM boundary in Saratoga County, NY. In spring 2011, didymo was found in Roundout Creek (Ulster Co.). This species has continued to move north over the past four 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

- No further spread of spiny waterflea (*Bythotrephes cederstroemi*) was reported in the Adirondack region. The only known populations in the PRISM are in Great Sacandaga Lake, Pecks Lake, Stuarts Bridge Reservoir, and Sacandaga Lake.
- In August 2010, Asian clam (*Corbicula fluminea*) was discovered in Lake George. This detection was the first reported occurrence of this species within the PRISM. Several additional populations were discovered in the lake in 2011. Current information about response efforts underway can be found online at <http://www.stoptheasianclam.info>.
- Chinese mystery snail was detected in Lake George during Asian clam control efforts. The snails are also reported elsewhere in the Lake Champlain Basin and NYS, but distribution data is somewhat limited. Some sources list this species as invasive but others list them as non-native. They are large snails that reproduce quickly.
- APIPP aims to expand its monitoring network beyond plants to include other AIS.

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 including 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 swine. Further information about impacts of non-native earthworms is also being investigated in cooperation with interested academic institutions.

“Watched Species” – Potential Plant Threats

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

- Himalayan balsam (*Impatiens glandulifera*) is not native to the U.S. and is 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.
<http://nbii-nin.ciesin.columbia.edu/ipane/icat/browse.do?specieId=58>
- Wild caraway (*Carum carvi*) is not native to the U.S. and colonizes roadsides and disturbed areas and is reported as invasive in some regions of Canada. The NY Flora Atlas shows distribution across the parts of the state,
<http://newyork.plantatlas.usf.edu/Plant.aspx?id=6641>. An occurrence was reported in 2011 on the Memorial Highway to Whiteface Mountain. Additional information is required to determine its invasibility in the region.

2011 Monitoring

Aquatic Plants – 10th Season Summary

- Coordinated 10th season of 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 tripled (Fig. 2).
- In 2011, 177 volunteer monitors and partner staff surveyed 96 Adirondack waterways (Table 1, Fig. 3).
- Accrued more than 620 volunteer monitoring hours.
- Volunteer recruitment and retention remains high (Fig. 4). Since 2002, the program has retained an annual average of 74 core volunteers and recruited an annual average of 53 new volunteers.

New detections in 2011

- **European frogbit** – private pond near Jay
- **Curly-leaf pondweed** – Schroon Lake
- **Variable-leaf watermilfoil** – Southern Lake Champlain
- **Chinese mystery snail** – Lake George

Terrestrial Plants

- Inventoried, managed, and mapped garlic mustard at 15 high priority DEC land-based campgrounds in the park, in collaboration with the Rapid Response Team.
- Accrued approximately 9,000 miles conducting early detection/rapid response activities, in collaboration with the Rapid Response Team.
- Surveyed, monitored, and mapped some or all of the following NYS DOT right of ways: State Routes 3, 30, 73, 86, 8, 9, 9N, 28N, 28, 22, 56, and I-87 Adirondack Northway, in collaboration with the Rapid Response Team.
- Monitored and mapped roads adjacent to the following NYS DEC Wilderness areas: McKenzie Mountain, Hoffman Notch, High Peaks, Round Lake, Five Ponds, Pigeon Lake, Ha De Ron Dah, Blue Ridge, West Canada Lake, Siamese Ponds, Silver Lake, Sentinel Range, Giant Mountain, and Dix Mountain, in collaboration with the Rapid Response Team.
- Monitored and mapped roads adjacent to the following NYS DEC Wild Forest units: Saranac Lake, Taylor Pond, Wilmington, Debar Mountain, Horseshoe Lake, Cranberry Lake, Sargent Ponds, Blue Mountain, Vanderwhacker Mountain, Moose River Plains, Black River, Jessup River, Ferris Lake, Wilcox Lake, Aldrich Pond, Raquette River, and Grasse River, in collaboration with the Rapid Response Team.
- Contracted with Ray Curran to conduct post-treatment monitoring on three *Phragmites* infestations on forest preserve that received a second year of treatment. Began long-term pre- and post-treatment monitoring at three additional priority *Phragmites* sites.

Terrestrial Non-Plant

- Offered assistance as needed to state and federal partners for forest pest surveillance.
- Participated with DEC in trapping and monitoring feral swine population in Clinton County in fall/winter 2011.

2011 Rapid Response

Aquatic Species

- The Lake Placid Shoreowners implemented year 3 of an eradication program for variable leaf milfoil. In 2009, over 2 tons of milfoil were removed from the lake. In 2010, fewer than one bag (<20lbs) of milfoil was removed. The 2011 report was unavailable during the writing of this report thus results are forthcoming; however, a shoreowner detected at least one satellite population of several plants in 2011 which were handpulled.
- The Paradox Lake Association implemented year 4 of an eradication program for Eurasian watermilfoil (EWM). Hand-harvesting has been taking place under the lead of the Paradox Lake lake manager, Steve LaMere. Some of the EWM plants harvested over the past several years have shown no additional growth, but overall the spread is still

quite aggressive. A total of 271 EWM and 674 curly-leaf pondweed plants were taken out of Paradox Lake in 2011. This represents an overall 72.7 % and 64.1 % decrease in the number of EWM and CLP plants harvested, respectively, from 2010 to 2011. The Paradox Lake Association has many individuals surveying the lake for aquatic invasive species and has implemented a lake stewardship program at the boat launch for the second summer in a row.

- In 2010, partners in Lake George established the Asian Clam Rapid Response Task Force (LGACRRTF) to institute a rapid response for Asian clam. Over the winter of 2010/11 the LGACRRTF organized a containment and eradication plan for the Asian clam which was planned for the beginning of the 2011 season. In April of 2011, over 800 benthic barriers were installed on the lake bottom and weighed down with rebar to smother the clams. While the project was still underway during the summer, additional locations of clams were found farther up the lake. The LGACRRTF and its partners undertook an extensive lake-wide survey, and as of the end of 2011 there were a total of five known locations of Asian clams in the lake (one of them could be considered an outlier to the Village site). Four of the five sites were treated in the fall of 2011 and the fifth site will be treated in 2012. Over \$650,000 has been raised to date for the project and additional funding is being sought for 2012.
- The Paul Smith's College Adirondack Watershed Institute was awarded funds through the Great Lakes Restoration Initiative to support the region's first ever Aquatic Response Team. Work was limited to the western Adirondacks within the Lake Ontario watershed. The team managed milfoil in the Fulton Chain and Follensby Clear Pond and also conducted early detection surveys in Cranberry Lake. Response efforts will continue in 2012 in the Fulton Chain and surveys will be expanded to other lakes in the contract area based on input from APIPP. The program has funding through at least 2013.

Terrestrial Plants

- APIPP was awarded funds to support the region's first ever Terrestrial Regional Response Team. The four-member crew conducted early detection surveys in high priority areas across the region and treated priority and new infestations: the program has funding for 2012.
- Validated and began formulating best management strategies for the first occurrences of pale swallow-wort (SW Adks) and wild caraway (Whiteface) within the park, and for four new occurrences of giant hogweed in Essex County and Tupper Lake (new occurrences of hogweed had not been reported in the park since 2006.)

2011 Management

Aquatic

- Implemented year 5 of the European frog-bit eradication project on the Grasse River near Lampson Falls. The initial infestation was 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 fewer than two buckets were harvested in 2009. In 2010, fewer than 1.5 buckets of plant material were harvested. In 2011, just over one bucket of plant material was harvested in just a few hours. 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 4 of Eurasian watermilfoil management in Follensby Clear Pond. In year 1, divers removed 479 bags (10,000lbs.) 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 (2,000lbs) of milfoil over 76 hours. In year 3 (2010), divers removed 30 bags (600lbs) of milfoil over 40 hours. In year 4 (2011), divers removed 400lbs. The Eurasian watermilfoil population has been reduced substantially over 4 years of effort, but a persistent low level population remains.

Terrestrial

- APIPP's Terrestrial Coordinator, Brendan Quirion, became a fully certified NYS category 3a pesticide applicator after completing one year of applied experience and 12 additional course credit hours.
- In collaboration with the Rapid Response Team and Student Conservation Association, 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, forest preserve, and DEC campgrounds.
- Worked with 15 Student Conservation Association members to manually manage garlic mustard, yellow iris, and purple loosestrife infestations.
- In collaboration with the Rapid Response Team, managed 284 sites totaling approximately 20 acres. Conducted herbicide treatments on 195 of those high priority sites throughout the field season totaling approximately 18 infested acres. 183 of these sites were extending off of or along DOT right of ways. 21 sites were treated that were extending onto forest preserve. Approximately 14 gallons of herbicide were applied throughout the field season (approx. 9 oz per site).
- Implemented manual management controls within the following NYS DEC forest preserve units: Moose River Plains, Sargent Ponds, Blue Mountain, High Peaks, Saranac Lakes, Taylor Pond, Siamese Ponds, Ferris Lake, Cranberry Lake, Sentinel Range Wilderness, and St. Regis Canoe Area.
- Worked with 30 volunteers from Beckett-Chimney Corners YMCA group and Ramah youth camp to manage invasive shrubs at high priority DEC trailheads in the high peaks region.

Distribution Analysis

Aquatic Plants

- The number of "weed-free" lakes surveyed by APIPP volunteers is nearly three times that of infested lakes (Fig. 5).
- 2010 was the first year aquatic data were recorded in a GIS (Geographic Information System), which was updated with 2011 data. 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:
 - 40 of the 47 NYS DEC Forest Preserve Units have one or more occurrences of invasive plants.
 - As of 2010, 31 of 36 land-based forest preserve campgrounds have invasive plants. The DEC's Operations Invasive Species Specialist was not funded in 2011, so no updated reporting is available.
 - As of 2011, approximately 1,240 sites are documented within the jurisdictional right-of-ways of NYS DOT; however, the Terrestrial Project is currently working on re-mapping these right-of-ways using new electronic distribution analysis tools. Because of this, many of these sites contain duplicate data from the previous paper-based database; therefore, the number of sites actually present is significantly less than 1,240.
 - Although the total documented number of invasive species occurrences in the Adirondacks is over 3,000 sites, most of these infestations are extremely small, which increases the likelihood of management success (Figs. 6, 7). Eradication of infestations < 1 ha (2.47 acres) in gross area (area over which the weed is distributed) were shown to have the highest likelihood of success in California (Rejmánek and Pitcairn 2002). The majority of common reed grass and Japanese knotweed infestations in the park are less than one tenth of an acre in size. Because of this, APIPP and partners have an extremely high likelihood of success in controlling the majority of priority invasive species infestations within the core area of the Adirondacks.

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

- Since 2002, APIPP maintained an online database which served as a record of surveyed waters, the distribution and abundance of aquatic invasive plants, and management activities on individual waterbodies in the region. Data and survey maps are visible via APIPP's website at <http://www.adkinvasives.com/Aquatic/Maps/Maps.asp>. The program is currently transitioning from using its online database to instead using the iMapInvasives online statewide database.

- Updated the statewide invasive species database, iMapInvasives (imapinvasives.org), with information from aquatic plant surveys conducted by APIPP volunteers.
- Updated APIPP's GIS database with aquatic volunteer monitoring data.

Terrestrial Plants

- The Terrestrial Project continued its transition from paper-based data records to using electronic devices to document the spread of invasive species. APIPP's Weed Information Management System (WIMS) database was updated to include all 356 occurrences from the 2011 field season. The incorporation of the old paper based records into the new system is currently being evaluated. The new electronic system allows for the querying of results, provides 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 2011 that included both the Terrestrial Invasive Species Project and the Aquatic Invasive Species Project.

APIPP Seasonal Stewardship

- Offered two part-time education and outreach positions in the spring: Alissa Rafferty (Alissa designed invasive plant door-hanger notification cards, and facilitated the design of an invasive species prevention postcard and invasive animal brochure) and Gus Goodwin (Gus organized Emerald Ash Borer Awareness activities and ash-tagging in communities throughout the region).
- Offered one seasonal stewardship position: Meghan Johnstone, APIPP's Natural Resource Protection Steward (participated in numerous field activities).
- Coordinated with DEC's Student Conservation Association team members who assisted invasive plant management during three weeks of the summer.

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

- iMap Training sessions for observations, treatments, and surveys
- Paul Smith's College Watershed Stewardship Program (WSP)
- Paul Smith's College Volunteer Lake Steward Program (VLS)
- Hadlock Lake Association
- Lake George Association Aquatic Invasive Animal Training
- NYSDOT Region 1

2011 APIPP Education and Outreach efforts

- Participated in more than 28 community events and workshops.
- Reached more than 1,083 individuals through presentations by APIPP staff.

- Launched and maintained an APIPP Activity Blog, <http://adk-invasives.blogspot.com/> .
- Submitted bi-weekly invasive species columns from May-October to the Adirondack Daily Enterprise and the Adirondack Express, <http://www.adirondackdailyenterprise.com/page/category.detail/nav/5144/Eye-on-Invasives--by-Hilary-Smith.html> .
- Celebrated the 6th Annual Adirondack Invasive Species Awareness Week, <http://adkinvasives.com/InvasiveSpeciesAwarenessWeek.html> .
- Collaborated with specific groups on invasive species awareness projects in the following ways:
 - Advised partners on the design and distribution of a new invasive species alert card, <http://adirondackscenicbyways.org/travel-guides.html#invasive> .
 - Collaborated with NYS DEC, USDA, Cornell, and other partners to participate in an emerald ash borer ash tagging project.
 - Reached out to local government groups and staffed an information table during Local Government Day.
 - Participated in the Lake Champlain Basin Program Technical Advisory Committee's Watershed Steward Summit.
 - Collaborated with the Garden Club of America's Adirondack Chapter to feature a variety of invasive plant and native plant talks at their annual meeting. The group also identified several awareness raising initiatives to take forward in 2012.
 - Participated in the 90 Miler by providing educational materials and conducting voluntary inspections at key portages.
 - Coordinated an ad-hoc Adirondack forest pest outreach committee in spring 2011, and started participating on a monthly NYS forest pest outreach committee in fall 2011.
 - Advised the Adirondack Landowners Association about options for addressing invasive species. They identified invasive species as a priority and incorporated informational rack cards at county clerk offices to distribute when licenses are purchased, <http://www.adklandowners.org/stewardship.html> .
 - Contributed invasive species information to the Adirondack Almanac and the Adirondack Daily Enterprise's publication, "Embark." This is a joint effort with the Adirondack Outdoors group that includes DEC, Wildlife Conservation Society, Adirondack Mountain Club, and the Adirondack Forest Preserve Education Partnership.
- Presented to groups at the following schools: Paul Smith's College.
- Presented to 4th and 5th graders at the South Franklin County 4H Conservation Field Day.
- Offered AIS presentations to the following lake associations: Otter Lake Association, Big Wolf Lake Association.
- Presented model initiatives during the following conferences: USFWS Northeastern Regional Conference, Northeast Natural History Conference and iMap Database Symposium, NYS Wetlands Forum, Adirondack Research Consortium, NYS Association of Counties Annual Conference, NYS Association of Landscape Architects and American Planners Association, and Cornell Invasive Species In-Service Workshop.
- Distributed two newsletters:
 - <http://adkinvasives.com/documents/ROOTSSpringSummer2011.pdf> ,
 - <http://adkinvasives.com/documents/ROOTSFallWinter2011.pdf>

- Designed prevention postcard:
http://adkinvasives.com/documents/Invasivespeciespostcard_hires.pdf
- Designed invasive animal brochure:
http://adkinvasives.com/documents/APIPPInvasiveAnimalBrochure_reduced.pdf
- Designed four door-hanger notifications for private landowners:
<http://adkinvasives.com/documents/Purpleloosestrife-doorhanger.pdf>
<http://adkinvasives.com/documents/Garlicmustard-doorhanger.pdf>
<http://adkinvasives.com/documents/Japaneseknotweed-doorhanger.pdf>
<http://adkinvasives.com/documents/Yellowiris-doorhanger.pdf>
- Distributed two APIPP brochures, one about the program and another about our target plants.
- Received more than 50 “cold call” inquiries from the general public.
- 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 2011 Annual Report.

Regional Planning and Coordination

- Collaborated with partners of the Adirondack Watershed Stewardship Program and lake associations to support the expansion of stewards at river and lake access points: nearly 30 stewards were at 17 lakes this year, and the Ausable River Association implemented a 2nd year of its River Steward Program.
- Collaborated with volunteer leaders of the Regional Inlet Invasive Plant Program, <http://www.noknotweed.org/index.html>.
- Organized two planning sessions to evaluate regional prioritization schemes for setting monitoring and management objectives.
- Collaborated with TNC colleagues in NY to develop the Invasive Plant Management Decision Analysis Tool to assess potential management projects for likelihood of success.
- Inventoried the Five Ponds Wilderness Area for designation as an Invasive Species Prevention Zone and developed management plan.
- Participated in a statewide forest pest outreach committee to plan for response to emerald ash borer or Asian longhorn beetle.
- Continued development of the PRISM strategic plan.
- Held two full partner meetings.
- Collaborated with other PRISMs (Partnerships for Regional Invasive Species Management) and Office of Invasive Species Coordination staff.
- Served on an ad-hoc committee for the development of the NYS Comprehensive Management Plan Strategy.
- Contributed information to the NYS Invasive Species Council.

2011 Research

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

Paul Smith's College: Monitoring the zebra mussel invasion front: Use of new technology (Lee Ann Sporn, faculty advisor)

SUNY ESF: Monitoring of biological control agents on purple loosestrife in the Adirondacks, New York (Natasha Finch, undergraduate student)

SUNY Plattsburgh: Assessments of three new invaders to the region (*Hydrocharis*, *Mycelis*, *Elsholtzia ciliate*) (Dr. Chris Marine, faculty advisor)

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

2011 Funding

- In 2011, APIPP was funded by the NYS Department of Environmental Conservation via the Environmental Protect Fund (year 4 of 5-year contract).
- Secured \$170,000 of Foundation funding to support the Terrestrial Response Team and special projects (Regional Inlet Invasive Plant Program, Asian Clam Eradication, and Paul Smith's College Steward Program).
- APIPP helped secure \$29,861 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 Paul Smith's College Watershed Stewardship Program.
- Various NY recipients leveraged \$233,704 in local implementation grants from the Lake Champlain Basin Program for aquatic invasive species.
- Paul Smith's College secured more than \$224,000 in 2011 from the USFWS to launch an expanded stewardship program at water access sites and an aquatic response team. An additional award of \$332,869 from the EPA's Great Lakes Restoration Initiative will be used in 2012 to continue its expanded boat launch program.

2011 Species Distribution Alerts

Information provided by the Office of Invasive Species Coordination and NYS Department of Agriculture and Markets

New Introductions into New York State

- Duponchela moth detected in Westchester Co., and also Suffolk, Nassau, Onondaga, Tioga, Erie and Cattaraugus Counties.
- Boxwood blight detected in Nassau and Suffolk Counties.
- Spotted wing drosophila detected in Suffolk Co.

Significant Range Expansions in New York State

- Emerald ash borer spread to 10 counties, and the number of quarantined counties reached 19.

- 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 have expanded; detected in Schoharie Co. in 2011.
- Hemimysis (bloody red shrimp), had been known in Lake Ontario; new to Oneida Lake in 2009 and Seneca Lake in 2010 (communicated from Megan Brown, Hobart & William Smith Colleges). It has since spread throughout the Great Lakes, Finger Lakes, and upper St. Lawrence River.
- Oriental weatherfish (*Misgurnus anguillicaudatus*), previously identified in Alleghany drainage (Alleghany Co.) and confirmed on Long Island (Suffolk Co.) and in the Wallkill R. Drainage (Ulster Co.) in 2009, now in at least three waters in Susquehanna drainage and western NY.
- Didymo, identified in Battenkill (WA Co.) and East + West branches of Delaware in 2007, mainstem Delaware in 2008 and in Esopus Cr (Ulster Co.) in 2009, Kayaderosseras Creek in Saratoga County in 2010, and Roundout Creek (Ulster Co.) in 2011.

Elevated Threat

- Hydrilla detected in Cayuga Lake inlet in the Finger Lakes (response effort underway); previously detected in 2008 in a private pond in Orange County and at least 8 waters in Long Island.
- Feral swine have breeding populations in 5 counties, including Clinton and Delaware Counties (up from 3 counties in 2010); sightings are reported in 37 counties (up from 16). These sightings are reports from the public and include any escaped swine, Russian boar, and domesticated and potbelly pigs. (Information provided by USDA APHIS)

2011 Regional Milestones

- Recognized by the Adirondack Council as their Conservationist of the Year.
- Thanked Tyler Smith for his service as APIPP's Aquatic Coordinator.
- Hired Meghan Johnstone as APIPP's Aquatic Invasive Species Project Coordinator.
- Received funding for the first Terrestrial Regional Response Team and for special projects including the Regional Inlet Invasive Plant Program, Watershed Steward Program, and benthic mats for Asian clam control in Lake George.
- PSC implemented an expanded WSP Program and deployed the first Aquatic Response Team.
- Raquette Lake Property Owners Association implemented first video surveillance system (ILIDS) at boat launch with audio message reminding boaters to check and clean their boats.
- Completed site workplans, received permits, and continued treatment of high priority *Phragmites* infestations on forest preserve.
- The Lake Champlain AIS Rapid Response Task Force formed and evaluated new species introductions to the Basin including Asian clam and variable leaf watermilfoil.
- Lake George implemented rapid response to Asian clam.
- Six Towns, one Village, and Warren County passed 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 EPA Regional Administrator Judith Enck.
- Implemented year 4 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. Nominated and approved as Chair in 2011.

2011 Statewide Milestones

- The FY11 State Environmental Protection Fund included \$3.8 million to implement the recommendations of the Invasive Species Task Force.
- Assemblyman Sweeney held a legislative hearing on invasive species.
- The DEC finalized contracts with two more PRISMs: Long Island Invasive Species Management Area and St. Lawrence Eastern Lake Ontario.
- 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 Department of Agriculture and Markets and its contractor completed its NYS Invasive Species Management Strategy.
- The NYS Invasive Species Education and Outreach program with Cornell hired two part-time staff.
- The NY Invasive Species Clearinghouse upgraded its website, www.nyis.info.
- 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 held two meetings.
- Holly Menninger stepped down as the coordinator of the Invasive Species Research Institute and accepted another position at NC State.

Resources to have on the Radar

- DEC website for aquatic invasive species information is <http://www.dec.ny.gov/animals/50121.html> and for terrestrial invasive species information is <http://www.dec.ny.gov/animals/6986.html>.
- New York Invasive Species Clearinghouse, <http://nyis.info/>.
- iMap invasives, <http://imapinvasives.org/>.
- New York State Invasive Species Research Institute, <http://nyisri.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>. A documentary video, “Playing Smart Against Invasive Species: How to Enjoy and Protect the Great Outdoors,”

was released 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>.

2012 Objectives

- Please see APIPP's 2012 Adirondack PRISM Staff Work Plan for a complete list of objectives and tasks, <http://adkinvasives.com/publications.html>:

Priorities include:

- Secure a contract amendment and renewal with the state for the Adirondack PRISM
- Complete the PRISM Strategic Plan
- Develop a PRISM communications plan
- Focus the APIPP internship on education and outreach
- Implement Year 2 of Regional Response Teams
- Implement Year 2 of an expanded Adirondack Watershed Stewardship Program, the region-wide spread prevention program at boat launches
- And much more!

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

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

Literature Cited

Rejmanek, M. and M. J. Pitcairn. 2002. When is eradication of exotic pest plants a realistic goal? Page 249-253 in C. R. Veitch and M. N. Clout, eds. *Turning the Tide: The Eradication of Invasive Species*. Auckland, New Zealand: Invasive Species Specialist Group of the World Conservation Union (IUCN).

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

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!

Shoreowner groups including, but not limited to

6th and 7th Lakes Association
 Bellmont 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