Adirondack Park Invasive Plant Program
2015 Terrestrial Invasive Plant Response Team
Final Report

June 29th – September 18th, 2015

Invasive Plant Control Inc.

Adirondack Park Invasive Plant Program

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Introduction

The 2015 field season was the fourth season that Invasive Plant Control, Inc. (IPC) served as the terrestrial invasive plant early detection and rapid response team for the Adirondack Park Invasive Plant Program (APIPP). Vance Brown worked as the team leader for this project, with Remy Schneider working as a second leader when the team divided. The other team members working under Vance and Remy were Chad Cyboran and Matt Rapisarda. The project work dates spanned from June 29th to September 18th 2015, for a total of twelve work weeks. During this time, the IPC team revisited APIPP's historically managed invasive plant infestations, as well as mapped and/or managed new occurrences of invasive plant infestations along main road corridors, on forest preserve, and on private lands of the Adirondack Park. Administrative tasks, data collection/processing, and general equipment maintenance activities were performed in conjunction with management actions throughout the field season. This report summarizes work performed and data collected as well as provides recommendations for improvement based on lessons learned from the 2015 field season. A comprehensive analysis of invasive plant distribution and management data collected over the course of the 2015 field season is not included in this report. This analysis will be included in APIPP's 2015 annual report.

APIPP Overview and Response Team Objectives

APIPP Overview

The Adirondack Park Invasive Plant Program (APIPP) serves as the Adirondack Partnership for Regional Invasive Species Management, one of eight regional partnerships in New York. APIPP is a partnership program among the Adirondack Chapter of The Nature Conservancy, New York State Department of Environmental Conservation (NYSDEC), New York State Department of Transportation (NYSDOT), New York State Adirondack Park Agency (APA) and more than 30 cooperating organizations whose mission is to protect the Adirondack region from the negative impacts of invasive species. APIPP is funded through the invasive species line of New York State's Environmental Protection Fund (EPF). To learn more, visit www.adkinvasives.com

Response Team Objectives

The main objective for this season's response team was to revisit, assess, and if necessary perform treatments on all of APIPP's historically managed, priority invasive plant infestations. The priority invasive plant species identified by APIPP for the response team's management efforts included common reed (*Phragmites australis*) and knotweed species (*Fallopia sp.*). Occasionally the team also managed priority infestations of black and pale swallow-worts (*Cynanchum sp.)*, purple loosestrife (*Lythrum salicaria*), oriental bittersweet (*Celastrus orbiculatus*), yellow iris (*Iris pseudacorus), garlic mustard (Alliaria petiolata),* and Japanese barberry (*Berberis*

thunbergii). Throughout the season, they managed several other lower priority invasive plants, but only if they were located within proximity to an occurrence of one of the priority species. The team typically did not manage species that were locally or regionally widespread or had a low New York State invasive species ranking (http://nyis.info/?action=israt_nn_plant) such as bush honeysuckle, multiflora rose, white sweet-clover, common mullein, spotted knapweed, crown vetch, wild parsnip, and bull and Canada thistle.

Priority infestations were primarily located within sensitive wetlands, along river corridors, on forest preserve, and along major road corridors within the interior of the Adirondack Park. Under the jurisdiction of a NYSDOT highway work permit, the team was authorized to treat any invasive plant infestations that were located along the state road right-of-way (ROW). APIPP had the response team skip over infestations documented along the state ROW but within hamlets or towns as there was a high likelihood for these infestations to extend onto private property thus requiring additional permissions to perform management. The state road ROW was defined as fifty feet from either side of the yellow line separating the roadway. If a new infestation was located outside of this delineation in a hamlet or town, the team would only conduct a preliminary survey of the infestation.

For sites newly discovered on Adirondack forest preserve, the response team surveyed the infestation then alerted APIPP's terrestrial coordinator. If the infestation was not already under permit and was determined to be a high priority for management, a Rapid Review Authorization Permit would be submitted to the NYSDEC to allow management during the current season. These infestations would then be incorporated into an Adopt-a Natural-Resource Permit during the off-season to allow APIPP to conduct management on the site over the next five field seasons.

If an infestation of one of APIPP's priority species extended beyond the ROW onto private property or fell completely within a privately owned parcel, and was considered a high priority for management, the response team or APIPP's terrestrial coordinator contacted the landowner to obtain permission. The permission form allows APIPP to conduct mechanical or chemical treatments on the property for five consecutive years. This determination of road right-of-way, forest preserve or private land was the individual team leader's responsibility. Overall, the goal was to ensure that the proper permissions and permitting documents were obtained before any management activities occurred.

Lodging, Typical Workday and Equipment

Lodging

The response team resided at a cabin within the Ausable Acres housing development in Jay, as well as at a cabin near Styles Brook in Keene. The team also spent four nights at Cold River Cottage in Jay. All cabins had the features needed to provide comfort for the team during their stay and were within close proximity to APIPP's headquarters in

Keene Valley. Lana Gokey of Adirondack Reality was the realtor who provided IPC with the rental cabins for the 2015 field season.

Typical Workday

The response team consistently worked four ten hour days leaving the cabins at 7:00 a.m. and returning at 5:00 pm each day. This increased the team's efficiency as it optimized the amount of time spent in the field after taking into consideration the significant travel distances and times associated with traversing the 6 million acre Adirondack Park. These significant travel times were considered part of the team's 40 hour work week. Lunch was usually consumed during travel time between work sites. Although weather and seasonality dictated the team's daily work plan, invasive plant surveys and/or management were usually performed. Rain days consisted of mapping new invasive plant infestations along priority road corridors that had been previously unsurveyed by APIPP, conducting targeted education and outreach, processing data, as well as completing administrative paperwork.

Equipment

IPC supplied two Ford F-150 pickup trucks which were used to transport the team, their management equipment, and their 35 gallon nurse tanks to be used for herbicide applications. The two work trucks also allowed the 4 person team to split into two groups of two if needed. This significantly increased the team's efficiency as the majority of APIPP's management sites are less than 0.1 acres in size, have already received several consecutive years of treatment, and are widely dispersed throughout the six million acre Adirondack Park. At times, such as to manage new or larger infestations, the team all worked out of one vehicle. On days that they did split, Remy and Vance both documented their different activities in separate daily logs. These daily logs provided the majority of data represented in this report.

The team used backpack sprayers and stem injection tools to perform herbicide applications. The backpack sprayers used for foliar spraying were Shindaiwa SP518, Jacto CD400, and Hudson SP-2's. JK International Stem Injection Tools were used for stem injections on large patches of common reed and knotweed. The following herbicide products by active ingredient were used:

Active Ingredient	Trade Name (EPA Registration Number)
Glyphosate	Aquamaster (524-343)
	Accord XRT II (62719-556)
	RoundUp Custom (524-343)
	Rodeo (62719-324)
Triclopyr	Garlon 4 Ultra (62719-527)
Imazapyr	Arsenal Powerline (241-431)
Imazamox	Clearcast (241-437-67690)

Arsenal Powerline was incorporated into glyphosate foliar spray solutions for knotweed infestations located on terrestrial sites. Clearcast was incorporated into glyphosate foliar spray solutions for knotweed infestations located on aquatic sites. The following surfactants and dyes were also incorporated into herbicide applications by the team: Activator 90, ChemSurf 90, and Blazon Blue.

Data Collection and Limitations

Data Collection

A strong emphasis was placed on the importance of documenting the response team's invasive plant management and survey efforts within the Adirondack region during the 2015 field season. This coincided with APIPP's requirements of prior response teams and allowed for data consistency and continued analysis from previous years. This data is used by APIPP in a variety of applications including to predict the spread potential of certain invasive plants, to evaluate the success or failure of management efforts, and to document the detrimental effect of invasive plant infestations on the region's ecosystems. This information can be influential in communicating the invasive species problem with the general public, landowners, and policy makers. Thorough and consistent data collection also allows APIPP to document invasive plant regression from the region as management efforts progress. APIPP accomplishes this through comprehensive pre and post treatment data collection via Trimble GeoXT hand-held computers and GPS receivers, the Weed Information Management System (WIMS) database, and Geographic Information System (GIS).

Chad Cyboran collects a Phragmites assessment using the Trimble.

The Trimble units operate and display the WIMS field data collection forms, which are used to transfer invasive plant survey and management data into the WIMS database and eventually into the more universally known GIS. The WIMS system was effective because of the variety and extent of information that could be collected while documenting an invasive plant location or management activity. Examples of WIMS data fields include plant phenology, invasive plant percent cover, habitat type, surrounding disturbances (mowing, flooding, grazing, etc.), goal for the site, etc. Full details on WIMS can be found at the following link http://imapinvasives.org/wims.html.

Remy Schneider performs a foliar spray treatment of Phragmites along state route 30.

The most important items of clarification regarding the response team's data collection include the differences and correlations between occurrences, assessment polygons, and treatment polygons. The following paragraphs outline the data collection process.

When the response team observed a priority invasive plant infestation, a GPS point occurrence was recorded, unless an occurrence already existed for the specific infestation. This was usually done for new infestations that had never been documented or mapped before and contained unique naming and attribute information for each specific infestation. After entering the new occurrence, the response team would then complete an assessment polygon for the infestation. An assessment polygon was mapped around the boundary of both new and historically managed infestations to document their size, percent cover, phenology and other notable attributes. Photos were also taken to help document the expansion or decline of the historic infestations as well as the sites' transition back to native plant habitat.

Chad Cyboran records a Phragmites occurrence in the Trimble along state route 22.

If a site was historically managed, a visual survey was completed before mapping an assessment polygon. If no target invasive plants were observed, a note of "no plants observed" was recorded in the notes section of the assessment polygon. No spatial information was recorded for assessment polygons that had no plants observed. If possible, it was also noted if the previous year was documented as "no plants observed." APIPP only deems an infestation to be eradicated after it progresses through three consecutive years of having no target invasive plants observed.

The team performed a management action if a new infestation of a priority species was documented along the road ROW or if the team possessed the proper permits and permissions to manage a historic infestation that still had invasive plants present. After the team managed the site, they created a treatment polygon. A treatment polygon is similar to an assessment polygon but instead of detailing attributes of the invasive plant infestation, the attributes focus on the management that was performed. Some of these data fields include the time needed to complete management, what management method was performed, herbicide product name, and application totals. For treatment polygons, the team hand traced the polygon over the assessment polygon previously

created for the occurrence. This allowed the team to avoid having to circumnavigate the infestation more than once for mapping. This was done to save time since the team had to visit numerous infestations each day. It also increased the team's efficiency by reducing the amount of time other team members had to wait in order for data collection to be completed.

Data Limitations

While every effort was made to ensure that quality data was being collected for the duration of this project, there were instances of data errors and inaccuracies. Minor errors may have occurred during the data collection process, and can in most instances be attributed to GPS inaccuracies, data collection inconsistencies, estimation and rounding errors, or other human errors. It should be noted that the 2005 Trimble GeoXT GPS units used for data collection were the main contributing factor to the errors experienced during this project. In addition to technological difficulties, some rounding took place in the recording of data especially when it came to time and chemical usage. For example, the team was instructed to use quarter hour increments when recording time spent performing survey and treatment activities. In some instances it took less than 15 minutes to perform the necessary task. Hence, the times recorded may occasionally over-represent the actual amount of time spent performing the activity. This was also standard practice for the team's daily logs, which is where the majority of the data in this report is based.

The IPC team documents Phragmites infestations along state route 22 outside of the core area.

Another minor inaccuracy was the result of how the treatment acreages were recorded. The treatment polygons were typically hand traced over the previously recorded assessment polygons in order to avoid having to map the extent of the infestations twice. This would occasionally produce a slightly larger or smaller treatment polygon than was actually managed. Therefore, the actual number of acres treated should be determined from the assessment polygons and not the treatment polygons.

These minor errors and inaccuracies will not change the dynamics of the report or significantly influence the data analysis, but need to be stated and should be kept in mind when considering the data presented throughout this report.

Project Overviews by Month

June 2015 Overview

June 29th & 30th

The starting date for this project was June 29th. Therefore the team only worked two days in June. The first day was spent on project orientation with APIPP's Coordinator, Brendan Quirion, and Terrestrial Invasive Species Project Coordinator, Zachary Simek. The first day of orientation involved an overview of APIPP and its history managing invasive plant infestations in the Adirondacks, the results of past response teams, the project's timeline, and how to identify the priority invasive plant species that would be managed by the team. The second orientation day was spent visiting historically managed infestations, learning to operate the Trimble GPS unit and WIMS system, and reviewing plant identification. Although a good portion of these orientation days were spent at APIPP's headquarters, opportunities were also provided for each team member to practice entering data into the Trimble units and practice identifying plants in the field. The team was able to visit several historically managed infestations, so that they could evaluate some of the work that had been accomplished by APIPP and past response teams. Approximately 87 miles were traveled by the team over those two days of orientation.

The IPC team performs a foliar spray treatment of yellow iris at Barton Mines tailings pond.

July 2015 Overview

Through July 3rd
Site Visits: 29

After receiving orientation and being trained the last two days of June, the team started invasive plant survey and management work along the major state roadways within the interior of the Adirondack Park. Past response teams had focused the majority of their survey and management efforts within the Interior Adirondacks. Some new mapping was conducted along state route 22 outside of the interior due to inclement weather conditions that inhibited management. During these few days of inclement weather, the team also spent time hand pulling garlic mustard at 10 priority trailheads and along state route 8 in the southwestern corner of the park.

July 6th – July 10th
Site Visits: 28

Upon returning to work after the 4th of July holiday weekend, the team completed management of garlic mustard sites along state route 8. The team then transitioned to begin management of common reed along the state route 3 corridor, heading west from Saranac Lake. This work was momentarily interrupted to conduct management on a large, high profile yellow-iris infestation located at the Barton Mines property in North Creek.

Chad Cyboran performs a foliar spray treatment of Phragmites along state route 3.

July 13th – July 17th
Site Visits: 91

After completing management of the Barton Mines yellow iris infestation, the team worked with APIPP's Terrestrial Invasive Species Project Coordinator, Zachary Simek, to manage several black swallow-wort infestations located in Willsboro and along state route 9N in Elizabethtown. The rest of this week was spent managing common reed along state route 3 west of Saranac Lake.

July 20th – July 24th
Site Visits: 152

The week of July 20th marked the first week that the team split into two, two person teams. Vance and Matt continued to work on common reed and knotweed along the state route 3 corridor, from Saranac Lake heading west. Several giant hogweed infestations were also treated on private properties located near Lake Champlain. At the end of the week Vance and Matt began managing a large knotweed infestation located at the Town of Clifton Highway Department building off of county route 60. Remy and Chad began managing common reed and knotweed infestations along the Route 30 corridor, beginning at the northern end of the route and working south.

Vance Brown uses a JK International Stem Injection Tool to treat Japanese knotweed.

July 27th – July 31st
Site Visits: 123

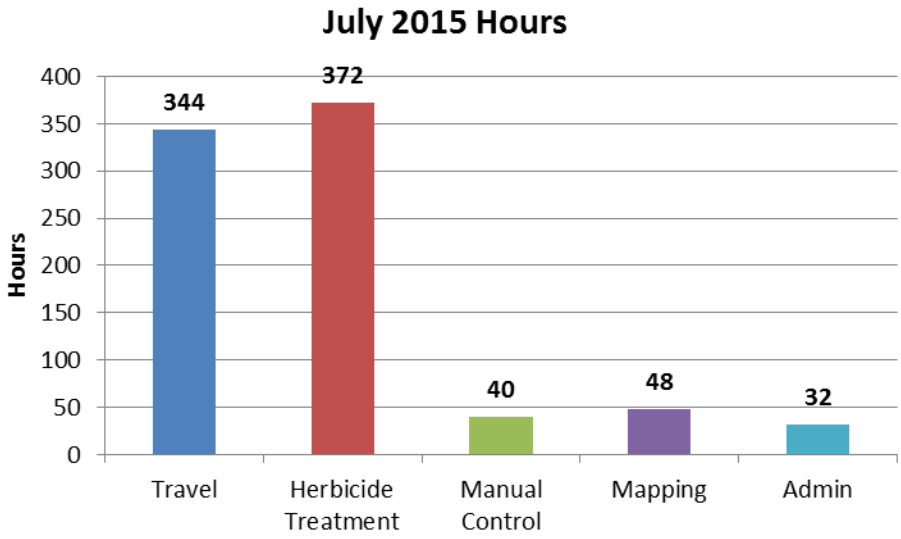
At the beginning of the week, Vance and Matt completed management of a large

knotweed infestation located at the Clifton Highway Department off of county route 60. They then proceeded to complete management of common reed and knotweed infestations along state route 3 to the western park boundary and the entire state route 56 corridor to the northern park boundary. At the end of the week they started managing infestations along the state route 28 corridor, working west from the town of Newcomb.

Remy and Chad completed management of common reed and knotweed along the state route 30 and 86 corridors. Mechanical issues with one of the vehicles brought the team back together to work on common reed along state route 10 at the very end of the week.

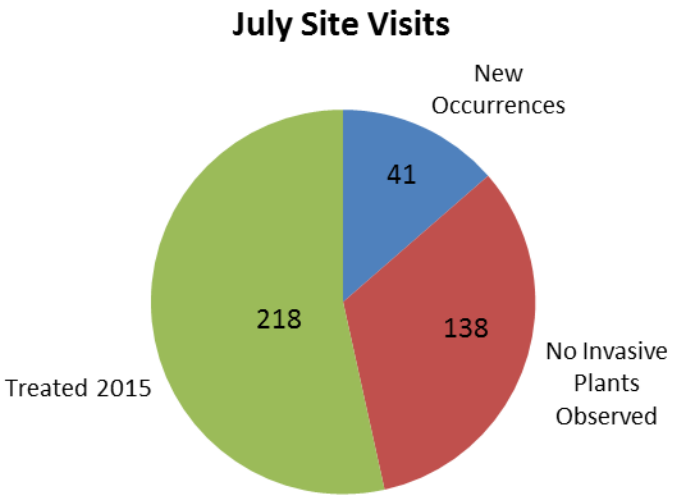
July 2015 Hours Worked by Activity

For the month of July, the team worked a total of 836 man hours and traveled a cumulative total of 5,262 miles. The following graph gives a breakdown of hours worked by activity for the month of July.



The majority of the team's work was spent traveling or conducting herbicide treatments. Many of the management sites visited in July were quite some distance from APIPP's headquarters and the response team's cabins, which contributed significantly to travel times.

The following graph provides a breakdown of the status of sites visited in July, including the number of new occurrences mapped, sites treated, and sites documented as having no plants observed.



A total of 397 sites were visited during the month of July. 218 of these sites were managed. Approximately half of the new occurrences were also managed. The rest required permissions before management could be performed or were not deemed a priority for management this year. The “No Invasive Plants Observed” sites may be in their first, second, or third year documented as having no plants observed. APIPP only deems an infestation to be completely eradicated after three consecutive years of having no target invasive plants observed. APIPP will compare these sites with previous years’ data to determine when they can be considered eradicated. This information will be incorporated into APIPP’s invasive plant management trend analysis which will be included in the program’s 2015 annual report.

Chad Cyboran poses with a recently treated Phragmites infestation.

August 2015 Overview

August 3rd – August 7th
Site Visits: 71

The entire four person team worked together this week to continue managing the state route 10 corridor and completed management of the state route 28/28N corridors. The remainder of the route 10 corridor was completed in conjunction with New York State Department of Transportation (NYSDOT) spray crews later in August (See August 17th – August 21st).

The IPC team also managed 11 common reed and knotweed infestations along state route 9N and 73.

Chad Cyboran collects a Phragmites assessment along state route 30.

August 10th – August 14th
Site Visits: 95

The entire team worked together this week, managing infestations along state route 9 and 73. Inclement weather at the end of this week forced the team to spend more time mapping new infestations along state route 9L and 22, which fall outside of the interior of the park.

August 17th – August 21st
Site Visits: 82

On Monday of this week, Vance and Matt worked with APIPP's Terrestrial Invasive Species Project Coordinator, Zachary Simek, and NYSDOT spray crews to complete management of 10 common reed infestations along state route 374. Miscommunication between the DOT spray crew and the response team resulted in work being conducted separately by the two crews. Eight new common reed and knotweed infestations were also mapped along state route 374. Remy and Chad worked along state routes 458 and 30 that Monday. Tuesday's work included conducting surveys and management along state routes 28, 30, and 3. On Wednesday, the team assisted with monitoring efforts near APIPP's Invasive Species Prevention Zone located within the Five Ponds Wilderness Area. Thursday was spent treating a large common reed infestation located at the Arietta stockpile area off of state route 10. NYSDOT spray crews assisted with the management of this particularly large infestation.

August 24th – August 31st
Site Visits: 103

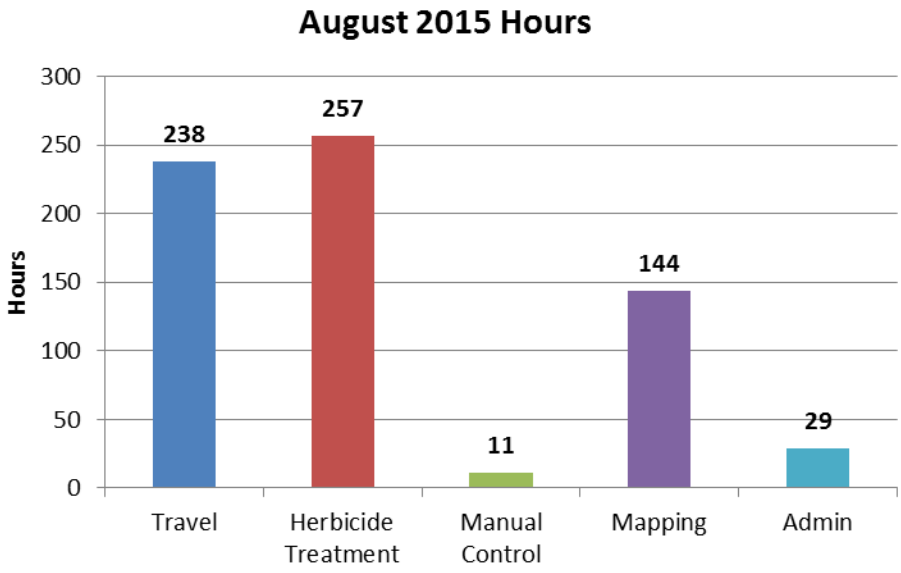
Vance and Chad worked Monday and Tuesday along state routes 28 and 30 managing infestations that were inadvertently missed earlier in the season. Wednesday and Thursday were spent treating large knotweed sites on private properties in Keene Valley and Saranac Lake. Time was also spent managing purple loosestrife along the route 73 and 86 corridors.

A small knotweed infestation detected along state route 28.

Remy and Matt worked on managing sites inadvertently missed by the team earlier in the season along state routes 3, 10, and 56. They also completed a survey for knotweed along Keese Mill Road in Paul Smith's and along the outlet of St. Regis Lake.

August 2015 Hours Worked by Activity

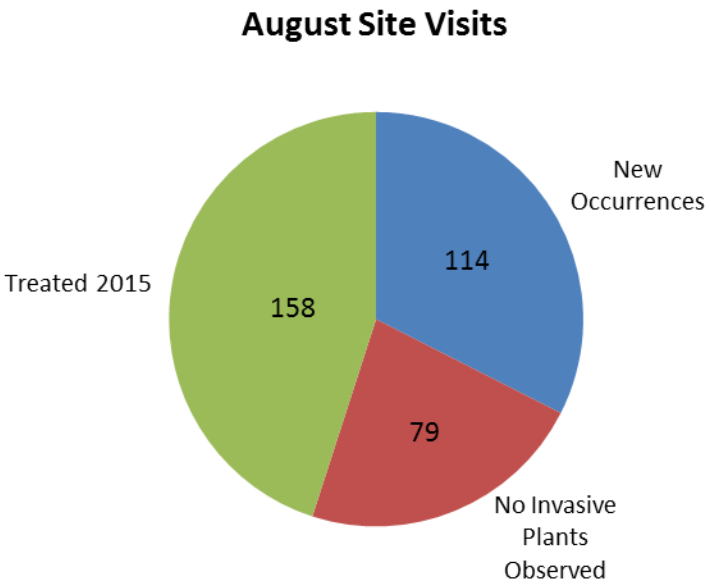
During the month of August, the team worked a total of 679 man hours and traveled a cumulative total of 4,966 miles. The following graph provides a breakdown of hours worked by activity for the month of August.



Similar to July, the majority of the team's time was spent traveling or performing herbicide treatments. Many sites were located a significant distance from APIPP's headquarters and the response team's cabins which contributed significantly to travel

times. A large portion of travel time was accrued on the days when the team conducted extensive survey work in the Five Ponds Wilderness Area. The time spent conducting mechanical control was to manage several purple loosestrife infestations via digging/pulling.

The following graph provides a breakdown of the status of sites visited in August, including the number of new occurrences mapped, sites managed, and sites documented as having no invasive plants observed.



For the month of August, a total of 351 site visits were conducted. 158 of these sites were managed and 79 sites had no invasive plants observed. Of the 114 new occurrences mapped, 15 were also managed. The remaining sites required permissions or were not deemed a priority for management this year. The “No Invasive Plants Observed” sites may be in their first, second, or third year documented as having no plants observed. APIPP only deems an infestation to be completely eradicated after three consecutive years of having no target invasive plants observed. APIPP will compare these sites with previous years’ data to determine when they can be considered eradicated. This information will be incorporated into APIPP’s invasive plant management trend analysis which will be included in the program’s 2015 annual report.

September 2015 Overview

September 1st – September 4th
Site Visits: 67

Vance and Chad completed management of common reed and knotweed along state route 28 and 8 in the southeastern tier of the park. They also completed survey and mapping activities along state routes 9N and 26. Treatments of newly documented sites along these routes were completed when permissions allowed.

Remy and Matt completed mapping activities and management of common reed and knotweed infestations along state routes 22 and 74.

September 7th – September 11th
Site Visits: 76

All team members worked to map new infestations and complete management of common reed and knotweed infestations along several state routes in the northern area of the park. State routes surveyed included 374, 25, 26, 27, 30, and 5. Management of small sized infestations was performed along these routes when permissions allowed. Vance and Chad also completed surveys and management of knotweed and common reed along state routes 28 and 9N.

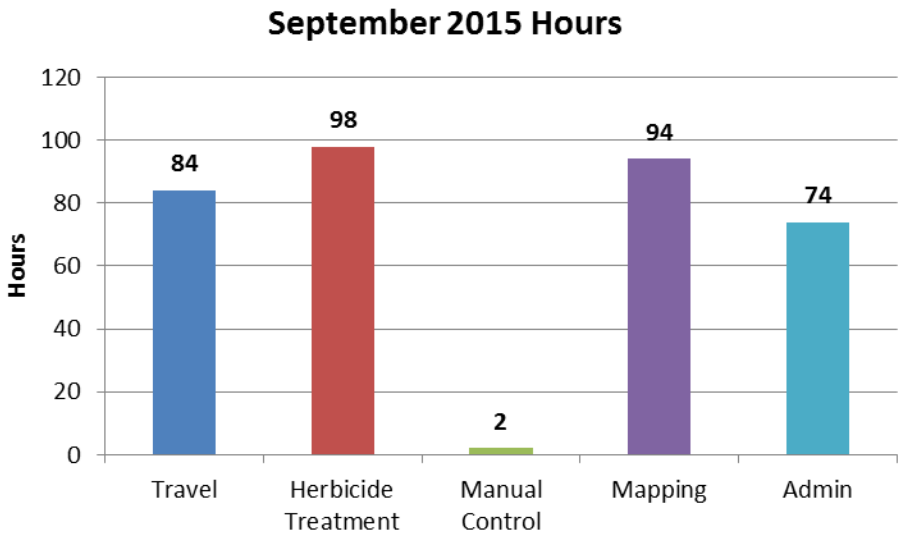
A previously unmanaged Phragmites infestation along state route 374 that was mapped for the first time during the 2015 field season.

September 14th – September 18th
Site Visits: 118

During the final week of the project, the team spent time cleaning equipment, completing various administrative tasks, and performing data management. Since most of the invasive plant management work was completed, the team continued mapping, and in some cases treating, infestations in the northern tier of the park along state route 11 and 22.

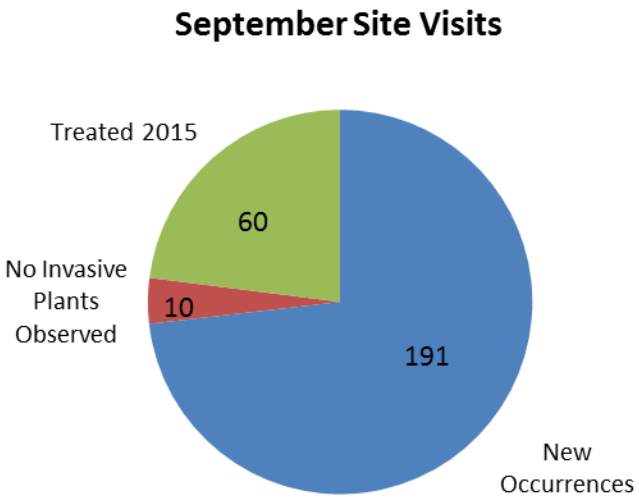
September 2015 Hours Worked by Activity

For the month of September, the team worked a total of 352 man hours and traveled approximately 2,500 miles. The following graph provides a breakdown of hours worked by activity for the month of September.



For the month of September, travel time and herbicide treatments made up the majority of the total man hours worked. However, slightly less time was spent on these than the previous months, and more time was dedicated to Administrative tasks. Since this was the last month of the response team's work, more administrative time was needed for processing data, writing reports, cleaning equipment, etc. in order to close out the field season. The time spent conducting mechanical control was to manage several purple loosestrife infestations via digging/pulling.

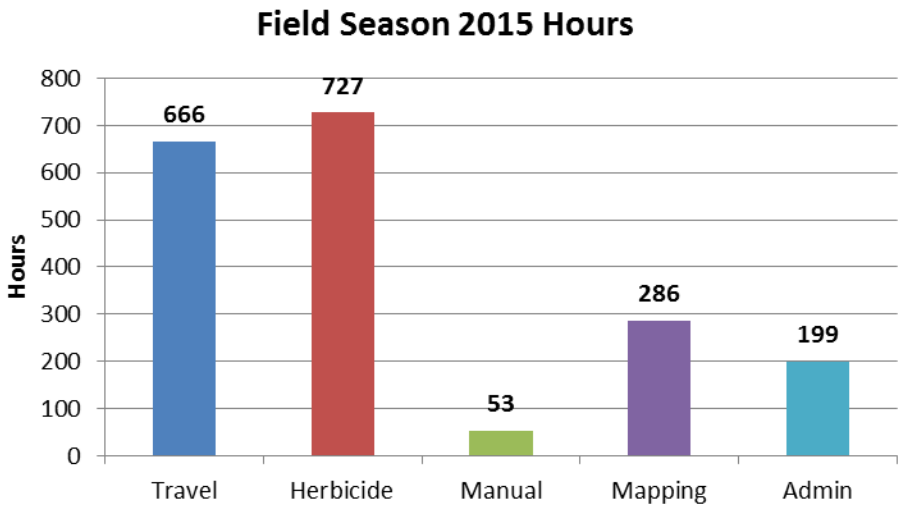
The following graph provides a breakdown of the status of sites visited in September including the number of new occurrences mapped, sites managed, and sites documented as having no invasive plants observed.



For the month of September a total of 261 site visits were conducted. 60 of these sites were managed with 10 sites documented as having no plants observed. Of the 191 new occurrences mapped, only 47 were managed. Most of these new occurrences were mapped in areas that fall outside of the interior of the Adirondack Park. Mapping outside of the interior was conducted this year with the hopes of expanding management efforts into these areas over the coming years. The “No Invasive Plants Observed” sites may be in their first, second, or third year documented as having no plants observed. APIPP only deems an infestation to be completely eradicated after three consecutive years of having no target invasive plants observed. APIPP will compare these sites with previous years’ data to determine when they can be considered eradicated. This information will be incorporated into APIPP’s invasive plant management trend analysis which will be included in the program’s 2015 annual report.

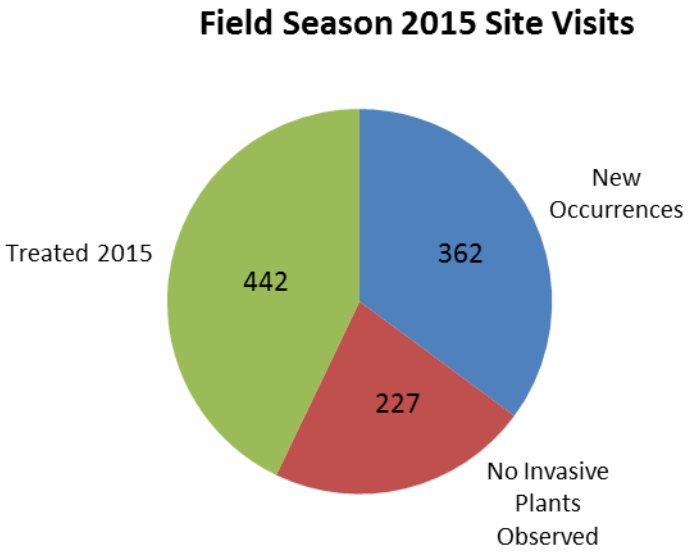
Field Season Totals

For the 2015 field season, the team worked a total of 1931 man hours and traveled approximately 12,815 miles. The following graph provides a breakdown of hours worked by activity for the 2015 field season.



**** Field Season 2015 Total Hours includes 64 admin hours from the month of June**

For the 2015 field season, travel time and herbicide treatments made up the majority of the total man hours worked. However, nearly 300 hours were spent mapping new infestations throughout the season. The following graph provides a breakdown of the status of sites visited during the 2015 field season, including the number of new occurrences mapped, sites managed, and sites documented as having no invasive plants observed.



For the 2015 field season, a total of 1,031 site visits were conducted. 442 of these sites were managed with 227 sites documented as having no plants observed. A total of 362 new occurrences were mapped. The majority of these new occurrences were mapped in areas that fall outside of the interior of the Adirondack Park. Mapping outside of the interior was conducted this year with the hopes of expanding management efforts into these areas over the coming years. The "No Invasive Plants Observed" sites may be in their first, second, or third year documented as having no plants observed. APIPP only deems an infestation to be completely eradicated after three consecutive years of having no target invasive plants observed. APIPP will compare these sites with previous years' data to determine when they can be considered eradicated. This information will be incorporated into APIPP's invasive plant management trend analysis which will be included in the program's 2015 annual report.

Vance Brown assessing a Phragmites treatment site on state route 86.

Recommendations and Conclusion

Recommendations

The response team provides the following recommendations on how to increase the efficiency and effectiveness of this project moving forward. The biggest recommendation from the crew is for APIPP to update its data collection and GPS systems before next field season. This would increase the quality of the data submitted as well as avoid any time lost to equipment malfunction issues. The team also recommends processing the data incrementally throughout the season instead of processing large amounts of data and photos at the end of the season. This would be beneficial for higher quality data analysis and would provide the opportunity to address problems with the data in a timely manner.

Another important recommendation from the team is for APIPP to create a general field season schedule or work plan prior to the season detailing areas to be surveyed or managed. Although weather played a major role in determining this season's management schedule, it would be beneficial for the team to have some kind of scheduled work plan detailing survey and management needs to be addressed over the course of the summer.

The idea of renting cabins in various parts of the park to further increase efficiency and reduce drive times has been voiced, but the team also feels that many different moves during the season can become stressful. One compromise might be to rent in the central Adirondacks so that drive times are somewhat minimized. However, this would increase the team's driving distance to APIPP's headquarters and therefore the satellite location would also need to provide water for herbicide mixing, equipment storage,

adequate parking, etc. IPC recommends utilizing Lana for any real estate arrangements during future work with APIPP in the Adirondacks.

The team also recommends the continuation of APIPP's education and outreach programs, both to public and private entities. Many infestations extend onto private property, requiring permissions to manage them. Some landowners are hesitant to have their property managed; but when they are provided more educational information, they see the benefits and are willing to have their property addressed.

People seem to react positively to the invasive species work being done in all areas of the park. The outlying areas of the Champlain and Lake George valleys, as well as the northernmost portions of Clinton and Franklin County, have received relatively little management and efforts could be expanded into these areas over time.

Chad Cyboran assessing a previously unmapped Phragmites infestation along state route 74.

As a final recommendation, the team encourages educating local highway department road crews on invasive plant identification and management. The team documented instances where state and local highway departments were inadvertently aiding in the spread of target invasive plants. As an example, along state route 26 several new culverts had recently been installed. At each culvert, a patch of knotweed was growing and had undoubtedly been introduced through contaminated fill used for the culvert replacements. Targeted education and outreach to highway departments would undoubtedly help prevent instances like this and would save APIPP time and resources by not having to clean up after others mistakes.

Conclusion

This was the fourth season that IPC provided the staff and services for APIPP's terrestrial invasive plant response team. Management data collected throughout the field season demonstrates that there have been noticeable decreases in invasive plant

infestation sizes and percent cover within the interior of the park. The results also indicate that there are a growing number of infestations being documented as having no invasive plants observed. Many sites, particularity Phragmites infestations, have transitioned into having no plants observed for 3+ years and are deemed eradicated from the landscape.

Overall, the 2015 invasive plant management season progressed well. In addition to treating many historic and high priority sites, the team was able to map extended areas within the park boundary. This distribution data will provide the information needed to determine expansion of treatment opportunities. IPC looks forward to the opportunity to continue working with APIPP to build upon the invasive plant management progress that has been made in the Adirondack Park.