

2015 Lake George Aquatic Invasive Species Prevention Program

A Trailered Boat Inspection Program

Final Report



**Lake George
Park Commission**

January 2015

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Executive Summary

Lake George is one of the most beautiful natural resources in the world. Its pristine waters have been a source of inspiration and joy to millions of visitors and residents for hundreds of years. Given these facts, Lake George is also the hub of a billion dollar regional economy, primarily based around tourism. It is imperative that we act collectively to protect it against outside threats that would diminish the quality of this lake, including the significant threat of aquatic invasive species.



Photo courtesy Carl Heilman

Aquatic invasive species (AIS) are organisms that are not native to that particular waterbody, and once introduced, can cause significant ecological harm to that waterbody including water quality impacts and recreational issues. The prevention of the introduction of these species into waterbodies has been shown to be far more cost-effective than management or eradication once introduced. There are currently five known aquatic invasive species in Lake George. The goal of the Commission's pilot regulatory program described in this report is to prevent, to the best of our ability, any new introductions of aquatic invasive species into Lake George. This report outlines the second year of the two-year pilot initiative to inspect all trailered boats prior to launch into Lake George.

The Commission's new regulations 6 NYCRR Subpart 646-9 entitled the "Prohibition of Aquatic Invasive Species Introduction" which became effective on May 15th, 2014, prohibit the human-induced introduction of aquatic invasive species (AIS) to Lake George. With the understanding that trailered boats are a primary vector for aquatic invasive species transport regionally, these regulations require the inspection of all trailered boats prior to launch and upon retrieval, as well as the registration and security of all launches on Lake George. Seven inspection stations were operated regionally around Lake George, at locations convenient to boaters prior to launch into the lake. These stations were operated generally from dawn until dusk, in an effort to achieve maximum convenience to boaters. The 2015 program operated from April 15th 2015 to December 1, 2015. In that time, the Commission processed 27,852 boaters through the inspection stations. Of that number, 10,247 received full entrance inspections, 9,949 received inspections while exiting Lake George at the inspection sites, and 7,656 boats arrived at the inspection stations with vessels already having received an inspection seal. Approximately 16 percent of boats receiving an inspection did not meet the "clean, drained, and dry" standard of the program, and required decontamination prior to launch into Lake George. There was no cost to the boater for either the inspection process or decontamination, if required, thanks to funding received from NYS and local entities which covered the entire operating cost of the program for 2014 and 2015.

This pilot regulatory program was funded without any new taxes, fees, or NYS general fund monies. Half of the funding for this State run program has been put forth by the State Environmental Protection Fund

with support from the office of Governor Andrew Cuomo, and the other half has been provided by a coalition of local groups including Warren County, local municipalities and nonprofit lake-based organizations including the Fund for Lake George and the Lake George Association. This group of local entities, known as the “SAVE Lake George Partnership”, played a key role in working to generate the funding necessary for the implementation of this boat inspection program.

The two years of the “Lake George Boat Inspection Program” has been met with resounding support from communities around Lake George, and even more importantly, the general boating public on the lake. Recent, independent Sienna Research Institute polls of recreational users of Lake George showed a remarkable 96% of respondents support this program and believe it is important to protect the lake.

This report details a brief history of the program’s background and detailed results from the second year of operation in 2015. For a full overview of the program’s creation, planning and logistics please refer to the Lake George Aquatic Invasive Species Prevention Plan / Environmental Impact Statement on the Commission’s website. Also, please review the dedicated website to this program, at www.lakegeorgeboatinspections.com.

2014 & 2015 Boat Inspection Program Summary - By the Numbers

Table 1: Boat Inspection Program Cost Summary

	2014	2015	Total
Number of inspection sites	6	7	7
Total boater inspections and contacts (entrance, exit, re-seals)	20,229	27,852	48,081
Entrance inspections without VICS seal	10,351	10,247	20,598
Exit inspections	5,960	9,949	15,909
Returning boats with seals	3,918	7,656	11,574
Number of boats decontaminated	1,264	1,631	2,895
Average boat inspection time	5 minutes	5 minutes	5 minutes
Average boat decontamination time	9 minutes	9 minutes	9 minutes
Highest total number of boater contacts in one week	1,703	1,949	N / A
Highest total number of decontaminations conducted in one week	118	148	N / A
Percentage of inspections requiring decontamination	12%	16%	14.05%
Number of boats with visible plant matter present	232	154	386
Number of boats with visible invasive species present	165	106	271
Percentage of boats with visible invasive species present	1.60%	1.03%	1.32%
Number of distinct waterbodies boaters visited prior to Lake George	457	432	N / A
Total number of staff at peak season	55	53	N / A
Total number of decontamination units	9	9	9
Number of public and commercial launches on Lake George	47	47	47
Total operational cost	\$ 668,537.00	\$575,089.69	\$1,243,626,69
Total cost of seasonal staff	\$ 548,078.00	\$482,443.00	\$1,030,521.00

Cost of LANDA equipment (purchased over 3 years)	\$ 204,000.00	N / A	\$204,000.00
Cost of a Landa ECOS decontamination unit	\$ 22,000.00	\$ 22,000.00	\$ 22,000.00
Cost to boater for inspection/decontamination	\$0/\$0	\$0/\$0	\$0/\$0
Cost savings for year 2015 due to optimized staffing	N / A	\$ 65,635.00	\$ 65,635.00
Annual program operating cost goal for future years	\$ 500,000.00	\$ 500,000.00	\$ 500,000.00

2015 Program Description

In accordance with the new regulations, for the second year of this pilot AIS prevention program, the inspection process prior to launch into Lake George began a month earlier than 2014, starting on April 15th, 2015. These inspections were performed at seven regional inspection sites located at convenient locations throughout the Lake George basin (as opposed to six in 2014). These sites are as follows: Dunham’s Bay Marina in Queensbury, Transfer Station Road in Lake George, Norowal Marina in Bolton, Roger’s Rock Campground in Hague, Mossy Point in Ticonderoga, and Hulett’s Landing Marina in Dresden (managed with Marina staff through contract).

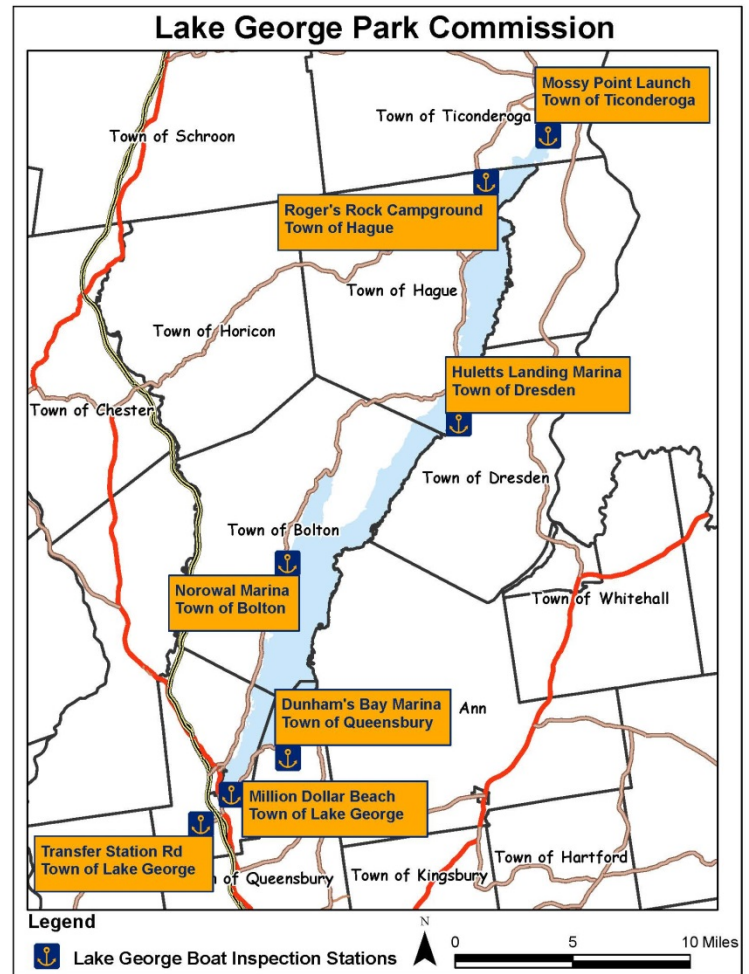
The new inspection site for 2015 was the NYS DEC owned Million Dollar Beach in the Town of Lake George. The DEC invested more than \$6 million dollars into the renovation of Million Dollar Beach recreation facility, including a brand new launch which now operates throughout the boating season. This site was added as a full LGPC inspection station when the facility opened June 10, 2015.

All staff at these sites underwent joint hands-on training by the Commission prior to the start of the boating season.

Inspection Process:

All Vessel Inspection Technicians (VIT’s) are trained to use the acronym, H.E.A.D. or Hull, Engine, Anchor, and Drain, during the inspection process. The acronym H.E.A.D provides the framework for a thorough inspection of the vessel in a systematic approach of all areas that require inspection.

HULL: The VITs walk around the boat with the owner, explaining the inspection process. The VITs conduct a visual and tactile inspection of the hull and trailer.



ENGINE: The VITs then inspect the engine of the vessel. This is accomplished by lowering the motor or lower unit and checking to see if any water drains from the engine. The VIT notes that engines use lake water to provide the necessary cooling. The result is the possibility of juvenile AIS in the water in their engine’s cooling system. Ideally, no water would be present, satisfying the Drained and Dry components of the engine inspection.

ANCHOR and DRAIN:

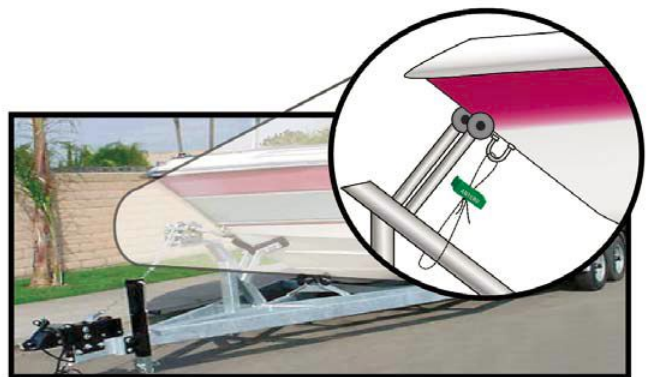
The final steps of the inspection process require the VITs to board the vessel with the owner and check the anchor, anchor line, marine and /or recreational equipment and all other compartments for standing water. VITs inspect the anchor and the anchor line for mud, organics, and specific AIS such as mussels, clams, and spiny water flea. Compartments and equipment that are dry to the touch satisfy the Drained and Dry components of the inspection criteria.

The last step of the inspection requires the VIT to inspect the bilge area of the vessel for standing water. The bilge is the lowest part of a boat and this is typically where standing water is found. The VITs instruct the boat owner to remove the bilge plug, if it hasn’t been already. The presence of standing water within the bilge or upon removal of the drain plug indicates the vessel is not sufficiently Drained and Dry.

If a vessel does not meet the Clean, Drained, and Dry standard, it does not pass inspection. The boat owner is then offered a decontamination on-site free of charge. If a vessel fails one portion of the inspection, the entire vessel does not require decontamination. By only decontaminating the parts of the vessel that failed inspection, we save the boaters time and reduce inconvenience.

The exterior of the vessel and the trailer are decontaminated by using high pressure, high temperature water. The interior is decontaminated with low pressure, high temperature water. Low pressure is used on the interior because many components on the vessels interior would be damaged by high pressures. The engine is decontaminated by using a special set of muffs that cover the engine’s water intake. The high temperature water is run through the engine until the water that comes out the output reaches 140 degrees Fahrenheit.

Once a vessel has either passed inspection or has undergone the decontamination process, the inspector applies a Vessel Inventory Control Seal (VICS). This is a small plastic seal that attaches the vessel to the trailer via a small diameter wire (see picture). These seals are numbered and color coded, allowing the Commission to keep track of where and when the vessel was inspected and sealed.



Now that the inspection is complete and the boat is “sealed”, the boater can launch at any of the nearly 50 publicly-owned and private commercial launches on Lake George. The Commission has agreements with the launches on the lake that allow the individual launches to remove the Vessel Inventory Control Seal and launch the vessel.

Public and commercial launches were issued VICs so they can seal boats as they exit Lake George. By getting their boat sealed as they leave the lake, boaters save themselves having to get an entrance inspection next time they come to the lake. As long as their VIC Seal is in place, they do not require another inspection. For more details on the inspection, decontamination and boat sealing processes, please refer to the “Lake George Aquatic Invasive Species Prevention Plan and Generic Environmental Impact Statement” on the Commission website.

Data Collection:

During the inspection process, the VITs collect information on a paper “Inspection Activity Log”. This information includes the vessel type (i.e. motor, sail, PWC) whether or not the vessel has a VIC Seal present, where the vessel was launched in the last 30 days, etc. The Inspection Activity Log also has a list of inspection procedures that each inspector must complete. This ensures a thorough, consistent inspection. Data from this form is then entered onsite into an electronic survey using the “SnapMobile” application which is installed on tablet computers. The “SnapMobile” app keeps a digital record of all boat inspections. This information is reviewed weekly, allowing the Commission to stay current with the number of inspections and decontaminations occurring at the numerous inspection locations, and manage for program efficiencies as appropriate. Staffing levels were adjusted based on the number of inspections performed each week.

Sample Collection:

During the inspection process, any aquatic invasive species found are collected and labeled with the date, vessel registration number, inspection station, and last water body visited. For ease of management, this information is entered into the same data collection survey as the Inspection Activity Log. The collected samples that could not be identified by the VITs were then provided to the Darrin Freshwater Institute for identification.

Decontamination Equipment:

Decontamination of vessels under this program is performed using high pressure hot water equipment. No chemicals are used in this process. Following the best science of vessel AIS decontamination, the water temperatures used are 140 degrees F for exterior surfaces, and 120 degrees F for soft fabric surfaces of the interior of the boat. Similarly, the hull is sprayed with approximately 3,000 psi water, and internal components, bilge, and motor are simply rinsed with hot water.



The Lake George Park Commission uses LANDA Ecos 7000 Mobile Wash and Recovery units for vessel decontamination. The LANDA comes with a 15’x30’ collection pad that collects all water used in the decontamination process, in a self-contained system. This prevents the water and any AIS present in that water from making its way into the environment.

The LANDAs have a water recovery and return system that vacuums the used water from the collection pad, filters the water, and uses the water to refresh the onboard reservoirs. This system allows the VITs to recycle water, reducing environmental impacts. The LANDAs come with a variety of different attachments that allow the VITs to decontaminate different portions of a vessel. There are high-pressure nozzles for the hull and trailer, low-pressure hoses for the interior compartments, and special attachments that allow for the flushing of motors.

Inspection Site Staffing and Site Improvements

Inspection Schedules:

Throughout the 2015 boating season, all inspection stations were open 7 days per week. The hours of operation for these stations varied by site and the demand for inspections. During the peak boating season of July and August, all inspection sites were staffed and operating from dawn until dusk.

Hours of operation during the shoulder season (April 15-June 26, September 8 – December 1) were established based on boater activity and daylight hours. Open and close times varied somewhat from station to station based on the 2014 data collected boater interactions recorded and current variables such as weather and local events. As expected, Fridays through Sundays were the busiest days requiring at least three or more Inspectors on duty.

Following the 2015 Labor Day weekend, boating traffic decreased considerably resulting in the closure of the Transfer Road inspection station located near Exit 21 of I87. For the remainder of the 2015 boating season, boaters seeking inspection and access to Lake George's southern basin were directed to the new NYS DEC Million Dollar Beach launch and inspection station thereby reducing program costs and redundancy in services in the south basin of the lake. Additional inspection site closure occurred at the Dunham's Bay inspection station located on Bay Rd in Queensbury. This site was closed week days beginning in October and operated only on weekends. There were no concerns or complaints registered with the Commission as a result of reduced hours and/or station closures beginning in September.

Staffing:

The Commission engaged in a full open bid process in 2015 to obtain the services of an employment agency to provide the seasonal staffing for this program. Global Employment Services, Inc. (GES) operating out of Selkirk, NY was selected as the lowest cost responsive bidder, and was able to provide the staffing and payroll administrative services for the program under the direction of the Commission. This firm is responsible for providing staffing of all Vessel Inspection Technician positions, liability and worker's compensation insurance. Commission staff work directly with GES management on the selection and hiring of program personnel, and operational oversight of all seasonal staff falls under the direction of the Commission's Operations Supervisor III.



Many VITs hired in 2014 returned for the 2015 season. Vacant positions were filled from the pool of new applicants received prior to the start of the 2015 boating season. These new hires received training from Commission staff and from the Inspection Station Site Supervisors. Additional VITs were hired in mid to late August as a result of several VITs returning to college, leaving vacancies that needed filling.

Seasonal positions under the program were as follows:

VIT1: New hires, no experience (\$11/hour)

VIT2: Returning hires, more independent and higher training (\$12/hr)

VIT3: Act as backup to Site Supervisors (very few) (\$13/hr)

Site Supervisors (5 total): (\$15/hr)

Given the volume of launch information gathered in the 2014 season, the Commission was able to significantly reduce the staffing (and thereby cost) of the program in 2015. Staffing was based upon actual traffic numbers, and much more accurately reflected the need of the sites based on 2014 data. Through diligent management, staffing costs in 2015 were reduced almost \$60,000 versus the 2014 season while providing the same level of service. We anticipate similar or even reduced levels of staffing in any future program as the program is optimized through experience.

Launch Management and Controls

There are more than 80 locations on Lake George where a trailered boat can be launched into the lake. These launches can be divided into three general categories: Public (state and municipal), Commercial (marina and motel), and Private (Homeowner Association and Private Homeowner). The management of each of these types of launches was distinct under this program, and were handled as follows:

Public: There are three NYS DEC launches and two municipal launches (Hague and Putnam) on Lake George. The DEC properties (Mossy Point, Roger's Rock, and the Million Dollar Beach) are three of the most heavily used launches on the lake, and as such, they were utilized as inspection sites and fully staffed by LGPC inspection technicians full time during operating hours. The two municipal launches were not inspection sites, but were staffed by town personnel who were charged with checking for inspection seals and re-sealing boats as they exited the lake. The Commission thanks the Towns of Putnam and Hague for putting forward the funding and efforts to comply with this program. Operating hours of those launches was set by the Town Boards of the respective municipalities.

Commercial: There are 47 marina and motel launches on Lake George. These facilities were responsible for checking for and removing inspection seals prior to launch and for re-sealing boats to trailers upon exit from the lake during operating hours. These facilities were also required to secure their launches in some manner during non-business hours. These facilities have operating agreements with the Commission noting their responsibility under the program, and were required to keep simple log sheets of launch activity and records of seals provided and removed. This process was straight forward and fairly easy for the commercial launches to administer, and there were few reported problems with managing this as a new system.

Private: There are seven Homeowner's Associations around Lake George that have launches on their property, and another 29 private homeowner launches. Boats owned by these individuals were allowed

to launch freely, provided those boats remained on the property and did not travel to another waterbody. A list of homeowner or association member boats authorized to use the private launch was provided to the Commission, certifying that no outside boats could launch from that property.

Night Operations at State launches:

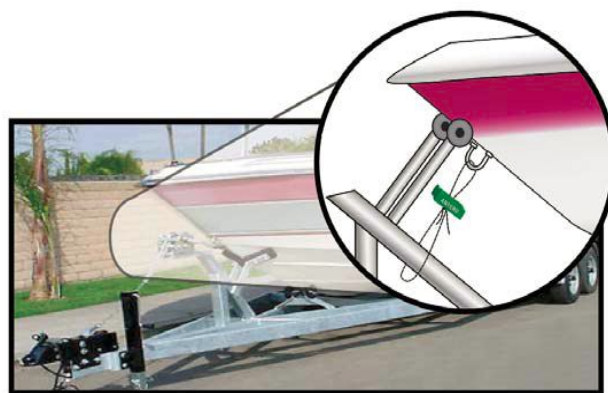
By NYS DEC operational policy, Rogers Rock and Mossy Point state-owned launches on Lake George are open to the public at all times. Million Dollar Beach is administered differently as a day-use site, and closes at night in the primary boating season. During the evening hours when the Commission's inspection facilities are closed, boaters demonstrate compliance with the regulations by signing into a launch register, similar to a hiking trail register, removing their vessel inspection control seal and placing it into a secure lock-box provided at the inspection site. When Commission vessel inspection technicians arrive at the launch in the morning, the seals are recovered from the night drop box, and these seals are compared with the number of vessel trailers in the parking lot. Any discrepancies between seals and trailers in the lot are researched to ensure compliance.

Management Efficiencies: "Lake George Only" Boats

In preparation for the Lake George AIS regulations it was recognized that a significant portion of the regulated constituency are boats that are stored locally and only used on Lake George. In consideration of this, the Commission organized programs that would allow these boats to forego the inspection process knowing that they were not a threat to bring new AIS to Lake George. These programs serve as a convenience to the boating public, and also represent significant program efficiencies.

Vessel Inspection Control Seals (VICS):

Pursuant to the AIS regulations, it is unlawful for any person to launch or attempt to launch a trailered vessel into the waters of Lake George during the boating season (April 15 to December 1) without an intact vessel inspection control seal. Vessels may be equipped with a VICS by Commission inspection and decontamination staff, as well as by operators of public and commercial launches upon retrieval of a boat from Lake George. When a boat is decontaminated or passes an inspection, Commission staff attaches a green colored VICS to the boat. When a boat is retrieved from Lake



George, a launch operator attaches a red colored VICS to the boat. In this manner, boats retrieved from Lake George that are used exclusively on the Lake and return to the Lake with a red VICS need not undergo additional inspection. Further, in contrast with a green VICS, the red colored VICS alerts stewards for other waterbodies in the region that a vessel has last been in Lake George. Using this program, a boat that is only used on Lake George will never be required to undergo an AIS inspection.

Hauler Agreements:

The Commission administered Hauler Agreements with local marine services professionals who maintain, haul and store Lake George boats. Within these agreements, Haulers must certify specific vessels that operate on Lake George and that are under the sole care, custody, and control of the

marine services professional. Haulers are authorized to annually retrieve customer boats from the Lake in the fall, service the boats, store them, and then in early summer launch them again into the Lake. These boats present no risk of new AIS introduction to Lake George, and accordingly were exempt from the inspection program through a written hauler agreement with the marine services professional. These hauler agreements identify the boats by registration number for which the hauler maintains care, custody, and control, and authorizes these boats to be launched without inspection, provided the hauler can certify the subject vessel has not been launched into any waterbodies aside from Lake George. Vessels not identified in the agreement, or which have visited another waterbody are required to be inspected at one of the regional LGPC boat inspection facilities and receive a Vessel Inspection Control Seal (VICS) prior to launch into Lake George.

Residential and Homeowner Association (HOA) Launches:

The last group of no-risk local boats that may be launched into Lake George are those owned and launched by Residential and HOA lakefront landowners with private boat launches. Residential and HOA boat launches are those that are owned by individual landowners or registered HOA’s, and which are not used for commercial purposes. In order to operate a residential or HOA launch, the respective owner must register the launch with the Commission, and as a condition of this registration process, specify the boats owned by the landowner or respective HOA member, and certify that each of these boats is not trailered to other waterbodies. If and when a boat travels to another waterbody, it may only be launched into Lake George once it has passed a Commission sanctioned Cleaned-Drained-Dry inspection or decontamination and received a vessel inspection control seal. In this manner, similar to the hauler agreement referenced above, local boats utilized exclusively on Lake George need not undergo inspection, which saves the boat owner and Commission inspection staff valuable time.

Program Cost, Funding, and Partners

This program exists through generous funding provided through a cost-sharing between the NYS Environmental Protection Fund and through local municipal and nonprofit contributions. Expenses and income are detailed in the tables in this section. This successful program is a model demonstrating that state, local and private organizations can all come together to achieve a common goal. Lake George is a significant ecological and economic treasure to both NYS and to the local region, and for these reasons a strong bond has been formed to help provide for its long-term protection.

To get a full understanding of the program, itemized below are the costs and contributions of the program for both 2014 and 2015.

Expenses:

1. Staffing and Program Administration

Table 2: Direct costs associated with staffing and program administration are as follows:

Expense Type	Amount	Amount	Amount
One Time Expenses	2014	2015	Total
Decontamination units (9, see Table 1)	\$204,000.00	\$0.00	\$204,000.00
Site Work and Signage	\$49,722.41	\$1,617.00	\$51,339.41
Safety/Security (fire extinguishers, lock boxes)	\$1,648.49	\$68.10	\$1,716.59

Radios/Cellphones/tablets/credit card terminals	\$7,155.54	\$2,125.69	\$9,281.23
Inspection site office (1 in 2015 at MDB)	\$31,627.00	\$7,700.00	\$39,327.00
Secure Storage Unit Delivery/Set up	\$1,828.62	\$350.00	\$2,178.62
Canvas Covers for Landas (2 in 2014, 4 in 2015)	\$1,500.00	\$3,000.00	\$4,500.00
Cloud Setup	\$251.27	\$0.00	\$251.27
Subtotal	\$297,733.33	\$14,860.79	\$312,594.12
Recurring Expenses			
Wash Unit Maintenance/misc. parts	\$6,594.44	\$1,445.16	\$8,039.60
Training	\$1,093.48	\$0.00	\$1,093.48
Seals and Wire	\$12,212.40	\$3,094.00	\$15,306.40
Fuel & Truck Maintenance	\$4,983.56	\$3,621.70	\$8,605.26
Advertising/Rack Cards	\$2,077.14	\$1,285.00	\$3,362.14
Hardware/Supplies	\$8,028.29	\$865.51	\$8,893.80
Uniforms	\$3,258.99	\$3,770.90	\$7,029.89
Subtotal	\$38,248.30	\$14,082.27	\$52,330.57
Monthly Expenses			
Utilities (electrical service, restrooms, landlines)	\$4,141.96	\$3,633.24	\$7,775.20
Secure Storage	\$3,321.25	\$3,247.68	\$6,568.93
Cellular Phones (2014: season total; 2015: through Nov.)	\$5,819.44	\$1,485.41	\$7,304.85
Cloud Services	\$269.91	\$269.91	\$539.82
SnapSurvey WebHost Service (annual subscription)	\$2,553.00	\$3,350.00	\$5,903.00
Subtotal	\$16,105.56	\$11,986.24	\$28,091.80
Staffing			
Seasonal Staff Labor Cost	\$548,078.47	\$482,433.11	\$1,030,511.58
Background Checks	\$4,865.00	\$3,050.02	\$7,915.02
Marina Liability Insurance	\$13,383.00	\$13,800.00	\$27,183.00
Finance charges	\$501.94	\$0.00	\$501.94
Full time Park Ranger with Benefits	\$49,738.05	\$49,738.05	\$99,476.10
Subtotal	\$616,566.46	\$549,021.18	\$1,165,587.64
Summary: Program Annually Recurring Expense	\$670,920.32	\$575,089.69	\$1,246,010.01
<i>Original Estimated Cost</i>	<i>\$700,000.00</i>	<i>\$700,000.00</i>	<i>\$1,400,000.00</i>
<i>Percent under budget</i>	<i>4.15</i>	<i>17.84</i>	<i>11.00</i>
Summary: Program One-Time Up-Front Expense	\$297,733.33	\$14,860.79	\$312,594.12
<i>Original Estimated Cost</i>	<i>\$300,000.00</i>		
<i>Percent under budget</i>	<i>\$0.76</i>		
TOTAL Program Cost to Date	\$968,653.65	\$589,950.48	\$1,558,604.13
<i>Percent under budget</i>	<i>3.13</i>	<i>15.72</i>	<i>8.32</i>

Program Income:

Table 3: Staffing and program administration costs incurred by the Commission were shared by New York State and the “Save Lake George Partnership” of locally-based municipal and nonprofit entities as follows:

Source	2014 Funding	2015 Funding
NYS Environmental Protection Fund	\$350,000	\$350,000
Warren County	\$150,000	\$150,000
Village of Lake George	\$30,000	\$30,000
Town of Lake George	\$30,000	\$30,000
Town of Bolton	\$30,000	\$30,000
Town of Queensbury	\$30,000	\$30,000
Fund for Lake George	\$30,000	\$30,000
Lake George Association	\$22,000	\$30,000

Table 4: 2015 funds invested by Towns to steward Town Launches:

Funding	Source
\$27,000	Town of Putnam, Staffing the Town’s launch
\$14,000	Town of Hague, Staffing the Town’s launch

2015 Inspection Program Results

The Lake George Park Commission boat inspection program had a total of 27,852 boater contacts at 7 regional inspection stations in the year 2015 (Figure 1, see Appendices for all figures and tables referenced henceforth). Fifty-one percent of these (10,247) were boats arriving at Lake George without a Vessel Inspection Control Seal (VICS), requiring a full inspection (Figure 2). Of these 10,247 trailered boats, 16% posed a threat of aquatic invasive species transport, and received onsite decontamination (Figure 3).

Twenty seven percent of program boater contacts were boats returning to Lake George with a Vessel Inspection Control Seal (Figure 4), meaning they had either already had an entrance inspection from a previous visit or they were returning to Lake George following a previous exit inspection. This represents significant program efficiency, in that these boaters do not require a full inspection, as they had already gone through either the entrance or exit inspection process. The exit inspection of trailered boats being retrieved from Lake George represents roughly 36% of all boater contacts.

During the 2015 season, 171 vessels arrived at inspection stations with visible organisms (plant and animal) attached to the vessel or trailer. A total of 106 visible aquatic invasive species were found on vessels throughout the season, equating to approximately 1.03% of boats arriving at Lake George. This is a reduction, compared to the 2014 boating season, where 257 vessels were found to have visible organisms (Table 5).

Table 5: Visible AIS retrieved during entrance inspections in 2014 and 2015

Species	2014	2015
Eurasian watermilfoil	119	67
Zebra mussels	23	20

Curly leaf pondweed	13	12
Water chestnut	8	7
Snail	2	0
Total Collected	165	106

For more detailed results, please see Table 7 in the attached appendices, which break the data out further by origin of boat and what was found.

During the inspection process Vessel Inspection Technicians gathered information about the subject vessel including the last waterbody from which the vessel was retrieved. The 2015 inspection program identified that boats arriving at Lake George had previously visited 432 unique waterbodies across the United States and Canada as the last body of water prior to coming to Lake George (Figure 5, Table 6). The ten most common waterbodies visited prior to coming to Lake George include the Hudson River, Saratoga Lake, and Lake Champlain (Table 8). The Hudson River and Lake Champlain are each known to have greater than 50 aquatic invasive species.

Data from the inspection program indicate trends in the timing of boater activity. There were significantly greater numbers of entrance inspections during the short “peak” summer season (June 27-September 8) compared with the longer shoulder season (April 15-June 26, September 8 – October 12). Expanding upon seasonal differences in boater activity, Figures 7 and 8 depict the number of entrance inspections and decontaminations throughout the boating season. These data reflect a bell-shaped curve indicating greater boater activity from late June through August, and significantly reduced activity at regional inspection stations during spring and fall.

In an effort to increase program efficiencies, staff levels were adjusted throughout the boating season. Total staff hours for the inspection program ranged from 700 to 1300 hours per week from late May through early September when hours were lowered in response to waning boater activity (Figure 9). That said, waning boater activity in the tail end of the 2015 boating season resulted in a relatively costly program, with the relative cost per inspection rising from a low of \$10.59 the week of July 31st into the hundreds of dollars per inspection in the month of November (Figure 10). It should be noted, the relatively high cost per inspection recorded for stations located at Transfer Station Rd and Dunham’s Bay are due to the upland location of these stations causing them to be geographically limited to entrance inspection services. In contrast, all other inspection stations may provide entrance inspections as well as exit inspections for trailered vessels leaving Lake George.

Program Compliance

While the inspection program is a major advance in protecting Lake George from aquatic invaders, it requires a level of compliance to ensure that the intent and letter of the regulations is being met by the boating public. Compliance, or checking to make sure that boaters and facilities are working properly in the program, is conducted primarily by the Commission’s Marine Patrol with additional upland checks by the Commission’s Park Ranger and Operations Supervisor.

The Marine Patrol is actively engaged in the education of the boating public and enforcement of existing invasive species regulations. The marine patrol assisted at inspection stations and patrolled the

unattended launches around the lake. The patrol's goal was to help educate the public about the inspection program as well as ensure that all vessels were properly inspected prior to launching into the waters of Lake George.

The patrol dedicated 1,155 patrol hours to aquatic invasive species in 2015. These hours were broken down into three categories: Time at launches, Time checking public and private launches, and AIS support time (Figures 11 and 12).

During the 2015 season, the patrol spent 184 hours at the inspection sites around the lake. The time spent at these launches was used to assist the inspectors as well as talk to the boaters about the mandatory vessel inspection program and the importance of stopping the spread of invasive species not just in Lake George but other waterways as well.

The patrol also checked private launches. There are almost ninety locations on Lake George that a trailered boat can be launched, mostly private, that do not have Vessel Inspection Technicians located at them. To help ensure compliance of these launches under this program, these launches were divided up by the patrol sectors they are located in. Each day, in addition to stopping in at the public launches and meeting with boaters, each patrol was given the task of checking each private launch in its sector. The patrol recorded if there was contact made at the launch, whether the launch was chained off, and if there was activity when checked. The patrol spent 704 hours and made 7,752 checks on launches around the lake. During those checks, there was activity present 469 times. Several of those checks resulted in finding vessels that were not registered to launch at certain private launches.

The patrol also spent 95 hours on AIS support time. This time includes participation in the annual clam survey, boater education and assisting with the efforts to mat the Roger's Rock area to stop the spread of Asian Clams.

This program has experienced an extremely high level of compliance, thanks to several factors including boater support of the program, education and outreach, marina support, and compliance inspections. In the year 2015, only one ticket was written under this regulation, and it related to launching without an inspection. A conviction was obtained and a fine paid by the individual.

2016 Anticipated Program

The pilot AIS prevention program and its associated regulations have come to a close as of December 1, 2015. A part of that process included the ongoing evaluation of the program's effectiveness, efficiency and public support. This evaluation was to conclude with a summary and recommendations for potential long-term implementation.

Towards this end, Commission staff conducted a two-year program evaluation and presented it to the full Commission at its September 22, 2015 monthly meeting. Executive Director Wick gave a full presentation to the Commissioners regarding the program's outcomes, costs, income, compliance and recommendations for modifications for any future program. Following the presentation and comments and questions from the Commissioners and the general public, the Commissioners voted unanimously to seek to make this program permanent. To do so, a revised set of draft regulatory language was developed (very similar to pilot regulations), and sent to the appropriate regulatory review agencies of New York State executive government in November of 2015. Upon State regulatory review and

approval, local public hearings on the program may commence. The local partnership which has provided 50% of the cost of the program has put forth resolutions noting full commitment over the next three years to fund their local share of the program.

Following the two year pilot program, it was determined that exceedingly few boats enter Lake George in April and November. Also, based on AIS science, there is very little threat of transfer of invasive species during these times, as all plants have died back and there is no spawning of invasive animals (mollusks, snails, etc.) at that time of year. Given these two facts and the program's relatively high cost per boater interaction to operate in April and November, the revised regulations seek to amend the dates of operation of the regulatory program resulting in a narrower season of May 1 through November 1.

Another modification to a future program is the pending inclusion of Trout Lake in the Town of Bolton. Following local outreach and a public meeting with the Town of Bolton Supervisor, the Commission has decided to include Trout Lake in the 2016 Vessel Inspection program, as it is a tributary lake to Lake George that has trailered boats on it. In essence, any invasive species getting into Trout Lake has a very high probability of flowing into Lake George through its outlet Huddle Brook. Adding Trout Lake will increase the protection of Lake George at relatively low costs. The majority of the boats on Trout Lake are only used on Trout Lake. These vessels would be sealed prior to the 2016 boating season as "Frozen Boats", allowing them to launch into Trout Lake or Lake George without the need for an inspection, since they pose no threat of AIS contamination. If one of these vessels goes elsewhere, it would need an inspection prior to launch into Trout Lake or Lake George, like any other vessel. The inclusion of Trout Lake in the 2016 Inspection Program benefits Trout Lake by limiting the risk of AIS introduction and protects Lake George by preventing the transmission of any future AIS introduction from Trout Lake into its waters. The Commission has contracted with the RPI's Darrin Freshwater Institute to conduct a full aquatic plant survey that will provide the Town and Trout Lake residents a full understanding of what is currently in their lake as a baseline for any future impacts or efforts.

Lastly, the Park Commission will begin selling Lake George Boater Registrations at three of the seven regional inspection stations (Mossy Pt., Rogers Rock and Million Dollar Beach). The purpose of selling registrations on-site is twofold. First, it provides convenient one-stop shopping for the boater. Secondly, it will improve boater compliance rates with Commission regulations which require boaters on Lake George to be registered with the Commission on either a daily, weekly or annual basis.

Conclusions and Recommendations

The two-years of the Lake George Park Commission's Pilot Aquatic Invasive Species Prevention Program (trailered boat inspection program) have been fully implemented and completed, and the effort has been deemed a significant success over the two years of the effort. Success is measured in many ways, including stopping several hundred visible AIS from entering Lake George, and decontaminating several thousand "at-risk" boats prior to launch. The Lake George program is modeled on the successful Lake Tahoe effort which is in its seventh year of operation with no new AIS introduced in that timeframe. The program has seen widespread public support from the recreational users of Lake George (96% support it according to Sienna Research Poll), to local municipalities around the lake (all 9 municipalities surrounding Lake George have written resolutions of support), to the media (dozens of articles and Opinion pieces supporting it), and much more. The Lake George program has been credited in many

circles for helping to advance AIS protections in the Adirondack region and indeed much of New York State. The Commission is pleased to assist the DEC and regional partners as they advance significant efforts to prevent AIS across the Adirondacks and the State.

This program simply would not have been possible without support from all levels of government (state, county, local), nonprofit lake-based partners and the business community surrounding Lake George. The model used by the Commission to implement these protections was derived by conducting more than 70 public and private outreach meetings, and getting all of the best ideas from every sector possible. We thank all that have elected to take their time and energies to make the program as robust and efficient as it can be.

As the Commission seeks to put in place a long-term program, it is cognizant of these partners and their considerable efforts to make it happen. The Commission strives to make the program as cost-effective and public-friendly as possible, and will continue to do so for the future. Lake George still has the relatively enviable position of having only five invasive species in its crystal clear waters, and by working together, the goal is to keep it that way for generations to come.

Appendices

Figure 1: Total vessel inspections by inspection station in 2015 including boats arriving without VICs, boats arriving with VICs, and exit inspections

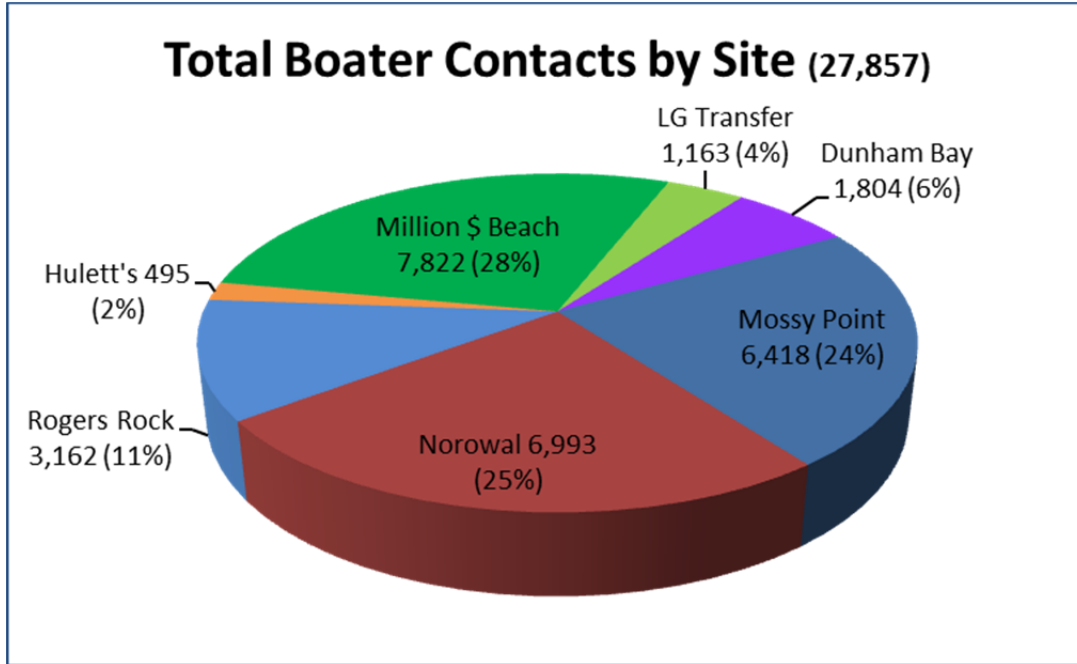


Figure 2: Total number of vessel inspections for boats arriving without VICs

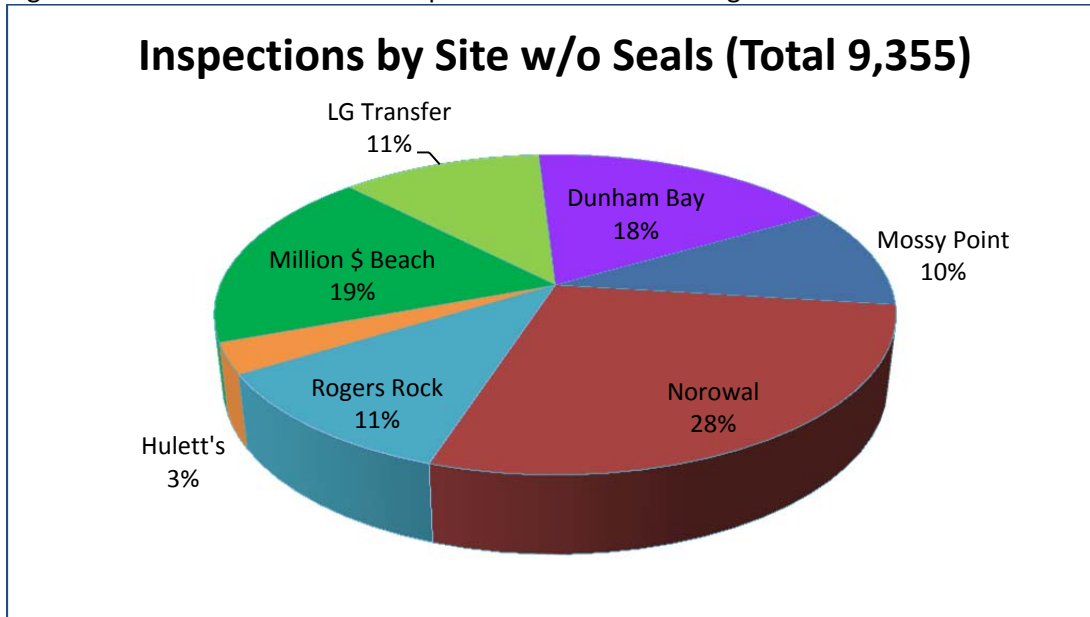


Figure 3: Total number of decontaminations

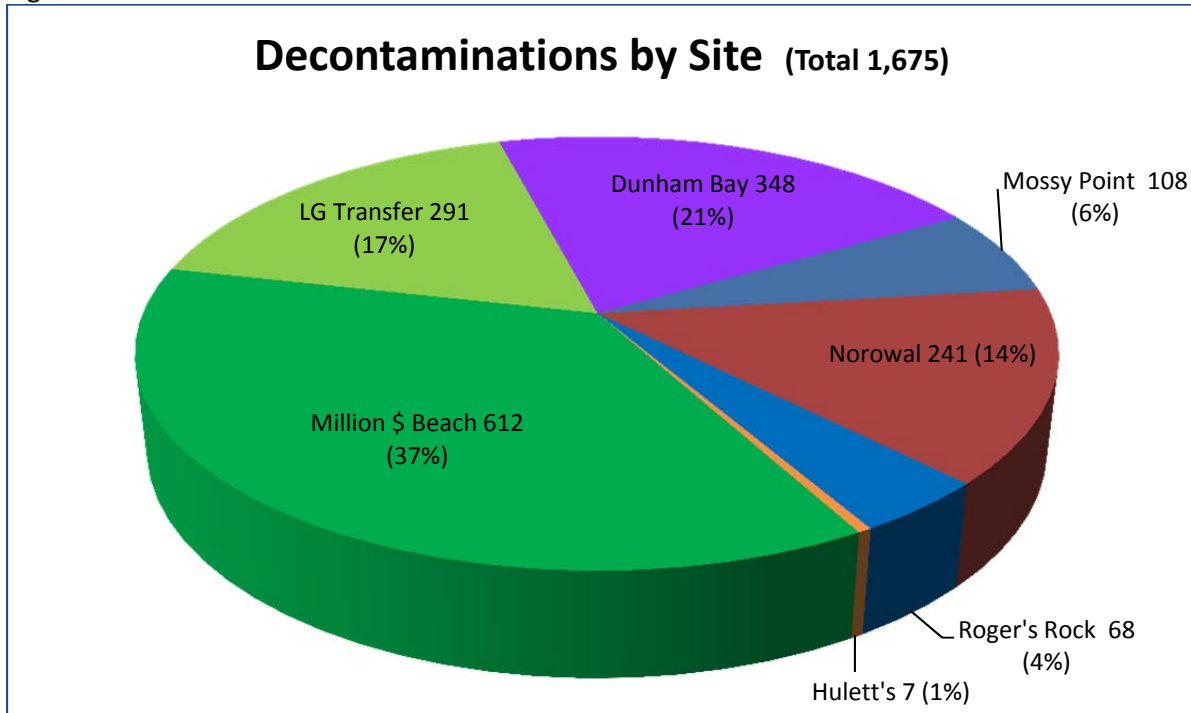


Figure 4: Total number of vessel inspections for boats arriving with VICs

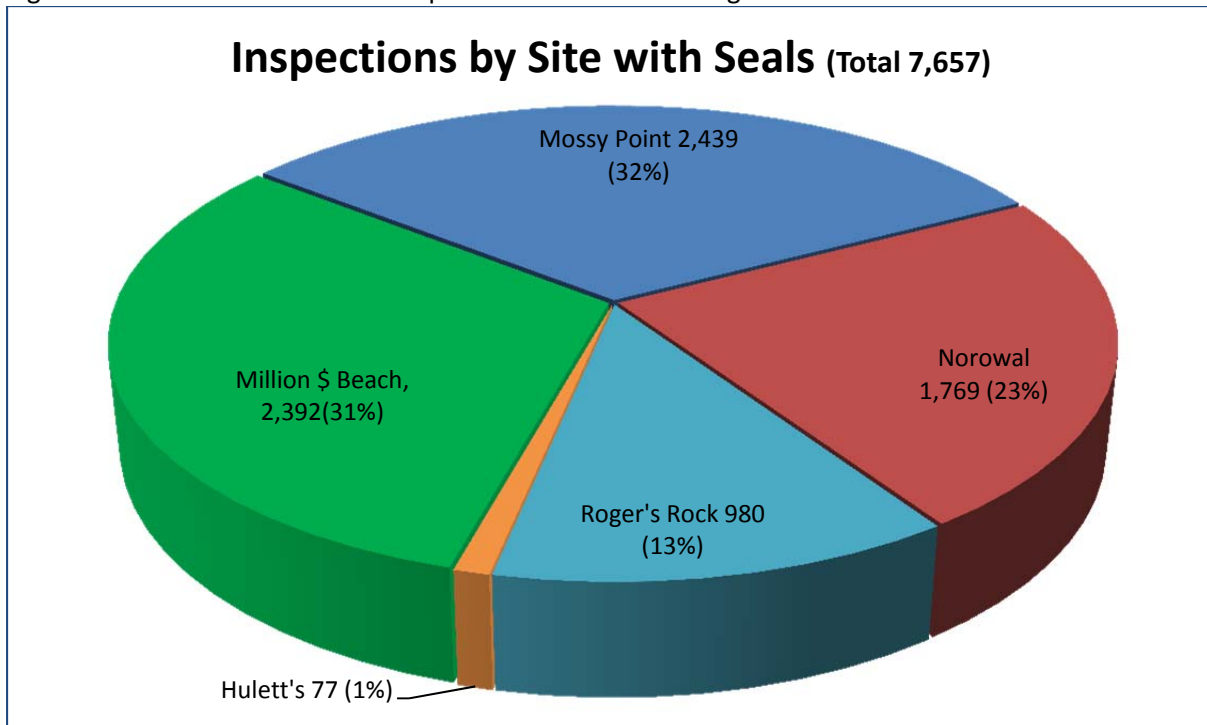


Figure 5: Geographic depiction of waterbodies visited prior to arriving at Lake George

Previous Destinations: Watercraft entering Lake George -2015

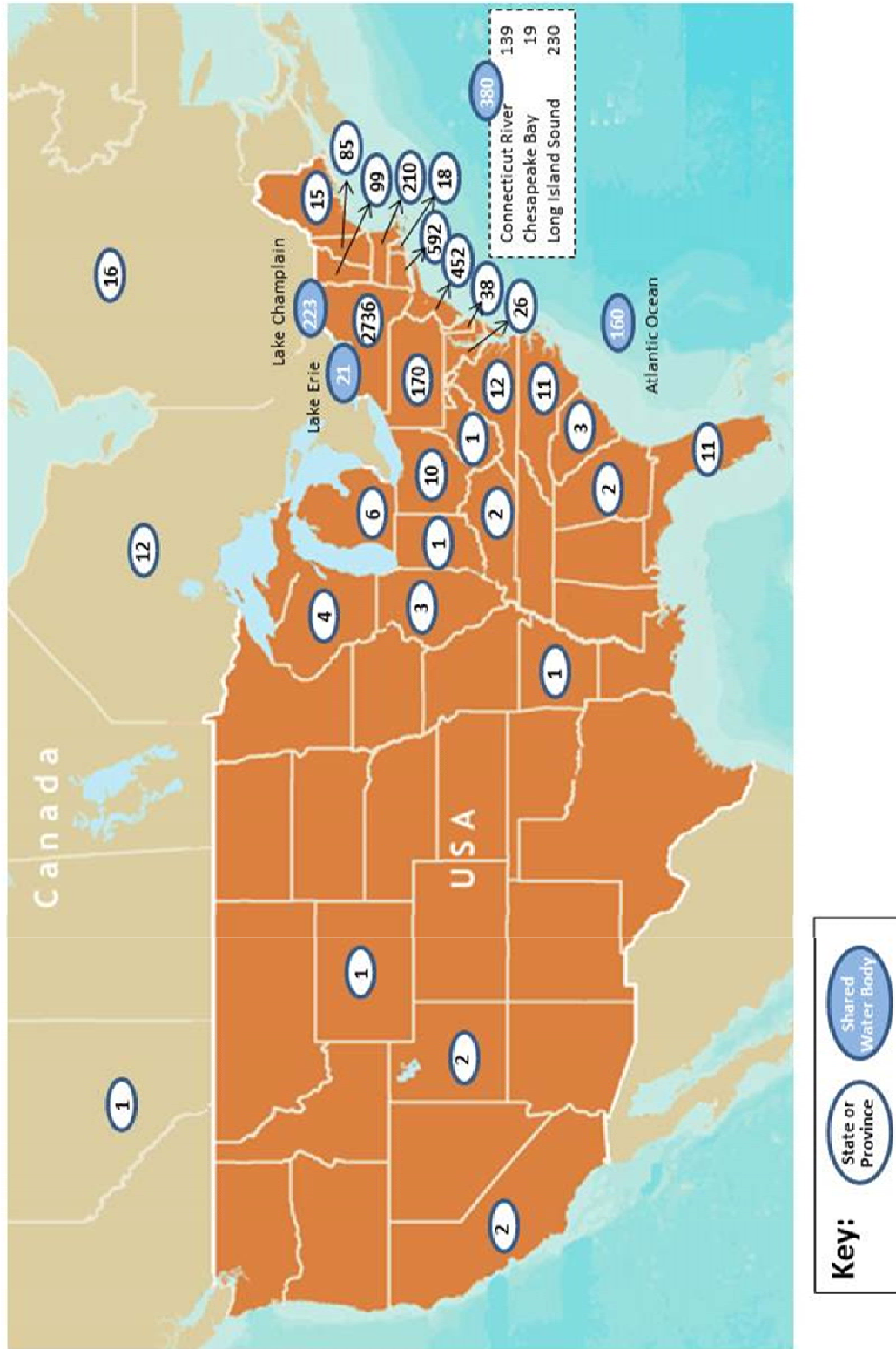


Table 6: Tabular list of waterbodies visited prior to arriving at Lake George
Last Water Bodies Visited (432) for Boats Entering Lake George - 2015

<u>Arkansas</u>	Florida Keys	Buffumville Lake
Lake Norfolk	Gulf of Mexico	Buzzard Bay
	Intracoastal Waterway	Cape Cod Bay
<u>California</u>	Lake Eloise	Charles River
Lake Sonoma	Lake Monroe	Cheshire Lake
Pacific Ocean		Connecticut River
	<u>Georgia</u>	Devils Pond
<u>Connecticut</u>	Allatoona	Goose Pond
Atlantic Ocean	Lake Nottely	Hamilton Reservoir
Bantam Lake		Hampton Pond
Beseck Lake	<u>Illinois</u>	Lake Ashmere
Candlewood Lake	Lake Michigan	Lake Buel
Cedar Lake		Lake Chaubunagungamaug
Colebrook River Dam	<u>Indiana</u>	Lake Congamond
Connecticut River	Brookville Lake	Lake Garfield
Coventry Lake		Lake Lashaway
Crystal Lake	<u>Kentucky</u>	Lake Mahkeenac
Gardner Lake	Cherokee State Park	Lake Metacomet
Highland Lake	Yatesville Lake	Lake Pontoosuc
Housatonic River		Lake Quinsigamond
Lake Lillinonah	<u>Maryland</u>	Lake Sabbita
Lake Pocotopaug	Bohemia River	Lake Shirley
Lake Quassapaug	Chesapeake Bay	Lake Singletary
Lake Zoar	Choptank River	Long Pond
Long Island Sound	Deep Creek Lake	Manchaug Pond
Mansfield Hollow Res.	Marshyhope Creek	Mashpee Pond
Moosic Reservoir	Northeast River	Massapoag Pond
Roger Lake	Pine Run Reservoir	Merrimack River
Staffordville Lake	Potomac River	Nantucket Sound
Thames River	Severn River	Northeast Pond
Tispaquin Pond		Onota Lake
Twin Lakes	<u>Maine</u>	Otis Reservoir
Waramaug Lake	Atlantic Ocean	Pantoosuc Lake
West Hill Pond	Baker Pond	Plantain Pond
West Brook	Bryant Pond	Quabbin Reservoir
	Eagle Lake	Quaboag Pond
<u>Delaware</u>	East Grand Lake	Quacumquasit Pond
Chesapeake Bay	Lake St. George	Queen Lake
Delaware River	Little Sebago Lake	Richmond Pond
Indian River Bay	Moose Head Lake	Salem Harbor
Ingrams Pond	Range Pond	Southwick Pond
Millsboro Pond	Sebago Lake	Swift River
Nauticoke River	Sokokis Lake	Wallum Lake
Trap Pond		Watatic Pond
	<u>Massachusetts</u>	Watuppa Lake
<u>Florida</u>	Anoda Lake	Webster Lake
Atlantic Ocean	Atlantic Ocean	Whitman Lake
Bal Harbour	Boston Harbor	Wickaboag Lake

Last Water Bodies Visited (432) for Boats Entering Lake George - 2015

Michigan

Devils Lake
Elk Lake
Lake Michigan
Webster Lake

Minnesota

Mc Call Lake

New Hampshire

Atlantic Ocean
Baxter Lake
Beaver Lake
Conway Lake
Dubes Pond
Granite Lake
Great East Lake
Island Pond
Lake Mascoma
Lake Massabesic
Lake Memphremagog
Lake Monomonic
Lake Ossipee
Lake Sunapee
Lake Winnepesaukee
Lake Winnisquam
Merrimack River
Moore Dam Reservoir
Newfound Lake
Pine River Pond
Silver Lake
Spofford Lake
Squam Lake

New Jersey

Assumpink Lake
Atlantic Ocean
Barnegat Bay
Beesley's Point
Budd Lake
Cheesequake State Park
Clinton Reservoir
Cranberry Lake
Deal Lake
Delaware Lake
Echo Lake
Garrison Lake
Great Bay

Greenwood Lake
Lake Apaceon
Lake Hopatcong
Lake Mohawk
Lake Musconetcong
Lake Wallenpaupack
Lake Wawayanda
Malaga River
Manahawkin Bay
Manasquan Reservoir
Manasquan River
Merrill Creek Reservoir
Metedeconk River
Monksville Reservoir
Mountain Lake
Mullica River
Navesink River
New York Harbor
Passaic River
Paulinskill
Pompton Lakes
Rancocas Creek
Raritan Bay
Raritan River
Rising Sun Lake
Round Lake Reservoir
Round Valley reservoir
Sandy Hook Bay
Shrewsbury River
South River
Spruce Reservoir
Swartswood Lake
Swinging Bridge Lake
Toms River
White Meadow Lake

New York

Abanakee Lake
Allegany State Park
Atlantic Ocean
Ballston Lake
Black River
Blue Mountain Lake
Brant Lake
Brantingham Lake
Burden Lake
Canada Lake
Canadarago Lake

Canandaigua Lake
Caroga Lake
Cayuga Lake
Cazenovia Lake
Chautauqua Lake
Chippewa Bay
Conesus Lake
Copake Lake
Cossayuna Lake
Cranberry Lake
Cuba Lake
Delta Lake
Durant Lake
Eagle Lake
East Sidney Lake
Eaton Brook Lake
Eighth Lake
Eire Canal
Findley Lake
First Lake
Forked Lake
Fourth Lake
Fulton Chain
Glen Island Sound
Glen Lake
Grafton Lake
Great Sacandaga Lake
Great South Bay
Green Pond
Greenwood Lake
Hadlock Pond
Harris Lake
Hemlock Lake
Hinckley Reservoir
Honeoye Lake
Hudson River
Indian Lake
Jamaica Bay
Keuka Lake
Kinderhook Lake
Lake Algonquin
Lake Champlain
Lake Clear
Lake Colby
Lake Eaton
Lake Erie
Lake Flower
Lake Lauderdale

Last Water Bodies Visited (432) for Boats Entering Lake George - 2015

Lake Luzerne	Saratoga Lake	Big Allen Lake
Lake Mahopac	Schroon Lake	Blue Marsh Lake
Lake Moraine	Schuylkill River	Darian Lake
Lake Ontario	Seneca Lake	Delaware Bay
Lake Oscawana	Seneca River	Delaware River
Lake Placid	Seventh Lake	Duck Harbor Pond
Lake Pleasant	Skaneateles Lake	Harvey's Lake
Lake Popolopen	Snyders Lake	Hunter Lake
Leaser Lake	Sodas Bay	Kinzua Lake
Lebanon Reservoir	South Bay LI	Lake Arthur
Lincoln Pond	St. Lawrence River	Lake Erie
Long Island Oyster Bay	St. Regis River	Lake Harmony
Long Island Sound	Staten Island	Lake Minola
Long Lake	Stewart's Bridge Reservoir	Lake Nockamixon
Loon Lake	Stewarts Pond	Lake Wynonah
Lower Saranac	Stillwater Reservoir	Lake Wallenpaupack
Manhasset Bay	Sullivan Reservoir	Lake Winnepesaukah
Merrick Bay	Summit Lake	Lehigh River
Mine Kill State Park	Susquehanna River	Mackenzie Reservoir
Minerva Lake	Swinging Bridge Reservoir	Marsh Creek Reservoir
Mirror Lake	Tennanah Lake	Nanticoke River
Mohawk River	Thousand Islands	Onota Lake
Mohegan Lake	Toronto Reservoir	Promised land St. Pk.
Montauk Bay	Trout Lake	Raystown Lake
Niagara River	Tupper Lake	Roamingwood Lake
Old Forge Lake	Upper Saranac	Sara Lake
Oneida Lake	Warner's Lake	Schuylkill River
Orange Lake	Whaley Lake	Silver Lake
Oscawana Lake	White Lake	Susquehanna River
Oswego River		
Otisco Lake	<u>North Carolina</u>	<u>Rhode Island</u>
Otsego Lake	Atlantic Ocean	Atlantic Ocean
Owasco Lake	Buffalo Lake	Burlingame Lake
Oyster Bay	Cape Fear River	Gorton Pond
Paradox Lake	Jordan Lake	Johnsons Pond
Peach Lake	Lake Hickory	Lake Wallen
Peck's Lake	Lake Norman	Narragansett Bay
Peconic Bay		Smithfield
Peconic Lake	<u>Ohio</u>	Stafford Pond
Piseco Lake	Alum Creek Lake	Waterman Reservoir
Putnam Pond	Caesar's Creek	Winnapaug Pond
Queechy Lake	Lake Erie	Worden Pond
Rainbow Falls Reservoir	Lake Milton	
Racquette River	Tappan Lake	<u>South Carolina</u>
Redfield reservoir		Atlantic Ocean
Round Lake	<u>Pennsylvania</u>	Intracoastal Waterway
Rushford Lake	Bald Eagle Lake	
Saranac Lake	Beltzville Reservoir	

Last Water Bodies Visited (432) for Boats Entering Lake George - 2015

Utah

Pineview Reservoir

Vermont

Crystal Lake
Dunmore
Emerald Lake
Harriman Reservoir
Lake Bomoseen
Lake Carmay
Lake Dunmore
Lake Hortonia
Lake St. Catherine
Lake Iroquois
Lake Morey
Lake Raponda
Lake Seymour
Lake Whitingham
Otter Creek
Waterbury Reservoir
Wrightsville Reservoir

Virginia

Chesapeake Bay
Chickahominy Lake
Lake Anna
Smith Mountain Lake
Potomac River

West Virginia

Cheat lake

Wisconsin

Mirror Lake
Muskego Lake
Pewaukee Lake
Pickerel Lake

Canada - Ontario

Georgian Bay
Lake Ontario
Lake Muskoka
Lake Superior
Ottawa River
Rideau Lakes
St. Lawrence River

Canada - Quebec

Lac Memphremagog
Lac St. Louis
Lake Magog
Lake of Two Mountains
Le Fleuve St. Laurent
Quebec River
St. Francois
St. Lawrence Seaway

Canada - Alberta

Baptiste Lake Alberta (2,550 miles)

Table 7: Visible AIS recovered at inspection stations in 2015 and the last waterbody visited by the subject vessel prior to Lake George

Origins of Aquatic Invasives in 2015						
Water Body last visited	Boats With Invasives	State	Eurasian Milfoil	Zebra Mussel	Curly Leaf Pondweed	Water Chestnuts
Arkansas River	1	OK	✓			
Ballston Lake	1	NY	✓			
Candlewood Lake	2	CT	✓			
Chautauqua Lake	1	NY	✓			
Greenwood Lake	6	NJ	✓		✓	✓
Harvey's Lake	1	PA	✓			
Hudson River	10	NY	✓	✓	✓	✓
Lake Bomoseen	4	VT	✓			
Lake Champlain	10	NY	✓	✓		
Lake Heritage	1	NJ	✓			
Lake Hopatcong	7	NJ	✓		✓	
Long Island Sound	1	NY	✓			
Mohawk River	3	NY	✓			✓
Oneida Lake	1	NY				✓
Roger's Lake	1	CT	✓			
Round Lake	1	NY	✓			
Saratoga Lake	19	NY	✓	✓		
Whaley Lake	1	NY	✓			
Black Lake	1	NY	✓			
Lake Dunmore	1	VT	✓			
Paradox Lake	1	NY	✓			
St Lawrence	1	NY	✓	✓		
White Lake	1	NY	✓			
Lake Quinsigamond	1	MA	✓			
Connecticut River	1	CT	✓			
DeRuyter Lake	1	NY	✓			

Table 8: Top ten waterbodies visited prior to arriving at Lake George

	Water Body	Number of AIS	Number of watercraft from	
			2014	2015
1	Hudson River	122	379	515
2	Saratoga Lake	4	279	375
3	Great Sacandaga Lake	3	196	263
4	Lake Champlain	50	203	251
5	Long Island Sound	Salt Water	124	246
6	Schroon Lake	3	114	204
7	Lake Hopatcong	3	185	197
8	Candlewood Lake	3	125	141
9	Greenwood Lake	2	122	127
10	Connecticut River	4	91	127

Figure 6: Shows peak season Entrance Inspection activity by day for each inspection station in 2015.

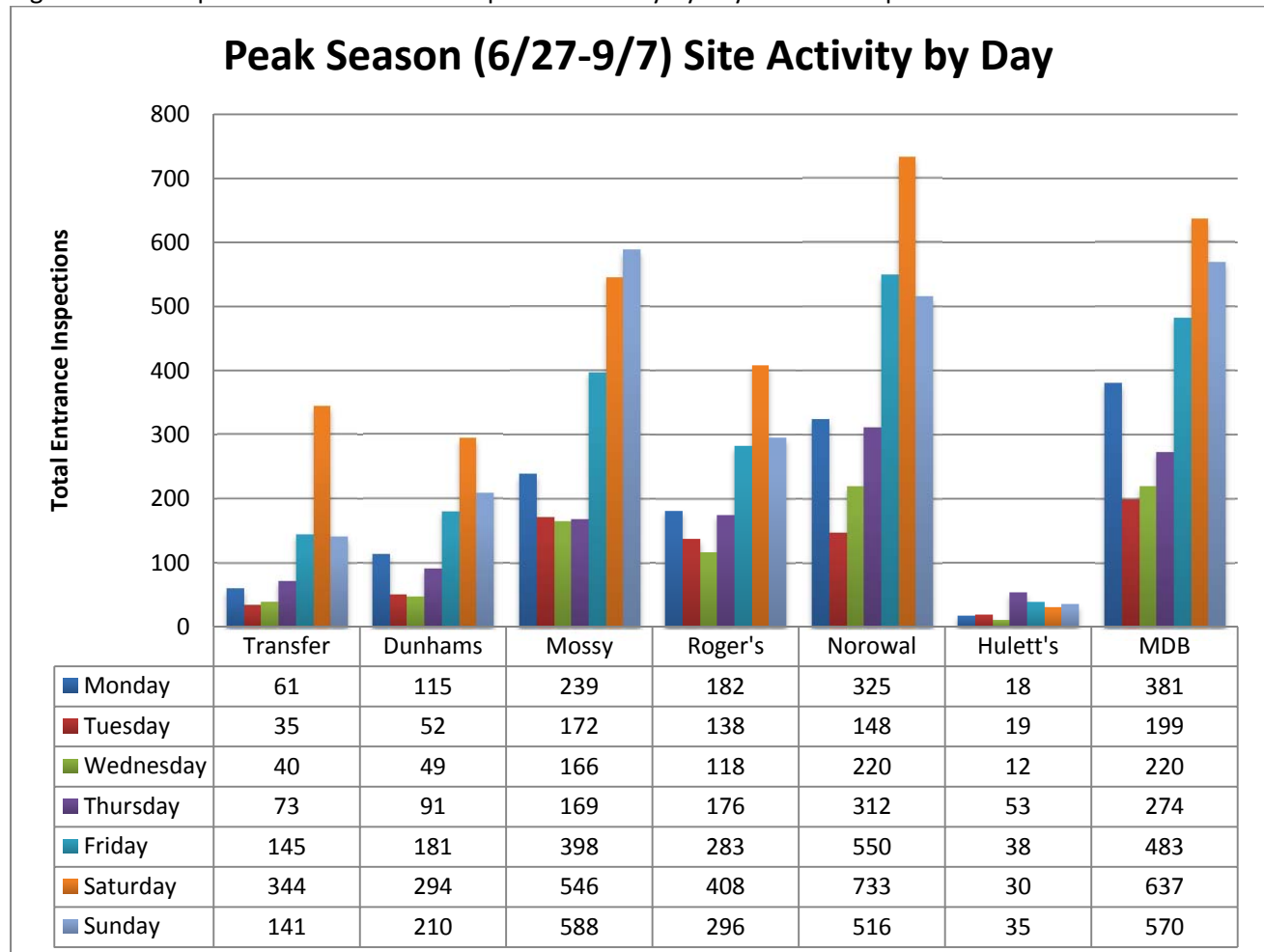


Figure 7: Temporal distribution of entrance inspections by week throughout the 2015 boating season

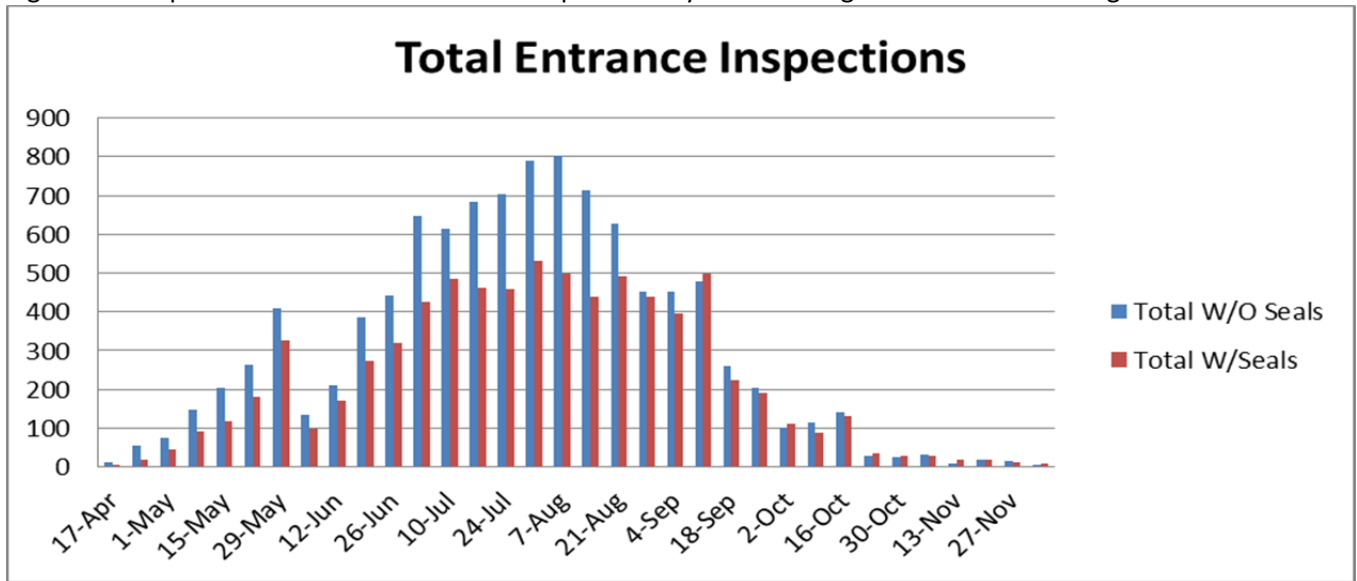


Figure 8: Temporal distribution of inspections and decontaminations by week throughout the 2015 boating season

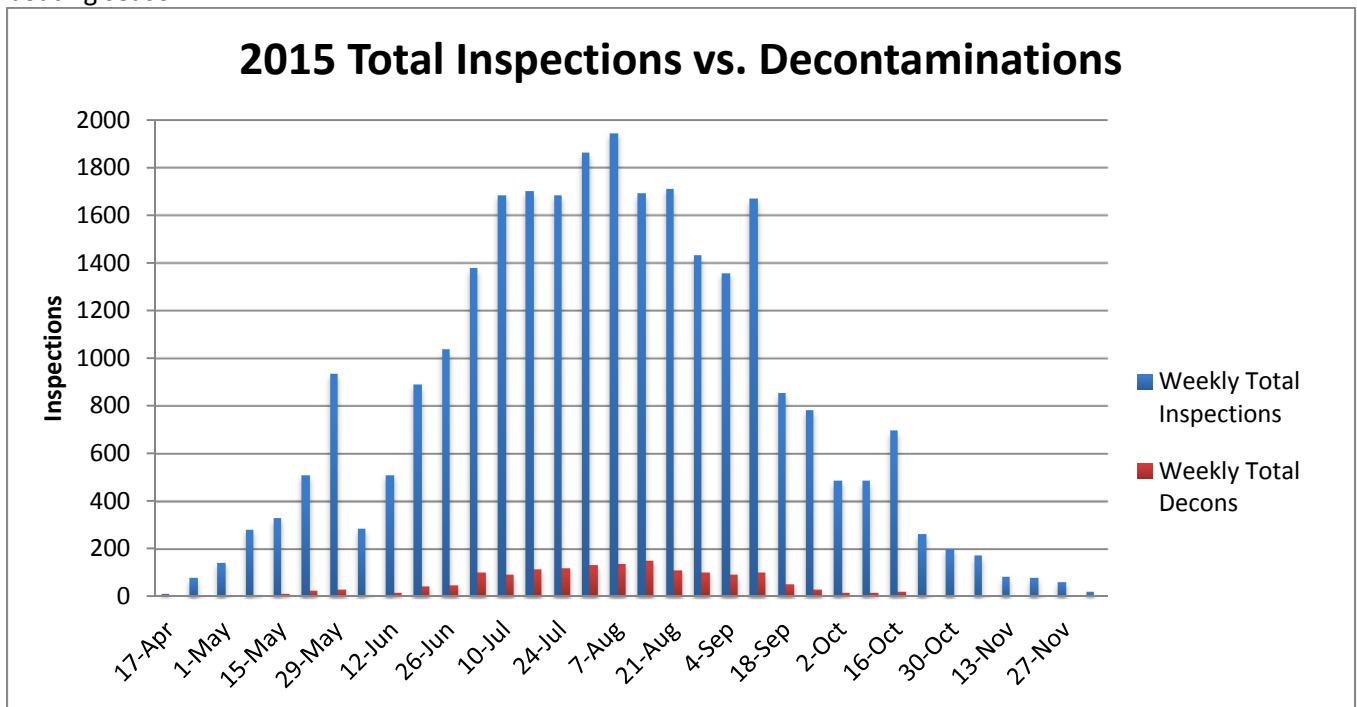


Figure 9: Temporal distribution of staff hours by week throughout the 2015 boating season

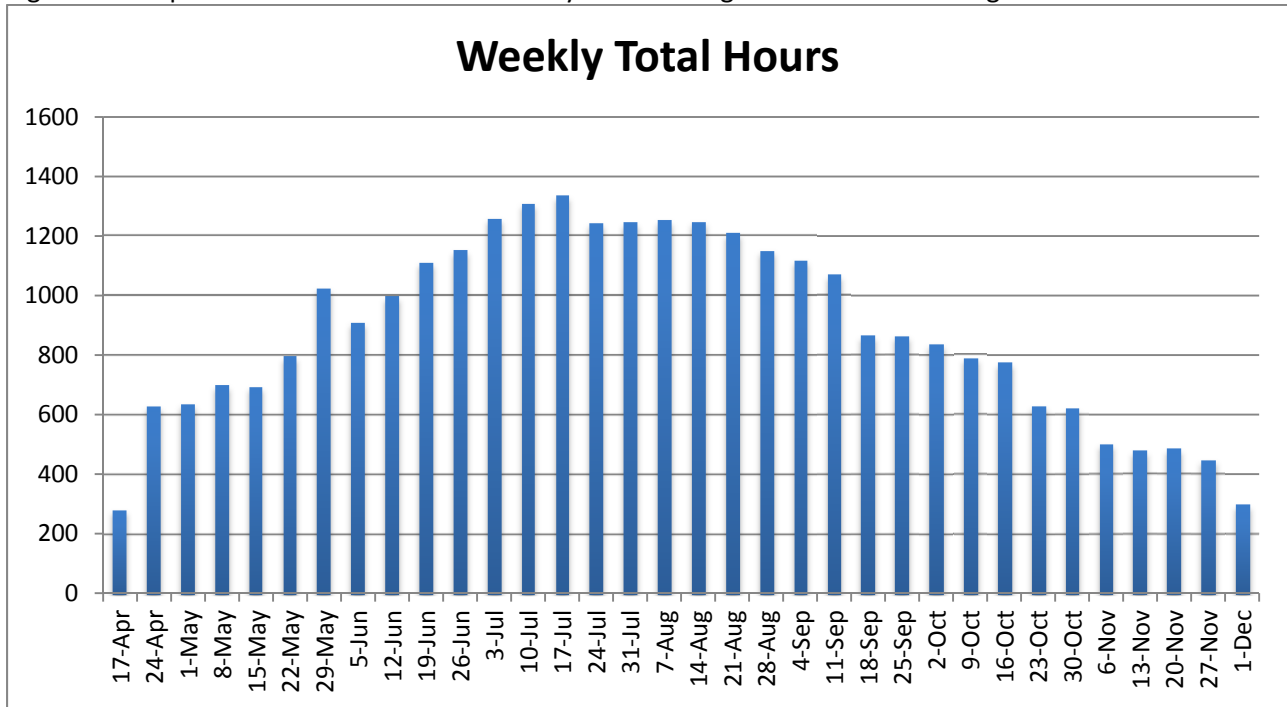


Figure 10: Temporal distribution of cost per inspection by week throughout the 2015 boating season.

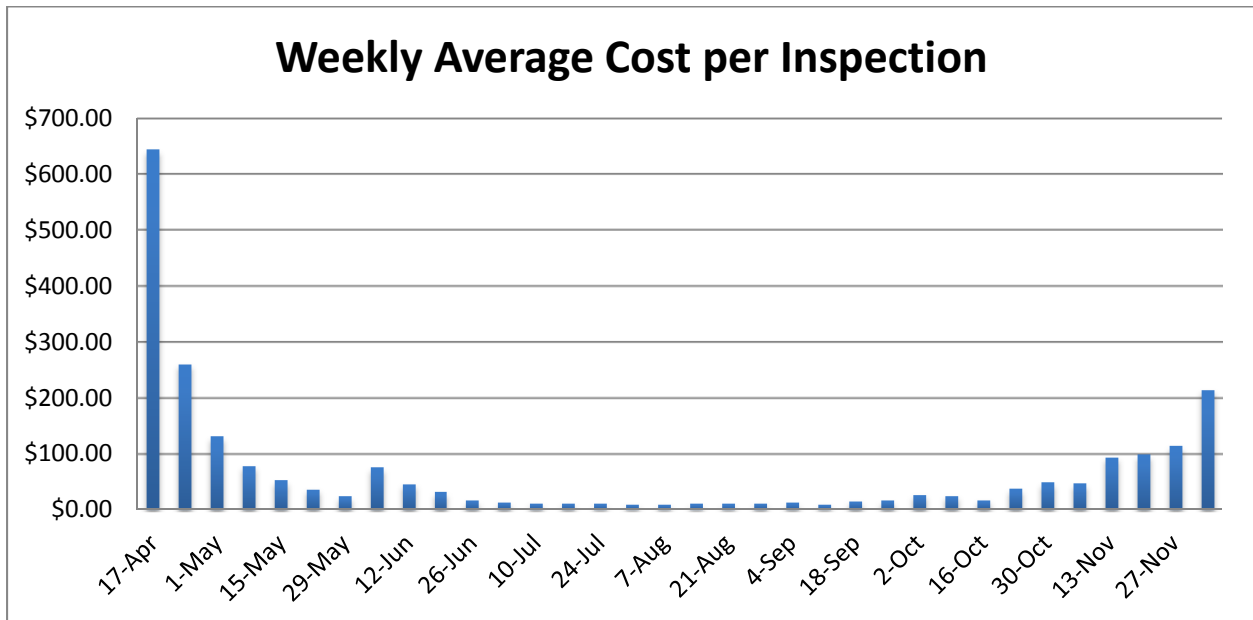
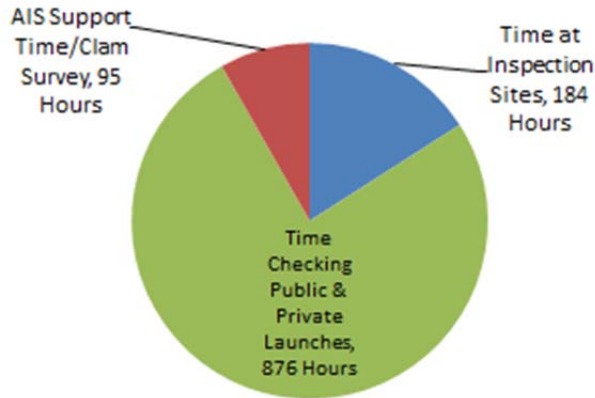


Figure 11: Commission Marine Patrol Time Dedicated to AIS Program Compliance, Totalling 1,155 hours

Marine Patrol AIS Hours Breakdown



Patrol spent 1155 hours on AIS, equal to 18.5% of total Patrol hours in 2015 through 9/10/2015

Figure 12: Commission Marine Patrol AIS Launch Compliance Checks by Location

