





Great Lakes Restoration Initiative: Lake Ontario Headwaters Watercraft Inspection Program

Table of Contents

Program Results & Discussion	3
Bibliography	
Location Use Data Summaries	10
Black Lake and Indian River Lakes	
Seventh & Eighth Lakes	14
Lower Raquette Reservoirs	
Meacham Lake	
St. Lawrence River – Wilson Hill	_



Great Lakes Restoration Initiative: Lake Ontario Headwaters Watercraft Inspection Program

2019 Results

Adirondack Watershed Institute Stewardship Program

Introduction

Eastern Lake Ontario and the St. Lawrence River serve as the chief points of entry connecting the Atlantic Ocean with North America's globally significant inland waterways comprised of the Great Lakes and connecting tributaries. For decades, transoceanic shipping has been the most consequential vector for introducing invasive species into the Laurentian Great Lakes, resulting in the highest rate of introduction of new invasive species to freshwater systems in the world (Ricciardi, 2006). Once established in the Great Lakes, secondary dispersal overland via recreational watercraft soon threaten inland waterways (Johnson, Ricciardi, & Carlton, 2001). Watercraft inspection and hand removal of aquatic invasive species are effective means of reducing the risk of introduction of new invasive organisms into inland waterways (Rothlisberger J. D., Chadderton, McNulty, & Lodge, 2010). Carefully designed and implemented AIS prevention public awareness campaigns with public outreach have shown promise in achieving the outcome of increased public adoption of Clean-Drain-Dry prevention protocol (Seekamp, et al., 2016). Boat steward programs are increasingly common strategies to protect the natural heritage of lakes, ponds and rivers throughout the Great Lakes catchment. Between 2010 and 2017, \$446 million in federal funds have been invested in invasive species projects including AIS spread prevention activities and programs (GLRI, 2018). Since 2011, Paul Smith's College has received a series of awards to implement boat inspection and education programs at various sites in the Eastern Lake Ontario watershed along tributaries originating in the Adirondack Park and entering either Lake Ontario or the St. Lawrence River. In 2019, the GLRI-funded program included boat steward activity at sites in the Black River, St. Regis River, Raquette River, Indian River and St. Lawrence River watersheds.



Inspecting boats at Black Lake while wearing a new steward vest issued by NYSDEC.



The GLRI was established in 2010 to consolidate, coordinate, target, and advance multiple-facet efforts to protect and improve the quality of the largest fresh surface-water ecosystem in the world. GLRI works through seven federal departments and multiple services, centers, and agencies to deploy federal support to projects falling within their complementary missions and priorities. One of the high-profile priorities is addressing the disruption and degradation caused by invasive species introduction and proliferation. Invasive species threaten ecosystems by outcompeting native species for habitat, and ultimately disrupt the flow of energy through food webs. As habitat and ecosystem restoration efforts are expanded in the Great Lakes, prevention of new infestations into these watersheds becomes increasingly critical. Preventing the spread of AIS in the headwater regions of the Great Lakes provides protection for each respective watershed as well as that of

Lake Ontario and the interconnected Great Lakes- St. Lawrence Seaway system. Preventing an infestation upstream protects ecosystems at all levels in a watershed (Johnson & Padilla, 1996). By intercepting AIS at the headwaters, boat inspectors eliminate threats that could potentially move downstream to infest high priority resources such as riparian areas and coastal wetlands.

Watershed stewards provide courtesy boat inspections, and information regarding the threat of AIS to waterway users in attempt to encourage them to adopt new behaviors when transporting their vessels between waterways. Stewards also provide outreach and attend community events to spread the message of AIS awareness and spread prevention at locations other than the boat launch. Stewards and other AWI staff attend community and inter-agency events and workgroup meetings throughout the summer and other times of the year to network and collaborate with partners in the Great Lakes watershed.

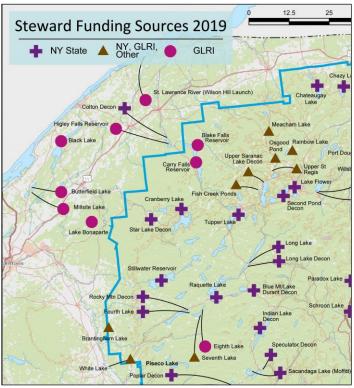


Figure 1. 2019 GLRI funded watercraft inspection locations noted by pink circles or select green triangles.

2019 GLRI Review

During the 2019 season, the AWI again provided highly trained, properly equipped and carefully supervised boat stewards at 11 boat launches in the Lake Ontario/St. Lawrence River watersheds. Expanded coverage hours at two sites was made possible with funding from the New York State Department of Environmental Conservation's Adirondack AIS Spread Prevention Program. The message of the AWI continued to reach new and familiar users in hopes to encourage positive changes in AIS spread prevention behavior. Stewards worked to inform Adirondack communities and visitors about the threat that AIS pose to ecosystems, fisheries, recreation and the local and regional economy.

Decontamination stations were regionally (if not always conveniently) available for referral whenever boat stewards discovered evidence of AIS on boats and trailers. These stations are funded via the NYSDEC-funded Adirondack AIS Spread Prevention Program, also implemented by the AWI. (visit www.adkcleanboats.org to learn more) "Decon" stations provided high-pressure hot water decontamination service to boaters who failed to meet the New York State clean, drained, dry regulation (6 NYCRR Part 576) and also to those who requested the service as a courtesy. Large-scale projects like this demonstrate the AWI's ability to collaborate with state agencies, municipalities, and environmental organizations, to offer the most comprehensive and integrated AIS spread prevention program in the Adirondack Park to date.



Table 1. GLRI data summary, boat types, 2019. Quantity of watercraft type observed at each boat launch site, including those not inspected. PWC = personal watercraft; SUP= stand-up paddleboard; Wind = windsurfer.

	<u> </u>			or art, DO		- P P -		,				
					Boat '	Гуре					total #	total #
Waterbody											boats	boats
	Barge	Canoe	Dock	Kayak	Motor	PWC	Row	Sail	SUP	Wind	observed	inspected
Black Lake	0	0	0	43	2286	90	2	0	0	0	2421	2399
Butterfield Lake	2	13	2	210	878	32	18	7	9	0	1171	1170
Eighth Lake	0	99	0	295	53	7	3	1	18	0	476	458
Lake Bonaparte	0	0	0	0	16	4	0	0	0	0	20	20
Lower Raquette - Blake Falls	0	4	0	19	21	0	0	0	0	0	44	44
Lower Raquette - Carry Falls	0	27	1	91	264	35	0	1	1	0	420	419
Lower Raquette - Higley Falls	0	16	1	174	149	52	3	1	0	0	396	392
Meacham Lake	0	17	0	84	310	59	0	0	4	0	474	464
Millsite Lake	0	7	0	109	50	0	2	0	0	0	168	168
Seventh Lake	0	139	2	536	420	76	2	3	41	0	1219	1208
St. Lawrence River (Wilson Hill)	0	85	0	56	644	57	2	0	0	1	845	840
Grand Total	2	407	6	1617	5091	412	32	13	73	1	7654	7582
% of all watercraft	0.03%	5.3%	0.1%	21.1%	66.5%	5.4%	0.4%	0.2%	1.0%	0.01%		

Throughout the 2019 season, 7,654 watercrafts were observed at 11 locations funded by GLRI in Lake Ontario/St. Lawrence River watersheds (Table 12). Stewards shared the AIS prevention message with 16,044 boaters at different launches in GLRI watersheds. 731 organisms were detected as a result of 7,582 inspections. The percentage of dirty boats stewards encountered at GLRI sites was 7.5% (Table 13). The AWI defines "dirty boats" as boats that pose a high risk to transport AIS because they were transporting visible organisms. Watercrafts were more three times as likely to be found with organisms when leaving as opposed to entering waterways. Stewards found organisms on a high percentage of watercrafts at Buttefield Lake, Lake Bonaparte, and Blake & Higley Falls Reservoirs (Raquette River). Stewards found comparatively fewer organisms on watercrafts at Eighth Lake, Meacham Lake, Millsite Lake, and Seventh Lake. Site characteristics (weed beds close to the boat launch) contributed to this discrepancy.



Large amount of Eurasian watermilfoil tangled with native plants that was pulled from the intake of a personal watercraft.

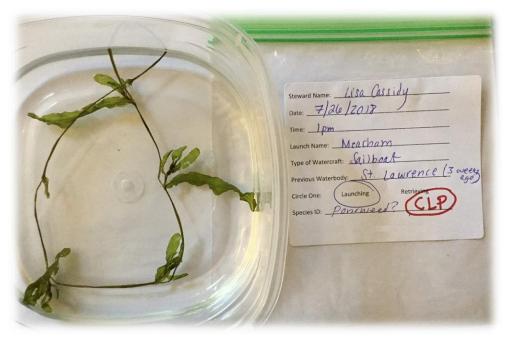


Table 2. Total # of visitors and # of organisms removed from watercraft entering and leaving GLRI funded boat launch sites, 2019.

		organisn	ns found	total					
Waterbody	total #			organisms	# boats	# boats	# of	% of inspected	% of inspected
	people	entering	leaving	found	dirty	w/AIS	inspections	boats dirty	boats w/AIS
Black Lake	5497	28	114	142	120	98	2399	5.0%	4.1%
Butterfield Lake	2452	42	311	353	258	136	1170	22.1%	11.6%
Eighth Lake	700	0	0	0	0	0	458	0%	0%
Lake Bonaparte	59	0	5	5	4	3	20	20.0%	15.0%
Lower Raquette - Blake Falls	81	2	11	13	9	2	44	20.5%	4.5%
Lower Raquette - Carry Falls	1230	32	0	32	28	1	419	6.7%	0.2%
Lower Raquette - Higley Falls	803	39	32	71	54	4	392	13.8%	1.0%
Meacham Lake	1122	3	7	10	9	2	464	1.9%	0.4%
Millsite Lake	222	0	10	10	7	7	168	4.2%	4.2%
Seventh Lake	1994	22	21	43	41	7	1208	3.4%	0.6%
St. Lawrence River (Wilson Hill)	1884	4	48	52	42	36	840	5.0%	4.3%
Grand Total	16044	172	559	731	572	296	7582	7.5%	3.9%

Stewards found and removed a variety of organisms from boats at the GLRI-funded locations. Butterfield Lake produced the most boats with confirmed AIS (136), followed by Black Lake (98) and the St. Lawrence River at Wilson Hill (36). (Table 13). The percentage of boats inspected with organisms present in GLRI regions was 7.5% (a decrease from 2017 rate of 9%), which is slightly higher than the AWI program-wide average of 5.8%. 3.9% of GLRI program inspected boats were transporting confirmed AIS, which is also slightly higher than the

program wide total of 2.7%.



Invasive curly-leaf pondweed intercepted at Meacham Lake.

Stewards asked each visitor group whether they had taken AIS spread prevention measures prior to arrival (Table 14). 83% of groups gave responses demonstrating AIS spread prevention awareness, up 10% from 73% in 2018. There was large variability in visitor adoption of active spread prevention behavior between sites, which suggests segmentation of user groups by location. Inspecting (38%) and draining bilges prior to launching (49%) were the two most frequently reported spread prevention measures, followed by drying of the watercraft (24%). Please refer to the Location Summaries at this report's end for further breakdown of GLRI data by location.



Table 3. AIS spread prevention behavior, GLRI, 2019. Yes = showed AIS spread prevention awareness; I = inspected boat; WB = washed boat; DB = drained bilge; BB = emptied bait bucket; LW = drained livewell; Dis = disposed of unused bait; Dry = dried boat; Same Lake = boat only goes in this lake; First/Frozen = first launch of the season or frozen boat.

				# gro	ups showi	ing AIS sp	read prev	ention av	wareness				
Waterbody													# groups
	yes	yes %	Inspect	Wash	Drain	Bait	Livewell	Dry	Decon	same lake	first/frozen	didn't ask	asked
Black Lake	2119	90%	438	559	1549	6	1080	1113	0	155	305	43	2355
Butterfield Lake	1017	97%	998	9	699	2	17	4	0	1	9	0	1052
Eighth Lake	170	68%	44	105	4	0	1	36	0	4	5	49	250
Lake Bonaparte	17	89%	0	1	10	0	6	17	0	0	0	1	19
Lower Raquette - Blake Falls	11	31%	4	0	2	0	1	2	0	1	4	2	35
Lower Raquette - Carry Falls	142	39%	8	14	86	0	3	0	0	13	26	10	365
Lower Raquette - Higley Falls	113	42%	4	17	30	0	0	1	0	19	50	29	269
Meacham Lake	298	73%	218	153	135	2	24	62	0	11	30	20	411
Millsite Lake	118	99%	111	0	66	0	2	1	0	0	7	0	119
Seventh Lake	652	76%	113	177	121	0	1	207	0	84	180	12	858
St. Lawrence River (Wilson Hill)	512	99%	420	85	379	3	152	55	0	18	63	208	518
Grand Total	5169	83%	2358	1120	3081	13	1287	1498	0	306	679	374	6251
% of groups taking active measures			38%	18%	49%	0.2%	21%	24%	0%				

Table 4. Organisms removed from watercraft, GLRI, 2019; CLP = curly-leaf pondweed; EF = European frogbit; EWM = Eurasian watermilfoil; VLM = variable-leaf milfoil; WC = water chestnut; ZM = zebra mussel; * and AIS = aquatic invasive species.

				org	ganism t	уре						
Waterbody	Non-invasive	BN*	CLP*	EF*	EWM*	VLM*	RC*	SWF*	WC*	ZM*	total AIS	% of inspected boats with AIS
Black Lake	34	0	52	0	45	0	0	0	0	11	108	4.1%
Butterfield Lake	184	0	81	0	80	6	0	0	0	2	169	11.6%
Eighth Lake	0	0	0	0	0	0	0	0	0	0	0	0%
Lake Bonaparte	2	0	0	0	3	0	0	0	0	0	3	15.0%
Lower Raquette - Blake Falls	11	0	0	0	0	2	0	0	0	0	2	4.5%
Lower Raquette - Carry Falls	31	0	0	0	0	1	0	0	0	0	1	0.2%
Lower Raquette - Higley Falls	67	0	1	0	0	2	0	0	0	1	4	1.0%
Meacham Lake	8	0	0	0	2	0	0	0	0	0	2	0.4%
Millsite Lake	3	0	1	0	6	0	0	0	0	0	7	4.2%
Seventh Lake	36	0	1	0	2	3	0	0	0	1	7	0.6%
St. Lawrence River (Wilson Hill)	14	0	32	0	5	0	0	0	0	1	38	4.3%
Grand Total	390	0	168	0	143	14	0	0	0	16	341	3.9%

Of the 341 AIS removed from watercraft in the GLRI program, curly-leaf pondweed (*Potamageton crispus*) was the most numerous (168 instances), followed by Eurasian watermilfoil (*Myriophyllum spicatum; 143*), zebra mussels (*Dreissena polymorpha*; 16), and variable leaf milfoil (*Myriophyllum heterophyllum; 14*). Overall AIS transport rate is 3.9%, slightly higher than the overall program rate of 2.7% (Table 15).

Looking Forward

The AWI AIS spread prevention program funded by GLRI is closely coordinated with similar boat steward programs funded by New York State and the efforts of the St. Lawrence Eastern Ontario Partnership for Regional Invasive Species Management (SLELO PRISM), which is part of the New York State-coordinated approach to invasive species management. AWI helps coordinate and link these separate funding streams in conjunction with New York State. AWI deploys boat steward resources to avoid duplication and to prioritize high traffic or high value waterways. We have been able to include an ever-increasing number of partners in the



St. Lawrence and Lake Ontario watersheds as a result of the GLRI award, for example the Brantingham Lake Association and the Indian River Lakes Land Conservancy in 2018. In the future, AWI intends to perform outreach to the users at all of our program locations with ever-increasing efficacy and frequency, given external funding.

As AWI has reached the 9-year mark of working in GLRI-served locations, we have witnessed increasing community acceptance and support each year. Previous relationships with state agencies, lake associations, outfitters, marinas and other local businesses have become stronger and new relationships continue to blossom. AWI is pleased to offer services for these regions which preserve native ecosystems and waterways which in turn helps local communities and economies to flourish.

In sum, AWI delivered another successful summer in the Great Lakes and St. Lawrence River watersheds, extending our work with a growing number of partners, and creating an increasingly comprehensive and widely deployed network of AIS spread prevention boat inspectors. With each public interaction, our GLRI AIS prevention program enhances awareness of the threat of AIS to our waterways and way of life. Our stewards worked diligently and passionately to forge relationships with and inspire visitors and residents to take the steps to ensure the future quality of the region's international significant freshwater resources.



Meacham Lake boat launch with AIS spread prevention messaging.



Bibliography

- GLRI. (2018, February 10). *Great Lakes Restoration Initiative Report to Congress and the President, Fiscal Year 2017.*Retrieved February 2019, from www.glri.us/documents
- Johnson, L. E., Ricciardi, A., & Carlton, J. T. (2001). Overland Dispersal of Aquatic Invasive Species: A Risk Assessment of Transient Recreational Boating. *Ecological Applications*, 11(6), 1789-1799.
- Johnson, L., & Padilla, D. (1996). Geographic spread of exotic species: Ecological lessons and opportunities from the invasion of the Zebra Mussel, Dreissena polymorpha. *Biological Conservation*, 78, 23-33.
- Johnson, L., Ricciardi, A., & Carlton, J. (2001). Overland dispersal of aquatic invasive species: a risk assessment of transient recreational boating. *Ecological Applications*, *11*, 1789-1799.
- Ricciardi, A. (2006). Patterns of invasion in the Laurentian Greate Lakes in relation to changes in vector activity. *Diversity and Distributions*(12), 425-433.
- Rothlisberger, J., Chadderton, W., McNulty, J., & Lodge, D. (2010). Aquatic invasive species transport via trailered boats: What is being moved, who is moving it, and what can be done. *Fisheries*, *35*(3), 121-132.
- Seekamp, E., McCreary, A., Mayer, J., Zack, S., Charlebois, P., & Pasternak, L. (2016). Exploring the efficacy of an aquatic invasive species prevention capaign among water recreationists. *Biological Invasions*(18), 1745-1758.



Location Use Data Summaries

Black Lake and Indian River Lakes

AIS intercepted: 284
Boats inspected: 3,737
Number of visitors: 8,171
Boats failing inspection: 10.3%

Visitors showing spread prevention awareness: 92%

Number of previously visited waterways: 89

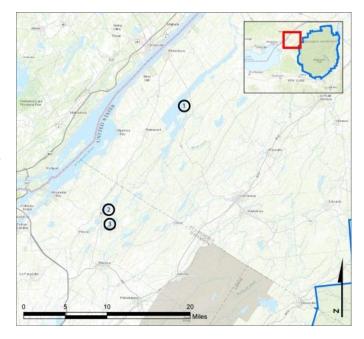
AIS Present in Waterbodies: Eurasian watermilfoil, curly-leaf

pondweed, zebra mussels, European frogbit

Stewardship History: 2016 – present

Partnerships: Black Lake Association; Great Lake Restoration Initiative; New York State Office of Parks, Recreation and

Historic Preservation



1-Black Lake; 2-Butterfield Lake; 3-Millsite Lake

					Boat	Туре					total#	total#
Watercraft	Barge	Canoe	Dock	Kavak	Motor	PWC	Row	Sail	SUP	Wind	boats	boats inspected
Black Lake	0	0	0	43	2286	90	2	0	0	0	2421	2399
percentage of total boats	0%	0%	0%	2%	94%	4%	0%	0%	0%	0%	100%	99%
Butterfield Lake	2	13	2	210	878	32	18	7	9	0	1171	1170
percentage of total boats	0%	1%	0%	18%	75%	3%	2%	1%	1%	0%	100%	100%
Millsite Lake	0	7	0	109	50	0	2	0	0	0	168	168
percentage of total boats	0%	4%	0%	65%	30%	0%	1%	0%	0%	0%	100%	100%
totals	2	20	2	362	3214	122	22	7	9	0	3760	3737
percentage of total boats	0%	1%	0%	10%	85%	3%	1%	0%	0%	0%	100%	99%

Boats observed at launch, including those not inspected. PWC=personal watercraft, SUP=stand-up paddleboard, Wind=windsurfer.

•	total#	total # organisms found			total	# boats	# boats	# of	% of inspected	% of inspected	
	visitors	entering	leaving	roadside	organisms	dirty	w/AIS	inspections	boats dirty	boats w/AIS	
Black Lake	5497	28	114		142	120	98	2399	5.0%	4.1%	
Butterfield Lake	2452	42	311		353	258	136	1170	22.1%	11.6%	
Millsite Lake	222	0	10		10	7	7	168	4.2%	4.2%	
totals	8171	70	435	0	505	385	241	3737	10.3%	6.4%	

Boats dirty = watercraft with any organic material, invasive, non-invasive or unknown.



					AIS spre	ead prev	ention	awaren	ess			# groups
Visitor Responses	yes	Inspect	Wash	Drain	Bait	LW	Dry	Decon	same lake	first/frozen	didn't ask	asked
Black Lake	2119	438	559	1549	6	1080	1113	0	155	305	43	2355
percentage of total groups asked	90%	19%	24%	66%	0%	46%	47%	0%	7%	13%	NA	
Butterfield Lake	1017	998	9	699	2	17	4	0	1	9	0	1052
percentage of total groups asked	97%	95%	1%	66%	0%	2%	0%	0%	0%	1%	NA	
Millsite Lake	118	111	0	66	0	2	1	0	0	7	0	119
percentage of total groups asked	99%	93%	0%	55%	0%	2%	1%	0%	0%	6%	NA	
totals	3254	1547	568	2314	8	1099	1118	0	156	321	43	3526
percentage of total groups asked	92%	44%	16%	66%	0%	31%	32%	0%	4%	9%	NA	

Yes = showed AIS spread prevention awareness; Drain = drained bilge; Bait = emptied bait bucket/disposed of bait; LW = drained livewell; Dry = dried boat; Decon = visited decon station; Same Lake = boat only goes in this lake; First/Frozen = first launch of the season or frozen boat.

			C	rganis	т Туре)				total	% of inspected
Organisms Removed	Non-invasive	BN*	CLP*	EF*	EWM*	VLM*	SWF*	WC*	ZM*	# AIS	boats w/AIS
Black Lake	34	0	52	0	45	0	0	0	11	108	4.1%
percentage of total orgs	24%	0%	37%	0%	32%	0%	0%	0%	8%		
Butterfield Lake	184	0	81	0	80	6	0	0	2	169	11.6%
percentage of total orgs	52%	0%	23%	0%	23%	2%	0%	0%	1%		
Millsite Lake	3	0	1	0	6	0	0	0	0	7	4.2%
percentage of total orgs	30%	0%	10%	0%	60%	0%	0%	0%	0%		
totals	221	0	134	0	131	6	0	0	13	284	6.4%
percentage of total orgs	44%	0%	27%	0%	26%	1%	0%	0%	3%		

Aquatic Invasive Species Intercepted by Stewards	# found on boats launching	Previous Waterway	# found on boats retrieving	Previous Waterway
curly-leaf pondweed	22	Black Lake: St. Lawrence River (6), Black Lake (2), None (2), Butterfield Lake (1), Red Lake (1), Rental (1) Butterfield Lake: Butterfield Lake (4), Black Lake (1), Hyde Lake (1), Lake Ontario (1), None (1), St. Lawrence River (1)	112	Black Lake (39) Butterfield Lake (72) Millsite Lake (1)
Eurasian watermilfoil	14	Black Lake: Black Lake (1), Butterfield Lake (1), None (1), St. Lawrence River (1) Butterfield Lake: Butterfield Lake (5), St. Lawrence River (2), Hyde Lake (1), None (1), Red Lake (1)	117	Black Lake (41) Butterfield Lake (70) Millsite Lake (6)
variable-leaf milfoil	0	N/A	6	Butterfield Lake (6)
zebra mussel	4	Black Lake: None (2), Lake Ontario (1) Butterfield Lake: None (1)	9	Black Lake (8) Butterfield Lake (1)
Totals	40		244	

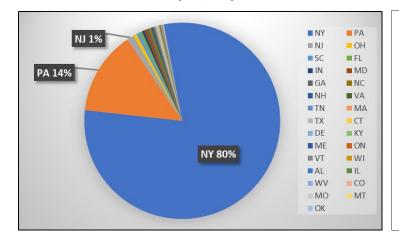


Previous Waterways for Launching Boats	# visits
NONE	951
SAME LAKE - PREVIOUS VISIT	469
St. Lawrence River	125
Lake Ontario	31
Black Lake (St Lawrence County)	25
RENTAL	23
Butterfield Lake	22
Lake of the Woods (Jefferson County)	19
Oneida Lake	17
Millsite Lake (Jefferson County)	16
Lake Bonaparte	14
Cranberry Lake	13
Sixberry Lake (Jefferson County)	12
Red Lake (Jefferson County)	9
Black River	8
Hyde Lake (Jefferson County)	8
NOT ASKED	8
Oswegatchie River, NY	8
Grass Lake (Jefferson/St Lawrence)	7
Prairie Creek Reservoir, IN	7
Clear Lake (Jefferson County)	6
Lake Champlain	6
Payne Lake (Jefferson County)	6
UNKNOWN (boater doesn't know)	6
Cayuga Lake	5
Honeoye Lake	5
Lake Erie	5
Yellow Lake (St Lawrence County)	5
Indian River, NY	4
Salmon River Reservoir (Oneida)	4
Delta Lake	3
Niagara River, NY	3

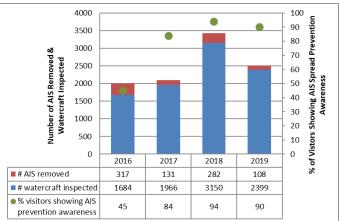
Previous Waterways for Launching Boats	# visits
Susquehanna River	3
Allegheny Reservoir (Cattaraugus)	2
Beaver River, NY	2
Blue Marsh Lake, Berks, PA	2
Canandaigua Lake	2
Conesus Lake	2
Erie Canal	2
Fish Creek Ponds	2
Muskellunge Lake (Jefferson County)	2
Pleasant Lake (St Lawrence County)	2
Salmon River, NY	2
Skaneateles Lake	
South Colton Reservoir (St Lawrence)	2
Upper Saranac Lake	2
Wolf Lake (Sullivan County)	2
AlleghenyReservoir, PA	1
Alum Creek Lake, Lewis Center, OH	1
Atlantic Ocean	1
Beltzville Lake, PA	1
Black Pond (Dutchess/Putnam)	1
Brant Lake	1
Canadarago Lake	1
Canadice Lake	1
Candlewood Lake, Brookfield, CT	1
Carry Falls Reservoir	1
Chaumont Pond (St Lawrence County)	1
Cowanesque Lake, Tioga County, PA	1
Crystal Lake, Ellington, CT	1
Fourth Lake	1
Grass River Flow (St Lawrence County)	1
Guntersville Lake, AL	1
Hemlock Lake (Livingston/Ontario)	1

Previous Waterways for Launching Boats	# visits
Higley Falls Reservoir	1
Jamesville Reservoir (Onondaga)	1
John H. Kerr Reservoir, VA	1
Kayuta Lake (Oneida County)	1
Keuka Lake	1
Lake Flower	1
Lake George	1
Lake James, Linville, NC	1
Lake Pleasant	1
Lake Wilhelm,PA	1
Manasquan Reservoir, Howell, NJ	1
Mohawk River	1
Mud Lake (St Lawrence County)	1
North Sandy Pond (Jefferson County)	1
Onondaga Lake	1
Oswego River, NY	1
Otisco Lake	1
Otselic River, NY	1
Pleasant Lake (Fulton County)	1
Port Bay (Wayne County)	1
Schoharie Reservoir (Schoharie Cnty)	1
Seneca Lake	1
Silver Lake (Clinton County)	1
Silver Lake (St Lawrence County)	1
Stark Falls Reservoir	1
Stillwater Reservoir	1
Tionesta Lake, PA	1
Two Mile Run Reservoir, PA	1
unspecified lake in Pennsylvania	1
Waneta Lake (Schuyler/Steuben)	1
White Lake (Sullivan County)	1
Total	1929

State of Motorized Boat Registration (n=3,376)

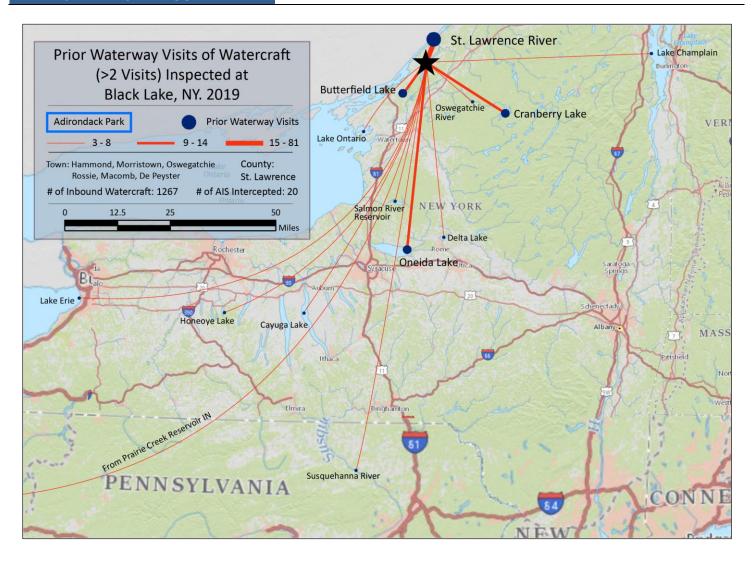


Historical Trends (Black Lake only)



Location	First Day	Last Day	Total Days
Black Lake	25 May	22 Sept	68
Butterfield Lake	25 May	29 Sept	56
Millsite Lake	27 May	2 Sept	28







Black Lake Boat Launch



Seventh & Eighth Lakes

AIS intercepted: 7
Boats inspected: 1,666
Number of visitors: 2,694
Boats failing inspection: 2.5%

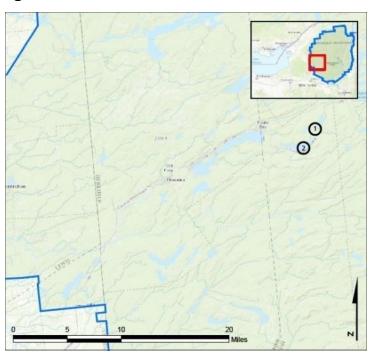
Visitors showing spread prevention awareness: 74%

Number of previously visited waterways: 65

AIS Present in Waterbodies: Eurasian watermilfoil,

variable-leaf milfoil

Partnerships: Fulton Chain of Lakes Association, Sixth and Seventh Lakes Association, Limekiln Lake Association **Funding:** Great Lakes Restoration Initiative & NYSDEC



1-Eighth Lake; 2-Seventh Lake

Boat Type									total#	total#		
Watercraft											boats	boats
	Barge	Canoe	Dock	Kayak	Motor	PWC	Row	Sail	SUP	Wind	observed	inspected
Seventh Lake	0	139	2	536	420	76	2	3	41	0	1219	1208
percentage of total boats	0%	11%	0%	44%	34%	6%	0%	0%	3%	0%	100%	99%
EighthLake	0	99	0	295	53	7	3	1	18	0	476	458
percentage of total boats	0%	21%	0%	62%	11%	1%	1%	0%	4%	0%	100%	96%
totals	0	238	2	831	473	83	5	4	59	0	1695	1666
percentage of total boats	0%	14%	0%	49%	28%	5%	0%	0%	3%	0%	100%	98%

Boats observed at launch, including those not inspected. PWC=personal watercraft, SUP=stand-up paddleboard, Wind=windsurfer.

•	total#	org	anisms fo	und	total	# boats	# boats	# of	% of inspected	% of inspected
		entering	leaving	roadside	organisms	dirty		inspections	boats dirty	boats w/AIS
Seventh Lake	1994	22	21		43	41	7	1208	3.4%	0.6%
Eighth Lake	700	0	0		0	0	0	458	0%	0%
totals	2694	22	21	0	43	41	7	1666	2.5%	0.4%

Boats dirty = watercraft with any organic material, invasive, non-invasive or unknown.



AIS spread prevention awareness							# groups					
Visitor Responses	yes	Inspect	Wash	Drain	Bait	LW	Dry	Decon	same lake	first/frozen	didn't ask	asked
Seventh Lake	652	113	177	121	0	1	207	0	84	180	12	858
percentage of total groups asked	76%	13%	21%	14%	0%	0%	24%	0%	10%	21%	NA	
Eighth Lake	170	44	105	4	0	1	36	0	4	5	49	250
percentage of total groups asked	68%	18%	42%	2%	0%	0%	14%	0%	2%	2%	NA	
totals	822	157	282	125	0	2	243	0	88	185	61	1108
percentage of total groups asked	74%	14%	25%	11%	0%	0%	22%	0%	8%	17%	NA	

Yes = showed AIS spread prevention awareness; Drain = drained bilge; Bait = emptied bait bucket/disposed of bait; LW = drained livewell; Dry = dried boat; Decon = visited decon station; Same Lake = boat only goes in this lake; First/Frozen = first launch of the season or frozen boat.

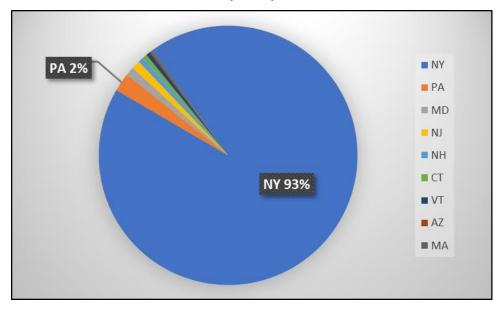
		Organism Type									% of inspected
Organisms Removed	Non-invasive	BN*	CLP*	EF*	EWM*	VLM*	SWF*	WC*	ZM*	# AIS	boats w/AIS
Seventh Lake	36	0	1	0	2	3	0	0	1	7	0.6%
percentage of total orgs	84%	0%	2%	0%	5%	7%	0%	0%	2%		
Eighth Lake	0	0	0	0	0	0	0	0	0	0	0%
percentage of total orgs	0%	0%	0%	0%	0%	0%	0%	0%	0%		
totals	36	0	1	0	2	3	0	0	1	7	0.4%
percentage of total orgs	84%	0%	2%	0%	5%	7%	0%	0%	2%	·	

Location	First Day	Last Day	Total Days
Seventh Lake	25 May	7 Sept	84
Eighth Lake	22 June	18 Aug	26

Seventh Lake				
Aquatic Invasive Species Intercepted by Stewards	# found on boats launching	Previous Waterway	# found on boats retrieving	Previous Waterway
curly-leaf pondweed	0	N/A	1	Seventh Lake (1) - previously in St. Lawrence River
Eurasian watermilfoil	0	N/A	2	Seventh Lake (2)
variable-leaf milfoil	1	Seventh Lake (1)	2	Seventh Lake (2)
zebra mussel	1	None (1)	0	N/A
Totals	2		5	



State of Motorized Boat Registration (n=560)



Seventh Lake

Previous Waterways for Launching Boats	# visits
NONE	334
SAME LAKE - PREVIOUS VISIT	118
Fourth Lake	35
Raquette Lake	16
Limekiln Lake	14
Sagamore Lake (Hamilton County)	13
UNKNOWN (boater doesn't know)	13
Eighth Lake	10
NOT ASKED	8
Moose River, NY	7
Big Moose Lake	6
Blue Mountain Lake	6
Big Moose River, NY	5
Nicks Lake (Herkimer County)	5
Sixth Lake (Hamilton County)	5
Adirondacks (unspecified)	4
Black River	4
Lake George	4
First Lake	3
Lake Ontario	3
Lake Placid	3

Previous Waterways for Launching Boats	# visits
Lake Rondaxe (Herkimer County)	3
Moss Lake (Herkimer County)	3
White Lake (Oneida County)	3
Canadarago Lake	2
Canandaigua Lake	2
Conesus Lake	2
Delta Lake	2
Lake Pleasant	2
Long Lake (Oneida County)	2
North Lake (Herkimer County)	2
Old Forge Pond (Hamilton County)	2
Otter Lake (Oneida County)	2
Piseco Lake	2
Sangerfield River/Ninemile Swamp (Madis	2
Tupper Lake	2
Batten Kill River	1
Canada Lake	1
Cascade Lake (Essex County)	1
Cedar River Flow (Hamilton County)	1
Cowanesque Lake, Tioga County, PA	1

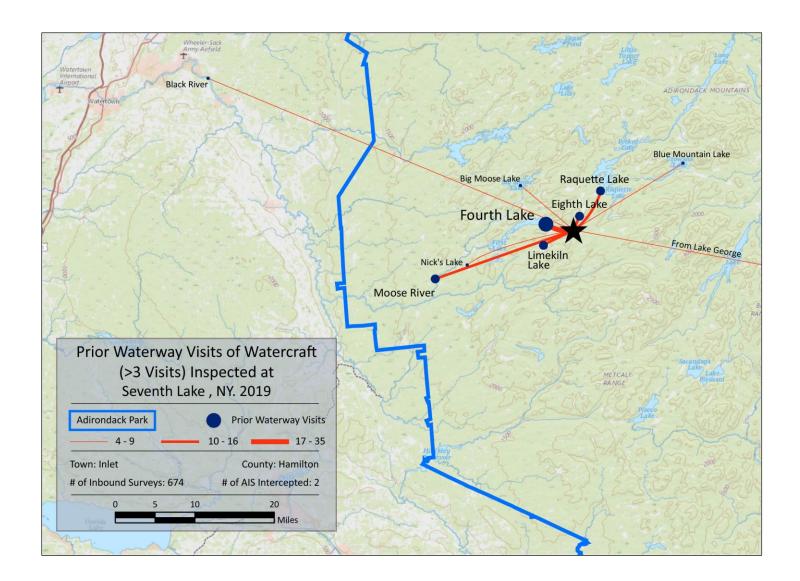
Duraniana Watannana faulannahina Baata	H. Jaise
Previous Waterways for Launching Boats	# visits
Erie Canal	1
Finger Lakes (unspecified)	1
Floodwood Pond	1
Fulton Chain of Lakes (unspecified)	1
Goodnow Flowage (Essex County)	1
Hudson River	1
Keuka Lake	1
Lake Eaton	1
Lake Erie	1
Little Sucker Brook (St Lawrence County)	1
Long Pond (Lewis County)	1
Mascoma Lake, Lebanon, NH	1
Niagara River, NY	1
Otsego Lake	1
RENTAL	1
Seneca Lake	1
Skaneateles Lake	1
Swartswood Lake, Stillwater Township, NJ	1
Sylvia Lake (St Lawrence County)	1
Taylor Pond (Clinton County)	1
Total	674



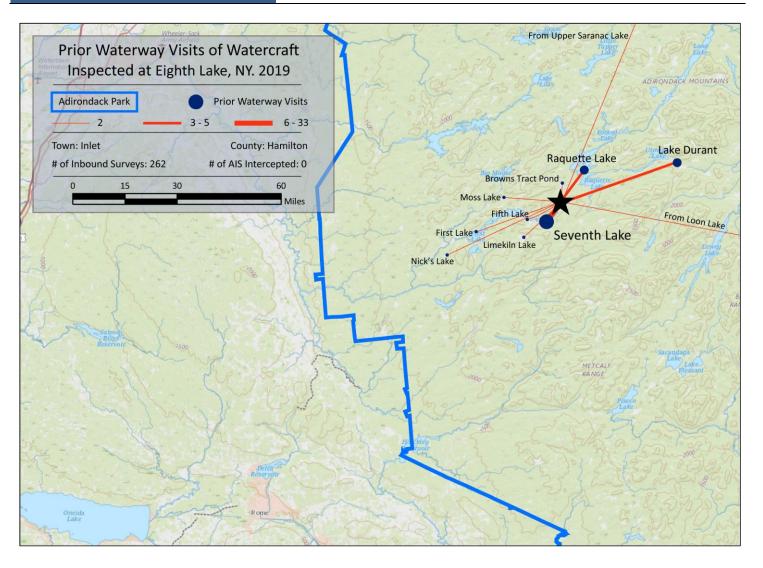
Eigh	th I	Lake
------	------	------

Librian Lake	
Previous Waterways for Launching Boats	# visits
SAME LAKE - PREVIOUS VISIT	82
NONE	69
Seventh Lake	33
RENTAL	31
NOT ASKED	12
Lake Durant (Hamilton County)	5
Raquette Lake	3
Browns Tract Pond	2
Fifth Lake	2
First Lake	2
Limekiln Lake	2
Loon Lake (Warren County)	2
Moss Lake (Herkimer County)	2

Previous Waterways for Launching Boats	# visits
Nicks Lake (Herkimer County)	2
UNKNOWN (boater doesn't know)	2
Upper Saranac Lake	2
Canandaigua Lake	1
Erie Canal	1
Forked Lake	1
Fourth Lake	1
Indian Lake (Hamilton County)	1
Long Lake	1
Owasco Lake	1
St. Lawrence River	1
Third Lake	1
Total	262









Eighth Lake Boat Launch



Lower Raquette Reservoirs

AIS intercepted: 7 Boats inspected: 855 Number of visitors: 884

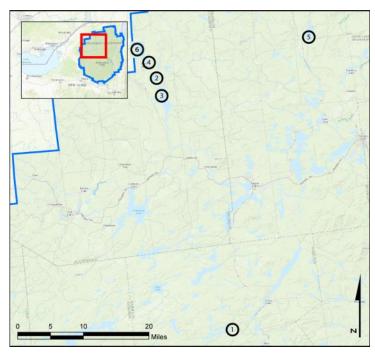
Boats failing inspection: 14.4%

Visitors showing spread prevention awareness: 40%

Number of previously visited waterways: 32

AIS Present in Waterbodies: variable-leaf milfoil

Funding: Great Lakes Restoration Initiative



2-Blake Falls Reservoir; 3-Carry Falls Reservoir; 6-Higley Falls Reservoir

Boat Type								total#	total#			
Watercraft	Barge	Canoe	Dock	Kayak	Motor	PWC	Row	Sail	SUP	Wind	boats observed	boats inspected
Blake Falls Reservoir	0	4	0	19	21	0	0	0	0	0	44	44
percentage of total boats	0%	9%	0%	43%	48%	0%	0%	0%	0%	0%	100%	100%
Carry Falls Reservoir	0	27	1	91	264	35	0	1	1	0	420	419
percentage of total boats	0%	6%	0%	22%	63%	8%	0%	0%	0%	0%	100%	100%
Higley Falls Reservoir	0	16	1	174	149	52	3	1	0	0	396	392
percentage of total boats	0%	4%	0%	44%	38%	13%	1%	0%	0%	0%	100%	99%
totals	0	47	2	284	434	87	3	2	1	0	860	855
percentage of total boats	0%	5%	0%	33%	50%	10%	0%	0%	0%	0%	100%	99%

Boats observed at launch, including those not inspected. PWC=personal watercraft, SUP=stand-up paddleboard, Wind=windsurfer.

•	total#	organisms found		total	# boats	# boats	# of	% of inspected	% of inspected		
		entering	leaving	roadside			w/AIS	inspections	•	boats w/AIS	
Blake Falls Reservoir	81	2	11		13	9	2	44	20.5%	4.5%	
Carry Falls Reservoir	1230	32	0		32	28	1	419	6.7%	0.2%	
Higley Falls Reservoir	803	39	32		71	54	4	392	13.8%	1.0%	
totals	884	41	43	0	84	63	6	436	14.4%	1.4%	

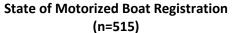
Boats dirty = watercraft with any organic material, invasive, non-invasive or unknown.

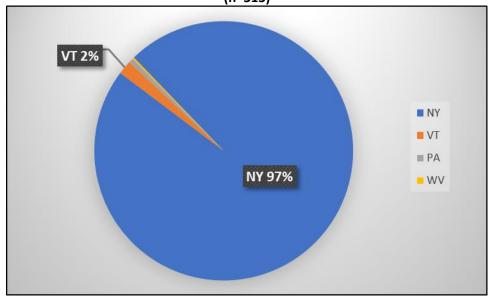


		AIS spread prevention awareness										
Visitor Responses	yes	Inspect	Wash	Drain	Bait	LW	Dry	Decon	same lake	first/frozen	didn't ask	# groups asked
Blake Falls Reservoir	11	4	0	2	0	1	2	0	1	4	2	35
percentage of total groups asked	31%	11%	0%	6%	0%	3%	6%	0%	3%	11%	NA	
Carry Falls Reservoir	142	8	14	86	0	3	0	0	13	26	10	365
percentage of total groups asked	39%	2%	4%	24%	0%	1%	0%	0%	4%	7%	NA	
Higley Falls Reservoir	113	4	17	30	0	0	1	0	19	50	29	269
percentage of total groups asked	42%	1%	6%	11%	0%	0%	0%	0%	7%	19%	NA	
totals	266	16	31	118	0	4	3	0	33	80	41	669
percentage of total groups asked	40%	2%	5%	18%	0%	1%	0%	0%	5%	12%	NA	

Yes = showed AIS spread prevention awareness; Drain = drained bilge; Bait = emptied bait bucket/disposed of bait; LW = drained livewell; Dry = dried boat; Decon = visited decon station; Same Lake = boat only goes in this lake; First/Frozen = first launch of the season or frozen boat.

			C	rganis	т Туре)				total # AIS	% of inspected
Organisms Removed	Non-invasive	BN*	CLP*	EF*	EWM*	VLM*	SWF*	WC*	ZM*		boats w/AIS
Blake Falls Reservoir	11	0	0	0	0	2	0	0	0	2	4.5%
percentage of total orgs	85%	0%	0%	0%	0%	15%	0%	0%	0%		
Carry Falls Reservoir	31	0	0	0	0	1	0	0	0	1	0.2%
percentage of total orgs	97%	0%	0%	0%	0%	3%	0%	0%	0%		
Higley Falls Reservoir	67	0	1	0	0	2	0	0	1	4	1.0%
percentage of total orgs	94%	0%	1%	0%	0%	3%	0%	0%	1%		
totals	109	0	1	0	0	5	0	0	1	7	0.0%
percentage of total orgs	94%	0%	1%	0%	0%	4%	0%	0%	1%		







Aquatic Invasive Species Intercepted by Stewards	# found on boats launching	Previous Waterway	# found on boats retrieving	Previous Waterway
curly-leaf pondweed	3	<u>Carry Falls Reservoir</u> : St. Lawrence River (2) <u>Meacham Lake</u> : St. Lawrence River (1)	0	N/A
Eurasian watermilfoil	2	<u>Carry Falls Reservoir</u> : St. Lawrence River (1) <u>Meacham Lake</u> : Meacham Lake (1)	0	N/A
variable-leaf milfoil	1	Higley Falls Reservoir: Carry Falls Reservoir (1)	5	Forked Lake (5)
water chestnut	0	N/A	1	Meacham Lake (previously in St. Lawrence River)
zebra mussel	1	<u>Carry Falls Reservoir</u> : Blake Falls Reservoir (previously in St. Lawrence River)	0	N/A
Totals	7		6	·

Location	First Day	Last Day	Total Days
Blake Falls Reservoir	27 May	2 Sept	15
Carry Falls Reservoir	30 May	12 Oct	35
Higley Falls Reservoir	25 May	13 Oct	32

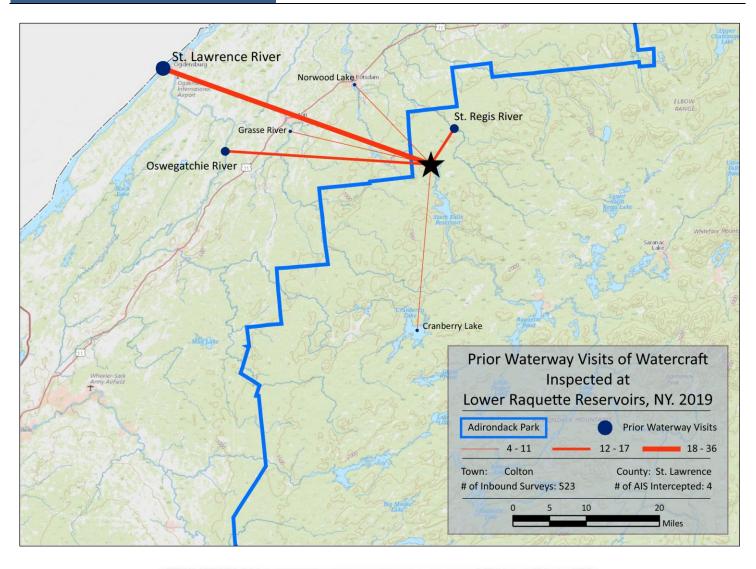
Previous Waterways for Launching Boats	# visits
NONE	203
SAME LAKE - PREVIOUS VISIT	145
St. Lawrence River	36
Higley Falls Reservoir	17
St. Regis River, NY	16
RENTAL	14
Blake Falls Reservoir	13
Oswegatchie River, NY	12
Raquette River, NY	6
Grasse River, NY	5
Carry Falls Reservoir	4
Cranberry Lake	4
Norwood Lake (St Lawrence County)	4
Stark Falls Reservoir	4

Previous Waterways for Launching Boats	# visits
UNKNOWN (boater doesn't know)	4
Lake Sebago (Orange/Rockland Counties)	3
Rainbow Falls Reservoir	3
Black Lake (St Lawrence County)	2
Meacham Lake	2
NOT ASKED	2
Saranac Chain of Lakes (unspecified)	2
Seneca Lake	2
Big Moose River, NY	1
Black River	1
Canandaigua Lake	1
Chazy Lake	1
Clear Pond (St Lawrence County)	1
Deer River Flow (Franklin County)	1

Previous Waterways for Launching Boats	# visits
Fish Creek Ponds	1
Follensby Clear Pond	1
Grafton Pond, Grafton, NH	1
Joe Indian Pond (St Lawrence County)	1
Lake Champlain	1
Lake Flower	1
Long Lake	1
Owls Head Pond (Franklin County)	1
Pleasant Lake (St Lawrence County)	1
Seneca River	1
South Colton Reservoir (St Lawrence Coun	1
Spitfire Lake (Franklin County)	1
Stillwater Reservoir	1
Tupper Lake	1
Totals	523

Aquatic Invasive Species Intercepted by Stewards	# found on boats launching	Previous Waterway	# found on boats retrieving	Previous Waterway
curly-leaf pondweed	1	St. Lawrence River (1)		
variable-leaf milfoil	2	Blake Falls Reservoir (1), None (1)	3	Lower Raquette Reservoirs (3)
zebra mussel	1	St. Lawrence River (1)		
Totals	4		3	







Carry Falls Boat Launch



Meacham Lake

AIS intercepted: 2 Boats inspected: 464 Number of visitors: 1,122 Boats failing inspection: 1.9%

Visitors showing spread prevention awareness: 73%

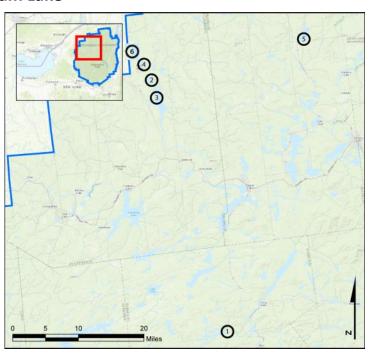
Number of previously visited waterways: 22

Total number of days covered: 67

Weekly coverage: 5 days

Dates of operation: May 25 – September 8

AIS Present in Waterbody: Eurasian watermilfoil **Funding:** Great Lakes Restoration Initiative, NYSDEC



5-Meacham Lake

Boat Type										total#	total#	
Watercraft										boats	boats	
	Barge	Barge Canoe Dock Kayak Motor PWC Row Sail SUP Wind								observed	inspected	
# of boats observed	0	17	0	84	310	59	0	0	4	0	474	464
percentage of total boats	0%	4%	0%	18%	65%	12%	0%	0%	1%	0%	100%	98%

Boats observed at launch, including those not inspected. PWC=personal watercraft, SUP=stand-up paddleboard, Wind=windsurfer.

total#	organisms found		nisms found total # boats # boats # o				# of	% of inspected	% of inspected
visitors	entering	leaving	roadside	organisms	dirty	w/AIS	inspections	•	boats w/AIS
1122	3	7		10	9	2	464	1.9%	0.4%

Boats dirty = watercraft with any organic material, invasive, non-invasive or unknown.

	AIS spread prevention awareness											# groups	
Visitor Responses	yes	Inspect	Wash	Drain	Bait	LW	Dry	Decon	same lake	first/frozen	didn't ask	asked	
# of groups	298	218	153	135	2	24	62	0	11	30	20	411	
percentage of total groups asked	73%	53%	37%	33%	0%	6%	15%	0%	3%	7%	NA		

Yes = showed AIS spread prevention awareness; Drain = drained bilge; Bait = emptied bait bucket/disposed of bait; LW = drained livewell; Dry = dried boat; Decon = visited decon station; Same Lake = boat only goes in this lake; First/Frozen = first launch of the season or frozen boat.

		Organism Type										
Organisms Removed	Non-invasive	BN*	CLP*	EF*	EWM*	VLM*	SWF*	WC*	ZM*	total # AIS	% of inspected boats w/AIS	
# of organisms	8	0	0	0	2	0	0	0	0	2	0.4%	
percentage of total orgs	80%	0%	0%	0%	20%	0%	0%	0%	0%			

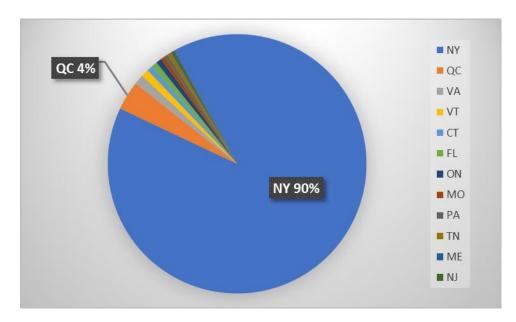


Aquatic Invasive Species Intercepted by Stewards	# found on boats launching	Previous Waterway	# found on boats retrieving	Previous Waterway
Eurasian watermilfoil	0	N/A	2	Meacham Lake (2)
Totals	0		2	

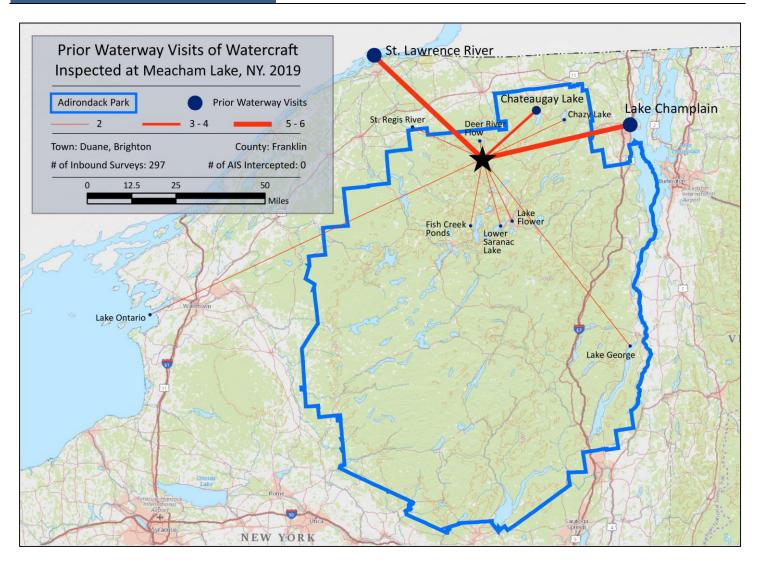
Previous Waterways for Launching Boats	# visits
SAME LAKE - PREVIOUS VISIT	133
NONE	113
Lake Champlain	6
St. Lawrence River	ϵ
NOT ASKED	5
Chateaugay Lake	4
St. Regis River, NY	(1)
Chazy Lake	2
Deer River Flow (Franklin County)	2
Fish Creek Ponds	2
Lake Flower	2
Lake George	2
Lake Ontario	2

Previous Waterways for Launching Boats	# visits
Lower Saranac Lake	2
RENTAL	2
Blenheim-Gilboa Reservoir (Schoharie Cou	1
Buck Pond (Rainbow Lake/Lake Kushaqua)	1
Chautauqua Lake (Chautauqua County)	1
Higley Falls Reservoir	1
La Pétite Rivière du Chêne, QC	1
Lake Anna, Louisa, VA	1
Long Lake	1
Sebago Lake, Standish, ME	1
Spitfire Lake (Franklin County)	1
Sylvia Lake (St Lawrence County)	1
Waterbury Reservoir, Waterbury, VT	1
Total	297

State of Motorized Boat Registration (n=515)









Meacham Lake Boat Launch



St. Lawrence River - Wilson Hill

AIS intercepted: 38
Boats inspected: 840
Number of visitors: 1,884
Boats failing inspection: 5.0%

Visitors showing spread prevention awareness: 99%

Number of previously visited waterways: 9

Total number of days covered: 72

Weekly coverage: 5 days

Dates of operation: May 25 - October 13

AIS Present in Waterbody: multiple species (100+)

Funding: Great Lakes Restoration Initiative



					Boat	Туре					total#	total#
Watercraft									boats	boats		
	Barge	Canoe	Dock	Kayak	Motor	PWC	Row	Sail	SUP	Wind	observed	inspected
# of boats observed	0	85	0	56	644	57	2	0	0	1	845	840
percentage of total boats	0%	10%	0%	7%	76%	7%	0%	0%	0%	0%	100%	99%

Boats observed at launch, including those not inspected. PWC=personal watercraft, SUP=stand-up paddleboard, Wind=windsurfer.

total#	orga	organisms found		total	# boats	# boats	# of	% of inspected	% of inspected
visitors	entering	leaving	roadside	organisms	dirty	w/AIS	inspections	•	boats w/AIS
1884	4	48		52	42	36	840	5.0%	4.3%

Boats dirty = watercraft with any organic material, invasive, non-invasive or unknown.

	AIS spread prevention awareness											# groups	
Visitor Responses	yes	Inspect	Wash	Drain	Bait	LW	Dry	Decon	same lake	first/frozen	didn't ask	asked.	
# of groups	512	420	85	379	3	152	55	0	18	63	208	518	
percentage of total groups asked	99%	81%	16%	73%	1%	29%	11%	0%	3%	12%	NA		

Yes = showed AIS spread prevention awareness; Drain = drained bilge; Bait = emptied bait bucket/disposed of bait; LW = drained livewell; Dry = dried boat; Decon = visited decon station; Same Lake = boat only goes in this lake; First/Frozen = first launch of the season or frozen boat.

			C	rganis	т Туре	•				total	% of inspected	
Organisms Removed	Non-invasive	BN*	CLP*	EF*	EWM*	VLM*	SWF*	WC*	ZM*	# AIS	boats w/AIS	
# of organisms	14	0	32	0	5	0	0	0	1	38	4.3%	
percentage of total orgs	27%	0%	63%	0%	10%	0%	0%	0%	2%			



Aquatic Invasive Species Intercepted by Stewards	# found on boats launching	Previous Waterway	# found on boats retrieving	Previous Waterway
curly-leaf pondweed	2	St. Lawrence River (2)	30	St. Lawrence River (30)
Eurasian watermilfoil	0	N/A	5	St. Lawrence River (5)
zebra mussel	0	N/A	1	St. Lawrence River (1)
Totals	2		36	

Previous Waterways for Launching Boats	# visits
SAME LAKE - PREVIOUS VISIT	364
NONE	78
UNKNOWN (boater doesn't know)	46
Carry Falls Reservoir	4
Lake Champlain	4
NOT ASKED	4
Cranberry Lake	2

Previous Waterways for Launching Boats	# visits
Fish Creek Ponds	2
Raquette River, NY	2
Chateaugay Lake	1
Lake Flower	1
Lake George	1
Lake Ontario	1
unspecified lake in New Hampshire	1
Total	511

State of Motorized Boat Registration (n=515)

