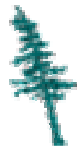


Watershed Stewardship Program

Summary of Programs and Research, 2005



Adirondack Watershed Institute



Paul Smith's College

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Introduction and Key Findings – 2005

**By Eric Holmlund, Director and Associate Professor
Watershed Stewardship Program**

Introduction

The Watershed Stewardship Program is a cooperative, community-based effort to conserve natural resources, including water quality, wildlife and soil, through targeted educational efforts at specific locations near Paul Smith's College in New York State's Adirondack Park. The program represents a convergence and synthesis of ideas and support from members of the Paul Smith's College faculty, New York State land management agencies, including the Department of Environmental Conservation, non-governmental environmental organizations including the Adirondack Watershed Institute, the Adirondack Park Invasive Plant Program and the Adirondack Cooperative Loon Program, and shore owner organizations from the St. Regis Lakes, Rainbow Lake, Lower Saranac Lake and Lake Placid.

The WSP wide ranging programs include point-specific environmental interpretation, educational outreach, field-based invasive species monitoring and various data-collecting projects aimed at better understanding human pressures on waterways and local trails. College students and recent graduates are hired to provide an informed, high-energy, friendly presence at local boat launches and trailheads. This report is an annual effort to consolidate and report on all aspects of program activities for the summer of 2005.

Summer 2005 Highlights

The Watershed Stewardship Program provided educational services at northern Adirondack boat launches and the summit of St. Regis Mountain for the sixth consecutive year. This year featured continuation of efforts to monitor and control the exotic invasive plant purple loosestrife, monitor loon pairs on the St. Regis Lakes, assess invasive plant presence on the St. Regis Lakes, and provide educational outreach programs for area children. The most significant change in the program for 2005 was the expansion of program services to two new locations, Lake Kushaqua and Second Pond, made possible by the support and collaboration of the Rainbow Lake Association and the Lower Saranac Lake Association. The WSP did not post stewards at Upper Saranac Lake as it has since 2001 due to a funding shortfall.

The primary thrust of this year's program was once again to educate people launching watercraft at our four launch locations - St. Regis Lake, Lake Placid, Lake Kushaqua and Second Pond - about the threat of introduced invasive species, primarily Eurasian watermilfoil (*Myriophyllum spicatum*) and how to minimize exposure of lakes to the threat. Stewards also compiled detailed information about the character of boat launch use, including such information as total boats launched, type of watercraft, and demographic information. Watershed Stewards also conducted a program assessment study for the third and final year. Stewards were stationed at the boat launches, and had other shifts on the water, climbing St. Regis Mountain, paddling kayaks to observe loons, maintaining data bases and meeting weekly to share information.

Program Mission

The Watershed Stewardship Program (WSP) at Paul Smith's College is a community-based program designed primarily to educate the public about conservation, preservation, and stewardship

issues of the Lower and Upper St. Regis Lakes, Spitfire Lake, Lake Placid, Second Pond, Lake Kushaqua and the St. Regis Mountain summit. The WSP also fulfills research and service functions. Baseline data concerning recreational use patterns and the status of natural resources gathered by the WSP aids in the development of area unit management plans by the New York State Department of Environmental Conservation. Stewards also maintain and clean up public campsites on the program's associated lakes and the St. Regis Mountain summit and identify and remove invasive purple loosestrife plants from the waterfronts of agreeable property owners on the St. Regis Lake chain. The WSP takes advantage of the skills and training of students of Paul Smith's College's Natural Resources, Environmental and Forestry programs with direction from the Paul Smith's College faculty, including a faculty program director. An advisory committee of community stakeholders, state agencies and Paul Smith's College faculty help guide the program.

The Watershed Stewardship Program has evolved over the years from its first year of service in 2000. In that year, the program served the St. Regis Lakes and St. Regis Mountain, both seven days per week during the summer. In 2001, the program expanded to serve Upper Saranac Lake for seven days per week, and in 2002, the WSP was welcomed on Lake Placid for four days per week. In 2004, coverage on Upper Saranac Lake shrank to weekends while coverage on Lake Placid expanded to five days per week. In 2005, coverage ceased for Upper Saranac Lake, but began on weekends at Lake Kushaqua (Rainbow Lake waterway) and Second Pond (Lower Saranac Lake waterway).

Staff

The program was funded to employ six employees for the summer of 2005 in a variety of full and part-time positions. All five of the Watershed Stewards were Paul Smith's College students or recent graduates. Positions included a Director, an Assistant Director/steward, 3 full-time stewards and a part time steward.

Staff Training

The first month of program operation, May, is typically the time for intensive staff training. The program begins with a full-time week of training sessions the week before the Memorial Day holiday. Sessions in 2005 included program orientation, safety and risk management, interpretation principles, interpretive message development, role-playing public contact, and introduction to WSP research program data collection and entry, all by the program director. Paul Smith's College's Recreation and Intramurals Director Jim Tucker provided First Aid and CPR instruction, Jane LaVoy provided Boater Safety certification, Forest Rangers Keith Bassage and Joe LaPierre and Forester Steven Guglielmi provided an orientation to the Forest Ranger program and Unit Management Planning, Kevin Prickett of the Association for the Protection of the Adirondacks covered the history of unit management planning and the Forever Wild aspect of the New York State Constitution, Professor Mike DeAngelo addressed principles of limnology and Hilary Oles of the Adirondack Park Invasive Plant Program addressed invasive plants. Dr. Nina Schoch trained our loon monitor. Anne Weld provided an orientation to the St. Regis Lakes, Linda Friedlander oriented us to Lake Placid, and Marge and Ted Glowa along with Pat Willis oriented us to Lake Kushaqua. The stewards also spent two days as attendees of the Adirondack Research Consortium's Conference on the Adirondacks in order to be exposed to the latest research and issues confronting the Adirondack Park.

We feel that the Watershed Stewardship Program offers a very impressive and comprehensive staff training and development effort in order to provide well-prepared and effective Watershed Stewards, who represent both the WSP and Paul Smith's College in the best possible light.



Pat Willis, of the Rainbow Lake Association, at WSP Staff Training

Key Findings and Program Activities

Overall, Watershed Stewards tallied 11,890 members of the public launching watercraft at the Lake Placid, Upper St. Regis, Lake Kushaqua and Second Pond boat launches. These recreators launched 5,446 watercraft. These numbers represent dramatic increases over 2004, when the program counted 5,151 visitors launching 2,416 watercraft. Overall, this represents a 131% increase in the number of visitors and a 125% increase in the number of watercraft encountered by a slightly smaller staff compared with last summer.

All Lakes 2005	Boat Type/Size (indicate hp for MO)											Total # of Boats	total users	Total Time at Launch	Gender		Pets	4 stroke motor on outboard?	Visible Weeds?	Use Boatwash?
	(hp)	MO	MI	I/O	P	J	S	R	C	K	B				M	F				
Lake Placid	67	809	336	414	126	0	8	31	151	366	39	2280	5594	12	3807	1787	207	177	7	
St Regis	48.2	236	4	3	1	0	0	12	436	292	93	1103	1895	14	1238	655	56	70	3	111
2 Pond wknd	61.5	622	82	76	47	17	2	10	374	445	1	1676	3691	18	2364	1324	197	74	16	
LKush wknd	53	122	2	17	3	2	1	2	136	101	1	387	710	14	409	229	30	4	17	13

Table 1: Recreational data from WSP launches. The values are grand totals for the 15 week period (Memorial Day to Labor Day). (hp) indicates average horsepower of all observed motors. In the registration column, No = the amount of boats with expired registration stickers. MO = outboard engine, MI = inboard engine, I/O = inboard/outboard (stern drives), P = pontoon boat, J = jet ski (personal watercraft), S = sailboat, R = rowboat, C = canoe, K = kayak, B = "barge". *Barges were recorded each time they utilized the launch area in an attempt to assess commercial/ construction use of the launch. Data for 2 Pond (Second Pond) and Lake Kushaqua was collected on weekends only.

This marked increase in use from 2004 is a counter-trend from the recent past, which has shown a decrease in visitation among our program sites since the peak year of 2002. It is likely that the good weather and increasing gas costs are driving more and more people into the Adirondack Park from nearby urban areas. Regardless of the reason, it is possible that this trend toward increased use will put additional pressure on local waterways in the form of boating traffic congestion and the ever-increasing risk of invasive species transport. Watershed Stewards serve an invaluable purpose in both educating users and inspecting their boats at critical points of entry.



Motorboat enthusiast - Upper St. Regis Lake

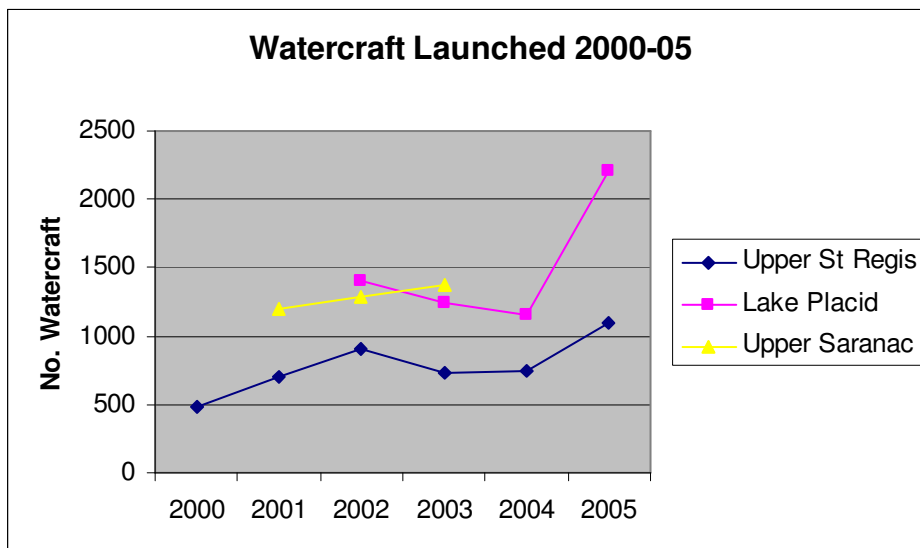


Figure 1: Multi-year trends in boat launch usage

This year, Watershed Stewards also compiled data on the recent use history of boats putting into program waterways. This information yielded a detailed picture of the web of interconnections between our lakes and those both within and without the Adirondack Park. Specific information from each lake may be found within this report. Please note the specially prepared maps which graphically communicate the pattern of risk represented by inputs from lakes with documented invasive species.

In general, Watershed Stewards have interpretive contact with at least one person per user group (1 boat or hiker group), although it is common for the entire group to listen to the Stewards' messages. With this in mind, well over 5,500 people were directly given an interpretive message centering on conservation and natural resource health in the summer of 2004 while untold numbers received the message indirectly through their peers or WSP publications.

Other Programs

Our Stewards are given the opportunity to pursue their interests beyond public education in the Watershed Stewardship Program. This is what sets this program apart from similar efforts across the country. Our Stewards engage in public contact with experts from area natural resource management and advocacy agencies to solve conservation and research problems. Watershed Stewards once again teamed up with Steven Flint from the Adirondack Nature Conservancy to track down, map, count and remove as many purple loosestrife plants as possible on the St. Regis Lakes Chain. Our program has been instrumental in this struggle against the exotic invasive plant for six years. This year's efforts saw a decrease in plant populations from last summer, in which 1,345 purple loosestrife plants were counted, mapped and removed. This year's efforts yielded 764 of the lovely invasives.

Once again, a steward spent one day per week monitoring the three pairs of banded loons that are residents of the St. Regis Lakes chain under the aegis of the Adirondack Cooperative Loon Program. Once again, the loons seem to be doing well.

The WSP Assistant Director, Jecinda Eller, served as a weekend interpreter on the summit of St. Regis Mountain. There, she gave an interpretive message about soil conservation, summit vegetation, and leave-no-trace outdoor ethics. She also tallied use levels and behavior under the same protocol as has been used by WSP stewards since 2000. This year, however, she was not able to provide coverage each weekend due to the need to support, supervise and cover for the other stewards at their

boat launch posts. The St. Regis Mountain summit was staffed only on June 18 and 26, July 3, 16, 17, 23, 24 and 31, for a total of 8 out of a possible 28 days (14 weekend season). As a result, we will not present a data summary in this report.

Finally, one steward prepared, advertised and offered educational outreach programs to the general public and to selected area summer recreation programs in 2005. We had great success with the Saranac Lake Summer Youth Program and the Adirondack Natural History Museum's summer education program.

In our third and final year of a self-study program entitled the WSP Program Assessment Study, we found once again that members of the public who had listened to a Watershed Steward's educational message in the past had significantly more knowledge of a key water quality issue than those with no prior contact with our program. This encouraging finding indicates that our message is reaching its mark.

Each of the special projects described above allows the WSP to respond to current needs, both of the community around us and of the students themselves. In this way, the program becomes a vital bridging experience between academic study and the world of productive conservation work.

Program recommendations

A primary goal for the 2005 season of the Watershed Stewardship Program was efficiency. My goal as director was for there to be 100% accuracy in obtaining and reporting the data that employees gather during their shifts educating the public. As a team, we strove to carefully emphasize the timely reporting and submission of data sheets, their timely transcription into our databases and timely proofreading by supervisors of each database so that errors could be addressed immediately, not after the mists of time fogged our collective memories. We were successful in this regard. We also stressed professionalism and positive attitudes among our staff, which was accomplished through careful staff orientation and regular and supportive monitoring and feedback. According to all reports, this year's staff performed exceedingly well in terms of professionalism, punctuality and knowledge of their duties. I feel that the team was indeed highly motivated and professional and was excellent to work with.

Despite the superior quality and efforts of the staff, the reality of the position of Watershed Steward is that it is not for everyone. While it might appear to be rather easy or low stress – one can picture Watershed Stewards reading novels while sitting in lawn chairs beside one of our beautiful Adirondack Lakes – in reality the job is quite difficult. The weather is frequently unpleasant, the bugs can be aggressive, and the repetitive nature of delivering a 2-5 minute conversation about invasive species literally thousands of times over the summer can be maddening. In addition, members of the public are not always receptive, and can be downright abusive to the Stewards, who are merely doing a public service summer job. Owing to the limits of our funding, Stewards are posted at the four boat launches for four out of five working days. The remaining day is dedicated to staff meetings, data entry or special projects. My point here is that the staff experienced varying degrees of burnout and struggled with motivation in the latter half of the summer. Unfortunately, very few staff members are interested in serving for more than one summer, owing to the repetitive nature of the job, and their growing perception that the public doesn't really care.

With this in mind, my leading recommendation is for the program and its supporters to find a way to reduce the ratio of boat launch duty to special project duty from 4 of 5 days to 3 of 5 days. We can increase the number of valid and helpful special projects through careful consultation with program supporters. In the past, we had time for trail maintenance, campsite maintenance, interpretive brochure research and development, wetland species inventories, waterfowl inventories, digital field guide development and other projects. These additional projects in service of area watersheds enrich

the service learning experience gained by Watershed Stewards, and enable them to be fresher, better informed and more enthusiastic on their days at the boat launches.

To get us to this point, I am recommending an increased role in terms of program support and funding by our partner state agencies, including the Department of Environmental Conservation and the Adirondack Park Agency. While we gain invaluable aid in orienting our staff by partnering with state employees, and while officials at both departments support our efforts, it's clear that the Watershed Stewardship Program is buttressing state efforts to educate the public at large regarding critical environmental issues that affect not only the entire Adirondack Park but the larger region. Why should local lake shore owners be the sole funders of a program that benefits not only their property but the watersheds of the entire region?

Watershed Stewardship Program Funding

The Watershed Stewardship Program was funded for the 2005 season by Paul Smith's College, the St. Regis Foundation, the Lake Placid Shore Owners' Association, the Rainbow Lake Association, the Lower Saranac Lake Association, the Lake Champlain Basin Program and the Kelsey Trust. We are profoundly grateful for their support and contributions to our program vision. We invite current funders to continue their support of this multifaceted and proven program and welcome new supporters to join this effort to serve Adirondack watersheds through education, research and service. The program director is eager to meet with interested parties to discuss future plans and opportunities for the Watershed Stewardship Program. We also would like to appreciate the readers of this document and the many members of the public with whom we have interacted over the past six years in the course of our efforts raise general awareness of critical watershed issues.



Canoeists, Lake Kushaqua

Staff Biographies – Summer, 2005



Jecinda Eller, Assistant Director of the Watershed Stewardship Program, Jecinda is a graduate of Paul Smith's College in the Outdoor Recreation program. Her background includes working with programs such as Vermont Youth Conservation Corps, Student Conservation Association, Adirondack Mountain Club and the Tennessee Nature Conservancy. She will be returning to Paul Smith's College in the fall to continue in the Recreation, Adventure Travel and Ecotourism program. Jecinda enjoys spending time with her husband, James, and their 10-month old daughter, Evelyn, on hiking trips and out on the Adirondack Waterways.



Ashlee Petell. The Watershed Steward and Environmental Education Program Coordinator, Ashlee is a 2005 graduate of Paul Smith's College. She received her Bachelor's degree in Biology. Ashlee is originally from Holland, Vermont. She has been living in the Adirondacks for the past several years and loves it! Ashlee enjoys being outside and is looking forward to spending her summer working for the Watershed Stewardship Program.



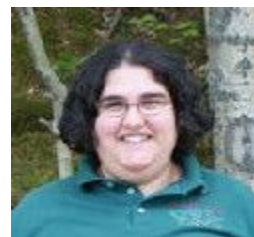
Kate Radock. Watershed Steward and Invasive Species Monitoring specialist, Kate is a senior at Paul Smith's College. Kate has received her Associates Degree in Fish and Wildlife Technology, a certificate in Geographic Information Systems (GIS) and is working towards her Bachelor's degree

in Natural Resources. Kate is originally from Edinboro, Pennsylvania and enjoys numerous outdoor activities. She has been a visitor of the Adirondacks for nearly two decades and is devoted to the protection of the natural resources of the Adirondacks.



Stephanie Sears. Stephanie Sears graduated from Paul Smith's College in 2004 with a B.S. in Natural Resources-Environmental Science, and an A.A.S. in Fish and Wildlife Technology.

Originally from Michigan, she has recently lived in Tennessee and California, but feels very at home in the Adirondacks. The Watershed Stewardship Program is very exciting to Stephanie because it is a great chance to help protect such a precious and indispensable location. She is also responsible for monitoring banded Loons for the Adirondack Cooperative Loon Program.



Leah Wacks. Leah is a student of Paul Smith's College pursuing a Bachelor's of Science in Fisheries and Wildlife Sciences. Originally from Baltimore, MD, Leah grew up learning about the importance of waterways in the Chesapeake Bay. Her background includes working at the Maryland SPCA and the Baltimore Zoo. She is currently president of Paul Smith's College Students for Environmental Action Club.



Eric Holmlund, Director of the Watershed Stewardship Program, is an Associate Professor of Recreation in the Forestry, Natural Resources and Recreation

Division at Paul Smith's College. In addition to his work as Director of the Stewardship Program, Eric teaches in Paul Smith's College's baccalaureate program in Recreation, Adventure Travel and Ecotourism. Eric is co-author of a book, *The Camper's Guide to Outdoor Pursuits*. Eric and his wife Kim have a six-year-old daughter, Dana, and twin four-year-old boys, Will and John. He enjoys most outdoor activities, especially lake kayaking and camping in his family's pop-up trailer.

Watershed Stewardship Program: Program Assessment Study, 2005

By: Eric Holmlund, Associate Professor of Recreation and Director, Watershed Stewardship Program, Paul Smith's College, Paul Smiths, New York

Abstract:

Public education is a common response to environmental concerns, but measuring the impact of such efforts can be challenging owing to the invisible nature of subject attitudes and intellectual development. The Watershed Stewardship Program (WSP) has developed an internal study of program efficacy through assessing the level of user knowledge about a key water quality issue: invasive Eurasian watermilfoil and the methods of its spread and control. Paul Smith's College's WSP has stationed public educators delivering short educational messages regarding invasive species at select boat launches in New York State's Adirondack Park since 2000, and has surveyed the public regarding knowledge of Eurasian watermilfoil spread over the summers of 2003, 2004 and 2005. Results from all three years clearly indicate that respondents previously exposed to WSP staff interpretive messages exhibited a higher level of knowledge than those respondents with no prior contact with the Watershed Stewardship Program's educational message. For example in 2005, mean scores on a five-point scale (1 = low; 5 = high) rating public knowledge of Eurasian watermilfoil in segmented user groups were as follows: those with no prior contact with WSP staff – 1.7; those with prior contact with WSP staff – 2.7; overall mean score – 2.1. We infer from this finding a positive effect from educational interventions in improving public knowledge about a key environmental issue.

Introduction:

The Watershed Stewardship Program was founded in the summer of 2000 in order to offer a suite of educational, service and research activities to augment watershed health in specific locations adjacent to Paul Smith's College in New York State's Adirondack Park. The program is sponsored by Paul Smith's College, local property owner associations and a few external funding sources. The program places college students with majors in natural resources or biological sciences at area boat launches in order to deliver a 3-10 minute interpretive message about water quality to each group of recreators launching watercraft. The boat launches are Upper St. Regis Landing, Upper Saranac Lake-Saranac Inn, and Lake Placid State Boat Launch with the addition of Second Pond and Lake Kushaqua for the summer of 2005. Watershed Stewards are also charged with collecting recreational use data and a host of smaller projects such as monitoring banded loons, surveying and controlling purple loosestrife, conducting educational outreach programs, educating hikers of St. Regis Mountain, and others. The program has run each of the past six summers from Memorial Day to Labor Day. The principle goal of the program is to stop or slow the spread of invasive plants from lake to lake through public education and visual inspection.

While the program has garnered local praise and regional attention, until 2003 there was no effort to measure program impact quantitatively. The current study design was implemented as a manageable, executable effort to measure changes in knowledge of a key watershed issue in respondents. This key issue – Eurasian watermilfoil growth and propagation – is seen as representative of the efforts made by Watershed Stewards to raise the awareness of water quality issues in boat launch users. Thus, for the purposes of this study, whether respondents have a high or low knowledge of the key issue is linked to the presence or absence of their prior exposure to the Watershed Stewards' message.

Project goals:

1. to assess the overall level of program effectiveness in delivering its primary and secondary objectives
2. to inform strategies to address perceived program weaknesses and to capitalize on program strengths.

Overarching Study Questions:

1. How effective is the WSP at delivering a message regarding invasive species?
2. Do the educational efforts of Watershed Stewards have an impact in altering visitor behavior regarding responsible boating, specifically in reducing the possibility of introducing unwanted invasive species?
3. Is visitor awareness of invasive species issues changing over time?
4. Is this awareness level changing as a result of the WSP?

Methods:

This study was conducted by front-line employees, referred to here as Watershed Stewards, in the context of their normal duties. Watershed Stewards are stationed at area boat launches between Memorial Day and Labor Day each year. Shifts run from 7 am to 4 pm. Stewards are instructed to approach users of the public boat launches, deliver their interpretive message about water quality and invasive species and record observable data for a separate study on recreational use characteristics (data points for this study include party size, composition, watercraft type, engine size and type, time at launch, etc.). Table 1 below details the level of coverage each week by site.

Sampling Strategy

Watershed Stewards were instructed to conduct the study, which was a four-question survey (see Figure 2), with each group launching a watercraft at the boat launch they were assigned to for the duration of their shift (7 am – 4 pm). It should be noted that Watershed Stewards were conducting the study in addition to their normal duties, which include a general educational message and the recording of recreational use data for another study. In practice, the survey was not given to each party, especially during periods of high user volume when shorter interactions between Watershed Stewards and the public became essential. Table 1 indicates the percentage of possible respondents which were actually surveyed. Note that the sample size grew considerably in the second year and third year of the study, both in absolute numbers and as a proportion of the potential population available for survey administration. The goal remains to survey 100% of the users on each day of the study.



Table 1: Watershed Stewardship Program Assessment Study Sampling Information

Northern Adirondack Boat Launches, 2003 and 2004

Public Boat Launch	Year	Days per week of coverage	# Days/ site/ week	Sample Size	Total Groups on surveyed days	Sample as % of Total Users
Lake Placid State Boat Launch	2003	Weds-Sun	5	68	171	39.7%
	2004	Weds-Sun	5	260	395	65.8%
	2005	Weds-Sun	5	342	786	43.5%
Upper St. Regis Landing	2003	All week	7	78	131	59.5%
	2004	All week	7	178	212	83.9%
	2005	All week	7	213	412	51.6%
Upper Saranac Lake- Saranac Inn	2003	All week	7	82	232	35.3%
	2004	Weekends	2	172	175	98.2%
	2005	Not Participating	-	-	-	-
Lake Kushaqua	2005	Weekends	2	80	144	55.5%
Second Pond	2005	Weekends	2	247	568	43.4%

The Watershed Stewardship Program Assessment Study was conducted during two generally defined periods throughout the summers of 2003, 2004 and 2005. In 2005, the study was conducted every day (when possible) for 16 days in late June and early July (early summer) and for 28 days in August and September (late summer). This structure was an important part of the study design, in that comparisons might be made between users of the boat launches in early summer versus late summer. In total, the study was conducted on 44 days throughout the summer of 2005.

Table 2: WSP Assessment Study Survey Days, 2003 - 2005

Month	2003	2004	2005
May	5	0	0
June	15	17	5
July	5	9	11
August	18	19	25
September	0	3	3
Total for summer	43	48	44

Procedures for Conducting the Survey

A specific protocol for implementing the Program Assessment Survey was designed in order to instill as much consistency as possible in the delivery of the survey. Watershed Stewards were instructed to adhere to the following methods:

Figure 1: Method of conducting WSP Program Assessment Survey

1. When recreators arrive at boat launch, record the observable data for the regular recreation study as usual.
2. Approach the party, give your standard introduction/hook
3. Ask question Q1 below. Depending on response, then ask questions Q2-Q4 OR skip to Q4. Record data on the WSPAS (Watershed Stewardship Program Assessment Study) form provided. This should take 1-2 minutes.
4. After finishing with the WSPAS, proceed with your normal interpretive message as appropriate to the needs or desires of the recreator.

A one-hour training session was given each year to orient the Watershed Stewards to the goals and methods of the study. This training session includes the use of role-played interactions between surveyors and the public, which are then scored by the group using the standard rubric found below. Scores can then be compared and calibrated between the raters.

It should be noted that the Watershed Stewards were instructed to integrate the study into their normal operating procedures. Stewards were not making a separate intervention in order to glean the data for this study. Also, Stewards conducted this study, at the request of the Director, on selected weeks in order to get information about early summer versus late summer visitors. That is, Stewards conducted the survey in two bursts- June-July and August-early September.

The four survey questions, seen below, were designed to be very simple and pointed, in order to not displace the other duties and responsibilities the Stewards were charged with each day.

Question #1 was intended to break the respondents into two sample subgroups: those who had prior contact with a Watershed Steward and those who had not. Question #2 gave us the respondent's recollected overall impression of program value. Question #3 gave us an interesting potpourri of information that ranged quite widely, but offered some insight into the messages that stayed with respondents. Question # 4 was our critical question, in that it allowed Stewards an opportunity to score or grade respondent knowledge on this key issue on a scale of 1 (low) to 5 (high). Stewards were requested to instantly score each subject's response to Question #4 according to the rubric below, which was printed on the reverse of each data sheet.

Figure 2: Survey Questions

Q1.	Have you encountered a Watershed Steward from our program before? (Y/N) (If yes, go to question 2. If no, skip to question 4)
Q2.	Did you learn useful information from the Steward regarding invasive species? (Y/N)
Q3.	What were the most important messages you can recall from your earlier meeting with the Steward?
Q4.	Can you tell me what you know about Eurasian watermilfoil?

Figure 3: Scoring Rubric for Responses to Question #4 of Survey

(Note: each higher level assumes the knowledge of the preceding level, plus the new material as noted. These levels are approximate, subjective. Do the best you can at determining the closest level.)

1- no knowledge	2- vague knowledge	3- reasonable working knowledge	4- advanced knowledge	5- extensive knowledge
No knowledge	<ul style="list-style-type: none"> • Noxious weed of some kind • In lakes 	<ul style="list-style-type: none"> • Invasive underwater plant • Chokes lakes • Transported by boats 	<ul style="list-style-type: none"> • Catches in boat props and trailers • Interferes with fishing, swimming, boating, skiing • Knows that there are native species of milfoil 	<ul style="list-style-type: none"> • Able to differentiate from native spec. • Knows the relationship of infestation to reduced O₂, shading of bottom, habitat change. • autofragmentation

Results:

Sample Segmentation:

Useful responses were divided into two sample groups for purposes of data analysis. S_n (Sample "No") was defined as the subgroup of respondents who indicated on Question # 1 that they had no

prior contact with Watershed Stewards. S_y (Sample “Yes”) was defined as the subgroup of respondents who indicated on Question #1 that they had prior contact with Watershed Stewards. S_t (Sample “Total”) was defined as the entire group of respondents.

Table 3: Comprehensive Results of Study, 2003 - 2005

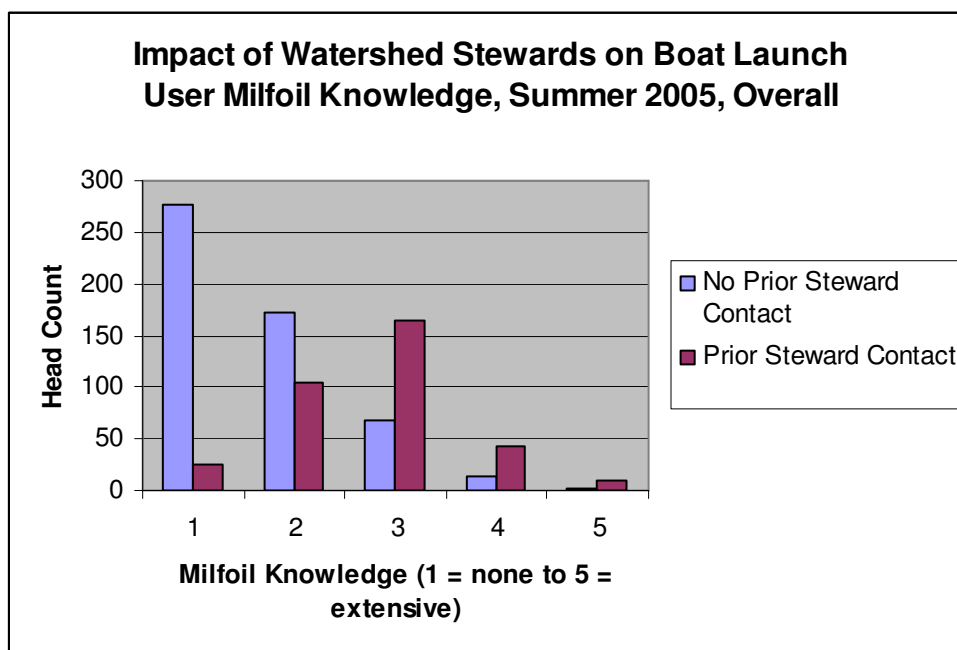
		<u>2003</u>	<u>2004</u>	<u>2005</u>
Sample Size	S_t (total sample in study)	228	582	878
	S_n (no prior contact with Watershed Stewards)	136	269	532
	S_y (“yes” to prior contact with Watershed Stewards)	85	313	346
Overall Mean Scores (1-5 scale; 1=low, 5=high)	S_t (total sample)	2.67	2.77	2.08
	S_n (no prior contact with Watershed Stewards)	2.24	2.16	1.66
	S_y (“yes” to prior contact with Watershed Stewards)	3.37	3.28	2.72
Early Summer Mean Scores	Early Summer (May-June) Sample Size	130	226	401
	Early Summer (May-June) Mean Score: S_n	2.29	2.36	1.59
	Early Summer (May-June) Mean Score: S_y	3.40	3.41	2.67
Late Summer Mean Scores	Late Summer (late July-August) Sample Size	98	356	481
	Late Summer (late July-August) Mean Score: S_n	2.19	2.01	1.72
	Late Summer (late July-August) Mean Score: S_y	3.29	3.22	2.77
Mean Scores Compared by Lake (study site)	Upper St Regis Lake Mean Score (n = sample size)	2.66 (78)	2.81 (178)	2.27 (213)
	Lake Placid Mean Score (n)	2.64 (68)	2.74 (260)	2.199 (342)
	Upper Saranac Lake Mean Score (n)	2.72 (82)	2.82 (178)	-
	Lake Kushaqua	-	-	1.95 (80)
	Second Pond	-	-	1.79 (247)

Means were calculated for respondents' scores on Question #4, which asked their general level of knowledge of Eurasian watermilfoil. Surveyors rated responses on a scale of 1 to 5, based on the criteria in Figure 3, above.

Discussion:

It is clear that the mean scores for the "treatment" group, i.e., those users of the boat launch who had experienced prior contact with Watershed Stewards, scored as a group over one full point higher on the scoring rubric in terms of their expressed knowledge of Eurasian watermilfoil. This difference is highlighted when one examines the subject count and percent breakdowns of respondents who scored at each of the five levels.

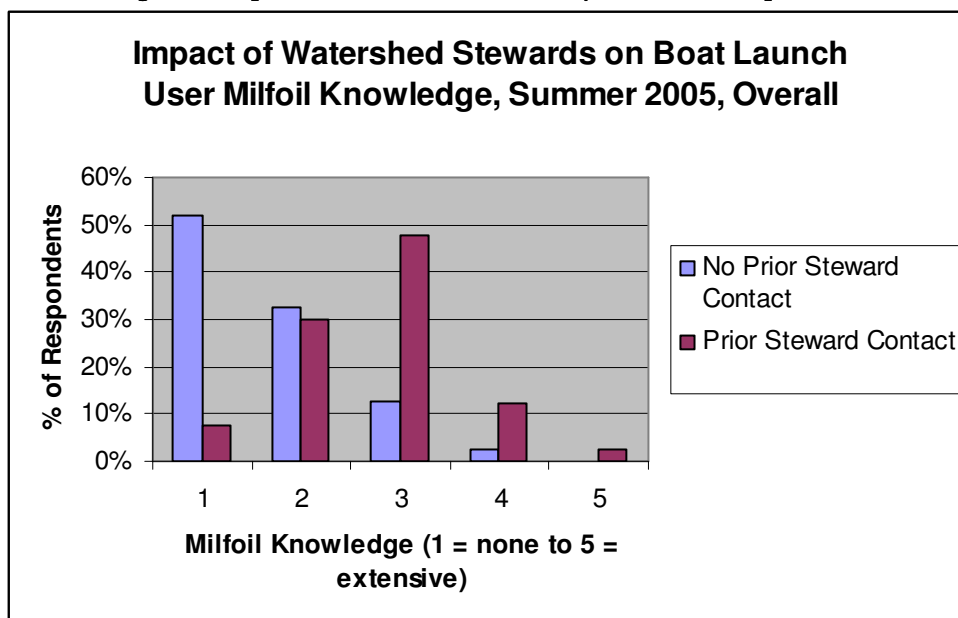
Figure 4: Impact of Steward Message by Number of Subjects, 2005



It is interesting to note that people with no prior contact with watershed stewards were highly likely to score a "1" and less and less likely to score at ever higher levels. In contrast, those people with prior Watershed Stewardship Program contact fell into a more normal bell-shaped distribution, with large numbers rated as "3's" and fewer rating as 1 or 5.

When one considers percents of respondents, the contrast is marked. A striking 85% of respondents with no prior contact with Watershed Stewards had either vague or no knowledge (scored a 1 or 2) of the natural history and threat posed by Eurasian watermilfoil, while 63% of those who listened to the Watershed Stewards on a prior occasion had a reasonable working knowledge of the plant or better (scored 3 or higher).

Figure 5: Impact of Watershed Stewards by Percent of Respondents



Based on this information, almost nine out of ten new visitors using Watershed Stewardship Program-addressed boat launches have inadequate information to make responsible decisions regarding the transport of invasive plants. Once exposed to the Stewards, this risk drops markedly.

Early versus Late Summer

In order to continue the design of the study from 2003, the survey was administered in two bursts- late June and early July and August through early September. These two periods were chosen to give insight into changes in user knowledge and satisfaction as the summer progresses.

The information in Table 3 indicates that there was a slight downturn in scores overall (approximately 0.1 in 2003 and 0.2 in 2004) as the summer progressed for the first two years of the study, which might be attributed to the probable greater instance of out-of-the-area recreators in August at the boat launches. It is likely that early summer users tend to be from the nearby region, and are somewhat better informed about regional water quality issues. However, in 2005, mean scores for both samples (those with and without prior contact with watershed stewards) increased slightly (Sn- from 1.59 to 1.72; Sy- from 2.67 to 2.77) as the summer progressed. It should be noted that we started the first burst of research considerably later in 2005 than in previous years (late June in 2005 compared to early June in 2004), and that usage overall was up between 50 and 100% at the boat launches studied compared with 2004. These factors could have altered the overall findings. Regardless, the degree of change – approximately 0.1 – was consistent over the three-year study between early and late summer surveys.

Respondent Satisfaction

While Question #1 asked if recreators had encountered a Watershed Steward in the past, Question #2 on the survey asked “Did you learn useful information from the Steward regarding invasive species?” We looked to this question for an indication of satisfaction or impact from the user’s gestalt memory of the past encounter.

In 2005, there were 318 useable responses to this question, while 532 respondents reported that they had not encountered a Watershed Steward in the past. Of the 318 respondents with prior experience with Watershed Stewards, 296 responded “yes” to Question #2 while 22 responded “no.” In percentages, 93% of respondents reported learning useful information about invasive species while a small 7% reported that they did not learn any useful information. This finding attests to the positive impact overall of the effort of the Watershed Stewards. The results are consistent over the three years of the study.

Year of Study	Usable n	% Satisfied	% Dissatisfied
2003	82	90%	10%
2004	313	95.5%	4.5%
2005	318	93%	7%

2005 compared with past years

In 2003, there were 228 respondents surveyed, while in 2004 there were 582, a 155% increase in subjects. 2005 saw a further 50% increase in subjects over 2004 – 878 compared to 582. Table 3 illustrates that there was little change overall in mean scores on Question #4 from 2003 to 2004 despite the greatly increased pool of respondents. This suggests that the program design is comparable and reliable over the course of two years, with a workforce of Watershed Stewards/ researchers that was entirely new in 2004 as compared with 2003.

However, 2005 brought considerable change when compared to the previous two years. Mean scores on the survey instrument dropped considerably, from an overall mean in 2004 of 2.77 to 2.08 in 2005. Mean scores dropped at both Upper St. Regis and Lake Placid from 2004 to 2005 (USR: 2.81 to 2.27; LP: 2.74 to 2.199). What could explain this apparent sudden decrease in environmental awareness in visitors from one year to the next?



Several variables could explain this fall off in scores. Firstly, while the survey instrument, training and overall method remained the same, the research crew was entirely new in 2005. This was also the case in 2004. However, it is possible that the team in 2005 was on a whole more critical in assessing responses to the key survey question, “Can you tell me what you know about Eurasian watermilfoil?” Secondly, 2005 saw a dramatic increase in visitation at both Lake Placid (up 100%) and Upper St. Regis (up 50%) from 2004 levels. This could indicate that less intrepid (“fair weather”) recreators were out in greater numbers, which might drag the overall level of scores down. Thirdly, we initiated new programs at two sites: Second Pond and Lake Kushaqua. The mean scores of respondents at those sites were considerably lower than those at Lake Placid and Upper St. Regis (Second Pond

mean – 1.79; Lake Kushaqua mean – 1.95). This would have some effect on our overall lower mean, but not on the means for Lake Placid and Upper St. Regis Lake. Lastly, the Stewards were instructed not to repeatedly poll visitors who indicated they had already answered the questions for the Assessment Study. It is likely that after three years of administering the study, many local, repeat users had

answered the questions in the past. This would effectively skew the sample toward new visitors who had never encountered Stewards or who had never participated in the Assessment Study. This skewed sample would naturally tend to score lower overall due to a decreased level of familiarity with northern Adirondack waters and our program.

Conclusion:

The Watershed Stewardship Program Assessment Study has confirmed in 2005 and 2004, using a much larger sample, what the study indicated in 2003. All three years show that there is a high correlation in the general public between heightened knowledge of Eurasian watermilfoil natural history and control methods and prior contact with representatives of the Watershed Stewardship Program. The program feels confident that it is having a positive impact on user knowledge of this critical watershed health issue and is protecting the waters not only of the lakes monitored by the program, but all the waterways that are potentially visited by each recreator educated by Watershed Stewards. Like ripples on a lake's surface emanating from the point of a pebble's impact, the message of watershed stewardship appears to be finding its way through time and space to a wider audience.

Recreation Use Study- St. Regis Lake Chain, 2005

By: Ashlee Petell, Watershed Steward and Eric Holmlund, WSP Director

Introduction:

The Watershed Stewardship Program hopes to improve watershed quality in the Adirondacks by educating users at area boat launches. Watershed Stewards orally presented general information about invasive species control to every boater, which they then carry with them and keep in mind when they leave and go to other launches. Stewards also collect data concerning the use of the launch. Data collected include such things as number of boats, types of boats, number of males and females using the sight. This year a new question was introduced to the study, addressing where each user's boat had been in the preceding two weeks. This allowed stewards to inform each user whether the lake they had visited previously was infested lake with Eurasian watermilfoil and to request that they use the boat wash. This question also lets us assess the risk of exposure to the St Regis Lake Chain. As in years past, visual inspections of boats and trailers were conducted.

Methods:

The Recreation use study began Saturday May 28, 2005 and ran through Monday September 5, 2005. A steward was stationed at the boat launch seven days a week from 7:00 am to 4:00 pm. When a boat pulled up the steward recorded the recreational study data which included boat type, horse power, presence of pets etc. After the data was collected, stewards approached boats and presented a short educational talk about invasive species and answered any questions the boater had. New this year was the question asked by stewards: has your boat been on any water other then here in the last two weeks and if so where? Collected data was then entered into a data base to find trends and compare to data from the past several years.

Results:

Demographics

Total use of the Upper St Regis boat launch totaled 1103 boats and 1895 people. This number is greater than any other year including the summer of 2002 which was the previous high of 907 boats. Non-motorized boats out numbered motorized boats by 2 to 1 (Figure 1). The peak weeks for use were 7/1-7/7 with 101 boats launched and 7/15-7/21 with 113 boats launched. Most boats were registered. Less than one percent of boats were not registered. 56 pets were observed over the course of the summer. Boats were registered primarily in New York but other states such as Vermont, Massachusetts, Illinois, and Connecticut were seen. The average amount of time spent at the launch by a boater was 14 minutes. Females were outnumbered by males by nearly two males for every one female.

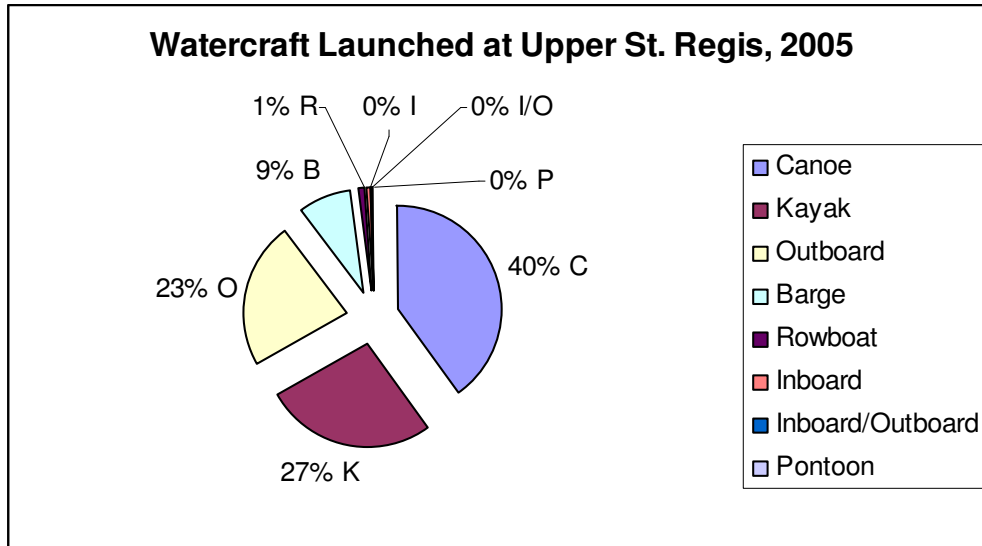


Figure 1: Watercraft Launched as Percent of Total, St. Regis Launch, 2005

Usage patterns throughout summer

Over the summer, use peaked around the 4th of July, the third full week of July, and again during the end of July into August. The greatest number of boats tallied in a week was 111 during the week of July 15-28. The smallest number of boats tallied was during the first week of service, May 27- June 2, which actually was not a full week of service due to staff training. The number of boats in this period was merely 21. The average number of boats per week in June was 52, in July was 92, and in August was 80.

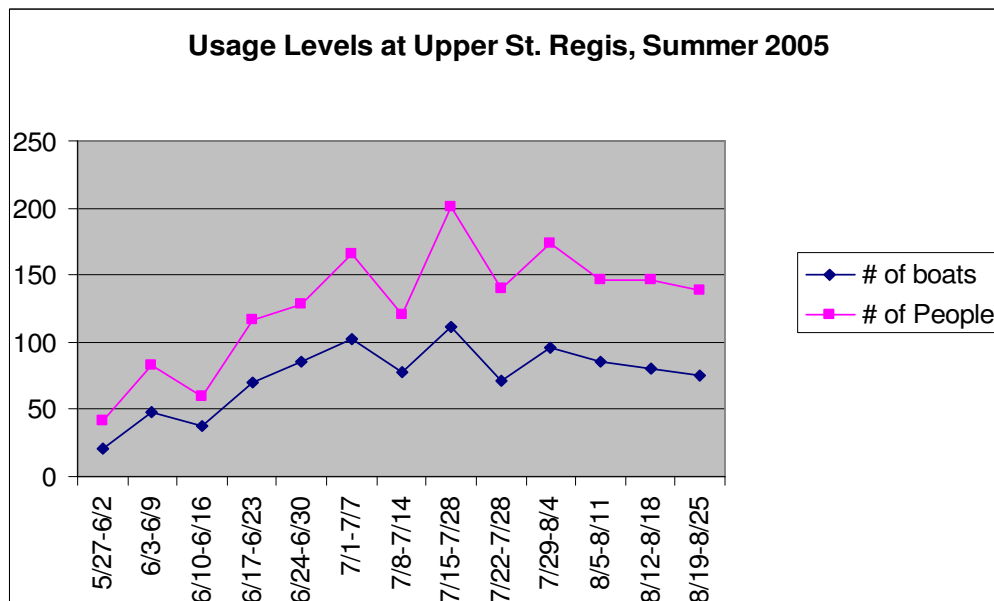


Figure 2: Use Levels, Upper St. Regis Lake, 2005

Boat Wash Usage

The number of people who used the boat wash was 111, or 10%. One of the reasons this number is low is that many non motorized boats think that they could not be carrying invasives and therefore do not have to wash their boat. I think that next year out reach at events like the canoe show at Paul Smith's College informing canoes that they can also spread invasives might help. Only three boats were observed having weeds on them. In general, boat wash use levels mirrored overall use levels.

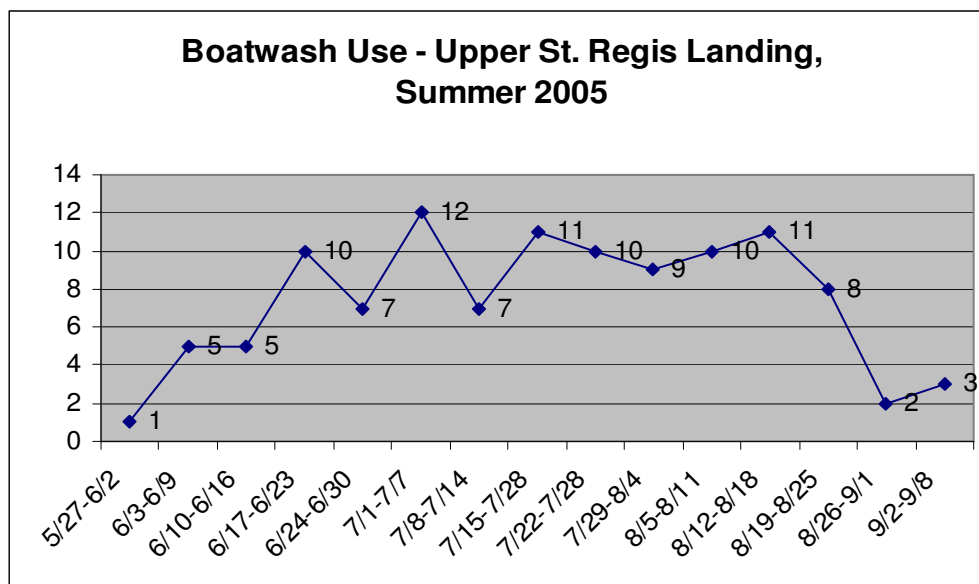


Figure 3: Boatwash Use, Upper St. Regis Lake Launch, 2005

Prior waterway visitation

The most interesting data was the response to where has your boat been in the last two weeks? Of the people who had been on water in the last two weeks 209 had been on known infested lakes. Nearly 19% of boats launched had been on infested water in the preceding two weeks, which is the range of time that some aquatic invasives are able to survive. This shows that there is a real need for boater education as there is a real risk of infestation on the St Regis Lake Chain.

There were a total of 97 different water bodies reportedly used by recreators in the preceding two week period, which is the greatest total of the four lakes in the study. While overall usage is not highest at Upper St. Regis, it appears that diversity of prior boat use is. The Great Lakes, Long Island Sound, the Connecticut River and the Erie Canal are all notable mentions for previously visited waterways that have invasive species problems. Upper St. Regis Lake is facing tremendous pressure from lakes with invasive species, with a total of 116 boats having reported prior use in infected lakes.

The most common response to the query was “rental” which we decided for the purposes of this study to be classified as having traveled in infected waters, which surround Upper St. Regis Lake. These boats hopefully have some degree of maintenance and care between users, but also are more likely to have come up against invasive plants as they typically are cycled between users fairly rapidly. The next most mentioned infected waterway was the Saranac chain of lakes, including the Saranac River. Each of the Saranac Lakes has a problem with Eurasian watermilfoil. Lake Champlain, with its array of invasive plants and animals, the St. Lawrence River and Fish Creek were also mentioned numerous times. It is clear that there is great potential for communication between waterways of

invasive organism breeding stock. It is evident that having a committed person to inspect boats before they enter Upper St. Regis is an important consideration.

Table 1: Boat use history, Upper St. Regis Lake, 2005

Boat Use History- Prior 2 weeks Upper St. Regis, Summer 2005			Boat Use History- Prior 2 weeks Upper St. Regis, Summer 2005		
Lake Visited	infected?	Totals	Lake Visited	infected?	Totals
Rental	Y	43	Osgood Pond	Unknown	17
Upper Saranac Lake	Y	20	Lake Placid	Unknown	15
Lower Saranac Lake	Y	17	Little Clear	Unknown	9
Lake Champlain	Y	15	Little Long	Unknown	8
Lake Flower	Y	12	Church Pond	Unknown	7
St Lawrence River	Y	11	Rainbow Lake	Unknown	7
Middle Saranac	Y	10	Bear Pond	Unknown	6
Saranac Lake	Y	10	Green Pond	Unknown	6
Meacham Lake	Y	9	7 carries	Unknown	5
Kiwassa Lake	Y	8	Black Pond?	Unknown	5
Fish Creek	Y	6	Lake Kushagua	Unknown	5
Franklin Falls Res	Y	5	Jones Pond	Unknown	4
Follensby Pond	Y	4	Barnum Pond	Unknown	3
Lake Colby	Y	4	Canada Lake	Unknown	3
Saranac River	Y	4	Clear Pond	Unknown	3
Chateaugay Lake	Y	3	Hope	Unknown	3
Hudson River	Y	3	Indian Lake	Unknown	3
Long Island Sound	Y	3	Lake Clear	Unknown	3
Taylor Pond	Y	3	Long Pond	Unknown	3
Erie Canal	Y	2	Loon Lake	Unknown	3
Horseshoe Pond	Y	2	Mirror Lake	Unknown	3
Niagara River	Y	2	Mountain View	Unknown	3
Tupper Lake	Y	2	Rollins Pond	Unknown	3
Atlantic ocean	Y	1	St Regis Pond	Unknown	3
Cayuga Lake	Y	1	Buck Pond	Unknown	2
Chateaugay Lake	Y	1	Chazy Lake	Unknown	2
Cranberry Lake	Y	1	Hoel Pond	Unknown	2
Dead Creek (VT)	Y	1	Long Lake	Unknown	2
Floodwood Pond	Y	1	Milaghaka River	Unknown	2
Lake Ontario	Y	1	Moose Pond	Unknown	2
North Hudson	Y	1	Osdaga	Unknown	2
Oseetah Lake	Y	1	Quebec	Unknown	2
Pacific Ocean	Y	1	Raquette River	Unknown	2
Putnam Pond	Y	1	Silver Pond	Unknown	2
Total from Infected Waters		209	Skeneateles Lake	Unknown	2
			Split Rock	Unknown	2
			Alans Falls Flow	Unknown	1
			Bone Pond	Unknown	1
			Bouquet River	Unknown	1
			Cascade Lakes	Unknown	1
			DAR State Forest (MA)	Unknown	1
			Dear Pond	Unknown	1
			Echo Lake	Unknown	1
			Harmin St Park	Unknown	1
			Henderson Lake	Unknown	1
			Higley Flow	Unknown	1
			Hitchens Pond	Unknown	1
			Lake Cassy	Unknown	1
			Lake Francis	Unknown	1
			Lake Harris	Unknown	1
			Lake Minafa (Plymouth)	Unknown	1
			Lake Nenav (VT)	Unknown	1
			Lower St. Regis	Unknown	1
			Narrows	Unknown	1
			Palean Lake (VT)	Unknown	1
			Paradox Lake	Unknown	1
			Pushville	Unknown	1
			Rock Pond	Unknown	1
			Silver Lake	Unknown	1
			Sunday Pond	Unknown	1
			Tinglu	Unknown	1
			Wheatherby Pond	Unknown	1
			Total from Unknown Uninfected Waters		180

Boat Visitation Maps

Dr. Daniel Kelting, Director of the Adirondack Watershed Institute and Eric Holmlund, Director of the Watershed Stewardship Program produced two maps describing graphically the pattern of origin of boats visiting the St. Regis Lakes for the first part of the summer of 2005. The first map depicts the local region and its inputs to the lake. Red lines indicate lakes with documented invasive species. The second map zooms out and shows a larger region.

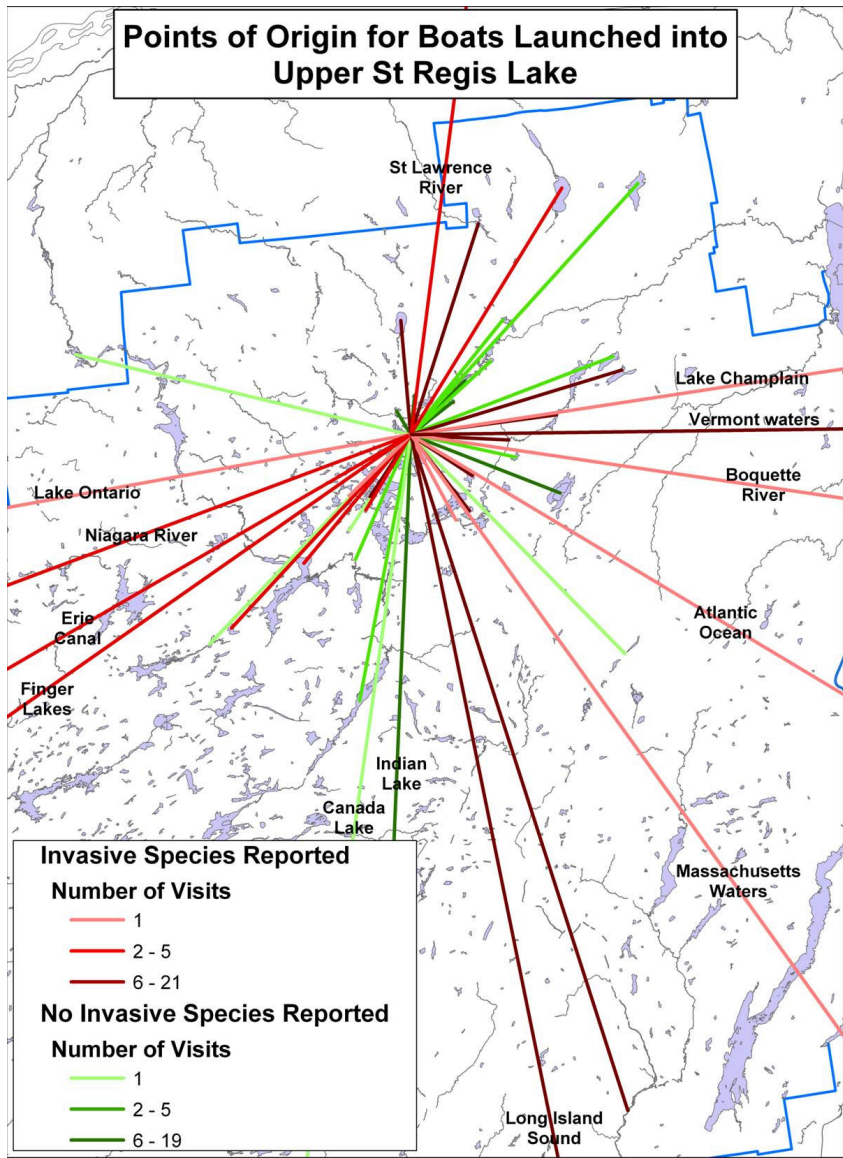


Figure 4: Point of origin map: nearby view

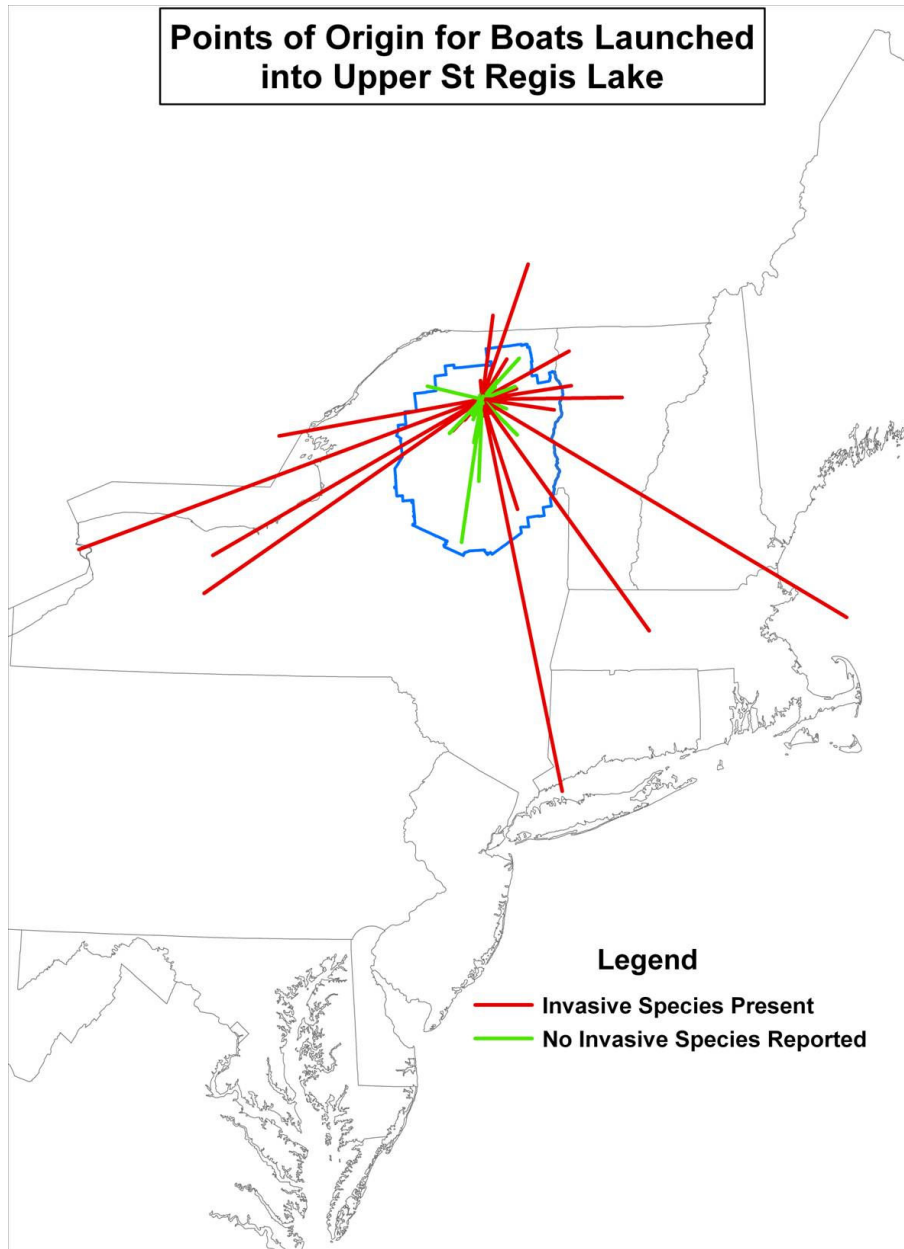


Figure 5: Point of origin map: regional view

Discussion:

As in other years, non-motorized boats greatly outnumbered power boats. A reason for this might be that the launch area is relatively small and there is limited parking making this launching site a maneuverability challenge for some motor boats. Boaters often complain to stewards about parking. Outboard motors greatly outnumbered any other kind of motor boats, which is probably due to the high number of regular fishermen. The amount of fishermen and the use of the public boat launch by construction workers gives way to the higher amount of men compared with women using the launch. The percent of people using the boat wash dropped from last year (10% in 2005 vs. 13% in 2004). Stewards tried to increase the number of people using the launch by standing next to the sign and flagging people down and offering to spray their boats off for them. This did not increase boat wash use, as many people simply refused to wash their boats. Stewards will have to find a way to deal with

this strong refusal on the part of the visiting public. Perhaps a local town ordinance requiring use of the boat wash or banning transport of invasive species can be explored.

Use overall surpassed the recent historic high set in 2002. Good weather and a consistently visible road sign on the corner of Route 30 probably both contributed to the rise in use. In percentages, boat use was up 45% over last year, while the number of people rose 38%. These rises were somewhat less than what was experienced in Lake Placid, which saw 100% increases in boats and people. It remains to be seen whether 2005 represents a return to growth, or whether 2006 will see levels in the range of the preceding two years.

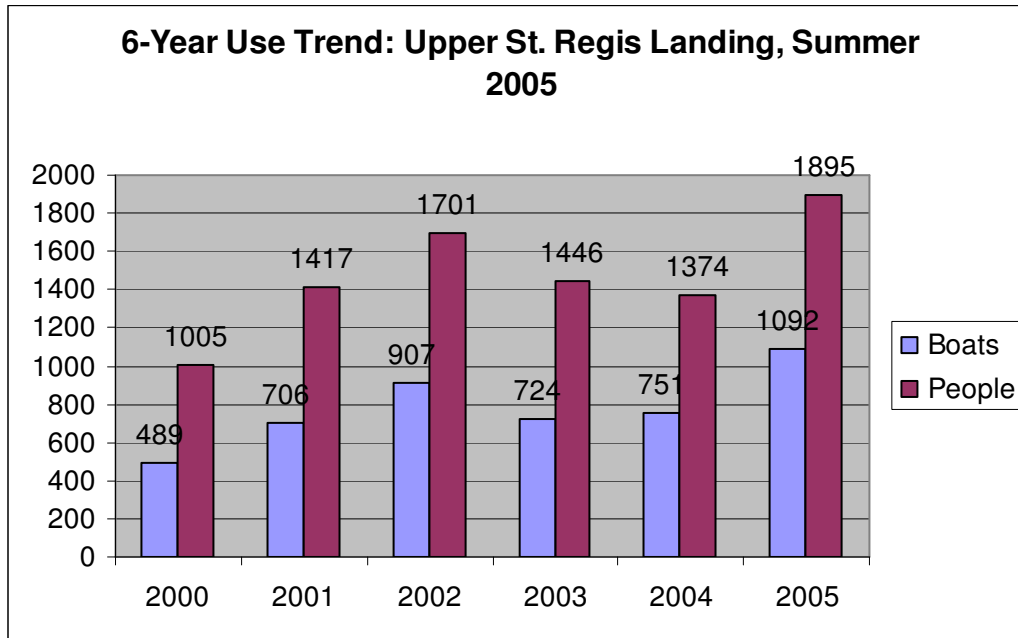


Figure 6: 6 year use trend, Upper St. Regis Lake

As far as recommendations for next year, it would be helpful to specifically document the more information when invasive weeds are seen. Location on the boat, boat type, ingress or egress to the waterway and weed species are all helpful points of information that would increase our understanding of invasive plant transport in the Adirondack Park. Also, a discussion with the SOA, town officials and the DEC about boosting compliance with the boat wash station would be helpful.



Conclusion:

The program at Upper St. Regis launch has been in effect for six years, since 2000. Each year, our primary benefactor is the St. Regis Foundation and the membership of the Shore Owners' Association of the St. Regis Lakes. We owe the Foundation a debt of gratitude for supporting this program, which works not only on behalf of the St. Regis Lakes, but the other lakes of the entire Adirondack region. Boaters educated at Upper St. Regis then travel to many other waterways, hopefully bringing their newly strengthened environmental awareness into practice wherever they go.

The job of a watershed steward is not as easy as it looks. As with any job that requires public interaction you will find people who are not friendly and this is true for stewards. In that light I would like to thank several people who made the life of the stewards at the Upper St Regis boat launch job more enjoyable. Ann Weld provided many books for Stewards to read through out the summer. Steve "the chocolate guy" who not only provided stewards with chocolate but made stewards smile. And, of course, Holly who was always willing to visit and give advice.



Table 2: Upper St. Regis Launch Usage, 2005

Upper St. Regis 2005 Date	Boat Type/HP (indicate hp for MO)											Total # boats	4 strk	Group Size	Gender		Not Reg	Total Time (minutes)	Pets #	Out Only	moored	Yes	Yes	
	(hp)	MO	MI	I/O	P	J	S	R	C	K	B				M	F						Visible Weeds	Used Boatwash	
	5/27-6/2	28.9	8	0	0	0	0	0	2	5	5				1	21						1	41	29
6/3-6/9	32.8	20	2	0	0	0	0	0	19	2	5	49	6	83	70	14		16	1	5	9	0	5	
6/10-6/16	91.9	16	0	0	0	0	0	0	9	7	6	38	1	60	46	14		9	2	7	0	0	5	
6/17-6/23	57.2	22	0	1	0	0	0	0	18	12	17	69	8	116	81	34		13	3	2		0	10	
6/24-6/30	38.4	13	0	1	0	0	0	1	22	25	23	85	5	128	88	40	1	16	2	11	15	0	7	
7/1-7/7	46.3	22	0	0	1	0	0	0	41	27	11	101	9	166	90	76	2	17	8	6	6	0	12	
7/8-7/14	36.8	24	0	0	0	0	0	1	21	12	20	78	8	120	89	31		12	5	8	3	2	7	
7/15-7/28	59.6	17	0	1	0	0	0	6	58	19	10	113	0	201	131	69		17	4	26	0	0	11	
7/22-7/28	40.9	25	0	0	0	0	0	2	23	21	0	72	6	140	78	62	1	15	2	12	5	0	10	
7/29-8/4	47	23	0	0	0	0	0	0	48	25	0	97	7	173	112	61	1	13	4	17		0	9	
8/5-8/11	41	12	0	0	0	0	0	0	39	35	0	88	4	146	83	63	1	14	7	7	3	0	10	
8/12-8/18	58.4	2	2	0	0	0	0	0	34	27	0	81	7	146	92	54		16	5	10	4	0	11	
8/19-8/25	45.8	7	0	0	0	0	0	0	42	26	0	79	1	139	93	46	2	17	4	7	3	1	8	
8/26-9/1	53.4	11	0	0	0	0	0	0	36	31	0	79	5	141	92	48		17	7	10	4	0	2	
9/2-9/8	44.1	14	0	0	0	0	0	0	21	18	0	53	2	95	64	31		17	2	6	1	0	3	
Totals:	48.2	236	4	3	1	0	0	12	436	292	93	1103	70	1895	1238	655	9	14	56	139	53	3	111	
(avg)																								

Key: MO = outboard motor; MI = inboard motor; I/O = inboard/outboard motor; P = pontoon boat; J = jetski; S = sailboat; R = rowboat; C = canoe; K = kayak; B = barge

Recreation Study: Lake Placid State Boat Launch, 2005

By: Jecinda Eller, Watershed Steward, and Eric Holmlund, WSP Director.

Introduction:

This was the fourth year the Watershed Stewardship Program has had a Steward present at the state launch site of Lake Placid. Lake Stewards were stationed at the launch site between May 28, 2005 and September 5, 2005. Our program took on a four and a half day work week at the Lake Placid State Boat Launch, from Wednesday afternoon through Sunday of each week.

The Lake Stewards had a significant duty while being present at the Lake Placid State Boat Launch. The Watershed Stewardship Program provided a crucial message to the boating community of how the spread of invasive species are affecting native terrestrial and aquatic ecosystems throughout the Adirondacks, and how the spread can be prevented.

Methods:

Stewards made their presence known between the hours of 7:00 am to 4:00 pm Thursday through Sunday and 12:00 pm to 4:00 pm Wednesday of each week from Memorial Day until Labor Day. Stewards were given data sheets to fill out daily at the launch site. A variety of information was taken from each boater that visited the launch site. This included boat size & type, which gets broken into ten different categories. The number of four stroke motors that were noticed by stewards was taken. Group size, with a break down of gender types was taken, along with the number of boats that had been registered. The time that the boater arrived to the launch site was recorded, along with the time that they departed from the dock; an average time spent by boaters to launch their boat was calculated. Numbers of pets were recorded, and an out only box was checked if a boater was hauling his/her boat out of Lake Placid and not accounted for as they entered Lake Placid. Boaters that were interested in our brochures were also noted. And, new this year, we logged the location of water bodies that the boats had visited in the previous two weeks allowing us to track what type of exposure the lakes have to all types of invasive aquatic plants.

In addition to recording data, stewards also tried to make the boating community feel responsible for maintaining healthy lake habitats. Stewards notified the public that the main cause of the spread of invasive aquatic plants is from boaters. Making a habit of washing their boat and/or inspecting the boat and trailer every time it comes out of the water is an immense precautionary procedure to reduce this spread. This wasn't successful with every boater, but the majority seemed interested to assist in the prevention of transporting exotic invasive organisms. We also made it clear that we would be grateful to answer any question they might have about the Adirondack Park, and encouraged each boater to take a pamphlet provided by the Shore Owners' Association titled "Boating Guide to Lake Placid Lake," which included a Lake Placid map, lake and state land regulations, and general information about the area, as well on invasive species. Finally, as Stewards educated users, they visually inspected each boat for weeds, looking at the propeller, hitch, rollers and other likely areas.

Results:

Of the over 14 weeks between Memorial Day and Labor Day that the Watershed Stewardship Program provided interpretive and data collection services at the Lake Placid Boat Launch, a total of 5,594 people were counted as launching 2,280 watercraft of various types. The average time spent by each person at the boat launch was 12 minutes. Peak usage occurred during the week of June 24, 2005 through June 30, 2005. 466 boats were launched that week and the number of users was 1,066. Use levels tailed off sharply after that peak period.

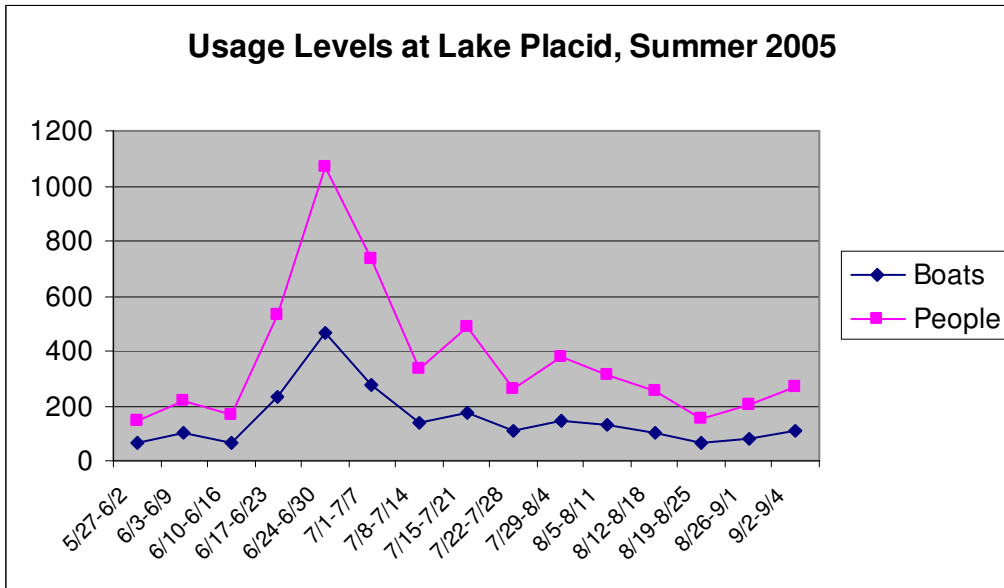


Figure 2: Use levels, Lake Placid State boat launch, 2005

Outboard motors were the most numerous type of watercraft launched in 2005 (809 total; 35% of total watercraft), followed by inboard/outboards (414; 18%), kayaks (366; 16%) and inboard motor boats (336; 15%). There were no personal watercrafts accounted for due to a ban. There were a small numbers of sailboats (8) and rowboats (31). Motorized watercraft outnumbered human-powered watercraft by a total of 1724 (76% of total watercraft) to 556 (24%). The average horsepower of motors observed was 67, down from 70 in 2004. 177 4-stroke outboards were observed, which was 22% of the 809 total outboard motors recorded. Only 1 boat was documented as unregistered.

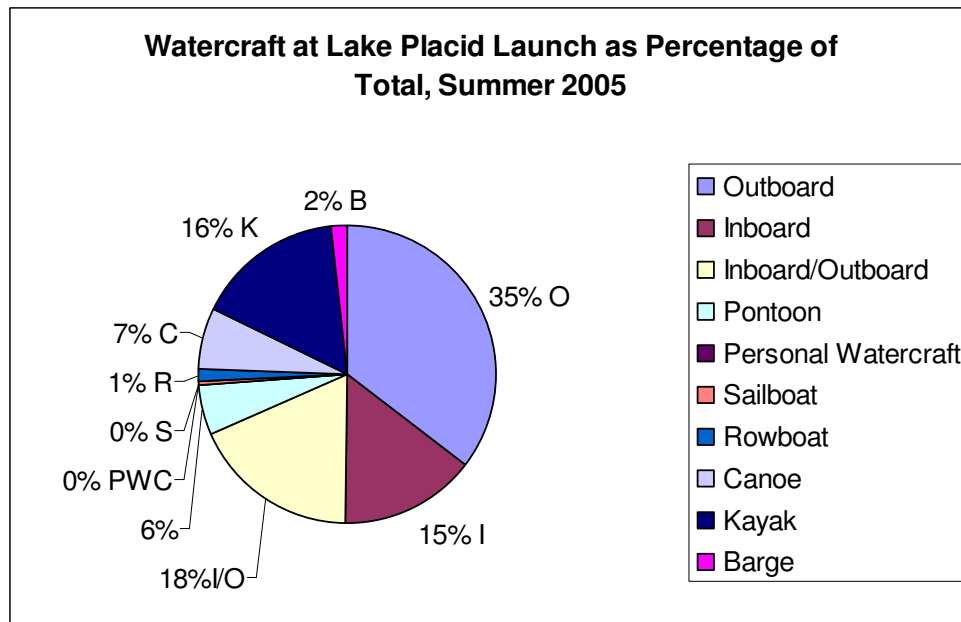


Figure 3: Categories of watercraft launched at Lake Placid, 2005

State/Province of Origin

As expected, most boats were registered in New York, while others came from a wide range of originating states. The second most represented state was New Jersey, with 42 boats, followed by Connecticut and Vermont (21 and 19 boats, respectively). Lake Placid attracts boaters from a wide range of states with 15 states represented. Watershed stewards determined originating state by observing registration stickers on motorized watercraft. It is likely that some of the unregistered watercraft would have originated in states outside New York, as well.

Table 3: State of Origin- boats launched in Lake Placid, 2005

State	Number of Boats
CT	21
FL	4
IL	1
MA	1
MD	1
MS	8
NH	3
NJ	42
NY	999
OH	2
PA	11
RI	5
VA	1
VT	19
WS	2
Total	1120

Party Composition

68% of the people launching watercraft were male and 32% were female. The average party size was 2.5 people. 207 pets were tallied; about 9% of the boats launched were accompanied by a (usually) canine co-pilot. About 18% of boats using the launch were taking out from the lake, not launching into the lake. This accounted for 403 boats designated as “out only.” It should be noted that some boats might have been counted twice because of this phenomenon. In other words, a boat may have launched on a Sunday and taken out on a Wednesday, and have been counted on both occasions, since there would have been a different Steward on duty. The intent of the study is to note total traffic impacting the boat launch. Each occasion of use is an opportunity for Watershed Stewards to educate the public and inspect boats.

Use Patterns

In 2005, Watershed Stewards were stationed at Lake Placid 4½ days per week, from Wednesday to Sunday. We found that the busiest day of the week was Saturday (1250 boats during the summer), followed by Sunday (1112), which is to be expected. Surprisingly, Thursdays ranked third highest in boat launches (722) followed by Fridays (553) and Wednesdays (262). One might wonder why Friday’s usage seemed somewhat minimal. The reader should note that the Watershed Stewardship Program staff meetings occurred on Friday mornings each week, which delayed the steward assigned to Lake Placid from reaching her post each week until between 10 and 11 am. This undoubtedly caused a smaller number of boats to be tallied than would

otherwise be the case. Note that in 2005, the Lake Placid State Launch was staffed on Wednesday afternoons only.

The average number of boats launched by day of the week was Friday – 40, Saturday – 83, Sunday – 74, Monday (only 2 Mondays- July 4 and Labor Day) – 110, Wednesday – 24 and Thursday – 52.

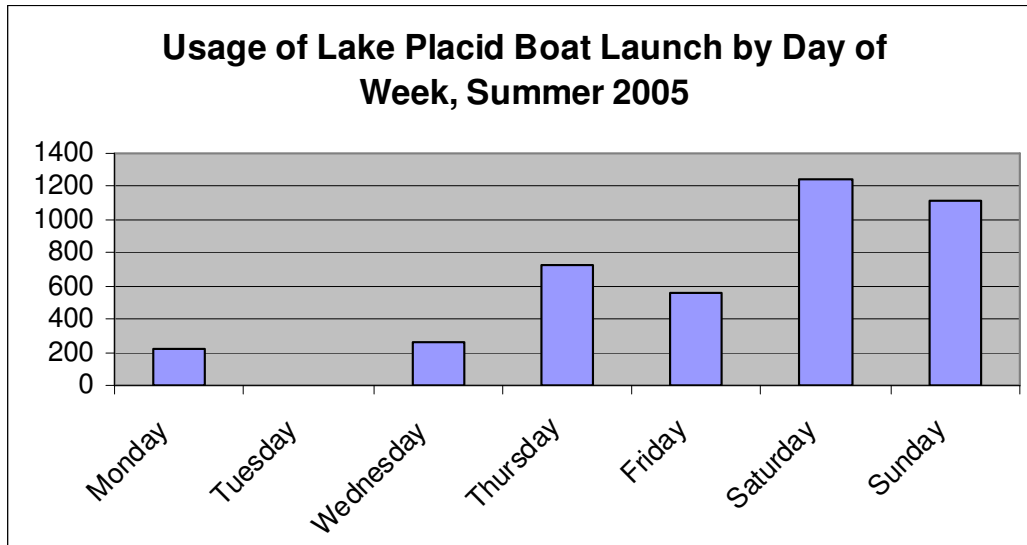


Figure 4: Total # boats launched, by day, Lake Placid 2005

Where has your boat been?

This year the Watershed Stewardship team asked all encountered boaters what other bodies of water their boats had visited before visiting Lake Placid. This gives us an idea of what type of exposure this lake has to introduced invasive aquatic plants. 318 boats were reported by their owners as having been used in other lakes in the preceding two weeks. This represents 14% of the total boats launched (2257 for summer). We expect that more boats had been used in other waterways in the preceding two weeks, but at high use periods it was difficult to ask this question of everybody.

We found that almost two-thirds (64%) of the responding boats had come from lakes that did have recognized (known to the researchers) presence of invasive aquatic plants. The Saranac Lake Chain, which hosts heavy growth of Eurasian watermilfoil, was by far the most often reported previously used waterway with 102 boats. This is an interesting fact due to the reason the most would assume that these invasive plants are being introduced to our pristine lakes by out-of-state visitors, when in actuality the transportation tends to be right in our backyard. Most out-of-state visitors responded to this question by saying that their boat had been nowhere in that past two weeks. This would lead one to believe that people on vacation in the area only use their boat on vacation and park their boat in their yard for the remainder of the year, while locals tend to boat more throughout the summer and transport their boat to numerous lakes in the immediate area. The most visited lake with invasive aquatic plants was Lower Saranac Lake with 46 boats. Upper Saranac (21), Lake Flower (18), Lake Champlain (17), and Middle Saranac Lake (17) all the second tier of previously visited lakes with invasive plants present.

Table 4: Boat Use History, Lake Placid, 2005

**Boat Use History- Prior 2 weeks
Lake Placid, Summer 2005**

Lake Visited	infected?	Totals
Lower Saranac Lake	Y	46
Upper Saranac Lake	Y	21
Lake Flower	Y	18
Lake Champlain	Y	17
Middle Saranac Lake	Y	17
Lake George	Y	9
Rental	Y	9
St. Lawrence River	Y	6
Tupper Lake	Y	5
Fish Creek	Y	4
Oseetah	Y	4
Lake Colby	Y	3
Lake Ontario	Y	3
Oneida Lake	Y	3
Saratoga Lake	Y	3
Atlantic Ocean	Y	2
Cranberry Lake	Y	2
Follensby Clear Pond	Y	2
Great Sacandaga Res	Y	2
Hudson River	Y	2
Lincoln Pond	Y	2
Long Island Sound	Y	2
Schroon Lake	Y	2
Taylor Pond	Y	2
Weller Pond	Y	2
Charles River (MA)	Y	1
Chateaugay Lake	Y	1
Dead Creek Res (VT)	Y	1
Finger Lakes Region	Y	1
Floodwood Pond	Y	1
Franklin Falls Reservoir	Y	1
Horseshoe Pond	Y	1
Kiwassa Lake	Y	1
Lac St. Louis	Y	1
Mass. Lakes	Y	1
Meacham Lake	Y	1
Mohawk River	Y	1
Niagara River	Y	1
Putnam Pond	Y	1
Second Pond	Y	1
Seneca Lake	Y	1
Total- Infected Lake Exposure		204

**Boat Use History- Prior 2 weeks
Lake Placid, Summer 2005**

Lake Visited	infected?	Totals
Mirror Lake		26
Upper St. Regis		14
Raquette River		6
Au Sable		4
Cascade Lake		4
Long Lake		4
Budd Lake		3
Chazy Lake		3
Black Pond?		2
Canada Lake		2
Cazenovia		2
CT Lakes		2
Heart Lake		2
Hoel Pond		2
Housatonic River (CT)		2
Lake Kushaqua		2
Lows Lake		2
Osgood Pond		2
Rollins Pond		2
Bakhville Dam, PA		1
Ballston Lake		1
Blue Mt. Lake		1
Bog River		1
Boquet River		1
Brandt Lake		1
Buck Pond		1
Cayuga Lake		1
Chapel Pond		1
Colgate Lake		1
Everett Lake		1
Forked Lake		1
Lake Clear		1
Lake Lillanonah (CT)		1
Lake Ozonia		1
Lake Pleasant		1
Lake Titus		1
Little Tupper Lake		1
Mill Pond		1
Moose River (RI)		1
NH Lakes		1
Schodack Lake		1
Spitfire Lake		1
Split Rock Reservoir (NJ)		1
Summerset Reservoir (VT)		1
Thomson Lake		1
Waterbury Reservoir VT		1
Waupumpack (PA)		1
Total- Unknown or uninfected lake		114

Boat Visitation Maps

Dr. Daniel Kelting, Director of the Adirondack Watershed Institute and Eric Holmlund, Director of the Watershed Stewardship Program produced two maps describing graphically the pattern of origin of

boats visiting Lake Placid for the first part of the summer of 2005. The first map depicts the local region and its inputs to the lake. Red lines indicate lakes with documented invasive species. The second map zooms out and shows a larger region.

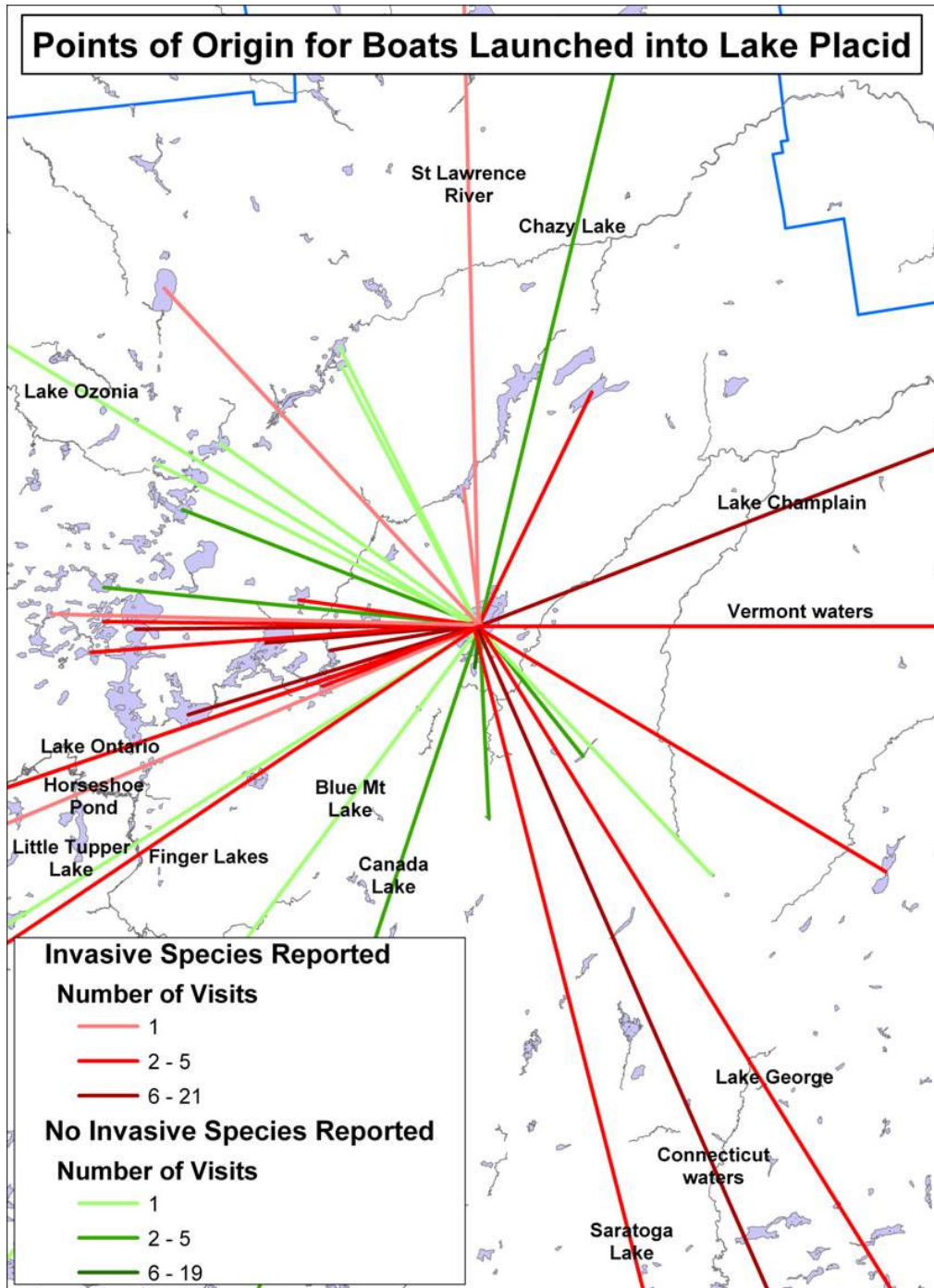


Figure 5: Points of Origin Map, Lake Placid, nearby view

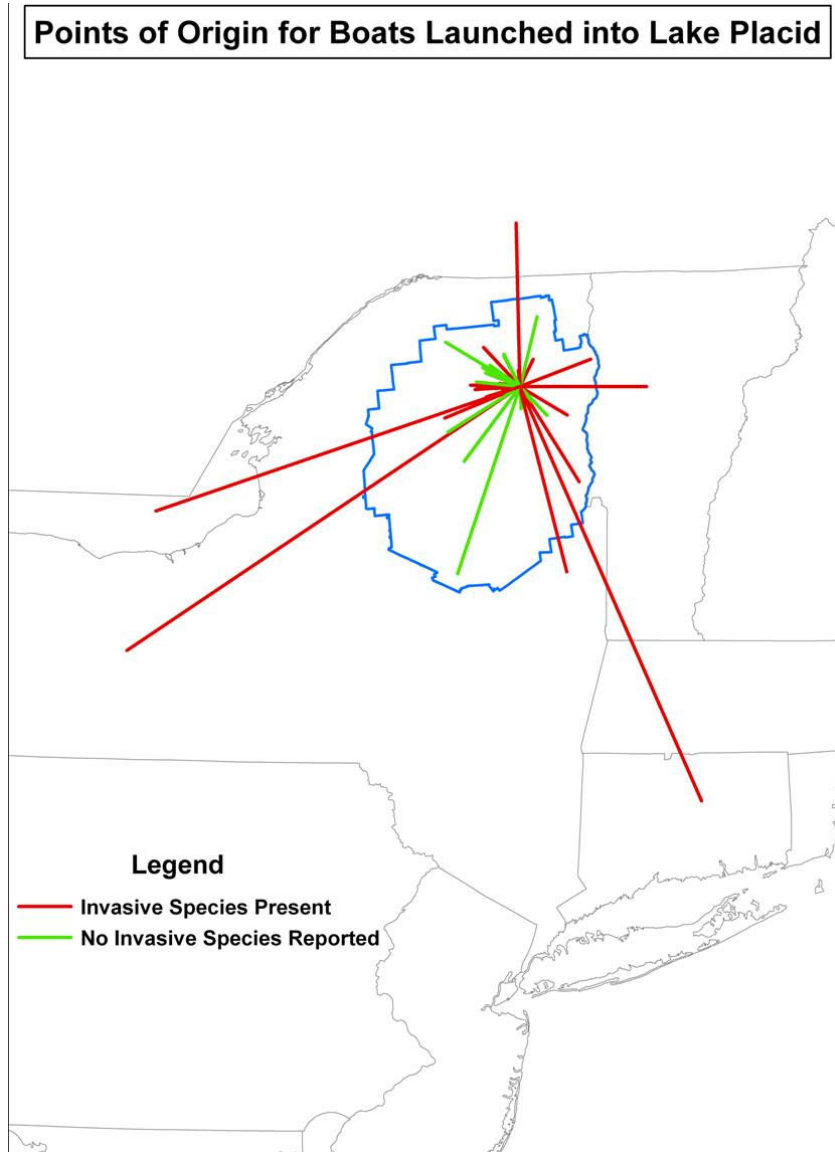


Figure 6: Points of Origin Map, Lake Placid, regional view

Lake Placid currently does not have detected populations of invasive plants or animals. Its high-quality water serves as the drinking water supply for the municipality of Lake Placid, and as such is vulnerable to contamination by invasive species. Lake Placid's 2-week prior use history reveals a wide-ranging list of boats inputting from all over the northeast. Among the most reported lakes with invasive species are Lower Saranac Lake and Lake Champlain, both of which have extensive problems with invasive species, such as Eurasian watermilfoil, water chestnut and zebra mussels. Boats came from as far as the Great Lakes, the Finger Lakes, Connecticut, Rhode Island and Vermont. In total, 87 boats were launched in Lake Placid during the test period that had reported prior use in the preceding 14 days from lakes that are known to have invasive species.

Visible weed observations on boats using the launch

On Saturday, August 13, 2005, WSP Director Eric Holmlund was filling in for a Steward and spotted a weed hanging from a boat about to be launched into Lake Placid. He stopped the boat and picked off the weed, which in full sunlight he confirmed to be a strand of Eurasian watermilfoil. Upon questioning,

the boat's owner stated that he had recently been motoring in Upper Saranac Lake. Holmlund retained the weed for additional scrutiny from Linda Friedlander, Mark Wilson and Dr. Dan Kelting. Eventually, a short story on the save was published in both the Adirondack Daily Enterprise and the Plattsburgh Press-Republican. This event, along with the media attention given it, helped to publicize the effort to inspect boats.

Over the course of the summer, there were seven (7) instances where Stewards documented observing visible weeds on boats about to launch in Lake Placid. Three of these sightings occurred in June, while the rest occurred in August.



Vehicles and boat trailers in Lake Placid State Boat Launch Parking Lot

Discussion

The summer of 2005 was an exciting one for Stewardship efforts on behalf of Lake Placid. Our staff was motivated and serious about their tasks, despite high volumes of daily use, which effectively doubled last year's traffic. There was increased efficiency over 2004, with not a day lost due to staffing issues. In total, Stewards staffed the Lake Placid State Boat Launch for 71 days during the summer of 2005, including two holiday Mondays: July 4th and Labor Day. This summer brought another layer of data collection as well, in which Stewards polled users as to the locations of previous boat use. Finally, Stewards were instructed to document weed sightings in a more systematic way, which helped us understand the actual threat posed by visiting boats. All of this information considered together allows us to grasp the interdependencies and interconnections between waterways in our larger region. Lake Placid is indeed well connected to other waterways both near and far. It draws visitors and watersport enthusiasts from across New England, some of whom bring with them invasive species. The exposure for Lake Placid is real, along with the need to prevent invasive species from entering its pristine waters.

Recommendations for the future include having Stewards save the weed fragments they observe on visiting boats for eventual identification. Also, it is necessary to document whether the boat transporting weeds was coming in or out of each lake in our study. It is recommended that the WSP create or adopt a form that gathers additional information about the situation when a weed is spotted on a boat. This information then can be tracked with greater detail and efficiency. Also, as we now have harder proof of the possibility of weed transport into Lake Placid, it is even more important to have boat coverage each day of the week. This increased coverage should be balanced with additional duties serving Lake Placid away from the boat launch, as the high use levels experienced by Stewards at the boat launch made the job difficult to sustain for the entire summer. This is a high burn-out position, demanding of the Stewards constant energy for long shifts, while being exposed to various weather conditions.

Multi-Year Use Perspective

Compared with recent history, the summer of 2005 represents a major jump in usage levels at the Lake Placid State Boat Launch. Perhaps as a result of greatly improved weather or the continued interest in

kayaking and in Lake Placid in general, recreators came out in droves. Especially of interest and concern is the 78% increase in outboard motor use over last year – from 455 to 809 outboard motor boats counted in 2005. This last number indicates the increasing pressure on Lake Placid to satisfy the recreational desires of region. Overall, use is up 108% from last year in terms of boats launched (5594 vs. 2694) and 97% in terms of people (2280 vs. 1160). We will watch carefully in 2006 to see whether use continues at this elevated level, or if it falls back again into the range of the preceding three years.

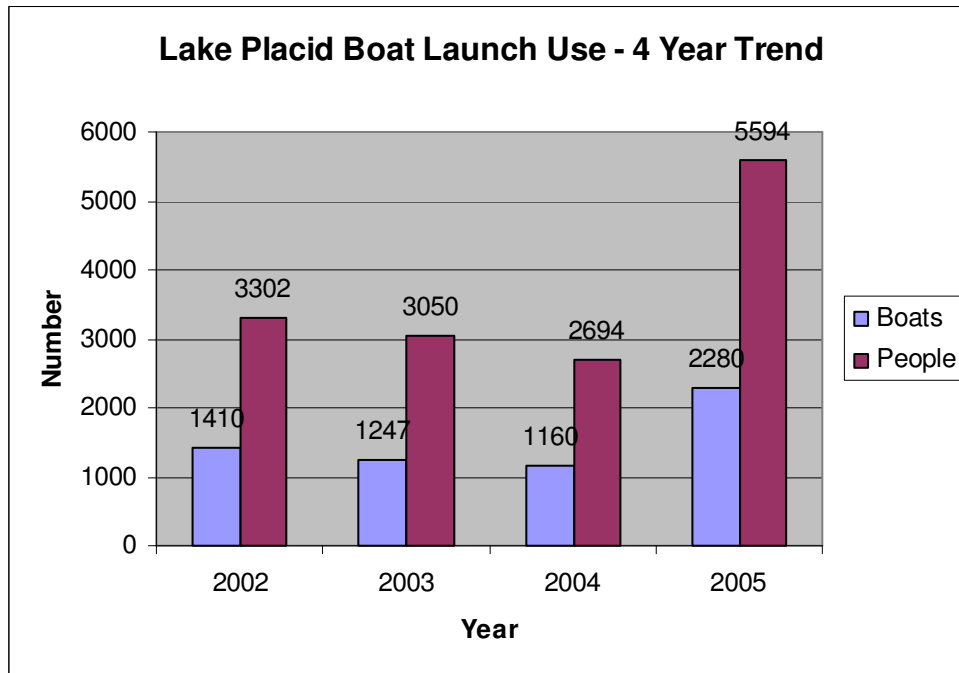


Figure 7: Use Levels at the Lake Placid Boat Launch, 2002-2005

Conclusion

In closing, the Watershed Stewardship Program would like to thank its primary sponsor, the Lake Placid Shore Owners' Association, for their vision and dedication to the health not only of the lake they are most concerned with, but for the waterways of the entire Adirondack Region. The LPSOA offers not only funding, but leadership and guidance for the Watershed Stewards themselves. This is indeed a productive partnership, in which volunteers from the LPSOA help in orienting, encouraging and mentoring the Watershed Stewards over the course of the summer. It is clear that the program sponsored by the LPSOA benefits not only Lake Placid, but all the lakes that are touched by the boat owners who are educated by the Watershed Stewards posted at Lake Placid. The message given them spreads near and far, hopefully resulting in changed behavior on part of boat owners with regard to minimizing the spread of invasive species. The WSP is rightly understood as one part in an integrated approach to solving this critical issue threatening the Adirondacks, and truly all parts of the world.

Table 4: Lake Placid Boat Launch Usage, 2005

Lake Placid Date	Boat Type/HP (indicate hp for MO)											Total # boats	4 strk	Group Size	Gender		Not Reg	Total Time (minutes)	Pets #	Out Only	moored	Yes Visible Weeds
	(hp)	MO	MI	I/O	P	J	S	R	C	K	B				M	F						
	5/27-6/2	84.8	29	8	8	2	0	0	1	5	9				0	62						
6/3-6/9	63.4	43	16	18	2	0	1	3	6	10	3	102	10	221	167	54	20	13	17	22	1	
6/10-6/16	66.7	24	18	11	5	0	0	1	1	7	2	69	6	170	127	43	11	10	15	11	0	
6/17-6/23	71.6	96	42	37	9	0	1	4	12	26	5	232	25	533	399	134	13	27	45	40	1	
6/24-6/30	71.6	192	84	74	18	0	2	9	24	52	10	465	46	1066	798	268	13	54	90	80	1	
7/1-7/7	70.7	86	41	52	13	0	0	2	21	58	5	278	17	735	455	279	13	24	44	50	0	
7/8-7/14	62.7	37	17	22	19	0	1	1	9	30	2	138	13	335	236	99	12	12	35	28	0	
7/15-7/21	67.6	51	28	47	16	0	0	0	9	25	1	177	11	487	294	193	10	10	41	40	0	
7/22-7/28	61.7	44	11	13	7	0	0	1	7	23	0	106	6	262	171	91	16	4	16	13	0	
7/29-8/4	63.2	49	12	34	14	0	1	2	7	26	3	148	13	381	253	128	11	8	23	27	0	
8/5-8/11	55.7	38	20	29	2	0	0	2	10	28	0	129	7	315	215	99	13	12	8	8	2	
8/12-8/18	69.6	30	9	23	4	0	0	1	8	23	2	100	7	251	157	94	13	5	21	10	0	
8/19-8/25	68.0	29	10	16	5	0	0	2	12	9	2	85	6	221	138	83	10	3	14	13	0	
8/26-9/1	68.2	21	11	13	3	0	0	2	10	17	2	79	2	206	127	81	1	14	9	11	8	0
9/2-9/4	54.2	40	9	17	7	0	2	0	10	23	2	110	3	269	165	104	11	12	10	6	2	
Totals:	66.6	809	336	414	126	0	8	31	151	366	39	2280	177	5594	3807	1787	1	12	207	403	363	7
(avg)																						

Table 1.- Lake Placid boat launch usage, Wednesdays - Sundays only, 2005 summer season. MO = outboard motor; MI = inboard motor; I/O = inboard/outboard motor; P = pontoon boat; J = jetski; S = sailboat; R = rowboat; C = canoe; K = kayak; B = barge

Recreation Use Study - Lake Kushaqua

By Stephanie Sears, Watershed Steward

Introduction

The purpose of having a Watershed Steward present at an area boat launch is to preserve the waterways in the area, stop the transportation of invasive species, and record useful recreational use data. This is mostly accomplished through contact with the public in short educational messages.

The Stewards are commissioned with important tasks including informing the lake users about invasive species, how they are transported, and what the boat owner can do to help mitigate the spread of these species. Along with the interpretive message, the Steward collects certain data regarding the recreational use of the boat launch. These data are significant to the NYS Department of Environmental Conservation in creating Unit Management Plans, to the lake shore associations, and also to the Adirondack Watershed Institute of Paul Smith's College.

This is the first summer that Watershed Stewards from Paul Smith's College maintained a post at Lake Kushaqua in the Buck Pond campground. The WSP worked closely with Bill Ulinski, Buck Pond Campground administrator, and other NYSDEC staff to ensure a productive and professional working relationship. Lake Kushaqua leads into Rainbow Lake; both of which are scenic and full of adventure. The members of the Rainbow Lake Shore Owners Association are greatly concerned with the transport of invasive species into these beautiful waterways, and have therefore selected the Watershed Stewardship Program along with the boat wash station as a beneficial means of prevention.

Methods

Stewards were stationed at Lake Kushaqua on Saturdays and Sundays throughout the summer, from Memorial Day to Labor Day. While delivering a prepared interpretive message about invasive species, Stewards recorded data about the boat launch visitors. These messages were also supplemented with brochures covering topics such as invasive species, historical information, and the local campground and lake specifics. The data collected includes type of watercraft, size of motor, whether it is a 4-stroke engine, time upon arrival and exiting the launch site, and also demographics of the boating group. The steward also records any observed weeds on a boat or trailer going into or out of the water, whether the boat wash station was used, and whether or not the group planned to visit Rainbow Lake. The new question that has been added this summer inquires about any other lakes that the boat has been in over the preceding two weeks. This question is important in determining the level of risk involved with each boat to transport invasive species into the lake. The Steward then invites any questions at the end of her message, thanks them for their participation, and wishes them a weed-free journey.

Results

Demographics

Stewards encountered 710 people this summer, 409 men and 229 women. The steward on duty on June 12 was "overrun" by a large group of school children and could not make an accurate count of gender

and estimated total numbers of users. Lake Kushaqua visitors spent an average of 14 minutes launching and retrieving their boats.

There were a total of 387 boats recorded; canoes were the largest category (136 boats, 35%). Outboard motorboats and kayaks were close behind with 122 and 101 respectively (32%, 26%). In/out board motors (17, 4%), in-board motors (2, 1%), pontoons (3, 1%), personal watercraft (2, 1%), sailboats (1, 1%), rowboats (2, 1%), and barges (1, 1%) were very rarely seen at Lake Kushaqua.

Use of Boat Wash Station

Only 3% (13 of 387) of boats were washed at the boat wash station, either before entering or after coming out of the lake. Visits to Rainbow Lake averaged 1 out of 4 boats. Barely 4% of the boats had visible weeds on them, mostly when coming out of the lake. 17 out of the 387 boats were observed having weeds on the boat or trailer. The steward did not note whether the weeds were observed while the boat was being launched or retrieved.

Use Patterns over the summer

Use on weekends at Lake Kushaqua spiked on two occasions. The weekends of 6/11 and 6/12 and 7/30 and 31 were high points for the summer, with 98 and 109 people recorded respectively. The high weekend for number of boats launched, however, was the Fourth of July weekend, with 65 boats tallied, which does not include the Monday of July 4 itself, as Mondays were not included in the 2005 program. During the first part of the summer, up to the weekend of July 23 and 24, Sundays were the high use day, as compared to Saturdays. Beginning on July 30 and 31, and for the rest of the summer, Saturdays experienced more use.

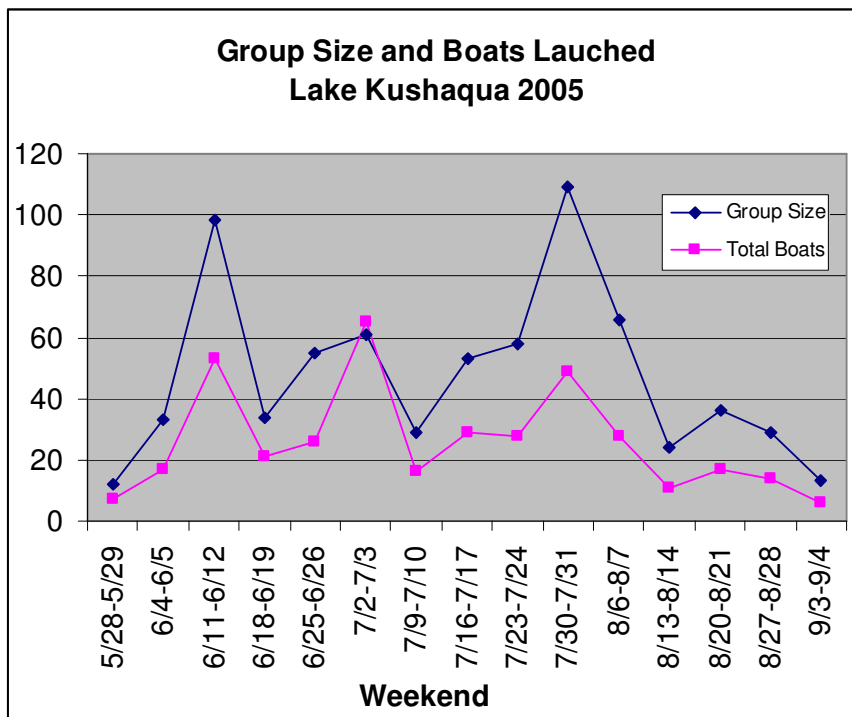


Figure 1: Boat Launch Usage Pattern, Lake Kushaqua, 2005

Lakes Visited Prior to Lake Kushaqua

When asked where the boat has visited in the last two weeks, most boaters responded “nowhere.” However, 80 of the total 387 boats (21%) over the summer reported being used in other lakes in the preceding two weeks. 46 boaters (12% of total boats) mentioned that their boat had been in a lake known to host populations of invasive organisms in the preceding two weeks. The most visited lakes recorded were Upper St. Regis Lake, which does not contain Eurasian Watermilfoil; Lake Champlain, Fish Creek, the Saranac chain of lakes, and Lake Flower, all of which do contain Eurasian Watermilfoil.

Lake Visited	infected?	Total
Lake Champlain	Y	8
Fish Creek	Y	6
Lower Saranac	Y	5
Upper Saranac	Y	5
Lake Flower	Y	4
Kiawassa Lake	Y	2
Loon Lake	Y	2
St. Lawrence River	Y	2
Atlantic Ocean	Y	1
Chateauguay	Y	1
Dead Creek	Y	1
Franklin Falls Pond	Y	1
Hudson River	Y	1
Lake Colby	Y	1
Mt. View Lake	Y	1
Oseetah	Y	1
Putnam Pond	Y	1
Sacandaga Reservoir	Y	1
Taylor Pond	Y	1
Tupper Lake	Y	1
Upper St Regis		8
Brown Track Pond		2
Chazy Lake		2
Jones Pond		2
Osgood Pond		2
Beautte River		1
Black Pond		1
Black River		1
Church Pond		1
Clyde River		1
Coopers Pond		1
Deer River		1
Highland Lake		1
Indian Lake		1
Lake Kushaqua		1
Lake of the Woods		1
Lake Placid		1
Led Lake (?)		1
Limekiln Lake		1
Little Clear Pond		1
Pecks Lake		1
Racquette River		1
Rowing Pond		1

Table 1: Waterways visited prior to Lake Kushaqua, 2005

Boat Visitation Maps

Dr. Daniel Kelting, Director of the Adirondack Watershed Institute and Eric Holmlund, Director of the Watershed Stewardship Program produced two maps describing graphically the pattern of origin of boats visiting Lake Kushaqua for the first part of the summer of 2005. The first map depicts the local region and its inputs to the lake. Red lines indicate lakes with documented invasive species. The second map zooms out and shows a larger region.

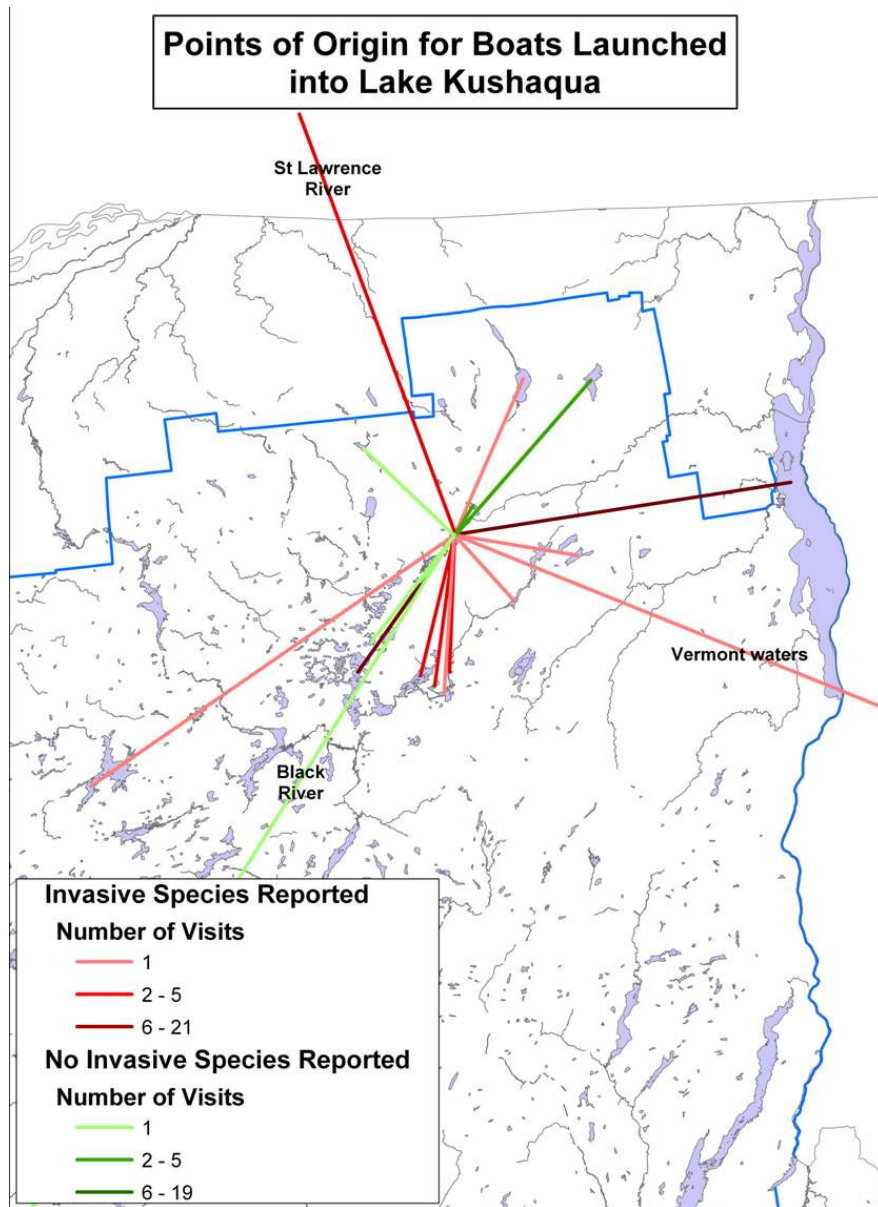


Figure 2: Points of Origin Map: nearby view

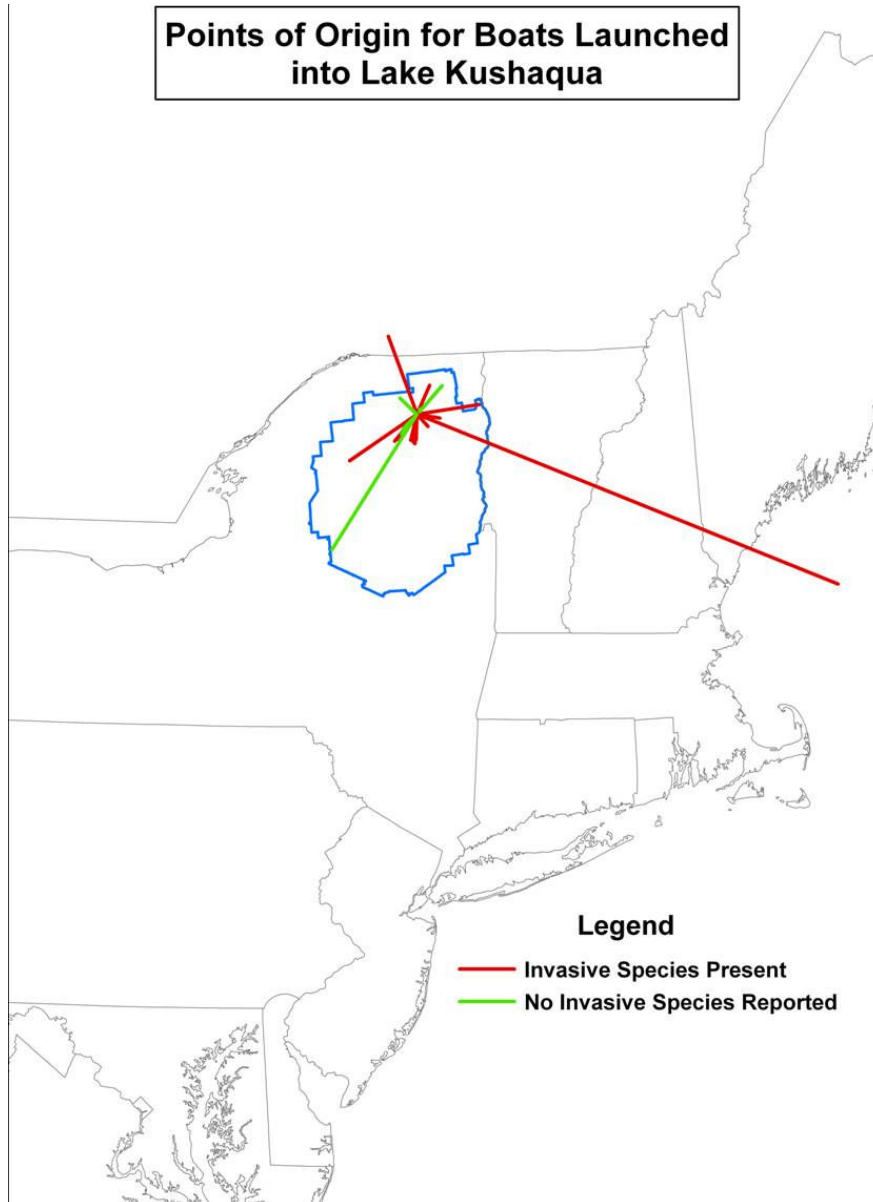


Figure 3: Points of Origin Map: regional view

Lake Kushaqua currently does not have detected populations of invasive plants or animals. It has a thick growth of Southern Naiad, which could cause regional problems in the future. This small boat launch is accessed through the Buck Pond State Campground, and experiences relatively light use. Our steward is posted there only on weekends. Even though this is not a widely known or notorious destination, boats have been launched that reported being used previously in the St. Lawrence River, Lake Champlain and the Atlantic Ocean. In total, 30 boats (weekends only) were reported in the test period as having recently been used in lakes with invasive species.

Discussion

Overall the majority of visitors to Lake Kushaqua were people paddling canoes. As Lake Kushaqua and St. Regis Canoe Area are two of the most popular areas for paddling trips it is intuitive that St. Regis is the most visited lake.

Generally, this boat launch receives few visitors, and therefore stewards had a considerable amount of free time. One possibility would be to create educational programs for children, or families staying in the campground. Another option would be to help harvest the Southern Naiad, the native nuisance species that is currently filling in the waterway. This year the Adirondack Watershed Institute helped establish a volunteer based program through the lake shore owners on Osgood Pond, which would be an advantageous way to cover more days of the week at Lake Kushaqua.

Another suggestion from the stewards to increase visits would be to improve the actual launch site, as the sand and gravel is eroding into the lake and making launching and retrieving boats difficult. Infrequent visits to the boat wash station could be attributed to the poor signage and the fact that the sewage depository for RV's is located at the same facility turns boaters away.

It was observed after a boater responded 'no' to the plan to visit Rainbow Lake question, the boat traveled in the direction of this lake. Another possible false impression of the data might be in the visible weeds column, because most of the visible weeds were of the weeds from Lake Kushaqua coming out. This could still be a possible threat to other lakes that the boat might visit, considering the Southern Naiad becomes a nuisance in other lakes as well. Southern Naiad is the major nuisance species within the lake and near the boat launch area, and was often mistaken as Eurasian Watermilfoil by boaters.

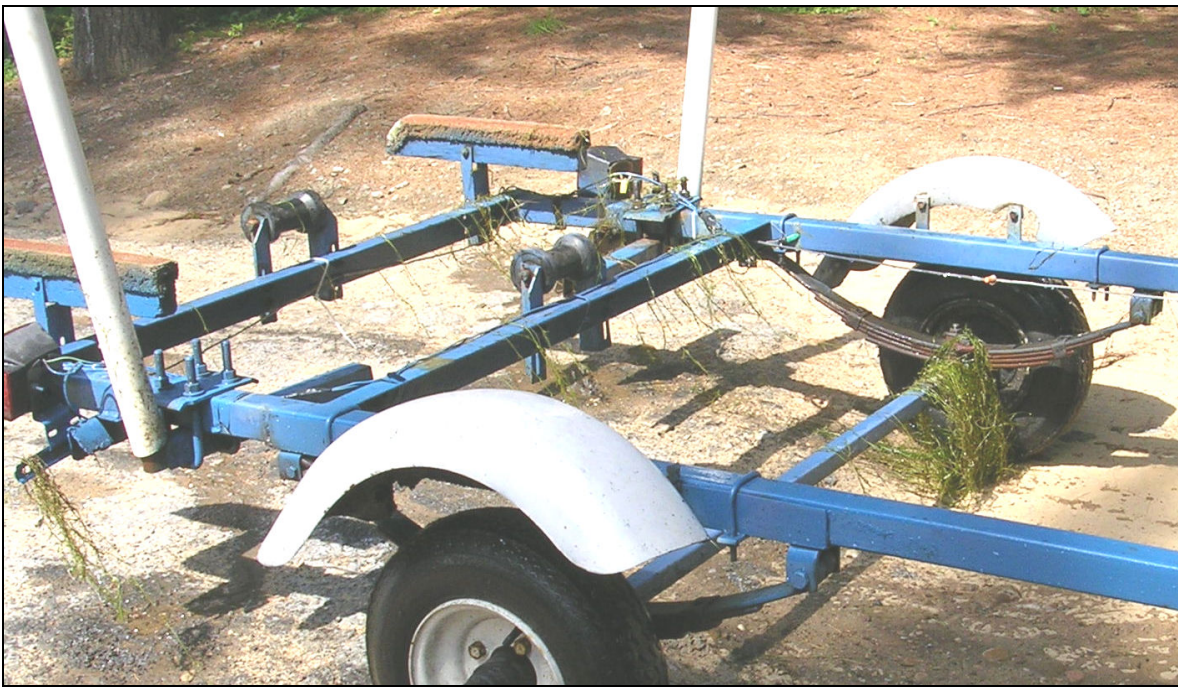


Figure 4: Close-up photograph of boat trailer emerging from Lake Kushaqua, laden with Southern Naiad.

Conclusion

The summer of 2005 should be considered a success for the Watershed Stewardship Program employees stationed at Buck Pond Campground. 710 people in 387 boats received a message regarding invasive species. All 387 boats were visually inspected for hanging weeds. It's clear that the threat of invasive species transport into Lake Kushaqua is a real one, since 21% of boats launched had been in other lakes in the prior two weeks. Many of these lakes are home to invasive species. The Watershed Stewards are a proactive means of preventing the spread of invasive species to Lake Kushaqua and for preventing Lake Kushaqua's weeds from being spread to other lakes.

The stewards would like to thank the residents who visited and their receptive and appreciative attitude toward our invasive species message. Also the employees at the Buck Pond campground for checking in on us and making us feel welcome. It was a great summer and we cannot wait to see you next year.

Summary of Boat Launch Usage- Weekends at Lake Kushaqua, Memorial Day to Labor Day, 2005

Summary of Week	Boat Type/HP (indicate hp for MO)											Total Boats	4 strk	Group Size	Gender		Total Time (minutes)	Pets #	Out Only	moored	Yes Visible Weeds	Yes Plan Visit Rainbow	Yes used btwash
	(hp)	MO	MI	I/O	P	J	S	R	C	K	B				M	F							
	5/28-5/29	67	7	0	0	0	0	0	0	0	0				0	7							
6/4-6/5	27	10	0	0	0	0	0	0	1	6	0	17	1	33	18	15	13	4	2	1	0	8	1
6/11-6/12	89	5	0	2	0	0	0	0	34	12	0	53	0	98	18	8	15	4	0	1	1	4	0
6/18-6/19	59	7	1	0	1	0	0	0	6	6	0	21	0	34	28	6	10	0	1	2	0	6	0
6/25-6/26	39	8	0	1	1	0	0	0	7	8	1	26	0	55	30	25	15	1	1	2	2	8	1
7/2-7/3	48	21	0	4	0	1	0	0	21	18	0	65	0	61	33	28	13	3	1	4	1	14	0
7/9-7/10	48	6	0	2	0	0	0	0	6	2	0	16	1	29	17	12	17	1	2	2	5	7	0
7/16-7/17	49	5	0	2	0	1	0	0	10	11	0	29	0	53	25	28	20	1	4	1	0	7	0
7/23-7/24	67	10	0	3	0	0	0	2	5	8	0	28	0	58	39	19	20	0	6	1	4	6	2
7/30-7/31	50	13	0	0	0	0	0	0	26	10	0	49	0	109	73	36	11	5	6	0	0	11	3
8/6-8/7	68	10	0	1	0	0	0	0	11	6	0	28	0	66	51	15	13	2	3	0	1	9	0
8/13-8/14	59	9	0	0	1	0	0	0	1	0	0	11	1	24	18	6	10	3	5	0	2	5	0
8/20-8/21	23	2	0	1	0	0	1	0	5	8	0	17	0	36	23	13	18	3	2	0	0	1	2
8/27-8/28	49	7	0	0	0	0	0	0	1	6	0	14	1	29	15	14	9	0	2	0	0	1	0
9/3-9/4	0	2	1	1	0	0	0	0	2	0	0	6	0	13	11	2		0	1	0	1	0	1
Totals	53	122	2	17	3	2	1	2	136	101	1	387	4	710	409	229	14	30	36	14	17	92	13

Table 2: Recreational data from Lake Kushaqua. Weekends only. The values are grand totals for the 15 week period (Memorial Day to Labor Day). (hp) indicates average horsepower of all observed motors. In the registration column, No = the amount of boats with expired registration stickers. MO = outboard engine, MI = inboard engine, I/O = inboard/outboard (stern drives), P = pontoon boat, J = jet ski (personal watercraft), S = sailboat, R = rowboat, C = canoe, K = kayak, B = *barge.

Recreation Use Study – Second Pond

By Stephanie Sears, Watershed Steward, and Eric Holmlund, WSP Director

Introduction

The purpose of having a Watershed Steward present at an area boat launch is to preserve the waterways in the area, stop the transportation of invasive species, and record useful recreational use data. This is mostly accomplished through contact with the public in short educational messages.

The Stewards are commissioned with important tasks including informing the lake users about invasive species, how they are transported, and what the boat owner can do to help mitigate the spread of these species. Along with the interpretive message, the Steward collects certain data regarding the recreational use of the boat launch. These data are significant to the Dept. of Environmental Conservation in creating Unit Management Plans, to the lake shore associations, and also to the Adirondack Watershed Institute.

This is the first summer that Watershed Stewards from Paul Smith's College maintained a post at Second Pond, negating the Upper Saranac Lake boat launch. Second Pond feeds into Lower and Middle Saranac and through to Lake Flower via Oseetah Lake, and is one of the busiest boat launches for many boaters to start their journey through this beautiful chain of lakes.

Methods

Stewards were stationed at Second Pond on Saturdays and Sundays throughout the summer, from Memorial Day to Labor Day. While delivering a prepared interpretive message about invasive species, Stewards record data about the boat launch visitors. These messages can also be supplemented with brochures covering topics such as invasive species, historical information, and the local campground and lake specifics. The data collected includes type of watercraft, size of motor, whether it is a 4-stroke engine, time upon arrival and exiting the launch site, and also demographics of the boating group. The steward also records any observed weeds on a boat or trailer going into or out of the water. The new question that has been added this summer is other lakes that the boat has been in the past two weeks. This question is important in determining the level of risk involved with each boat to transport invasive species into the lake. The Steward then invites any questions at the end of her message, thanks them for their participation, and wishes them a weed-free journey.

Results

Demographics

Stewards encountered 3691 people this summer, 2364 men and 1324 women. There were 197 pets observed. These people spent an average of 18 minutes launching and retrieving their boats.

There were a total of 1676 boats recorded; outboard motors made up the largest amount (622, 37%), and the average horsepower was 62. Kayaks and canoes were close behind with 445 and 374 respectively (27%, 22%). In-board motors (82, 5%), in/out board motors (76, 4.5%), and pontoons (47, 3%) occurred less frequently. While personal watercraft (17, 1%), sailboats (2, .1%), rowboats (10, 1%), and barges (1, .05%) were very rarely seen. 74 (4%) of the motors were observed to be 4-stroke, energy efficient, low-pollution models.

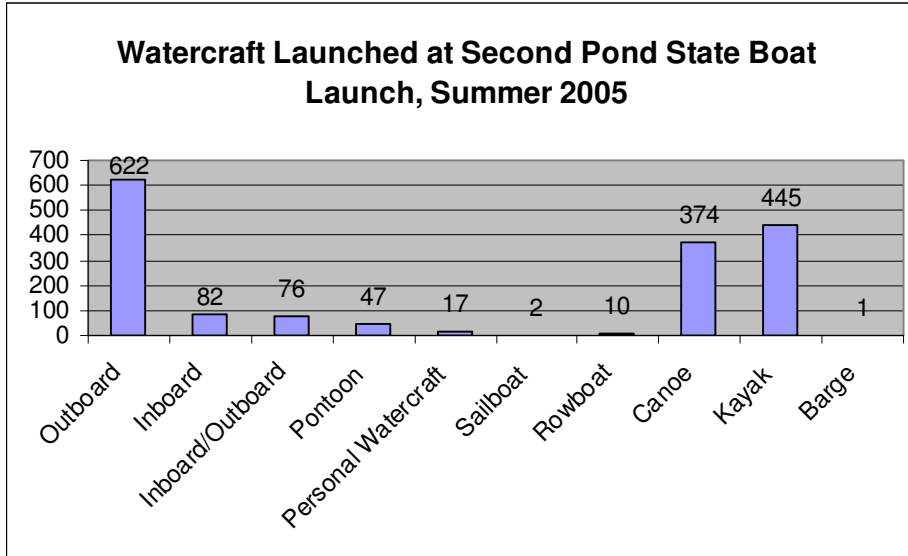


Figure 8: Types of Watercraft Launched: Second Pond 2005, Weekends

Use Patterns at Second Pond

Watershed Stewards were stationed at Second Pond only on Saturdays and Sundays. Over the course of the summer, Sundays emerged as significantly busier, with 2123 total visitors versus 1568 on Saturdays. This finding meshes with the fact that most campers emerge from their campsites to return home on Sundays. Over the entire 15 week season, use spiked just after public schools let out at the end of June and then was steadily high for July, falling considerably in August (see figure below).

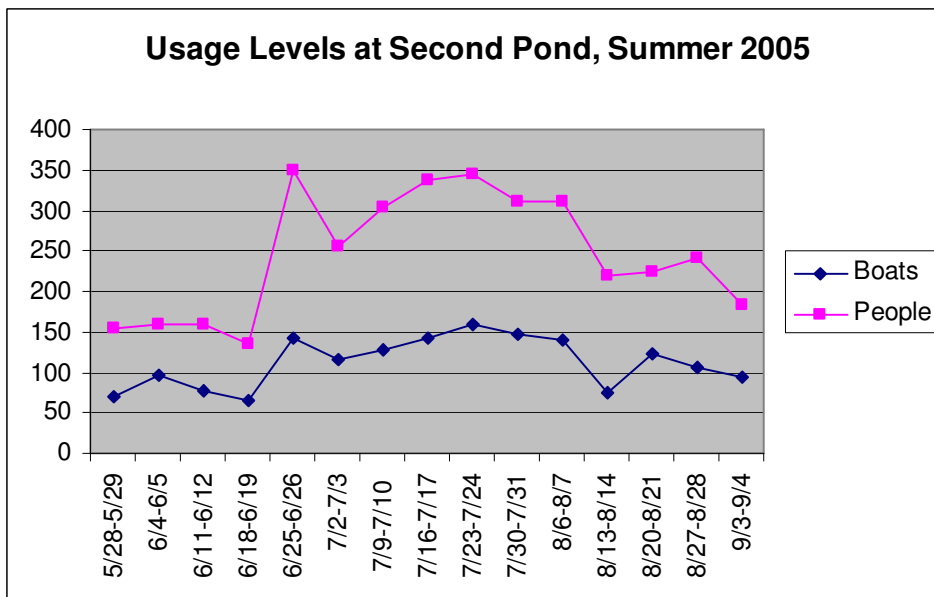


Figure 9: Usage Levels at Second Pond, Lower Saranac Lake 2005

Points of Origin of Boats Launched At Second Pond

When asked where the boat has visited in the last two weeks, most boaters responded “nowhere.” However, 264 of the total 1676 (16%) boats were reported as having visited another waterway during the preceding 14 days. 56 boats were rented from a local outfitter. 18 boats had visited Lake Placid, 12 boats had visited Upper Saranac Lake, and 10 had visited Lake Champlain.

Tables 1 and 2: Boat Use History, Second Pond, Summer 2005, Infected and Unknown/Uninfected Points of Origin

Boater Use History- Prior 2 weeks		
Second Pond, Summer 2005		
Lake Visited	infected?	Totals
Rental	Y	56
Upper Saranac Lake	Y	12
Lake Champlain	Y	10
Lake Flower	Y	10
Lower Saranac Lake	Y	10
Tupper Lake	Y	5
Erie Canal	Y	4
Floodwood	Y	4
L Ontario	Y	4
Lake George	Y	4
Middle Saranac	Y	4
Oneida Lake	Y	4
Oseetah Lake	Y	4
Raquette River	Y	4
Fish Creek	Y	3
Lake Kiwassa	Y	3
Chateaugay Lake	Y	2
Cranberry Lake	Y	2
Eagle Lake	Y	2
Great Sacandaga Res.	Y	2
Hudson River	Y	2
Lake Erie	Y	2
Putnam Pond	Y	2
Saranac River	Y	2
Schroon Lake	Y	2
St Lawrence River	Y	2
Brandt Lake	Y	1
Canandaigua Lake	Y	1
Cape Cod	Y	1
Cayuga Lake	Y	1
Connecticut River	Y	1
Copperas Pond	Y	1
Delaware River	Y	1
Fulton Chain of Lakes	Y	1
Honeoye Lake	Y	1
Ironduquois bay Lake Ontario	Y	1
Lake Colby	Y	1
Long Island Sound	Y	1
Middle River (Chesapeake Ba	Y	1
Pennsylvania waters	Y	1
Rodacoy Bay	Y	1
Saratoga Lake	Y	1
Shelburn Bay (VT)	Y	1
Square Pond	Y	1
Taylor Pond	Y	1
Weller Pond	Y	1
Total Infected		181

Boater Use History- Prior 2 weeks		
Second Pond, Summer 2005		
Lake Visited	infected?	Totals
Lake Placid		18
Upper St Regis		14
Spitfire Lake		6
Long Lake		3
Lower St. Regis		3
Rollins Pond		3
Fern Lake		2
Franklin Falls Reservoir		2
Hoel Pond		2
Little Clear		2
Mirror Lake		2
Newton Falls		2
Raquette Lake		2
Barnum Pond		1
Black Creek		1
Canada		1
Canada Lake		1
Congamond MA		1
Eaton Brook		1
Fairport NY		1
Flying Pond		1
Forked Lake		1
Francis Lake Stillwater Res.		1
Indian Lake		1
Jones Pond		1
McDaniels Marsh NH		1
Moodus Reservoir (CT)		1
Mountain Pond		1
Otter Creek		1
Paradox Lake		1
Platte River (VT)		1
Rainbow Lake		1
Swinging Bridge Res NY		1
Whey Pond		1
Winooski river VT		1
Total Uninfected/Unknown Status		83

Boat Visitation Maps

Dr. Daniel Kelting, Director of the Adirondack Watershed Institute and Eric Holmlund, Director of the Watershed Stewardship Program produced two maps describing graphically the pattern of origin of boats visiting Second Pond for the first part of the summer of 2005. The first map depicts the local region and its inputs to the lake. Red lines indicate lakes with documented invasive species. The second map zooms out and shows a larger region.

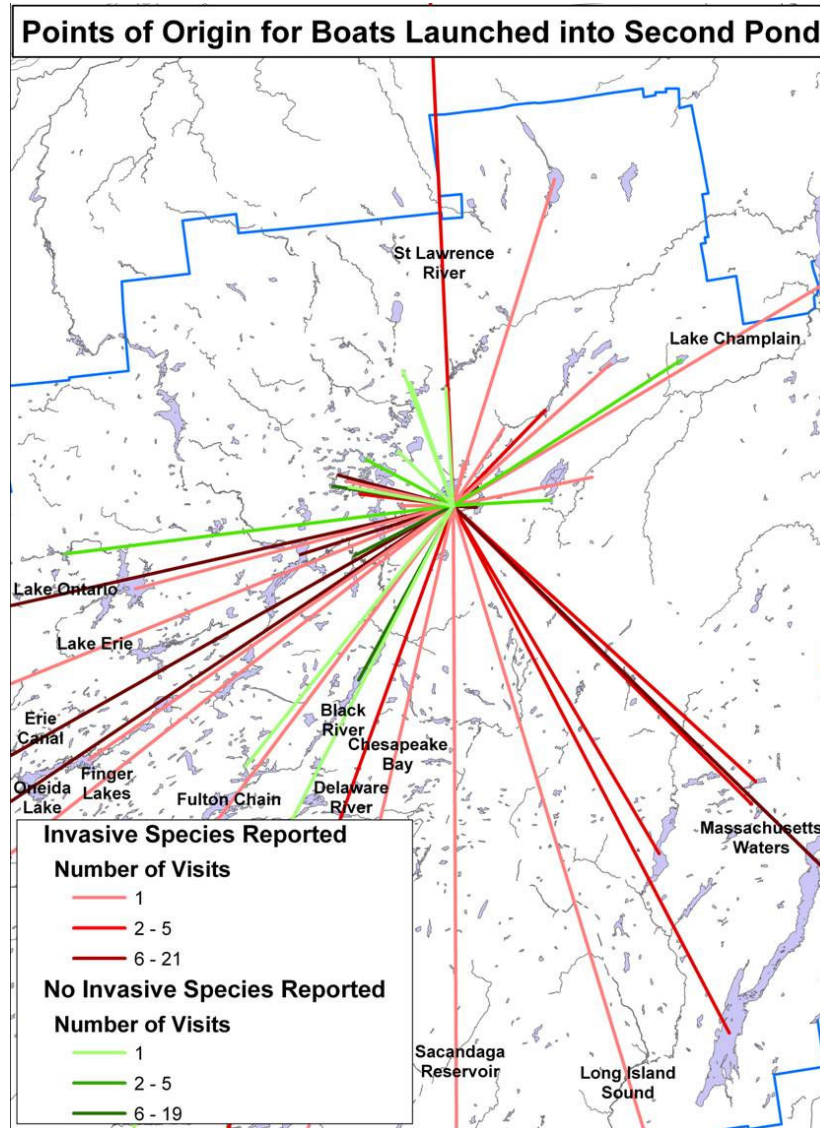


Figure 3: Points of origin map: nearby view

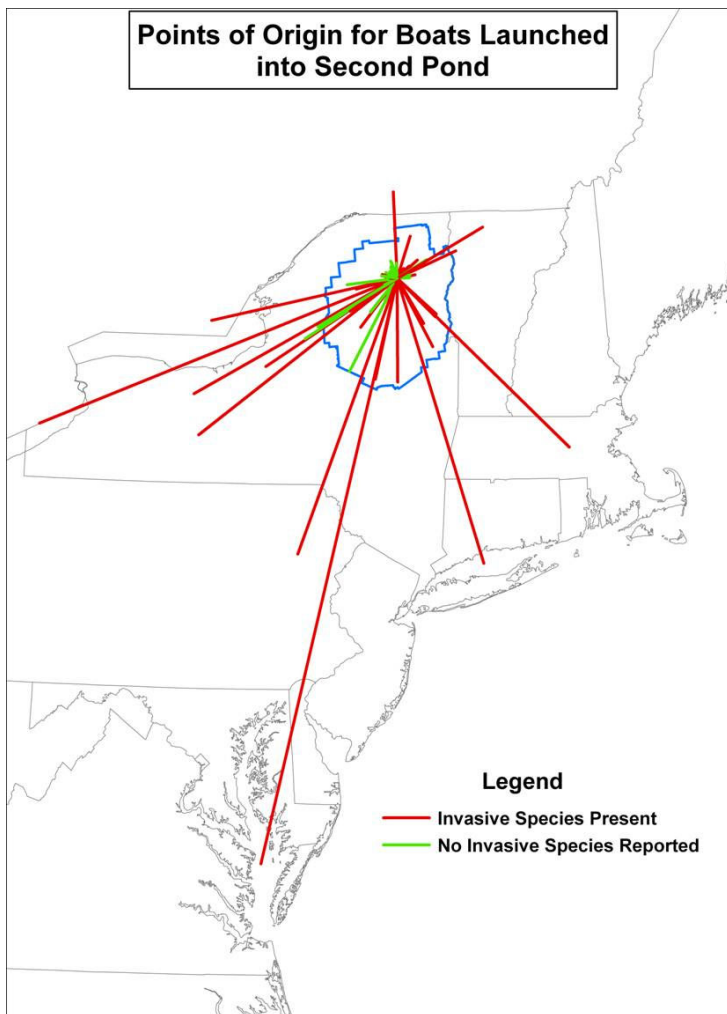


Figure 4: Points of origin map: regional view

Weed Observations

Watershed Stewards observed 16 boats (of 1676 total) or 1 % of the total boats launched as having visible weeds. Stewards were instructed to inspect each boat for visible, trailing weeds on the hitch, rollers, props and other areas. It was not recorded whether the weeds were observed on the way into Second Pond or on the way out. Stewards then assisted users in removing the weeds by leaving them well away from the boat launch where they would dry and die.

Discussion

Second Pond contains a unique dynamic from the other boat launches addressed by the Watershed Stewardship Program as it is the registration area for the Saranac Lakes Islands campground. Throughout the summer these beautiful island campsites are usually sold out. Combining the campers with the regular day users makes for noticeably increased traffic at the boat launch compared with the other program sites of Lake Placid, Upper St. Regis and Lake Kushaqua. Stewards found it challenging at times to speak with every group, especially on Sunday as campers were checking out of their sites.

This unique population also showed us that the people were visiting lakes that were a day's drive or more away from Adirondack waters, which could mean a great deal of invasive transport (both to and

from Second Pond). Many of the boats that were registered in New Jersey, the New England states, and the Great Lakes Region also did not report being used in the preceding two weeks.

Second Pond is the only lake in the Watershed Stewardship Program (compared with Upper St. Regis, Lake Placid and Lake Kashaqua) that has a documented invasive species problem. For this reason, the data of lakes that have been visited in the previous two weeks must be looked at through a slightly different lens. One can assume that the owner of a boat might return to previously visited lakes, which now exposes new lakes to traces of invasive species unwittingly picked up from Second Pond. Further, a larger portion of the lakes reported as being visited in the preceding two weeks at Second Pond are infected with invasive species as compared with the other three lakes in the study. This might suggest that users of Second Pond are more likely to recreate in invasive infected waters.

As you can see from the data, the most frequented lakes are from area lakes within the Adirondack Park. It's intuitive that the high number of rental boats visit many lakes in the area, including the Saranac Chain, but these boats are also being washed after every day of rental. One would think that rentals might be a greater risk of transporting invasive species because these boats frequent many lakes in a short amount of time, but the outfitters are taking precautions, and keeping their boats clean.

Conclusion

The use of the Second Pond boat launch is very impressive in regard to raw numbers of boaters, their wide-ranging geographic points of origin and the variety of watercraft used. Many boaters were not aware of the invasive species problem in the Adirondacks. Even more were somewhat rushed and interested in their recreational time as well as in moving quickly through the boat launch to make room for people behind them. As a result, this boat launch was a challenge at times for the Watershed Steward on duty to manage. All of these factors point to the important role of education and inspection at Second Pond. Since the waterway is exposed to so many boaters from across New England, it's likely that invasive species are inadvertently being introduced to the Saranac River, and that our "resident invaders" (Eurasian watermilfoil) are being transported out to other area lakes and/or the recreators home waters. It is very clear that an on-duty inspector/educator is called for during the week as well. We can only guess at the number of weeds transported and the number of human minds left ignorant of the scourge of invasive plants between Mondays and Fridays.

We would like to give many thanks to Jeff Gonyea, the caretaker at Second Pond, and his friendly staff. We appreciate all of your help and support this summer.



Summary of Boat Launch Usage- Weekends at Second Pond, Memorial Day to Labor Day, 2005

Date	(indicate hp for MO)											Total # boats	4 strk	Group Size	Gender		Not Reg	Total Time (minutes)	Pets #	Out Only	moored	Visible Weeds
	(hp)	MO	MI	I/O	P	J	S	R	C	K	B				M	F						
	5/28-5/29	63	23	5	0	3	0	1	2	12	23				0	69						
6/4-6/5	57	33	1	4	2	5	0	0	17	34	1	97	1	160	117	43	18	9	17	0	0	
6/11-6/12	77	32	2	7	2	0	0	0	17	16	0	76	5	160	103	57	14	5	15	0	0	
6/18-6/19	73	29	6	0	0	0	0	0	14	16	0	65	3	134	97	37	24	5	12	15	1	
6/25-6/26	59	61	17	5	2	2	0	1	28	27	0	143	5	350	222	128	15	11	26	30	2	
7/2-7/3	77	34	9	6	1	0	0	1	26	38	0	115	3	256	155	101	16	14	7	29	0	
7/9-7/10	65	50	15	4	5	0	0	2	33	18	0	127	7	304	187	114	18	26	22	37	0	
7/16-7/17	63	63	2	6	9	5	0	0	33	24	0	142	11	337	206	131	21	16	27	48	3	
7/23-7/24	58	66	5	6	6	1	0	0	31	43	0	158	13	345	214	131	20	16	21	39	3	
7/30-7/31	56	56	4	13	2	0	0	0	26	46	0	147	4	311	202	109	16	19	27	22	0	
8/6-8/7	54	43	4	11	4	2	0	1	32	43	0	140	6	311	195	116	16	19	37	15	1	
8/13-8/14	60	33	5	1	6	0	1	0	19	10	0	75	3	219	139	80	21	12	34	11	0	
8/20-8/21	62	29	3	1	3	1	0	0	40	46	0	123	2	224	155	69	16	10	24	16	3	
8/27-8/28	49	36	1	10	2	1	0	3	26	27	0	106	7	242	144	98	15	24	29	17	2	
9/3-9/4	51	34	3	2	0	0	0	0	20	34	0	93	3	184	111	73	20	6	19	6	1	
Totals:	62	622	82	76	47	17	2	10	374	445	1	1676	74	3691	2364	1324	1	18	197	334	285	16
(avg)																						

Table 3: Recreational data from Second Pond. The values are grand totals for the 15 week period (Memorial Day to Labor Day). Weekends only. (hp) indicates average horsepower of all observed motors. In the registration column, No = the amount of boats with expired registration stickers. MO = outboard engine, MI = inboard engine, I/O = inboard/outboard (stern drives), P = pontoon boat, J = jet ski (personal watercraft), S = sailboat, R = rowboat, C = canoe, K = kayak, B = *barge.

St. Regis Lakes Purple Loosestrife Removal Project 2005

By: Kathryn M. Radock, Watershed Steward

Introduction:

Purple Loosestrife (*Lythrum salicaria*) removal from the St. Regis lake chain has continued for the sixth year by the Watershed Stewardship Program at Paul Smith's College. Originally initiated by concerned property owners on the lakes the removal of *L. salicaria* is a major component of the WSP.

L. salicaria is a perennial herb native to Eurasian wetland soils. The plant was introduced to the United States in the 1800's for ornamental and medical reasons. When this invasive plant becomes mature it can produce up to three million seeds a year, the seeds can also survive in water up to twenty months. The plant also spreads through its root system, by vegetative regeneration which can crowd native plants. *L. salicaria's* ability to quickly spread enables them to dominate an area threatening the biodiversity of that area. In addition the plants that *L. salicaria* chokes out also affects migratory birds, reptiles, amphibians, larger mammals and many invertebrates that are dependent upon these native areas for food and shelter. This is why the removal of *L. salicaria* is so important to these lakes and the Adirondack Park. This plant can jeopardize the biological and aesthetic properties of this area.

As in years past the WSP has worked with Steven Flint, The Nature Conservancy Invasive Species Project Coordinator. We continued the monitoring and removal from the projects origination in 2000 until the present. The removal amount is varied as it has been in years past. This could be dependent upon weather or effective harvesting in the previous summer.

Materials:

Watershed Stewardship boat, fifty gallon black garbage bags, clip board and zip lock bags to keep documents dry, topographic map, pruning shears, and a handheld GPS unit.

Methods:

The removal of Purple Loosestrife in the St. Regis lake chain as in previous years was focused on twelve confirmed sites, and areas of concern from St. Regis shore owners informing us of possible new sites. A complete shoreline survey was done on Upper St. Regis, Spitfire and the St. Regis River.

Again this year Steven Flint, Terrestrial Invasive Species Project coordinator worked with us. Our involvement was part of the "Adirondack Park Non-Native Invasive Plant Species Initiative" which is a joint effort of the NYSDEC, APA, NYS DOT, and The Nature Conservancy (TNC)/ Adirondack Land Trust. Flint along with two TNC stewards and WSP Steward Kathryn Radock completed a shoreline survey and removal of the Lower St. Regis – Spitfire Slough and Spitfire Lake on July 27th. We checked all pre-existing sites and identified on new site on Spitfire. A survey of Upper St. Regis Lake was done on July 29th with Radock and Steward Leah Wacks and a survey of the St. Regis River was also completed with Radock and Steward Ashlee Petell, no plants were found on either survey that day. All sites were then rechecked on August 19th by Radock. While traveling between Lower St. Regis and Spitfire a new site was discovered on Lower St. Regis near the DEC canoe launch. This was done to remove any plants that have grown back up or have matured since the first survey and are now easily found.

The method of removal is continued from years past and is done by cutting the plant with a pair of pruning shears as low to the ground as possible or if possible pulling the plant and root up where the soil is thin enough to do so. The plant is then disposed of in a large black garbage bag, and the number of plants removed is then recorded. If a new site is identified in addition to removing the plants and recording the number of plants removed we also recorded the GPS coordinates for future reference and removal. The

plants are removed starting in late July because the plant is just starting to bloom, easy to identify and the seeds are not ready to drop yet.

Results:

The amount of Purple Loosestrife that has been removed this year compared to years past is down dramatically. This year the least amount of plants were removed since the first year when only 292 plants removed from nine sites. Despite this drop in removed plants, two new sites were identified, one on Spitfire (S13) and one on Lower St. Regis (S14). This is the first plant sighting on the lower lake. The GPS coordinates for S13 are N 4918668 and E 557451, there are no GPS coordinates for S14 because the site was identified later in the summer without Flint. Plants were found in the channel between Spitfire and Upper St. Regis, where one of the largest sites is located very few plants were found even after repeated checks.

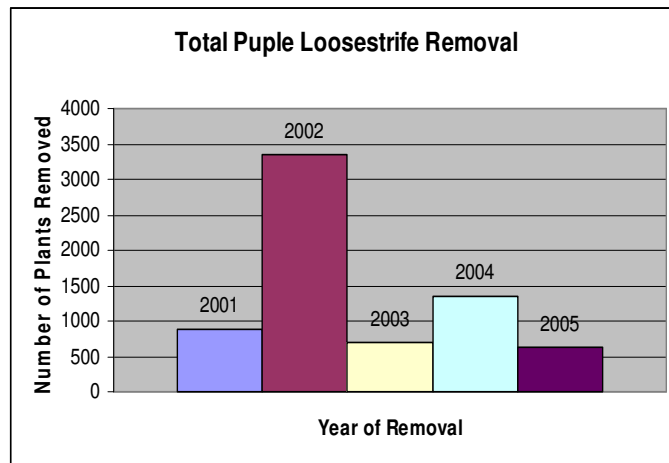
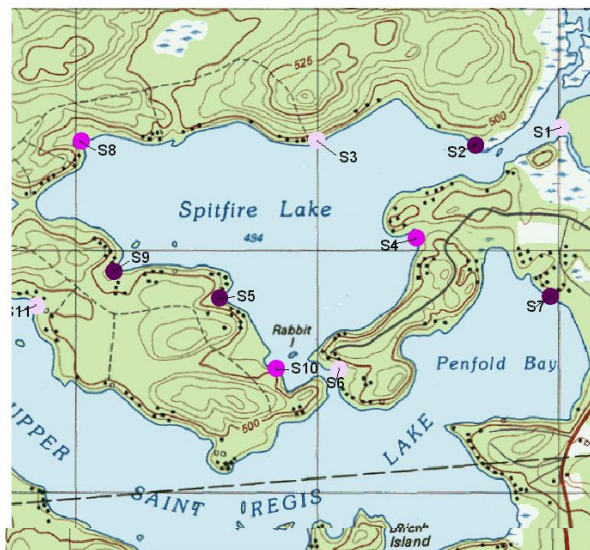


Figure 1: Comparison of removal amounts in the past five years on the St. Regis Lake Chain.



- Loosestrife Sites
- low abundance
 - medium abundance
 - high abundance



Figure 2: Map of purple loosestrife sites

Site/GPS	2001	2002	2003	2004	2005
S1 N4918731 E559028	30	8	16	42	40
S2 N4918673 E558675	25	260	35	111	100
S3 N4918680 E5579988	18	11	13	3	10
S4 N4918290 E558390	110	49	3	74	150
S5 N4918087 E557660	250	915	117	146	250
S6 N4917748 E558103	5	63	5	26	5
S7 N.A.	450	1400	330	742	130
S8 N4918636 E557038		123	5	34	25
S9 N4918149 E557190		437	143	116	25
S10 N4917831 E557837		74	23	50	15
S11 N.A.		14			
S12 N4918960 E559279				1	
S13 N4918668 E557451					10
S14 N.A.					4
Total	888	3354	690	1345	764

Table 1: This table represents the number of plants removed since 2001.

Discussion:

There is a 47 % difference in plant removal between 2005 and 2004, 634 plants compared to 1,345 plants. The drastic drop is caused mainly by the absence of plants harvested from S7. If a similar amount of plants were harvested from this site as in years past the total plants harvested for 2005 would be similar to the previous summer. This site was checked three times and only a few plants were found compared to previous years. The reason for the drop in plants removed is slightly troublesome, it may be because of effective harvesting in previous years. Possibly the weather was not appropriate for the plant. The site was very overgrown by alders so may be the plant is being over run by another.

The two new sites found are small sites both along the shore. The plants found in S13 were large and established. This site is very wet and somewhat hard to access which may be why it was not found until this year with more stewards looking on the surveys. S14 was a very small site on the bank of the Paul Smith's College campus. It is a concern that the plant is now found on the lower lake for the first time though it can be hopeful that the site may be easily managed because the plants were pulled from the root end and it was so small.

The weather this year was thought to make a difference in the amount of plants found and harvested. This area had early heavy rain then very hot spells of weather that were thought to increase growth earlier in the year. When surveying the shoreline in late July it appeared that we early, many plants were still juvenile and not near the blooming stage. There also appeared to be fewer plants than in previous years. Thinking we were too early in the season recon visits were made later in the summer but numbers are still down.

In Figure 1, it is apparent that there are fewer plants harvested than in the earlier stages of the program. There does appear to be a trend that large plants harvests are followed by a summer of smaller plant harvests. It may be thought that these years where numbers are lower are when the plants are smaller and harder to find at sites. Another consideration is weather, summer of 2004 the weather was very wet. According to Julie K. Cronk and M. Siobhan Fennessy's Wetland Plants our method of hand pulling and cutting weeds has been the most effective way of harvesting *L. salicaria*. In one summer trial when the plant was cutting done in late summer then flooded, the plant was then highly stressed for the next summer. This may be an explanation for this summer, the effectiveness of last summer's harvests and the wet weather put a damper on the reproductive abilities of the plant. Cronk and Fennessy also mention that there is consistency of spring and early summer flooding may hinder the plants ability to establish itself that season. This may be what has happened this summer before the warm spells of weather the area experienced a very wet spring.

Hopefully in the next year the steward running this project will be able to take the time and detail needed to check and recheck these sites to find plants at all stages in its life cycle. This can a tedious job and time consuming when doing shoreline surveys but hopefully the time and effort put into will help keep this invasive plant in control for the shore owners and many recreators that enjoy the St. Regis Lakes.



Loon Observation Report for St. Regis Lakes, Summer 2005

by Stephanie Sears

Introduction

The Watershed Stewardship Program undertakes the duty of monitoring several banded loons on the St. Regis Lakes each summer under the direction and supervision of the Adirondack Cooperative Loon Program. The mission of the Adirondack Cooperative Loon Program (ACLP) is to learn about the condition of the breeding population of the Common Loon (*Gavia Immer*) within the Adirondacks. The mere presence of these magnificent birds in the Park is an indication of the rejuvenation of the health of our waterways. Because they are sensitive to disturbances within their habitat, the Loon is a symbol for the condition of the environment. Human disturbance, water chemistry, and food availability, are just a few of the major influences that can affect the population.

The ACLP have banded many Loons within the Adirondacks with unique color bands on their legs. These bands allow us to recognize individuals and observe their behavior, know their territory, and monitor mate selection. This also includes knowing what lake they choose to reside on from year to year. By monitoring the loons throughout the summer we can track the reproductive success of individual loons and also learn more of the natural history of the loon.

Another important aspect of the program is to educate the public about environmental and anthropogenic factors that affect their population, especially from lead, by issuing pamphlets and putting up signs in specific locations.

Methods

As a Watershed Steward, Stephanie Sears worked on the field crew for the Adirondack Cooperative Loon Program monitoring banded loons on Upper St. Regis and Spitfire lakes. The kayak was the main vessel used, but sometimes the johnboat, both provided by the Adirondack Watershed Institute/ Paul Smith's College. Binoculars were provided to the steward by the Natural History Museum of the Adirondacks. One day a week was dedicated to monitoring the loons on the St. Regis chain of lakes, consisting of Upper and Lower St. Regis and Spitfire Lakes. The paddle usually began from the Upper St. Regis Landing in the early morning, between 7 AM and 9 AM, and took between 3-7 hours. The route followed most of the shoreline, into all bays and into Spitfire Lake, constantly scanning for birds. As loons were observed information was collected on the location of the territory, obvious behavior, band color (or lack of bands), mate status, location of nests, number of eggs, and as the summer progressed, how many chicks fledged.



Results

Upper St. Regis

Upper St. Regis supported two breeding pairs of Loons, one pair on Birch Island and the other in Averill Spring Bay. The Birch Island pair consisted of one banded bird, originally from Little Clear Pond, and an un-banded mate. The pair successfully fledged two chicks from their nest early in the summer. The hatch date is approximately 6-15-05, because the nest was not found before they hatched. My first observation of the chicks was on 6-23-05 and they had already grown a bit, but still had black downy feathers. At every observation of this family the chicks had grown noticeably and were soon diving and fishing right along side the adults.

The Spring Bay pair also had one banded and one un-banded bird. Although they were not as successful in their nest, they give us some information about loon behavior. One egg was observed in one nest in Spring Bay. Loons were not observed sitting on the nest, and the egg was not being moved in the nest after

the first couple weeks of monitoring. Another nest was found late in the summer (7-27-05) in North Bay with fragments from one egg. Both the whole egg from Spring Bay and the fragments from North Bay were collected for further examination and mercury analysis. The same loons were often seen near Camp Topridge and near the opening to North Bay, relatively far from either of the nests located.

Spitfire Lake

The Spitfire pair also consisted of a banded bird and un-banded mate. Despite the fact that the pair were frequently observed sitting on the nest, the two eggs in the nest did not hatch. Also, no fragments were found in the nest suggesting possible predation.

Antenna bird

During the 2004 monitoring season two Loons from these lakes had satellite telemetry antennas implanted. The battery is designed to last for a year to watch the individuals' migratory journey, and then removed the following year, leaving the bird unscathed. ACLP made an attempt to capture these birds to remove the battery/antenna, to no avail. Next year they will try again, meanwhile we continue to monitor them and the birds are doing well.

Discussion

This study is not only important to more fully understand the natural history of the Common Loon and insure its protection, but this study also benefits policy making, environmental quality, and the paddlers and shore owners who are fortunate enough to experience this brilliant species.

Loons are a great indicator for changes within their environment. With studies like these policies and management practices will be put in place, or changed. These policies can affect air and water quality, development, and mercury contamination. The Loon is a visible sign of invisible stimulus.

Having shore owners participate in the monitoring of the adults and chicks is very helpful and could also be increased. Many people have given very important information and helped the steward out. The residents are on the lake everyday and can notice when behaviors change, or when chicks are born, more than someone who is only on the lake once a week.

Some limitations that were experience are that Loons fly, kayaks are relatively slow, and waves generally make looking through binoculars difficult. The Birch Island pair that had two chicks liked to hang out in the main passage way of boats using the Upper St. Regis Landing. Traffic and the wakes from boats made the observing quite arduous. Overall the summer was very gratifying, and challenging.

Conclusion

The Loon is a sign of the *Wilderness*. The eerie call, the distinctive wing flapping, and remarkable rebirth all create a certain feeling inside us. Visiting the Adirondack Park is an historic tradition for many people and the Loon is a symbol of beauty and nostalgia that keeps people coming back.

Regardless of the difficulties and minor limitations, the major outcomes, and new information about the Loon is immeasurable. Thanks to Nina Schoch, Amy McKay, Holly Lutz, and Ann Weld for the updates, useful advice and going out monitoring with me.



Watershed Stewardship Program: Educational Outreach Program Report

By: Ashlee Petell, Educational Programs Coordinator

Introduction:

It is the Watershed Stewardship Program's hope that children who are exposed to the natural environment will grow to appreciate stewardship messages in the future. In that vein the Watershed Stewardship Program has been presenting educational programs to area children for the last six years. Several different programs were designed and advertised to the public as open enrollment programs. Area summer camps and recreation programs were contacted and offered programs as well. Both the open enrollment and summer camp formats were successful this year.

Open-Enrollment Programs:

The following is a copy of the press release sent via Stephanie Colby, the Paul Smith's College communications director to area papers and National Public Radio. Programs were also advertised by flyers hung at area stores. Not all area papers advertised the programs. The Director of the Watershed Stewardship Program had to make follow up calls to ensure that the information was included in the paper.

"The Watershed Stewardship Program is offering free educational programs to area children. Please note that pre-registration is required, if interested in signing your children up for a program call 327-6341 or email petella@paulsmiths.edu."

Invisible Life Friday July 8 1:00 – 2:30 Paul Smith's College

Come join a Watershed Steward and go on a treasure hunt to find life where you may have never looked. Water samples will be collected from Lower St. Regis and then a Steward will help your child take a closer look using a microscope. The collection part will be fun for all ages, but the rest will be geared to children 10 or older. Half of this activity will be outside so dress appropriately.

Swamp Things Friday July 15 12:30 – 2:30 St. Regis Landing

Come Join a Watershed Steward and investigate life in a bog. A fun activity for all ages, although young children (6 or under) need to be accompanied by a parent. Participants should wear clothes that can get dirty and rubber boots or old shoes that can get wet. Bring the bug spray and water.

Salmon Migration Friday July 22 1:00 – 2:30 Paul Smith's College

Salmon migrate hundreds of miles back to where they were hatched to lay their eggs. It is thought that salmon use their sense of smell to accomplish this amazing task. Come use your nose to find your way through the maze just like a Salmon. Please wear clothing appropriate to the weather. This activity is primarily for 7-11 year olds younger children are allowed with adult supervision and parents are always welcome.

Habitat Needs Friday August 5 1:00 – 2:30 Paul Smith's College

This program is for 9-11 year olds and will help them understand what animals need to live. There will be a fun activity and some discussion talking about carrying capacity. Dress appropriate for weather conditions.

Animal Pairs Friday August 19 1:00 – 2:30 Paul Smith's College

Come learn about odd pairs of animals that need each other to survive. The program will feature a short activity and some discussion about relationships between strange animal pairs. The basic topic is interesting for 7-10 yrs old, but the discussion is more appropriate for 10-14 yrs olds. This activity will be indoors.

Attendance For Open Enrollment Programs:

Program	Date	# Children	Status
		Registered	
Invisible Life	7/8/2005	0	Cancelled
Swamp Things	7/15/2005	6	Rescheduled
Salmon Migration	7/22/2005	0	Cancelled
Swamp Things	7/29/2005	4	Offered
Habitat Needs	8/5/2005	2	Offered
Animal Pairs	8/19/2005	2	Offered

Attendance for open enrollment programs was low. The total number of participants was 8 children and 1 mother. The subject matter or activity planned for the last two programs had to be adjusted because the number of participants was so low. All lesson plans follow after this report.

Camp Outreach Programs:

In June email and phone calls were made in an attempt to establish relationships with area camps. The email sent was as follows

Hello,

My name is Ashlee Petell and I am the Education Outreach Coordinator for the Watershed Stewardship Program of Paul Smith's College. The Watershed Stewardship Program (WSP) is a cooperative community-based effort to conserve natural resources. The WSP has found that education is a key component in the conservation of natural environments. Along with providing education to the public at boat launches the WSP would like to further spread its message by offering programs to area children. In the past the WSP has offered programs to area summer camps. The specific topic of the program can be altered to fit your Camp's special interests. Examples of topic ideas include but are not limited to water quality, bog life, habitat needs, or fish migration. Any of these topics (or others) can then be presented to campers as an educational fun art project or in a more active game. The duration of a program can be adjusted to fit your Camp's schedule but are normal an hour and half. Programs will be free and all materials needed will be supplied by the WSP. If you are interested in having a Watershed Steward come and present a program to your campers please contact me.

Office phone: 518-327-6321

Home phone: 518-327-9391

Email: petella@paulsmiths.edu

Thank you,

Ashlee Petell

Only one area camp responded to this email. I followed up with phone calls and more emails and ended up presenting programs at Petrova School (Saranac Lake Summer Youth Program)---Bill Wilson and The Wild World Summer Day Camp presented by the Natural History Museum.

Attendance for Saranac Lake and Natural History Museum of the Adirondacks Programs

Camp	Date	Topic of Program	Age Group	# Participants
Bill Wilson	7/8/2005	Habitats	7 and 8 yrs	44
Bill Wilson	7/15/2005	Water Bugs	9-13 yrs	42
WWSDC*	7/18/2005	Collect water bugs	3-4 grade	7
WWSDC	7/18/2005	Water Quality	5-7 grade	11
WWSDC	7/18/2005	Nature walk; water bugs	K-2 grade	13
WWSDC	7/19/2005	Water Quality; Insect ID	3-4 grade	9
WWSDC	7/22/2005	Salmon Migration	3-7 grade	20
WWSDC	7/22/2005	Salmon Migration	K-4 grade	23
WWSDC	7/22/2005	Fishing	5-7 grade	11

*Wild World Summer Day Camp

At the Saranac Lake Programs there were 86 participants. The theme of the Wild World Summer Day Camp for the week of 7/18-7/22/2005 was Aqua Ventures. The total number of participants was 33 but each of these children participated in one or more programs.

Overall Participation

The total number of different participants in Watershed Stewardship Educational Programs for the summer of 2005 open enrollment and camp out reach totaled 127 different children. This was 188 if you count kids attending more than one program.

Discussion and Suggestion For Next Year:

This year I tried to make outreach programs as educational as possible. Furthermore I tried to design programs like a fun science class. In years past outreach programs have been more arts and crafty. I feel that this approach worked well for most programs. Especially the programs offered at the Wild World Summer Day Camp program. The Saranac Lake programs had a lot of kids at them so I strongly feel that if this venue is used next year that for every 10-12 kids there is a steward, and the group is divided up in to a smaller more manageable size. The Wild World Summer Day Camp was a great program to take part in and I feel that this is a venue that should strongly be considered for next year. I feel that there should be less time spent on open enrollment programs, maybe only offer one or two in a summer. As in years past there needs to be more advertising. My most important suggestion is that the assistant director or director takes on the role of scheduling events. I found it very challenging to make (and maintain) contact with camps when I only had Fridays to concentrate on planning and presenting programs.

Program Lesson Plans:

Name of Program: Invisible Life
Location: Paul Smith's College Library
Date: Friday July 8 1:00-2:30
Age: 10 or older

Descriptor: Come explore water and all the life "hiding" with it.

Objective: Steward and children will discuss water and what lives in it. Starting with large scale (fish, turtles, frogs, etc.) and then small scale like insect larva and zooplankton.

Materials: nametags, markers, drawing pens and pencils, different size containers, microscopes, and magnifying glasses

Activity:

1. Nametags
2. Introduction to the bathroom
3. Basic facts about water
 - *What do you know that lives in water?
 - *What do those large creatures eat?
4. Collect Water Sample
 - * Try and get a variety of samples
 - * Try and get some insect larvae as well
5. Go into the Lab
 - * In the lab we will use microscopes to see tiny creatures we couldn't see before
6. Discuss the role of invisible life

Name of Program: Swamp Things
Location: St. Regis Landing Boat Launch
Date: Friday July 15, 12:30-2:30
Age: 6 and Up

Descriptor: Come explore the wonderful world of a wetland.

Objective: Steward and children will discuss the importance of wetland and all the life they support.

Materials: nametags, drawing pens and pencils, different size containers, nets

Activity:

1. Nametags
2. Introduction to the bathroom (there is none)
3. Basic facts about wetlands
 - * This can happen on the walk to wetland
 - *What do you know about wetlands?
4. Walk to the Wetland
 - * Look for Swamp things
5. Discussion about what is found

*Talk about frogs, birds, mud, plants, etc.

6. Continue discussion on walk back

Name of Program: Salmon Migration

Location: Paul Smith's College Library

Date: Friday July 22, 1:00-2:30

Age: 7-11

Descriptor: Come explore the migratory life of a salmon.

Objective: Steward and children will discuss how salmon migrate and then discuss the challenges they face.

Materials: nametags, drawing pens and pencils, cotton balls, lots of string or twine, paper cups, paper, and strong scents (about five different ones)

Activity:

4. Nametags
5. Introduction to the bathroom
6. Basic facts about salmon
 - *What do you know about salmon?
 - *What do they need to live?
 - *How are humans playing a role in the life cycle of salmon?
4. Scent Maze
 - *Children will navigate through a maze based on scent
5. If there is spare time a game of migration tag will be played
6. Discuss how challenging this is and leave kids with an awe for nature

Name of Program: Habitat Needs

Location: Paul Smith's College Library

Date: Friday August 5, 1:00-2:30

Age: 9-11

Descriptor: Learn about what animals need to survive and concepts involved with habitats

Objective: Steward and children will discuss the importance of habitats and limiting factors.

Materials: nametags, markers, drawing pens and pencils, paper

Activity:

7. Nametags
8. Introduction to the bathroom
9. Basic facts about habitat
 - *What does a specific animal need to survive?
 - *What is a limiting factor?
4. Tag Like Activity
 - *Kids will have a set amount of time to gather the little pieces of paper that indicate things they need to survive
5. Discuss how challenging it can be for an animal to survive

*Things that effect limiting factors ie weather

Name of Program: Animal Pairs

Location: Paul Smith's College Library

Date: Friday August 19 1:00-2:30

Age: 7-14

Descriptor: Come learn about odd pairs of animals that need each other to live.

Objective: Steward and children will discuss the relationships that exist between animals.

Materials: nametags, drawing pens and pencils, pictures and maybe a video

Activity:

10. Nametags
11. Introduction to the bathroom
12. Basic facts about relationships
 - *Predator/Prey?
 - *Partnerships?
4. A matching game
 - *Guess what animals need each other
5. Discuss why this animals need each other
6. For fun show pictures and talk about animal pairs like the baby elephant that has taken a sea turtle as a sergeant mom.

Student Capstone Project: Factors Associated with the Presence of Eurasian Watermilfoil in the Adirondack Park

By: Kathryn Radock, Watershed Steward

Introduction:

This summer the Watershed Stewardship Program had the chance to give steward and Paul Smith's College student Kathryn Radock a unique opportunity to utilize stewardship time and resources to work on her capstone project. Radock was presented with five Fridays at the beginning of the summer to work on compiling data and tables to organize project information. The project entitled A Preliminary Study of Factors Associated with the Presence of Eurasian Watermilfoil (*Myriophyllum spicatum*) in the Adirondack Park. The aim of the project is to provide the Adirondack Park Invasive Plant Program (APIPP) with an organized look at existing data and to determine if there is any correlative data where certain variables could indicate where *M. spicatum* infestations may be more likely to occur.

Objectives:

There are two main objectives of the capstone project, first to determine if boat launch type, access type, and ownership of Adirondack Park lakes are associated with the presence of *M. spicatum*. The second objective is to determine if the frequency of occurrence of *M. spicatum* in the Adirondack Park lakes is associated with trophic states and lake morphology. Knowing which types of boat launches, access types and ownerships are more likely to cause or aid the spread of *M. spicatum* can be incredibly valuable in many aspects. Managers could prevent the spread of this invasive species by then limiting the usage of these variables which can make lakes more susceptible. By making this determination the costs in managing *M. spicatum* and the damages done to aquatic ecosystems and recreation could be reduced.

Radock's capstone project will be divided into two phases, data compilation and data analyses (see Figure 1). Phase one: data compilation where Radock will identify sources and create a new database. APIPP's Aquatic Invasive Plant Survey Database, the Adirondack Watershed Institute and the Adirondack Lakes Survey Corporation are the sources identified initially. The database created will be divided into three main sections. The *M. spicatum* section will have presence or absence data and frequency of occurrence data. The water quality section will have total phosphorous, secchi transparency and chlorophyll-a. The lake morphology section will have lake area, mean depth, and shoreline length.

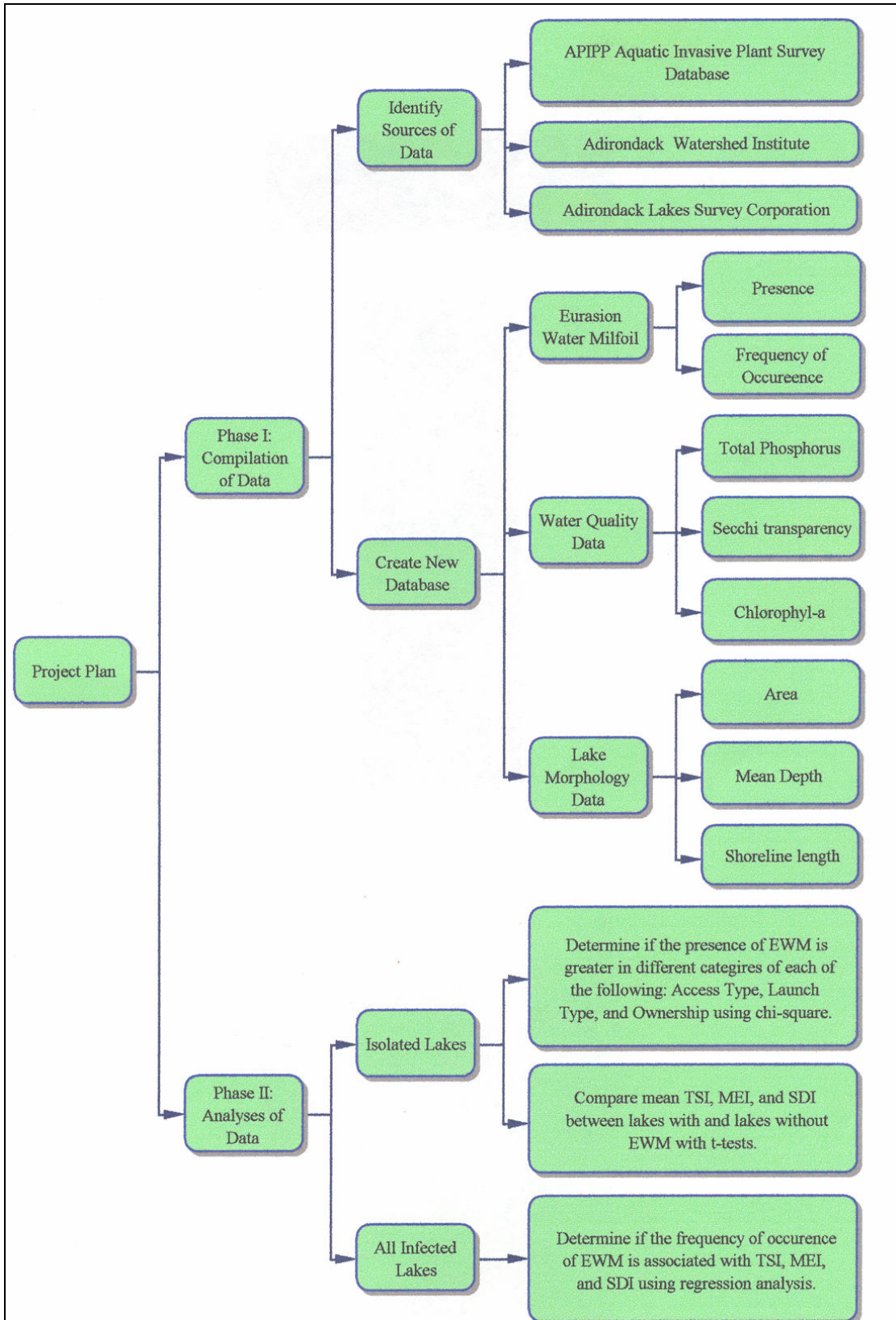


Figure 1: Diagram of Radock's overall capstone plan for completion.

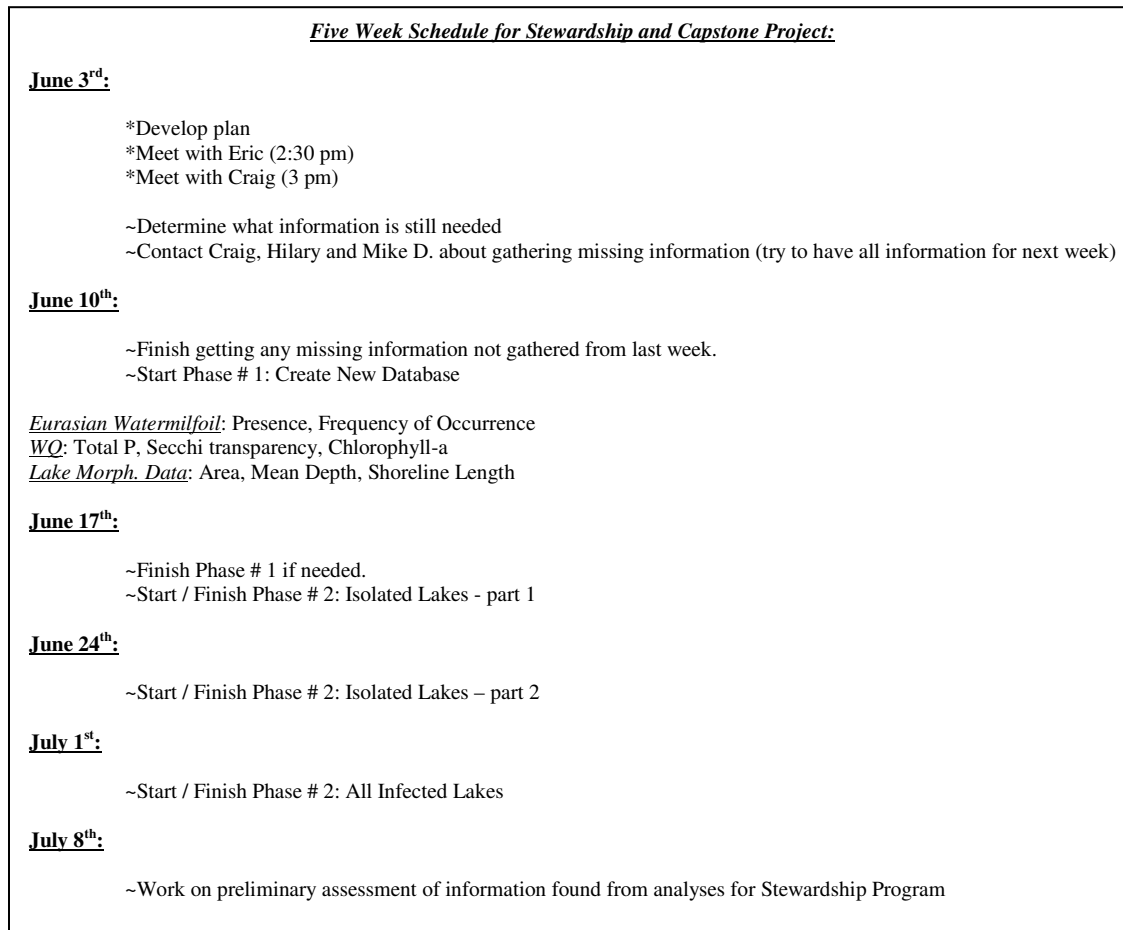


Figure 2: Initial five week schedule of summer work.

Phase two: data analyses divides into isolated lakes and all infested lakes. Isolated lakes will be analyzed to determine if the presence of *M. spicatum* is greater in different categories of access type, launch type, and ownership using chi-square. In isolated lakes, differences in trophic state index (TSI), morpheodaphic index (MEI) and the shoreline density index (SDI) between lakes with and lakes without *M. spicatum* will be analyzed with t-tests. In infested lakes the frequency of occurrence of *M. spicatum* with TSI, MEI and SDI will be analyzed using regression analyses. Radock's original goal for this summer steward work was to finish phase one and two (Figure 2), though as her mentor for the project Dr. Craig Milewski has said many times multiply estimated work time by two and that is at least what it will take you. That is what happened this summer- only phase one was completed and prep work for phase two.

The time that it took to gather the three different sections for the database took longer than originally estimated. It is tedious work with numbers. There are also many lakes that have repeat names, so clarification was needed on lakes each time when entering data. This work almost doubled the time that it took to create an overall project database. Also not all time was utilized to work on the project with other small obligations like New York state boaters safety.

This was a wonderful opportunity and I would like to thank the Adirondack Aquatic Institute and the Stewardship Program for the time given. Hopefully this project will be beneficial to them in December when it is completed and presented to public. Eurasian Watermilfoil is a problem that needs to be addressed from as many angles and views as possible, this is just another one that may give society a better way to manage this invasive species.

Watershed Stewardship Program Article published in the Fall/Winter, 2005 edition of the Adirondack Journal of Environmental Studies

Paul Smith's College's Watershed Stewardship Program: "Yes! In my back yard." (An exercise in YIMBY)

by Eric Holmlund, Associate Professor of Recreation and Director, Watershed Stewardship Program, Adirondack Watershed Institute, Paul Smith's College

A young woman in a uniform and green ball cap waits with a clipboard at the Lake Placid state boat launch. The sky is achingly blue and the water is glimmering, peaceful and transparent. A man backs up a boat trailer and then gets out of his truck to unstrap his fishing boat. The uniformed woman walks up to the man and offers a smile and a greeting.

"Good morning! How are you today? OK? Glad to hear it! My name is Jecinda and I'm here today with the Watershed Stewardship Program of Paul Smith's College. Did you know that this lake is under attack? Yes, it is – not by *people*, but by *plants*..."

So begins one of the approximately 3,000 formal interactions during summer months between Watershed Stewards and people launching watercraft at four public boat launches in the northern Adirondack Park. These interpretive encounters are the heart of the Watershed Stewardship Program (WSP), its reason for being, and its chief vehicle for impacting public awareness about what has developed into another war being waged on American soil: the desperate and sometimes hopeless fight against introduced, invasive plants and animals. Lake Placid is one of the remaining lakes that are so far free of invasive species such as Eurasian watermilfoil and zebra mussels. In 2004, over 1,100 boats were counted by Watershed Stewards as having been launched at the state facility; we assume that the actual total is 20-30% higher, since Mondays and Tuesdays were left out of the study. What has residents, scientists, visitors, and by anthropomorphism, local weeds and trout, worried is that these 1,100 boats each could introduce invasive species into the vulnerable waters of Lake Placid, potentially degrading water quality and creating a tangled mat of weeds rising to the surface.

Such is the state of affairs at Lake Placid. This situation is repeated at many lakes in the Adirondack Park as lake advocates try to keep the Pandora's Box of invasive species tightly closed, at least as far as the remaining "clean" lakes. Many other lakes, already infected, are faced with a different ethical dilemma: how to keep invasive species contained and limited to where they are. This situation is slightly harder to get people excited about: while the damage has been done, so to speak, on some lakes like Upper Saranac Lake and Lake Flower which both struggle with rampant exotic weed growth, there is an obligation to keep boats from those lakes from carrying invasive species to other, uninfected lakes.

The Growth of a Good Idea

Since 2000, the Watershed Stewardship Program has tackled these ethical questions directly, with on-the-ground programming and research designed to enlist the general public in the effort, the struggle, to keep invasive species in check. The program was a brainstorm of Jim Gould, a professor and administrator at Paul Smith's College, in 1999. The idea was that there is a need for a tightly focused, local effort on behalf of the integrity of single lakes and their watersheds. Many programs have

national, regional, or park-wide scopes. The Stewardship Program was to be different; it was to dig deep rather than spread wide, it was to gather information and resources that pertained to issues relevant to one lake, one place, one community. In a sense, the program represents the reverse of the oft-mentioned NIMBY principle – this isn't a program to which people say, "Not in my back yard"; we are welcome in areas near and dear to local residents.

With this philosophy, I was asked in 2000 to inaugurate a program addressing Upper St. Regis, Spitfire and Lower St. Regis lakes, along with St. Regis Mountain, all of which are located next to the Paul Smith's College campus. The first year was for pioneering – in a very real sense the first stewards designed the program with me as the summer went on. Stewards were posted at the Upper St. Regis boat launch and the summit of the mountain, but also had time to do vegetation inventories of several local wetlands using nested plots on transects, conduct weekly water chemistry checks at 11 stations through the three lakes, list birds, flowers and trees, engage in substantial trail maintenance efforts, measure exposed bedrock on the mountain summit, and create and publish a brochure series. The stewards loved the job- these six college students couldn't believe that they were getting paid to do the things they loved: look at plants, hike mountains, talk to people, take water samples, drive motorboats. The stewards' enthusiasm rubbed off: during the summer I was approached by the Upper Saranac Lake Association to expand the program to that lake.

In 2001 we expanded to include Upper Saranac Lake, and stationed stewards at the Saranac Inn boat launch for the next four years. During that time, stewards offered educational outreach programs to camps and other entities on the lake, conducted a shoreline development study of the entire lake, which took a literal snapshot of shoreline development for the summer of 2002 as a benchmark, studied recreational use volume in Fish Creek, a stream flowing into the lake from a popular campground, and other special projects. The following year, the program expanded to Lake Placid, where it has been for four years. This year, 2005, saw the expansion yet again of the program to two new locations: Lake Kushaqua (Buck Pond State Campground), sponsored by the Rainbow Lake Association, and Second Pond (Saranac Islands State Campground), sponsored by the Lake Champlain Basin Program and the Lower Saranac Lake Association.

Associated with the Associations

When I reflect on the origin of this program, I am struck by the rich community that we tapped into and became part of. The primary boosters, both financially and philosophically, of the program were and remain property owners. This program is directed by Paul Smith's College but would not exist without the vision and dedication of the people who live on or around each of the lakes we serve. Members of the St. Regis Property Owners' Association, the Lake Placid Shore Owners' Association, the Upper Saranac Lake Association and the Rainbow Lake Association all have dedicated volunteer time and collective resources to the idea that a uniformed, educated person stationed at boat launches can help address the national issue of invasive species propagation. The officers of these associations have assisted me in orienting the Watershed Stewards, providing advice, printed resources, companionship and helpful news (gossip) to the Stewards, who are truly on the front lines of the effort to change public behavior around invasive species. Our program owes a tremendous debt to people like Susan Riggins and Linda Friedlander of the Lake Placid Association, Ed Hoe and Anne Weld of Upper St. Regis Lake, Curt Stiles from Upper Saranac Lake, Pat Willis from Rainbow Lake, and Charles Sporck and Penny Curran from Lower Saranac Lake.

The Watershed Stewards have also been trained and oriented by employees of the New York State Department of Environmental Conservation, the Adirondack Park Agency, the Adirondack Park Invasive Plant Program, the Adirondack Cooperative Loon Program and others. The stewards realize that they are part of a professional, committed community, and often share information as colleagues

with Forest Rangers, Environmental Conservation Officers, unit management planners and environmental professionals.

It's Raining Invasive Species

"It figures," mutters Kate as she looks skyward at the heavy blanket of gray clouds. The rain falls at the soft, slow rate that all but confirms an all-day storm. Today is Kate's day to drive the Paul Smith's College boat around to a dozen sites along the shoreline of Upper St. Regis and Spitfire Lake in search of purple loosestrife. The WSP has worked with local residents, chiefly Lewis and Sheila Rosenberg of Spitfire Lake, since 2000 to map, track and "whack" stands of the lovely magenta flower, which so marvelously and rapidly spread and out compete native vegetation. Kate and I fill up the two six-gallon gas tanks for the small boat, hauling them through the rain-soaked pathway from the College's maintenance shed. We are soon met by two stewards hired by the Adirondack Park Invasive Plant Program, Leda and Joe, who then motor away with Kate to meet Steven Flint, the Park's icon of exotic weed control, at the Upper St. Regis Carry. This four-person rapid response team will spend a rainy day locating and pulling hundreds of purple loosestrife plants in an effort to keep the spread of the weed under control.

WSP Stewards, under the supervision of Steven Flint, have pulled literally thousands of the plants from local shorelines, and so have preserved the traditional color scheme of vivid greens, whites, yellows and pinks that we, and the rest of the ecosystem, have come to regard as natural. We can leave the acres of solid purple flowers for another time, another place. Sadly, such expansive vistas of purple loosestrife monocultures are becoming common along Adirondack highways and rivers, and can be seen in full glory in parts of Vermont and much of downstate New York. We're waging a war of attrition, and can't seem to stamp out the growth of purple loosestrife on the St. Regis Lakes, but we're keeping it isolated, and in a semblance of balance.

Later that day, I run into Kate as she returns, wet, muddy and cold, from a day of slogging through bogs, wrangling stubborn roots from the ground, dealing with a finicky motor, and bending over for far too long to clip seed heads. "How'd it go?" I ask. She pushes a wet strand of hair from her face and manages a smile. "Great. We got 'em. There were a lot fewer plants out there than last year. We took care of them before the seeds disperse in the wind."

I ask about how she dealt with the rain. "Soaked to the skin, but I didn't get cold 'til the end. But then I just wanted to get out of there and get warm." I can certainly sympathize.

Looking for Volunteers

Bob Hall, the current President of the Osgood Pond Association, rings me in my office. "We want to take you up on your offer. I think I've got about six people lined up. Let's try to get something together by Thursday."

"Sure, Bob. I'll plan something with Hilary. I think this could be the start of something big."

We're not talking about espionage or smuggling, here. In fact, quite the opposite – I suppose this is interdiction. For a couple of years we've been thinking about finding a way for small lake associations, those without significant financial resources, to get involved with the public education and lake stewardship effort. If one considers the Adirondack Park on a whole, it's easy to see that 4, 5 or even 10 lakes working to control invasive species and improve water quality can only do so much if they are surrounded by 2,000 lakes that have no such effort. It's apparently only a matter of time before the invasive plants and animals are transported in to each lake by unwitting members of the public.

Osgood Pond has been interested in what we do for years, but just couldn't afford us. Isn't there some other way? We came up with a solution: Volunteer Lake Stewards. Working together, Hilary Oles and I reviewed model programs in Maine and Wisconsin that train a cadre of local volunteers to do the work of my summer employees. There are certain advantages to volunteers: they're cheap, once trained, they stay for many years, they care deeply about the resource, and they're cheap. (Did I mention that?) This approach, if successful, will allow small, local organizations to structure and organize Volunteer Lake Steward programs at a minimal cost.

Hilary and I pulled together a condensed training program, based on the week-long training we give to our paid seasonal staff. We did it in two hours, rather than five days. We gave them uniforms, brochures and visual aids, data sheets and encouragement. So far, it's working. Six local volunteers have begun manning the public access to Osgood Pond with the objective of inspecting boats and educating the public about invasive species. The main obstacle to the program is coordinating the volunteers and getting enough people to cover all the critical time periods. As you might guess, there is no way to restrict public access to certain hours convenient to the Volunteer Lake Stewards; they have to be ready when the public is there!

We're optimistic that this summer's test of the Volunteer Lake Steward concept will allow us to offer the service to other lakes in 2006. Of course, lake associations will soon learn just why paid employees are so effective: they *have* to work their shifts!

My Own Story: Save!

As the Director of the Watershed Stewardship Program, I have to serve in a variety of ways as situations present themselves. On August 13, 2005, I needed to work a shift, not in the office, which is my familiar post, but at the state boat launch in Lake Placid, as one of my employees took a special day off. The rest of the Watershed Stewards were pleased to know that the "boss" was going to actually do a day's work "in the trenches." They were eager for me to see what the job was really like.

Well, let me tell you, interacting with a steady stream of folk intent on rapidly launching expensive watercraft during their precious and limited leisure time does present a challenge to one's communication skills. The Lake Placid launch can accommodate two boats side by side. There are many times when this statistic is doubled and feats of exquisite (and lucky) trailer maneuvering can open your eyes in wonder. The steward's job is to chat up every boat owner while eyeballing the boat, prop, rollers, wheels, hitch and license plate for visible weed fragments. Rush hour at the Lake Placid Launch resembles the Chinese New Year Parade in San Francisco. It's difficult to see all sides of each boat while engaging in earnest environmental discussion with each person.

At about 3 pm, as I'm getting weary (I started the day at 7 am), a large inboard-outboard ski boat is being backed into the launch. I spy what looks like a weed attached to the lower unit, deep in the shade under the boat. "Stop!" I say, rather excitedly, to the woman walking backward toward the water. She relays the message to a man behind the wheel of the tow vehicle. I stoop into the shade and pull a long stringy weed into the sunlight. I suddenly realize that this is the sinister object of my entire program: a strand of parched, but alive Eurasian watermilfoil. The boat was three feet from entering Lake Placid, which is, as I mentioned, beautifully clear of invasive weeds. I felt like a goalie in a long, boring soccer match. Up to this point, nothing ever seemed to actually happen in my end of the field. Finally, there was a shot on goal – I made a save!

As luck would have it, five minutes after I single-handedly saved Lake Placid (allow me my fantasy, please), Linda Friedlander, the Coordinator of the Lake Placid Shore Owners' Association – sponsor of our program – walked over to check on our progress. In my glory, I brandished my weedy trophy, which I had inserted into a soft drink bottle. We were partly heartened by this proof of the program's relevance, and worried by the close call. How many weeds like this made it through this

summer, either during busy times when the Watershed Stewards were overwhelmed or on Mondays and Tuesdays, which are without our service? One can't help but feel humbled by the challenge of the task.

And so the Watershed Stewardship Program finishes its sixth year of service to four lakes directly, and to perhaps hundreds of lakes, indirectly. For the educational message our employees relate to users of our four lakes applies to any and all water bodies, near and far. We are finding that more and more people are aware of the threat of invasive species, and the role that boaters play in their transport and spread. But the majority of the public still is ignorant of the problem, and our Watershed Stewards strive from Memorial Day to Labor Day to spread information and change attitudes, which hopefully begins to change years of habits and behaviors. The rewards are few and fleeting, the obvious saves too infrequent, yet the cost of failure is too much for any of our lakes to bear.