

Watershed Stewardship Program



Summary of Programs and Research, 2003



A facet of the Adirondack Watershed Institute
of Paul Smith's College



Table of Contents	<i>Author</i>	<i>Page</i>
Introduction	Eric Holmlund	3
Staff Biographical Notes	Molly Shubert	12
Program Assessment Study	Eric Holmlund	14
 <i>Recreation Studies</i>		
Recreation Study: Upper St. Regis Lake	Laurella Mamere	21
Recreation Study: Upper Saranac Lake	Laurella Mamere	27
Recreation Study: Lake Placid	Michele Diamanti	34
Reaction Study: Summary/Comparison	Molly Shubert	40
Recreation Study: St. Regis Mountain	Michele Diamanti	45
Recreation Study: Fish Creek Bay	Molly Shubert	55
Recreation Study: Lake Placid Village Launch	Michele Diamanti	62
Recreation Study: Buck Pond	Jeremy Riedl	64
 <i>St. Regis Lakes Projects</i>		
Purple Loosestrife Removal	Shawn Brundage	67
Invasive Plant Mapping- St. Regis	Justin Levine	71
Lean-to Assessment	Shawn Brundage	72
Loon Monitoring	Justin Levine	73
Frog Study	Michele Diamanti	76
 <i>Lake Placid Projects</i>		
Invasive Plant Mapping	Molly Shubert	79
 <i>Education Projects</i>		
Educational Programs for Kids	Molly Shubert	80
Field Guide for PSC Library Wetland	Justin Levine	91
 <i>Appendix</i>		
Lake Data Tables	Molly Shubert	92
PSC Library Wetland Field Guide	Justin Levine	96

Section 1: Introduction and Key Findings - 2003

Prepared by Eric Holmlund,

Director of the Watershed Stewardship Program of Paul Smith's College

The Watershed Stewardship Program enjoyed a successful and productive summer in 2003, marked by the initiation of a new, full-summer recreation study on Upper Saranac Lake's Fish Creek inlet, two pilot programs at potential program sites of the future, a restructured and energized educational outreach effort and continuing coverage and public education at our primary program locations. Our stewards again had the sometimes enviable job of waiting in the sun and rain, each day of our 15 week season, to encounter the wide variety of recreators at three public boat launches and the summit of St. Regis Mountain. Our stewards met weekly, reported their findings, maintained databases, documented findings in written reports, drew up lesson plans, investigated invasive plants and kept a watchful eye on the resources that mean so much to both the human and non-human residents of our watersheds.

The Watershed Stewardship Program, as an aspect of Paul Smith's College's Adirondack Watershed Institute, also welcomed a new staff member in September of 2003. Dr. Daniel Kelting assumed the position of Director of the Adirondack Watershed Institute, promising a bold new era of program growth and leadership. I am confident that the fortunes and prospects for the Watershed Stewardship Program will benefit from the emerging mission and activities of the larger organization of which the WSP is part – the Adirondack Watershed Institute. I have worked closely with Dan in the last few months to chart a course for the Watershed Stewardship Program that complements the ideals of general watershed stewardship, research and outreach.

The new mission of the Adirondack Watershed Institute, formulated collaboratively in the fall of 2003, is as follows:

The mission of the Adirondack Watershed Institute is to create scientifically-sound knowledge about terrestrial and aquatic ecosystems and human relationships with the environment, enhance the educational opportunities available for undergraduate students and to engage the Adirondack Community in ways that facilitate the stewardship of our natural resources.

Background

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, Upper Saranac Lake, Lake Placid and the St. Regis Mountain trail and summit. The WSP also fulfills research and service functions. Baseline data concerning recreational use patterns and vegetation gathered through this program aids in the development of area unit management plans being prepared by the 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. The WSP takes advantage of the skills and training of students from Paul Smith's College's Natural Resources, Environmental and Forestry programs with direction from one of the College's professors. An advisory committee of community stakeholders (including lake associations and The Nature Conservancy), state organizations (including the DEC and APA) 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 only the St. Regis Lakes and St. Regis Mountain, both seven days per week for our summer season. 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 a 5-day per week period of service. We have had discussions of further program expansion to other lakes and ponds in the immediate area as well as in the southern Adirondack Park.

Summer, 2003

The Watershed Stewardship Program enjoyed a successful and rewarding summer of service to the resources and people of the St. Regis Lakes, Upper Saranac Lake and Lake Placid.

Personnel. The program provided funding for five full-time Stewards, one part-time Steward, one Assistant Director and one Director. Five positions were filled by Paul Smith's College students and recent graduates in the Natural Resources, Environmental Studies and Fish and Wildlife programs at the college. One position was filled by a Paul

Smith's College faculty member who is a graduate of the EET program. The final position was filled by a recent graduate from St. Lawrence University who is also a Lake Placid resident.

Staff Training and Orientation. The first month of program operation, May, was devoted to staff training and program development. After an intensive initial week of orientation to program policies, equipment, interpretive methods and safety, the stewards attended training sessions specific to their areas over the following two weeks. The stewards attended instructional sessions by the Director of the program (policies, research projects, interpretive methods, map and compass, etc.), DEC Forest Ranger Joe Rupp (orientation to St. Regis Canoe Area and St. Regis Mountain), DEC Forester Steve Guglielmi (land classification issues and unit management planning process/data collection), Aquatic Program Director Michael DeAngelo (basic limnology and water testing methods), Jane LaVoy (boater safety), the Red Cross (First Aid and CPR), the Adirondack Park Agency's Hilary Oles (exotic aquatic invasive species identification), the Association for the Protection of the Adirondacks' Kevin Prickett (unit management planning procedures and issues), The Nature Conservancy's Steven Flint (invasive terrestrial plants) and Jack Drury from the Adirondack Forest Preserve Education Program. The stewards were also introduced to the issues and history of the program's lakes by the St. Regis Owners' Association's John and Mike Quenell (orientation to St. Regis Lakes history and current water quality and recreation issues), Curt Stiles (orientation to Upper Saranac Lake program requirements and background), and Georgia Jones, LPSOA President (orientation to Lake Placid). Finally, the stewards received natural history field orientations by Celia Evans (wetlands) and Brian McAllister (birds and upland species).

Steward Duties. All stewards were on duty during the day and returned to their homes in the evening. Stewards were responsible for environmental education/interpretation at the St. Regis, Saranac Inn, and Lake Placid boat launches, focusing on the control of exotic invasive plant and animal species, recreational information and local history. Stewards also conducted research throughout the lake systems and performed service projects. Steward research projects a frog call study of Upper St. Regis Lake, invasive plant mapping on Lake Placid, purple loosestrife

identification and removal on the St. Regis Lakes and Upper Saranac Lake, banded loon nest monitoring on the St. Regis Lakes, recreational traffic study of Fish Creek, design and delivery of educational outreach programs, development of a natural history guide to wetland plants for Paul Smith's College, and a clean up day on Lake Placid. Stewards also compiled statistics on recreational use at both boat launches (every day, Memorial Day to Labor Day) and on St. Regis Mountain on the weekends. Stewards stationed at the summit of St. Regis Mountain on the weekends offered interpretation and education to the public. Stewards continued to monitor and employ the boat wash station at Upper St. Regis landing.

Staff: Summer, 2003

<u>Name</u>	<u>Position</u>
Brundage, Shawn	Steward
Dalton, Sean	Steward (part-time)
Diamanti, Michele	Steward
Holmlund, Eric	Director
Levine, Justin	Steward
Mamere, Laurella	Steward
Riedl, Jeremy	Assistant Director
Shubert, Molly	Educational Programs Director

Important Findings

As has been the pattern over the four summers of the Watershed Stewardship Program, the stewards were very involved in 2003 with a wide array of projects in which data was collected and interpreted.

Lake Recreational Studies

I have presented here a digest of the findings for the past 4 years from our recreational studies of program lakes. I found it useful to compare findings for each lake over the period of our study to get a broad picture of trends.

Lake Placid	Boat Type/Size (indicate hp for MO)												Total # of Boats	total users	Registr		Total		Gender		Pets	4 stroke motor on outboard?
	(hp)	MO	MI	I/O	P	J	S	R	C	K	B	yr			N	Launch	M	F				
	2003	64	457	146	216	35	0	13	7	106	246	21			1247	3050	2005	44	15	2079		
2002	61	485	162	281	34	3	10	17	153	228	37	1410	3302	2004	101	13	2139	1153	143	35		

St. Regis	Boat Type/Size (indicate hp for MO)												Total # of Boats	total users	Registr		Total		Gender		St. Regis Canoe Area?	4 stroke motor on outboard?
	(hp)	MO	MI	I/O	P	J	S	R	C	K	B	yr			N	Launch	M	F				
	2003	33	171	0	2	5	1	1	14	382	128	20			724	1446	2005	32	19	928		
2002	60	170	3	8	3	0	0	10	478	182	53	907	1701	2004	12	19.467	1098	575	56	241	16	
2001	61	151	0	3	0	0	1	5	375	170	1	706	1417	n/a	3	19	882	535	44	n/a	n/a	
2000	n/a	136	6	n/a	n/a	n/a	n/a	13	267	64	misc	489	1005	n/a	n/a	n/a	643	352	29	n/a	n/a	

Upper Saranac Lake	Boat Type/Size (indicate hp for MO)												Total # of Boats	total users	Registr		Total		Gender		Pets	4 stroke motor on outboard?
	(hp)	MO	MI	I/O	P	J	S	R	C	K	B	yr			N	Launch	M	F				
	2003	66	633	66	201	29	39	19	6	267	114	5			1379	3263	2005	41	16	2207		
2002	68	624	61	210	38	36	29	14	188	63	35	1291	3210	2004	77	17	2110	1105	104	72		
2001	78	569	68	178	34	47	20	n/a	199	64	25	1204	3036	n/a	41	18	1911	1125	93			

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.

It is apparent from these results that use is comparable between Upper Saranac Lake and Lake Placid. However, as discussed in the comparison analysis within this report, this figure is somewhat misleading as Watershed Stewards man the Saranac Inn boat launch seven days per week as opposed to the four-day-per-week regimen at Lake Placid. Furthermore, the data from the Fish Creek study indicate an additional influx of at least 663 boats entering Upper Saranac Lake from that entry point. It is likely that the actual numbers of boats using Lake Placid and Upper Saranac Lake would rise significantly if both of these additional factors are accounted for.

As a caution, consumers of this data should recognize its limitations: you will find that the total user numbers aren't consistent with the totals of male and female users by year in some cases. It should be noted that there are instances of error in coding the volumes of data over the summer, although the impact of these errors is small overall. As far as they go, these figures are helpful in gaining an overall picture of the trends in usage at our three program sites. If anything, our data omissions and errors speak to a need for program expansion in terms of boat launch coverage and time allocated for database management. There also is room for improvement in our data management procedures, in

terms of how we collect and process our raw data. I will implement these changes next season.

As these figures indicate, the program encountered approximately 7,759 recreators over the course of the summer at the three boat launches. Each of these people at least saw a uniformed Watershed Steward on duty, and at most had an opportunity for an extended educational interaction with WSP staff. While most people received at least an introductory message about water quality and invasive species, I feel comfortable saying that almost all of the recreators observed someone employed to care for water quality issues, which sends a clear unspoken message.

Other Programs

Our Watershed Stewards also encountered 689 hikers at the summit of St. Regis Mountain during the weekends of our 15 week period of service. Stewards shared a message about the importance of summit vegetation and soil conservation, and acted as advocates for safe recreation and ambassadors for area attractions. Stewards conducted pilot studies of expanded coverage for the Lake Placid Village Launch and Lake Kushaqua Boat Launch.

This summer's stewards continued to hunt down and remove the exotic invasive plant, purple loosestrife, from identified patches on the St. Regis Lakes. We are happy to report a dramatic downturn in the loosestrife invasion, in part due no doubt to past efforts at plant control. Again, one steward monitored nesting loons in Spitfire and Upper St. Regis Lake in conjunction with the Adirondack Cooperative Loon Program. A Steward initiated a study of frog calls on Upper St. Regis Lake. One Steward planned and offered a full slate of educational programs for the entire regional community. Finally, a Steward worked with Paul Smith's College Professor Celia Evans to prepare an educational guide to wetland plants around the college's new Joan Weill Adirondack Library.

Our Stewards are allowed the opportunity to pursue their interests beyond public education in the Watershed Stewardship Program. This is, to me, what sets this program apart from similar efforts. Our Stewards engage in contact with experts from area land management agencies and non-governmental organizations to solve conservation and research problems. You can probably imagine that a 15 week job sitting at boat launches could become tedious. Our stewards agree. They find that the projects they work on that

get them away from the boat launches serve to inform and invigorate them for their duties as public educators back at the boat launches. These special projects also allow the Watershed Stewardship Program 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.

Lastly, the Director has crafted an assessment study that was initiated this summer to determine whether the program was having a measurable impact on its target audience. Preliminary data analysis indicates that our Watershed Stewards have had a positive effect on the public's knowledge of key water quality issues. Details may be found within this document.

Program Recommendations, 2003

The Watershed Stewardship Program offers a suite of services to local lakes and landscapes. The Program also aims at accomplishing aspects of its mission directly for the academic and professional benefit of its student staff and for Paul Smith's College itself. The program has become a vital resource in understanding the interaction between human activity and the health of local watersheds. Our data is useful in the effort to manage these resources in an informed and responsive way. To this end, I have prepared some recommendations for future seasons of the Watershed Stewardship Program.

Personnel:

- Continue to offer the Educational Programs Director position. I felt that this designation, along with the additional administrative time I built into the position's schedule (1 day per week) allowed this vital service to take a step forward this summer.
- Continue to offer the Assistant Director position, but make modifications. I will require that the A.D. keep the same schedule (i.e., 7 am – 4 pm) as the front-line stewards, to facilitate mentoring. I also will require a regular schedule for site visits by the A.D. for quality assurance and motivation.
- Retain one steward part-time over the Fall and Spring semesters to continue working on important projects and report writing.
- Collaborate with Aquatic Program and Outreach Program on staff training and employee sharing (share summer staff when appropriate).

Equipment:

- Purchase a laptop computer for use by stewards while at boat launches. Main purpose: data entry and report writing.
- Look into upgrading the boat we have access to on Upper Saranac Lake. While the USL Association has been generous in donating its use, we found too often this summer that it was inoperable.

Communication/ Information

- Complete web-guide to wetland vegetation
- Update program website in "off season" to be current at beginning of summer. Have staff or release time to support this goal.
- Notify program constituents that our cycle for reporting will be normalized to be consistent for the entire AWI. We will report on each year's findings by February of the following year
- Conduct advisory panel meeting in conjunction with AWI conference to be held on campus in the summer. This allows us to have greater attendance by seasonal stakeholders.

Research

- Finish construction of a pressed-plant herbarium of wetland plants.
- Integrate our frog study into national Frog Watch program
- Continue data analysis on program assessment project. Write up study. Seek publication.
- Identify a collaborative research project that spans the entire AWI, and serves to integrate its components.

Programs

- Educational Outreach Programs. Plan and release entire summer's schedule of educational programs early in summer. Repeat throughout summer. Partner with local summer camps and campgrounds to ensure larger audiences
- Revisit our coverage of St. Regis Mountain and other local trail systems. Investigate alternative partners interested in land-based conservation.
- Continue with writing a program wide risk management plan.
- Bring in a child safety programmer to train our educational outreach staffers.
- Investigate program expansion to Lower Saranac Lake.
- Investigate the addition of a boat wash station at the Saranac Inn public launch.

Finances

- Work with Institutional Advancement Office to approach funding sources in a timely manner. Goal: secure funding by December 2002 for summer, 2003.

WSP Funding

The Watershed Stewardship Program is funded by the Upper Saranac Lake Foundation, the St. Regis Lakes Foundation, the Lake Placid Shore Owners' Association and Paul Smith's College. We look forward to working with our newest supporter, the Glenn and Carol Pearsall Adirondack Foundation, in 2004. We invite current donors to continue their support of this successful and innovative program, and welcome new donors to join in this exemplary effort. The Watershed Stewardship Program is an exceptional example of a cooperative, community-based effort to protect threatened natural areas within the Adirondacks. The Watershed Stewardship Program Director is available to meet with interested parties to discuss future plans and opportunities for program support in detail.

Staff Biographical Notes

Prepared by: Molly Shubert

The WSP provided funding for four full-time stewards, one part-time steward, one educational programs coordinator/steward, an assistant director, and a director. Three steward positions were filled by current students of Paul Smith's College and two were filled by recent graduates, all in the Natural Resources baccalaureate program. The educational programs coordinator/steward position was filled by a recent graduate of St. Lawrence University, who is also a resident of Lake Placid, and second-year steward. The assistant director position was filled by a Paul Smith's College faculty member who is also a graduate of the Ecology and Environmental Technology program. Eric Holmlund directed the WSP; he is an Assistant Professor of Recreation in the Forestry Division at Paul Smith's College, and also teaches in the baccalaureate program in Recreation, Adventure Travel and Ecotourism.

Meet our Staff, Summer 2003. *Shawn Brundage* was a full-time steward who graduated from Paul Smith's College in 2003 with Associates degrees in Environmental Studies and Fish and Wildlife Management. Shawn was drawn to the WSP because it is a stepping stone to lead him to further environmental careers and because he enjoys the outdoor setting of the job. His projects included Purple Loosestrife removal, Lean-to assessment and monitoring, and helping with the educational programs for kids.

Sean Dalton was the part-time steward this summer, stationed primarily at the Upper St. Regis boat launch and on St. Regis Mountain. Sean will graduate in December 2003 with an Associate's degree in Environmental Studies, with plans to continue his education with a bachelor's degree. Sean feels the WSP is important to raising public awareness about local environmental concerns in order to maintain the ecological integrity of the Adirondacks.

Michele Diamanti was a full-time steward who graduated from Paul Smith's in 2003 with a Bachelor's degree in Natural Resources and Environmental Science. She views the importance of the WSP in its ability to educate people about the impact their activities have on the environment as well as minimizing environmental impacts. Her

projects included recreation use studies of St. Regis Mountain and Lake Placid, as well as the frog study.

Justin Levine returned for his second summer of stewardship. Justin is a senior at Paul Smith's College, studying Natural Resources Management and Policy. His projects this summer included Loon Monitoring on the St. Regis Lakes chain, in cooperation with the Adirondack Cooperative Loon Program, as well as invasive plant monitoring and mapping of the St. Regis Lakes chain, and writing a Field Guide for the Paul Smith's library wetland.

Laurella Mamere was a full-time steward who is working on a combined Associates degree at Paul Smith's College in Ecology and Environmental Technology and Environmental Studies. Her projects were recreation studies of Upper St. Regis Lake, Upper Saranac Lake, and Fish Creek.

Jeremy Riedl served his second summer as Assistant Director of the WSP. Jeremy is a member of the faculty at Paul Smith's College, teaching composition, speech, and mythology. He enjoys working for the WSP because, "an important part of stewardship is teaching others to be stewards."

Molly Shubert served as the Educational Programs Coordinator this summer in addition to stewardship duties at the boat launches. This was her second summer working for the WSP. She graduated from St. Lawrence University with a Bachelor of Arts degree in Environmental Studies and Government. Her interest in educating others about the environment and maintaining the quality of Adirondack lakes drew her to the WSP. In addition to coordinating the educational programs for kids she aided in invasive plant monitoring and mapping in the St. Regis Lakes chain and Lake Placid.

Watershed Stewardship Program: Assessment of program efficacy

Prepared by: Eric Holmlund

A. Introduction

The Watershed Stewardship Program has been providing services since 2000 with much anecdotal and popular acclaim, but with no quantifiable indicators of program success. As the program reaches maturity it is necessary to document the impact of the program in order to isolate the program's strengths and weaknesses. This project is the first step in the direction of gathering useful feedback and input from a broad swath of program subjects.

B. 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.

C. Background- WSP Program goals

Watershed Stewardship Program Mission Statement: The Watershed Stewardship Program is a community-led program designed primarily to educate the public about conservation, preservation, and stewardship issues of particular water bodies and forests within a watershed. The program serves Lower and Upper St. Regis and Spitfire Lakes and the forest land surrounding St. Regis Mountain, Upper Saranac Lake, and Lake Placid. Baseline data gathered through this program aids in the development of an area management plan currently being created by the Department of Environmental Conservation. The program capitalizes on the skills and training of students from Paul Smith's College's Natural Resources, Environmental and Forestry programs with direction from several of the College's professors. An advisory committee of community stakeholders, state organizations and College faculty will be kept informed and work together to help guide the development of the program.

The WSP produces digests and summaries of its objective, quantitative research each year for distribution to program stakeholders. In this manner, it is apparent whether the WSP is successful in obtaining, analyzing and disseminating targeted information. The WSP has documented its success in gathering and distributing information pertaining to recreational use, water chemistry, vegetation and other objective studies as exhibited in program summary documents from the summers of 2000, 2001 and 2002.

The WSP does not to date have similar documentation of its progress toward reaching its goals regarding public information and ultimately behavior modification vis-à-vis the threat of invasive species. This project will survey stakeholder perceptions of the effectiveness of the stewards' messages. The principle tool for obtaining this feedback will be postcard-sized feedback forms distributed to recreators and other stakeholders. Selected interviews may supplement this strategy.

D. 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?

E. Method:

There will be three levels of assessment that will be administered according to the willingness of respondents. The first level will be two simple yes/no questions that stewards will ask each recreator in the context of their interpretive message. The second level will be a 3 X 5 card with a limited number of written questions which will be offered to each recreator. This card could also be mailed. The third level will be a longer, more in-depth survey supplied to willing respondents via email.

Level 1 study (Watershed Stewardship Program Assessment Study- WSPAS)

Methods:

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.
5. Hand out Level 2 study (3 X 5 card) as appropriate, with pencils, if needed.
6. Point out the location of the collection box for Level 2 study cards.

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?

F. Rationale for Method:

In sum, we sought to divide the population of visitors into two groups, one reporting no prior contact with Watershed Stewards (non-treatment group) and another reporting prior contact with Watershed Stewards (treatment group). We sought a way to conveniently measure overall knowledge of water quality issues. Rather than resort to a

lengthy questionnaire or interview, we decided to target one central water quality issue as an indicator of overall water quality knowledge. We devised a scoring rubric for our stewards to rate performance when answering a prompt. These steps were designed to yield two populations, each generating a score that could be statistically compared.

G. Results:

Note well: The findings reported here are preliminary and incomplete. An updated report will be published in the spring of 2004.

Level 1 Study-

The Level 1 phase of the WSPAS was administered in two waves- 5/24/03 – 6/12/03 and late July-August 2003. The intent of this two-wave approach was to determine if there was any difference in subject knowledge over the course of the summer. This would be expected, especially for repeat subjects who had been exposed to the Stewards' message.

As of December, 2003, the AWI staff has analyzed the first wave of data (5/24-6/12). We expect that the entire summer's data will be analyzed over the winter.

Summary of Quantitative Findings:

N (number of subjects) = 101

P_y /Population Y (people with prior contact with stewards, determined by Q1) = 51

P_n /Population N (people without prior contact with stewards, determined by Q1) = 50

Mean score of P_y = 3.39

Mean score of P_n = 2.48

Dr. Daniel Kelting, AWI Director, performed a Chi-Square test on the data to determine whether the differences in scores were significant. His findings were thus:

“The Chi-Square statistic for testing the hypothesis that “respondents who had prior contact with a steward would have greater knowledge of milfoil” was significant with a P value < 0.0001, which means that there is less than a 0.0001% chance that the difference in response is due to random chance alone.”

This statement confirms what the casual observer might conclude by merely looking at the discrepancy in mean scores between the two populations. We conclude, with a high degree of certainty, that there is a connection between people having contact with Watershed Stewards and their increased knowledge of a targeted water quality issue, which in this case is E. watermilfoil. This finding supports our contention that the message our Watershed Stewards seek to impart is indeed finding its mark, and has penetrated the consciousness of our subjects. The level two test will determine, hopefully, the impact this increased knowledge has on actions.



As the above histogram indicates, most visitors without prior contact with Watershed Stewards scored relatively low on our rating scale for knowledge of Eurasian watermilfoil conservation issues. A clear trend toward elevated scores can be seen in those visitors who report prior Steward contact. Employing the language of our rubric (see below) approximately 75% of visitors with prior contact with Stewards possessed a “reasonable working knowledge” or better of E. watermilfoil. In contrast, only 50% of visitors with no prior contact with Stewards had reasonable working knowledge or better.

These preliminary data also suggest that over half of the public launching boats with no prior contact from Stewards did not understand that their watercraft potentially carry watermilfoil fragments that could spread infestation. However, over 75% of the people who have been contacted by Stewards know this fact. This underscores the importance of posting Watershed Stewards to convey this simple but essential piece of information.

Our preliminary evaluation of findings for the Watershed Stewardship Program Assessment Study seems to indicate that the Stewards are having a positive impact on visitor knowledge. We will continue with this regimen in 2004 to determine if the results are consistent over more than one season.

Level 2 study- 3 X 5 response card

Watershed Stewardship Program Assessment Study

Please help us improve our program by responding to the following questions. We will share this information with our sponsors as we evaluate our strengths and weaknesses. Please drop this form in the collection box when you have finished. Thank you!

1. Are you (please check one):
 A local resident, A seasonal resident, A visitor from New York State
 A visitor from another state/country _____

2. Have you encountered a Watershed Steward from our program? Yes No

3. Please rate your knowledge of water quality issues. (circle one)

	Low	Moderate	High	
1	2	3	4	5

4. Please rate your opinion of the effectiveness of the Watershed Stewardship Program.

	Low	Moderate	High	
(circle one) 1	2	3	4	5

5. Please describe the measures you take (if any) to prevent the spread of invasive species while boating. (Circle one)
 - a. Don't do anything.
 - b. Quick inspection of propeller and hull when removing boat- looking for weeds.
 - c. Thorough inspection of propeller, hull, trailer when removing boat. Pick off weeds and leave them at launch.
 - d. Thorough inspection of above when launching and removing boat.
 - e. Inspection plus boat washing.
 - f. Inspection, boat washing, bilge inspection and cleaning.

6. Have you changed your actions or habits regarding the environment as a result of the Watershed Stewardship Program? Yes No

7. What would you say are the strengths of the Watershed Stewardship Program?

8. What would you say should be changed or improved about the Watershed Stewardship Program?

9. If you wish to see results of this study, or to be part of our email list of people interested in the program, please provide your email address. (The WSP will not share your address with any other group.) _____

10. Please share any additional comments or suggestions:

I. Raw Data: first cohort, summer, 2003

2003 Watershed Stewardship Program Assessment Study- Level 1 (brief personal questions administered direct							
							P _x = people with no prior contact with stewards
P=Lake Placid; S=Upper St. Regis; U=Upper Saranac Lake;							P _y = people with prior contact with stewards
current n	site	date	Q1	Q2	Q4	Q3	
1	P	5/31/2003	N			3	P _x average score 2.48
2	P	5/31/2003	N			3	P _y average score 3.39
3	P	5/31/2003	N			4	
4	P	6/1/2003	N			5	P _x standard deviation 0.95
5	P	6/1/2003	N			4	P _y standard deviation 0.98
6	P	6/1/2003	N			3	
7	P	6/1/2003	N			4	read about program in newspaper
8	P	6/6/2003	N			2	
9	P	6/6/2003	N			3	
10	P	6/6/2003	N			2	
11	P	6/6/2003	N			4	
12	P	6/7/2003	N			2	
13	P	6/7/2003	N			2	
14	P	6/7/2003	N			1	
15	P	6/7/2003	N			1	
16	P	6/8/2003	N			2	
17	P	6/8/2003	N			3	
18	P	6/8/2003	N			3	
19	P	6/12/2003	N			2	
20	P	6/12/2003	N			1	
21	P	6/12/2003	N			2	
22	P	6/12/2003	N			3	
23	P	6/12/2003	N			2	
24	P	6/12/2003	N			2	
25	S	5/24/2003	N			3	
26	S	5/25/2003	N			4	
27	S	5/25/2003	N			2	
28	S	5/26/2003	N			2	
29	S	5/26/2003	N			2	
30	S	5/26/2003	N			2	
31	S	6/7/2003	N			2	
32	S	6/7/2003	N			2	
33	U	5/24/2003	N			1	
34	U	5/24/2003	N			2	
35	U	5/25/2003	N			1	
36	U	5/25/2003	N			3	
37	U	5/25/2003	N			3	
38	U	5/25/2003	N			3	
39	U	5/31/2003	N			2	
40	U	6/3/2003	N			3	
41	U	6/4/2003	N			2	
42	U	6/4/2003	N			3	from Florida
43	U	6/6/2003	N			1	
44	U	6/6/2003	N			3	
45	U	6/6/2003	N			3	
46	U	6/6/2003	N			1	
47	U	6/6/2003	N			2	
48	U	6/10/2003	N			3	
49	U	6/12/2003	N			4	
50	U	6/12/2003	N			2	
51	P	5/30/2003	Y	Y		1	contamination issues
52	P	5/31/2003	Y	Y		4	wash boat, milfoil, education, encountered WSP at SR
53	P	5/31/2003	Y	Y		4	milfoil, mussels, loosestrife, importance of education
54	P	6/6/2003	Y	Y		4	removal from boats
55	P	6/6/2003	Y	Y		4	fragmentation causes spreading
56	P	6/7/2003	Y	Y		3	milfoil
57	P	6/6/2003	Y	Y		3	clean boat
58	P	6/6/2003	Y	Y		4	fragmentation
59	P	6/6/2003	Y	Y		4	how they're spread
60	P	6/6/2003	Y	Y		4	came on boat
61	P	6/6/2003	Y	Y		3	affect fish population
62	P	6/6/2003	Y	Y		3	affect fish population
63	P	6/12/2003	Y	N		4	
64	P	6/12/2003	Y	Y		4	trailer cleaning, bilge pump
65	P	6/12/2003	Y	Y		4	washing techniques, letting boat sit for 5 days
66	P	5/30/2003	Y	Y		2	impact of lead on birds
67	P	5/31/2003	Y	Y		2	remembered topics, not much detail
68	S	5/25/2003	Y	Y		4	invasives, litter, knew MacKenzie by name
69	S	5/25/2003	Y	Y		3	5 invasives, litter
70	S	5/25/2003	Y	Y		2	very little- plant
71	S	5/25/2003	Y	Y		2	very little- plant
72	S	5/25/2003	Y	Y		5	Mike DeAngelo
73	S	5/26/2003	Y	N		4	native, already knew info
74	S	5/26/2003	Y	N		3	native, already knew info
75	S	5/26/2003	Y	Y		4	spreading of milfoil, growth rate
76	S	6/6/2003	Y	Y		3	wash the boat
77	S	6/6/2003	Y	Y		5	didn't have much contact w/stewards, values the progra
78	S	6/7/2003	Y	Y		3	boatwash use/sinker exchange
79	S	6/10/2003	Y	Y		4	no polluting, lead sinkers
80	S	6/10/2003	Y	Y		4	everything
81	U	5/24/2003	Y	Y		4	enthusiastic about program, resident, worked with Mike
82	U	5/24/2003	Y	Y		5	milfoil, local, professor of E.S.
83	U	5/25/2003	Y	Y		3	removal of milfoil
84	U	5/25/2003	Y	Y		4	milfoil
85	U	5/25/2003	Y	Y		4	removal/ suggested spray station
86	U	5/25/2003	Y	Y		2	fragmentation and boat inspection
87	U	5/25/2003	Y	Y		3	fragmentation, bilge pumping
88	U	5/25/2003	Y	Y		3	harvesting, how fast it grows
89	U	5/30/2003	Y	Y		2	"milfoil is good for bass"
90	U	5/30/2003	Y	Y		3	milfoil on USL, USR
91	U	5/31/2003	Y	Y		3	boat inspection/removal
92	U	5/31/2003	Y	N			in a hurry- talk later
93	U	6/3/2003	Y	Y		3	wash boat and trailer, watch for loons
94	U	6/7/2003	Y	Y		5	loons and lead sinkers
95	U	6/6/2003	Y	Y		4	invasives
96	U	6/6/2003	Y	N		2	
97	U	6/6/2003	Y	Y		5	program is useful
98	U	6/6/2003	Y	Y		2	stay out of weeds
99	U	6/10/2003	Y	Y		3	bad plant- didn't want to talk
100	U	6/12/2003	Y	Y		3	eurasian milfoil
101	U	5/24/2003	Y	Y		2	spreading milfoil, dive program

Recreation Study: Upper St. Regis Lake, 2003

Prepared by: Laurella Mamere

Introduction:

The recreational use study was conducted from May 23, 2003 to September 1, 2003. There were three main objectives to this study. The first was to enlighten the users of the boat launch about issues concerning exotic invasive species including Eurasian Water Milfoil, Zebra Mussels, and Purple Loosestrife. The second was to assess the amount and type of public recreational use on the St. Regis Chain and in the St. Regis Canoe Area. The third objective was to bring attention to lead poisoning in water fowl through a lead sinker exchange, sponsored by the Adirondack Cooperative Loon Program. The Stewards were available as a resource for recreational users of the St. Regis Lakes Chain, able answer various questions and offer brochures about natural and cultural resources.

Methods:

The study was conducted seven days a week, Friday through Thursday, from 7:00 am to 4:00 pm. The parameters examined in this study included boat type/size, registration information about the boat, information about the group including number of people, amount of time spent at the launch, pets, whether or not a brochure was taken, and plans to enter the St. Regis Canoe Area. The categories used to determine boat type included: outboard motor, inboard motor, stern drive (inboard-outboard), pontoon, jet propulsion, sail, rowboat, canoe, kayak, and barge. The boat size refers to the horsepower of outboard motors. Stewards also noted if the outboard motor was a four-stroke motor. Whether or not motor boats were registered was recorded. The year and state of registration was recorded if the boat was registered. The total number in the group was recorded, as well as the gender of group members. Stewards also observed and recorded whether the group had pets with them, if brochures were given to the recreational users, and how long users occupied the launch. Users that came to the

launch with canoes and/or kayaks were also asked if they intended to enter the St. Regis Canoe Area (SRCA), in order to help determine the amount of usage the area receives.

In addition to recording data at the launch the watershed steward would approach the boaters, introducing themselves and the Watershed Stewardship program. Stewards then delivered a brief message about exotic invasive species and how to prevent the spread of these species, encouraging recreational users of the launch to use the high-pressure, cold water boat wash station. Information about the Adirondack Cooperative Loon Program and the lead sinker exchange was also presented to recreational users of the launch.



Upper St. Regis Lake boat wash station.

Results/Discussion:

Totals for the data collected at the launch between Memorial Day (May 23, 2003) and Labor Day (September 1, 2003) included 1,446 people in 724 boats (see Appendix, Table 1). The gender breakdown of users was 928 men and 490 women. 25 recreational users of the Upper St. Regis Launch took a brochure that the watershed stewards offered to them. Overall the peak usage time was from July 4 to August 21 (Figure 1). The week

with the heaviest usage was the week of the Fourth of July. The average amount time spent at the launch was 19 minutes.

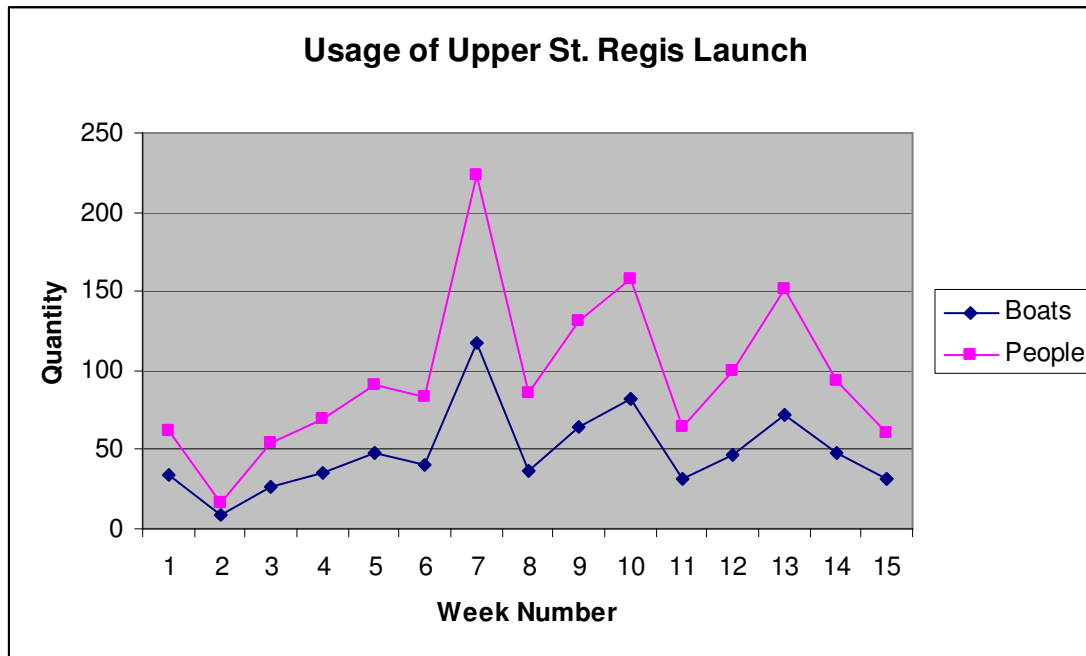


Figure 1: Usage of Upper St. Regis Launch. The number of boats launched compared to the number of recreational users at the launch sites, recorded by week, beginning May 23, 2003, ending September 1, 2003. Peak usage at the Upper St. Regis Launch site occurred in the 7th week, July 4, 2003 to July 10, 2003.

Canoes were the most highly launched at the Upper St. Regis boat launch, 382 in total. The second highest number of boats launched was outboard motorboats, with a total of 171 recorded. Out of the 171 outboards only 22% were four-stroke engines. The average horse-power of the outboard motors was 33. The third highest number of boats launched was kayaks, with a total of 128 launched. 73% of the boats launched at the Upper St. Regis Launch were non-motorized (canoes, kayaks, rowboats). 25% (180 boats) of the boats launched planned to enter the St. Regis Canoe Area. Motorized boats accounted for 27% of the boats launched at Upper St. Regis. 17% of the motorized boats launched at Upper St. Regis were not registered. Boats launched at Upper St. Regis were predominantly registered in New York State (179). Other states represented included

Delaware (1), New Jersey (2), Virginia (4), Connecticut (4), Maryland (3), Vermont (2), Florida (1), Ohio (2), and Mississippi (1) (Figure 3).



Getting ready to launch at the Upper St. Regis Lake landing.

A unique feature of the Upper St. Regis launch is its proximity to the St. Regis Canoe Area, a series of ponds and lakes that are designated a wilderness area for non-motorized craft including canoes and kayaks. This accounts for the large percentage of non-motorized craft launched at the landing (72%). Based on oral surveys of recreational users of the Upper St. Regis launch 25% of the total number of boats launched planned to enter the St. Regis Canoe Area.

A registration box was located at the Upper St. Regis launch again this summer. Justin Levine, watershed steward, took on the duty of constructing the box for one of his project days. It was placed to the right of the launch “ramp,” next to a tree that has been used for posting signs about exotic invasive species and the Adirondack Cooperative Loon Program. The registration box was designed to be moveable, in hopes that it would not be destroyed by the plow as the 2002 box was ruined.

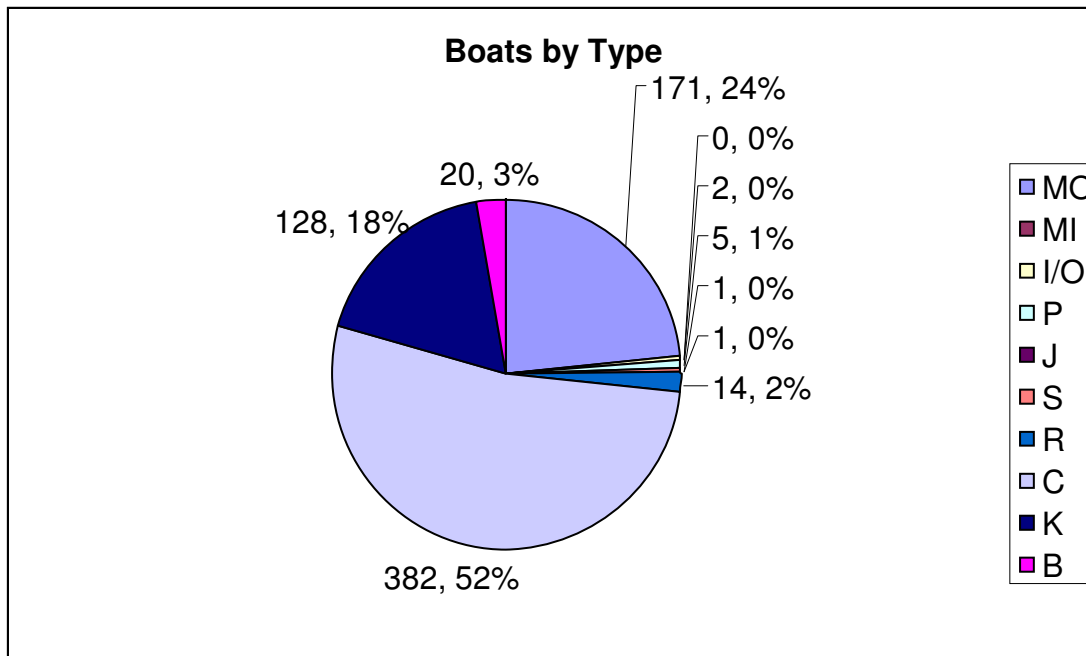


Figure 2: Boats by Type, Upper St. Regis Launch. This figure shows the types of boats launched at the Upper St. Regis site, as a whole number and as a percentage of the total number of boats launched. Key: MO (outboard motor), MI (inboard motor), I/O (inboard/outboard, stern drive), P (pontoon), J (personal watercraft), S (sailboat), R (rowboat), C (canoe), K (kayak), B (barge).

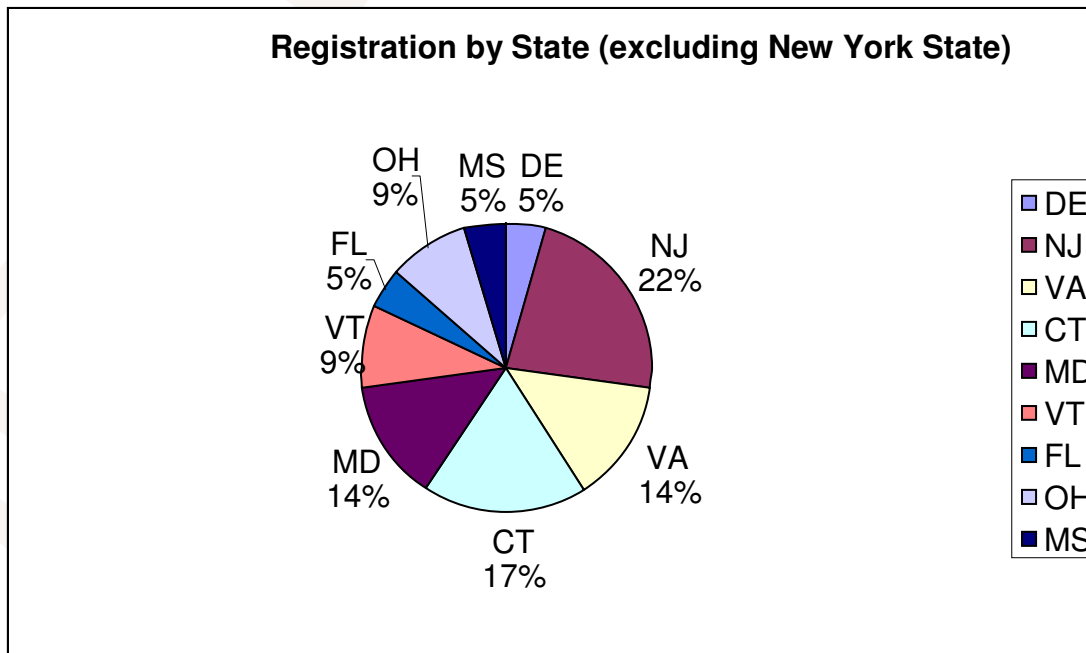


Figure 3: Registration by State (excluding New York State). The registration state for 201 boats was recorded at the Upper St. Regis launch. 89% (179 boats) were registered in New York State, with the remaining 11% registered to the other states shown in this figure. New Jersey represents 22% of the other states represented, with 5 boats launched that were registered in New Jersey.

Upper St. Regis Lake, 2003 Data

Week #	Date	Boat Type/Size (indicate hp for MO)											Total # of Boats	Total # People	Registered Boats		Average Time		Gender		Pets	Out Only	Brochure	SRCA
		(hp)	MO	MI	I/O	P	J	S	R	C	K	B			avg yr.	N	(min)	M	F					
1	5/23-5/29	12.9	5	0	0	0	0	0	0	20	9	0	34	62	4.25	0	0:13	48	14	0	5	4	11	
2	5/30-6/5	15.7	6	0	0	0	0	0	1	1	0	9	16	4.11	1	0:10	16	0	1	0	0	3		
3	6/6-6/12	33.2	13	0	0	0	0	0	0	7	3	4	27	54	4.76	4	0:24	38	16	0	2	2	8	
4	6/13-6/19	58.6	15	0	0	1	0	0	1	10	4	4	35	70	4.88	8	0:20	59	11	0	2	4	8	
5	6/20-6/26	63.8	19	0	0	0	0	0	0	23	6	0	48	91	4.56	6	0:35	74	18	3	8	7	12	
6	6/27-7/3	21.2	8	0	0	0	0	0	1	21	8	2	40	83	4.556	2	0:15	54	25	2	2	3	18	
7	7/4-7/10	33.7	17	0	0	1	0	0	4	64	32	0	118	224	4.927	0	0:20	130	94	10	10	3	27	
8	7/11-7/17	32.1	7	0	0	0	0	0	1	22	2	5	37	86	5.333	5	0:20	57	24	4	6	0	9	
9	7/18-7/24	38.8	13	0	0	0	0	0	0	35	12	4	64	131	4.933	3	0:20	86	45	1	7	0	13	
10	7/25-7/31	35	11	0	0	0	0	0	1	59	11	0	82	158	4.778	0	0:22	76	68	4	4	1	19	
11	8/1-8/7	29.4	12	0	0	0	0	0	1	15	4	0	32	65	4.583	0	0:21	41	23	3	2	0	6	
12	8/8-8/14	40.8	8	0	0	0	0	0	1	31	7	0	47	100	4.6	0	0:20	67	31	4	8	1	16	
13	8/15-8/21	13.1	18	0	1	1	0	0	1	37	14	0	72	151	4.813	2	0:15	87	63	3	6	0	8	
14	8/22-8/28	29.1	8	0	1	1	1	1	1	27	8	0	48	94	4.533	1	0:15	58	34	5	6	0	12	
15	8/29-9/01	33.7	11	0	0	1	0	0	1	10	8	0	31	61	4.806	0	0:20	37	24	2	9	0	10	
2003 Total:		32.7	171	0	2	5	1	1	14	382	128	20	724	1446	4.695	32	0:19	928	490	42	77	25	180	

Table 1: Upper St. Regis Lake, 2003 Data. This table shows the data collected at the Upper St. Regis Lake launch from May 23, 2003, to September 1, 2003. Totals are by week. (Data is missing for the following dates: June 27, July 10, 14, 15, August 10, 26).

Key for Lake Data Tables:

Boat Type/Size: HP=Horsepower (outboard motors), MO=Outboard Motor, MI=Inboard Motor, I/O=Inboard/Outboard Motor (Stern-drive), P=Pontoon, J=Jetski (Personal Watercraft), S=Sailboat, R=Rowboat, C=Canoe, K=Kayak, B=Barge.

Total # of Boats: The total number of boats recorded at the launch for the particular week.

Total # People: The total number of people recorded at the launch for the particular week.

Registered Boats: avg yr.=The average registration year of the boats recorded at the launch. N=Number of boats not registered.

Average Time (min)= The average time spent at the actual launch site.

Gender: M=male, F=female

Pets= The total number of pets recorded in a particular week.

Out only= The steward only recorded the particular boat exiting the lake, not entering the lake. Particularly important for Upper St. Regis Lake and Upper Saranac Lake where there are other places to launch a boat than where the stewards are stationed.

Brochure= The total number of people who took a brochure offered by the steward.

SRCA= The number of people planning to enter the St. Regis Canoe Area; unique to the Upper St. Regis Lake launch.

4 stroke motor= The number of outboard motorboats possessing 4 stroke, rather than 2 stroke, motors.

Recreation Study: Upper Saranac Lake- Saranac Inn Boat Launch,
2003

Prepared by: Laurella Mamere

Introduction:

The recreational use study was conducted from May 23, 2003 to September 1, 2003. There were three main objectives to this study. The first was to enlighten the users of the boat launch about issues concerning exotic invasive species including Eurasian Water Milfoil, Zebra Mussels, and Purple Loosestrife. The second was to assess the amount and type of public recreational use on Upper Saranac Lake. The third objective was to bring attention to lead poisoning in water fowl through a lead sinker exchange, sponsored by the Adirondack Cooperative Loon Program. The Stewards were available as a resource for recreational users of Upper Saranac Lake, able answer various questions and offer brochures about natural and cultural resources.

Methods:

The study was conducted seven days a week, Friday through Thursday, from 7:00 am to 4:00 pm. The parameters examined in this study included boat type/size, registration information about the boat, information about the group including number of people, amount of time spent at the launch, pets, whether or not a brochure was taken, and plans to enter the St. Regis Canoe Area. The categories used to determine boat type included: outboard motor, inboard motor, stern drive (inboard-outboard), pontoon, jet propulsion, sail, rowboat, canoe, kayak, and barge. The boat size refers to the horsepower of outboard motors. Stewards also noted if the outboard motor was a four-stroke motor. Whether or not motor boats were registered was recorded. The year and state of registration was recorded if the boat was registered. The total number in the group was recorded, as well as the gender of group members. Stewards also observed and recorded whether the group had pets with them, if brochures were given to the recreational users, and how long users occupied the launch.

In addition to recording data at the launch the watershed steward would approach the boaters, introducing themselves and the Watershed Stewardship program. Stewards

them delivered a brief message about exotic invasive species and how to prevent the spread of these species, encouraging recreational users of the launch to use the high-pressure, cold water boat wash station. Information about the Adirondack Cooperative Loon Program and the lead sinker exchange was also presented to recreational users of the launch.



Saranac Inn Boat Launch, Upper Saranac Lake

Results/Discussion:

Totals for the data collected at the Upper Saranac Lake launch between Memorial Day (May 23, 2003) and Labor Day (September 1, 2003) included 3,263 people in 1,379 boats (see Appendix, Table 2). The gender breakdown of users was 2,207 men and 962 women. 20 recreational users of the Upper Saranac Lake launch took a brochure that the watershed stewards offered to them. The two weeks recorded with the highest rates of usage were the week of the Fourth of July, and secondly, the week of August 8th to the 14th, with this week recording higher usage rates (Figure 1). Average time spent at the launch was 16 minutes.

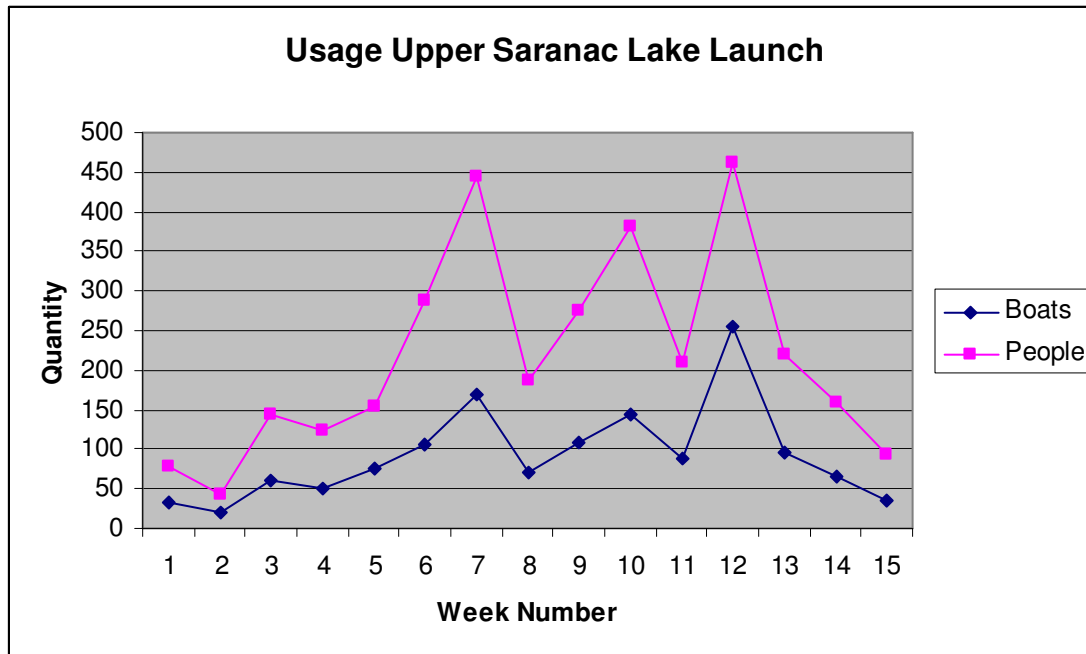


Figure 1: Usage Upper Saranac Lake Launch. The number of boats launched compared to the number of recreational users at the launch sites, recorded by week, beginning May 23, 2003, ending September 1, 2003. Peak usage at the Upper Saranac Lake launch occurred in the 12th week, August 8, 2003 to August 14, 2003, with 254 boats launched containing 463 people.

Overall the outboard motor was the type of boat most frequently launched on Upper Saranac Lake, with 633 launched throughout the summer. 11% of outboard motor boats recorded were powered by four-stroke motors. The average horse-power of the outboards was 66. The canoe was the second most popular boat with 267 being launched. Inboard/outboards or stern-drives recorded the third highest totals for launching with 201 launched in the summer of 2003. Motorized boats accounted for 71% of the boats launched at Upper Saranac Lake, compared to non-motorized boats accounting for 29% of the boats launched at Upper Saranac Lake. Motorized boats include outboard motors, inboard motors, inboard/outboards or stern drives, pontoons, personal watercraft (jetskis), and barges. Non-motorized boats include sailboats, rowboats, canoes, and kayaks (Figure 2). Only 4% of the motorized boats launched at Upper Saranac Lake were not registered.

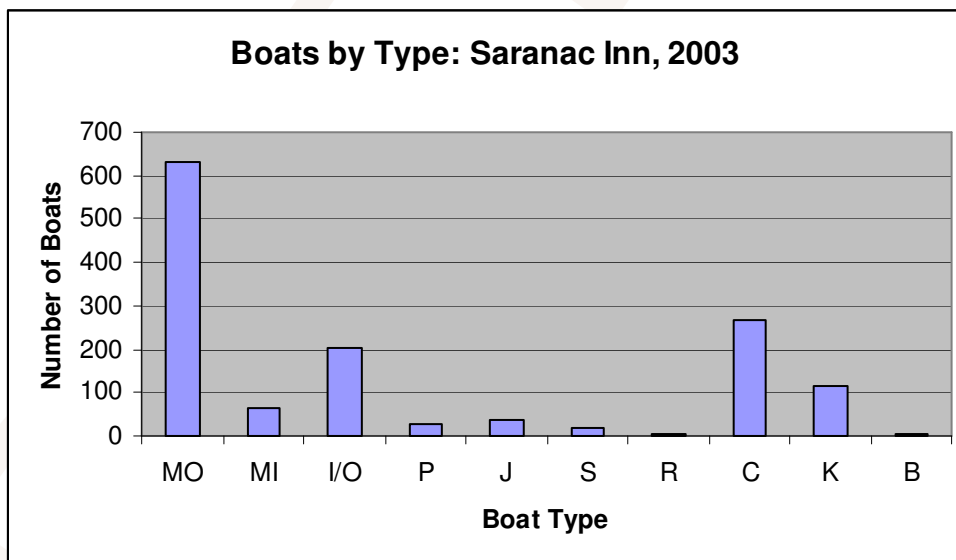
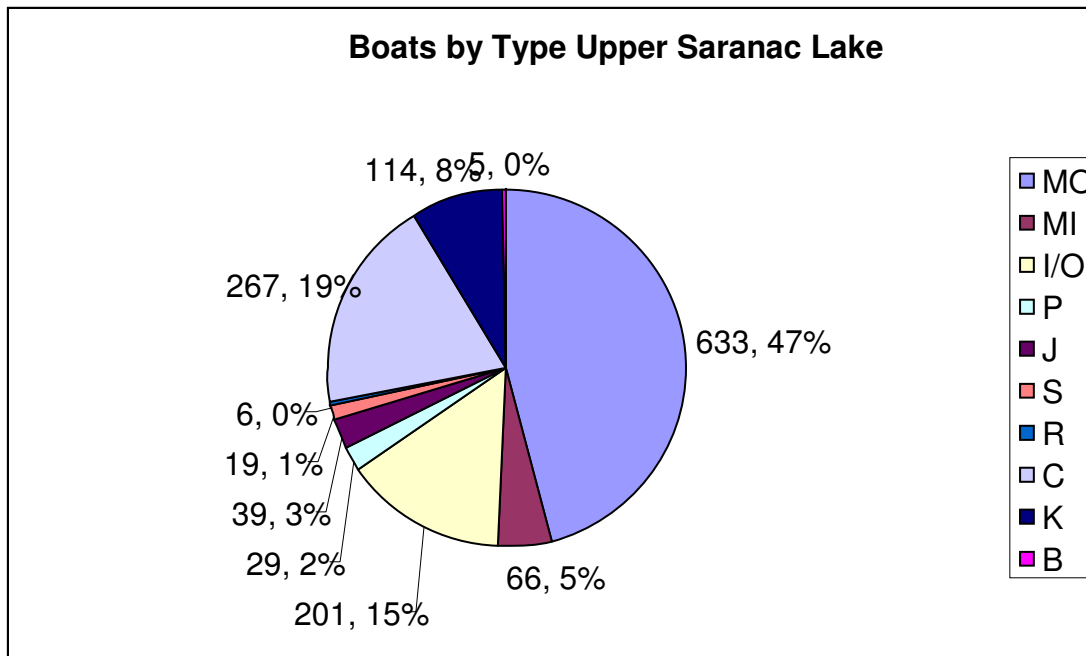


Figure 2: Boats by Type Upper Saranac Lake. This figure shows the types of boats launched at the Upper Saranac Lake launch, as a whole number and as a percentage of the total number of boats launched. Key: MO (outboard motor), MI (inboard motor), I/O (inboard/outboard, stern drive), P (pontoon), J (personal watercraft), S (sailboat), R (rowboat), C (canoe), K (kayak), B (barge).

Boats launched at Upper Saranac Lake were predominantly registered in New York State (802 of 889 recorded). Other states represented included Mississippi (11), Massachusetts (5), Connecticut (9), New Jersey (26), Maryland (6), Vermont (4), Pennsylvania (6), New Hampshire (3), Rhode Island (2), Michigan (1), North Carolina

(4), Missouri (2), Indiana (2), Ohio (2), Maine (1), Virginia (1), and one boat was registered in Canada (Figure 3).

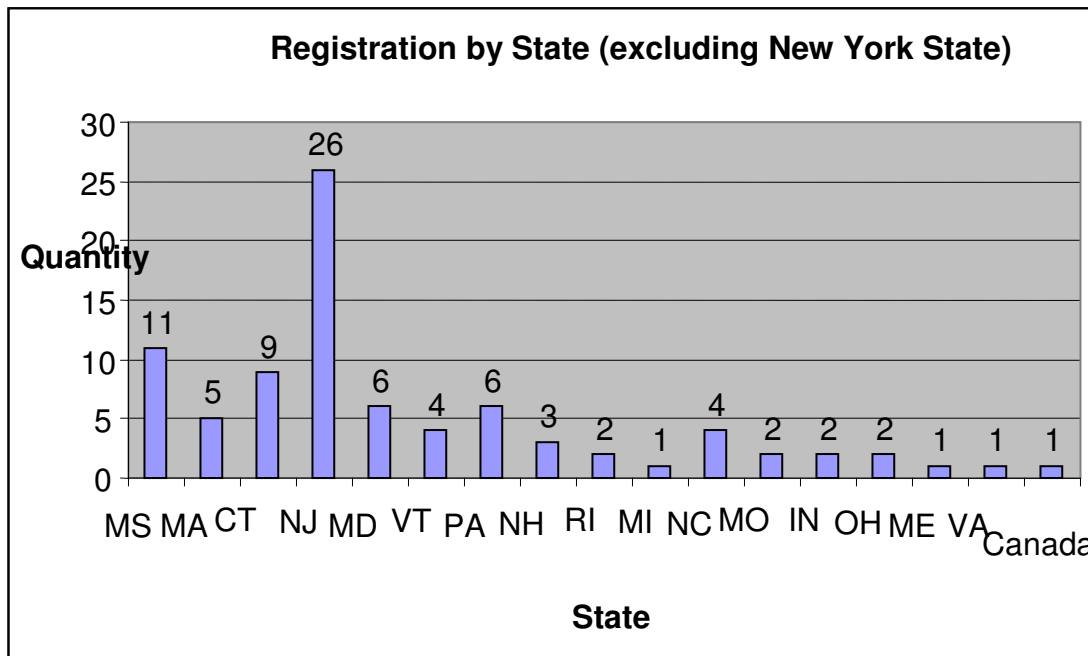


Figure 3: Registration by State (excluding New York State). The registration state for 889 boats was recorded at the Upper Saranac Lake launch. 90% (802 boats) were registered in New York State, with the remaining 10 % registered to the other states (and country) show in this figure. New Jersey represents 30% of the other states represented, with 26 boats launched that were registered in New Jersey.



Steward Shawn Brundage works on the boat at Back Bay.

We were again fortunate this summer to have the use of an Upper Saranac Lake Association outboard motorboat. The boat was kept in Back Bay, near the Upper Saranac Lake boat launch. The boat was implemented to record recreational use data at the mouth of Fish Creek Bay. The stewardship program was asked to record data at this location every weekend during the summer of 2003 to assess the number of boats and boaters entering the lake from the popular Fish Creek campground. Stewards navigated through the channel from Fish Creek Bay to a location in the mouth of Fish Creek Ponds to count boats and boaters leaving Fish Creek Pond and entering into either Follenbsy Clear Pond or Upper Saranac Lake.

DRAFT

Upper Saranac Lake

Week #	Weekly Totals:	Boat Type/Size (indicate hp for MO)											Total # of Boat	Total # People	Registration		Average T (minutes)	Gender		Pets Y	Out Only	Brochure	4 stroke motor or outboard
		(hp)	MO	MI	I/O	P	J	S	R	C	K	B			Avg. yr.	N		M	F				
1	05/23 to 05/29	70.8	23	0	3	0	0	1	0	6	1	0	34	78	4	0	17	48	26	4	11	4	2
2	05/30 to 06/05	57.5	12	1	8	0	0	0	0	0	0	0	21	42	4.449	2	11	37	5	0	1	1	3
3	06/06 to 06/12	70.1	38	2	8	3	3	1	1	3	2	0	61	145	4.16	4	14	103	43	10	13	3	5
4	06/13 to 06/19	62.3	29	3	10	3	0	0	0	3	3	0	51	124	4.54	2	16	87	37	11	8	0	3
5	06/20 to 06/26	81.3	35	4	13	1	1	0	0	7	15	0	76	155	4.69	3	15	111	42	6	6	1	3
6	06/27 to 07/03	64.4	44	6	26	3	4	1	0	14	8	0	106	288	4.568	1	18	194	95	18	10	4	4
7	07/04 to 07/10	58.3	71	12	37	7	3	4	1	12	21	0	168	444	4.92	5	14	277	168	26	21	1	7
8	07/11 to 07/17	77.1	35	5	11	5	1	0	0	4	10	0	71	186	4.61	4	15	140	47	8	15	2	3
9	07/18 to 07/24	77.9	65	0	12	1	7	2	0	12	9	0	108	275	4.86	3	18	185	93	7	18	0	8
10	07/25 to 07/31	72	57	11	18	4	4	2	0	44	3	0	143	382	4.73	3	33	279	101	6	34	0	10
11	08/01 to 08/07	55.8	33	3	14	0	1	3	0	29	5	0	88	210	4.88	4	19	155	55	6	20	0	7
12	08/08 to 08/14	61.8	101	3	15	1	7	1	3	93	30	0	254	463	5.09	4	14	255	121	8	26	3	9
13	08/15 to 08/21	69.4	42	4	13	1	5	3	0	25	3	0	96	220	5.03	0	13	155	61	4	11	1	3
14	08/22 to 08/28	60.3	29	4	9	0	1	0	0	15	4	4	66	158	5.041	5	16	107	51	6	20	0	3
15	08/29 to 09/01	53.6	19	8	4	0	2	1	1	0	0	1	36	93	4.941	1	12	74	17	4	12	0	1
Totals:		66.17	633	66	201	29	39	19	6	267	114	5	1379	3263	4.7006	41	16	2207	962	124	226	20	71
		(avg)													2005		(avg)						

Table 1: Upper Saranac Lake, 2003 Data. This table shows the data collected at the Upper Saranac Lake, Saranac Inn launch from May 23, 2003, to September 1, 2003. Totals are by week. (Data is missing for the following dates: July 16, August 17, 25, 30).

Key for Lake Data Tables:

Boat Type/Size: HP=Horsepower (outboard motors), MO=Outboard Motor, MI=Inboard Motor, I/O=Inboard/Outboard Motor (Stern-drive), P=Pontoon, J=Jetski (Personal Watercraft), S=Sailboat, R=Rowboat, C=Canoe, K=Kayak, B=Barge.

Total # of Boats: The total number of boats recorded at the launch for the particular week.

Total # People: The total number of people recorded at the launch for the particular week.

Registered Boats: avg yr.=The average registration year of the boats recorded at the launch. N=Number of boats not registered.

Average Time (min): The average time spent at the actual launch site.

Gender: M=male, F=female

Pets: The total number of pets recorded in a particular week.

Out only= The steward only recorded the particular boat exiting the lake, not entering the lake. Particularly important for Upper St. Regis Lake and Upper Saranac Lake where there are other places to launch a boat than where the stewards are stationed.

Brochure= The total number of people who took a brochure offered by the steward.

SRCA= The number of people planning to enter the St. Regis Canoe Area; unique to the Upper St. Regis Lake launch.

4 stroke motor= The number of outboard motorboats possessing 4 stroke, rather than 2 stroke, motors.

Recreation Study: Lake Placid State Boat Launch, 2003

Prepared by: Michele Diamanti

Introduction:

This was the second year the Watershed Steward Program operated at the Lake Placid State boat launch, on Mirror Lake Drive. Stewards were stationed at the launch beginning May 24, 2003 and ending September 1, 2003, Thursday through Sunday. During the last two weeks of the stewardship season Wednesdays were added to the launch duty to make a total of five days of stewardship.

There were three objectives for the Watershed Stewardship program in Lake Placid. Firstly, stewards observed the usage of the Lake Placid State boat launch. Secondly, stewards were present to provide an interpretive message to recreational users. One focus of education was to inform people that Lake Placid is the water supply for Village of Lake Placid and the town of North Elba. As part of this message, the public was encouraged to use public restrooms located at the launch and not to dispose of anything into the lake. The second focus of education was to inform recreational users about invasive species such as Eurasian Milfoil, Purple Loosestrife, and Zebra Mussels. While none of these species are currently present in Lake Placid the stewards still educate recreational users as a preventive measure. A third focus was to foster responsible recreation – Stewards reminded recreators of the personal watercraft ban and speed limits within close proximity to shore. Stewards handed out brochures, including one published by the Shore Owners Association titled “Boating Guide: Lake Placid Lake”, which included a map, important regulations, general information about the area and information about invasive species. Other brochures on hand included the New York State boating guide and information on the Adirondack Cooperative Loon Program. Stewards answered questions about the Lake Placid watershed.

Methods:

The recreation study was conducted from 7:00 am until 4:00 pm, for four days a week. The parameters examined in this study included boat type/size, using the following distinctions: motor outboard and horsepower, motor inboard, stern drive

(inboard/outboard), pontoon, sail, rowboat, canoe, kayak, and barge. The group size was documented along with the gender members of the group. Time spent at the launch was also recorded. The presence of pets was noted, whether a brochure was given, and if the outboard motor was a four-stroke engine. Stewards also made notes and comments about the users.

In addition to recording data at the launch the watershed steward would approach the boaters, introducing themselves and the Watershed Stewardship program. Stewards then delivered a brief message about exotic invasive species and how to prevent the spread of these species, encouraging recreational users to inspect and clean their boats between each use in different lakes and launch sites. Information about the Adirondack Cooperative Loon Program and the lead sinker exchange was also presented to recreational users of the launch.

Results:

Over the fifteen weeks that the launch was staffed by a watershed steward, a total of 3,050 recreational users entered the lake through this launch in 1247 boats. The average amount of time spent at the launch was 15 minutes. This year had two peaks in usage during the season, week 6 (June 26 – 29) and week 13 (August 13 to 17) (Figure 1). The week of June 26, 2003 through June 29, 2003 was the busiest at the Lake Placid launch, with 137 boats launched and 326 recreational users entering the lake through this launch.

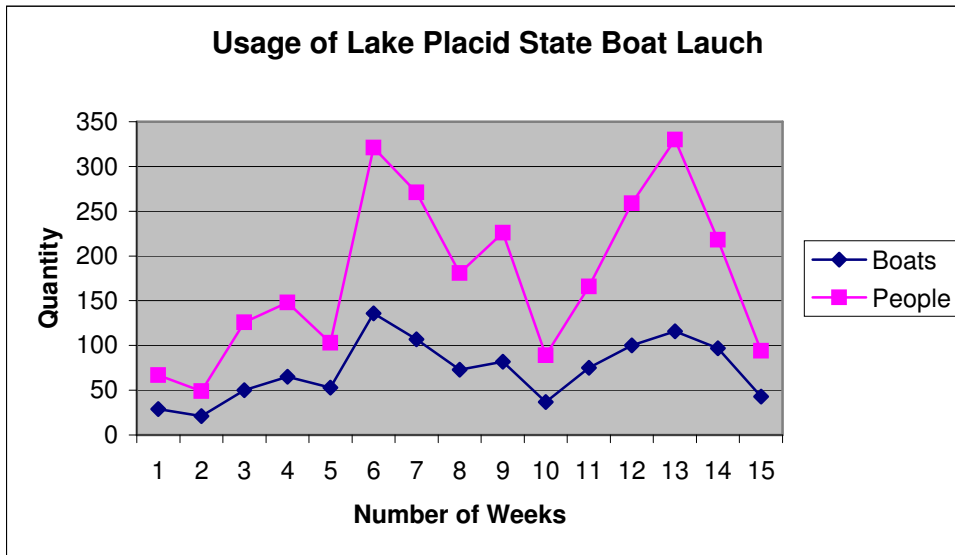


Figure 1: Usage of Lake Placid State Boat Launch. The amount of boats and people that used the Lake Placid State Boat Launch from Memorial Day week to Labor Day week. Peak usage occurs from week 6 to week 13, with the most boats being launched in week 6, and the most boaters using the launch in week 13.

Following a trend from 2002, outboards engines were again the most popular type of boat launched at the Lake Placid site (36%) (Figure 2). The average horsepower was 64 hp and 7% of outboards have four stroke motors. Inboard/outboard engines made up 17% of the total boats used on the lake. Inboard engine made up only 12%. Non-motorized vessels increased, especially the use of kayaks; they made up 19% of the boats use on the lake, while canoes only made up 9% of the boats. The other categories only made up of less than 3% of the total boats on the lake. There were no jet skis present on the lake this year as they were banned from the Town of North Elba in the summer of 2002. 95% of motorboats were registered, with an average registration date of 2005.

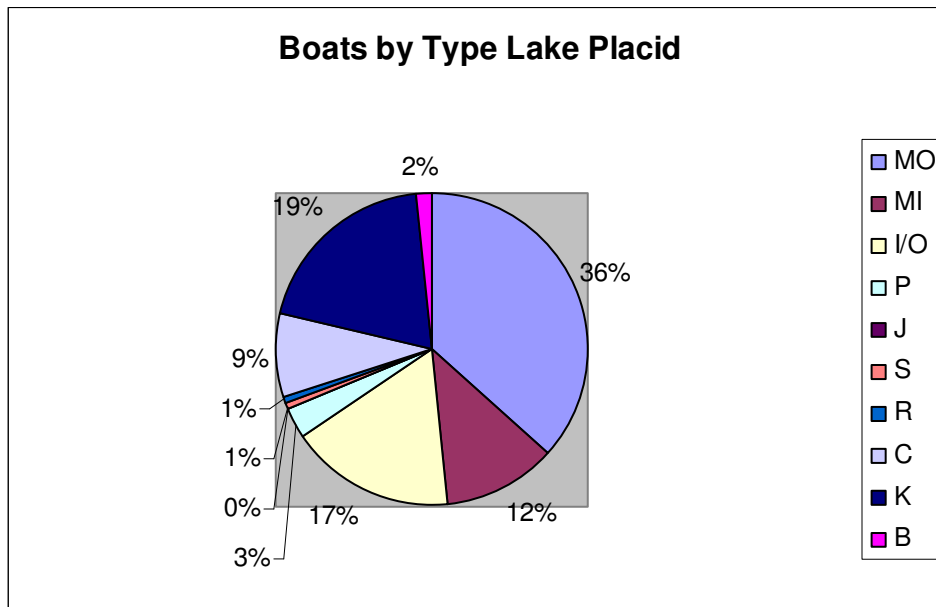


Figure 2: Boats by Type Lake Placid. The amount of different types of boats launched at the Lake Placid State boat launch between Memorial Day week to Labor Day week. MO= outboard engine MI= inboard engine I/O= inboard/outboard (stern drives) P= pontoon boat J=jet ski S= sailboat R= rowboat C=canoe K= kayak B= *barge.

*Barges were documented each time they used the launch area in attempt to assess commercial/construction use of the area.

Discussion:

This study gives an idea of the type of boats present at the Lake Placid State boat launch, but there are some limitations to this study. A steward is only present for only certain amount of time this means that activity is only documented during the time they are present at the launch. Some boats are being recorded more than once at the launch but there is no way of ensuring that these boats are not entered into our data record more than once. There are many boaters who use the Lake Placid launch on a regular basis, included in this category are construction workers and contractors and repeat visitors that do not have a place to dock their boat on the lake. For the purposes of this study it is not yet possible to separate the regular users from the new users of the Lake Placid launch site.

Many recreational users of the Lake Placid launch feel that the watershed stewardship program is very useful and positive for the lake. They feel it protects the

drinking supplies, and protects the lake from invasive species, which are our main focus for Lake Placid. Many people are aware of the Program, the issue of invasive species, lead sinker exchange, and the Adirondack Cooperative Loon Program.

In sorting and processing the data sheet, many of the stewards have made many observations about type of usage (i.e. commercial vs. recreational). It has been noted that site has be utilized for deliveries and pickup of boats, boat rented by groups renting camps on the lake, boat repair companies performing work on boat owned by camp owners on the lake, guides services taking guest out on lake, and camp owner launching boats for the summer season. Next year it would be interesting to see how many people use the lake for recreation or commercial purposes. Maybe a column should be added to data sheet form for this.

Stewards have seen a considerable amount of traffic coming from Mirror Lake, crossing Mirror Lake Drive, and launching canoes, kayaks, and rowing sculls into Lake Placid. Parking continues to be a constant source of frustration at the Lake Placid launch site as it is not patrolled regularly, and the signs and existing lines are unclear. Some users of the site assume that one of the roles of the stewards is to be parking attendant, and in many instances this is what we became, either asking people not to park in the lot unless they were launching or hauling boats, making sure single cars were not parking in spaces for trailers, and mediating when users became irate over parking issues.

In conclusion, the program is an excellent resource for the Lake Placid State Launch. It provides information for new comers to the area, and keeps regular users of the launch informed about issues facing the environment and the Lake Placid watershed. The program should continue because of the benefits it provides for recreational users and shore owners of Lake Placid.

Week #	Weekly Totals:	Boat Type/Size											Total Number Boats	Total # of People	Registration		Total Time (min)	Gender		Pets	Out Only	Brochure	4 stroke motor on outboard		
		avg. HP	MO	MI	I/O	P	J	S	R	C	K	B			Average Year	No regist		M	F						
1	5/19-5/25	60	18	3	2	0	0	0	0	2	3	1	29	67	3.64	1	20	48	17	0	7	1	2		
2	5/26-6/1	44	12	1	3	1	0	0	0	0	3	0	20	49	3.99	1	15	42	7	3	7	3	1		
3	6/2-6/8	79	25	10	4	0	0	0	0	6	4	1	50	126	4.7	0	25	91	37	5	9	6	2		
4	6/9-6/15	71	28	2	19	2	0	0	0	0	9	5	65	148	4.52	7	13	115	35	3	3	3	4		
5	6/16-6/22	68	23	9	8	3	0	0	0	1	9	0	53	103	4.36	1	14	83	24	4	10	0	3		
6	6/26-6/29	90	35	15	33	5	0	1	0	14	31	3	137	326	4.8	1	15	220	107	9	10	4	3		
7	7/3-7/6	56	45	14	32	2	0	1	0	8	26	2	130	334	4.87	7	13	220	112	19	2	10	0		
8	7/10-7/13	59	20	6	10	2	0	2	0	7	24	2	73	181	4.98	1	18	127	53	3	7	0	1		
9	7/17-7/21	75	38	11	28	0	0	0	1	4	14	1	97	252	5.06	4	18	171	81	13	12	0	3		
10	7/24-7/27	61	27	8	11	5	0	0	0	4	16	2	73	175	4.99	3	14	120	60	5	13	0	1		
11	7/31-8/3	50	22	11	10	2	0	0	4	19	7	1	76	167	4.63	4	13	120	71	6	10	0	0		
12	8/7-8/10	58	55	12	11	5	0	0	0	7	9	1	100	259	4.8	4	12	167	91	9	20	0	1		
13	8/14-8/17	61	39	18	20	2	0	1	1	12	23	0	116	330	4.74	4	14	201	125	8	12	0	5		
14	8/20-8/24	52	29	18	10	1	0	1	0	12	34	0	105	238	4.76	3	12	156	82	4	18	2	2		
15	8/27-8/29	72	41	8	15	5	0	7	1	10	34	2	123	295	4.63	3	13	198	96	12	28	0	5		
		average											avg.												
Grand Total		64	457	146	216	35	0	13	7	106	246	21	1247	3050	4.6313	44	15	2079	998	103	168	29	33		
		2005																							

Table 1: Lake Placid, 2003 Data. This table shows the data collected at the Lake Placid launch from May 23, 2003, to September 1, 2003. Totals are by week.

Key for Lake Data Tables:

Boat Type/Size: HP=Horsepower (outboard motors), MO=Outboard Motor, MI=Inboard Motor, I/O=Inboard/Outboard Motor (Stern-drive), P=Pontoon, J=Jetski (Personal Watercraft), S=Sailboat, R=Rowboat, C=Canoe, K=Kayak, B=Barge.

Total # of Boats: The total number of boats recorded at the launch for the particular week.

Total # People: The total number of people recorded at the launch for the particular week.

Registered Boats: avg yr.=The average registration year of the boats recorded at the launch. N=Number of boats not registered.

Average Time (min): The average time spent at the actual launch site.

Gender: M=male, F=female

Pets: The total number of pets recorded in a particular week.

Out only= The steward only recorded the particular boat exiting the lake, not entering the lake. Particularly important for Upper St. Regis Lake and Upper Saranac Lake where there are other places to launch a boat than where the stewards are stationed.

Brochure= The total number of people who took a brochure offered by the steward.

SRCA= The number of people planning to enter the St. Regis Canoe Area; unique to the Upper St. Regis Lake launch.

4 stroke motor= The number of outboard motorboats possessing 4 stroke, rather than 2 stroke, motors.

Recreation Study: Lake 2003 Summary and Comparison

Prepared by: Molly Shubert

During the summer of 2003 Watershed Stewards continued to provide their services to the users of the Upper St. Regis Lake, Upper Saranac Lake, and Lake Placid boat launches. Stewards were stationed at these launches beginning Saturday, May 24, 2003 (Memorial Day weekend) and ending Monday, September 1, 2003 (Labor Day). Stewards recorded a total of 3,350 boats between the three launches, and spoke to 7,759 boaters while they utilized the launch sites. The Upper St. Regis Lake and Upper Saranac Lake launches were staffed seven days a week by Watershed Stewards. Throughout the majority of the summer the Lake Placid launch was staffed four days a week, and for the last two weeks of August stewardship was expanded to five days a week at this site.

Similar data was collected at all three launches by the stewards, including: boat type/size, using the following distinctions: motor outboard and horsepower, motor inboard, stern drive (inboard/outboard), pontoon, sail, rowboat, canoe, kayak, and barge. The group size was documented along with the gender members of the group. Time spent at the launch was also recorded. The presence of pets was noted, whether a brochure was given, and if the outboard motor was a four-stroke engine. Stewards also made notes and comments about the users. Unique to the Upper St. Regis Lake launch was whether or not operators of non-motorized boats intended to enter the St. Regis Canoe Area.

Stewards stationed at Upper Saranac Lake recorded the most boats of the three launches, with a total of 1,379 boats and 3,263 people. Lake Placid was the second busiest launch, with 1,247 boats recorded and 3,050 people. If stewardship were expanded to seven days at the Lake Placid site, the total numbers would probably exceed those of Upper Saranac Lake. Upper St. Regis remained the quietest of the three launches, with 724 boats recorded, containing 1,446 people. (Figure 1)

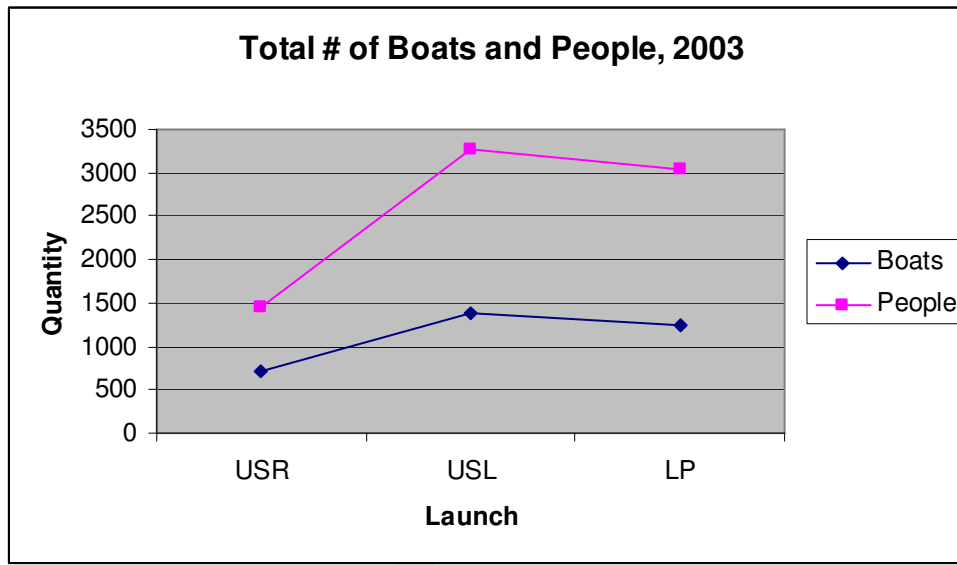


Figure 1: Total # of Boats and People, 2003. This line graph shows the distribution of boats and people using the three boat launches in 2003. Upper Saranac Lake had the highest volume of use.

Users spent the most time at the Upper St. Regis boat launch. This can probably be attributed to the large amount of non-motorized craft embarking from this site to the St. Regis Canoe Area. Many boaters heading into the SRCA would spend more than one day there, thus requiring more gear, which takes longer to load into the boats. Another factor making the Upper St. Regis Lake launching time the longest is that it is the most difficult to back a trailer into. The limited parking area makes it difficult to maneuver a truck and trailer, and once trailers are backed in it is difficult to put them at the correct angle to access the deeper water. The average amount of time spent at the Upper Saranac Lake launch was 16 minutes, and 15 minutes was average at Lake Placid.

Nearly $\frac{3}{4}$ of the boats launched at Upper St. Regis Lake were non-motorized (canoes, kayaks, rowboats, or sailboats), with 73% recorded as non-motorized. In contrast, 70% of boats launched in Lake Placid were motorized, and 71% of boats launched at Upper Saranac Lake were motorized (Figure 2). Outboard motorboats which were recorded at Upper St. Regis Lake exhibited a lower average horsepower than the other two lakes (33 hp). Outboard motorboats on Upper Saranac Lake had an average horsepower of 66. Outboard motorboats on Lake Placid had an average horsepower of 64.

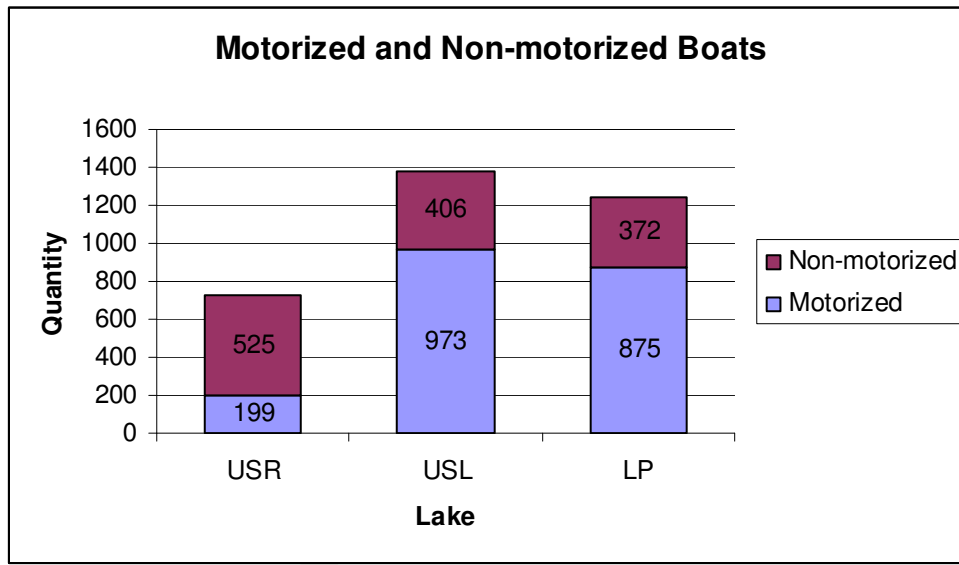


Figure 2: Motorized and Non-motorized Boats. This chart shows the breakdown of motorized and non-motorized boats for each of the three lakes studied, as well as the total number of boats recorded at each lake. (USR=Upper St. Regis Lake, USL=Upper Saranac Lake, LP=Lake Placid).

The week of the Fourth of July tends to be a busy one for boating, with many families on summer vacation and people receiving time off for the national holiday. At the Upper St. Regis Lake and Upper Saranac Lake launch sites, it held true that the week of the Fourth of July was the busiest. The busiest week in Lake Placid was the week before the Fourth of July, June 26 to June 29, 2003.

Upper St. Regis Lake remains the only boat launch with a boat wash station. It is cold water, high-pressure spray system used to spray aquatic plant and animal life off of hulls, props, and trailers.

Compared to the data from 2002, there was a slight decrease in the total number of boats and boaters recorded and reached by the WSP at the three lakes. In 2002 a total of 3,608 boats were recorded, compared to a total of 3,350 boats in 2003. The number of boaters also decreased slightly, with 8,213 boaters in 2002 and 7,759 boaters in 2003. There are a number of factors that could influence these numbers including the economy, the weather, and a decreased interest in boating.

Examining the data from each lake individually gives an idea of the total number of people approached by the watershed stewards each summer. For Upper St. Regis Lake, the summer of 2002 was the busiest (Figure 3).

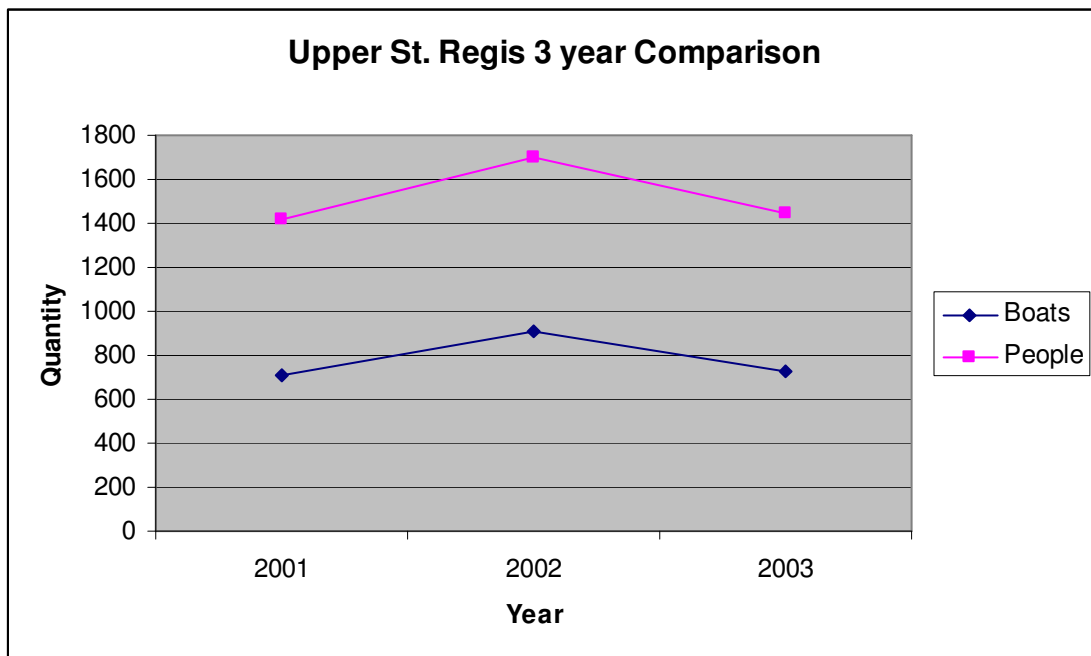


Figure 3: Upper St. Regis 3 year Comparison. This figure shows the total usage of the Upper St. Regis launch for the years 2001, 2002, and 2003. The summer of 2002 was the busiest, with 907 boats launched containing 1,701 people.

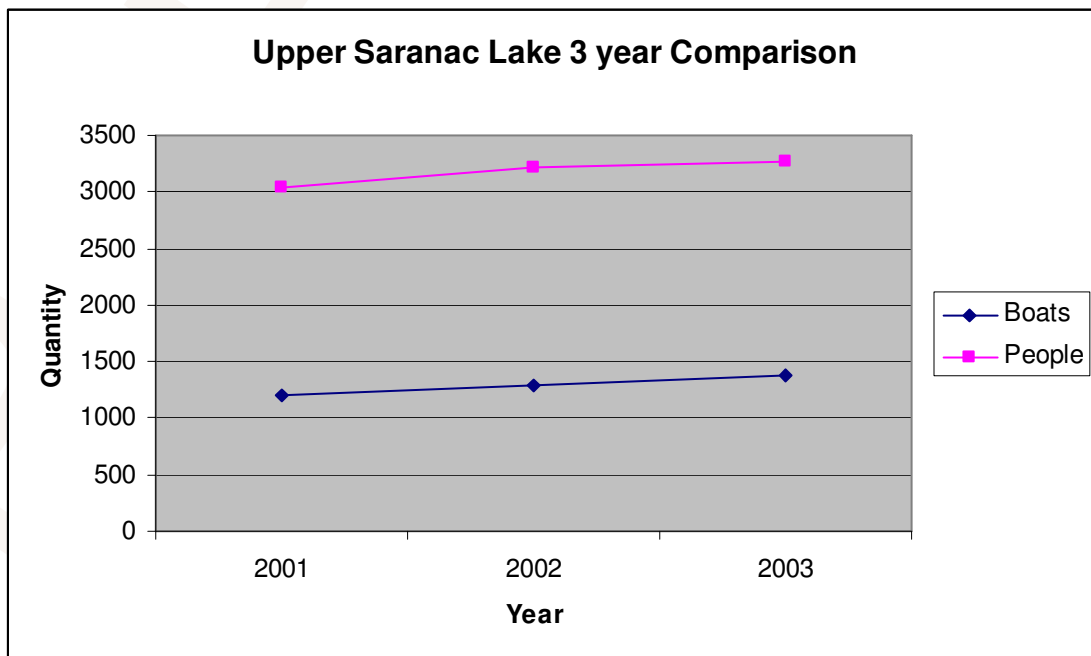


Figure 4: Upper Saranac Lake 3 year Comparison. This figure charts the totals for the number of boats and people recorded at the Upper Saranac Lake boat launch during the 3 summers that the stewardship program has stationed someone there. There has not been a huge change in the volume of use. 2003 was slightly busier, with 1,379 boats recorded containing 3,263 people.

There was not a huge change in the volume of use of the Upper Saranac Lake Back Bay boat launch during the three summers that stewards have been stationed there. 2003 was slightly busier than the first two summers (Figure 4). The Lake Placid boat launch reflects a slight decrease in the amount of use compared to 2002 (Figure 5). In 2002 a steward was stationed at the Lake Placid launch five days a week for the majority of the summer, compared to four days a week during the summer of 2003.

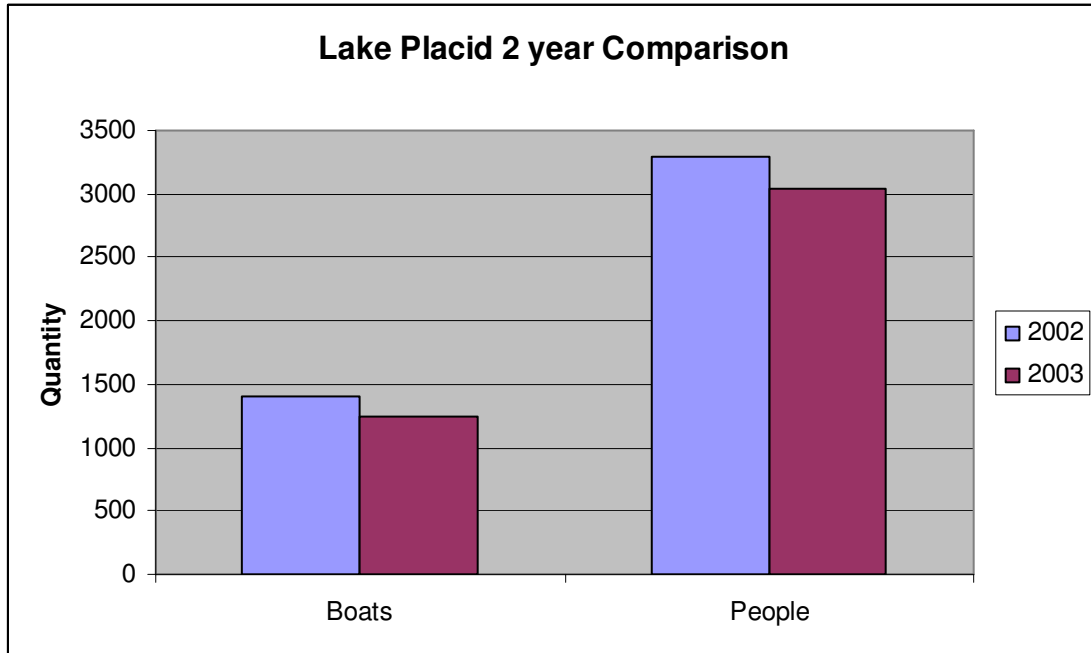


Figure 5: Lake Placid 2 year Comparison. This figure compares the total number of boats and people recorded for the summers of 2002 and 2003 at the Lake Placid boat launch.

Recreation Study: St. Regis Mountain

Prepared by: Michele Diamanti

Introduction:

St. Regis Mountain (elevation of 2,873 feet) is located in the St. Regis Canoe Area that encompasses the Paul Smith's College campus. The Canoe Area is currently managed as "wilderness" as defined by the Adirondack Park State Land Master Plan. According to the State Master Plan, wilderness is an area of land that is undisturbed by human habitation. This area gives the opportunities for solitude, primitive, and unconfined types of recreation. The goal of the Adirondack Park State Land Master Plan is to protect and preserve the ecological, educational, scenic and historical value of the land. The St. Regis Canoe Area Unit Management Plan has not been completed. Public comments were initially sought in 2001 and a draft unit management plan has yet to be released. (DEC, 1999).

The Paul Smith's College Watershed Stewardship Program has kept these goals as objectives on the summit of St. Regis Mountain. In 2000, the program had a steward on the summit seven days a week. In the last three years the total number of days spent on the mountain has decreased to just the weekend, but the interpretive message and the data collected still has remained the same. The data that is collected includes how much hiking takes place on the trail and to the summit. The stewards also observed the behavior of hikers on the summit and trails, with the main goal being to deliver an interpretive message. The purpose of the message was to inform the public about protecting the Adirondack watersheds and alpine forest. This included encouraging the public to walk on durable surfaces such as bedrock on the summit, staying on the trail and not walking on the outskirts of the trail where erosion can take place. The stewards were available to offer information regarding camping/hiking, flora/fauna identification, natural/cultural history, regulation, and help people interpret the mountain and lake that occupy the St. Regis summit view.

Methods:

Stewards were stationed at the summit of St. Regis Mountain on weekends beginning May 25, 2003 (Memorial Day) and ending September 1, 2003 (Labor Day). Stewards were expected to arrive at the trailhead by 7 a.m. in order to be stationed on the summit by 10 a.m. In the case of unfavorable weather (i.e. thunderstorms or rain), the steward would not be present at the summit. Each Steward remained on the summit from 10:00 am to 3:30 pm for data collection and interpretation.

Data Collection:

Each Steward was equipped with a data form to record their observations of hikers on the summit of St. Regis. One of the main observations recorded was hiker readiness. This was determined by observing several things about the hikers. Stewards looked at the type of equipment such as presence of backpack, type of clothing (i.e. cotton clothing) and footwear (sneakers vs. boots). The type of gear was noted on the forms. The stewards also noted the behavior of hikers including actions such as staying on rocky surfaces compared to hiking on grassy areas or climbing the fire tower on the summit of the mountain. We were also interested in quantity of hikers, and recorded data including the quantity and gender of hikers in a group. In addition we recorded the presence of pets such as dogs that hikers brought with them. Weather was also taken into account. Weather was recorded (clouds, wind, and estimated temperature) because it seems to have a significant impact on recreational activity.

Interpretive Message:

After giving hikers time to relax after their hike up St. Regis Mountain, a Watershed Steward would approach them. The steward would introduce them themselves and describe the Watershed Stewardship Program. We would think of many different creative ways to convey the message of responsible hiking practices such hiking on hard surfaces and staying on the trails in order to protect the delicate vegetation.

These talks would lead to other conversations sometimes relating to natural/cultural history, interpreting the summit view, and questions about the fire tower. In addition conservation allowed for the steward to take a closer look at the gear hikers used as well as their behavior on the summit.

At 3:30 pm the steward would descend the mountain. If it was busy the steward would stay longer. Stewards were encouraged to descend the mountain at this time for their own personal safety. A Steward would conclude the day around 5:00 pm at the mountain's trailhead, followed by a phone call to the assistant director reporting that they were safely down the mountain.

Results:

Upon examining the results of this year they were compared to the results of previous years of mountain stewardship. In comparing the data for this study the year 2000 was exempt because time was more extensive (7 days vs. 2 days). The trends in the present data being compared do follow the trends that were expressed in the High Peaks Wilderness Management Plan (DEC, 1999).

During the summer of 2003 stewards were present on the St. Regis Mountain for a total of 22 days. This was the same amount time spent on the mountain as in 2002, which is 6 days less than the total for 2001. Some days were missed because of unfavorable weather, and illness of the Steward. Comparing the data from the three years, 2003 had more hikers than the years before, and there were 135 more hikers at the summit compared to last year and 57 more compared to 2001 (Table 1).

The average group size remained the same for the 2002 and 2003, with 3 people per group. The number of large groups, defined by the DEC as group of 10 or more people, was a very small amount, less than 2 % for 2003 while looking at past data (2002) the numbers where around 2 to 3%. In addition, the number of groups also increased, but not on a large scale. In 2003, there were weekends during the summer which were busier than others. It is obvious that the weekend of July 4th there is going to be an increase in trail usage because it is a popular family vacation weekend. During the last three weekend of the August there was significant increase in usage (Figure 1).

Weekend #	Date	Total Number of Hikers			Avg. Group size		# of Groups	
		2003	2002	2001	2003	2002	2003	2002
1	May 25, 2003	39	87	33	4	4	11	25
2	May 31, 2003	13	21	5	2	2	6	9
3	June 7 to June 8	52	30	52	2	2.5	10	12
4	June 14 to June 15	24	9	34	5	3	9	3
5	June 21 to June 22	36	15	10	2	2	15	7
6	June 28 to June 29	57	37	2	3	3	21	12
7	July 5 to July 6	82	7	34	4	2	23	4
8	July 12 to July 13	40	N/A	25	3	N/A	15	N/A
9	July 19 to July 20	N/A	97	117	N/A	3	N/A	32
10	August 2 to August 3	65	52	65	4	3	19	16
11	August 5 to August 6	N/A	76	37	N/A	3	N/A	23
12	August 9 to August 10 August 16 to August 17	131	67	87	2	3	16	23
13	August 23 to August 24	73	56	66	4	3	20	18
14		77	N/A	65	3	N/A	26	N/A
Totals:		689	554	632	3	3	191	184

Table 1: Total number of hikers, by weekend, 2001-2003. Summary of 2001 to 2003 of the amount of hikers, the average groups size, and the number of group for 2002 and 2003 for St. Regis Mountain. The Dates are based on 2003. N/A means data not available.

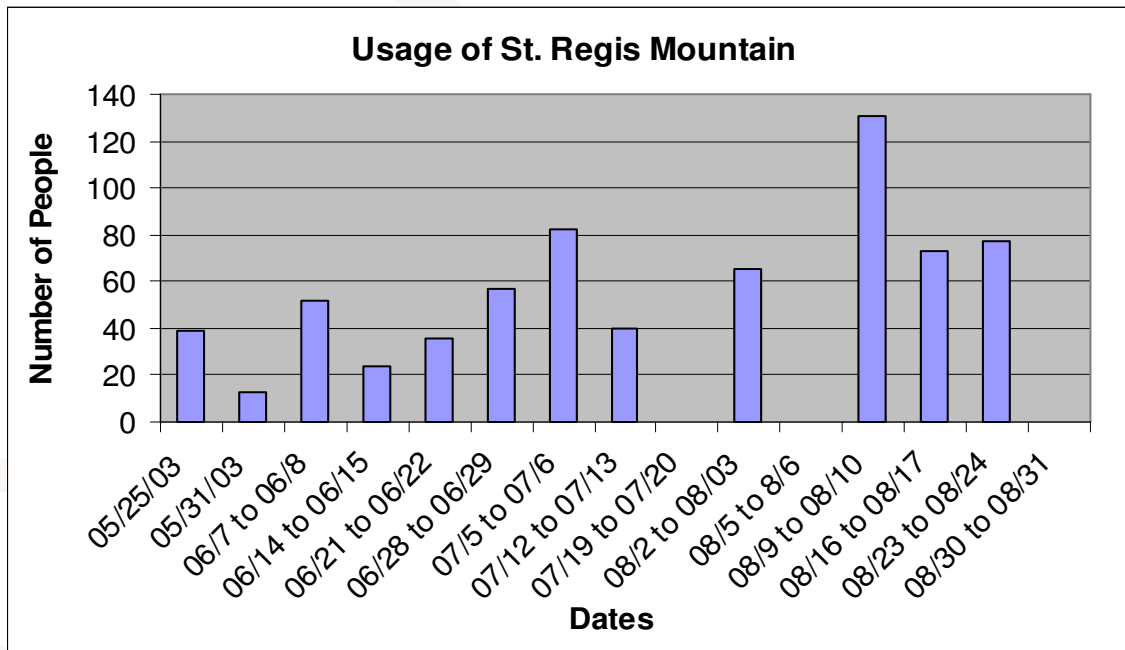


Figure 1: Usage of St. Regis Mountain. Shows the trend of hiker using the mountain through the summer. The busiest weekend of recreational activity was August 9 and August 10, 2003; 131 hikers visited the summit of St. Regis Mountain on this weekend.

Average Time Spent at Summit, 2001-2003

Weekend #	Date	Avg. time spent at summit		
		2003	2002	2001
1	May 25, 2003	37	40	30
2	May 31, 2003	142	50	N/A
3	June 7 to June 8	15	33	53
4	June 14 to June 15	48	N/A	53
5	June 21 to June 22	39	40	55
6	June 28 to June 29	40	48	15
7	July 5 to July 6	41	71	32
8	July 12 to July 13	34	N/A	54
9	July 19 to July 20	N/A	45	39
10	August 2 to August 3	59	48	37
11	August 5 to August 6	N/A	55	33
12	August 9 to August 10	70	40	42
13	August 16 to August 17	65	42	35
14	August 23 to August 24	57	N/A	45
(in Minutes)		54	47	40

Table 2: Summary of the average time that hiker spent on the summit of St. Regis from 2003 to 2001. N/A means data no available. In table two the steward kept track the time groups of hikers spent at the summit. There has been an increase in the amount of time spent on the summit since 2001. In 2003, hikers spent an average of 14 minutes longer on the summit than in 2001. This could be due to several factors including: fatigue from hiking, more time spent conversing with the steward, time spent climbing the fire tower, and other unknown factors.

Behavior on the Summit:

The Behavior of hikers using the St. Regis Mountain trail was another focal point in the study. Behavior included the actions of hikers such as walking on the grass, compared to walking on rock, and climbing on the fire tower. There was a slight increase in the number of people who climbed on the fire tower. The number of people who used the rock instead of the grass increased significantly. This could suggest that the message of the steward is reaching the recreational users of St. Regis Mountain (Table 3).

Another reason for the decreased number of people climbing the fire tower could simply be the presence of the steward on the summit. Particularly at the boat launches, recreational users tend to perceive uniformed stewards as some type of law enforcement.

Weekend Date #	# Of People Climbed The Fire Tower			# Of People Walking on Grass			# Of People Walking on Rocks		
	2003	2002	2001	2003	2002	2001	2003	2002	2001
1 May 25, 2003	0	3	0	5	9	1	5	15	7
2 May 31, 2003	0	0	0	4	0	0	6	7	0
3 June 7 to June 8	0	1	2	9	3	3	11	8	10
4 June 14 to June 15	0		0	1		2	7		5
5 June 21 to June 22	0	0	0	4	1	0	13	4	2
6 June 28 to June 29	0	0	0	4	6	0	15	2	1
7 July 5 to July 6	0	0	0	4	0	8	22	4	3
8 July 12 to July 13	0		0	0		2	15		6
9 July 19 to July 20	N/A	1	1	N/A	16	0	N/A	17	22
10 August 2 to August 3	1	0	2	8	3	12	19	16	11
11 August 5 to August 6	N/A	0	1	N/A	2	5	N/A	22	8
12 August 9 to August 10	5	0	0	0	12	19	62	12	11
13 August 16 to August 17	0	1	0	4	5	7	20	17	8
14 August 23 to August 24	1		0	4		20	25		3
Totals	5%	3%	3%	7%	31%	43%	88%	67%	53%

Table 3: Behavior on the summit. Shows the average number of people behavior on St. Regis Mountain from 2001 to 2003. Dates are based on 2003. N/A means data not available.

Equipment for Hiking Summit:

The stewards also observed the type of equipment the hikers were using on the summit (Table 4). This year there was an increase in the number of hikers that were unprepared for the hike, because of their lack of backpacks. In 2001, 9% of hikers lacked backpacks, compared to 2003 figures with 40% of hikers lacking backpacks. There was a marked decrease in the percentage of hikers deemed unprepared because they wore cotton clothes; in 2002 64% of hikers wore cotton clothing, compared to only 38% of hikers in 2003. The percentage of hikers wearing sneakers did not differ greatly in the three year period.

Weekend #	Date	# Of Group without Backpack			#Of Group With Cotton Clothes			# Of group Wearing Sneakers		
		2003	2002	2001	2003	2002	2001	2003	2002	2001
1	May 25, 2003	1	1	1	3	18	2	7	1	1
2	May 31, 2003	1	3	1	5	4	1	2	3	0
3	June 7 to June 8	2	0	0	8	5	9	9	4	2
4	June 14 to June 15	3	1	0	2	1	5	0	0	0
5	June 21 to June 22	3	1	0	7	4	0	3	1	0
6	June 28 to June 29	5	4	0	0	10	0	9	3	0
7	July 5 to July 6	2	0	1	12	2	11	7	1	10
8	July 12 to July 13	4	N/A	1	10	N/A	5	6	N/A	1
9	July 19 to July 20	N/A	5	2	N/A	22	N/A	N/A	7	3
10	August 2 to August 3	6	0	0	14	14	4	5	11	1
11	August 5 to August 6	N/A	0	1	N/A	14	8	N/A	3	2
12	August 9 to August 10	6	1	7	0	6	N/A	0	11	4
13	August 16 to August 17	1	1	3	7		N/A	3	5	14
14	August 23 to August 24	6	N/A	2	5		5	4	N/A	2
Totals:		40%	9%	8%	38%	64%	41%	22%	27%	17%

Table 4: Equipment for hiking summit. Summary from 2003 to 2001 of how prepared hikers were at the Summit. There were three categories: hikers without backpacks, hikers with cotton clothes, and sneakers. Dates are based on 2003. N/A means data not available.

Comparison of male to female hikers

Along with hiker preparedness, we counted the number of hikers (Table 5). We also compared the number of male hikers to female hikers. In 2003, 46% of hikers were males, representing a slight decrease in the percentage of male hikers compared to 2002 figures. There was an increase in the number of female that hiked the summit in 2003 compared to 2002. In addition, in Table 6 the amounts of pet (dogs) were compared, there was slight decrease in the percentage of hiker with dogs in 2003 compared to previous years.

Weekend #	Date	# Of Male			# Of Female		
		2003	2002	2001	2003	2002	2001
1	May 25, 2003	23	45	18	16	42	15
2	May 31, 2003	7	15	3	6	6	2
3	June 7 to June 8	30	23	29	22	7	24
4	June 14 to June 15	8	5	17	5	4	17
5	June 21 to June 22	21	8	6	14	7	4
6	June 28 to June 29	29	21	0	28	16	2
7	July 5 to July 6	48	4	14	34	3	20
8	July 12 to July 13	22		14	18		11
9	July 19 to July 20	N/A	48	77	N/A	40	49
10	August 2 to August 3	36	21	35	29	30	30
11	August 5 to August 6	N/A	47	18	N/A	29	20
12	August 9 to August 10	45	33	55	86	34	32
13	August 16 to August 17	43	29	30	30	27	36
14	August 23 to August 24	42		36	37		27
Totals		46%	54%	56%	56%	46%	44%

Table 5: Comparison of male to female hikers, 2001-2003. Summary of 2003 to 2001 of the ratio of gender that traveled to the summit of St. Regis Mountain. N/A means data not available.

Pets at the Summit

Weekend #	Date	# Group with Pets		
		2003	2002	2001
1	May 25, 2003	1	3	1
2	May 31, 2003	1	0	0
3	June 7 to June 8	2	1	3
4	June 14 to June 15	1	1	1
5	June 21 to June 22	5	0	0
6	June 28 to June 29	10	1	0
7	July 5 to July 6	2	1	3
8	July 12 to July 13	1	N/A	0
9	July 19 to July 20	N/A	8	3
10	August 2 to August 3	5	1	0
11	August 5 to August 6	N/A	6	4
12	August 9 to August 10	5	5	6
13	August 16 to August 17	4	5	4
14	August 23 to August 24	6	N/A	3
Totals		14%	17%	17%

Table 6: Pets at the summit. Summary of 2003 to 2001 of amount of pet present at the summit of St. Regis Mountain. N/A means data not available

Discussion:

This report gives some understanding to the number of visitors to St. Regis Mountain. By observing the trail register at the base of the mountain we can see we are not interacting with everyone that hikes St. Regis Mountain. Visitors have been seen climbing the mountain before a steward is present and also visitor has been hiking up the summit after the steward leaves the summit at 3:30 pm. Adding a column to the data form to record the amount of visitors that signed the register at the trailhead would provide more conclusive information about usage.

Interestingly, the behavior of hikers has improved over the three years but the preparedness of hikers has decreased. This could be because behavior is mentioned by the steward, along with the natural/cultural history of the area, in the interpretive message. Maybe in future years stewards need to emphasize the importance of being prepared such as mentioning the risk of wearing cotton clothes and/or sneakers and having a lack of supplies can improve visitors' awareness. The improvement in behavior could have been influenced by the stewards' message for previous years. The method of data recording by individual stewards could influence the results of data collection. Hiker behavior might exhibit modifications after speaking with the stewards. An ideal collecting strategy would be to record behavior before and after the message to see the effectiveness. In addition, different stewards are doing data collection, which means there are different perspectives reflected in the entries on the data forms.

Again this year, climbing the fire tower did not seem to receive a lot of attention from hikers. The presence of a steward on the summit may influence hikers' behavior. However, a steward is not present on the summit at all times so this behavior could happen and not be documented. It did remain a popular topic of discussion and many hikers asked: when are they taking the fire tower down?

The percentage of pets/dogs was at a fairly low rate. Dogs can have significant impact on the trail and the summit. Pets can travel off the trail easily and owners may not dispose of their waste properly. In the DEC management proposal, there are no formal policies regarding pet behavior, however a serious encounter with a dog that is off its

leash may result in a lawsuit or fines. The rules for dog behavior in the High Peaks Wilderness Complex are stricter than those proposed for the St. Regis Mountain area.

Comparing data from the 3-year period does not accurately show trends in how the trail has been used the public. The results have been similar to findings in the High Peaks Wilderness Plan (DEC, 1999). The plan states that 2 to 3 people are the common group size, which this data also supports. In addition, large parties (10 more people) represent a small amount of the total use of trail and for the past 3 years on St. Regis Mountain the percent of large parties have been 2-3%. They do have a large impact on resources and other hikers' experiences. Managers believe that large groups impact congestion of trails, higher noise level, and greater visual impacts (DEC 1999). From personal observation, large groups tend to make the summit feel crowded and noisy. Some visitors have warned stewards of large parties arriving to summit that they have passed on their ascent of the mountain. The amount of the use of a trail may not be as important as the hiker's behavior when determining the amount of impact (DEC, 1999).

In conclusion, mountain stewardship was a success this year for the program. This year 281 people visited St. Regis Mountain when a steward was stationed on the mountain and walked away with the message of protecting Adirondack alpine vegetation. The protection is used to keep the land wild for generations to come to enjoy. The only way to protect the land is by managing the people who use the land. This data can be used to understand the public behavior, their safety precautions, and their impacts when hiking in the wilderness.

Reference:

NYS Department of Environmental Conservation (DEC). March 1999. High Peaks Wilderness Complex Unit Management Plan: Wilderness Management for the High Peaks of the Adirondack Park. Office of Natural Resource- Regional 5. Available: <http://www.dec.state.ny.us/website/dlf/publands/adk/hpwa/ump.html>.

Recreation Study: Fish Creek Inlet to Upper Saranac Lake

Prepared by: Molly Shubert

Introduction:

One of the Watershed Stewardship Program's projects for the benefit of Upper Saranac Lake this summer was to count watercraft exiting Fish Creek and entering Upper Saranac Lake or Follensby Clear Pond. This took place every weekend day beginning Saturday, June 14, 2003 and ending Sunday, August 31, 2003. The project was conducted at the request of the Upper Saranac Lake Association.

The reason for assessing the use of Fish Creek was to determine the impact this boat access is having on Upper Saranac Lake. We suspected that we are "missing" many people who could benefit from our stewardship message because they are entering Upper Saranac Lake through Fish Creek. The Eurasian water milfoil map from 2002 shows that one of the highest concentrations of Eurasian water milfoil in the Upper Saranac Lake watershed is in the Fish Creek Ponds. There is also a high intensity of Eurasian milfoil growing in the mouth of Fish Creek Bay.

Methods:

Stewards were stationed at Fish Creek every Saturday and Sunday throughout the Stewardship season. The boat provided to us by the Upper Saranac Lake Association was instrumental in conducting this recreation use study. Two stewards were scheduled to work at Upper Saranac Lake each day of the weekend, with duty split between the Saranac Inn/ Back Bay boat launch and Fish Creek Bay. Stewards anchored the boat on the Fish Creek Ponds side of the Fish channel connecting Fish Creek Ponds with Upper Saranac Lake.

Stewards recorded the following information about the boat traffic coming from Fish Creek: boat type, registration state and year, group size, gender of people on the boat, whether or not any pets were onboard, whether boats were entering Upper Saranac Lake or Follensby Clear Pond, and whether or not outboard motors were 4-strokes.

Results:

The busiest weekend at Fish Creek was Saturday, June 28 and Sunday, June 29, 2003, with 499 people counted, 163 boats entering Upper Saranac Lake from Fish Creek and 16 entering Follensby Clear Pond from Fish Creek. 12 pets were recorded on this weekend. There were 85 outboard motors counted, with an average horsepower of 49.2. There were 14 inboard motor boats, 9 inboard/outboards, 8 personal watercraft, 3 canoes, and 5 kayaks (Table 1).

Fish Creek Bay Data, 2003

Date	Boat Type/Size (indicate hp for MO)										Total # of Boats	Group Size	No Regis.	Direction		Gender		Pet	Four Stroke Motor	Comments		
	(hp)	MO	MI	I/O	P	J	S	R	C	K				B	Upper Sar.	Foll. Cl.	M				F	
6/14-6/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Boat did not run
6/21-6/22	36	32	0	3	0	0	0	0	0	0	0	35	151	1	46	16	86	50	4	6		
6/28-6/29	49	85	22	33	2	28	0	0	12	7	0	189	499	0	163	16	312	180	12	3		
7/5-7/6	48	42	2	21	2	10	0	0	14	9	0	100	272	1	73	18	154	103	9	5		
7/12-7/13	56	31	3	12	3	5	0	0	5	1	0	60	170	0	48	10	113	53	7	4		
7/19-7/20	62	50	9	29	1	10	0	0	19	8	0	126	362	0	103	7	234	129	13	0		
7/26-7/27	36	26	1	8	2	0	0	1	0	2	0	40	106	0	39	0	83	26	5	6	Foul weather Sunday	
8/2-8/3	58	38	5	31	5	17	0	0	10	1	0	107	298	1	101	0	171	127	2	0		
8/9-8/10	31	33	3	6	0	2	0	0	3	1	0	48	139	1	45	3	77	66	2	1	Saturday only	
8/16-8/17	27	29	1	9	1	3	0	0	3	0	0	46	131	1	43	3	85	47	0	1	Saturday only	
8/23-8/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Boat did not run
8/30-8/31	5	1	1	0	0	0	0	0	5	0	0	7	16	0	2	1	9	7	2	0	Saturday only	
Totals:	34	367	47	152	16	75	0	1	71	29	0	758	2144	5	663	74	1324	788	56	26		
(avg)																						

Table 1: Fish Creek Bay Data, 2003. Data collected at Fish Creek Bay, on weekends.

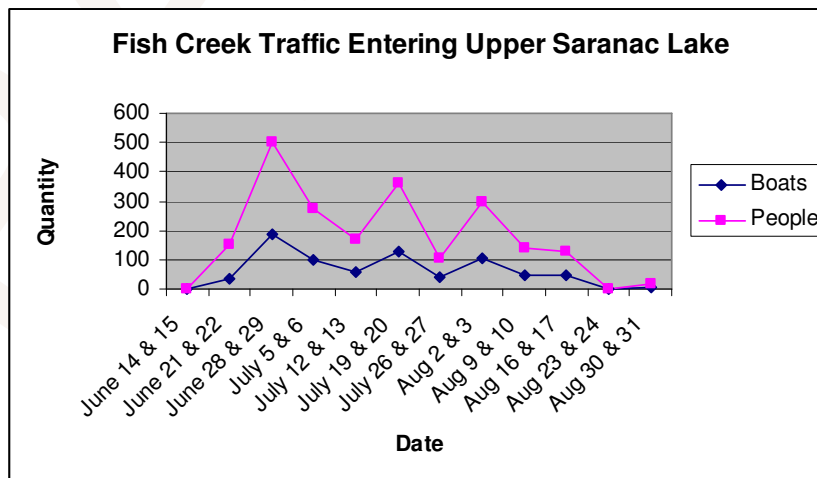


Figure 1: Fish Creek Traffic Entering Upper Saranac Lake. The highest volume of boats entering Upper Saranac Lake from Fish Creek occurred during the weekend of June 28 and June 29, 2003.

Figure 2 documents the boat traffic entering Upper Saranac Lake and Follensby Clear Pond from Fish Creek. 87% of boat traffic leaving Fish Creek entered Upper Saranac Lake, while only 10% entered Follensby Clear Pond. (Percentages do not add up to 100% because stewards were not able to determine the direction of all boats leaving Fish Creek). Information collected included boat type, the direction that boats exiting Fish Creek were going, registration year of the boat, group size and gender of the group, any pets onboard, and the number of 4-stroke outboard motors seen.

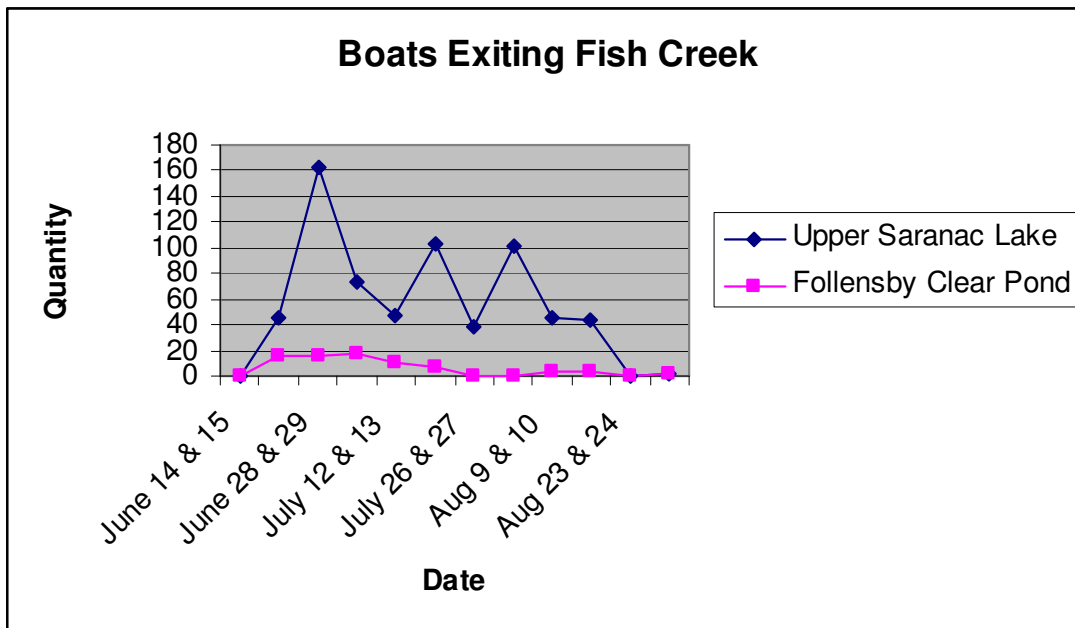


Figure 2: Boats Exiting Fish Creek. This chart shows the distribution of boats leaving Fish Creek, heading to either Upper Saranac Lake or Follensby Clear Pond. This chart shows that the majority of boats (87%) entered Upper Saranac Lake from Fish Creek Ponds.

There were a couple days and weekends during which stewards were not able to count boats at Fish Creek. Reasons for this were either dangerous weather conditions (i.e. thunderstorms) or mechanical problems with the boat.

Discussion:

Comparing the data collected at Fish Creek Bay on the weekends to the data collected at the Saranac Inn/Back Bay boat launch shows that a high volume of traffic on Upper Saranac Lake originates at Fish Creek. In order to examine the full impact of Fish Creek on Upper Saranac Lake I examined the data gathered on the weekends at Back Bay

(Table 2). This gives a more accurate perspective of the impacts of Fish Creek users on Upper Saranac Lake.

Saranac Inn Launch

	hp	MO	MI	WO	P	J	S	R	C	K	B	#Boats	Group	M	F	Pets	4stroke
Totals:	74	316	26	84	12	16	7	2	41	12	0	516	1215	820	395	50	27

Table 2: Saranac Inn Launch. This table shows the totals for the data collected at the Upper Saranac Lake Saranac Inn launch during the summer of 2003. The numbers are for weekends only, so as to compare with the Fish Creek study.

A total of 758 boats were counted exiting Fish Creek, containing 2,144 people. Weekend use of the Upper Saranac Lake boat launch totaled 516 boats with 1,215 passengers. It is clear that Fish Creek has a large impact on the Upper Saranac Lake watershed (Figure 3).

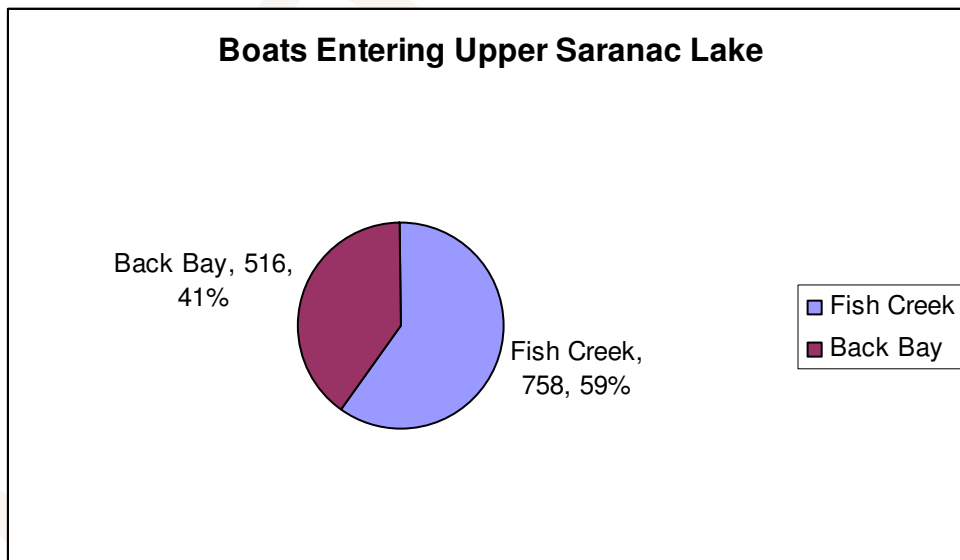
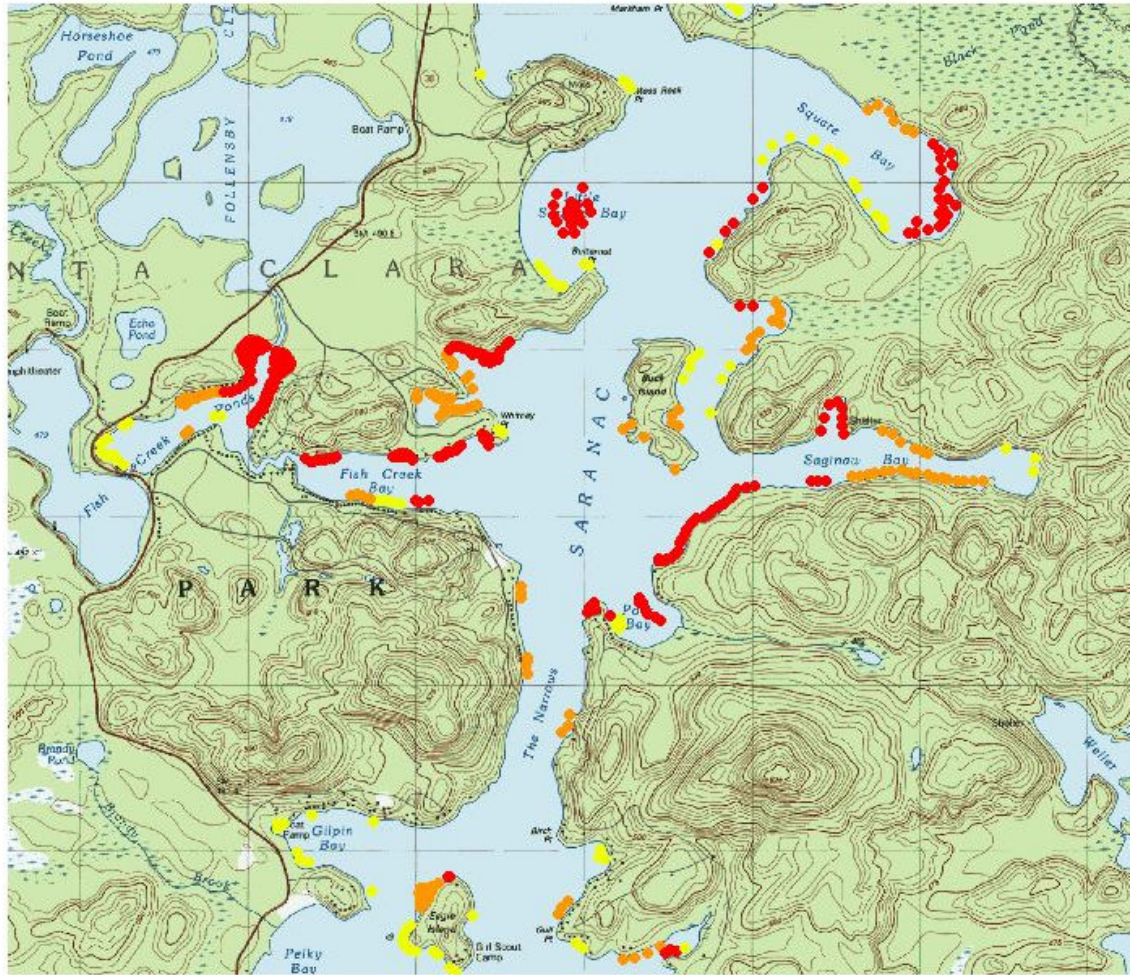


Figure 3: Boats Entering Upper Saranac Lake. This pie chart shows the total number and percentage of boats entering Upper Saranac Lake. Boats entering from Fish Creek make up 3/5 of the boat traffic on Upper Saranac Lake. (Back Bay = Saranac Inn State Boat Launch)

Based on these observations, it is clear that the Fish Creek access point to Upper Saranac Lake brings in a considerable amount of watercraft activity. Recreational users, counted by stewards, of Upper Saranac Lake, entering via Fish Creek, make up 64% of the boaters observed on weekends. Watercrafts entering via Fish Creek make up 59% of the watercraft on Upper Saranac Lake. Activity originating at Fish Creek accounts for approximately 3/5 of the boat traffic on the lake.

Examining the GIS map created in 2002 that documents Eurasian Watermilfoil occurrence in Upper Saranac Lake, it is clear that some of the higher concentrations of Eurasian Watermilfoil occur in the Fish Creek Bay and Ponds. There is a strong correlation between the high volume of use that Fish Creek Ponds contribute to Upper Saranac Lake and the high percentage of Eurasian water milfoil found in Fish Creek Ponds and in the mouth of Fish Creek Bay.

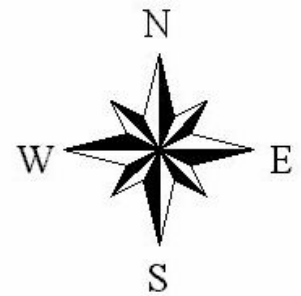
DRAFT



Eurasian milfoil map- July '02

- low intensity
- moderate intensity
- high intensity

Adirondack Watershed Institute
Paul Smith's College



Map: This map shows the concentration of Eurasian Watermilfoil in Upper Saranac Lake. It shows a high intensity of Eurasian Watermilfoil documented in the Fish Creek Ponds and Fish Creek Bay.

Recommendations:

If there is enough funding available for the summer of 2004 it would be wise of the Upper Saranac Lake Association to station a steward at Fish Creek. Perhaps a partnership can be formed with the DEC for 2004 since the DEC runs the Fish Creek Ponds Campground. It is clear from the data gathered on weekends during 2003 that Fish Creek boaters make up a large percentage of the volume of motorboats operating on Upper Saranac Lake. With boats from Fish Creek accounting for approximately 60% of the traffic on Upper Saranac Lake on the weekends it is quite possible that this activity is responsible for the high concentrations of Eurasian Watermilfoil in the Fish Creek Bay area. One of the easiest ways to foster the spread of Eurasian Watermilfoil is through intense boat activity in the areas where the exotic invasive plant is present. By stationing a steward at the Fish Creek boat launch to educate boaters about Eurasian Watermilfoil we maybe be able to decrease the impacts that boaters are having on the Eurasian Watermilfoil beds in the Fish Creek area.

Recreation Study: Lake Placid Village Launch

Prepared by: Michele Diamanti

Introduction:

One of the projects conducted at Lake Placid this summer was monitoring the Lake Placid Village Launch site. This project took place during a couple days in June. Use of the Village Launch site by contractors, construction companies, barges, and other commercial uses was banned by the Village of Lake Placid in the summer of 2002. Anyone needing to access Lake Placid lake for commercial purposes had to come through the DEC (state) launch site.

The objective of the steward was to monitor the boat usage and the educate people about the lake. There were several messages the steward focused on. Firstly, the Lake Placid is the water supply for the Village of Lake Placid and the town of North Elba; they encourage people not to dump anything in the lake. Secondly, the steward focuses on educating the public about invasive species such as Zebra Mussel, Purple Loosestrife, and Eurasian Milfoil. They also, handed out brochures published by Shore Owners Association titled, "Boating Guide: Lake Placid Lake."

Method:

The Lake Placid Village launch site is located in the southern end of the lake, in Paradox Bay. The launch is accessed from Victor Herbert road, which runs parallel to the lake from Route 86 (Saranac Avenue) to Lake Street (near the Harbor Condominiums on Mirror Lake Drive). The launch has a kiosk similar to the one at the DEC launch site, featuring a map of Lake Placid and the Shore Owners Association brochure titled, "Boating Guide: Lake Placid Lake."

Recreation monitoring of the village launch site took place on Sunday, June 22, 2003, and Friday, June 27, 2003. The recreation monitoring was conducted from 7:00 a.m. to 4:00 p.m. The same parameters used to study usage at the Lake Placid DEC launch site were recorded at the Village Launch site. These parameters included boat type/size, using the following distinctions: motor outboard and horsepower, motor inboard, stern drive (inboard/outboard), pontoon, sail, rowboat, canoe, kayak, and barge.

The group size was documented along with the gender members of the group. Time spent at the launch was also recorded. The presence of pets was noted, whether a brochure was given, and if the outboard motor was a four-stroke engine. Stewards also made notes and comments about the users.

Stewards were expected to deliver the same message to the public as they did at the DEC launch site. The watershed steward would approach the boaters, introducing themselves and the Watershed Stewardship program. Stewards then delivered a brief message about exotic invasive species and how to prevent the spread of these species, encouraging recreational users to inspect and clean their boats between uses in different lakes and launch sites. Information about the Adirondack Cooperative Loon Program and the lead sinker exchange was also presented to recreational users of the launch.

Results/Discussion:

There were only two days in which a steward was present at the Lake Placid Village launch site, so statistical analysis was not completed for this recreational study. Table 1 illustrates the usage of the area during this time (village launch). The table also shows the data recorded on the same days at the DEC launch site.

Date	Boat Type/Size											Total # of Boats	Total # of People	Registered Boats Y (yr)	Avg. Time (min)		Gender		Pets	Out Only	Brochure	4 stroke motor
	(hp)	MO	MI	I/O	P	J	S	R	C	K	B				M	F						
Village Launch																						
6/22/03	60	3	1	2	0	0	0	0	2	2	0	10	22	5	4.6	17.5	17	2	0	1	0	1
6/27/03	45	1	0	0	0	0	0	0	0	0	0	1	2	1	10	1	1	0	0	0	0	0
State Launch																						
6/22/03	65	5	6	0	0	0	0	0	1	1	0	13	24	11	4.73	14.6	20	8	2	2	0	0
6/27/03	69	5	2	4	0	0	0	0	0	0	0	11	29	11	4.56	18.5	23	6	0	3	0	1

Table 1: Lake Placid Village Data. This table shows the data collected at the Lake Placid Village Launch site on two separate dates. It also shows the data for the State (DEC) launch from the same dates for comparison. The launches received a similar volume of use on June 22, 2003, with a difference of only 3 boats.

Note: The Steward on duty on 6/27 decided to suggest that boaters coming to the Lake Placid Village launch site use the DEC (state) launch site instead. I am unsure why this choice was made. This could account for the low number of boats recorded at the Village launch site.

A recommendation for next year would be to conduct this study for more than two days in order to get more accurate information about the amount of use that the site receives.

Recreation Study: Buck Pond

Prepared by: Jeremy Riedl

Introduction:

Pat Willis of the Rainbow Lake Association contacted Stewardship Program director, Eric Holmlund, in 2003 regarding recreational traffic entering Rainbow Lake from the Buck Pond state recreation area. The Rainbow Lake Association requested that we pilot a project at Buck Pond in order to assess the actual use of the lakes connected to Rainbow, and to monitor traffic entering Rainbow Lake. As part of the program Stewards educated users about exotic invasive species and boater safety.

Methods:

In order to get an accurate estimate of traffic at the boat launch at the Buck Pond area, which launches into Lake Kushaqua, stewards were posted at the site during a heavy traffic weekend in July. The dates chosen for the pilot project were Saturday and Sunday July 26th and 27th. Assistant WSP director Jeremy Riedl contacted the caretaker at Buck Pond, Bill Yulinski to determine whether our presence at the launch would have an effect on his management of the area. Bill Yulinski agreed to allow the project at the site and was instrumental in orienting stewards Shawn Brundage and Laurella Mamere to the Buck Pond Recreation Area.

Results:

On Saturday, July 26, 2003, 10 groups were recorded using the boat launch to access Lake Kushaqua. 3 of these groups accessed Rainbow Lake from this site. Two groups operated motorboats and the third used a canoe. The total number of individuals who used the launch that day was 27; 16 males and 11 females. One dog was also recorded.

The two most popular types of boats used at the launch were motorboats and canoes. The average horsepower of the motorboats was 75hp and all the boats were registered. Average time spent at the launch was 17 minutes. Of the ten groups that

launched four washed their boats using a primitive wash station at the site, which consists of a rubber hose and spigot.

On Sunday, July 27, 2003 one group launched a boat at the Lake Kushaqua site. The one group consisted of one man and one woman in a canoe; they spent two minutes at the launch.

Discussion:

Results for this project are somewhat inconclusive. Due to high wind and rain on the 27th only one group was recorded which is well below the previous days tally and what is expected for midsummer traffic. However, some interesting results did emerge from the comments of the stewards and the data they collected. It could be said with some confidence that traffic on Lake Kushaqua is higher than on Rainbow Lake, and that presently there is little danger of a substantial increase in traffic at Lake Kushaqua due to the size and primitive nature of the launch. The relatively small launch also prohibits access from large power boats as well. Stewards also reported that many people were aware of the boat wash and used it. Also of interest was that the stewards' message regarding invasive species was well received, and many people were already aware of Eurasian Milfoil.

Recommendations:

Perhaps the most important asset of the Lake Kushaqua launch is its primitive boat wash station. With the guidance of stewards, compliance was about 40% which is much better than compliance at the Upper St. Regis boat wash station. This, in concert with the effort of watershed stewards to educate users regarding invasive species, could be an effective safeguard against an invasion of Milfoil. While the traffic at the boat launch was small in comparison with our other sites, a steward could be insurance against possible plant infestations and act as a monitor for trends in recreational traffic on the lakes. Since this project may be viewed as inconclusive, due to the uncommonly low traffic on July 27, we would recommend at the very least running another pilot project, perhaps for two weekends concurrently. It is our belief that the Watershed Stewardship Program could provide an invaluable service to the area with our educational message.

Our program can act as a link between the seasonal users and residents, educating, monitoring and providing service for both recreational user groups.

DRAFT

St. Regis Lakes Purple Loosestrife Removal Project, 2003

Prepared by: Shawn Brundage



Introduction:

The 2003 Loosestrife removal project on the St. Regis Lakes focused primarily on the sites that were monitored during the 2002 season. There were additional sites that did emerge during this season's monitoring, however the populations at those sites was minimal. As with previous years this project was conducted in accord with The Nature Conservancy and their Invasive species project coordinator for this region, Steven Flint. Our involvement was part of the "Adirondack Park Non-Native Invasive Plant Species Initiative" which is a cooperative between the DEC, APA, NYS DOT, and the Adirondack Nature Conservancy/ Adirondack Land Trust. Steven Flint assisted with cutting of Purple Loosestrife on Saturday, July 31, at several locations on the St. Regis slough, Spitfire Lake and Upper St. Regis Lake. After the initial cutting on July 31st two more cuttings took place on August 10th and August 17th at sites which showed continued growth.

Materials:

Stewardship Program boat, pruning shears, 50 gal black garbage bags, topographic map, spaded shovel, four pronged pitchfork.

Methods:

Removal of Purple Loosestrife was usually conducted with short handled pruning shears, clipping the plant just above the level of the ground. On those occasions where the soil

was thin whole plants were pulled out of the soil with their roots intact. This was not the usual method used as there is implicit danger in removing portions of the root mat, which is capable of regrowing several new plants if fragmented. Cutting of plants was not restricted to only those plants in flower. Most of the plants that stewards removed, especially at Camp Regis Applejack, were juvenile plants which may not have flowered if left to their devices, due to the unusually short growing season. All plants were bagged in extra thick 3mm contractor cleanup bags, then left exposed in the sun for four days before disposal to ensure plant death and seed destruction.

Results/Discussion:

The greatest mechanism for spread of Purple Loosestrife on the St. Regis lakes is wind, followed closely by water. By observing the prevailing wind direction and layout of Loosestrife communities most plants one can see that most plants seem to have been transported by wind. The Camp Regis Applejack site even displayed signs of further inland invasion also attributable to prevailing wind patterns.

Compared to 2002 data, numbers of plants observed and removed, this seasons numbers appear staggering in contrast. Stewards removed 2500 fewer plants in 2003 than were recorded in last years report, a 78.4% decrease. This is probably due in part to the methods used last season. Last year's removal was done at the peak time in the season and extreme care was taken to facilitate proper removal techniques.

This year's stewards worked at the same time period this season and removed all plants observed, even those that were only a few inches high. As noted in last year's report, the Camp Applejack site was on the way to becoming a monoculture and a few isolated plants were found further out into the wetland. This season plant numbers decreased by 1070 plants.

Though the problem with Purple Loosestrife on the St. Regis chain of lakes has decreased dramatically, it is important to remember that this came about due to vigorous plant observation and removal by many parties. It should be stressed that continued efforts are vital to aid in the continued decrease of this invasive species. A step in the right direction should not lead to a period of lackadaisical behavior.

At this point in time, hand-harvesting of Purple Loosestrife is the most effective and efficient method of removing the plants. This report clearly indicates that hand-harvesting is helping to decrease the quantity of Purple Loosestrife plants found on the St. Regis Lakes chain.

(Table 1)

2001	
Site Number	Plants Removed
1	30
2	25
3	18
4	110
5	250
6	5
7	450
Totals=-	888 Plants

2002	
Site Number	Plants Removed
1	8
2	260
3	11
4	49
5	915
6	63
7	1400
8	123
9	287
10	74
Totals=	3190 Plants

2003	
Site Number	Plants Removed
1	16
2	35
3	13
4	3
5	117
6	5
7	330
8	5
9	143
10	23
Totals=	690 Plants



Loosestrife Sites

- low abundance
- medium abundance
- high abundance



DF

Invasive Plant Mapping: St. Regis Lakes

Prepared by: Justin Levine

Introduction:

In conjunction with the Adirondack Park Invasive Plant Project, Stewards Molly Shubert and Justin Levine conducted invasive plant mapping on Upper St. Regis, Spitfire, and Lower St. Regis Lakes. This mapping was done with Hilary Oles of the Adirondack Park Agency.

The mapping took place over two days, Monday, August 18, and Tuesday, August 19, 2003. We are happy to report that no aquatic invasive plants were found. However, beds of dense native plants were marked on the map because these areas are usually hotspots for invasive plants. There are some very dense beds of native milfoils, but we found no Eurasian Milfoil.

The techniques used were to slowly motor along the shore in a zigzagging pattern to cover a variety of depths. If there were any dense beds of plant growth, a "rake-toss" was made. This is a technique that uses a jerry-rigged rake so that we can pull plant matter from out of the water. The plants on the rake are then identified, and if any suspect specimen appears, they are documented and taken to the APA for scientific identification.

Lean-to Inspection and Maintenance: St. Regis Lakes
Prepared by: Shawn Brundage

The public campsites on the St. Regis lakes chain have a wide range of site maintenance issues. Some sites need very little attention and others should be looked at by the state in order to initiate maintenance procedures. Lean-to sites such as, "Honeymooners" and "North bay," are in very good condition and this shows that the people that use those sites are using responsible outdoor techniques. Responsible outdoor techniques include carrying out all garbage and leaving the campsite in a condition as good as or better than it was found. Other sites such as, "The Tip" are in very poor condition. For instance, "The Tip" was covered in garbage and broken glass. The site was also trampled beyond belief causing loss of vegetation and erosion.

On average the sites were in fair condition and were obviously being used and enjoyed by the public. Unfortunately the Watershed Stewards were only able to do lean-to maintenance on one occasion this summer due to a tight schedule, but it definitely should be continued as a project day task by the WSP in the future.

Loon Nest Monitoring Report

Prepared by: Justin Levine



Throughout the summer of 2003, Watershed Stewardship Program steward Justin Levine monitored loon nests on Upper St. Regis and Spitfire lakes. This project was in cooperation with the Adirondack Cooperative Loon Program (ACLP).

The ACLP is concerned with the status of the Common Loon (*Gavia immer*) in the Adirondack Park. Toxins such as mercury, lead and acid rain are some of the problems afflicting the birds within the Park, as well as all of North America. These toxins could potentially cause reproductive failures, as well as harm live, adult birds. Another problem the loons are faced with is human disturbance. Boaters coming too close to a loon nest could cause the incubating bird to slip off the nest and leave the eggs unattended. If the loon is repeatedly forced off the nest, the eggs will not stay warm enough to develop properly. In addition, motor boaters or personal watercraft coming too close to a nest can create a wake that may flood the nest, resulting in chilling of the eggs and failure of the eggs to hatch or nest abandonment.

Once a week, the steward would kayak on Upper St. Regis and Spitfire Lakes to check on the status of the loons. The steward was assigned to three nests; being

responsible for weekly observations and data collection. Two nests were on Upper St. Regis, one near the boat launch bay and the other in Spring Bay. The third nest was on an island on Spitfire Lake.

The nesting pair on Spring Bay successfully brought two chicks into the world. From the first time of observation, one of the loons was sitting on the nest. Both the male and the female will sit on the nest. They share nesting responsibilities so the adults can take turns fishing for food, and so the eggs will stay warm. The two eggs that were laid hatched sometime in the week of June 29th through July 4th. Each week after that, the chicks were observed in Spring Bay. The week of August 22nd, the pair and the chicks were observed at the edges of their territory, indicating that the chicks were maturing and getting ready to fledge.

The island pair on Spitfire Lake laid two eggs. Again, like in Spring Bay, from the first date of observation, one of the loons was sitting on the nest. Both chicks also hatched during the week of June 29th and July 4th. Both adults were with the hatched chicks. Loon chicks usually hatch within a few days of each other. An egg that has been on the nest for well over a week is not good. However, both chicks hatched, and then one was killed, reportedly by a reckless boater. The surviving chick on Spitfire Lake was developing normally throughout the rest of the observations.

Sometime in the fall is the normal time for chicks to fly south for the first time. The steward plans to continue observations of the Upper St. Regis and Spitfire loons. Observations will stop when it has been determined that the chicks did not survive, or they have successfully fledged.

Watershed Stewardship Program: Summary of Programs & Research, 2003
 Adirondack Watershed Institute of Paul Smith's College

Lake Name: Spittfire DEC WIN #: 030264

Amy
 Observer: Fleischut Territory: island

Visit Information				Weather Information			Loon Information							Band Information				Nest Site Information			
Observation (visit) #	Date	Weekday	Observation Time	Weather	Beaufort Wind Scale	Water	Loons Obsvd	# Immature Loons	# Single Adult Loons	# Adult Loons in Group	Territorial Pairs	Nesting Pairs	Pair w/ Chicks	Legs Obsvd	Bands Obsvd	Loon #1: Left Leg	Loon #1: Right Leg	Original Nest	Renest	Nest Site	Nest Type
#1	6/11/02	Y	9:15-1:30	Cloudy & Rainy 60 degrees	3	Swell	Y		3	2	Y	Y		N	N			Y		Island	Scrape
#2	6/19/02	Y	8:30-11:00	sunny clear 70 degrees	2	calm	Y			2		Y		N	N			Y		Island	Scrape
#3	6/25/02	Y	9:15-12:45	partially cloudy 60 degrees	3	calm	Y					Y		N	N			Y		Island	Scrape

Nest Site Information								Nest Failure Information					Comments
Original Nest	Renest	Nest Site	Nest Type	# Eggs in Nest	Actual Hatch Date/Range	# Chicks Hatched	# Chicks Surviving	Egg #1 Condition	Egg #2 Condition	Egg #3 Condition	Egg or Shell Collected?	Probable Cause of Nest Failure	
Y		Island	Scrape										female on nest. Male swimming around island. No bands observed.
Y		Island	Scrape										female on nest, didn't see band. Two loons in area, diving around nest, didn't see bands
Y		Island	Scrape										female still on nest, male patrolling area, no bands seen

Figures 1 and 2- excerpts from Amy Fleischut's data entry forms (Summer 2002), which were sent to the Adirondack Cooperative Loon Program

St. Regis Lake Wetland Frog Survey

Prepared by: Michele Diamanti

Introduction:

This is the first year that the watershed program conducted a frog survey. The program examined the species present at the St. Regis Lake Wetland area adjacent to the boat launch (Figure 1).

Frog Study Area- Upper St. Regis Lake

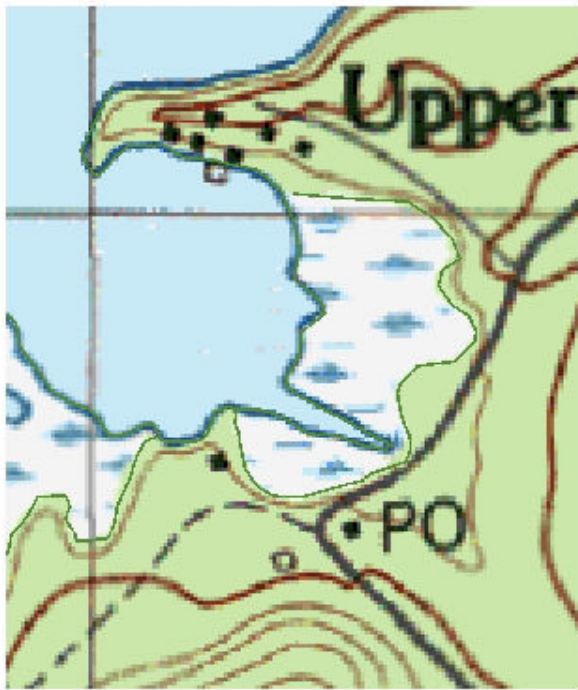


Figure 1: Frog Study Area-Upper St. Regis Lake. Dark spots indicate listening stations for frog study. PO is the location of the Upper St. Regis post office.

The survey took place for 4 weeks in June and July. Our objective was to establish a method for surveying frogs in surrounding lake/wetland areas, and to provide data for the Nation Wildlife Federation (Frog Watch USA).

Frogs are very important to our lakes/wetland area because they can be used to monitor health of a given ecosystem. Frogs are physiologically sensitive due to the absorption through the skin (Natural History). According to the Environmental Protection Agency, frogs can tolerate pH levels up to 4.0 ppm while other animals such as bass and trout can only tolerate levels around 5 ppm. Frogs play a very active role in the food chain. They act as energy transfers between insects and fish in an aquatic environment (EPA, 2002). Our study illustrates that there are only a few species that were present in the wetland.

Methodology:

The perimeter of the St. Regis Lake Wetland was walked and paddled. The area had a listening station every 200 yards. The calls of the frogs were recorded and identified. The calls were compared to other calls from the Frog Watch USA website and the Northwood Compact Disc. Then the calls were tabulated and the data was entered to Frog Watch USA database. Finally, calls were measured by intensity from a scale of 1 to 5; going from less intense to more based on listening to a number of calls.

Result/Discussion:

There were only six species found in the site (Table 1). There are a couple reasons that might explain this. The weather (i.e. temperature and precipitation) plays a major role on frog behavior. The time in which the study was conducted only shows the presence of frogs that could have been breeding at this time.

Scientific Name	Common Name	Intensity of call
Rana sylvatica	Wood frog	3
<i>Rana pipiens</i>	Leopard frog	2
<i>Bufo americanus</i>	American toad	4
<i>Hyla vericolor</i>	Gray treefrog	2
<i>Rana clamitans</i>	Green frog	2
<i>Rana catesbeiana</i>	Bullfrog	5

Table 1: Summarizes the frogs present at St. Regis Lake Wetland. The call intensity is based on 1 to 5 scale based on the number of calls during the study time.

There could be some improvement made to the methods such as doing a visual survey of the frogs to ensure that the calls were attributed to the correct species. In addition, time for the study need to be expanded due to the time which frog are calling during the breeding season. This is the reason why Spring peepers were not included in survey this year. Also, there are mink frogs that are not present in this survey, although I think they do live in the area I studied; this could be because they have a difficult call to learn. In some cases it could difficult to distinguish calls, so a visual survey would give a more complete representation. This survey only gives an idea of the species present. There are many variables that affect the presence of species.

Reference:

Environmental Protection Agency (October 2002). EPA's Clean Air Market Programs-
Effects of Acid Rain: Lakes & Streams.
[Http://www.epa.gov/airmarkestst/acidrain/effects.surfacewater.html](http://www.epa.gov/airmarkestst/acidrain/effects.surfacewater.html).

Lake Placid Invasive Plant Mapping

Prepared by: Molly Shubert

Introduction:

During the summer of 2002, Watershed Steward Justin Levine began surveying Lake Placid Lake to map exotic invasive plant species. The survey was completed this summer by Molly Shubert.

Methods:

On Thursday, July 17, Watershed Steward Molly Shubert conducted an invasive species mapping exercise on Lake Placid Lake. I constructed a rake similar to the one used by Hilary Oles for the Watershed Program to use in invasive mapping surveys. I used my personal outboard motorboat to conduct the survey. I began at Whiteface Bay and worked my way counter-clockwise around the lake, surveying the shoreline to Paradox Bay. I then surveyed the shoreline around Buck, Moose, and Hawk Islands.

Results and Discussion:

There was no evidence of any aquatic exotic invasive plant species in Lake Placid. Overall there was very little aquatic vegetation in the lake. The bottom of Lake Placid consists mostly of rock and sand, with little opportunity for aquatic plants to grow. Lake Placid is classified as an oligotrophic lake, with little ability to support aquatic plant life. Lakes that are classified as oligotrophic typically are abundant in dissolved oxygen and deficient in plant nutrients.

An invasive species observation form was filled out and mailed to Hilary Oles, coordinator of the Adirondack Park Invasive Plant Program.

Educational Programs for Kids Prepared by: Molly Shubert



Introduction:

The Educational Programs for Kids are another way to achieve the mission of the stewardship program, primarily to educate the public about conservation, preservation, and stewardship issues of watersheds which we steward. After struggling to run successful programs for children during the summer of 2002, I was appointed Educational Programs Coordinator for the summer of 2003.

Goals:

The goal for the educational programs this summer was to make the programs work. Last summer we struggled due to a variety of factors including a lack of effective advertising and a combined effort to run the programs without one particular leader. This summer I took the position of Educational Programs Coordinator and diligently devoted my project days to planning, organizing, and running the programs. Press releases were

written and given to the Paul Smith's College Director of Communications and Internal Marketing in early June. In addition the information was sent to North Country Public Radio for inclusion on their Community Calendar. Despite early action on my part to get the information to the Communications office there still seemed to be a fair amount of lag time between the information being sent to the Communications office and it actually appearing in the local papers. However, this was a marked improvement over last year's lack of press.

Programs:

The following educational programs for kids were scheduled for the summer of 2003:

1. *All About Water*, Thursday, June 26, 1-3 p.m. ages 6-11 (**cancelled- lack of interest**)
2. *All About Leaves*, Thursday, July 10, 1-2 p.m. ages 3-5 (**cancelled**)
3. *Exploring a Bog on Foot*, Thursday, July 17, 1-3:30 p.m. ages 6-11 (**cancelled**)
4. *Where did they come from? It's an invasion!*, Thursday, July 24, 1-3 p.m. ages 6-11
5. *All About Water*, Thursday, July 31, 1-3 p.m. ages 6-11 (rescheduled after 6/26 program was cancelled)
6. *It's in the Trees*, Thursday, August 7, 1-3 p.m. ages 6-11
7. *Scavenger Hunt in Nature*, Thursday, August 14, 1-2:30 p.m. ages 6-11
8. *Exploring a Wetland by Boat*, Thursday, August 21, 1-4 p.m. ages 10-14 (**cancelled**)

In addition to these scheduled programs, one outreach program was conducted for the Saranac Lake Area Summer Youth Program on Wednesday, July 23, from 12:30 to 1:30 p.m. The program presented was on tree identification. Thirty-two children aged nine and ten were in attendance, along with four counselors. The program was successful, and well received by the Saranac Lake Area Youth Program. Debbie LaPlante is the director of the program, and this would be a good person to contact early in the 2004 season to set the framework for weekly or biweekly programs. The Saranac Lake Area Summer Youth Program serves approximately 90 children aged 6-12.



Lesson Plans:

Name of Program: ***All About Leaves **CANCELLED*****

Location: **Paul Smith's College, Gazebo**

Date & Time: *Thursday, July 10 1-2 p.m.*

Age: *Ages 3-5*

Descriptor: Fun art projects for younger children to introduce them to the trees and leaves of the Adirondacks.

Objective: Stewards will introduce the children to some of the trees that can be found in their backyard.

Materials: nametags, contact paper, wax paper & iron, hole punch, inkpads, paper, crayons

Activity: Samples of pine needles, pinecones, leaves, and bark to help children see the differences in trees.

1. Hand out nametags to children.
2. Introduction.

3. Bathroom.
4. Take kids on a short walk around campus to look at different trees and leaves. Let them collect a couple leaves to make nature windows, using contact paper or waxed paper.
5. Kids arrange leaves on contact or wax paper, stewards put contact paper or wax paper on top, trim edges and punch holes, add string, can hang.
6. Set out more leaves, inkpads, and paper. Show kids how to put leaves on inkpad, then arrange on paper.
7. Write names on paper, set aside to dry.
8. Get out more paper, leaves, and crayons. Show kids how to make leaf rubbings.

Name of Program: ***Exploring a Bog on Foot*** ****CANCELLED****

Location: ****Upper St. Regis Lake Post Office Boat Launch or PSC campus?****

Date & Time: *Thursday, July 17 1-3:30 p.m.*

Age: *Ages 6-11*

Descriptor: Participants will learn what a bog is and the interesting organisms that call the bog their home. We will examine plants, animals, insects, and amphibians in the bog, using our senses to look, feel, hear, and smell the life in a bog.

Objective: Introduce children to a wetland environment. Examine the plant, animal, insect, and amphibious life. Use senses to observe bog life.

Materials: nametags, clear buckets, nets,

To Do (Molly): drive over to St. Regis and inspect the bog. Identify plants and areas that will be easily accessible by kids. Check materials.

Kids should bring: rubber/waterproof boots, sunscreen, insect repellent, waterbottle, snack

Activity:

1. Nametags.
2. Introduction
3. Observations—what can you see or hear that lives in the marshy area?
Plants, animals, amphibians, insects

***** Please note that I cancelled this program due to a zero enrollment rate as of the Tuesday preceding the program. The majority of the lesson plan would have been completed the Wednesday before the program ran. *****

Name of Program: ***Where did they come from? It's an invasion!***

Location: **Lake Flower Boat Launch, Saranac Lake** ****relocated to Cantwell Room at the Saranac Lake Free Library due to weather conditions****

Date & Time: *Thursday, July 24 1-3 p.m.*

Age: *Ages 6-11*

Descriptor: Come learn about exotic invasive plant and animal species that can cause serious problems in the lakes you like to swim and fish in. We'll learn about where they came from, what they look like, and how to prevent them from spreading.

Objective: To introduce children to the concept of exotic invasive plants.

Materials: nametags, samples of invasives, photos of invasives, clear buckets

To do (Molly): Contact Hilary Oles to see if she is interested in assisting. Call DEC to make sure it is okay to use Lake Flower launch for this program. Get color brochures of exotics. Collect native and Eurasian milfoil, purple loosestrife, dandelions, etc. ahead of time.

Activity:

1. Nametags
2. Intro
3. Explain to kids what happens at a boat launch; lots of activity.
4. Talk about exotic invasive plants. Difference between native and exotic, invasive and noninvasive. How do plants spread? Pollination, excrement, human contact, wind, etc.
5. Show examples of invasives, either photos or samples
6. Role-play with kids to demonstrate the difficulty in dealing with invasive plants once they grow, make a circle with half of the kids, the other kids are the plants, add one at a time until it becomes difficult to navigate
7. Are there any invasive animals or insects? Starling, cowbird, Japanese beetle, snakehead fish in MD last year
8. Explain how to slow/stop the spread of invasives, wash boat, check trailer and boat
9. Take a walk, see if we find any of the plants we talked about

Name of Program: ***All About Water***

Location: **Paul Smith's College Gazebo/ Canoe Launch (inner sanctum)**

Date: *Thursday, July 31 1-3 p.m.*

Age: *Ages 6-11*

Descriptor: Did you know that water covers 70% of the Earth's surface? And that our bodies contain 65% water? Come learn about what kind of plants and animals live in the water, and about the different kinds of fish you can catch in the area.

Objective: Stewards and children will discuss the importance of water to human and non-human activities, in order to enhance the children's appreciation of water.

Materials: nametags, photos of fish, game cards for Water Match Game, fish coloring sheets, crayons & colored pencils, flashlights

Activity:

1. Nametags.
2. Introduction and bathroom.
3. Basic facts about water.
 - What do you know about water?
 - Do we need water to live?
 - What do we use water for?
 - Why is water so important?
 - Talk about different things that require water in order to exist...humans, animals, plants, food, etc.
4. Molecules in Motion Activity
 - *Project WET: Curriculum & Activity Guide*. The Watercourse and the Council for Environmental Education, 1995: 47.
 - Teaches kids about the 3 states of water: solid, liquid, and gas.
5. Water Match Game
 - *Project WET: Curriculum & Activity Guide*. The Watercourse and the Council for Environmental Education, 1995: 50.
 - Review of the 3 states of water, also brings up topic of pollution.
6. Talk about lakes/streams/rivers/ponds
 - What kind of aquatic life inhabits these bodies of water?
7. Walk down to Lower St. Regis shoreline to observe aquatic life
8. Back to Gazebo
9. Talk about fish
 - Show photos
10. Hand out fish coloring activity sheets.

Name of Program: *It's in the Trees*

Location: **Paul Smith's College, Gazebo**

Date & Time: *Thursday, August 7 1-3 p.m.*

Age: *Ages 6-11*

Descriptor: Come learn about the trees that inhabit the Adirondacks. We will also do art projects involving leaves and bark.

Objective: To teach kids how to do basic tree identifications, difference between coniferous and deciduous trees, photosynthesis.

Materials: Nametags & Marker, Tree/Leaf Identification guides, Clipboards, paper, crayons, Contact Paper, Scissors, Colored Pencils, Hole punch, Twine/String, Leaves

Activity:

1. Meet at Gazebo, nametags.
2. Introduction
3. Does anyone need to use the bathroom?
4. Walk over to Alumni Park, talk about trees
 - Conifers vs. Deciduous
 - Leaves vs. Needles
 - Differences in Bark
5. Head into woods
6. Have kids form pairs of 2 for *Meet a Tree* activity
 - Tell kids about activity, each of you will have a turn being blindfolded. The child without the blindfold will lead you to a tree of their choosing. You need to explore the tree and think about things that will help you find the tree without a blindfold—i.e. Rub your cheek on the bark, Is the tree alive?, Can you wrap your arms around it?, Are there plants growing on it?, Is it older than you?, Any signs of an animal?, Does it have low branches or knots in its trunk?
 - Blindfold one child in each pair.
 - Give them enough time to get to know the tree.
 - Have the partner bring them back to where they started, taking a different route than before.
 - Take blindfolds off and have children try to find *their* tree.
 - Repeat, blindfolding other child in the pair.
7. Take a walk around the woods, looking at different trees.
 - Have children try to identify the trees based on what we have already talked about and using tree ID guides.
 - Have children collect something from each species we talk about, to make a tree identification guide when we return to gazebo/classroom; this can include doing bark rubbings
8. Return to gazebo/classroom. Setup children with contact paper, paper to label their leaves/needles/bark to make tree ID guides.
9. Put contact paper on top of what they want to have in their guides.
10. Make a cover with name on it.
11. Punch holes and pass out string/twine to hold guides together.
12. Do leaf rubbings if time allows.

Name of Program: ***Scavenger Hunt in Nature***

Location: **Paul Smith's College, Gazebo**

Date & Time: *Thursday, August 14 2-3:30 p.m.*

Age: *Ages 6-11*

Descriptor: Go on a scavenger hunt and learn about what can be found on the forest floor and seen in nature. This will be an adventure using your senses to look, listen, feel, and smell the neat things that can be found in the outdoors.

Objective: To show kids some of the interesting things that can be found in nature, just by looking around. Basic introduction to Leave No Trace ethic (www.lnt.org).

Materials: nametags, clipboards, whistles, pencils, scavenger hunt list (things on the trail)

Activity:

1. Hand out nametags.
2. Introduction and bathroom, sunscreen/bugspray.
3. Explain stewardship program, why it is important to conduct plant surveys and to map invasive plants.
4. Explain basic idea of Leave No Trace principles.
 - Talk about going hiking/camping
 - What to take?
 - What to leave behind?
5. Talk about using senses to find objects.
6. Put kids in pairs, give each pair a whistle, clipboard, list, and pencil. Talk about items on list, explain that they need to find these items on the ground.
7. Walk out to trail, give kids 30-45 minutes to locate the items on the list.
8. Gather the group and talk about what the kids found, compare.
9. Talk about other things on the trail that weren't on the list.
10. We ended up doing the *Meet a Tree* activity.

Name of Program: ***Exploring a Wetland by Boat*** ****CANCELLED****

Location: **Paul Smith's College, Gazebo**

Date & Time: *Thursday, August 21 1-4 p.m*

Age: *Ages 10-14, must weigh 90 lbs. to fit into Adult sized Personal Flotation Devices*

Descriptor: Participants will learn basic boater safety skills necessary to canoe under the instruction of watershed stewards. We will canoe on Lower St. Regis Lake, examining plant and other aquatic life.

Objective: Teach kids about basic boater safety skills necessary to canoe on a small body of water, and to gain a better understanding of aquatic life.

Materials: nametags, canoes, paddles, PFDs for youth sizes, whistles,

Kids should bring: hat, sunscreen, windbreaker,

Risk Management:

Eric and I drew up a Risk Management Plan for the Educational Programs, in cooperation with Susan Sweeney, the Director of Human Resources at Paul Smith's. The risk management plan examines the potential risks and harms associated with the Educational Programs for kids, and outlines techniques for preventing such occurrences. The risk management plan included a clause regarding required pre-registration for all programs, including a medical waiver and release. A "Registration, Medical Information, and Release Form" was required for each participant in the Educational Programs, preferably returned to the Educational Programs Coordinator prior to the date of the program. This was sent to parents who called to inquire about the educational programs, along with information detailing the gear that children needed to participate in the programs.

The programs were free of charge to local and out-of-town children. All supplies were provided by the stewardship program. At the most children were encouraged to wear proper clothing and shoes, and to bring a drink or snack.

Attendance:

The first three programs were cancelled due to low enrollment. Only one child was signed up for each of these programs. Factors contributing to the poor enrollment could include the lag time that resulted after I completed information for press releases, as well as coinciding with the end of school and beginning of summer vacation, and competition with other area activities. The first program, *All About Water*, which was originally scheduled to take place on Thursday, June 26, was later rescheduled for Thursday, July 31. *Exploring a Bog on Foot* was cancelled due to low enrollment. *Exploring a Wetland by Boat* was also cancelled due to low enrollment. This program was designed for children ages 10-14. The date conflicted with Saranac Lake High School orientation.

There were 3 children at the invasive species program on Thursday, July 24. The program was scheduled to take place at the Lake Flower boat launch, but thunder and

lightning storms that day forced us to take it inside to the Mackenzie Cantwell room at the Saranac Lake Free Library. The charge for use of the room for up to ten people was a total of \$5. Not a bad investment for the purpose of actually running a program!

Five children attended the program titled *All About Water*, which was held at Paul Smith's College. We met at the Gazebo, spent some time on the shoreline of Lower St. Regis Lake, later returning to the Gazebo to learn about local fish.

There were 8 children in attendance at the program titled *It's in the Trees*. We began with an introduction to leaves, needles, cones, evergreens, and hardwoods at the Gazebo. Later we walked to the Alumni Park where stewards showed the participants several of the different tree species found in the area. The next activity took place in Freer 209 where we made tree identification guides, using materials collected in the field, tree identification labels, and contact paper.

Nine children attended the program titled *Scavenger Hunt in Nature*, which was held at Paul Smith's College. This was the most sought-after program of the summer. Unfortunately, I had to turn a couple families away who called at the last minute looking to register their children for the program. If the children had enrolled I would have exceeded the staff: child ratio included in the risk management plan. Scavenger Hunts are always popular activities for children and in the future I would suggest allocating more stewards to staff this program, thus allowing more children to participate. We met at the Gazebo and then walked to the outdoor classroom where the scavenger hunt was held. After the scavenger hunt we played the "Meet a Tree" game.

Suggestions for Next Year:

Try to schedule more programs to take place in Saranac Lake, and even Lake Placid. Most children participating in the programs at Paul Smith's College resided in Saranac Lake, Paul Smith's, or Tupper Lake. Several were children of parents who work at Paul Smith's College. It would be good to reach out to children living in Lake Placid as well, since we are stewards of Lake Placid lake. Originally the program, *All About Water*, was to take place in Lake Placid to coincide with Lake Appreciation Week, however a venue was not sought out early enough in advance and no suitable location was found. Suggestions for a Lake Placid location include the beach house on Mirror Lake, a conference room at the Olympic Regional Development Authority's Arena, or the

town hall. Other ways to reach out to children in Lake Placid in 2004 could include an outreach program for the Lake Placid Summer Youth Commission.

Paul Smith's College Watershed Stewardship
 Program
 Educational Programs for Kids 2003
 Attendance

	Program Title	Date	Number of Children	
1	All About Leaves	7/10/2003	0	*cancelled
2	Exploring a Bog on Foot	7/17/2003	0	*cancelled
3	Tree Identification	7/23/2003	32	*Saranac Lake Area Youth Program
4	Where did they come from? It's an Invasion!!	7/24/2003	3	
5	All About Water	7/31/2003	5	
6	It's In the Trees	8/7/2003	8	
7	Scavenger Hunt in Nature	8/14/2003	8	
8	Exploring a Wetland by Boat	8/21/2003	0	*cancelled
	Total:		56	

Figure 1- Summer Attendance Totals, 2003 Educational Programs

Be sure to find out when other summer programs are taking place, such as story-time at the local libraries, activities at the Visitor Interpretative Center, activities at the Lake Placid Center for the Arts, etc. While there are a lot of activities taking place during the summer for children in the Adirondacks it is important to try not to overlap with other activities.

Again, publish and advertise the schedule of programs as early in the summer as possible, and then monthly throughout the summer. This will mean staying in close contact with the communications office on campus throughout the summer, making sure that press releases are sent to the newspapers and radio stations on a regular basis. Parents make plans for summer camps, vacations, and other activities early in the summer, so the sooner they know about the programs, the better. Use the contact list from 2003 to send information to families who previously participated in the educational programs. I told many of the parents who participated during the summer that they would be hearing from us at the beginning of next summer. Do more advertising on the Paul Smith's campus, perhaps via faculty/staff email, or put a flyer in each faculty/staff member's mailbox at the beginning of the stewardship season.

Field Guide for the Paul Smith's College Wetland Project
Prepared by: Justin Levine

Introduction:

Paul Smith's College has started a wetland project on campus. The recreated wetland is located near the new library and is visible to everyone who comes on to campus. A natural history field guide has been prepared for the project by Steward Justin Levine. The production of this field guide was supervised by Dr. Celia Evans of Paul Smith's College.

The field guide is designed to be used by new students so that they may navigate the wetland and identify various native plants. More than fifteen species of wetland plants are contained in the wetland, and the field guide has an information sheet on each species.

The field guide contains several areas on information on each species, including common name, Latin name, other common names, range, habitat, description, associations, and side notes.

A completed version of the field guide is included in the appendix.

2003 Lake Data: Figures for Upper St. Regis Lake, Upper Saranac Lake and Lake Placid

The following pages of the WSP 2003 Final Report contain the data collected at each of the boat launches. Data is totaled by week and then a total for the 15 weeks of stewardship is tabulated at the bottom of each table. Data was collected by watershed stewards daily during the time they were stationed at the launch, from 7:00 a.m. to 4:00 p.m.

Key for Lake Data Tables:

Boat Type/Size: HP=Horsepower (outboard motors), MO=Outboard Motor, MI=Inboard Motor, I/O=Inboard/Outboard Motor (Stern-drive), P=Pontoon, J=Jetski (Personal Watercraft), S=Sailboat, R=Rowboat, C=Canoe, K=Kayak, B=Barge.

Total # of Boats: The total number of boats recorded at the launch for the particular week.

Total # People: The total number of people recorded at the launch for the particular week.

Registered Boats: avg yr.=The average registration year of the boats recorded at the launch. N=Number of boats not registered.

Average Time (min)= The average time spent at the actual launch site.

Gender: M=male, F=female

Pets= The total number of pets recorded in a particular week.

Out only= The steward only recorded the particular boat exiting the lake, not entering the lake. Particularly important for Upper St. Regis Lake and Upper Saranac Lake where there are other places to launch a boat than where the stewards are stationed.

Brochure= The total number of people who took a brochure offered by the steward.

SRCA= The number of people planning to enter the St. Regis Canoe Area; unique to the Upper St. Regis Lake launch.

4 stroke motor= The number of outboard motorboats possessing 4 stroke, rather than 2 stroke, motors.

Upper St. Regis Lake, 2003 Data

Week #	Date	Boat Type/Size (indicate hp for MO)											Total # of Boats	Total # People	Registered Boats		Average Time (min)	Gender		Pets	Out Only	Brochure	SRCA	4 stroke motor	
		(hp)	MO	MI	I/O	P	J	S	R	C	K	B			avg yr.	N		M	F						
1	5/23-5/29	12.9	5	0	0	0	0	0	0	20	9	0	34	62	4.25	0	0:13	48	14	0	5	4	11	1	
2	5/30-6/5	15.7	6	0	0	0	0	0	1	1	0	1	9	16	4.11	1	0:10	16	0	1	0	0	3	2	
3	6/6-6/12	33.2	13	0	0	0	0	0	0	7	3	4	27	54	4.76	4	0:24	38	16	0	2	2	8	1	
4	6/13-6/19	58.6	15	0	0	1	0	0	1	10	4	4	35	70	4.88	8	0:20	59	11	0	2	4	8	3	
5	6/20-6/26	63.8	19	0	0	0	0	0	0	23	6	0	48	91	4.56	6	0:35	74	18	3	8	7	12	3	
6	6/27-7/3	21.2	8	0	0	0	0	0	1	21	8	2	40	83	4.556	2	0:15	54	25	2	2	3	18	0	
7	7/4-7/10	33.7	17	0	0	1	0	0	4	64	32	0	118	224	4.927	0	0:20	130	94	10	10	3	27	1	
8	7/11-7/17	32.1	7	0	0	0	0	0	1	22	2	5	37	86	5.333	5	0:20	57	24	4	6	0	9	4	
9	7/18-7/24	38.8	13	0	0	0	0	0	0	35	12	4	64	131	4.933	3	0:20	86	45	1	7	0	13	7	
10	7/25-7/31	35	11	0	0	0	0	0	1	59	11	0	82	158	4.778	0	0:22	76	68	4	4	1	19	5	
11	8/1-8/7	29.4	12	0	0	0	0	0	1	15	4	0	32	65	4.583	0	0:21	41	23	3	2	0	6	7	
12	8/8-8/14	40.8	8	0	0	0	0	0	1	31	7	0	47	100	4.6	0	0:20	67	31	4	8	1	16	2	
13	8/15-8/21	13.1	18	0	1	1	0	0	1	37	14	0	72	151	4.813	2	0:15	87	63	3	6	0	8	0	
14	8/22-8/28	29.1	8	0	1	1	1	1	1	27	8	0	48	94	4.533	1	0:15	58	34	5	6	0	12	1	
15	8/29-9/01	33.7	11	0	0	1	0	0	1	10	8	0	31	61	4.806	0	0:20	37	24	2	9	0	10	1	
	2003 Total:	32.7	171	0	2	5	1	1	14	382	128	20	724	1446	4.695	32	0:19	928	490	42	77	25	180	38	
	(avg)													2005		(avg)									

Table 1: Upper St. Regis Lake, 2003 Data. This table shows the data collected at the Upper St. Regis Lake launch from May 23, 2003, to September 1, 2003. Totals are by week. (Data is missing for the following dates: June 27, July 10, 14, 15, August 10, 26).

Upper Saranac Lake

Week #	Weekly Totals:	Boat Type/Size (indicate hp for MO)											Total # of Boat	Total # People	Registration		Average T (minutes)	Gender		Pets Y	Out Only	Brochure	4 stroke motor or outboard
		(hp)	MO	MI	I/O	P	J	S	R	C	K	B			Avg. yr.	N		M	F				
1	05/23 to 05/29	70.8	23	0	3	0	0	1	0	6	1	0	34	78	4	0	17	48	26	4	11	4	2
2	05/30 to 06/05	57.5	12	1	8	0	0	0	0	0	0	0	21	42	4.449	2	11	37	5	0	1	1	3
3	06/06 to 06/12	70.1	38	2	8	3	3	1	1	3	2	0	61	145	4.16	4	14	103	43	10	13	3	5
4	06/13 to 06/19	62.3	29	3	10	3	0	0	0	3	3	0	51	124	4.54	2	16	87	37	11	8	0	3
5	06/20 to 06/26	81.3	35	4	13	1	1	0	0	7	15	0	76	155	4.69	3	15	111	42	6	6	1	3
6	06/27 to 07/03	64.4	44	6	26	3	4	1	0	14	8	0	106	288	4.568	1	18	194	95	18	10	4	4
7	07/04 to 07/10	58.3	71	12	37	7	3	4	1	12	21	0	168	444	4.92	5	14	277	168	26	21	1	7
8	07/11 to 07/17	77.1	35	5	11	5	1	0	0	4	10	0	71	186	4.61	4	15	140	47	8	15	2	3
9	07/18 to 07/24	77.9	65	0	12	1	7	2	0	12	9	0	108	275	4.86	3	18	185	93	7	18	0	8
10	07/25 to 07/31	72	57	11	18	4	4	2	0	44	3	0	143	382	4.73	3	33	279	101	6	34	0	10
11	08/01 to 08/07	55.8	33	3	14	0	1	3	0	29	5	0	88	210	4.88	4	19	155	55	6	20	0	7
12	08/08 to 08/14	61.8	101	3	15	1	7	1	3	93	30	0	254	463	5.09	4	14	255	121	8	26	3	9
13	08/15 to 08/21	69.4	42	4	13	1	5	3	0	25	3	0	96	220	5.03	0	13	155	61	4	11	1	3
14	08/22 to 08/28	60.3	29	4	9	0	1	0	0	15	4	4	66	158	5.041	5	16	107	51	6	20	0	3
15	08/29 to 09/01	53.6	19	8	4	0	2	1	1	0	0	1	36	93	4.941	1	12	74	17	4	12	0	1
Totals:		66.17	633	66	201	29	39	19	6	267	114	5	1379	3263	4.7006	41	16	2207	962	124	226	20	71
		(avg)													2005		(avg)						

Table 2: Upper Saranac Lake Back Bay, 2003 Data. This table shows the data collected at the Upper Saranac Lake Back Bay launch from May 23, 2003, to September 1, 2003. Totals are by week. (Data is missing for the following dates: July 16, August 17, 25, 30).

Lake Placid State (DEC) Launch, 2003 Data																						
Week #	Date	Boat Type/Size (indicate hp for MO)											Total # of Boats	Total # People	Registered Boats		Average			Out Only	Brochure	
		(hp)	MO	MI	I/O	P	J	S	R	C	K	B			avg yr.	N	Time (min)	Gender M	Gender F			Pets
1	5/24-5/25	60	18	3	2	0	0	0	0	2	3	1	29	67	3.64	1	20	48	17	0	7	1
2	5/26-6/1	44	12	1	3	1	0	0	0	0	3	0	20	49	3.99	1	15	42	7	3	7	3
3	6/2-6/8	79	25	10	4	0	0	0	0	6	4	1	50	126	4.7	0	25	91	37	5	9	6
4	6/9-6/15	71	28	2	19	2	0	0	0	0	9	5	65	148	4.52	7	13	115	35	3	3	3
5	6/16-6/22	68	23	9	8	3	0	0	0	1	9	0	53	103	4.36	1	14	83	24	4	10	0
6	6/26-6/29	90	35	15	33	5	0	1	0	14	31	3	137	326	4.8	1	15	220	107	9	10	4
7	7/3-7/6	56	45	14	32	2	0	1	0	8	26	2	130	334	4.87	7	13	220	112	19	2	10
8	7/10-7/13	59	20	6	10	2	0	2	0	7	24	2	73	181	4.98	1	18	127	53	3	7	0
9	7/17-7/21	75	38	11	28	0	0	0	1	4	14	1	97	252	5.06	4	18	171	81	13	12	0
10	7/24-7/27	61	27	8	11	5	0	0	0	4	16	2	73	175	4.99	3	14	120	60	5	13	0
11	7/31-8/3	50	22	11	10	2	0	0	4	19	7	1	76	167	4.63	4	13	120	71	6	10	0
12	8/7-8/10	58	55	12	11	5	0	0	0	7	9	1	100	259	4.8	4	12	167	91	9	20	0
13	8/14-8/17	61	39	18	20	2	0	1	1	12	23	0	116	330	4.74	4	14	201	125	8	12	0
14	8/20-8/24	52	29	18	10	1	0	1	0	12	34	0	105	238	4.76	3	12	156	82	4	18	2
15	8/27-8/31	72	41	8	15	5	0	7	1	10	34	2	123	295	4.63	3	13	198	96	12	28	0
2003 Total:		64	457	146	216	35	0	13	7	106	246	21	1247	3050	4.6313	44	15	2079	998	103	168	29
		(avg)													2005	(avg)						

Table 3: Lake Placid State (DEC) Launch Data, 2003. This table shows the data collected at the Lake Placid State (DEC) launch from May 24, 2003, to August 31, 2003. Totals are by week.

Appendix: Paul Smith's College Wetland Field Guide
Prepared by: Justin Levine

Blueberry

Vaccinium sp.

OTHER NAMES: Common, swamp blueberry

RANGE: 440' to 4960' in Adirondack Park

Various species grow worldwide.

HABITAT: Acid soils. Highbush is more tolerant of pH than other sp. However, pH is more important than water in determining site placement.

Usually in wetlands, but may be found on acidic upland soils.



BRIEF DESCRIPTION: Blueberry is a widely variable shrub. Cross-pollination and hybridization make distinguishing species difficult. May grow from low shrub up to twelve feet in height. Small, white flowers are easily recognizable and give way to edible bluish-purple fruits.

ASSOCIATES: Other blueberries. Sphagnum moss, tamarack, spruces. Insect pollinated. Highly dependent on mycorrhizae. Often hybridizes with other blueberries making ID difficult.

SIDE NOTES: White, bell shaped flowers give way to blue-purple fruit that is edible and quite sweet.

Commercially cultivated only in N. America, blueberry is a well known and utilized plant.

Amsel, S. (1997). *Adirondack Nature Guide*. Mt. Kisco, NY: Pinto Press.

Eastman, J. (1995). *The Book of Swamp and Bog*. Mechanicsburg, PA: Stackpole Books.

Kudish, M. (1992). *Adirondack Upland Flora*. Saranac, NY: The Chauncy Press.

Mitsch, W. J., & Gosselink, J. G. (2000). *Wetlands (3rd ed.)*. New York, NY: John Wiley & Sons, Inc.

Newcomb, L. (1977). *Newcomb's Wildflower Guide*. New York, NY: Little, Brown and Company.

Rook, E. (1998). *Various Plant Biographies*. Retrieved: 6/03 through 8/03 from:

www.rook.org/earl/bwca/nature/index.html

Cinnamon Fern

Osmunda cinnemomea

OTHER NAMES: Swamp break, breadroot, fiddle heads

RANGE: 210' to 3124' in Adirondack Park

Worldwide in Northern Hemisphere

HABITAT: Acidic to neutral soils.

Cinnamon fern is widely tolerant of shade, as well as flooding. Usually along the edges of marshes, bogs and fens.



BRIEF DESCRIPTION: Fronds have alternate leaflets. This fern may grow up to four feet tall.

Recognize characteristic cinnamon-colored spore stalks growing from the middle.

ASSOCIATES: Royal ferns, other ferns. Sphagnum moss and other eastern freshwater plants.

SIDE NOTES: This large fern has a long history of lore and mythology associated with it. Purported to have guarded several different mythological characters, this fern is ranked among the oldest plants still in existence. The fiddle heads (curled up fronds found early in the spring) are edible.

Amsel, S. (1997). *Adirondack Nature Guide*. Mt. Kisco, NY: Pinto Press.

Eastman, J. (1995). *The Book of Swamp and Bog*. Mechanicsburg, PA: Stackpole Books.

Kudish, M. (1992). *Adirondack Upland Flora*. Saranac, NY: The Chauncy Press.

Mitsch, W. J., & Gosselink, J. G. (2000). *Wetlands (3rd ed.)*. New York, NY: John Wiley & Sons, Inc.

Newcomb, L. (1977). *Newcomb's Wildflower Guide*. New York, NY: Little, Brown and Company.

Rook, E. (1998). *Various Plant Biographies*. Retrieved: 6/03 through 8/03 from:
www.rook.org/earl/bwca/nature/index.html

Leatherleaf

Chamaedaphne calyculata

OTHER NAMES: Cassandra

RANGE: 588' to 5300' in Adirondack Park

Most boggy areas in North America

HABITAT: Peat bogs and fens. Needs slightly acidic soil. Is shade intolerant, needing full sunlight to grow. Grows extremely densely (~ 200 stems per sq. meter).



BRIEF DESCRIPTION: Leatherleaf is an evergreen shrub. Very tough, scaly leaves are the dominant trait. Blueberry-like flowers hang down from the stem, while seed casings point upward. Another characteristic is that the leaves get noticeably smaller at the tip of the stem.

ASSOCIATIONS: Insect pollinated. Sphagnum moss is most commonly found with leatherleaf. Grows with virtually any other freshwater wetland plant, but may shade or be shaded out by other shrubs/trees.

SIDE NOTES: Chief source of tannins in wetlands. Used in many teas, though not much should be taken. Can survive light fires, but is often replaced by blueberry after heavier fires.

Amsel, S. (1997). *Adirondack Nature Guide*. Mt. Kisco, NY: Pinto Press.

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Rook, E. (1998). *Various Plant Biographies*. Retrieved: 6/03 through 8/03 from:

www.rook.org/earl/bwca/nature/index.html

Mountain Holly

Nemopanthus mucronata

OTHER NAMES: Brick timber, longleaf holly and mountain winterberry (an upland sp.)

RANGE: 750' to 4857' in the Adirondack Park

Northern North America

HABITAT: Swamps to upland areas. Prefers more acidic soils in relatively close proximity to bogs. Moderately shade tolerant, and moderately flood tolerant.

BRIEF DESCRIPTION: Yellowish flowers appear earlier in summer than winterberry, but fruits are similar. The

leaves are smaller as well, while being smooth too. Cloning shrub that may be densely stemmed.



ASSOCIATES: Insect pollinated. Northern white cedar, larch, alders, and sumacs may grow with winterberry.

SIDE NOTES: Fruit is toxic to humans, but foraging occurs in the wild. Foragers usually resort to these berries after most other food sources have been depleted because of the bitter taste.

- Amsel, S. (1997). *Adirondack Nature Guide*. Mt. Kisco, NY: Pinto Press.
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Kudish, M. (1992). *Adirondack Upland Flora*. Saranac, NY: The Chauncy Press.
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Rook, E. (1998). *Various Plant Biographies*. Retrieved: 6/03 through 8/03 from: www.rook.org/earl/bwca/nature/index.html

Pussy Willow

Salix discolor

OTHER NAMES: Glaucus willow, sallows, osiers

RANGE: 100' to 2878' in Adirondack Park

Most of North America, near water (*Salix* means
“near water”)

HABITAT: Can grow virtually anywhere. Along stream
banks, edges of wetlands and gardens. Wide
tolerance to flooding, pussy willow prefers slightly
acidic to neutral soils. Shade intolerant.



BRIEF DESCRIPTION: A four to seven foot tall shrub. Pussy willow is one of the most recognizable
willows around. The flowers are catkins, which are its namesake. These shrubs are a pioneer
species, often stabilizing a disturbed area and then getting out-competed by secondary species.

ASSOCIATIONS: Other willow shrubs (especially black willow), sensitive fern, alders, dogwoods. Wind
pollinated.

SIDE NOTES: Widely used in gardens and floral arrangements. Seeds are extremely short-lived and
must germinate quickly. Hybridization by cloning and cross-pollination have made many
willow shrubs difficult to identify.

- Amsel, S. (1997). *Adirondack Nature Guide*. Mt. Kisco, NY: Pinto Press.
Eastman, J. (1995). *The Book of Swamp and Bog*. Mechanicsburg, PA: Stackpole Books.
Kudish, M. (1992). *Adirondack Upland Flora*. Saranac, NY: The Chauncy Press.
Mitsch, W. J., & Gosselink, J. G. (2000). *Wetlands (3rd ed.)*. New York, NY: John Wiley & Sons, Inc.
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and Company.
Rook, E. (1998). *Various Plant Biographies*. Retrieved: 6/03 through 8/03 from:
www.rook.org/earl/bwca/nature/index.html

Blue Flag Iris

Iris versicolor

OTHER NAMES: Blue iris, snake-liver, fleur-de-lis

RANGE: 115' to 1700' in Adirondack Park

East-central North America

HABITAT: Eastern freshwater wetlands. Relatively large range of tolerance to growing conditions. Prefers barely acidic, mineral rich soils. Several upland species are also native.

BRIEF DESCRIPTION: Broad, tough, bluish-green leaves that resemble cattails, but shorter. Large, especially showy blue flowers with purple veins are the defining characteristic. Thrives in full sun, but can handle light shade.



ASSOCIATIONS: Insect pollinated. Sedges, rushes, and other irises.

SIDE NOTES: This flower adorned the French national flag in the early part of American history. Toxic to humans and cattle.

- Amsel, S. (1997). *Adirondack Nature Guide*. Mt. Kisco, NY: Pinto Press.
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Blue Vervain

Verbena hastata

OTHER NAMES: Iron weed, false or American vervain

RANGE: 100' to 1653' in Adirondack Park

E. North America, close relatives
throughout Northern Hemisphere

HABITAT: Has a wide range of tolerance for pH and flooding. Generally prefers wetter sites, but shows little preference for acid, basic, or neutral soils.



BRIEF DESCRIPTION: Purplish flowers that cluster tight to stem. Lower flowers mature first, with flowers at the tip of the stem maturing into the fall. Narrow, toothed leaves.

ASSOCIATIONS: Insect pollinated (though sometimes flowers self-pollinate). Some birds eat the seeds, as do some smaller mammals.

SIDE NOTES: Used to make various medicinal teas. European vervain has been long associated with the occult and witches.

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Round-leaf Sundew

Drosera rotundifolia

OTHER NAMES: Sundew, dew-plant, youthwort, red-rot

RANGE: 1500' to 1860' in Adirondack Park

East-central North America

HABITAT: Peat bogs, marshy areas, peat mats. Slightly acidic soils in wetland areas. Because sundews are very small (2-3" tall), they need full, open light.

BRIEF DESCRIPTION: Round-leaf sundew is a very small herb in wetlands. Usually bright green leaves have radiating red hairs with drops of a sticky liquid on the ends that glisten like dew in the sun.



ASSOCIATIONS: Insect pollinated. Peat moss, and pitcher plants.

SIDE NOTES: Sundews make up one of three insectivorous groups of plants in wetlands (pitcher plants and bladderworts are the others). Sundews actually trap insects with the sticky liquid on the hairs. After the insect touches several of the hairs quickly, the sundew grows extremely quickly to close the leaf around the insect.

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Sensitive Fern

Onoclea sensibilis

OTHER NAMES: Bead Fern (due the bead-like hanging of spore cases)

RANGE: 210' to 2353' in Adirondack Park

Most of N. America, naturalized in Europe and Eastern Asia

HABITAT: Freshwater wetlands to lightly forested. Prefers shade, but will

handle sun with adequate water. Very sensitive to temperature changes, especially cold. Usually in slightly acidic soils.

BRIEF DESCRIPTION: Opposite, broad fronds are the dominant trait. Sensitive fern is easily recognized by the obvious frailty of the fronds. Sterile, broad fronds grow between 16-30" above ground. Fertile fronds are modified to support bead-like casings. This fern is quite common in natural areas around N. America, and can sometimes grow with such propensity as to become weed-like.

ASSOCIATIONS: Grows with virtually any other plants that have similar habitat requirements, especially other ferns.

SIDE NOTES: Sensitive fern is known to be poisonous to mammals, though the poisonous chemical has yet to be identified. Both the sterile and fertile fronds are poisonous.

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Sheep Laurel

Kalmia angustifolia

OTHER NAMES: Lambkill, sheep kill, calf kill.

RANGE: 750' to 5076' in Adirondack Park

Eastern North America

HABITAT: Has a wide range of moisture tolerance, so can grow in bogs, but also on acidic upland soils.

BRIEF DESCRIPTION: A smaller shrub, sheep laurel has opposite of three-whorled leaves that remain evergreen. Red to pink flowers grow tightly to the stem.

ASSOCIATIONS: Because of the wide habitat it enjoys, sheep laurel can be found with virtually anything. However, it is believed that sheep laurel is allelopathic to black spruce. Insect pollinated.



SIDE NOTES: The stamen of the flowers are spring loaded, so that an insect touching the flower will set them off and be coated in pollen. The stamen then reset themselves. Poisonous to humans and cattle.

- Amsel, S. (1997). *Adirondack Nature Guide*. Mt. Kisco, NY: Pinto Press.
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Swamp Milkweed

Asclepias incarnate

OTHER NAMES: Rose milkweed, white Indian hemp

RANGE: 100' to 1620' in Adirondack Park

All across North America

HABITAT: Needs full sun in fens. Prefers edges of wetlands in close proximity to open water. Most other milkweed sp. are upland species, so this milkweed is rather easily identified.

BRIEF DESCRIPTIONS: Flowers cluster in pink-red groups at top of stems. Long, slim leaves have consistency of other milkweeds.



ASSOCIATIONS: Insect pollinated. Many insect residents, including a few who spend their entire lives on swamp milkweed. Some animals browse, but taste is horrible due to toxicity. Loostrike and white willows are commonly found with swamp milkweed.

SIDE NOTES: Poisonous to humans. Some birds, mammals and insects can palate the bitter taste. Tea will supposedly rid you of worms in less than one hour.

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Sweet Gale

Myrica gale

OTHER NAMES: Dutch myrtle, scotch gale, bay-bush, sweet willow

RANGE: 588' to 1850' in Adirondack Park

World-wide in the Northern Hemisphere

HABITAT: Along the fringe of fens, bogs, and swamps. Prefers neutral soil (neither acidic nor mineral-rich). Moderately shade tolerant, it prefers open sun.

BRIEF DESCRIPTION: May grow up to six feet. Entire leaves are toothed from the middle to the tip, and smooth towards the stem. Resin glands on the undersides of the leaf (sometimes on top, too) are the defining characteristic. Pleasantly aromatic.



ASSOCIATIONS: Sphagnum moss, sedges willows, and alders. Wind pollinated.

SIDE NOTES: Voracious cloner. Plant of some cultural significance for over 500 years.

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Three Way Sedge

Dulichium arundinaceum

OTHER NAMES: Pond Sedge

RANGE: 150' to 1700' in Adirondack Park

All of North America north of Mexico

HABITAT: Full sun, usually around pond edges. Acidic to neutral soils, wet soil with close proximity to open water.

BRIEF DESCRIPTION: Most recognizable and distinguishable sedge. Look straight down on the plant to see three ranks of leaves. Edges on stem also help to lump this plant in with the sedges instead of the grasses.



ASSOCIATIONS: Wind pollinated. Cattails, larch, leather leaf and sweet gale have similar requirements and are often found with three way sedge.

SIDE NOTES: Lightly browsed by many birds and mammals, three way sedge is a rather benign wetland occupant.

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Turtlehead

Chelone glabra

OTHER NAMES: Snake-head, fish-mouth, shell-flower

RANGE: 800' to 4735' in Adirondack Park

Eastern N. America

HABITAT: Prefers lightly acidic to neutral soils.

Spotty distribution makes this one of the more difficult plants to find in the wild.

Often solitary, they reproduce by seed and rhizome propagation.

BRIEF DESCRIPTION: The unique, white, mouth-like flowers give this plant its name. They also make it easily identifiable. Flowers grow clustered along stalk, with older, lower flowers lower on the stem.



ASSOCIATIONS: Sedges, purple loostrife, other fringe plants. Turtle head is insect pollinated, and has a host of parasites and natural feeders. Birds and mammals apparently do not browse this plant much.

SIDE NOTES: Very bitter tea was used to cure a variety of ailments including tumors and liver problems.

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Winter Holly

Illex verticillata

OTHER NAMES: Common winterberry, false alder

RANGE: 210' to 1820' in Adirondack Park

Eastern North America

HABITAT: While tolerant of flooding, winter holly prefers shrubby swamps.

Neutral or barely acidic soils are preferential. Winter holly is moderately shade tolerant.



BRIEF DESCRIPTION: Cloning shrub with alternate leaves that are serrated with bristly tips. Pale yellow flowers give way to bright red fruit in the fall.

ASSOCIATIONS: Usual associates are black and white ash, red maple, tamarack, and blueberry. Insect pollinated.

SIDE NOTES: Most birds consume the fruit later in the winter because of the relatively poor nutrient and fat values. Usual browsers include deer, raccoons, and white-footed mice. The fruit is toxic to humans, and was used in the past to expel worms.

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