

Lake Minnetonka Conservation District

2009 Video Launch Monitoring Summary

Environmental Sentry Protection, LLC

Background

For the 2009 season, the Lake Minnetonka Conservation District (LMCD) in awarding a grant, contracted with Environmental Sentry Protection, LLC (ESP) to operate launch monitoring cameras (ILIDS¹) at the 2 busiest boat launches on Lake Minnetonka: Grays Bay and Maxwell Bay. The main goals of the program were to continue past objectives of the program including:

- 1) Reduce the risk of AIS introduction into Lake Minnetonka through dawn to dusk monitoring for periods when DNR interns are not present
- 2) Identify AIS violators who had attached weeds on their boat and trailer while launching.
- 3) Improve public education on AIS including if possible notifying violators of illegal transport.

Save The Lake Grant

In 2009, the LMCD implemented a grant program for Save the Lake funds which created a partial funding for the ILIDS program. In developing and submitting the grant request to the LMCD, ESP proposed to implement monitoring at the 3 busiest launches (Grays, Maxwell, and Spring Park) at a total of \$16,655. A letter from the Lake Minnetonka Association offered support for one of the sites contingent upon a followup program being developed. The Save the Lake committee recommended that only 2 launches be monitored by ILIDS, Grays and Maxwell. The grant awarded to ESP was for monitoring at two sites (at a limit of \$7,100) presuming that LMA would pay for the monitoring portion of this project.

Efforts to Develop a Followup Plan

ESP coordinated numerous meetings in early 2009 to explore how followup could occur in order to satisfy the LMA grant contingency. These meetings were held with the DNR, LMCD, and the LMA. The best recommendation that ESP could make was for the LMCD to provide boat registration numbers of violators of state and district illegal to launch laws to the DNR in order to followup with educational letters. This would be identical to the overdock violations followup that the LMCD has conducted in support of its own statutes where the DNR provides the registered boater information. This recommendation has yet to be acted on by the LMCD. In the absence of a followup plan, the LMA decided that they would not fund the review of the videos for the ILIDS program in 2009. ESP believes that with a followup plan, the LMCD would create support from funding sources to more fully implement the ILIDS monitoring program which would also result in a higher level of boater compliance. It is regretful that DNR enforcement has chosen at this time to not followup on ILIDS documented violations to state law despite the continued spread of Aquatic Invasives.

¹ The ILIDS is a hardened stainless steel casing holding a network based video camera, 12V battery, power conversion/sensing circuitry, and solar panels. The remote systems on the Internet convert uploaded MPEG4 videos and store the results in an Internet accessible database.

How The ILIDS Helps Prevent AIS

Video Inspection Complements the DNR Intern Program

Interns were present on Fri afternoons /Sat/Sun and holidays (Memorial Day through Labor Day) at Grays Bay and Maxwell Bay (45 days from 6am to 5pm). The ILIDS provided inspection coverage during the periods when interns were not present which accounted for approximately 56% of the activity at the launches compared with 59% of the time for 2008.

To Reduce Risk of New AIS Introductions

Lake Minnetonka faces threats from new varieties of AIS such as Hydrilla (newly discovered in Indiana, and Wisconsin), Brazilian Elodea (Powderhorn Lake, Minneapolis), and Zebra Mussels that are accessible from more than 55 boating accesses in Minnesota. One of the boaters using the access was observed to have come from Illinois. In Wisconsin Zebra mussels have already spread to 100 bodies of water. In Michigan, 227 lakes have Zebra mussels. One study shows the primary method of introduction is from mature mussels attaching to plants transported by boaters. Therefore it's clear why leveraging limited resources to get boaters to clean their boats is critical.

Project Implementation

The reinstallation used the same site locations from 2008 at Grays and Maxwell Bays. Permission was obtained from the DNR and the City of Minnetonka to operate cameras at Grays Bay and Maxwell Bay. The sites were active prior to the fishing opener and started capturing videos on 5/6. The contract period adjusted to start on 5/20.

Grays Bay

The footing location used was near the launch on the west side. This offered a close look at the trailers of boats launching, a connection to a power source, and indirect light from the overhead streetlight. Because the camera was always on, it could be logged into at any time to check configuration settings. A short circuit with the power supply at the light pole provided by the City of Minnetonka was problematic all season as it was difficult to diagnose. ESP noticed one evening that the light was not on and had the City of Minnetonka electricians come onsite on 10/15 where they eventually diagnosed the issue with their wiring. The ILIDS then had no issues in operation from that point forward until it was uninstalled on 10/26.

Maxwell Bay

An external solar panel was used to provide power to the camera so it could be running all the time. Videos were captured every day except for 2 days in late October.

Audio message

A recorded audio message was used at Maxwell Bay to remind boaters of the need to inspect and clean prior to launch. This message was audible only to boaters at the launch and was programmed to play several times before resting for a period of time. An audio message was not used at Grays Bay due to the issues with the power source that were occurring throughout the season. With these identified and resolved, an audio system with a volume control could be implemented in 2010.

Video Reviews

While not compensated directly, ESP reviewed 2,902 videos for the dates and counts shown in the appendix. This represented 742 launches. ESP will commit to reviewing another 2000 videos based on direction of LMCD staff.

ESP gained the approval of the LMA to make the videos available for the public to review through a link on their site. In conversations with one lake group, there is an interest in the public participating in this review. The link has to date not been put up on the LMA site.

Camera Outages

There were 12 camera outage days that lasted longer than 2 hours that were documented during the course of the season which were above the threshold of 10 allowable outages per camera. Most of these outages were attributable to the short circuit in the lighting at Grays Bay.

Violation Follow-up – Enforcement

Of launches reviewed only one boat was seen launching a weed at Grays Bay 7/5 at 10:37am. This was during a time when the launch was monitored by DNR staff. The suspect AIS violation was only recently discovered, and was reported to LMCD staff.

In another incident, the Minnetonka police department requested several videos in support of a DUI/BUI prosecution. This case has not been adjudicated yet, but the 3 videos provided have provided supporting evidence to be used in this case.

Summary Video/Launch Counts

From early May to late October over 48,000 videos were captured at these two launches for the season representing an estimated 16,855 launches (based on 2008 measurements). In 2008, 42,142 videos were captured between 5/10 and 10/10. 2009 counts are broken down as follows:

-----Videos Captured-----				
Launch	Period	Intern Period	ILIDS Period	Total
Grays Bay	5/8-10/26	10885 42.8%	14555 57.2%	25429
Maxwell	5/6-10/19	10474 46.17%	12214 53.83%	22688
			Total Videos Captured	48,117
			Estimated Launches	16,855

Findings / Observations

Despite a lower than desirable sample size, the trend for boaters launching weeds is holding at 0.13%. The comparable seasons measurements for boaters launching weeds were: 2006 (7.4%); 2007 (0.3%); 2008 (0.13%). Awareness of the monitoring by boaters was evident in conversations.

Again in 2009, the majority of the launches took place when interns were not present, only ILIDS.

Recommendations

These recommendations are suggested for 2008 with the primary goals of increasing the effectiveness of automated monitoring as a complement to DNR interns.

1) Adopt a policy to submit AIS violations to access registration information for educational letters. To further reduce the risk of boaters launching new AIS into Lake Minnetonka, boaters identified as launching aquatic plants into Lake Minnetonka need to understand the importance of their cleanoff behaviors in order to protect the lake.

In 2008, the Burnett County sheriffs department working with the Wisconsin DNR leveraged ILIDS to take action on both AIS violations and clean-offs observed at the boat launches. 5 uncontested citations were issued via the mail based on video evidence alone. Also, 10 gift certificates were given to boaters who had performed exceptional cleanoffs. The method for reviewing the videos involved having 4 separate authorities view suspect violations to reach concurrence on whether a citation should be issued.

In 2009, after reviewing over 10,000 videos for Yellow Lake in Burnett County, not one boater was observed to have been launching a weed in to the lake.

2) Expand the use of ILIDS at other launches to optimize in-person resources at peak times as a critical part of the AIS prevention program.

Cost/Benefit Data

Number of videos captured	48117
Approximate hours on duty	2635
Total seasonal cost	\$7,100
Cost per video (non-intern hours)	\$0.14 (compared to \$0.26 in 2008)
Cost per hour on duty	\$2.69 (compared to \$4.19 in 2008)

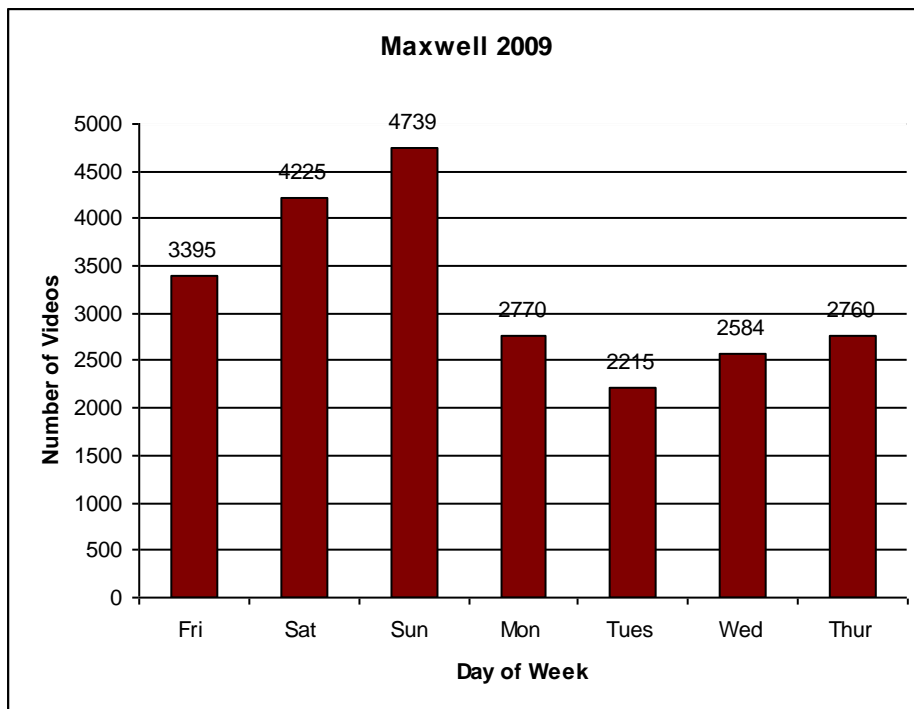
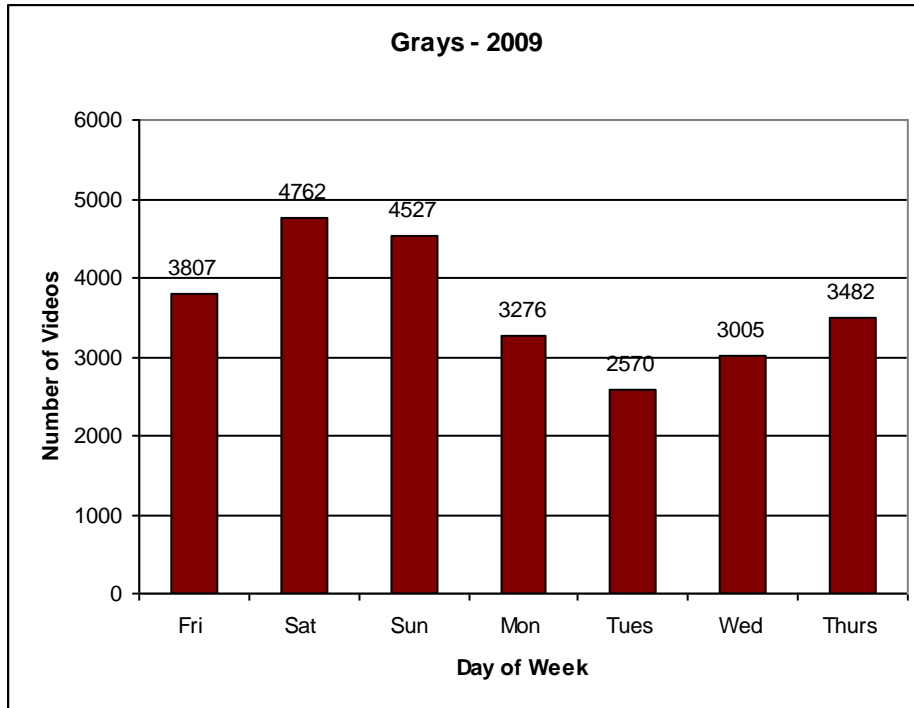
About the Company

Environmental Sentry Protection, LLC offers a stand-alone system to monitor boat launch events with network video and make a history available for web review by lake constituents and enforcement officials. It is a tamper-proof, onsite solution to capture boater clean-off activities to ensure compliance with the Aquatic Invasive Species laws so lakes can be protected from the extensive and irreversible impact of Aquatic Invasive Species such as Eurasian Watermilfoil, Curlyleaf Pondweed, and Zebra Mussels. Utilizing Internet connectivity for video storage, alerting, and remote management, this system offers continuous monitoring at boat launches.

For more information visit www.environmentalsentry.com

Or contact Eric Lindberg at 763-473-0051

Appendix A. Usage of Launch by Day of Week



Appendix B. Videos Reviewed (thru 11/13/09)

Date	Count
05 08 2009	72
05 09 2009	160
05 10 2009	23
05 11 2009	16
05 12 2009	25
05 13 2009	52
05 14 2009	149
05 15 2009	111
05 17 2009	1
05 18 2009	3
05 19 2009	1
05 20 2009	1
05 21 2009	3
05 26 2009	1
05 27 2009	1
05 28 2009	1
06 09 2009	1
06 11 2009	5
06 23 2009	1
06 25 2009	2
06 27 2009	1
06 30 2009	1
07 01 2009	1
07 02 2009	1
07 05 2009	303
07 06 2009	222
07 07 2009	153
07 09 2009	1
07 11 2009	72
07 15 2009	1
07 16 2009	1
08 02 2009	261
08 11 2009	1
08 16 2009	2
08 21 2009	109
08 22 2009	280
08 23 2009	11
08 31 2009	113
09 01 2009	124
09 02 2009	120
09 03 2009	154
09 04 2009	101
09 05 2009	117
09 06 2009	121
09 11 2009	1
09 12 2009	1
Total	2902