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# **Using Technology to Prevent Invasive Species Introduction at Boat Accesses**

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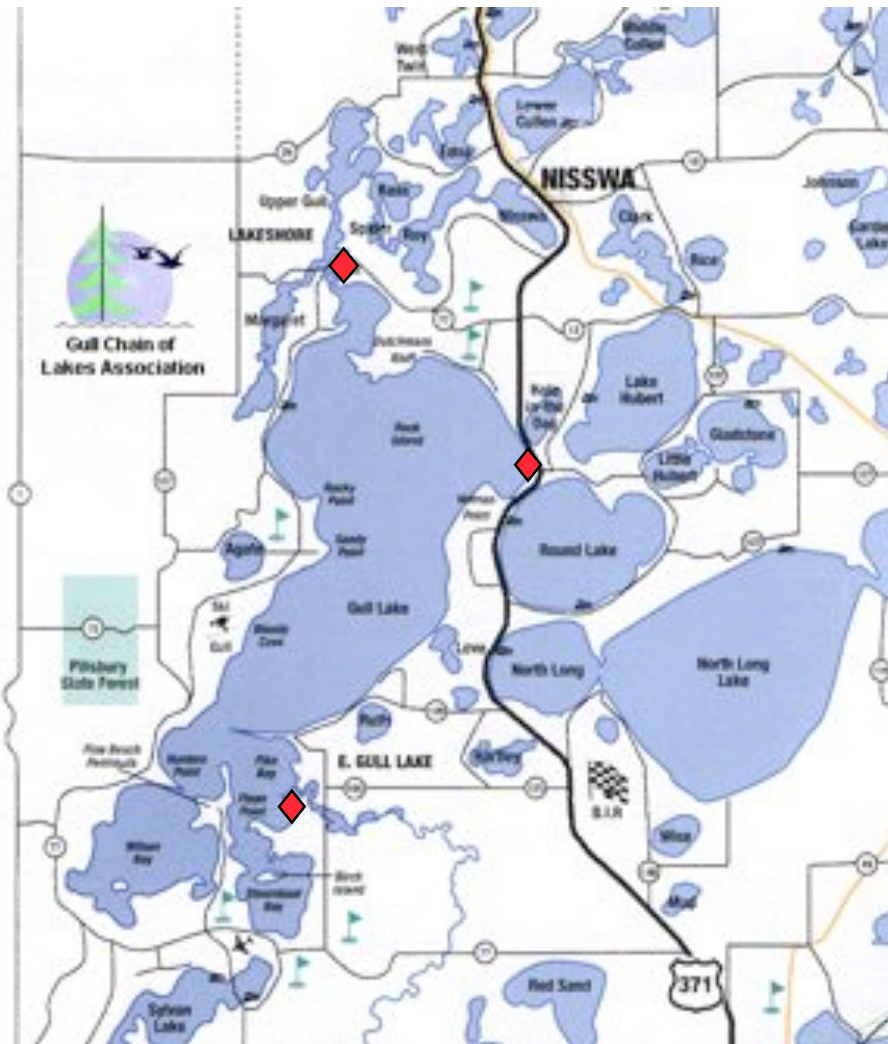
# Gull Chain of Lakes

An aerial photograph of the Gull Chain of Lakes, a series of interconnected lakes and islands in a forested area. The water is a deep blue, and the surrounding land is covered in dense green and brown trees. The lakes are irregularly shaped and connected by narrow channels. The overall scene is a complex network of water and land.

Photo by Vern Whitten  
[www.vernwhittenphotography.com](http://www.vernwhittenphotography.com)

# Gull Chain of Lakes

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- 8 lakes
- 13,000 acres
- 46.32 miles of shoreline
- 2700 homes/cabins
- 80 ft maximum depth
- 3 primary launches but multiple (20+) resort launches and small public and private accesses

# Invasives in the Gull Chain of Lakes

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- No Eurasian watermilfoil
- Zebra mussels found October, 2010
- Curley leaf pondweed in the upper chain

# DNR Intern Boat Inspection Program

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- \$10,000 cost shared between DNR and Gull Chain of Lakes Association
- 832 inspection hours plus driving time
- 3267 total inspections at three launch sites in 2009

# DNR Intern Boat Inspection Program

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- Inspection is primarily educational in purpose:
  - 6 question survey
  - Walk around with the boat owner
- 5% of boaters inspected came from another state

# I-LIDS Technology

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- **Internet Landing Installed Device Sensor**
- Records a 10 second video clip of every boat being launched and sends it wirelessly to the manufacturer for review
- Audio message is also given to boater
- Data shows that a large percentage of boat launches occur before 8 AM and after 5 PM when DNR interns are less likely to be working

# Using Technology

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- Warning sign is very important



# I-LIDS Maintenance

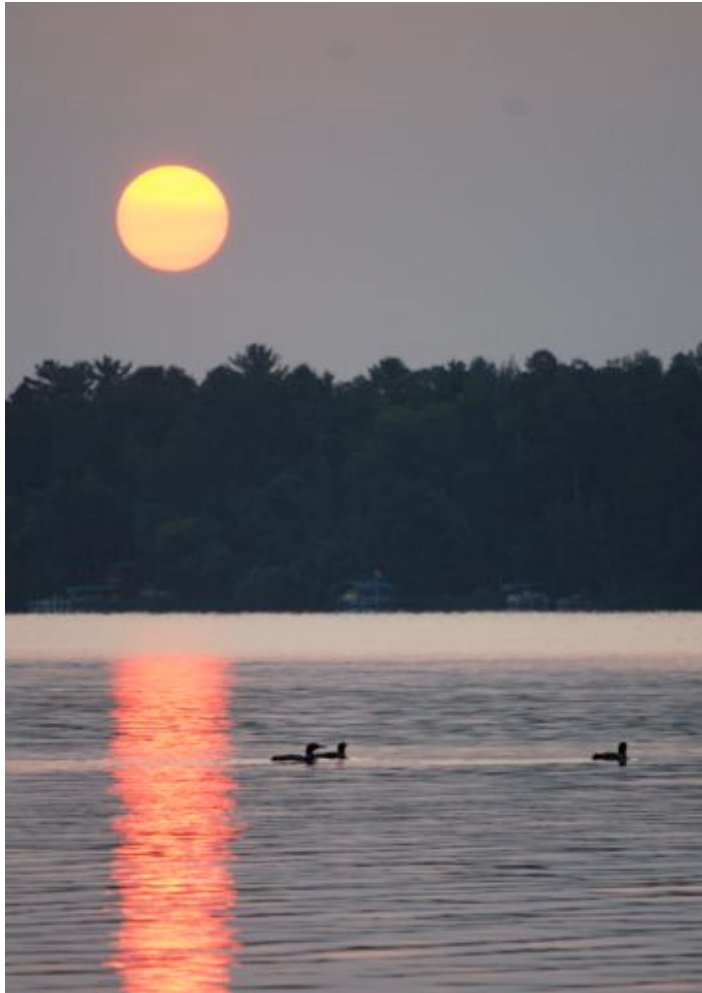
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- Put them out in the spring and take them in in the fall
- One I-LIDS top lid was broken by something, but the device continued to function. Stainless steel casings were said to be “bulletproof” but we didn’t put that in the press releases.
- One lightning strike during first two years
- A few restarts, power supply checks, and spider cleanings

# Total Launches on Gull, 2009

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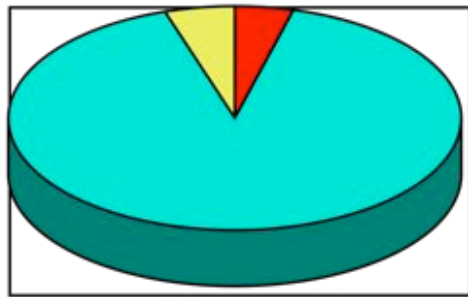


- Inspected by DNR interns: 3,267
- Counted electronically via ILIDS: 25,627
- For \$10,000, DNR interns were able to inspect only 13% of boats launching in 2009

# Boater Attitudes and Education

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**Would you be willing to cooperate fully with DNR requirements to contain invasive species?**



**No**

**Cooperate Fully**

**Undecided**

- 9% of respondents to a 2010 online poll said they were undecided or **no!**
- Source: Northwoods Press, Crosslake, MN

# Boater Attitudes and Education

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- DNR interns surveyed 3267 boaters during inspections on Gull in 2009:
  - *4.8% said they were not familiar with **invasive species***
  - *4.8% said they were not familiar with **Eurasian watermilfoil***
  - *4.9% said they were not familiar with **zebra mussels***



## **Cost Estimates (apples and oranges)**

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	Number of Launches	Cost	Cost per Launch
DNR Intern Inspections	3,267	\$10,000	\$3.06
I-LIDS Videos	25,627	\$20,000*	\$0.78**

\*cost during first year of purchase of 3 I-LIDS

\*\*\$7000 estimated future annual costs for operation/maintenance and video reviews will bring this down to \$0.27

# Conclusions

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- Boater education is still necessary.
- New technology compliments a boat inspection program and can send a message to all boaters at all times.
- I-LIDS were very popular with the public; not one complaint to Gull Chain of Lakes Association in two years.
- New technology is cost efficient when compared to personal inspections and treatment programs necessary after AIS contaminate a lake.