



Invasive Species Initiatives Undertaken by the Jack Lake Association in 2015

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Steven J. Kerr
Director – Environment
Jack Lake Association

Executive Summary

During the summer of 2015, the Jack Lake Association (JLA) was involved in an invasive species awareness project sponsored jointly by the Ontario Ministry of Natural Resources and Forestry (MNR) and the Federation of Ontario Cottagers' Associations (FOCA). This report has been prepared to outline invasive species projects completed by JLA volunteers as well as summarize results of a questionnaire designed to evaluate general public awareness of invasive species.

JLA volunteers were involved in several invasive species projects. For the second consecutive year, the JLA participated in the Ontario Federation of Anglers and Hunters (OFAH) Invasive Species Monitoring Program (spiny water flea was discovered during the 2014 program). From an awareness perspective, the JLA disseminated information developed by MNR and other groups at meetings and social functions over the course of the summer. The JLA Board of Directors requested (and received) a staffed invasive species display at the annual general meeting which was attended by over 100 people. Finally, three invasive species articles were published in the popular JLA newsletter *Smoke Signals* in 2015.

A two page questionnaire on invasive species was developed by JLA and FOCA. Respondents were solicited by a website posting, distribution during the annual general meeting, direct request and at a promotional display at the annual regatta. A total of 148 questionnaires were completed and submitted. As expected, most (90.5%) of the respondents were property owners on the lake. Participants were asked to rate their knowledge of invasive species. Approximately one-third indicated minimal knowledge and only 8 respondents (5.5%) evaluated themselves as having extensive knowledge. All but one respondent (N=142) indicated that they believed invasive species was currently an important issue. Most participants were aware of the informational materials which had been prepared or distributed by the JLA. Feedback from survey participants indicated the importance of the JLA newsletter *Smoke Signals* in providing them with information on the topic. When asked about other potential communication options there was broad general support for the products which had already been produced but no clear consensus on any new products.

Jack Lakers were asked about boating habits and cleaning practices. Many (30.0%) respondents indicated they did not move their boat from Jack Lake over the course of the open water season but many of those that did took preventive cleaning measures. Anglers were asked if they released live, but unused, bait back into the lake and, despite being illegal, almost 10% of the respondents indicated they followed that practice. Zebra mussels was the species identified as the most concern for introduction to Jack Lake. Respondents indicated that the most likely pathways for future introduction of invasive species included recreational boaters (32.9%), release of live bait by anglers (28.2%) and unauthorized fish introductions (22.7%). There was strong (92.1% of respondents) support for the installation of a high pressure boat wash at or near the public boat launch.

Introduction

The Jack Lake Association (JLA) was established in 1950. It currently has a membership of approximately 450 families, cottagers and lake residents.

In 2015, the Jack Lake Association was one of four cottage associations which participated in a joint Ontario Ministry of Natural Resources and Forestry (MNRF) - Federation of Ontario Cottager's Associations (FOCA) invasive species prevention and awareness program.

This report has been prepared to summarize invasive species projects initiated by the Jack Lake Association during the summer of 2015. The report is divided into two components: (i) 2015 invasive species projects and (ii) results of the invasive species questionnaire.

I. 2015 JLA Invasive Species Projects

Dissemination of Information - The JLA acquired a wide variety of informational material on invasive species. This information was made available to attendees at events over the summer. In addition, educational materials were posted on each of the four enclosed JLA signboards situated around the lake (including two at the major access point). Several invasive species articles were also posted on the JLA website (www.jackslakeassociation.ca).

OFAH Display at Annual General Meeting – At the July 5 Annual General Meeting of JLA, the OFAH provided a staffed display on invasive species (at the request of the JLA). There were approximately 100 people in attendance at the meeting.

Monitoring of Aquatic Invasive Species – For the second consecutive year, JLA volunteers participated in the Ontario Federation of Anglers and Hunters (OFAH) Invasive Species Awareness Program. A sampling kit was borrowed from OFAH and water samples were collected from three basins (Brooks Bay, Sharpe's Bay and Williams Bay) on July 19. Samples were sent out for analysis. In 2014, spiny water flea was discovered from this sampling program.

Articles in *Smoke Signals* – *Smoke Signals* is the official newsletter of the Jack Lake Association. The newsletter, in a magazine format, is published twice a year (mid winter and mid summer). Two invasive species articles, "New Invasive Species Found Near Jack Lake" (Kerr 2015a) and "Jack Lake's Invasive Species Awareness Program" (Kerr 2015b) were printed in the winter 2015 newsletter. An article on spiny water flea (Kerr 2015c) was published in the summer 2015 edition of the newsletter.

Questionnaire – In conjunction with the Federation of Ontario Cottager's Associations (FOCA) a two page questionnaire was developed to gauge public knowledge of invasive species and

what could be done to address the issue. The survey was intended to be short and easy to complete. Questionnaires were sent directly (via E-mail) to JLA board members, posted on the JLA website, and distributed to attendees at the annual general meeting and annual regatta. Promotional t-shirts were given to individuals (free t-shirts were provided to the first 100 individuals completing the survey, Figure 1) who completed the questionnaire at the regatta on August 1.

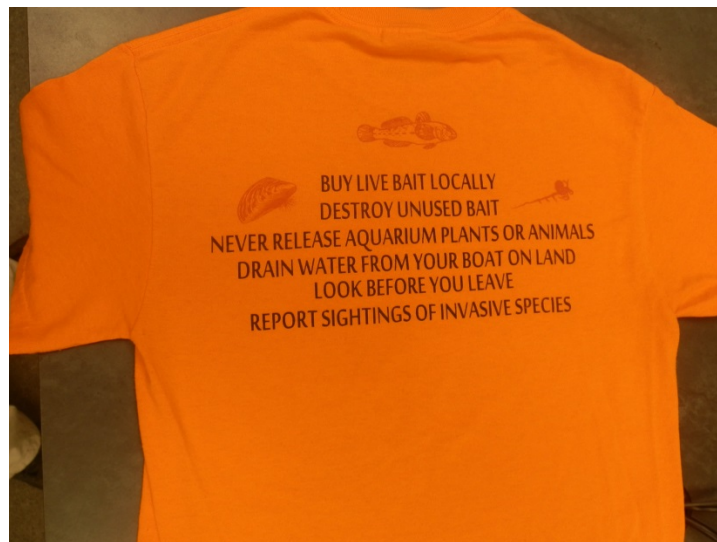


Figure 1. Promotional invasive species t-shirts developed and distributed by the Jack Lake Association (top photo – front; bottom photo – back)

II. Survey Results

Number of responses received - A total of 148 questionnaires were completed (Table 1). A variety of means and activities were employed to encourage participation.

Table 1. A summary of invasive species questionnaires completed at Jack Lake in 2015.

Event	No. Questionnaires Completed
Regatta	107
Annual General Meeting	21
Personal Request	19
Website Posting	1
Total	148

A large crowd and the promotional t-shirts were responsible for the large number of questionnaires completed at the annual regatta. Despite a web posting for more than two months, only one response was received from that source.

Characteristics of respondents

- (i) **Residency/Property Ownership** – A total of 147 individuals responded to this question. The vast majority (133 respondents, 90.5%) of respondents were property owners on Jack Lake.
- (ii) **Personal Knowledge of Invasive Species** - Respondents were asked to rank (in terms of minimal, moderate or extensive) their personal knowledge of invasive species. A total of 146 individuals responded to this question (Table 2). More than one-third of respondents categorized themselves as having minimal personal knowledge about invasive species.

Table 2. Respondents knowledge of invasive species (2015 JLA survey).

Personal Knowledge	No. Respondents (% of Total)
Minimal	50 (34.2%)
Moderate	88 (60.3%)
Extensive	8 (5.5%)
Total	146 (100.0%)

- (iii) **Importance of Invasive Species** – This question asked if the respondent thought that invasive species was an important issue. A total of 142 responded to this question. All but one respondent (99.3%) felt that this was currently an important issue.

- (iv) **Knowledge of JLA Invasive Species Outreach** – This question was designed to gauge knowledge of efforts undertaken by the JLA to increase awareness about invasive species. Several examples of different communications initiatives were provided. There was no restriction on the number of items selected. A total of 111 individuals responded to the question. This includes ten people who were unaware that the JLA had any invasive species outreach initiatives.

Responses (Table 3) indicate that many are aware of the communications products (developed by MNRF, FOCA and OFAH) which have been disseminated to date. These results also indicate the importance of the JLA newsletter *Smoke Signals* in informing members of issues such as invasive species.

Table 3. Respondent knowledge of various JLA invasive species outreach initiatives (2015 JLA Survey).

Intiative/Product	No Responses
Articles in Smoke Signals	75
Brochures	36
Fact Sheets	40
Stickers/Identification Cards	22
Posters and Signs	44
Promotional Materials	26
Newspaper/Magazine/Website	44
Other	2
Total	289

Increasing Public Awareness of Invasive Species – This question was similar to the previous question but was intended to obtain ideas and opinions from respondents about the best ways to increase public awareness about invasive species in the future. Respondent were asked to numerically rank (1-10) options. Unfortunately, only a portion of respondents correctly achieved this – most only selected the options which they felt were most effective (this should be kept in mind when designing future surveys). As a result, analysis was based on the number of individuals who identified a specific option (Table 4).

Table 4. Survey respondent ratings of communications initiatives to enhance public knowledge of invasive species (2015 JLA survey)

Communications Option	No. of Respondents (% of Total)
Posters/Signs	98 (18.2%)
Newspapers/Magazines/Website	96 (17.8%)
Fact Sheet	87 (16.1%)
Radio/TV Advertisements	80 (14.8%)
Stickers/ID Cards	79 (14.7%)
Promotional Material	79 (14.7%)
School Education/Outreach	5 (0.9%)
Social Media	5 (0.9%)
Meeting/Workshops	2 (0.4%)
Articles in Smoke Signals	2 (0.4%)
Presence at Local Events	2 (0.4%)
E-Mail	1 (0.2%)
Send Information with Tax Bill	1 (0.2%)
Informed Marina Operators	1 (0.2%)
Boating Licence Requirement	1 (0.2%)
Total	539 (100.1%)

A total of 143 individuals responded to this question. There was broad general support for all of the current products but no clear consensus on the best communication techniques

Boat Movements and Cleaning Practices – This question was intended to find out how extensive boat movements were by Jack Lake residents and what, if any, actions were taken to reduce the likelihood of spreading invasive species. The questionnaire identified several common activities but also provide the option to identify alternate strategies. Respondents could identify one or more of the options listed.

There were 132 responses to this question (Table 5). Two facts are obvious from these results. Firstly, 41 of 132 respondents (30.0%) indicated that they did not move their boat from Jack Lake over the course of the season. Secondly, it is apparent that many local boaters take some precaution(s) when moving their boats.

Table 5. Boat movements and cleaning practices identified by respondents in the 2015 JLA questionnaire.

Practice	No. of Respondents
Clean off visible mud, vegetation and other debris	72
Pull plug to drain standing water before leaving the boat launch	66
Dry boat and equipment for 2-7 days before moving to another waterbody	37
Use pressure water to spray and rinse boat	42
Other (chemical wash)	1
Total	218

Angler Disposal of Live Bait – A total of 136 individuals responded to this question. Despite the fact that the question indicated that the release of unused live bait into Jack Lake was illegal, thirteen people (9.6%) responded that they followed this practice

Awareness of Invasive Species of Concern to Jack Lake – This question was designed to ascertain what local residents, cottagers and shoreline owners perceived to be the invasive species of most concern with respect to Jack Lake. A brief listing of some of the more common invasive species was presented but the respondent had the opportunity to identify other species.

Only 85 individuals responded to this question. Zebra mussels was the species of greatest concern to those who responded (Table 6).

Table 6. Invasive species of concern for Jack Lake residents (2015 JLA Survey).

Invasive Species	No. of Respondents
Zebra Mussels	50
Spiny Waterflea	27
Round Goby	19
Garlic Mustard	17
Eurasian Milfoil	3
Chinese Mystery Snail	2
Asian Carp	1
Unidentified Aquatic Vegetation	1
None	2
Unaware of any Species	6
Total	128

Pathways for Introduction of Invasive Species - This question was designed to find out what people believed were the most common pathways for introduction of invasive species to the Jack Lake area. Some of the more common pathways were identified but respondents also had the opportunity to select other pathways which were not listed. A total of 140 individuals responded to this question. The most common pathway which was identified was recreational boating (Table 7).

Table 7. Pathways for invasive species to gain access to the Jack Lake area (2015JLA survey)

Pathway	No. of Responses (% of Total)
Recreational boaters	84 (32.9%)
Use of live bait by anglers	72 (28.2%)
Unauthorized (illegal) fish introductions	58 (22.7%)
Firewood from non-local sources	36 (14.1%)
OPP marine unit boats	2 (0.8%)
Competitive fishing events	1 (0.4%)
Releases of aquarium pets	1 (0.4%)
Plants in ornamental gardens	1 (0.4%)
Total	255 responses

Unauthorized fish introductions were identified by 58 respondents. There have already been five introductions of fish into Jack Lake (JLA Fisheries Committee 2013). The only authorized introduction was walleye in the 1920s. Unauthorized introductions of four different fish species, involving largemouth bass, rock bass, black crappie and bluegill, have all occurred on Jack Lake.

Controlling Invasive Species in the Jack Lake Watershed

Identifying Invasive Species Action Items for JLA – Respondents were given the opportunity to identify actions items which they thought the Jack Lake Association should initiate/continue in order to reduce the likelihood of any additional invasive species from being introduced to the watershed.

Only 85 individuals responded to this question and sixteen options were identified (Table 8). Continuing/improving public education and awareness were the predominant items identified.

Table 8. Options for the Jack Lake Association to prevent the introduction of invasive species (2015 JLA survey).

Potential Action	No. Responses (% of Total)
Increase information dissemination	40
More signs/posters	21
Install wash station at boat launch	13
Implement summer student program	8
Educate cottagers and visitors	7
Newspaper/TV advertisements	6
Prevent/control sale of live bait	4
Implement/continue monitoring programs	2
Install more bulletin boards	1
Conduct local workshops/information sessions	1
Initiate volunteer days	1
Request more on-water enforcement	1
Request OPP clean their boats	1
Initiate measure to kill/eradicate invasive species	1
Implement controls on sand/rocks being imported to lake	1
Restrict off-lake boaters	1
Total	109

- (i) **Support for Installing a High Pressure Boat Washing Station** – This question was intended to obtain information on whether local users would support the JLA to investigate the possibility of installing a high pressure boat washing station at or near the public boat launch in Brooks Bay.

Table 9. Opinions of survey respondents to the installation of a high pressure boat wash system for Jack Lake (2015 JLA survey).

Preference	No. Respondents (% of Total)
Yes	128 (92.1%)
No	7 (5.0%)
Unsure	4 (2.9%)
Total	139 (100.0%)

There was overwhelming support (92.1% of respondents) for the JLA to construct a boat washing station. One respondent was unsure because the costs were not provided. Seven individuals did not support the proposal as worded. One respondent felt that the site of the washing station should be Apsley in order that it could be used by boaters using other local lakes. Another respondent did not object to a boat wash station but felt that it should be constructed and funded by the local municipality.

JLA Website – The JLA recently upgraded its website and is actively striving to keep it updated with articles of interest to lake visitors and residents. This question was intended to determine awareness of the website and how much it is being used.

There were 136 responses to this question (Table 10).

Table 10. Survey responses regarding knowledge and usage of the Jack Lake website (2015 JLA survey).

Regular Usage of JLA Website?	No. Respondents (% of Total)
Yes	57 (41.9%)
No	79 (58.1%)
Total	136 (100.0%)

References

- Jack Lake Fisheries Committee. 2013. A review of fisheries management activities on Jack Lake and proposals for the future. Jack Lake Association. Apsley, Ontario. 27 p. + appendices.
- Kerr, S. J. 2015a. New invasive species found near Jack Lake. p. 12 *In* Smoke Signals (Winter 2015 edition). Jack Lake Association. Apsley, Ontario. 66 p.
- Kerr, S. J. 2015b. Invasive species awareness program. p. 13 *In* Smoke Signals (Winter 2015 edition). Jack Lake Association. Apsley, Ontario. 66 p.
- Kerr, S. J. 2015c. Spiny water flea found in Jack Lake. p. 17 *In* Smoke Signals (Summer 2015 edition). Jack Lake Association. Apsley, Ontario. 94 p.



Please take a moment to fill out this short survey.

Do you have a shoreline property on Jack Lake?

- Yes
- No

How would you rate your knowledge of invasive species?

- Minimal
- Moderate
- Extensive

Do you think that the spread of invasive species is an important issue today?

- Yes
- No

Does the Jack Lake Association currently do any invasive species outreach that you are aware of?

- Articles/print content
- Brochures
- Fact Sheets
- Stickers/Identification cards
- Posters/Signs
- Promotional Material (hats, t-shirts, key chains etc.)
- Newspaper/Magazine/Website articles
- Other (please specify): _____

Please rate (in order; 1 highest; 10 lowest) what would be the best way to increase public awareness about invasive species?

- Radio/TV Ads
- Stickers/Identification cards
- Fact sheets
- Posters/Signs
- Promotional Material (T-shirts, key chains, etc.)
- Newspaper/Magazine/Website articles
- Other (please explain) _____

When moving your boat between water bodies do you do the following? (Check all that apply to you)

- Clean off visible mud, vegetation and other debris
- Pull drain plug to drain standing water before leaving the boat launch
- Dry your boat and equipment in hot sunny weather for 2-7 days before moving to another water body
- Use a pressure washer to spray off your boat and trailer or rinse your boat in hot water
- Other (specify): _____

Do you release unused bait fish into the lake after you are done angling (this is illegal)?

- Yes
- No

Please tell us if you are aware of any invasive species that are a concern on Jack Lake

- Zebra Mussels
- Spiny Waterflea
- Round Goby
- Garlic Mustard
- Other (please specify) _____

What pathway do you think has the highest potential to introduce an invasive species to Jack Lake?

- Use of live bait by anglers
- Firewood from non-local sources
- Recreational boaters
- Unauthorized (illegal) introductions of fish
- Other (please specify): _____

Have you heard of the Federation of Ontario Cottagers' Associations (FOCA) Aquatic Invasive Species Monitoring program that uses an online toolkit?

- Yes
- No

What action (if any) can the Jack Lake Association take to prevent invasive species from becoming established in the area? _____

Would you support JLA funding for the installation of a high pressure boat washing station at the public access point on the lake?

- Yes
- No

Do you regularly visit the Jack Lake Association website?

- Yes
- No

Would you be interested in receiving the latest electronic news updates for cottagers from FOCA?

- Yes
- No
- E-mail: _____

Thank you *very much* for your participation!