2014 Project Abstract

For the Period Ending June 30, 2016
PROJECT TITLE: Northwest Minnesota Regional Aquatic Invasive Species Prevention Pilot
PROJECT MANAGER: Julie Goehring
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FUNDING SOURCE: Environment and Natural Resources Trust Fund
LEGAL CITATION: M.L. 2014, Chp. 226, Sec. 2, Subd. 04c
APPROPRIATION AMOUNT: $219,000

Overall Project Outcomes and Results

Aquatic Invasive Species (AIS) spread has become one of the top concerns as it threatens the recreational and economic viability of the surface water resources of the Red River of the North watershed. According to the Minnesota Department of Natural Resources Infested Waters report (2016), Zebra Mussels have invaded the Otter Tail, Pelican and Red River systems. The Local Governmental Units (LGU's) are implementing plans to address AIS issues at the county level, but introduction into our river systems necessitate a regional approach to education, outreach and management of AIS within the Red River of the North watershed. The goal of this pilot project was to expand AIS work from a largely county based process to a watershed scale through partnerships between LGU's. The project targeted three main watersheds, Buffalo, Otter Tail and Wild Rice, which make up the Red River drainage basins of Becker, Clay, Otter Tail and Wilkin Counties.

The project focused on three specific outcomes including 1) Coordination with LGU's to develop effective AIS communication and management. 2) Develop and distribute educational materials that support best management practices for AIS. 3) Expand and leverage opportunities to develop and deliver an AIS program based on best management practices that are replicable throughout the region.

The project made significant progress toward the coordination of the LGU's within the three watersheds and four counties. All endorsed the watershed approach and included this strategy in their local plans. The Red River Basin Commission staff met monthly for the duration of the project with AIS LGU's to integrate the watershed approach and worked directly with over 20 groups and 6000 individuals including natural resource managers, lake property owners, students, teachers and researchers.

Educational materials and management resources including; AIS Risk Assessments for the targeted watersheds, an AIS mobile application, GIS based AIS maps, AIS identification cards, information brochures and promotional items and multiple surveys, presentations and ads were all developed and disseminated by the Red River Basin Commission for the watershed approach to AIS management as a result of the project.

Project Results Use and Dissemination

Educational materials and management resources developed by the Red River Basin Commission were disseminated to local groups, state agencies, national and international AIS related peer groups through the Red River Basin Commission website, public presentations and educational workshops.

Additionally, targeted media messages included regionally branded print media and radio AIS promotions that run along with other timely water conservation messages daily during prime listening time were adopted for reaching a regional listening audience of 71,500 weekly.

The resources developed including the Aqua.mn mobile application - https://aqua.mn/ and website- http://www.redriverbasincommission.org/ are designed so citizens can access educational materials and resources with links back to county based resources, watershed partner resources and Minnesota Department of Natural Resources AIS tools and information.

The AIS Risk Assessments that use science, fact and logic to identify and quantify vectors of risk assist in planning for zebra mussel management. These assessments were shared with and are used by watershed districts, local units of government, lake associations and others, to support the prioritization of funding and activities, including inspection and decontamination, to curtail and prevent the spread of zebra mussels and other AIS species to Minnesota's lakes and rivers. The AIS Risk Assessment GIS Tool allows users to interactively explore the infestation risks of lakes and rivers in the project area, and visualize where aquatic invasive species have been sighted. It serves as a digital companion to the static maps generated in the reports. The AIS Risk Assessment GIS Tool can be accessed on ArcGIS Online via the link:
http://www.arcgis.com/home/webmap/viewer.html?webmap=2a3a1ecbc1ca414b875c0b8feed7463a

The Red River Basin Commission lead efforts to collect, review and distribute current AIS survey data and watershed scale demographic data within the targeted project region. The survey initiatives were aimed to help determine the current knowledge, attitude and interest in AIS issues affecting Minnesota's lakes region. A final survey results report was shared with watershed districts, LGU's, lake associations and others and is attached to the LCCMR Final Report.

As a basin wide focused organization the Red River Basin Commission is continuing to take action in coordinating efforts between organizations focused on AIS. The Red River Basin Commission through the facilitation of the Red River AIS Technical and Science Team and multiple other working groups will continue to sustain and build upon the watershed scale AIS strategy for the Red River of the North International Watershed.

Environment and Natural Resources Trust Fund (ENRTF)
M.L. 2014 Work Plan Final Report

Date of Report: August 15, 2016

Date of Work Plan Approval: June 4, 2014

Project Completion Date: June 30, 2016

PROJECT TITLE: Northwest Minnesota Regional Aquatic Invasive Species Prevention Pilot

Project Manager: Julie Goehring

Organization: Red River Basin Commission (RRBC)

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Location: Becker, Clay, Otter Tail and Wilkin County

Total ENRTF Project Budget:		
	ENRTF Appropriation:	**$219,000**
	Amount Spent:	**$199,420**
	Balance:	**$ 19,580**

Legal Citation: M.L. 2014, Chp. 226, Sec. 2, Subd. 04c

Appropriation Language:
$219,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the Red River Basin Commission to develop aquatic invasive species prevention strategies on a watershed scale and develop materials to sustain watershed scale decision-making and implementation. This initiative must be coordinated with the Department of Natural Resources and outdoor heritage fund activities for locally based invasive species control. Specific reporting and analysis of outcomes and findings of this alternative approach must be provided to enable duplication in other regions of the state.

I. PROJECT TITLE:
Northwest Minnesota Regional Aquatic Invasive Species (AIS) Prevention Pilot

II. PROJECT STATEMENT:
Aquatic Invasive Species (AIS) spread has become one of the top concerns especially as it relates to emerging nonnative species that threaten the recreational and economic viability of the surface water resources of the Red River of the North watershed. The greatest area of immediate concern is centered on the counties of Becker and Ottertail in Minnesota, where according to the Minnesota Department of Natural Resources Infested Waters report (4-29-2013), three species, Zebra Mussel, Faucet Snail and Flowering Rush alone have invaded 35 lakes and wetlands, with Zebra mussels also listed in the Otter Tail, Pelican and Red River systems.

The Local Governmental Units (LGU's) are implementing plans to address the issues within the lakes and wetlands at the county level, but introduction into our river systems necessitate a regional approach to education, outreach and management of nonnative species evolving within the Red River Basin. Additional data supporting this idea comes from Becker and Otter Tail county data related to nonresident riparian property ownership which exceeds 63% Becker and 55% Otter Tail indicating that future transport of nonnative species to other regions of the watershed are of significant concern for this region.

The goal of this pilot project is to expand Aquatic Invasive Species work from a largely county based process to a larger context or "watershed scale" through partnerships with local government units. We will target the three main watersheds, Buffalo, Otter Tail and Wild Rice, which make up the Red River drainage basins of Becker, Clay, Otter Tail and Wilkin Counties.

Three specific outcomes will include 1) Coordination with Local Government Units (LGU's) to develop effective AIS communication and management for basin residents. 2) Develop and distribute educational materials that support proper practices for AIS outreach education and citizen engagement planning strategies at the watershed scale. 3) Expand and leverage opportunities with state, federal and provincial agencies and institutions efforts to develop and deliver an AIS program based on promising practices and newer more innovative methods that are replicable throughout the Red River of the North Watershed.

III. PROJECT STATUS UPDATES:

Project Status as of January 1, 2015:
The project staff has made significant progress coordinating with the LGU's within the three watersheds and four counties. All have endorsed the watershed approach and are including this concept in their local plans. Additionally, Becker, Clay and Otter Tail have contributed five thousand dollars each as members of the Red River Basin Commission, Joint Powers Board member counties to support efforts of this regional pilot and Buffalo/Red, Pelican River and Wild Rice Watershed Districts have contributed the same amount as watershed partners. The Red River Basin Commission staff is meeting monthly with the county AIS committees and integrating our planning with local plans, engaging the local government and citizen groups in regional brand development and moving forward with activity plans that are targeted to the riparian property owners and users based on the demographic profile within each watershed. Expanded opportunities underway have included an AIS tour and workshop with regional participation, including participants from our pilot partners in Minnesota, and guests North Dakota and Manitoba local government units. The RRBC coordinated a formal meeting with agency leads from each state and province as well as representatives from U.S Fish and Wildlife Service meeting to begin discussions on developing a plan for the Red River of the North Watershed that will support leveraging for long term sustainability of AIS efforts. The forming of an AIS technical science team was also discussed and will become one of the first steps taken in 2015.

Project Status as of September 1, 2015:
The staff continues to coordinate with the Local Units of Government however, the infusion of AIS aid dollars at the county level has changed the dynamics of the promotion of a "regional approach" to AIS work. The counties receiving small amounts of AIS aid like Traverse County, have begun contacting the RRBC to seek assistance to help make the most effective use of resources already developed through our regional AIS approach for their local outreach efforts. The counties receiving larger AIS aid amounts like Becker and Otter Tail, with a combined total of more than $800,000 of new funding in 2015, are re-evaluating plans they had in place and are adjusting to plan for management of the new resources. The abundance of funding is helping them target local needs but limiting growth of some of the "regional approach" priority efforts that counties and watershed partners were excited about at the beginning of this project. The RRBC has begun working with the local leadership to facilitate more intentional communication and coordination of AIS activities especially to lakes that border

county boundaries including better coordination of AIS inspection programs, decontamination services and sharing of successful local efforts across jurisdictional boundaries.

One of the encouraging results we are seeing from our preliminary survey data is that majority of local residents and lakes users, answering this survey question, would support an additional fee in the five dollar range collected at the local or watershed level to support aquatic invasive species efforts. This and other survey information will be presented and discussed during focus group meetings we are planning with our partners within the regional project site. If an AIS or natural resource type fee were initiated at the watershed scale the funds could be managed by a watershed district or other regional entity and partner efforts with county based AIS programs and target specific AIS needs as they arise that affect a watershed region.

The educational materials and outreach tools the RRBC is developing including the Aqua.mn app- https://aqua.mn/ and our website- http://www.redriverbasincommission.org/ are designed so citizens can access regional materials and resources we are developing with links back to county based resources, watershed partner resources and links to Minnesota Department of Natural Resources AIS tools and information. As an example, the MNDNR has developed a statewide GIS based decontamination map, we were able to integrate that link into the Aqua.mn app so any user with our app can find statewide decontamination facilities without having to search any further than the app on their mobile device. Our resources are being designed to be more nimble and adaptable as information changes or is updated regardless of where development of the resource takes place.

The RRBC is collaborating closely with the MNDNR AIS staff in the region and state. We are taking a lead role in supporting a plan for managing the newly discovered Red River zebra mussel infestation coordinating with our regional AIS specialist. We are also coordinating efforts with the state Invasive Carp coordinator, as the new Minnesota Invasive Carp plan is being developed. The RRBC will be written into the new state plan as the lead agency coordinating efforts to implement plan strategies for the Red River of the North Watershed. A spring 2016 meeting is being planned with our regional project technical science team and the MNDNR state coordinator to develop share information across jurisdictions and begin localizing the invasive carp plan to the needs of the watershed system.

Project Status as of April 1, 2016:
As a basin wide focused organization the RRBC is taking action in coordinating efforts between organizations focused on AIS. The RRBC has facilitated the organization of a Red River AIS Technical and Science Team. This effort will share information, and leverage and sustain promising practices for the basin through discussion of threats and actions from a basin/watershed approach. The AIS Technical and Science Team has representation from the entire basin (MN, ND, SD, and Manitoba). The AIS Technical and Science Team is seeking to establish goals and tasks for the basin that can serve to move efforts in the basin forward, identify roles each government unit and the RRBC can have in achieving those goals, and explore funding for sustaining the promising practices for the basin approach. Formal meetings are planned for the spring of 2016 to gather all the stakeholders for detailed discussion of AIS in the Red River Basin.

The RRBC continues to work closely with the MNDNR in supporting a plan for managing the Red River zebra mussel infestation and identifying the risk invasive carp pose for the Red River. The Red River basin AIS Technical Team through discussions did identify the need to change the sampling timetable for zebra mussels in the Red River. In the past the sampling on the US side was completed in June and July. This was too late in the season to catch the peak production of veligers. We will need to take this type of cross-border discussions on a broader scale as we attempt to address future AIS infestations that will be coming. The RRBC attended an invasive carp forum where promising practices for monitoring and controlling the spread of invasive carp were discussed. The RRBC will continue to develop and share information across jurisdictions to sustain promising practices for the basin and begin localizing the Minnesota invasive carp plan to the needs of the watershed system.

Amendment Request May 27, 2016:
This amendment request is to correct the budget for future expenses and update the personnel information related to changes within personnel (2 FTEs) managing this project. The RRBC is requesting that Julie Goehring be accepted as the current project manager (0.25 FTE) and Aaron Ostlund as the current Field Technician (0.8 FTE). These personnel changes include changes in billable rates but will not result in exceeding any budgeted salary totals. Additionally, the RRBC is requesting to shift salary funds ($500) into travel expenses to cover future expenses for coordination with county and watershed LGU activities.

Amendment Approved by LCCMR 6-3-2016

Overall Project Outcomes and Results:
Aquatic Invasive Species (AIS) spread has become one of the top concerns as it threatens the recreational and economic viability of the surface water resources of the Red River of the North watershed. According to the Minnesota Department of Natural Resources Infested Waters report (2016), Zebra Mussels have invaded the Otter Tail, Pelican and Red River systems. The Local Governmental Units (LGU's) are implementing plans to address AIS issues at the county level, but introduction into our river systems necessitate a regional approach to education, outreach and management of AIS within the Red River of the North watershed. The goal of this pilot project was to expand AIS work from a largely county based process to a watershed scale through partnerships between LGU's. The project targeted three main watersheds, Buffalo, Otter Tail and Wild Rice, which make up the Red River drainage basins of Becker, Clay, Otter Tail and Wilkin Counties.

The project focused on three specific outcomes including 1) Coordination with LGU's to develop effective AIS communication and management. 2) Develop and distribute educational materials that support best management practices for AIS. 3) Expand and leverage opportunities to develop and deliver an AIS program based on best management practices that are replicable throughout the region.

The project made significant progress toward the coordination of the LGU's within the three watersheds and four counties. All endorsed the watershed approach and included this strategy in their local plans. The Red River Basin Commission staff met monthly for the duration of the project with AIS LGU's to integrate the watershed approach and worked directly with over 20 groups and 6000 individuals including natural resource managers, lake property owners, students, teachers and researchers.

Educational materials and management resources including; AIS Risk Assessments for the targeted watersheds, an AIS mobile application, GIS based AIS maps, AIS identification cards, information brochures and promotional items and multiple surveys, presentations and ads were all developed and disseminated by the Red River Basin Commission for the watershed approach to AIS management as a result of the project.

IV. PROJECT ACTIVITIES AND OUTCOMES:

ACTIVITY 1: Coordination with Local Government Units
Description: This pilot project will support the development of AIS prevention strategies and resources that focus beyond the local level supporting a watershed based approach within the targeted project area and expand Aquatic Invasive Species work to the "watershed scale" through partnerships with local government units within three watersheds, Buffalo, Otter Tail and Wild Rice, which make up the Red River drainage basins of Becker, Clay, Otter Tail and Wilkin Counties.

The RRBC working collaboratively with our County Commissioner based Joint Powers Board will coordinate with LGU's to develop effective AIS communication and management for basin residents. The engagement process will include working closely with county AIS staff and their task force groups. Coalition of Lake Associations (COLA) groups, Watershed and Soil and Water Conservation Districts (SWCD) managers and local Lake

Associations that are within key destination, infested waters and waters directly connected rivers within the targeted watersheds.

The plan will include a survey of riparian property owners, regional businesses and natural resource partners (riparian audience). Survey methodologies will include, an electronic and paper survey to gauge riparian audience attitude, knowledge and interest in invasive species prevention and management and planned observational methods at destination water access sites to form baseline knowledge. Survey results will be reported to LGU'S and natural resource community to help prioritize strategies that support watershed approach to AIS efforts.

This pilot project will establish a Geographic Information System (GIS) database that focuses on the science of an individual watershed ecosystem based on physical and chemical features favorable to grow and sustain new species. This database will help managers and decision makers establish targeted programs that direct resources in a more cost effective manner. The GIS database will use current surface water quality data, lake monitoring data and physical landscape features to create a map within each watershed's most vulnerable water bodies.

Summary Budget Information for Activity 1:

ENRTF Budget: $ 109,165
Amount Spent: $ 93,210
Balance: $ 15,955

Activity Completion Date: June 30, 2016

Outcome	Completion Date	Budget
1. Develop & administer survey to establish baseline information around AIS Attitude, knowledge and interest. Including reporting of preliminary results by 2015 Red River Basin Commission (RRBC) International Water Conference.	January 15, 2015	$ 22,000
2. Facilitate regional meetings and educational efforts with AIS task force, COLA and local lake association to support and develop the watershed approach to AIS prevention and management. Lead efforts to establish an Integrated AIS plan developed at watershed scale within each of the targeted watersheds.	June 30, 2016	$ 70,000
3. Develop GIS data base for use by LGU's, citizens and decision makers	November 1, 2015	$ 17,165

Activity Status as of January 1, 2015:

- An initial AIS attitude, knowledge and interest survey has been developed and was tested in limited scope during the first six months of this project. The survey will be introduced during the January 2015 Red River Basin Commission (RRBC) International Water Conference. Distribution and survey efforts targeting riparian property owners will be one of the key activities during 2015 outreach efforts.
- The RRBC staff have been active participants and members of the Becker County AIS Panel and the Otter Tail County AIS Task Force, participants at both county based COLA's (coalition of lake associations) and presented and facilitated discussions with each of the counties and watershed districts within in the pilot project area.
- The RRBC joint powers board, has requested that the RRBC host a one day workshop for the sixteen counties in the Red River Basin to assist with AIS planning as counties develop local efforts in prevention, education and management with state supported AIS prevention aid dollars.
- Hosted a one day AIS tour and informational session for decision makers, citizen volunteers and service providers on Pelican Lake to show impact zebra mussels and other AIS species are having on the recreational resources and economy in this region. Participants had a chance to see zebra mussels as they were extracted from the lake, hear from local lake service providers about the

impacts to their businesses and learn from local programs about efforts considered success stories that are leading to potential promising long term practices.

- Developed a first of its kind, AIS risk assessment tool that uses science, fact and logic to plan for zebra mussel management. These assessments will be used by watershed districts, local units of government, lake associations and others, to support the prioritization of funding and activities to curtail and prevent the spread of zebra mussels and other AIS species to Minnesota's lakes and rivers. The Wild Rice and Pelican River Watershed AIS assessments have been completed and are currently under peer review, with Buffalo/Red River and Otter Tail to be started in 2015. Upon completion of each watershed assessment, the data will be integrated as maps available as part of the GIS data base development.
- The RRBC is delineating "sub watershed" drainage systems, five completed, which will allow for targeting of specific recommended activities highlighted in each watersheds AIS risk assessment.

Activity Status as of September 1, 2015:

- The AIS attitude survey was mailed out to 1353 households (232 in the Rose lake watershed and 1121 in the Cormorant lakes watershed). Additionally our local partners have supported the purchase and deployment of 4 tablet devices containing the survey at area lakes service providing businesses. Initial survey response of 450 participants through August 15 is being reviewed and summarized. It is anticipated the report from this first group will be published by early November. The survey will be opened for a second round in mid-September to target fall and winter lakes and river users.
- The RRBC continues to be active in the Otter Tail AIS task force (OTAISTF) and our staff are now actively participating in subcommittee efforts contributing to education and outreach as a partner delivering the regional AIS message. The RRBC assisted the task force in organizing a face to face networking event and coordinated youth outreach promotional item development for the OTAISTF. The RRBC also facilitated a meeting between the Otter Tail AIS task force leadership and the Becker County AIS coordinator to explore more effective cross county boundary efficiency for AIS prevention and education. The RRBC is an active participant in the Otter Tail Coalition of Lake Association (COLA) and Becker COLA monthly meetings providing regional AIS updates and support.
- The RRBC participated in 3 MNDNR Regional AIS workshops in Fergus Falls, Bemidji, and Thief River Falls, providing overview of the Regional AIS Approach and assisting with facilitation in small group discussion.
- The RRBC presented the findings of its AIS Risk Assessment tool to the Becker and Otter Tail AIS staff and to the Buffalo/Red River Watershed District, the Wild Rice Watershed District, the Pelican River Watershed District, and the Cormorant Watershed district board of Directors. The tool helps prioritize AIS related resource planning and management and we are working to move this and similar AIS resources to a GIS level format to allow users to connect with those GIS based AIS tools in Minnesota that will help in decision-making.
- The RRBC participated in the Big Cormorant Lakes Spring Fling, advocating a watershed scale approach to AIS policy. The outreach staff is working directly with the Cormorant watershed leaders to develop outreach activities that meet the needs of this diverse riparian property owner and user group. More than 45% of the users and property owners within this watershed come from North Dakota and states outside of Minnesota
- At the invitation of the Buffalo Red River Watershed District, the RRBC conducted AIS outreach with a booth at the Barnesville Showcase in Barnesville MN. Participants, many of whom visit area lakes in neighboring counties have had little community based exposure to AIS issues and information.
- The RRBC participated in the River Keepers outreach clinic in Moorhead, MN. Approximately 150 young people visited various stations, including RRBC's about aquatic invasive species.
- The RRBC in collaboration with the Otter Tail COLA, attended and participated in 3 fishing tournaments, delivering the watershed message, distributing materials, and providing media based radio interviews.
- The AIS Risk Assessment GIS tool is live and can be accessed on ArcGIS Online via the link: http://www.arcgis.com/home/webmap/viewer.html?webmap=2a3a1ecbc1ca414b875c0b8feed7463a The AIS Risk Assessment Tool allows users to interactively explore the infestation risks of lakes and rivers

in the project area, and visualize where aquatic invasive species have been sighted. It serves as a digital companion to the static maps generated in the report. One challenge of GIS data sets that are developed is the frequency of information updates. The intent is that these data are accurate and up to date but often agency budgets limit staff time available to provide timely information updates. The RRBC has made it a priority to maintain updated data with the GIS tools we have developed as a result of the AIS Risk Assessment Tool

Activity Status as of as of April 1, 2016:

- The Regional AIS knowledge, attitude, and interest survey is complete. RRBC staff formally presented the results of the survey to the Cormorant Watershed District, the Buffalo/Red River Watershed District, the Otter Tail County AIS Task Force, and to staff at Becker County Soil and Water Conservation District. Survey feedback was positive and encouraging. Of special note was the respondents willingness to pay an additional fee to fund AIS prevention activities. The results of the survey will be compiled in a report that will be provided in the final update.
- The expansion of the infestation of zebra mussels in the Red River that occurred in 2015 took a lot of people by surprise. Zebra mussels were found in Pelican Lake in the Ottertail River watershed in 2009. They were found in extremely limited numbers at one location in the Red River at Wahpeton/Breckenridge area in 2010. This is where the Ottertail River empties into the Red River. Subsequent sampling in the period of 2010 to 2014 showed no increased infestation. Spring 2015 zebra mussels were found at the US/Canadian border for the first time. Sampling for zebra mussels was then completed in June 2015 along the whole length of the Red River US from Wahpeton to Canadian border and large numbers of veligers were found at every location sampled.

Final Report Summary:

The project made significant progress toward the coordination of the Local Governmental Units (LGU's) within the three watersheds, Buffalo, Otter Tail and Wild Rice, which make up the Red River drainage basins of Becker, Clay, Otter Tail and Wilkin Counties. All of the targeted LGU's endorsed the watershed approach and included this strategy in their local plans. The Red River Basin Commission (RRBC) staff met monthly for the duration of the project with AIS LGU's to integrate the watershed approach and worked directly with over 20 groups and 6000 individuals including natural resource managers, lake property owners, students, teachers and researchers. The engagement process included working closely with county AIS staff and their task force groups, the Coalition of Lake Associations (COLA) groups, Watershed and Soil and Water Conservation Districts (SWCD) managers and local Lake Associations that are within the targeted watersheds. Educational materials and management resources developed as a result of the project were disseminated to these groups for the watershed approach to AIS management.

The RRBC developed and disseminated an AIS Risk Assessment tool to the Becker and Otter Tail County AIS staff and to the Buffalo/Red River Watershed District, the Wild Rice Watershed District, the Pelican River Watershed District, and the Cormorant Watershed District board of directors. The tool helps prioritize AIS related resource planning and management. In an ideal world, all AIS prevention programs would be applied to all lakes. In reality, budgets are always limited, so prioritization of programs based on risk is necessary. In order to have a watershed strategy for AIS program management, the vectors of spread for each lake needs to be determined. The risk assessment process identifies the vectors of spread for the lakes in the watershed. For headwaters lakes there is no risk of infestation from upstream, so any new infestation would come from lake users (boats, boat lifts, docks, etc). For lakes in a river chain, both lake users and upstream lakes need to be considered as potential vectors of spread. By identifying vectors of risk for AIS and analyzing environmental and social factors a risk assessment is effective for guiding AIS program development. This process identifies lakes with high public use ratings that should be at the highest priority for boat inspections at public accesses. Additionally, lakes that are already infested should have boat-washing stations nearby for decontamination, and all lakes should be targeted with a watershed-wide education program. The AIS Risk Assessment Reports can be inserted directly

into county's AIS Plans and guide the use of the county's AIS funds in the most efficient and effective way possible.

The AIS Risk Assessment GIS Tool allows users to interactively explore the infestation risks of lakes and rivers in the project area, and visualize where aquatic invasive species have been reported. It serves as a digital companion to the static maps generated in the reports. One challenge of GIS data sets that are developed is the frequency of information updates. The intent is that these data are accurate and up to date but often agency budgets limit staff time available to provide timely information updates. The RRBC has made it a priority to maintain updated data with the GIS tools we have developed as a result of the AIS Risk Assessment GIS Tool. The AIS Risk Assessment Reports and GIS Tool can be accessed through the RRBC website- http://www.redriverbasincommission.org/ or directly on ArcGIS Online via the link: http://www.arcgis.com/home/webmap/viewer.html?webmap=2a3a1ecbc1ca414b875c0b8feed7463a

The RRBC as part of the watershed approach to AIS prevention and management developed a survey to help determine the current knowledge, attitude and interest in AIS issues affecting Minnesota's lakes region. The survey was administered to a riparian audience that included property owners, recreational water users and businesses who benefit from this regions diverse surface water resources. Respondents were asked questions to measure current "knowledge" they feel they have related to AIS, their "attitude" regarding management of invasive species and personal "interest" in taking an active role to manage and prevent the spread of invasive species. As an example, more than 90% of respondents recognize the words "clean, drain, dry" from the Stop Aquatic Hitchhikers campaign which is designed to prompt action when leaving a waterbody after a recreational outing. The "clean, drain, dry" message has nationwide outreach and has been adopted to provide consistency and repetition for outdoor oriented travelers and resource users. Respondents also expressed a high degree of confidence relating to ability to identify a zebra mussel (72%), knowing how to report a potential aquatic invasive species (75%) and having spent time in the past searching for AIS information (59%). Respondent's attitude toward management of AIS are both supportive and positive in nature. A large majority disagree with the following negative views, AIS is a problem we can do little about (79%) and no matter what we do we will not prevent AIS (70%). The majority agree with and support the following actions:

- The need for more access restrictions (79%)
- Supporting lake management that is best for the lake, not people (78%)
- Inspection for all watercraft leaving infested waters (74%)
- Supporting "rapid response" strategies to chemically treat newly infested lakes (67%)
- Support efforts to place a higher priority for decision making on protecting lakes over recreation and lakeshore resident interests (64%)

While knowledge and attitudes are important measures to know and understand, one's interest in taking action as a citizen and resource user becomes the keystone habit and building block for long-term impacts. A vast majority, 91 % of respondents, expressed interest in doing their part to prevent the spread of aquatic invasive species. The majority of the respondents also expressed interest in the belief that it is all lake users' responsibility to reduce AIS spread (85%), that they would be willing to share information with other to help prevent AIS (86%) and a high majority would be willing to pay more, $2-$5 for local AIS management support (76%). Many area lakes have some form of organized group, usually a Lake Association so respondents were asked about their interest in knowing about lake associations and volunteering. Only 44% responded as being interested, while 18% were not interested, with 38% replying with a neutral response. Less than half of the respondents expressed an interest in engaging as a volunteer but when combined with those respondents indicating a "neutral" preference there is an opportunity to recruit up 82% of this respondent group as a potential volunteer at the local level. Respondents were also asked about their opinion in taking precautions to prevent the spread of nine AIS species that are either present in or emerging as a threat to invade the Red River Basin. Based on a five point scale with 5 being extremely important, the first tier included Zebra mussel

(4.78), Asian carp (4.41), Eurasian water milfoil (4.34) and Curly leaf pondweed (4.04) and the second tier, Spiny water flea (3.95), mystery snail (3.84), Flowering rush (3.77), Rusty crayfish (3.74), and Yellow iris (3.56). Of interest in the comment section of the survey, a number of respondents expressed little or no knowledge of the second tier AIS species. How respondents prefer to learn about AIS is interesting especially knowing the majority are over fifty years old; Internet (52%) ranked as the number one preference followed by, printed media (49%), Newspaper/magazine (39%), radio/television (35%), smart phone/mobile device (20%), Attending a class/workshop (19%). A final survey results report is attached to this report and contains graphs from the responses to each of the survey questions, a visual approach using word clouds to show popularity of lakes in this survey group and a map of each watershed with the lake to lake travel pattern of lake property owners in each watershed.

A remaining balance of 16,454 for activity 1 is a result of project personnel changes during the second year of the project. The personnel turnover resulted in an overall shift in billing rates as well as significant time devoted to the project from the RRBC Executive Director for which we did not seek reimbursement.

ACTIVITY 2: Material development and distribution

The pilot project will expand programs like the "Stop Aquatic Hitchhikers" campaign and State Agency Invasive Species resources and educational materials to the Red River Basin, including a focus to "regionally brand" resources to fit the impact area (Red River Watershed) in an effort to support ownership and sense of place connections to the decisions that citizens of this region make as they relate to surface water impacts from nonnative species.

In an attempt to emphasize the watershed approach at least three lake associations in each watershed (Buffalo, Otter Tail, Pelican and Wild Rice) will be targeted for planning and training to make a personal connection to local property owners. In these instances branding will be scaled to reflect the sub-watershed (Buffalo, Ottertail/Pelican, and Wild Rice) that are immediately impacted by decisions of each local riparian user. This effort will directly distribute educational materials to 1000 riparian property owners whose activities directly impact their watershed. Additional materials will be distributed through partners (sporting goods/bait distributors, real estate agents, civic groups and service industry businesses) to reach an additional 4000 participants.

To support the current trend of mobile media as a tool for sharing and receiving information, this project will expand on two successful mobile applications (apps) developed for the Red River Watershed, "River Mapper" and "CRED- Flood reporting" by developing an invasive species app to these mobile based educational tools. Organizational arrangement for this phase will mirror existing mobile apps of which examples include: Minnesota Department of Natural Resources (MN DNR) Lake finder, PaddleNet-Launch Sites, Early Detection and Distribution Mapping System (EDD Maps). These apps are examples of phone or tablet based apps that promote citizen engagement, education and reporting of information and data for science and additional citizen participation.

The mobile environment will serve to target a younger demographic for gathering data and disseminating branded educational material content and as a tool to engage those participants who are or will be engaged as citizen scientists. This will be a critical component to support and validate the GIS data planned for the project site. The plan is to develop and test this app creating a field tested version ready for release and distribution as a tool for use across Minnesota and the region.

In an effort to help determine the potential effectiveness of branding resources to impact at the watershed scale, focus group sessions will be conducted within each county to gather citizen response to print and mobile materials. The results of this feedback will be used for future planning of prevention and management activities

that invest resources in a more clearly defined manner. Results will also be used to develop promising practices for larger scale watershed and education and outreach planning throughout the state of Minnesota.

Summary Budget Information for Activity 2:

ENRTF Budget: $ 77,335
Amount Spent: $ 73,814
Balance: $ 3,521

Activity Completion Date: March 15, 2016

Outcome	Completion Date	Budget
1. Develop and distribute regionally branded AIS educational materials within project site. Targeting a minimum of 5000 citizens	March 15, 2016	$ 50,000
2. Develop and field test "Invasive App" in counties and watersheds within project	June 30, 2015	$ 17,335
3. Conduct a minimum of 10 focus group sessions to evaluate and summarize effectiveness of branded materials and Invasive mobile tools	December 31, 2015	$ 10,000

Activity Status as of January 1, 2015:

- Have begun development of an AIS brand that is specific and recognizable to this region. The first branded slogan: "*Get your AIS off the boat!*" ties into the existing "Clean, Drain, Dry" campaign and will be used along with print material, web resources and creatively distributed using a waterproof cell phone pouch and a chamois boat drying towel. These educational items have been endorsed by our project collaborators, and will be distributed as part of our educational efforts to reach and engage riparian property owners, business community and younger demographic audiences.
- A fully functioning test "beta" version of our mobile AIS App, has been created and initial testing has taken place this fall to verify functionality and accuracy. The App, which will be deployed for full field testing in 2015, allows a user to capture both image and location data of a suspected AIS species and upload the information to a cloud based server for screening by RRBC staff prior to forwarding reports to DNR AIS specialists and AIS scientists working in this region. The App contains a resource library connected to the existing resources of Minnesota Sea Grant and the Minnesota Department of Natural Resources so users can seek out more information while out on the water. Includes a "take action" section that encourages users to get involved with a local COLA or lake association, or as a volunteer with the Minnesota DNR AIS volunteer monitoring program. And includes a mapping feature utilizing the Minnesota DNR Recreation Compass map. The map allows the user to verify accuracy of the report they are making as well as using the AIS App for recreational purposes beyond AIS reporting. Bids for App. Development were advertised with inquiries by Houston Engineering, North Dakota State University, Computer Science Department and Myriad Mobile. The bid was awarded to Houston Engineering, the only bidder who came in at budgeted amount and with most complete deliverables proposed based on the request for bids solicitation.
- Focus group activity not yet begun.

Activity Status as of September 1, 2015:

- "Get your AIS off the Boat" branded items distributed at fishing tournaments, pubic accesses, and other outreach events. The materials which are contemporary and unique have been popular with both the fishing and recreational lake user community. The RRBC staff have provided education, outreach and facilitation activities that have resulted in material and information distribution to 3750 citizens through this spring and summers outreach efforts.
- The waterproof AIS ID field cards have been well received. They are suitable for wet environments, fit in a tackle box or boat storage bay and are detailed enough so an average lake user could compare the AIS

species on the card with a plant or animal found in the lake. Approximately 4000 cards identifying eleven different AIS species have been distributed to date.

- RRBC partnered with the Traverse County Sherriff's department to distribute "Get your AIS off the Boat" to educate 200 participates in the Lake Traverse fishing tournament.
- RRBC assisted the Otter Tail County AIS taskforce in selecting promotional items for younger members of the public. These included Frisbees with an AIS message and honorary AIS inspector badges. Otter Tail county AIS inspectors are distributing these items at public accesses in the county.
- Aqua.mn the AIS reporting app for smartphones has been field tested this summer by staff out in the field. It has been promoted at area fishing tournaments, area schools, and at public boat landings. Becker county AIS inspectors have installed the app on their personal devices and have promoted it during their inspection duties at boat landings.
- The Aqua.MN is being considered by the MN DNR as one of the potential frameworks to develop their planned statewide AIS mobile reporting Applications. Minnesota based Houston Engineering, submitted a proposal based on the Aqua.mn development and field testing and is one of the finalists for consideration for the MNDNR statewide AIS mobile application project.
- Focus group activity has been conducted with the Otter Tail AIS leadership to determine which educational materials are most useful to support their local efforts, with the boat towels and AIS cards being seen as having appeal to help engage citizens to take action. The smartphone waterproof cases have been popular with the younger generation and with recreational (swimming, paddle sport) lake users.
- Focused discussion around the mobile application "Aqua.MN", led to the Otter Tail Coalition of Lake Associations (COLA) developing and submitting a proposal for Lessard Sams funds to develop a similar app for tracking boat and equipment movement.

Activity Status as of as of April 1, 2016:

- RRBC Staff conducted 7 focus groups with the Otter Tail AIS Task Force, The Cormorant Watershed District, The Pelican River Watershed District, and Becker County staff to discuss and refine branded AIS outreach items. Feedback on the ID cards and cell pouches has been favorable. Suggestions included making the cards larger and adding more species.
- Aqua.MN continues to be a success. A survey respondent commented that they enjoy the app and the information it features. At this point the web based version will be maintained. Further development of the app to launch Apple and Google Play compatible versions has been determined to provide little advantage. The web based version can be accessed from computer and portable devices and allows for updates in real time without the need to seek approval from application hosts. Additional development to allow for Apple, Google Play, and other versions is estimated to cost three times the original engineering costs.

Final Report Summary:

Educational materials developed by the RRBC were disseminated to local groups, state agencies, national and international AIS related peer groups through the RRBC website, public presentations, targeted advertisement and educational workshops. The project expanded the "Stop Aquatic Hitchhikers" and "Clean, Drain, Dry" campaigns to the Red River Basin with development of an AIS brand that is specific and recognizable to this region. The branded slogan: "*Get your AIS off the boat!*" ties into the existing "Clean, Drain, Dry" campaign and was used along with print material, web resources and distributed promotional items. These educational items were distributed as part of our efforts to reach and engage riparian property owners, the business community and younger demographic audiences. Branded items distributed at fishing tournaments, pubic accesses, and other outreach events included waterproof AIS identification field cards, waterproof cell phone pouches, chamois boat drying towels and light weight day packs. The materials which are contemporary and unique have been popular with both the fishing and recreational lake user community. The RRBC staff have provided

education, outreach and facilitation activities that have resulted in material and information distribution to 4,400 citizens.

Additionally, targeted media messages including regionally branded print media publications and radio AIS promotions were adopted for reaching additional audiences beyond the fishing and recreational lake user community. The RRBC contributed to the monthly Otter Tail COLA newsletter providing news worthy columns and an Op-ed piece called "Beyond the Bait Bucket" which is designed to get local AIS leaders thinking about impacts of current efforts while incorporating a targeted slant to thinking about potential for more effective education for local citizens. The RRBC have created "Ripple Effect" radio promotions that air on the clear channel regional radio (KFGO AM 790) that specifically target an AIS related message. Ripple effect promotions are a contracted service the RRBC has with KFGO and AIS ads are running along with other timely water conservation messages daily during prime listening time. These messages are reaching a regional listening audience of 71,500 weekly.

The fight against AIS requires a variety of approaches, but a key component is informing and more importantly engaging the public. Exploring and evaluating a multi-faceted approach for motivating and engaging the public on the AIS issue lead to the development of the Aqua.mn mobile application - https://aqua.mn/. Mobile or tablet based applications that promote citizen engagement, education and reporting of information and data capture this multi-faceted approach. Aqua.mn allows a user to capture both image and location data of a suspected AIS species and upload the information to a cloud based server for screening by RRBC staff prior to forwarding reports to Minnesota DNR AIS specialists and AIS scientists working in this region. The application contains a resource library with images and descriptions of AIS and is connected to the existing resources of Minnesota Sea Grant and the Minnesota DNR so users can seek out more information while out on the water. The application includes a take action section that encourages users to get involved with a local COLA or lake association, or as a volunteer with the Minnesota DNR AIS volunteer monitoring program. Aqua.mn also includes a mapping feature utilizing the Minnesota DNR Recreation Compass map. The map allows the user to verify accuracy of the report they are making as well as using the AIS application for recreational purposes beyond AIS reporting. It has been promoted at area fishing tournaments, area schools, at public boat landings, public presentations and educational workshops to engage citizen scientist in proactively monitoring for AIS.

The Aqua.mn application was considered by the Minnesota DNR as one of the potential frameworks to develop their planned statewide AIS mobile reporting applications. Ultimately, the Minnesota DNR selected an alternative application platform, EDDMapS, for managing data about observations of terrestrial and aquatic invasive species, recording the designation of bodies of water infested by invasive species and for providing invasive species information to DNR decision-makers and the public. EDDMapS had already been developed for monitoring terrestrial invasive species in Minnesota. The Minnesota DNR found that it was more cost effective to continue development of this platform over adopting and integrating the Aqua.mn application for AIS.

The RRBC is working with Houston Engineering, Inc. to identify future utilization opportunities for Aqua.mn. Currently Houston Engineering, Inc. is working with Kandiyohi County to build an AIS tracking and information application that will expand Aqua.mn. The proposed expansion will allow users to be able to upload a picture of a suspected AIS and utilize image recognition to tell them if it is an invasive species. If the image recognition produces a positive result, a form opens to report the AIS to the Minnesota DNR and get more information on decontamination. The application will continue to provide additional information about AIS and how to avoid their spread. In order to enable high usage, the web based application will be further developed for Android and Apple platforms. The RRBC is supporting this effort to expand Aqua.mn to further engage citizen scientist in proactively monitoring for AIS in Minnesota.

ACTIVITY 3: Leveraging to sustain promising practices

Description: As a function of the overall coordination effort by the project director, time will be devoted to developing promising practices that can be integrated throughout Minnesota and the Red River Watershed. The RRBC board of directors, water quality and fish and wildlife work group members will engage in a strategy that will support leveraging of resources from North Dakota and Manitoba to sustain and build upon the watershed scale decision-making and thinking around AIS program development for the Red River of the North International Watershed.

Summary Budget Information for Activity 3:

ENRTF Budget: $ 32,500
Amount Spent: $ 32,395
Balance: $ 105

Activity Completion Date: 4/30/2016

Outcome	Completion Date	Budget
1. Establishment of a working technical science team to address current and future needs for watershed scale invasive species prevention and management	09/30/2015	$17,500
2. Develop and initiate a base funding strategy to support sustainability of AIS program efforts for Northwest Minnesota and the Red River Watershed	4/30/2016	$15,000

Status as of January 1, 2015:
The RRBC coordinated a one day meeting that included agency representatives from Minnesota Department of Natural Resources, University of Minnesota, North Dakota Game and Fish, Manitoba Conservation and the U.S. Fish and Wildlife Service to discuss overall Watershed needs related to AIS prevention, education and management. The discussion include supporting the development of a technical science team and initial conversations related to future funding to support sustainability for this region and the Red River Watershed.

Status as of September 1, 2015:

- The RRBC is coordinating with key scientists from: Minnesota Department of Natural Resources (MNDNR), University of Minnesota Aquatic Invasive Species Research Center (MAISRC), Concordia College Moorhead, North Dakota Game and Fish (NDGF), Valley City State University, South Dakota Game, Fish and Parks (SDGFP), Manitoba Conservation and Water Stewardship, and RMB Environmental labs. This technical group is providing emerging AIS issue related information to the RRBC, advising on current and future AIS sustainability needs and providing expertise to the RRBC for distribution within our Regional AIS project and throughout the larger Red River Watershed.
- Team participants provided a workshop at the 2015 RRBC International land and water summit conference in Winnipeg, Manitoba and will be providing a similar workshop as part of the 2016 conference in Grand Forks. They will also gather for a one day technical workshop in 2016 coordinated by the RRBC and the MNDNR Invasive carp coordinator to discuss the future challenges invasive carp might create if they enter the Red River system.
- The RRBC staff in the Manitoba office coordinated a one day watershed issues conference which included Science team member Candice Parks from Manitoba Conservation and Water Stewardship providing an Aquatic Invasive Species, Manitoba update. Staff from the U.S. Office along with Minnesota delegates from the RRBC Board of Directors attended the workshop. Board member engagement plays an important role as the RRBC defines its long term strategy for AIS leadership in this region of Minnesota and within the International watershed that is affected by the actions of people using the water resource of Northwest Minnesota.

Status as of as of April 1, 2016:

- The RRBC continues to work closely with the MNDNR, North Dakota Department of Game and Fish and Manitoba Water Conservation and Stewardship in supporting a plan for managing the Red River zebra mussel infestation and identifying the risk invasive carp pose for the Red River. The RRBC attended an invasive carp forum where promising practices for monitoring and controlling the spread of invasive carp were discussed. The RRBC will continue to develop and share information across jurisdictions to sustain promising practices for the basin and begin localizing the Minnesota invasive carp plan to the needs of the watershed system.
- The RRBC is facilitating the organization of a Red River AIS Technical and Science Team in an effort to leverage and sustain promising practices for the basin through discussion of threats and actions from a basin/watershed approach. The AIS Technical and Science Team is seeking to establish goals and tasks for the basin that can serve to move efforts in the basin forward, identify roles each government unit and the RRBC can have in achieving those goals, and explore funding for sustaining the promising practices for the basin approach. Formal meetings are planned for the spring of 2016.

Final Report Summary:
The RRBC coordinated with key scientists from; Minnesota Department of Natural Resources, University of Minnesota Aquatic Invasive Species Research Center, Concordia College Moorhead, North Dakota Game and Fish, Valley City State University, South Dakota Game, Fish and Parks, Manitoba Conservation and Water Stewardship, U.S. Fish and Wildlife Service and RMB Environmental Labs in the organization of a Red River AIS Technical and Science Team. The RRBC facilitates the Red River AIS Technical and Science Team in an effort to leverage and sustain promising practices for the basin through discussion of threats and actions from a basin/watershed approach. The AIS Technical and Science Team establishes goals and tasks for the basin that can serve to move efforts in the basin forward, identifies roles each government unit and the RRBC have in achieving those goals, and explores funding for sustaining the promising practices for the basin approach. Workshops, meetings and conference calls have been facilitated as part of this effort including; an AIS workshop at the 2015 RRBC International land and water summit conference in Winnipeg, Manitoba, meetings supporting a plan for managing the Red River zebra mussel infestation and identifying the risk invasive carp pose for the Red River and discussions identifying the need to shift the sampling timetable for zebra mussels in the Red River Basin from June and July to earlier dates to catch the peak production of veligers. Future workshops and meetings will focus on this type of cross-border discussions on a broader scale as we attempt to address future AIS infestations that will be coming. The RRBC will continue to develop and share information across jurisdictions to sustain promising practices for the basin.

Additionally, the RRBC collaborates with many AIS focused groups in the Red River Basin including; North Dakota Game and Fish Aquatic Invasive Species Committee, Minnesota Invasive Carp Forum, International Water Institute, FM River Keepers and Prairie Waters Education and Research Center. This collaboration effort allows for the sharing of information and resources among all the groups working on AIS.

The RRBC sponsored and participated in the 2016 International Legislators Forum in Grand Forks, ND. The International Legislators Forum is an annual meeting of legislators from the Red River Basin that provides an avenue for representatives to discuss various regional issues. The International Legislators Forum focused on AIS among other topics in 2016. The discussion focused on the need to collaborate between states and province and work to slow the impacts of AIS on the environment and economy.

The RRBC has partnered with the US Army Corps of Engineers in developing the Comprehensive Watershed Management Plan to identify gaps and needs for the Red River Basin. The plan is intended to help identify what could be the next generation of success stories in the Red River Basin. The plan focuses on six resource management areas including; flood risk management, water quality, water supply, recreation, soil health and fish, wildlife and ecosystem health. Within the focus area of fish, wildlife and ecosystem health a goal of maintaining existing habitat and restoring natural systems in the basin has been adopted. This goal includes focusing on three problems the basin faces; habitat loss, habitat degradation and unfamiliarity of ecosystem

functions and values. Invasive species fall under the habitat degradation portion of the plan and have been a targeted as an issues of emphasis for current efforts to prevent further degradations of habitat. Objectives within the plan to address the AIS issues include; preventing and managing the spread of invasive species, developing opportunities for education to aid in the understanding and appreciation of fish, wildlife and natural processes and increasing stakeholder and public knowledge of fish, wildlife and natural processes. Through this partnership and publishing of the Comprehensive Watershed Management Plan the RRBC is hoping to provide direction and continue facilitating efforts to mitigate the impacts AIS have to the Red River Basin.

The RRBC through the AIS Technical and Science Team and the multiple other working groups will continue to sustain and build upon the watershed scale decision-making and thinking around AIS for the Red River of the North International Watershed.

V. DISSEMINATION:

We will communicate outcomes of what we learn to local groups, state agencies, and national AIS related peer groups through the RRBC website, public presentations and educational displays. We will develop a set of "promising practices" that other Minnesota watersheds and community groups can use to assist in planning for cost effective AIS related programs. We will create targeted media messages for print media and radio spots as part of our "Ripple Effect" water minutes that currently air in this region on clear channel radio. Details of survey results will available as a final report to LCCMR and other project partners and we will create summary fact sheets and other documents that supports the RRBC's long term strategy to expand watershed scale AIS efforts throughout the Red River Watershed, Minnesota and the region. The "Invasive App" will be shared and promoted for use throughout Minnesota and the Red River Watershed.

Activity Status as of January 1, 2015:

- Set up and staffed an informational display at the Douglas County Aquatic Invasive Species Workshop.
- Set up and staffed an educational display at the Upper Midwest Invasive Species Conference in Duluth.
- Presented at the Red River Basin Monitoring Advisory Committee Meeting.

Activity Status as of September 1, 2015:

- The RRBC staff have created five "Ripple Effect" radio spots air of the clear channel regional radio (KFGO AM 790) that specifically target an AIS related message. Ripple effect ads are a contracted service the RRBC has with KFGO and AIS ads are running along with other timely water conservation messages daily during prime listening time. These messages are reaching a regional listening audience of 71,500 weekly.
- At the request of the Otter Tail COLA staff is contributing to their monthly newsletter providing news worthy columns and an Op-ed piece called "Beyond the Bait Bucket" which is designed to get local AIS leaders thinking about impacts of current efforts while incorporating a targeted slant to thinking about potential for new and more effective education for local citizens.
- Hosted an AIS plenary workshop during the RRBC International Land and water summit conference in January in Winnipeg. More than 250 participants, learned about Red River Watershed AIS issues from experts with the Minnesota Department of Natural Resources, North Dakota Game and Fish and Manitoba Conservation and Water Stewardship. The workshop also provided the opportunity for many of our technical team members to meet each other and build connections for our long term efforts.
- The watershed AIS Assessment tools which were developed for this project outline most effective practices for preventing and managing zebra mussels and other AIS species. This tool has now been used by three other Minnesota counties with their County based AIS aid, to help target most effective practices based inland water management for aquatic invasive species.
- The RRBC staff met with the FM River Keepers organization to develop cooperative outreach efforts for urban audiences from the Moorhead, MN and Clay County area to support dissemination of materials for regional users who fish along the Red River in Clay County Minnesota. Additional outreach strategies will be planned for 2016 spring and summer events.

Activity Status as of as of April 1, 2016:

- The RRBC continues to run "Ripple Effect" AIS ads along with other timely water conservation messages with KFGO.
- Aqua.MN continues to be promoted as an AIS tool for regional and state utilization.
- The RRBC continues cooperation and coordination with intergovernmental agencies to develop and share information across jurisdictions to sustain promising practices for the basin.

Final Report Summary:

Educational materials and management resources developed by the Red River Basin Commission were disseminated to local groups, state agencies, national and international AIS related peer groups through the Red River Basin Commission website, public presentations and educational workshops. The "Get your AIS off the boat!" and "Clean, Drain, Dry" campaign efforts to reach and engage riparian property owners, the business community and younger demographic audiences provided education, outreach and facilitation activities that have resulted in material and information distribution to 4,400 citizens.

Additionally, targeted media messages including regionally branded print media publications and radio AIS promotions were adopted for reaching additional audiences beyond the fishing and recreational lake user community. The RRBC contributed to the monthly Otter Tail COLA newsletter providing news worthy columns and an Op-ed piece called "Beyond the Bait Bucket". The RRBC have created "Ripple Effect" radio promotions that air on the clear channel regional radio (KFGO AM 790) that specifically target an AIS related message. Ripple effect promotions are a contracted service the RRBC has with KFGO and AIS ads are running along with other timely water conservation messages daily during prime listening time. These messages are reaching a regional listening audience of 71,500 weekly.

The resources developed including the Aqua.mn mobile application - https://aqua.mn/ and website- http://www.redriverbasincommission.org/ are designed so citizens can access educational materials and resources with links back to county based resources, watershed partner resources and Minnesota Department of Natural Resources AIS tools and information.

The AIS Risk Assessments that use science, fact and logic to identify and quantify vectors of risk assist in planning for zebra mussel management. These assessments were shared with and are used by watershed districts, local units of government, lake associations and others, to support the prioritization of funding and activities, including inspection and decontamination, to curtail and prevent the spread of zebra mussels and other AIS species to Minnesota's lakes and rivers. The AIS Risk Assessment GIS Tool allows users to interactively explore the infestation risks of lakes and rivers in the project area, and visualize where aquatic invasive species have been sighted. It serves as a digital companion to the static maps generated in the reports. The AIS Risk Assessment GIS Tool can be accessed through the RRBC website- http://www.redriverbasincommission.org/ or directly on ArcGIS Online via the link:
http://www.arcgis.com/home/webmap/viewer.html?webmap=2a3a1ecbc1ca414b875c0b8feed7463a

The Red River Basin Commission lead efforts to collect, review and distribute current AIS survey data and watershed scale demographic data within the targeted project region. The survey initiatives were aimed to help determine the current knowledge, attitude and interest in AIS issues affecting Minnesota's lakes region. A final survey results report was shared with watershed districts, local units of government, lake associations and others and is attached to this report.

As a basin wide focused organization the Red River Basin Commission is continuing to take action in coordinating efforts between organizations focused on AIS. The Red River Basin Commission through the facilitation of the Red River AIS Technical and Science Team and multiple other working groups will continue to sustain and build upon the watershed scale AIS strategy for the Red River of the North International Watershed.

VI. PROJECT BUDGET SUMMARY:

A. ENRTF Budget Overview:

Budget Category	$ Amount	Explanation
Personnel:	$ 186,020	*Julie Goehring, Project Manager: $56,028 (66% salary, 34% benefits); .25 FTE for 2 years*
		Leah Thevdt, Outreach Specialist: $33,933 (66% salary,34% benefits); .25 FTE for 2 years
		Aaron Ostlund, Project Field Technician: $96,060(85%salary, 15% benefits) 1 FTE for 2 years
Professional/Technical/Service Contracts:	$ 25,480	Houston Engineering "invasives App" Develop and Beta test including developer fees for research of existing apps, writing code, artwork and building functionality of app for IOS/Android platforms
		RMB Environmental labs, GIS data acquisition, input and mapping support. RMB currently houses the lake and stream water quality , so working directly with the lab ,rather than using the International Water Institute (IWI) will save time and expenses for the GIS mapping portion of the project
		River Keepers, Survey collection and analysis
		Regionally branded AIS educational material organization and distribution including printed Id cards, boat sponges and towels for watercraft cleaning, printed plastic bag for distributing materials, floating key fobs, refrigerator magnets, etc.
Printing:	$ 1,500	Riparian property owner survey print and distribution
Travel Expenses in MN:	$ 6,000	Mileage, lodging, meals for travel within project site and within MN portion of Red River Basin
TOTAL ENRTF BUDGET:	**$ 219,000**	

Explanation of Use of Classified Staff: NA

Explanation of Capital Expenditures Greater Than $5,000: NA

Number of Full-time Equivalents (FTE) Directly Funded with this ENRTF Appropriation: 3 FTE (2 year total)

Number of Full-time Equivalents (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation: N/A

B. Other Funds:

Source of Funds	$ Amount Proposed	$ Amount Spent	Use of Other Funds
Non-state			

RRBC- Joint Powers Board Becker, Clay, Otter Tail	$15,000 (received)	$15,000	**Support for RRBC staff time to do pre-grant coordination work, meeting with project partners.**
RRBC	$2,500	$2,500	**Contract work for Mobile App. Discovery Phase**
Red River Watershed Management Board	$25,000 (not received)	$0	**Project Support, basin wide expansion support and sustainability planning**
Buffalo/Red, Pelican, Wild Rice Watershed Districts	$15,000 (received)	$15,000	**Project support, for risk assessment, coordination, outreach materials and regional brand development**
TOTAL OTHER FUNDS:	**$32,500**	**$32,500**	

Note: We proposed local support from the counties involved in our Joint Powers Board advisory board at $7500, individual county members of the RRBC-Joint Powers Board have contributed $15,000 to the project as participating county members resulting in an increase of proposed funds. The three watershed districts involved have committed an additional $15,000 to support the project with funding increasing total other funds proposed and committed to the project to $57,500. The Red River Watershed Management Board funding will be requested in 2016 as part of the base funding support to maintain longer term commitment to regional AIS watershed scale critical needs.

VII. PROJECT STRATEGY:

A. Project Partners:

This project is in cooperation with Becker, Clay, Otter Tail and Wilkin Counties and the watersheds of Buffalo, Otter Tail/Pelican, and Wild Rice. Additional Partners include: Joe Eisterhold, MN DNR Invasive Species Specialist, Neil Powers, USFWS, Manager – Tamarac National Wildlife Refuge, Wayne Goeken, International Water Institute, Christine Laney, FM River Keepers, Laura Bell, University of Minnesota-Crookston, Doug Jensen, MN Sea Grant Program- University of Minnesota, Robert Borash, RMB Environmental Labs, Andre Delorme, Valley City State University, Fred Ryckman, North Dakota Game and Fish- Invasive Species Specialist.

This is the base group is currently providing expertise to the RRBC and will serve as the core group to provide technical and content expertise as part of a "technical planning team".

B. Project Impact and Long-term Strategy:

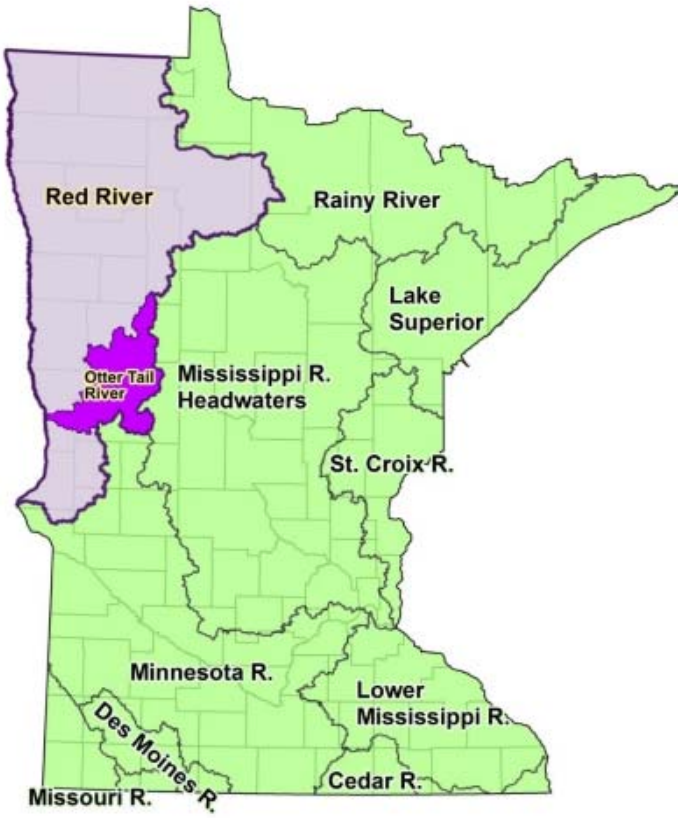
The project will serve to expand AIS thinking and planning beyond the local level using a watershed approach for the Red River Watershed. Both promising practices and new educational tools will be part of sustainability planning effort that will involve expansion of the project to the Red River of the North watershed and throughout the state of Minnesota. The Red River Watershed Management Board (RRWMB) will serve as the partner that supports articulation of long term strategies on the Minnesota side of the watershed. Their support will directly reflect the Minnesota Association of Watershed Districts (MAWD)" support through partnerships with lake associations in providing aquatic plant management and controlling invasive species". The RRBC long term strategy will include planning that will leverage additional resources from North Dakota and the Province of Manitoba to provide multi-jurisdictional leadership in RRBC Goal area 2: Aquatic and Riparian Ecosystem Health.

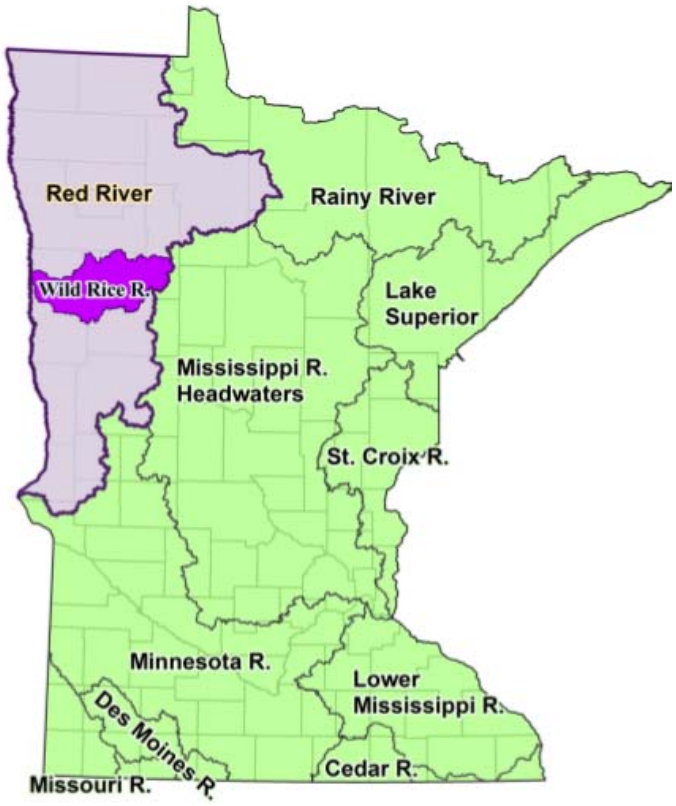
C. Spending History: N/A

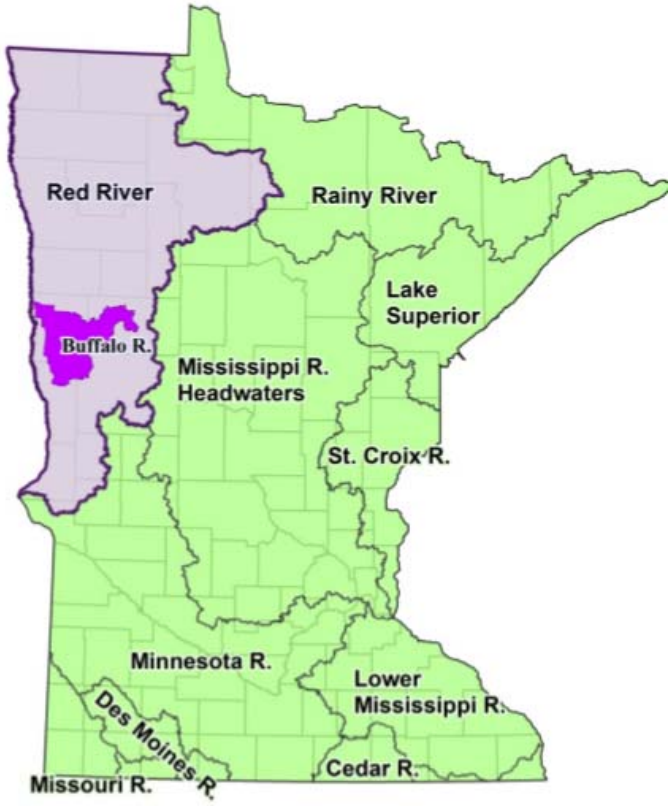
VIII. ACQUISITION/RESTORATION LIST: N/A

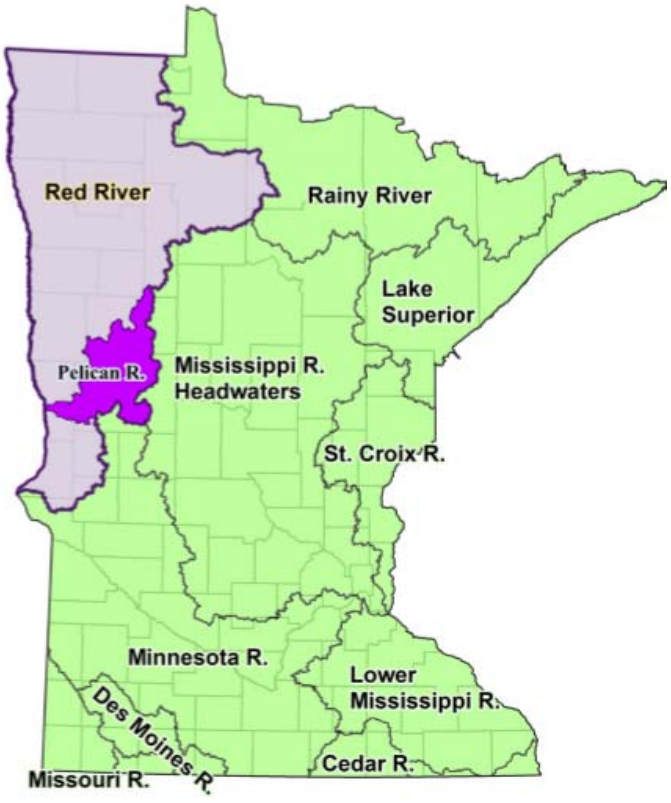
IX. VISUAL ELEMENT or MAP(S):

Below are Maps of MN with the Red River Basin highlighted in light purple and targeted watersheds highlighted in dark purple.

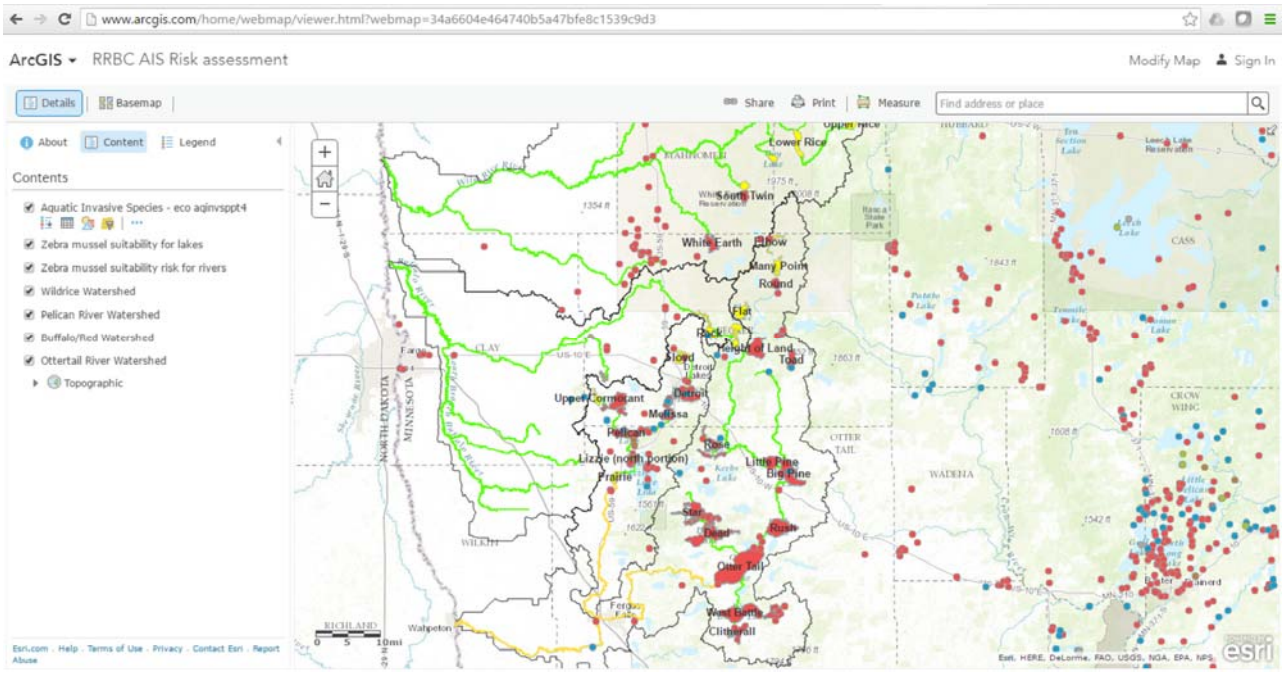




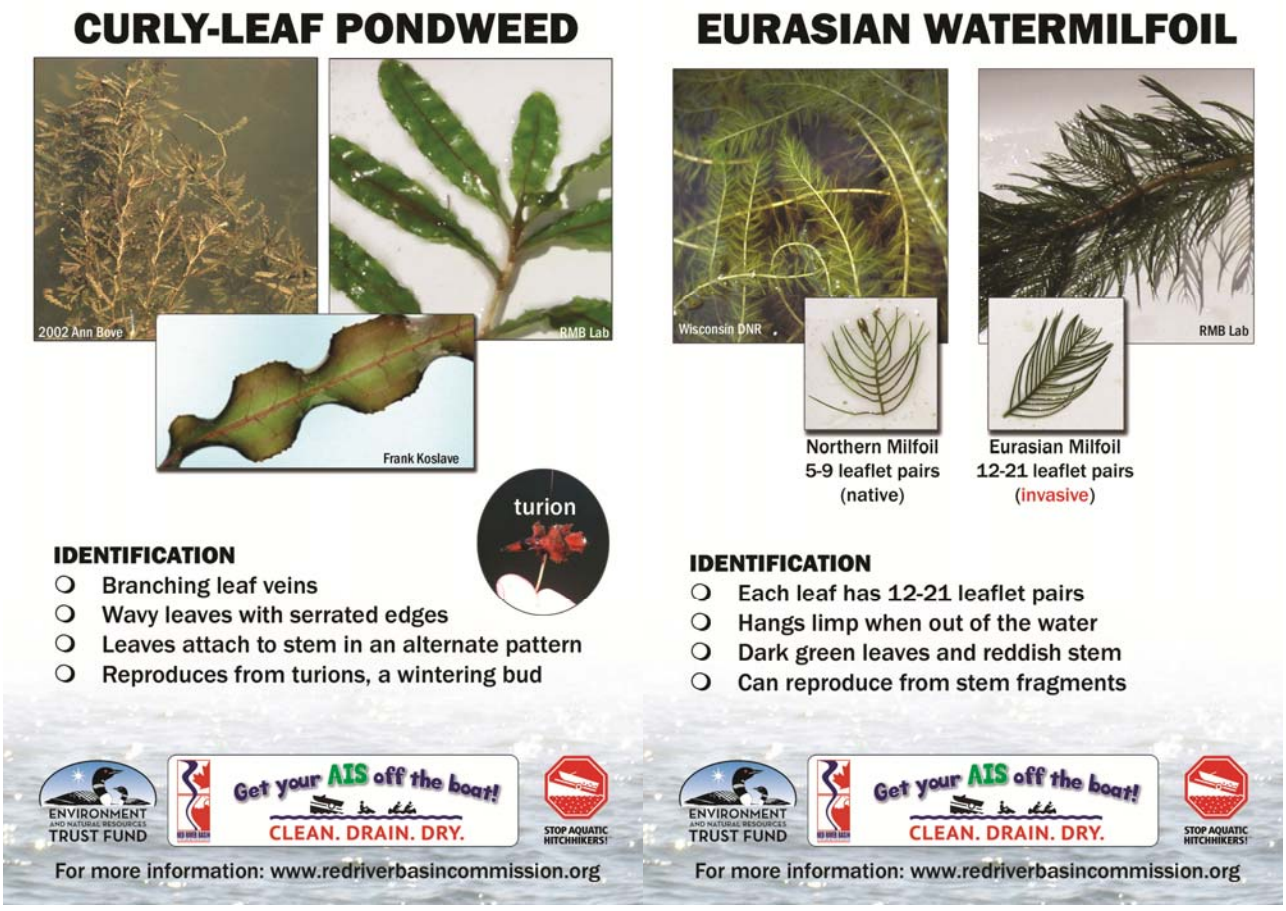




Below is a screen shot from the AID Risk Assessment GIS Tool



Below are the AIS Identification cards utilized for educational and outreach materials



FLOWERING RUSH

IDENTIFICATION

1. Pink umbrella-shaped flowers
2. Leaves are triangular in cross section
3. Grows in dense emergent stands in lakes
4. Can also grow submerged in rivers

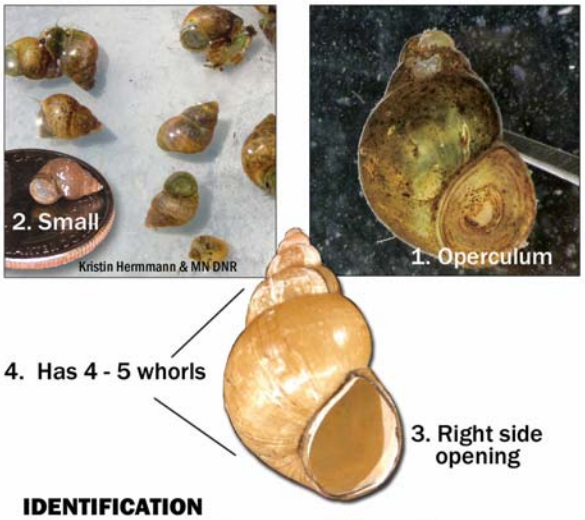
ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

Get your AIS off the boat! CLEAN. DRAIN. DRY.

STOP AQUATIC HITCHHIKERS!

For more information: www.redriverbasincommission.org

FAUCET SNAILS



IDENTIFICATION

1. Operculum (door) covers shell opening
2. Small, up to 1/2 inch long
3. Shell opening on the right side when pointed up
4. Has 4 - 5 whorls, light brown to black

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

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STOP AQUATIC HITCHHIKERS!

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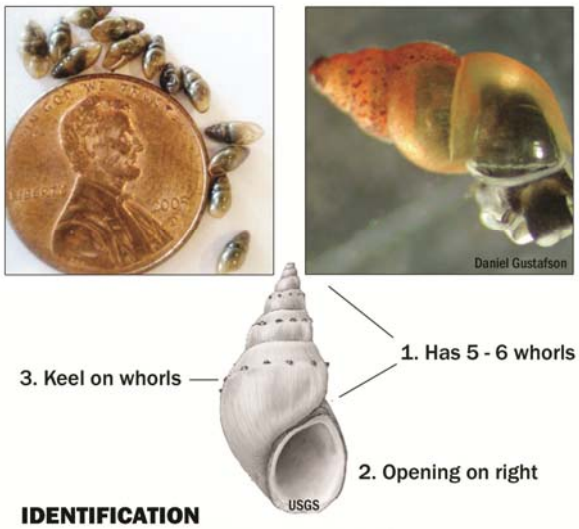
NEW ZEALAND MUD SNAIL



IDENTIFICATION

1. Has 5 - 6 whorls
2. Opening on right side when shell pointed up
3. Keel (ridge) on whorls could be present or absent
4. Has an operculum (door to opening)

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

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PURPLE LOOSESTRIFE

IDENTIFICATION

- Height 3 - 7 feet
- Spike covered with many purple flowers
- Downy, smooth-edged leaves
- Grows along wetlands and shorelines

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

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RUSTY CRAYFISH

IDENTIFICATION

- 1. Dark, rusty spots on each side of the carapace
- 2. Black bands at the tips of claws
- Adults are 3-5 inches long
- Overall tan color, especially on legs
- Larger claws than native crayfish

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

Get your AIS off the boat! CLEAN. DRAIN. DRY.

STOP AQUATIC HITCHHIKERS!

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QUAGGA MUSSEL

IDENTIFICATION

- D-shaped shells
- Alternating white and brownish stripes
- Usually paler color near hinge
- Adults are ¼ to 1 ½ inches long
- Usually found attached to a hard surface
- Rounder than Zebra mussels

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

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STOP AQUATIC HITCHHIKERS!

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SPINY WATERFLEA

IDENTIFICATION

1. Clumps look and feel like gelatin
2. Black eye spots are visible
3. Long tail with spines

Prefer deep lakes, but can also be in shallow

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

Get your AIS off the boat! CLEAN. DRAIN. DRY.

STOP AQUATIC HITCHHIKERS!

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YELLOW IRIS

IDENTIFICATION

- Grows 2 - 3 feet tall
- Grows along shores in shallow water
- Deep yellow flowers, 2 or 3 on one stalk
- Blooms May through July
- Competes with native shoreline vegetation

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

Get your AIS off the boat! CLEAN. DRAIN. DRY.

STOP AQUATIC HITCHHIKERS!

For more information: www.redriverbasincommission.org

X. ACQUISITION/RESTORATION REQUIREMENTS WORKSHEET: N/A

XI. RESEARCH ADDENDUM: N/A

XII. REPORTING REQUIREMENTS:

Periodic work plan status update reports will be submitted no later than January 1, 2015, September 1, 2015 and April 1, 2016. A final report and associated products will be submitted between June 30 and August 15, 2016.

Red River Basin Commission

Vision: *A Red River Basin where residents, organizations, and governments work together to achieve basin-wide commitment to comprehensive integrated watershed stewardship and management*.

Mission: *To create a comprehensive integrated basin-wide vision, to build consensus and commitment to the vision, and to speak with a unified voice for the Red River Basin.*

Northwest Minnesota Regional Aquatic Invasive Species (AIS) Prevention Pilot

Riparian Audience Knowledge Attitude and Interest Survey

Funding provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources

Purpose: The Red River Basin Commission (RRBC) as part of the watershed approach to aquatic invasive species (AIS) prevention and management developed a survey to help determine the current knowledge, attitude and interest in AIS issues affecting Minnesota's lakes region. The survey was administered to a riparian audience that included property owners, recreational water users and businesses who benefit from this regions diverse surface water resources.

Methods: The initial survey was administered as a mail survey to property owners within a defined "lake level watershed". Two watersheds, Cormorant Lake Chain in Becker County and Rose Lake watershed in Otter Tail County, were selected in the first round. In addition to a paper survey, an electronic version was promoted as part of outreach efforts with the placement of mobile tablets between June 1 and September 30, 2015 at three lakes area businesses in Becker and Otter Tail County. Each business promoted the opportunity for walk in customers to take the survey. The results from the survey efforts, 350 responses (Rose 76, Cormorant 142, and Tablets 132), have been combined in this report to provide an overall summation of response to the AIS issues experienced in this region.

Demographics: Respondents represented, males (62%) and Females (38%) with a majority in their mid-50's or older (57%), followed by, mid 40's to mid-50's (29.5%), mid 30's to mid-40's (18%) and those under 35 (13.5%). The top type of watercraft ownership recoded was, fishing boat (55%), recreation boat (51%), canoe/kayak (35%) and personal watercraft (20%). The majority, Sixty seven percent of respondents report using the area lakes fifteen or more times annually.

Results: Respondents were asked questions to measure current "knowledge" they feel they have related to AIS, their "attitude" regarding management of invasive species and personal "interest" in taking an active role to manage and prevent the spread of invasive species. As an example, more than 90% of respondents recognize the words "clean, drain, dry" (CD2) from the Stop Aquatic Hitchhikers campaign which is designed to prompt action when leaving a waterbody after a recreational outing. The CD2 message has nationwide outreach and has been adopted to provide consistency and repetition for outdoor oriented travelers and resource users. It is interesting to note from 9% of the respondents regarding the (CD2) message, that it is still not recognized by lake users in this this group. Respondents also expressed a high degree of confidence relating to ability to identify a zebra mussel (72%), knowing how to report a potential aquatic invasive species (75%) and having spent time in the past searching for AIS information (59%).

Respondent's attitude toward management of AIS are both supportive and positive in nature. A large majority <u>disagree</u> with the following negative views, AIS is a problem we can do little about (79%) and no matter what we do we will not prevent AIS (70%). The majority <u>agree</u> with and support the following actions:

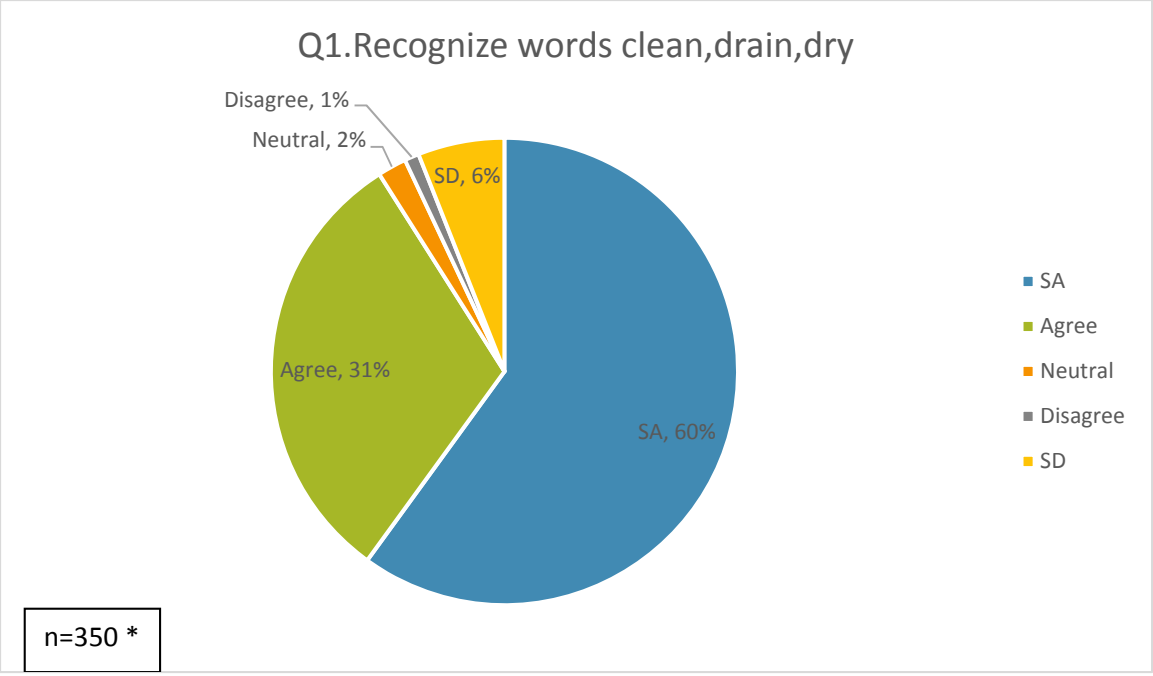
- The need for more access restrictions (79%)
- Supporting lake management that is best for the lake, not people (78%)
- Inspection for all watercraft leaving infested waters (74%)
- Supporting "rapid response" strategies to chemically treat newly infested lakes (67%)
- Support efforts to place a higher priority for decision making on protecting lakes over recreation and lakeshore resident interests (64%)

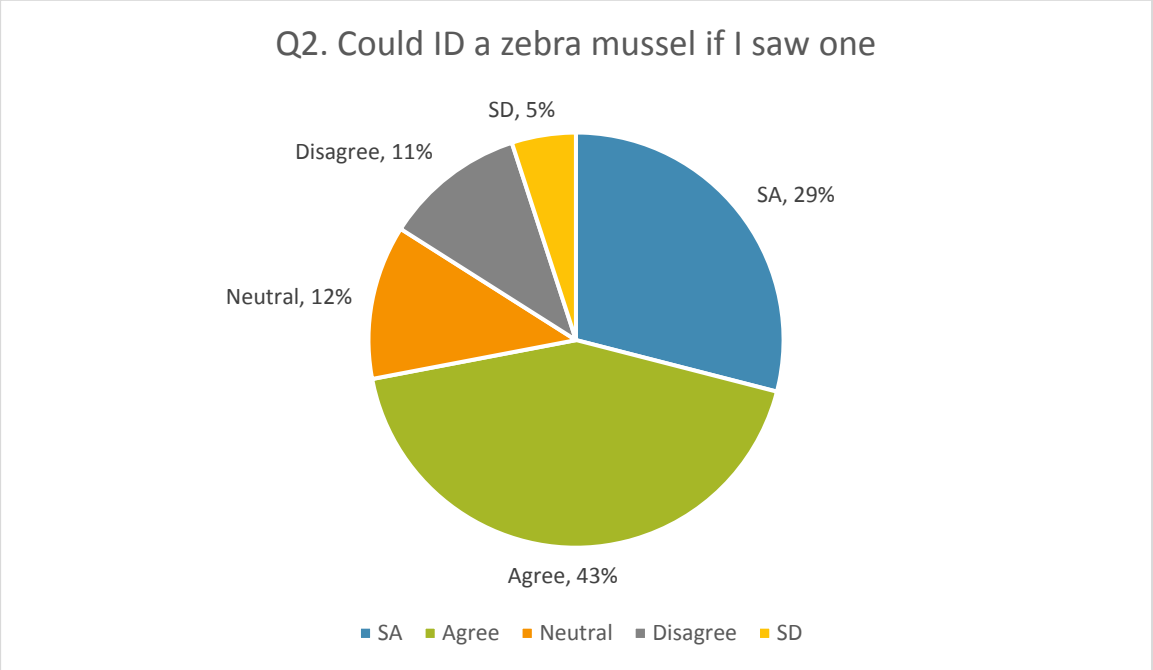
While knowledge and attitudes are important measures to know and understand, one's interest in taking action as a citizen and resource user becomes the keystone habit and building block for long-term impacts. A vast majority, 91 % of respondents, expressed interest in doing their part to prevent the spread of aquatic invasive species. The majority of the respondents also expressed interest in the belief that it is all lake users' responsibility to reduce AIS spread (85%), that they would be willing to share information with other to help prevent AIS (86%) and a high majority would be willing to pay more, $2-$5 for local AIS management support (76%). Many area lakes have some form of organized group, usually a "Lake Association" so respondents were asked about their interest in knowing about lake associations and volunteering. Only 44% responded as being interested, while 18% were not interested, with 38% replying with a neutral response. Less than half of the respondents expressed an interest in engaging as a volunteer but when combined with those respondents indicating a "neutral" preference, there is an opportunity to recruit up 82% of this respondent group as a potential volunteer at the local level.

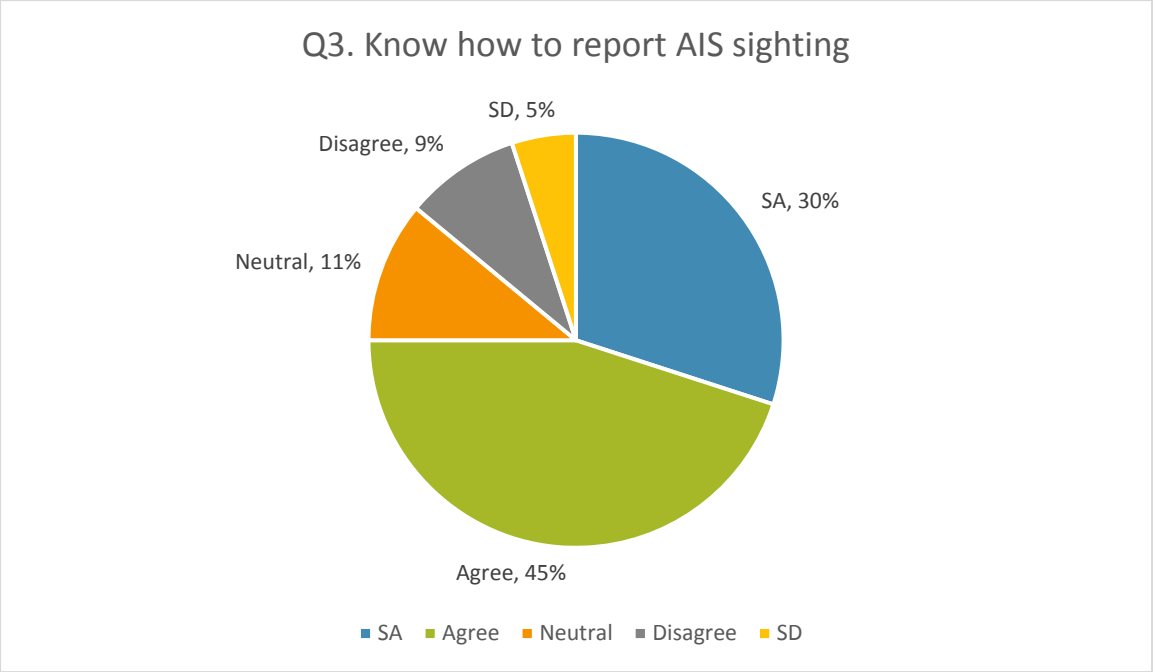
Respondents were also asked about their opinion in taking precautions to prevent the spread of nine AIS species (question 12) that are either present in or emerging as a threat to invade the Red River Basin. Based on a five point scale with 5 being extremely important, the first tier included Zebra mussel (4.78), Asian carp (4.41), Eurasian water milfoil (4.34) and Curly leaf pondweed (4.04) and the second tier, Spiny water flea (3.95), mystery snail (3.84), Flowering rush (3.77), Rusty crayfish (3.74), and Yellow iris (3.56). Of interest in the comment section of the survey, a number of respondents expressed little or no knowledge of the second tier AIS species.

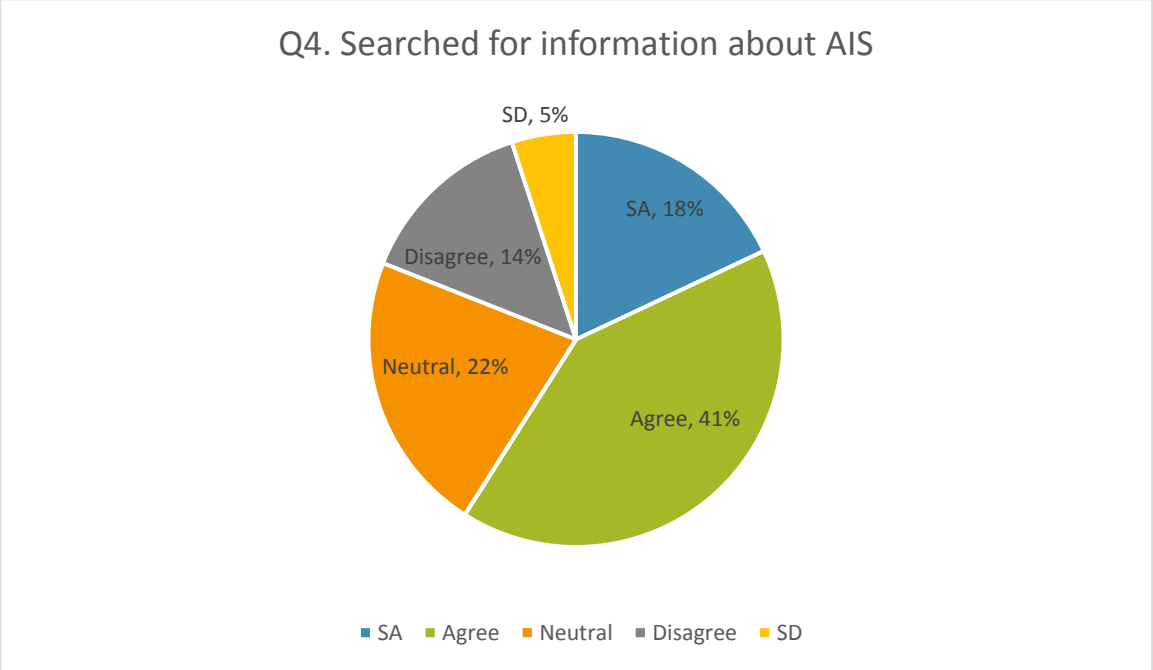
How respondents prefer to learn about AIS is interesting especially knowing the majority are over fifty years old. Internet (52%) ranked as the number one preference followed by, printed media (49%), Newspaper/magazine (39%), radio/television (35%), smart phone/mobile device (20%), Attending a class/workshop (19%).

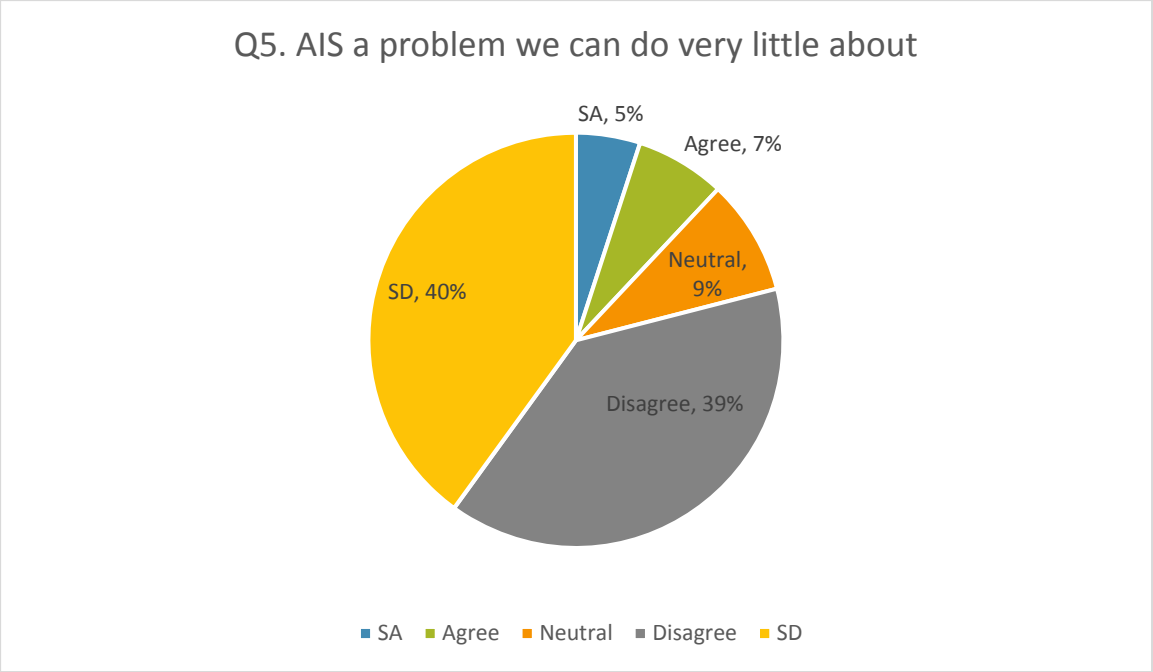
The following section contains graphs from the responses to each of the survey questions, a visual approach using word clouds to show popularity of lakes in this survey group and a map of each watershed with the lake to lake travel pattern of lake property owners in each watershed.

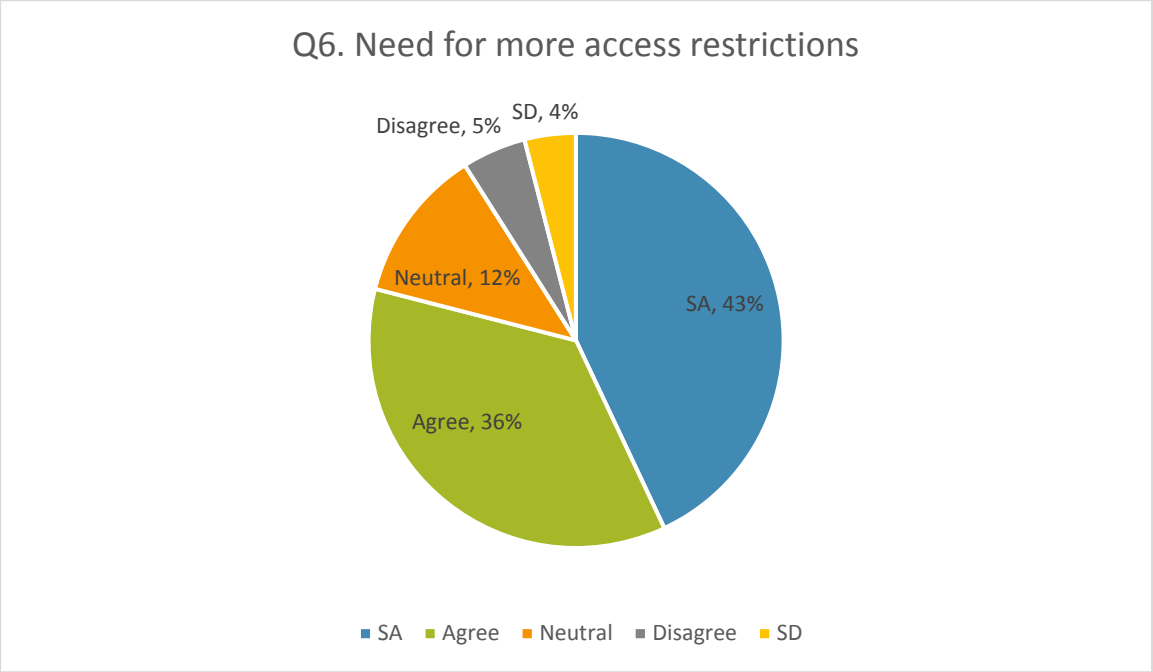

Q1.Recognize words clean,drain,dry
Disagree, 1%
Neutral, 2%
SD, 6%
Agree, 31%
SA, 60%
SA
Agree
Neutral
Disagree
SD
n=350 *

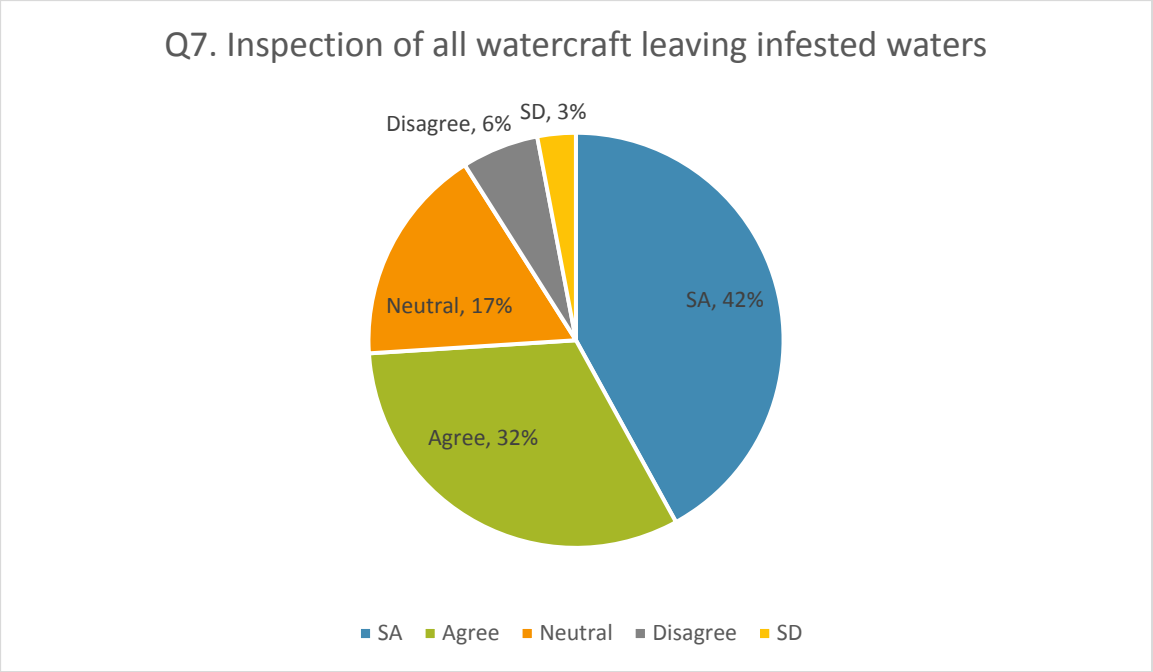

Q2. Could ID a zebra mussel if I saw one
SD, 5%
Disagree, 11%
SA, 29%
Neutral, 12%
Agree, 43%
SA
Agree
Neutral
Disagree
SD

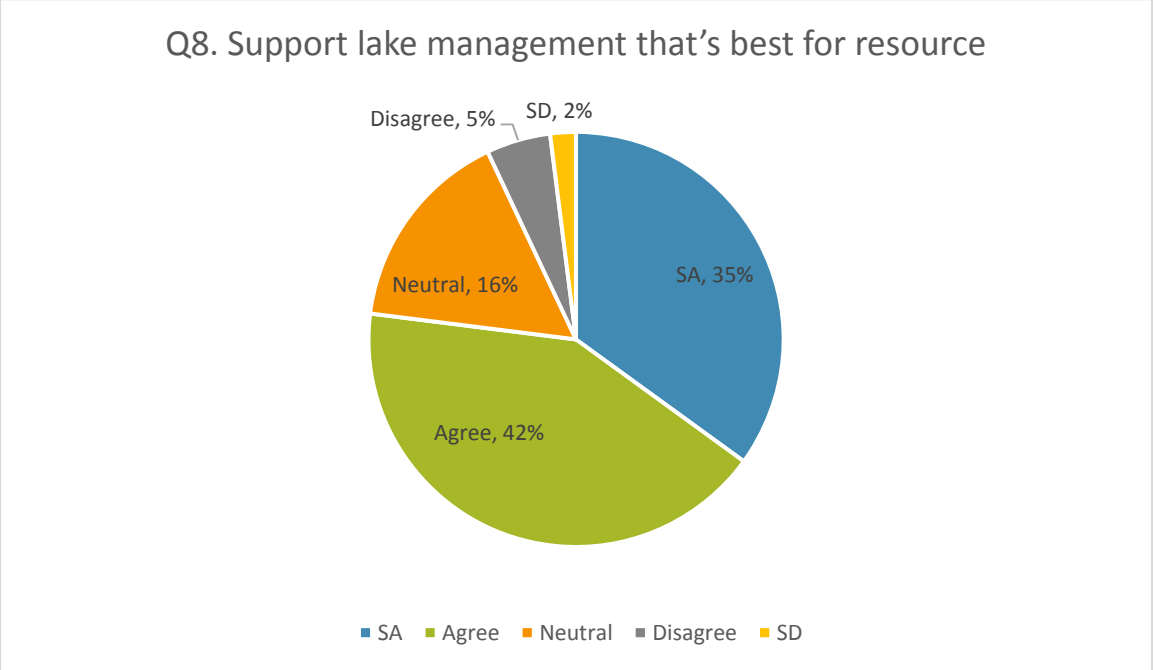

Q3. Know how to report AIS sighting
SD, 5%
Disagree, 9%
SA, 30%
Neutral, 11%
Agree, 45%
SA
Agree
Neutral
Disagree
SD

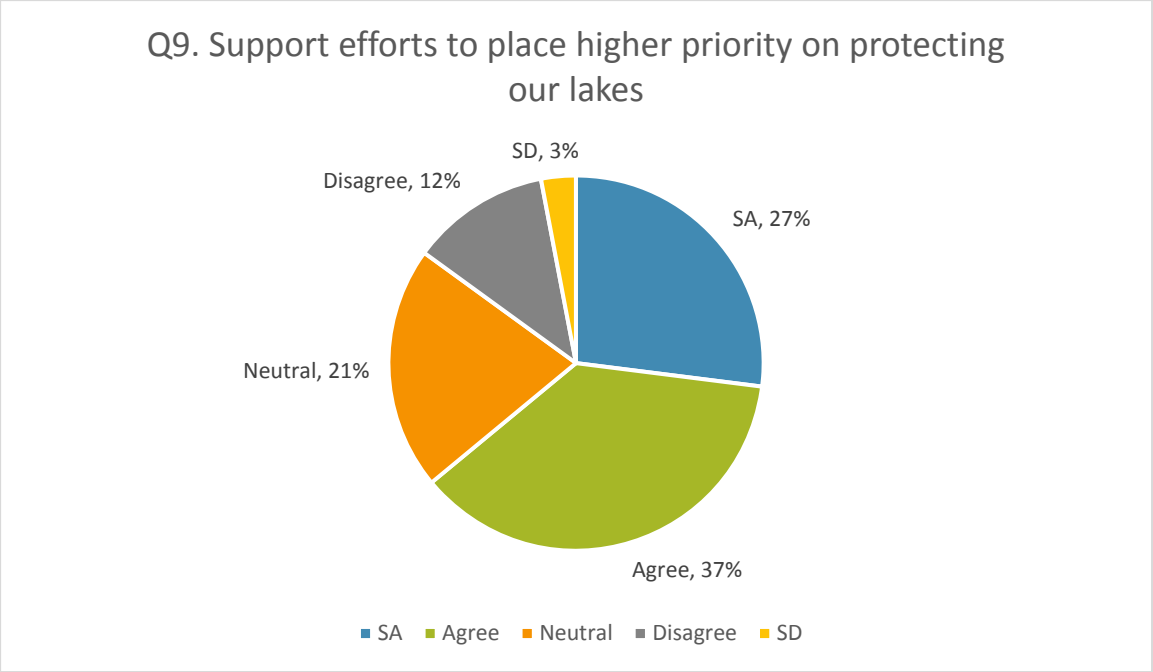

Q4. Searched for information about AIS
SD, 5%
SA, 18%
Disagree, 14%
Neutral, 22%
Agree, 41%
SA
Agree
Neutral
Disagree
SD

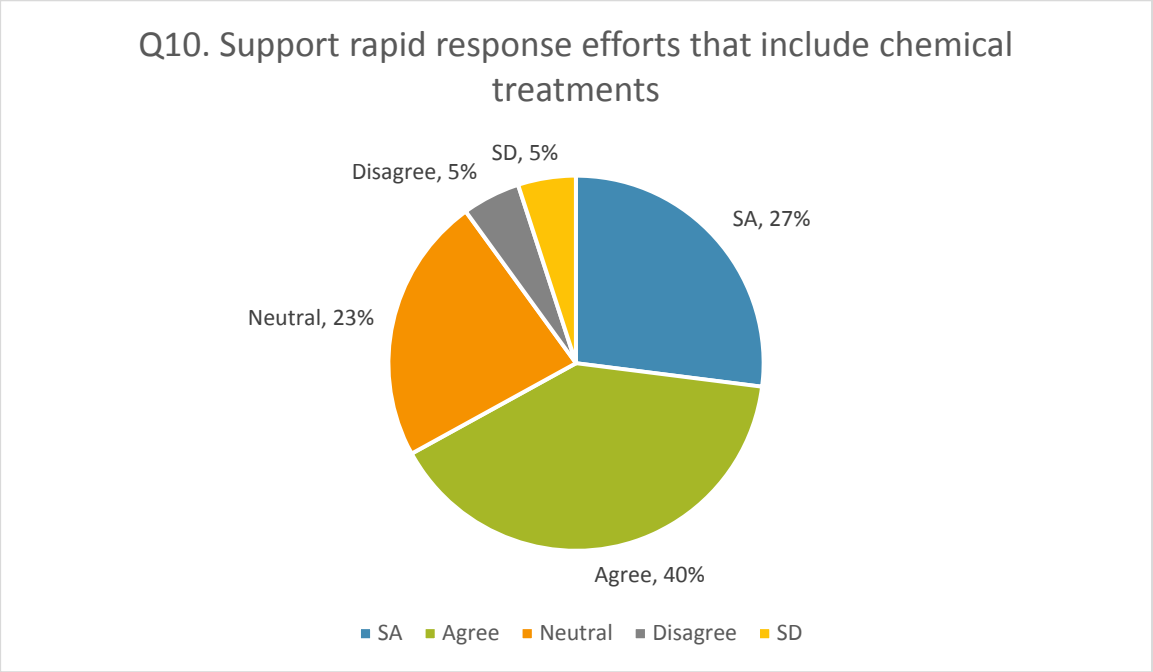

Q5. AIS a problem we can do very little about
SA, 5%
Agree, 7%
Neutral, 9%
Disagree, 39%
SD, 40%
SA
Agree
Neutral
Disagree
SD

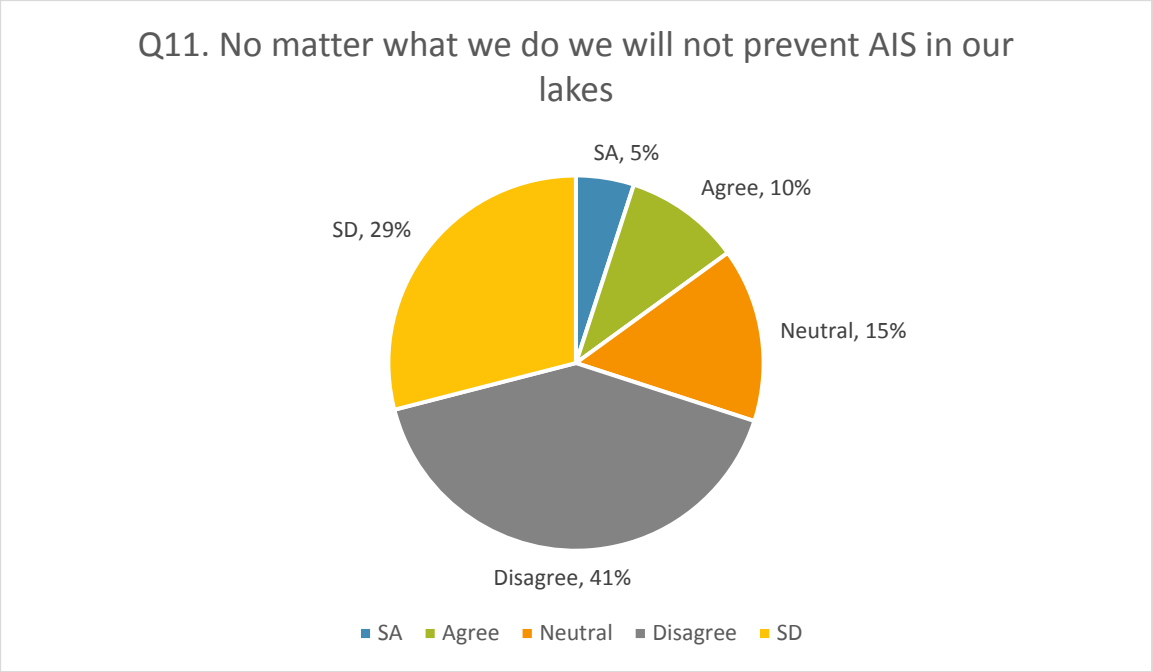

Q6. Need for more access restrictions
Disagree, 5%
SD, 4%
Neutral, 12%
SA, 43%
Agree, 36%
SA
Agree
Neutral
Disagree
SD


Q7. Inspection of all watercraft leaving infested waters
Disagree, 6%
SD, 3%
Neutral, 17%
SA, 42%
Agree, 32%
SA
Agree
Neutral
Disagree
SD


Q8. Support lake management that's best for resource
Disagree, 5%
SD, 2%
Neutral, 16%
SA, 35%
Agree, 42%
SA
Agree
Neutral
Disagree
SD

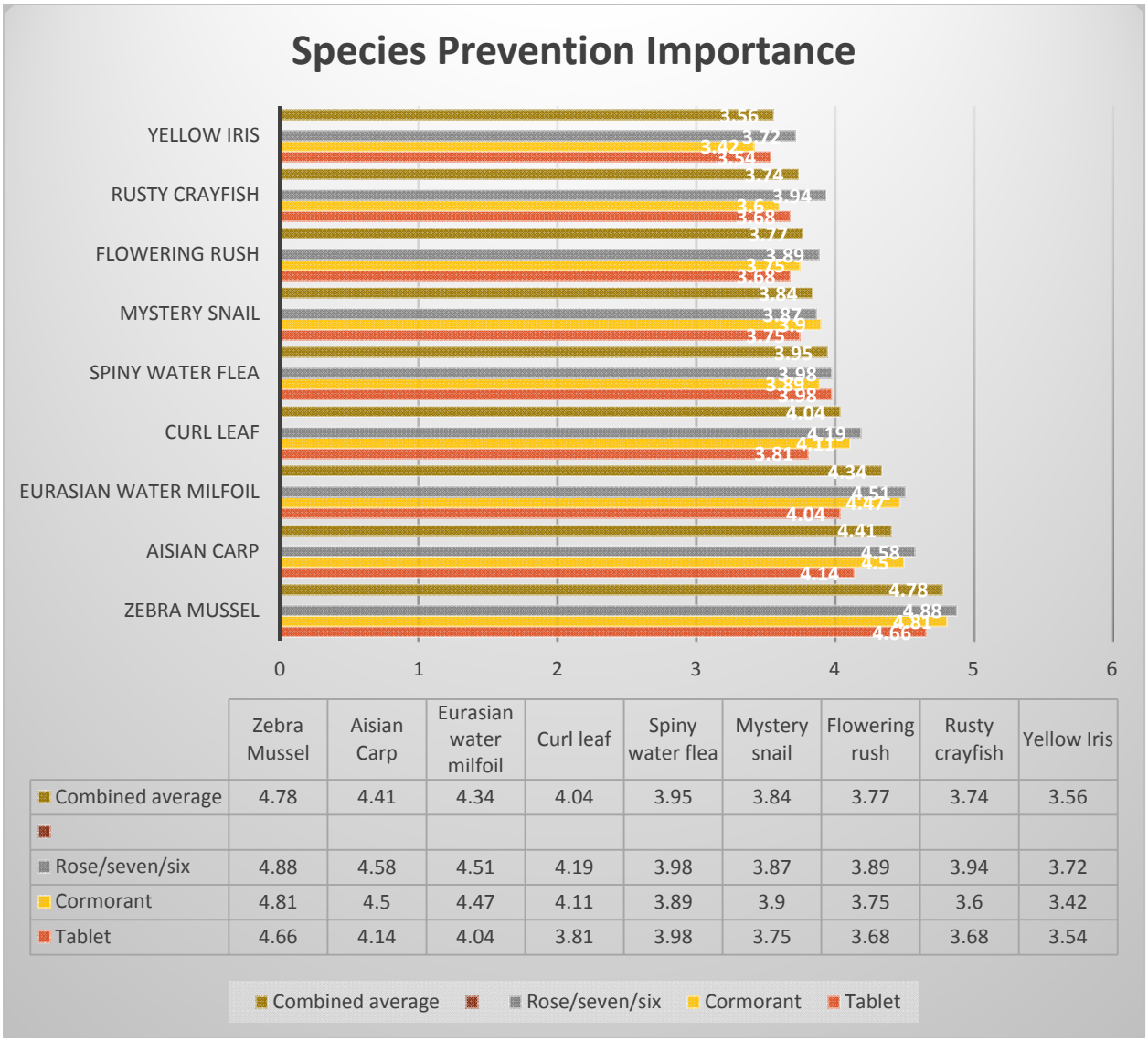

Q9. Support efforts to place higher priority on protecting our lakes
SD, 3%
Disagree, 12%
SA, 27%
Neutral, 21%
Agree, 37%
SA
Agree
Neutral
Disagree
SD


Q10. Support rapid response efforts that include chemical treatments
SD, 5%
Disagree, 5%
SA, 27%
Neutral, 23%
Agree, 40%
SA
Agree
Neutral
Disagree
SD

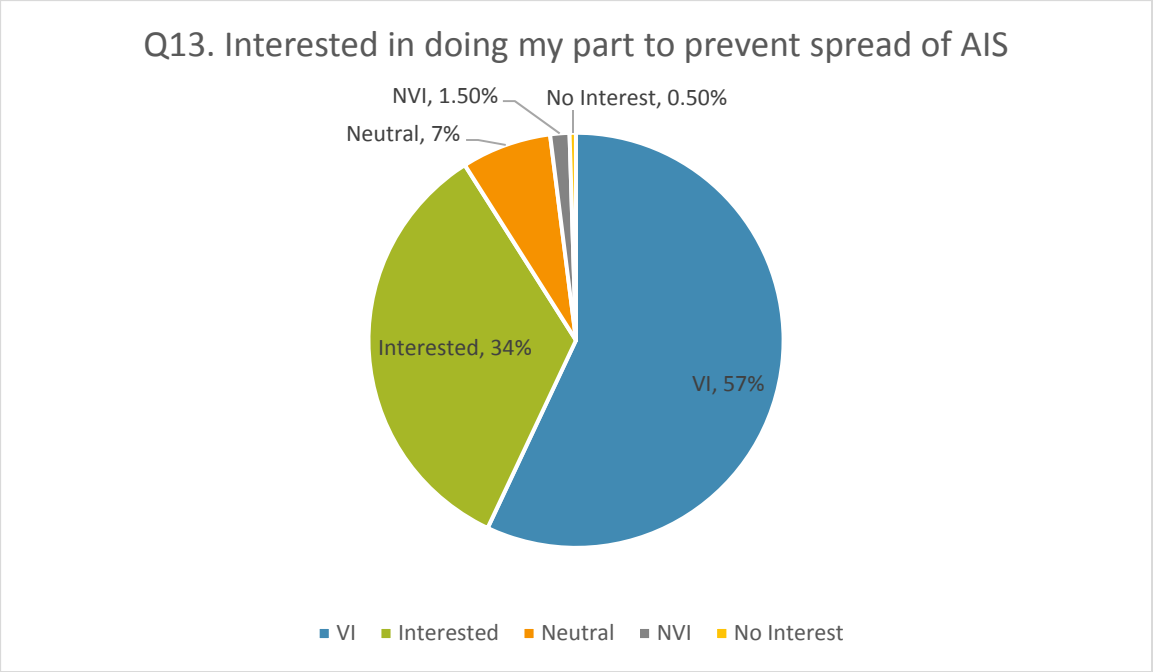


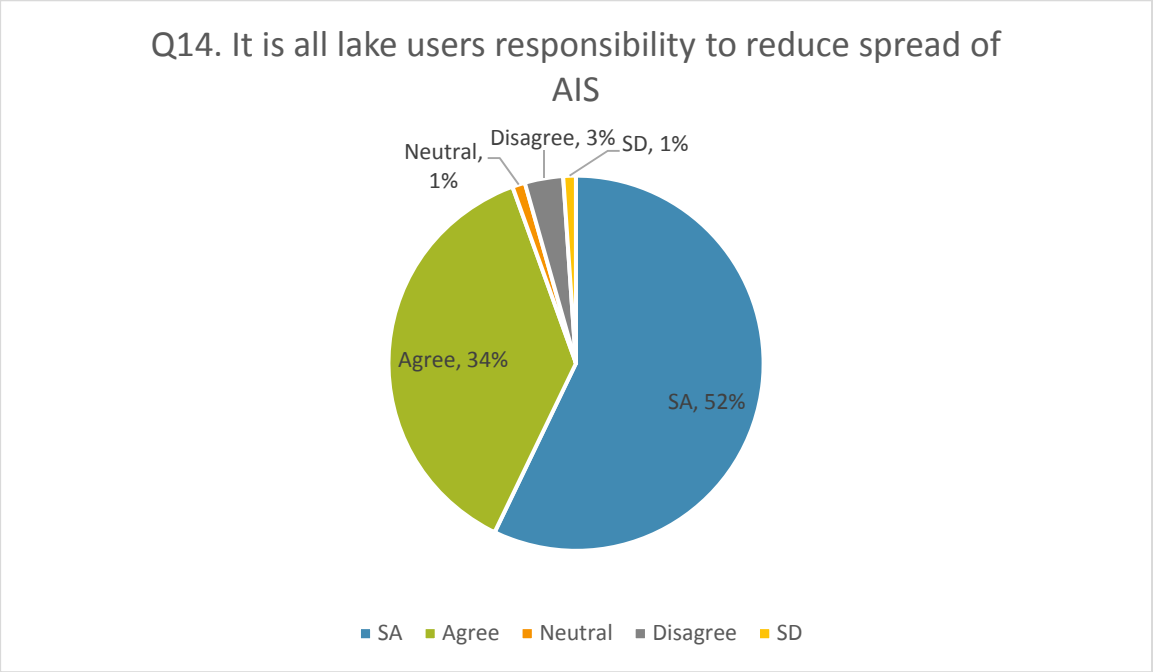
*Survey response based on a total of 350 respondents with the following breakdown: Cormorant watershed mail survey = 142, Rose Watershed mail survey = 76 and tablet based survey = 132.

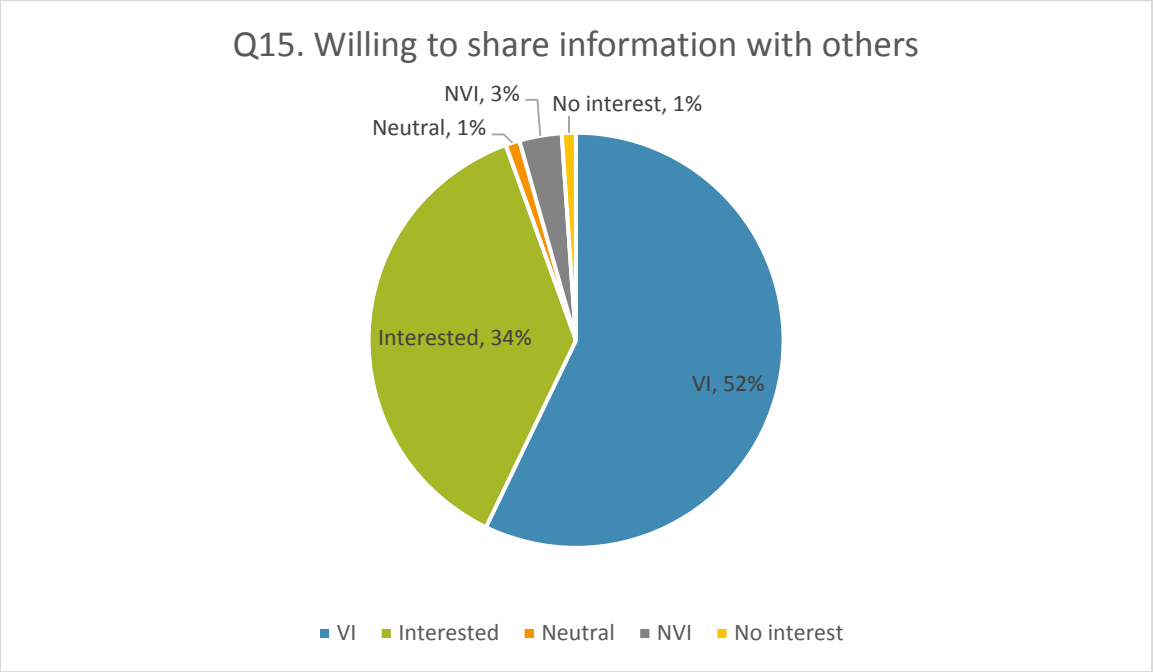
Three android tablets were placed at the following locations, The Lake Place in Lake Park, Lakeland General Store, Dunvilla and Pine Hurst Resort, Naytahwaush (June-September) to randomly collect survey information from summer lakes oriented travelers who are the primary audience for these businesses.

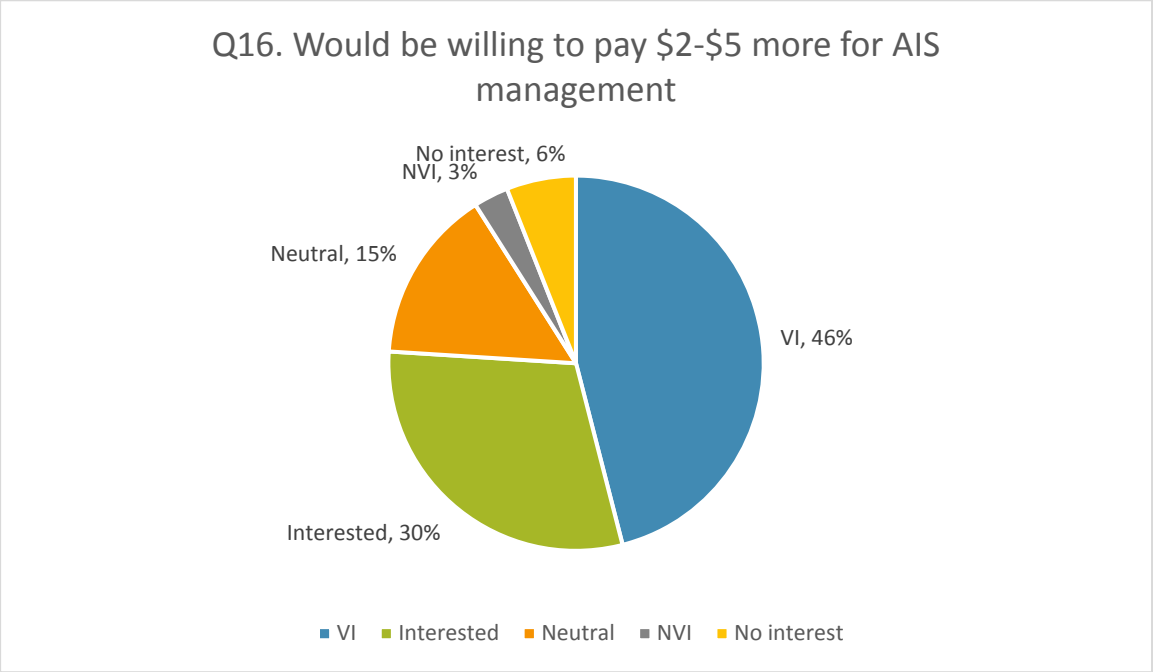


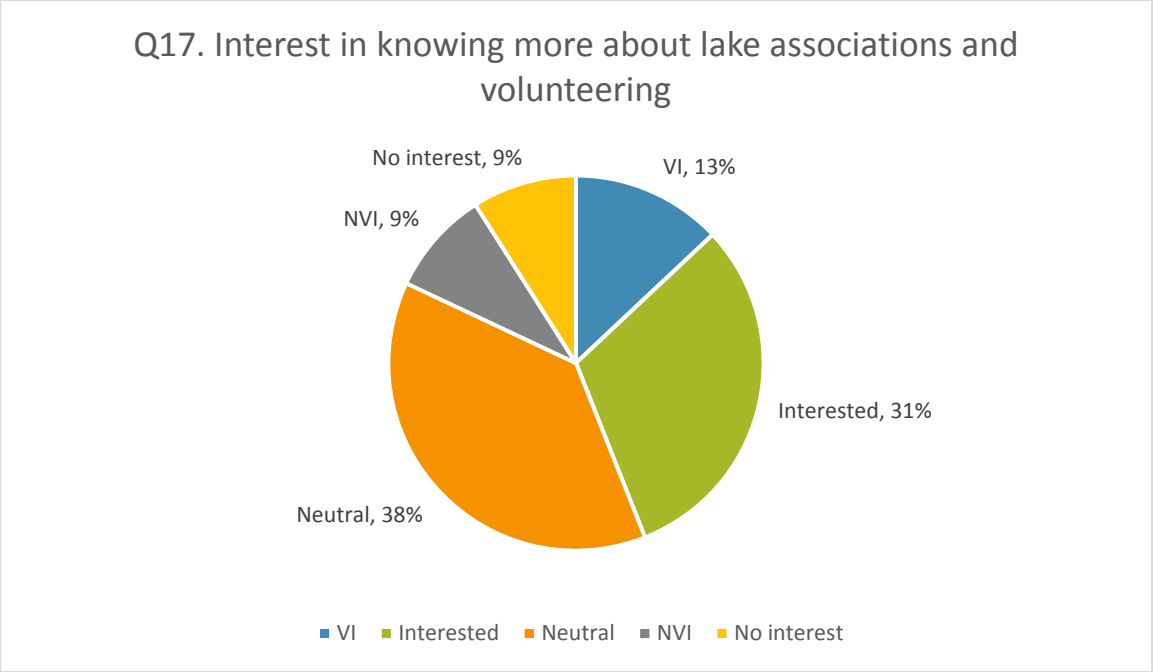
	Zebra Mussel	Aisian Carp	Eurasian water milfoil	Curl leaf	Spiny water flea	Mystery snail	Flowering rush	Rusty crayfish	Yellow Iris
Combined average	4.78	4.41	4.34	4.04	3.95	3.84	3.77	3.74	3.56
Rose/seven/six	4.88	4.58	4.51	4.19	3.98	3.87	3.89	3.94	3.72
Cormorant	4.81	4.5	4.47	4.11	3.89	3.9	3.75	3.6	3.42
Tablet	4.66	4.14	4.04	3.81	3.98	3.75	3.68	3.68	3.54

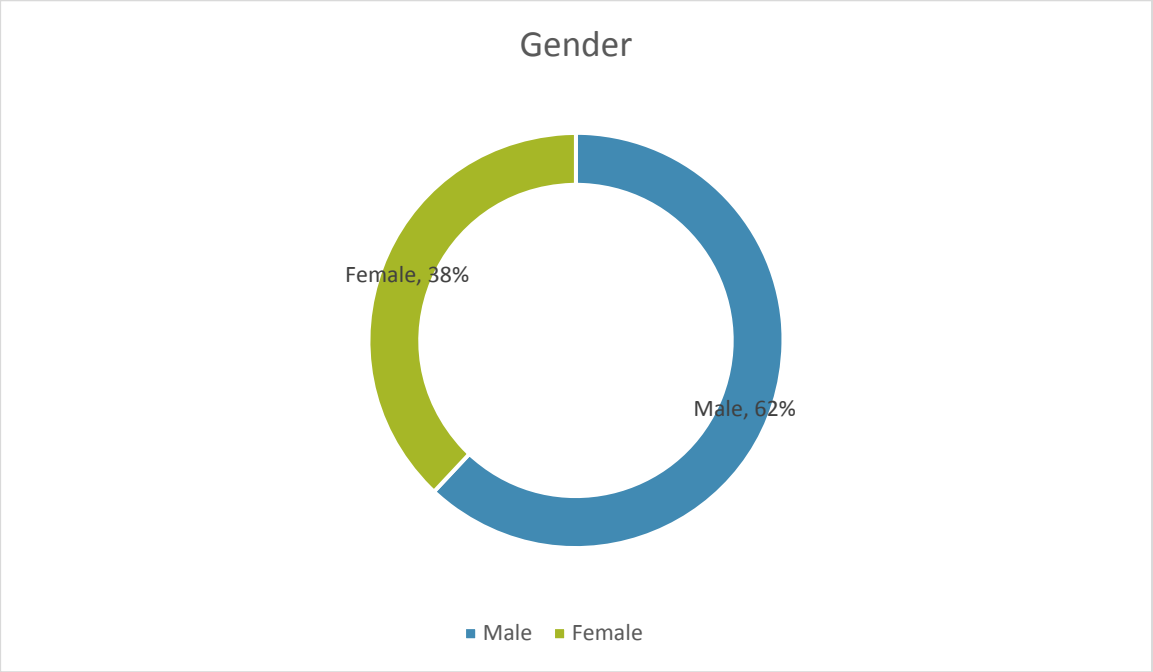

Q13. Interested in doing my part to prevent spread of AIS
NVI, 1.50%
No Interest, 0.50%
Neutral, 7%
Interested, 34%
VI, 57%
VI
Interested
Neutral
NVI
No Interest


Q14. It is all lake users responsibility to reduce spread of AIS
Neutral, 1%
Disagree, 3%
SD, 1%
Agree, 34%
SA, 52%
SA
Agree
Neutral
Disagree
SD

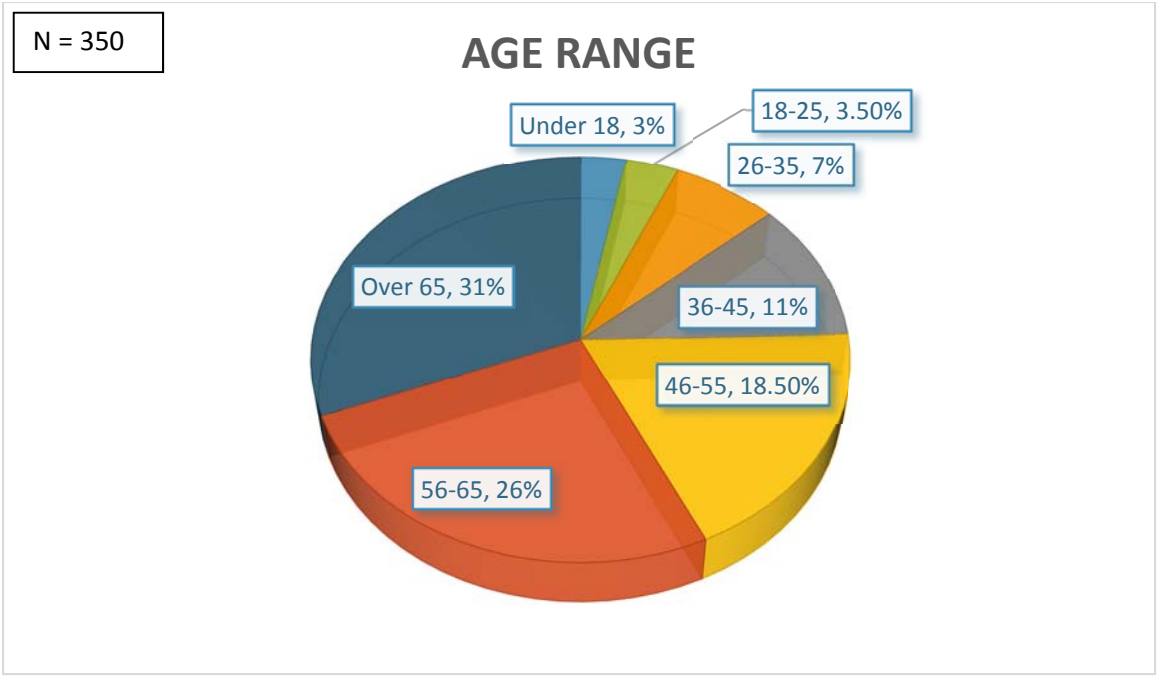

Q15. Willing to share information with others
NVI, 3%
No interest, 1%
Neutral, 1%
Interested, 34%
VI, 52%
VI
Interested
Neutral
NVI
No interest


Q16. Would be willing to pay $2-$5 more for AIS management
No interest, 6%
NVI, 3%
Neutral, 15%
VI, 46%
Interested, 30%
VI
Interested
Neutral
NVI
No interest

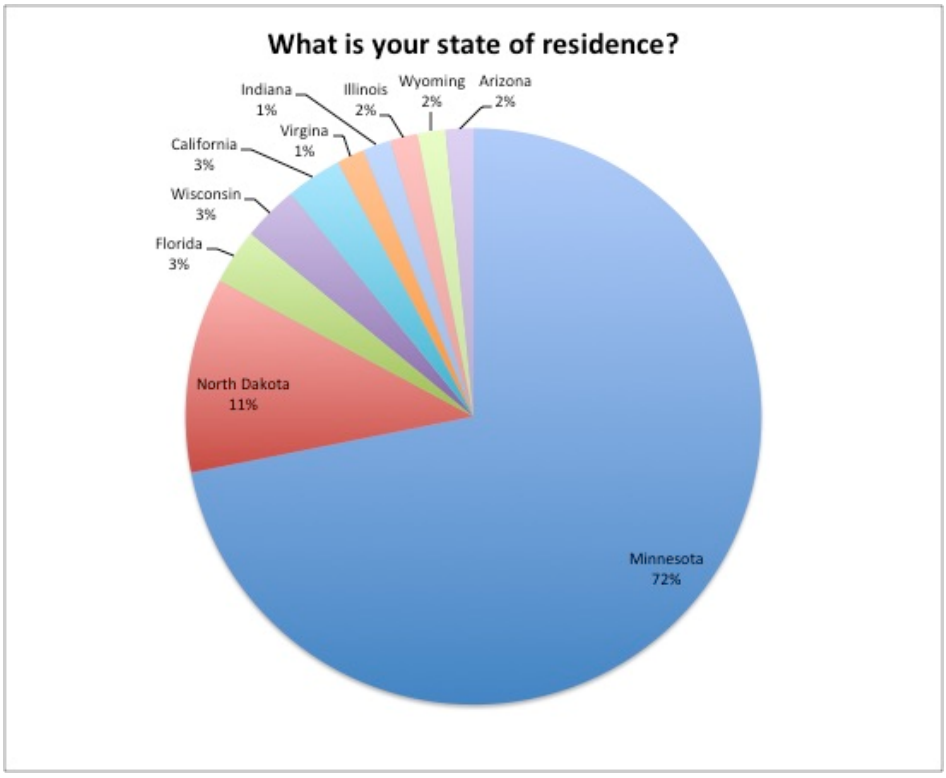

Q17. Interest in knowing more about lake associations and volunteering
No interest, 9%
VI, 13%
NVI, 9%
Interested, 31%
Neutral, 38%
VI
Interested
Neutral
NVI
No interest


Gender
Female, 38%
Male, 62%
Male
Female

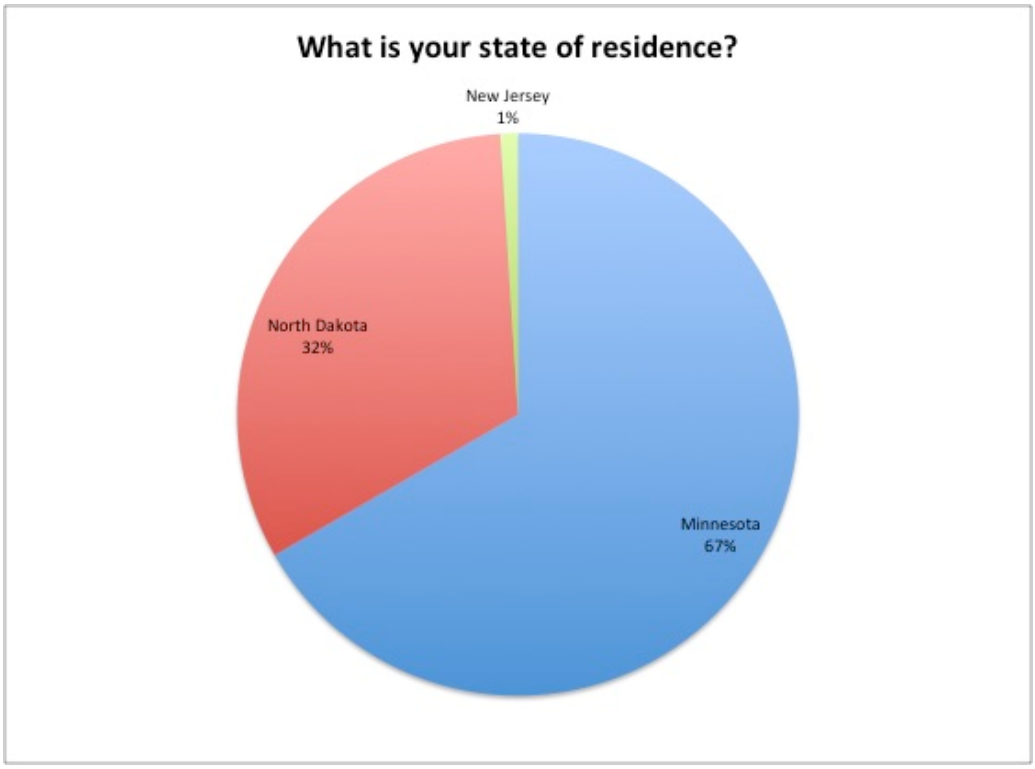
N = 350



Rose Watershed



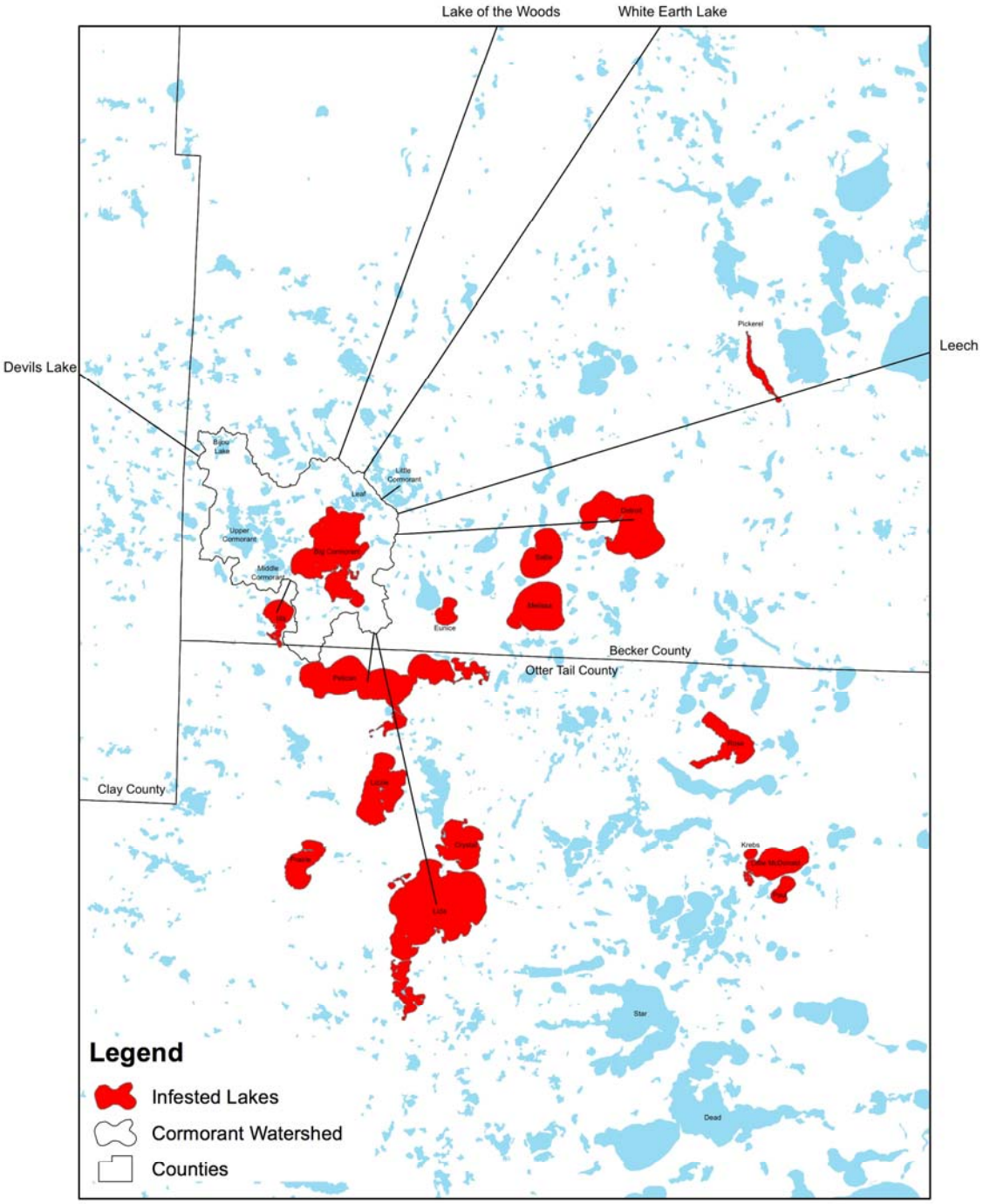
Cormorant Watershed



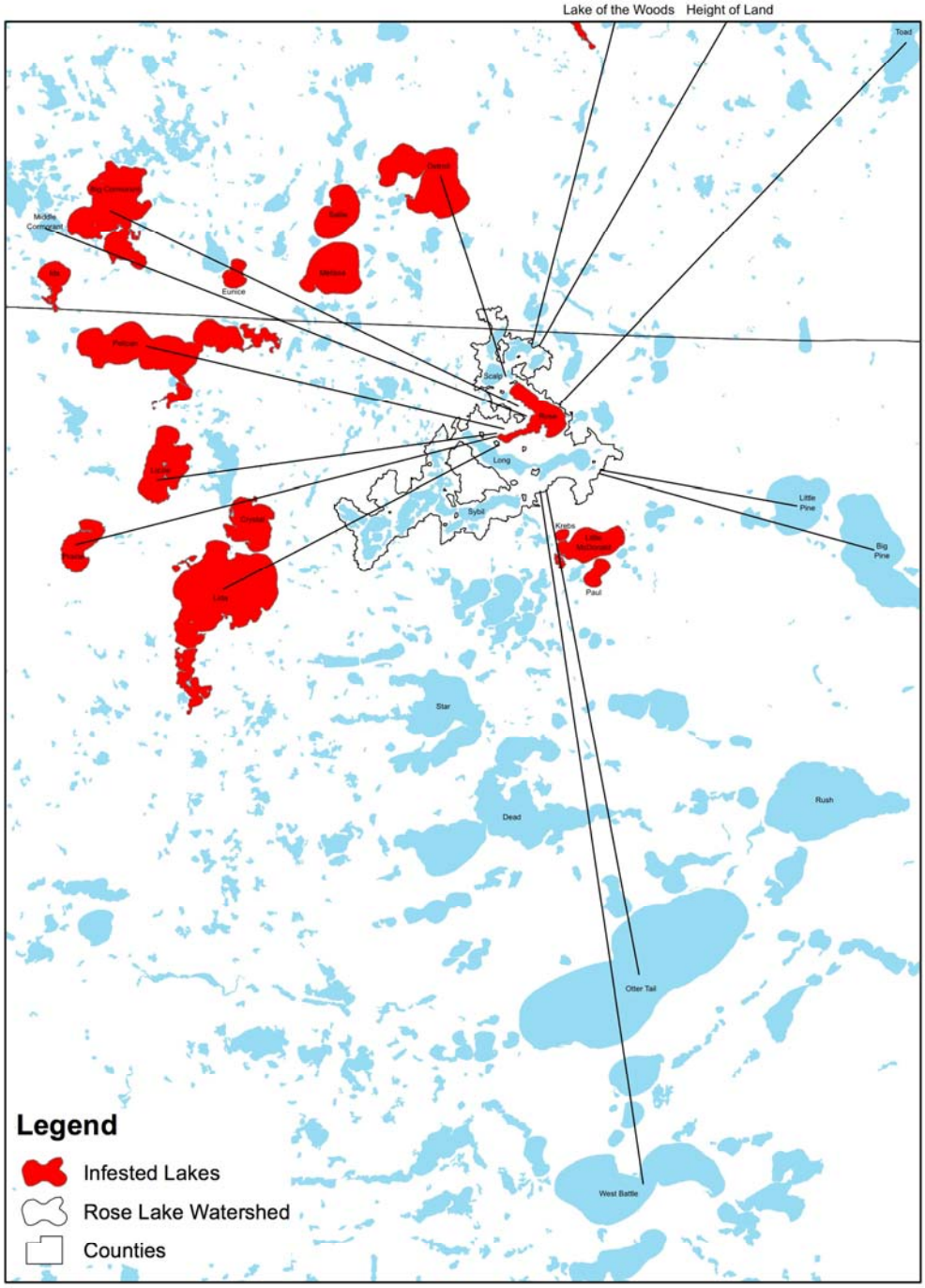
Word Clouds that reflects identified lake usage based on number of times an individual lake was referred to in survey question. The larger the lake name, the more times it was reported as a fishing or recreation destination by survey participants.

Lake property owner participants were also asked what if any other lakes they travel to for recreation other than their home lake, below is the travel pattern established from responses within the Rose Lake and Cormorant lakes sub watersheds. Lakes shaded in "red" have been confirmed as lakes with one or more aquatic invasive species infestation. One of the common perceptions of lake property owners is that fisherman and recreational boaters who travel to lakes country for pleasure are the biggest threat to spreading AIS. We ask respondents to this survey, which lakes they visit and then converted their reply's to a map that highlights this pattern of travel beyond their small watershed. The first map is the Rose Lake respondents and the second is the Cormorant Lakes respondents. Travel in both groups includes a pattern to area lakes that are infested as well as regional destination lakes that are noted as popular fishing destinations.

Which Other Lakes do you Visit?



Which Other Lakes do you Visit?



Participant Comments:

Rose Watershed

- What is to stop someone from taking a five gallon pail and filling it with water from an infected lake and dumping water into an uninfected lake, could IS be spread that easy?
- I would be willing to pay more to support AIS management if it was truly going toward species management.
- Have attended a DNR class and was certified but it only lasted 2 years. Why make it so hard for volunteers? (My teachers license lasts 5 years)
- We need more education on flowering rush, yellow iris, mystery snail and spiny waterflea for the general public.
- Don't know what a Chinese mystery snail is.
- Have never heard of flowering rush, yellow iris, curly leaf pondweed, rusty crayfish, mystery snail or spiny waterflea.
- We do not dare bring our boats to other sites anymore due to invasive species.
- Boats/water toys from infested lakes should not be allowed to go on other lakes.
- Would like to learn more about AIS from webinars.
- I have heard a group of over age 50 property owners go kayaking on area lakes, am not sure how well they clean and dry their kayaks as they come and go, could they be infecting other lakes? Please pass on to DNR.

Cormorant Watershed

- My part is keeping my own boat clean, nothing else.
- Willing to pay more if it was for power washers to clean boats before they leave the lake.
- I support efforts to protect our lakes but, efforts should be in the area of changing rules for property owners that are grandfathered in.
- I support lake management planning by NR agencies, but I do not agree with their ideas.
- The real invasive species are humans that strip shorelines of natural habitat and leak fertilizer into our lakes. Why isn't more done in this area?
- More should be done to reverse the damage older lots are doing to lakes.
- We really need an outlet on Cormorant, we have 5-6 lakes dumping in water with very little release. Docks and lifts have to be moved multiple times per year which is a big job.
- My boat stays on Cormorant, I am afraid to trailer my boat even to have it serviced.
- We need better communication, please!

- Use part of the sales tax, my taxes have gone from $2,500- $46,000 in 10 years, Use this increase. I pay property tax, most users don't!
- You cannot keep wildlife from spreading some of these species. I believe the majority of lake owners try to keep from spreading the problem, however you always have a few idiots.
- Eventually they will die out, I feel we use way too many chemicals already.
- I think the DNR has plenty of funds to take care of this, we are taxed enough as lake shore owners.
- Thanks for the information, I will pass it on.
- They put inspection on one lake in the cormorant chain instead of all access points- it's a waste of time, effort and resources, All or nothing!
- Not familiar with flowering rush, yellow iris, rusty crayfish, Chinese mystery snail, or spiny water flea.
- Television/radio and internet have larger audiences.
- I like your new App!
- The ability to drain the ballasts of wakeboard boats is a big problem.
- Too my knowledge "rapid response" has not been very successful-new options need to be investigated.
- Would be willing to pay more if we included lake resident representatives in ways to manage funds.
- Only consider chemical treatment if it does not have other adverse effects.
- Don't know about, flowering rush, yellow iris, rusty crayfish, Chinese mystery snail, or spiny water flea.
- There is a lack of will to do what we need to do.
- When it comes to protecting our lakes, we have agencies that have different views of what should be done.
- Rapid response, we love going for swims in chemical dumps.
- No will to do what is needed.
- You get more than you need now- take the money from this survey and use it.
- Control the organizations and you control the people.

Tablet Comments

- Very much a concern, I have been doing my part.
- I feel for the most part the spread of invasive species is caused by fisherman who do not own lake property they go freely from lake to lake taking water in bait buckets thus spreading the problem.
- Fisherman can just fill a jug from the lake to take along in case DNR is present rather than taking water from home.

- Add a tax to boat owners who are not property owners.
- Concerned with infested lakes and effect on lake property values.
- Our lake association is quite active in spreading information and soliciting help in protecting our lakes.
- The government needs to discover a way to kill the zebra mussels in our lakes.

Acknowledgements:

Survey Design & Hosting Support,

NDSU Group Decision Center (GDC)

Survey Collection and Data Input Support

River Keepers

Funding provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR)

Basin wide AIS Survey— Question Set

Local and regional leaders have been working to help educate citizens about the importance of preventing the spread of aquatic invasive species, in your opinion, how you feel about this issue that is affecting the quality of our lakes, rivers, streams and ponds in this region. Your participation in this survey will help local leaders understand what citizens know and how they feel about invasive species and how best to plan activities that support clean healthy recreation use of our lakes.

Please read and rate the following statements based on what you know about aquatic invasive species

1) I recognize the words ***clean***, ***drain***, ***dry*** and know what I need to do after a day at the lake

- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Neutral
- ❍ Agree
- ❍ Strongly Agree

2) I could identify a zebra mussel if I saw one at an area lake

- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Neutral
- ❍ Agree
- ❍ Strongly Agree

3) I know who to contact if I find an invasive plant or animal and want to report it

- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Neutral
- ❍ Agree
- ❍ Strongly Agree

4) I have searched for information and read about aquatic invasive species information to help me learn more about this issue

- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Neutral
- ❍ Agree
- ❍ Strongly Agree

5) Aquatic invasive species are a problem we can do very little about regarding prevention of their spread to other areas

- ❍ Strongly Agree
- ❍ Agree
- ❍ Neutral
- ❍ Disagree
- ❍ Strongly Disagree

Please read and rate the following statements as way to help prevent the spread of aquatic invasive species in our lakes and rivers.

6. We need a Plan for more access restrictions on infested lakes

- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Neutral
- ❍ Agree
- ❍ Strongly Agree

7. We need to require inspection and decontamination of all watercraft leaving infected waters

- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Neutral
- ❍ Agree
- ❍ Strongly Agree

8. I support lake management planning by our Natural Resource Agencies that focuses on what is best to support water quality of our lakes and rivers, rather than what is best for people and recreation.

- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Neutral
- ❍ Agree
- ❍ Strongly Agree

9. I support increased efforts to protect our lakes and feel that protection needs to be a higher priority than fishing, recreation and lakeshore living for decision makers working with lake management.

- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Neutral
- ❍ Agree
- ❍ Strongly Agree

10. Whenever possible, we should use “rapid response” efforts through chemical treatments to reduce aquatic invasive species in newly infested lakes and rivers

- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Neutral
- ❍ Agree
- ❍ Strongly Agree

11. It’s useless, no matter what we do, we will not prevent aquatic invasive species from getting into our lakes and rivers

- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Neutral
- ❍ Agree
- ❍ Strongly Agree

12. In your opinion, how important is it that lake users and property owners take precautions to prevent the spread of certain aquatic invasive species? 0 – Unsure to 5- Extremely Important

_____ Flowering Rush
_____ Yellow Iris
_____ Curly Leaf Pond weed
_____ Eurasian water milfoil
_____ Rusty Crayfish
_____ Asian Carp
_____ Chinese mystery snail
_____ Spiny water flea
_____ Zebra Mussel

13. I am interested as a lake/river user in doing my part to help reduce the spread of aquatic invasive species

- ❍ Not at All Interested
- ❍ Not Very Interested
- ❍ Neutral
- ❍ Somewhat Interested
- ❍ Very Interested

14. I believe it is all lake users' responsibility to help reduce the spread of aquatic invasive species

- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Neutral
- ❍ Agree
- ❍ Strongly Agree

15. I am willing to share information with friends, relatives, etc. who are also lake users

- ❍ Not at All Interested
- ❍ Not Very Interested
- ❍ Neutral
- ❍ Somewhat Interested
- ❍ Very Interested

16. I would be willing to pay more ($2-$5) for fishing/boating licenses to support aquatic invasive species management

- ❍ Not at All Interested
- ❍ Not Very Interested
- ❍ Neutral
- ❍ Somewhat Interested
- ❍ Very Interested

17. I am interested in knowing more about local/regional lake associations and the opportunities to help out as a volunteer

- ❍ Not at All Interested
- ❍ Not Very Interested
- ❍ Neutral
- ❍ Somewhat Interested
- ❍ Very Interested

Background: This information will help determine the preferences of different users to learn more about aquatic invasive species.

18. Where is your primary resident?

- ❍ US
- ❍ Canada
- ❍ Other _____

Answer If Where is your primary resident? US Is Selected

US Postal code?

Answer If Where is your primary resident? Canada Is Selected

Canada Postal code?

Answer If Where is your primary resident? Other Is Selected

Other postal code?

20. What Lake(s) do you visit most?

21.

- ❍ Male
- ❍ Female

22. Age range:

- ❍ Under 18
- ❍ 18-25
- ❍ 26-35
- ❍ 36-45
- ❍ 46-55
- ❍ 56-65
- ❍ over 65

23. I visit and use lakes/rivers in this area (Becker, Mahnomen, and Otter Tail County) (times per summer)

- ❍ 1-5
- ❍ 6-10
- ❍ 11-15
- ❍ More than 15
- ❍ Never

24. I own at least 1 type of the following watercraft (check all that apply)

- ❑ Fishing boat
- ❑ Recreation boat
- ❑ Kayak/Canoe
- ❑ Paddle board
- ❑ Duck hunting boat
- ❑ Personnel watercraft
- ❑ Other _____
- ❑ None
- ❑

25. I would prefer to learn about aquatic invasive species from: (check all that apply):

- ❑ Attending a class or workshop
- ❑ Newspaper/magazine
- ❑ Television/radio
- ❑ Internet
- ❑ Smart phone (social media, downloaded app or information sent to my mobile device)
- ❑ Printed media
- ❑ Other _____

Funding provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR)

Environment and Natural Resources Trust Fund

Final Attachment A: Budget Detail for M.L. 2014 Environment and natural Resources Trust fund Projects

Project Title: Northwest Minnesota Regional Aquatic Invasive Species Prevention Pilot

Legal Citation: M.L. 2014, Chp. 226, Sec. 2, Subd. 04c

Project Manager: Julie Goehring (Replaces Joe Courneya - Jan. 2016)

Organization: Red River Basin Commission

Final Requested Period - January 1 to June 30, 2016 **Project Ending Date - June 30, 2016**

	Activity 1: Coordination with County & Watershed LGU's			Activity 2: Educational Material Development & Distribution			Activity 3: Leveraging Support and Resources to Sustain Promising Parctices			PROJECT TOTALS		
BUDGET ITEM	**Revised Activity 1 Budget**	**Amount Spent**	**Balance**	**Budget**	**Amount Spent**	**Balance**	**Budget**	**Amount Spent**	**Balance**	**TOTAL BUDGET**	**TOTAL SPENT**	**TOTAL BALANCE**
Personnel (Wages and Benefits)	$98,465.00	$82,510.45	$15,954.55	$54,555.00	$51,225.06	$3,329.94	$32,500.00	$32,395.83	$104.17	$185,520.00	$166,131.34	$19,388.66
Joe Courneya,Project Manager: $56,028 (66% salary, 34% benefits); .25 FTE for 2 years		$17,398.26			$14,316.05			$11,407.09			$43,121.40	
Julie Goehring, Project Manager: $13,605(66% salary, 34% benefits); .25 FTE for 6 months		$6,877.50			$3,360.00			$3,360.00			$13,597.50	
Leah Thevdt, Outreach Specialist: $33,933 (66% salary,34% benefits); .25 FTE for 2 years		$10,411.25			$16,519.16			$4,774.20			$31,704.61	
Spencer McGrew,Project Field Technician: $96,060(85%salary, 15% benefits) 1 FTE for 2 years		$33,925.62			$14,991.05			$5,277.00			$54,193.67	
Aaron Ostlund,Project Field Technician: $23,560 (85%salary, 15% benefits) 0.8 FTE for 5 months		$13,897.82			$2,038.80			$7,577.54			$23,514.16	
Professional/Technical/Service Contracts												
Houston Engineering "invasives App" Develop and Beta test including developer fees for research of existing apps, writing code, artwork and building functionality of app for IOS/Android platforms. Bids solicited and contract awarded to Low bidder, Houston Engineering, Minneapolis.		$0	$0.00	$10,280	$10,280.00	$0.00			$0	$10,280	$10,280	$0.00
RMB Environmental labs, GIS data acquisition, input and mapping support. RMB currently houses the lake and stream watre quality , so working directly with the lab ,rather than using the International Water Institute (IWI) will save time and expenses for the GIS mapping portion of the project	$3,700.00	$3,700.00	$0.00			$0.00			$0.00	$3,700.00	$3,700.00	$0.00
River Keepers, Survey collection and analysis	$1,000.00	$1,000.00	$0.00			$0.00			$0.00	$1,000.00	$1,000.00	$0.00
Equipment/Tools/Supplies												

Regionally branded AIS educational material organization and distribution including printed Id cards, boat sponges and towels for watrecraft cleaning, printed plastic bag for distributing materials, floating key fobs,refrigerator magnets, etc			$0.00	$10,500.00	$10,309.07	$190.93	$0.00	$0.00	$0.00	$10,500.00	$10,309.07	$190.93
Printing												
Riparian property owner survey print and distribution	$1,500	$1,500.00	$0.00			$0			$0	$1,500	$1,500	$0.00
Travel expenses in Minnesota												
Mileage,lodging, meals for travel within project site and within MN portion of Red River Basin	$4,500.00	$4,500.00	$0.00	$2,000.00	$2,000.00	$0.00		$0.00	$0.00	$6,500.00	$6,500.00	$0.00
COLUMN TOTAL	**$109,165.00**	**$93,210.45**	**$15,954.55**	**$77,335.00**	**$73,814.13**	**$3,520.87**	**$32,500.00**	**$32,395.83**	**$104.17**	**$219,000.00**	**$199,420.41**	**$19,579.59**