

*Iron County LWCD
TFFTL AIS Report
Grant Reimbursement Report
AIS Project: AEPP-290-11
January 30, 2017*

Grant Overview

The Iron County Land & Water Conservation Department (LWCD) is devoted to working with private landowners, municipalities, and partner agencies on erosion and water quality concerns throughout the county. Aquatic Invasive Species education, prevention, and control are critical components of protecting the high quality resource waters in the county. Aquatic Invasive Species (AIS) has been a focus of the Iron County LWCD for the past ten years with the establishment of an AIS program through a WDNR AIS education, prevention and control grant awarded for 2009-2011 (extensions through 2016). Through this program the county hired an AIS Coordinator who has provided education and outreach as well as assisted with prevention and control of AIS across the county.

On October 3, 2006 Xcel Energy (Licensee) filed an application with the Federal Energy Regulatory Commission (FERC) to amend its license for the Big Falls Hydroelectric Project to include the Turtle-Flambeau Flowage as a project feature. FERC issued an order on October 14, 2008 amending the Big Falls license to include the Turtle Flambeau Project. The amending order stipulated various conditions or additions to the plans and requirements (Article 416) in the WDNR's Water Quality Certification (WQC). One of the plans required the development of an invasive species management plan. In 2009-2010 the Iron County LWCD became involved in the Federal Energy Regulation Commission (FERC) license requirement that Xcel Energy develop an Invasive Species Management Plan for the Turtle Flambeau Flowage in consultation with the resource agencies. The Iron County LWCD, WDNR, Turtle Flambeau Flowage and Trude Lake Property Owners Association (TFFTL POA) and Xcel Energy developed the Invasive Species Management Plan for the Turtle-Flambeau Storage Reservoir. This Invasive Species Management Plan provides \$7,000 annually to the Iron County LWCD to subsidize a limited term employment position on the Turtle Flambeau Flowage to carry out the invasive species education, monitoring and control efforts outlined in the plan. The funds from Xcel Energy obtained by the Iron County LWCD are intended to serve as a match for a grant through the WDNR to expand funding for a second LTE position and education and prevention activities.

The AIS TFFTL Grant has also allowed the project to better its monitoring efforts of purple loosestrife through training and providing equipment to volunteers who actively participate in the purple loosestrife surveys and treatment each year. In addition, funding has enabled the expansion of education and outreach to resort owners, TFFTL POA members, visitors and additional user groups.

Objectives and Activity Update 2016

The Iron County Land & Water Conservation Department hired two interns (LTE) staff from May-September to conduct AIS monitoring, Clean Boats Clean Waters boat landing surveys and

to educate the public on the identification, awareness, prevention, and control, for boats and water sports equipment in regards to aquatic invasive species.

Goal A: Educate the public on AIS and prevention through statewide programs including Clean Boats, Clean Waters and Citizen Lake Monitoring. Develop additional education programs for the public. Target audiences include: lake associations, lake recreation users, landowners, local businesses, etc.

Objective A1: *Provide regular AIS monitoring and conduct regular watercraft inspections on the TFF and Trude Lake.*

Activity 1.1: Hire two limited term employees during the summer months to provide AIS education and outreach

2016 Field Season: Matt Weber and Brad Freiherr were hired for the 2016 summer field season as LTE staff. They were employed from May 18 through September 9th, 2016. Hiring AIS interns before mid-May and even beyond Labor Day, as stated in the grant, continues to be an issue, in particular with college students. This year Brad Freiherr returned to school at the end of August while Matt Weber continued on through Labor Day weekend. As an aside, Matt Weber is a graduate of the Woods and Water youth education program out of Mercer. The Woods and Waters program has been one of the educational programs that the AIS and Lake Protection grant has helped support. Matt competed strongly during the interview process with other college students throughout the state and due to his strong background gained through our woods and waters program, we felt that he was the best candidate for the job. Again, a great testament of the educational effort supported by this grant and the Land and Water Conservation Department. To our knowledge, since the inception of this grant in 2011, three students from the woods and waters education program have acquired employment through our department as well as the Minocqua chain of lakes Clean Boats Clean Waters program.

Objective A2: *Provide education information to recreation users, non-residents, resort owners, and lake groups on AIS issues.*

Activity 2.1: Provide AIS Folders to resort owners.

2016 Field Season: Conservation Specialist updated each of the complimentary bags filled with AIS handouts and down sized the information to focus on a few of the pertinent handouts that best fits Iron County AIS issues. The resort owners and real estate agents were given new packages and were encouraged to contact the Iron County LWCD if they needed any additional resources. 15 packets were distributed.

Activity 2.2: Distribute AIS information to interested citizens and lake groups at County events and lake association meetings.

2016 Field Season: Information and updates were provided at all public events including at each of the Iron County Lakes and Rivers Alliance meetings, there were three meetings held two of which LWCD staff participated in discussions and/ or presented; On July 23th the LWCD Conservation Specialist presented on the state of Iron County's lakes and rivers. This presentation was designed to report water quality and invasive species findings to lake volunteers, land owners, lake associations, and interested citizens. A section of the presentation focused on getting involved in citizen lake water quality monitoring and AIS monitoring. 40 people attended and six new lakes signed up for water quality monitoring. At each of these meetings there was an update on the AIS program and LWCD activities. In addition to working with the Iron County Lakes and Rivers Alliance, the Conservation Specialist took an active role in AIS and Water Quality monitoring in the Springstead /Sherman Area. Another Springstead Healthy lakes presentation was scheduled on July 19th with only 5 people in attendance.

This year we also hosted a citizen lake monitoring network training at the Mercer Community Center followed by an all-day Invasive Species Identification Day event. In total 35 people participated in both events and with the help of Sandy Wickman we trained volunteers on an additional six lakes. Oak, Boot, Stone, Fawn, Hewitt, Crystal and two other new volunteers on the Turtle Inlet and Clear Lake were trained in both water quality sampling and AIS monitoring.

On June 18th, the Conservation Specialist attended the annual Turtle Flambeau Flowage Trude Lake Property Owners Association's meeting and gave a brief update on current monitoring efforts as well as volunteer opportunities scheduled throughout the season.

Lastly, on August 18th the Conservation Specialist presented at "The Pines" in Mercer on the importance of shoreline buffers and general lake shoreline habitat. The event was advertised and sponsored by the Iron County Lakes and River Alliance. 45 people were in attendance. Informational packets were handed out at each event.

Activity 2.3: Maintain updated AIS information on Iron County Land & Water Conservation Department AIS & TFFTL POA websites.

2016 Field Season: The Conservation Specialist has created a group emailing list that provided program updates and general lake information to all of partnering organizations and individual volunteers. Each organizations websites are updated by their perspective organization. Updates focused on new AIS information with links to programs. The Iron County AIS Strategic Plan, Iron County Loon and Lake project report, Springstead/Sherman AIS Lake study report, State of the Counties water quality presentation, and Natural resource foundation annual grant report, were all posted on the LWCD website. In addition to the LWCD website updates, the LWCD Facebook page was maintained to improve communication and awareness of AIS activities. Another link

to the Land and Water Conservation Department's webpage was created on the Northwood's Cooperative Weed Management Area's (NCWMA) webpage. A web map of the monitoring effort of purple loosestrife on the flowage was also linked to the webpage under the AIS page.

- LWCD Website: <http://ironcountylcd.org/education/ais/>
- LWCD Facebook: https://www.facebook.com/pages/Iron-County-Land-Water-Conservation-Department/1441783062725866?sk=timeline&ref=page_internal
- TFFTL POA Website: <http://www.tfftl.org/>
- NCWMA Website: <http://www.northwoodscwma.org/>

Activity 2.4: Develop media releases on trainings, current AIS topics, etc.

2016 Field Season: A dozen media releases were sent to the area papers to advertise program offerings, these included: Conservation on Tap education series; Kids free fishing event, Citizen Lake Monitoring Network training, Invasive Species I.D. day, Iron County Lake and River Alliance presentations and the Springstead area Healthy Lakes presentation events. The area papers included: Ironwood Daily Globe, Lakeland Times, Turtle Flambeau Flowage POA newsletters, Iron County Miner, and Price County Review. Please see Appendix A for examples of press releases.

Objective A3: *Provide education presentations and activities on AIS.*

Activity 3.1: Develop program for TFFTL POA meetings.

2016 Field Season: LWCD Conservation Specialist wrote two newsletter articles and updated the new flowage president on AIS, shoreline restoration, terrestrial invasive species work, CLMN volunteer trainings and CBCW efforts. A volunteer picnic was schedule for a second year in a round, where volunteers get together to meet the new summer LTE staff. In addition, a purple loosestrife work day was also scheduled through the association.

Activity 3.2: Develop lake stewardship programs for lake users.

2016 Field Season: After having great success in 2014 with the initiation of the “Lakes Series”, based on the very popular Science on tap program hosted by the U.W Trout Lake in Minocqua, the LWCD continued hosting their “Conservation on Tap” education series at The Pines in Mercer. Lectures were all focused around land and water conservation issues which included topic like; Lake Superior Fresh Water Estuary Designation, the Turtle Flambeau Flowage Conservation History- the resort era, Monarch Butterflies and Invasive Species, The History of Loon and Lake Research in Iron County – important findings, and an Iron County Bobcat Research Project. This series popularity grew again this year educating a total of 378. This proved to be a HUGE success once again and will be continued in throughout the years.



Conservation on Tap~ Education Series: Licia Johnson (Monarch Butteries and Invasive Species) and Mike Hittle (Flowage Conservation History)

Activity 3.3: Provide education booth at Loon Days.

2016 Field Season: LWCD staff attended Loon Days on August 3rd, where they had a booth with their educational displays and informational handouts on shoreland health and AIS. Approximately 200+ people visited the booth. During the Loon Days event LWCD staff made many contacts with landowners who live on a lake, some who were unaware of invasive species infestations nearby.

Activity 3.4: Coordinate a Clean Boats/Clean Waters program and Citizen Lake Monitoring workshop.

2016 Field Season: The LWCD scheduled one citizen lake monitoring network training with Sandy Wickman on June 15th, Six new participants from Oak, Fawn, Stone, Crystal, Boot, Hewitt, and the Turtle Flambeau Flowage attended. Other presentations and AIS educational efforts encouraging participates to get involved with citizen lake monitoring were shared with Lake of the Falls Lake Association, Spider, Clear, Boot, Mercer, Springstead Lake Association and Weber lake associations. A total of 603 people were educated at these events. In total, the Land and Water Conservation Specialist

communicates and works bimonthly with 36 different lake groups throughout Iron county during the monitoring season. In addition, TFFTL AIS LTE staff were trained in the CBCW program and attended the U.W. Wisconsin (KEMP station's) aquatic plant identification training. AIS, CLMN information packets and LWCD brochures were offered to all participants at all events.

Objective A4: *Monitor and maintain signage at boat landings at TFF and Trude Lake Landings.*

Activity 4.1: Coordinate with DNR to replace small signs at landings.

2016 Field Season: Most boat landing signage throughout the county were inspected and reported in good condition. The Turtle Flambeau Flowage Trude Lake boat landing signs were also in good working condition and reported in the SWIMS database. The LWCD does encourage the public to contact the department when signs are needed or missing at boat landings. In 2016, the Wilson Lake boat landing signs were replaced by LWCD staff and a "Borrow a bucket" program was added to the Mercer Lake boat landing in 2015.



Goal B: Monitor and document invasive species locations on the TFF and Trude Lake and conduct boat inspections. Monitor shoreland for sites that require habitat restoration, and report sites to Iron County LWCD.

Objective B.1: *Coordinate LTE's and volunteers to monitor for AIS and conduct watercraft inspections to education recreationists on preventing the spread of AIS.*

Activity 1.1: Conduct weekly WQ sampling and identify aquatic plants through summer.

2016 Field Season: Volunteers take monthly water quality sampling at six locations on the TFF and one site on Trude Lake. Many of these volunteers take secchi readings bi-weekly in addition to their monthly WQ sampling. These volunteers are trained to monitor for basic AIS and have been asked to monitor for AIS while they are conducting

their water quality testing. Two new volunteers participated in trainings in 2016. An end of the season report was created and shared with the TFFTL POA and it was also included in their annual newsletter. Comparisons dating back 10 years were included for reference. We feel that it is important to report back to our volunteers and to show them that their data is being used and is very important in the overall monitoring of the flowage and Trude lake.

Activity 1:2: AIS monitoring and Point Intercept Surveys (PI):

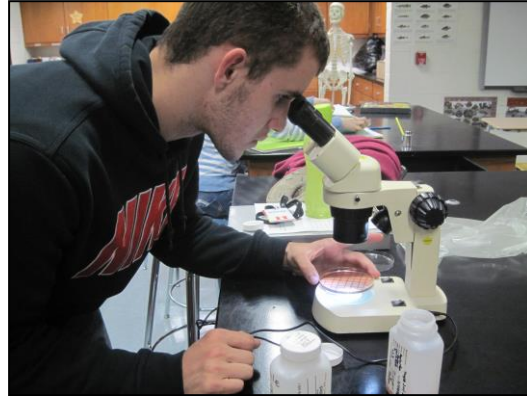
2016 Field Season: The Turtle Flambeau Flowage AIS shoreline monitoring surveys continue to be a monumental task mostly due to the dark stained water and the over 100 miles of shoreline. During the 2016 field season the LTE staff conducted meandering surveys and PI survey twice weekly, concentrating on high use areas such as boat landings, resorts, and developed shorelines. Meandering protocol suggests throwing out a rake every 100-200 meters and more intense surveys near high risk areas. Also, throughout the season LTE staff help DNR staff by conducting Point Intercept (PI) surveys which is a more systematic sampling technique. The TFFTL PI surveys typically are conducted with a trained DNR staff member and due to time constraints, scheduling, and the large area to be covered, as discussed in the 2015 grant report and annual meeting, the Conservation Specialist along with the two LTE staff conducted these surveys in 2016. For additional training to aid in these surveys both LTE staff and the Conservation Specialist attended the Aquatic Plant identification workshop at Kemp Station on June 30th. Although surveys may have taken a bit longer with a less qualified survey team, we feel that the surveys were done with the same amount of accuracy and accountability.

In 2016, LTE staff focused in on the Horseshoe / Town Line areas of the flowage completing 166 PI surveys. Survey data was also entered into the PI spread sheet database. Purple Loosestrife and Reed Canary grass were the only non-native invasive species identified during both the PI and the meandering survey.

LTE staff monitored for AIS on the TFF and Trude Lake two days a week. Each Monday and Tuesday LTE staff surveyed as much water and shoreline as time allowed during the field season. They spent approximately 424 hours monitoring for AIS in 2016. In that time, they reported purple loosestrife and banded mystery snail but no new AIS. Please see the map in [Appendix B](#) for specific survey routes and P.I locations.

- **Additional AIS monitoring not funded by grant** ~ Gile Flowage Spiny Water flea survey: Through a partnership with the U.W. Trout Lake field station, LWCD Conservation Specialist conducted bi-weekly spiny water flea abundance surveys on the Gile Flowage. LWCD staff on several occasions offered educational seasons with the

Gile Flowage Lake Association. Local high school students also participated and learned proper identification, sampling protocols, and the threat that the invasive has to the overall health of the lake system.



Students conducting tow net survey and identifying spiny water fleas 2015.

- **Additional Educational opportunities not funded by grant ~Iron County Loon and Lake research project**

2016 field season:

The LWCD staff and the Hurley and Mercer Schools partnered up in a long-term Common Loon and Lake Health practicum project, looking at loon reproduction and lake health of seven area lakes. 32 students participated in three lake visits learning about water quality collection, shoreline littoral zones, native plant buffers, non-point source pollution, common loon natural history, loon toxicology, loon habitat, and loon chick reproduction. During monthly lake visits students were taught to collect pH, dissolved oxygen, secchi, and water temperature data on seven area lakes. During the August visit students focused aquatic plant identification and the threat of aquatic invasive species. Students also aided in evaluating lakes for use of artificial nest platforms. Lakes that qualified for platforms had platforms placed in traditional nesting areas and were monitored for use. This year three of the seven lakes hatched out loon chicks, two from natural nest and one from an artificial nest platform totaling five loon chicks. No major changes in water quality were observed and no new AIS populations were found.



Mercer and Hurley students learn about Loon ecology and Lake Water Quality Monitoring

Activity 1.2: Develop a project report for the partnership.

2016 Field Season: Each year a copy of the report is provided to all members and financial partners, these include; DNR Lakes Coordinator, Turtle Flambeau Flowage Property Manager, TFFTL POA, Iron County Land Conservation Committee, and Xcel Energy. This report is discussed at the annual partnership meeting, during that time the partnership provides feedback to improve or make changes to the program.

Activity 1.3: Document findings in SWIMS.

2016 Field Season: Data was put into SWIMS on a weekly basis, all 2016 data has been submitted.

Activity 1.4: Conduct weekly boat inspections.

2016 Field Season: Watercraft inspections are conducted at various landings throughout the Turtle Flambeau Flowage / Trude Lake. Also included in the grant is additional monitoring on Wilson Lake. CBCW inspections are done Friday, Saturday and Sunday as those days receive the highest traffic. This year the LTE staff contacted 2,785 people while inspecting 1,321 boats in a total of 626 hours. Other highlights include 49% of the recreationists reported it was their first time being contacted by a boat inspector, and 99% were willing to participant in the survey. Also 17% or 141 boaters had been to another lake in the past 5 days before entering the Flowage or Trude Lake. It is interesting to note that of the 141 boaters that had visited another lake within the past 5 days, these boaters had come from 16 different counties and three different states. Please see [Appendix C](#) for the results from the CBCW surveys.

Objective B2: *Monitor and address new & existing infestations of invasive species immediately.*

Activity 2.1: LTE's & volunteers report monitoring results on DNR SWIMS database.

2016 Field Season: Data was put into SWIMS on a weekly basis, all 2016 data has been submitted.

Goal C: Aide coordinated partners to organize and carry out control efforts. Document all infestations with GPS to show locations of AIS and extent of infestations. Develop maps for annual reports on the locations and extent of any AIS on the TFF, Trude Lake and the tributaries.

Objective C1: *Assist DNR, TFFTL POA and other partners in control efforts of invasive species.*

Activity 1.1: Conduct Purple loosestrife surveys, map infestations and map treatment efforts.

2016 Field Season: Each year the Turtle Flambeau Flowage & Trude Lake Property Owners Association (TFFTL POA) conducts purple loosestrife surveys through their membership. Volunteers take a section of the flowage, covering their territory noting any location of loosestrife on a map or when possible with a GPS unit, flagging is also placed at the site as a quick visual reference. See [Appendix B](#) for a map of these sections and infestations. Each monitoring team fills out a data sheet with location, # of plants, succession of plant growth, beetle damage, and treatment. In some instances, we recommend pulling the plant if the roots come out easy and if there are only one or two plants in the area. Once the section has been monitored the data sheets are given to the LWCD Conservation Specialist who then maps the locations and formulate a report and strategic plan. Once the data has been recorded a work day is organized. The work day is typically made up of TFFTL POA members, DNR and LWCD staff. A team of volunteers in about six different boats are assigned a section to monitor, cut flower heads, pull plants, or treat with herbicide. This year 30 pots filled with roughly 3000 galerucella beetles were released in two sites in Iron County. 15 pots were placed at the purple loosestrife infestation along Bass Lake Road near Long Lake and 15 pots were placed on the TFFTL near Hideaway resort.



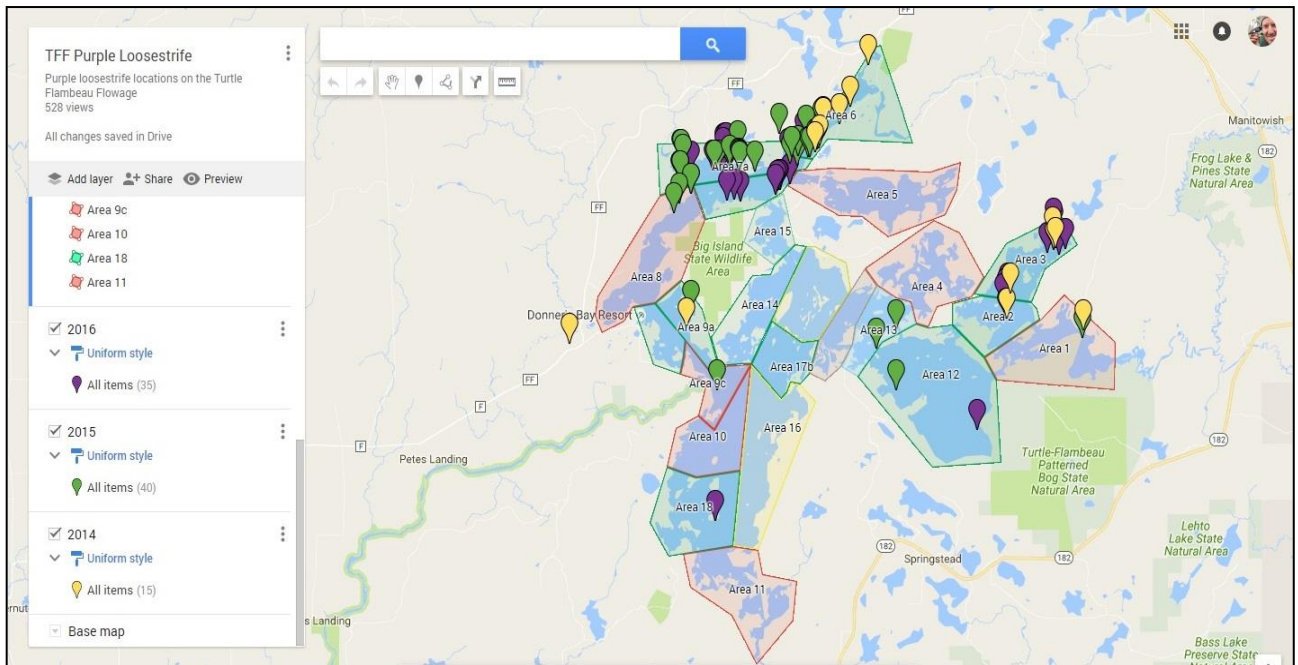
Grant Creek Inlet (Bonnies Mound Area TFF)



Bass Lake Road -Underwood
(PL collection for beetle rearing)

Activity 1.2: Activity 1.2: Aide DNR in treatment of terrestrial and wetland species on TFFTL

2016 Field season: Great strides have been made to eliminate or manage Purple loosestrife infestations on the TFFTL. Volunteers reported that they are starting to see a reduction in plant abundance and distribution. An online database was created this year which included past monitoring efforts. We feel that this will aide in future monitoring efforts and will help us document spread or elimination of Purple Loosestrife in certain areas. The google mapping app also allows volunteers to use their cellphone to find locations. This year we feel invasive species staff took a more organized approach and with the added resources were able to do more purple loosestrife management than in years past. Pulling, cutting, herbicide treatments, and the release of *Galerucella* beetles, were all methods used to control the spread of purple loosestrife.



Screen shot of the google maps app that was created for the TFFTL

Additional work done not funded through this grants:

2016 Field Season: This year two additional Purple loosestrife sites, four Japanese knotweed sites, one Wild parsnip, three Garlic mustard, two Japanese barberries, and one Spotted knapweed site were all treated through chemical application and or mechanical control means in Iron County. The Purple loosestrife and Japanese knotweed sites were all treated through a partnership between the Wisconsin DNR, Great Lake Indian Fish and Wildlife Commission, and the Iron County LWCD.

The two Iron County Garlic mustard sites were controlled in 2016, both treated through mechanical means including hand pulling. One site is located in the township of Mercer on Fisher Lake and the other site is along the Montreal River near Peterson Falls in Hurley. The Fisher Lake site totals about two acres and is behind a private land owner’s garage on Fisher Lake. The Hurley site spans into Ironwood, MI totaling 25 acres. This year the LWCD coordinated the hand pulling effort with the Hurley School and Mercer 8th grade biology class, Northwoods Cooperative Weed Management Area, Ottawa National Forest, and Gogebic County Land Conservation Department. In total the students pull roughly 800lbs of garlic mustard from the two sites.



Garlic Mustard Pull- Montreal River



Colleen Matula (WDNR) Educating the Group

Goal D: Manage AIS grant and develop funding opportunities for evolving AIS concerns.

Objective D1: Administer AIS grant

Activity 1.2: Develop/ manage reporting database system to track volunteer hours and staff contribution (“in-kind”).

2016 Field Season: The in-kind database was developed and is updated as volunteers report their time, mileage, etc. Each year this database is submitted to Jane Malischke-WDNR Grant Specialist with the Grant Reimbursement Request.

Activity 1.3: Submit reimbursement requests and project reports as required.

2016 Field Season: Each year reimbursement requests and project reports are provided to the DNR in November-December.

Activity 1.4: Report accomplishments to Iron County LCC.

2016 Field Season: Each LCC meeting the Conservation Specialist provides a program update with highlights from the AIS program. The LCC meets 3-4 times a year, receiving these updates each meeting. At the end of each year at the November-December meeting the LCC receives the same TFF end of the year report that the partnership does.

2016 Field Season:

The Land and Water Conservation Department has now completed the requirements listed in the grant. A final annual reports has been created and submitted to WDNR office in Rhinelander, and reimbursement request submitted to WDNR office in Spooner.

APPENDICES