2013AIS End of the Year Report Sawyer County AIS Program Kristy Maki, Sawyer County AIS Coordinator

December 2013 ends the second year of a 3 year grant from the WI DNR to fund the Sawyer County Aquatic Invasive Species program. The program has been in existence since May of 2006 and continues to help area lake associations and groups with education and technical assistance in regards to aquatic invasive species (AIS).

The Sawyer County AIS Coordinator position has five goals that are worked upon each year:

- 1. Educate the public about AIS issues.
- 2. Map and monitor aquatic invasive species in Sawyer County.
- 3. Ensure lake associations have assistance to properly manage AIS issues on their lakes.
- 4. Maintain AIS database and AIS mapping program for Sawyer County.
- 5. Develop a Sawyer County Strategic AIS Plan.

These goals guide the major projects that the AIS Coordinator works on throughout the year. The following is a summary of the activities undertaken by the Sawyer County AIS Coordinator in 2012 and 2013.

2012:

2012 was the beginning of the 3 year grant from the WI DNR for the Sawyer County AIS program. Some of the duties accomplished by the AIS Coordinator included grant writing assistance, Purple Loosestrife control, presentations at many meetings, AIS monitoring trainings, and Clean Boats, Clean Waters trainings. The AIS Coordinator also attended meetings and conferences, held a story hour at the community library, mapped and surveyed AIS in known lakes, surveyed other lakes to look for AIS, provided educational materials to groups, provided maps to lake associations tailored to their needs, assisted lake associations with boat landing signage, held an AIS Coffee Hour to discuss topic relevant to lake associations and AIS, provided displays for fishing tournaments and lake association meetings, and assisted lake associations with other requests they made in regards to AIS. See the attached work reports for more details.

Lakes Surveyed:

Tiger Cat Flowage Spider Chain of Lakes Chippewa Flowage Clear Lake Osprey Lake Sand Lake Windigo Lake Lake Hayward Whitefish Lake Round Lake Little Round Lake Nelson Lake Callahan Lake Mud Lake

2013

2013 was a busy year for the AIS Coordinator. A great deal of time was spent working with lake associations on the control of EWM. Eurasian watermilfoil was discovered on 3 new lakes and 7 other lakes were helped with their control treatments. The AIS Coordinator also provided displays and presentations for lake association meetings, assistance with grant writing, AIS monitoring training, CBCW trainings, and continued with the AIS Coffee Hour. See detailed work reports in the appendix for more information.

2013 Lakes Surveyed:

Windigo Lake Lake Hayward Whitefish Lake Clear Lake Chippewa Flowage Tiger Cat Flowage Grindstone Lake Lost Land Lake Round Lake Little Round Lake Osprey Lake Spider Chain of Lakes

New EWM Infestations

In 2013, Eurasian watermilfoil (EWM) was found in two (2) new lakes in Sawyer County and one hybrid lake was confirmed over the winter. Responses to these new discoveries were quick and effective in mobilizing the lake associations to respond to the problem.

Tiger Cat Flowage

Great Lakes Indian Fish and Wildlife Commission (GLIFWC) found EWM on Tiger Cat Flowage on July 22nd and 23rd, 2013. The EWM was found in two isolated locations in the north end of the flowage in Upper Twin Lake (see map for exact location). On July 25th, the Sawyer County AIS Coordinator and an employee of the Sawyer County Zoning and Conservation Department hand pulled EWM in the 2 known locations on Tiger Cat Flowage. One plant was pulled from the east side of Upper Twin and a few plants were pulled in the channel on the northside of Upper Twin near the public boat landing. The channel that leads to the public boat landing is full of very robust native milfoil (*Myriophyllum sibiricum*) that is easily confused with EWM. It is possible to tell the two species apart based on number of leaflets on each plant, but difficult to use growth habit, coloring, and size for identification in this particular area. The boat landing area was checked approximately once per week for the rest of the growing season and no additional EWM plants were found. The WI DNR, Alex Smith and colleagues, surveyed Upper and Lower Twin Lakes, the channel into McClaine Lake, and most of the shoreline of the lower flowage and did not find any EWM. They gave special consideration to the known locations of EWM and found none to be growing in either location.

The Tiger Cat Flowage Lake Association was contacted immediately upon discovery of the EWM. The Association immediately began seeking volunteers to be trained on EWM identification and survey methods. A training was held for lake association volunteers by the Sawyer County AIS Coordinator on August 14th. Another training was given at a lake association membership meeting on August 31st, 2013. At both meetings the identification of EWM and look-a-likes was discussed using live specimens, how to survey and map EWM was shown, and control methods were discussed. A training will be held in the spring of 2014 to assign locations on the lake to volunteers for monitoring and refresh identification of EWM. It is thought that the EWM was most likely introduced at the WI DNR public boat landing off of Hwy 77.

Lost Land Lake

The second new infestation for Sawyer County in 2013 was Lost Land Lake. GLIFWC found EWM in Lost Land Lake on July 24th, 2013. Scattered locations were found in the northern bay of Lost Land Lake and one location just south of the boat landing (see map for exact locations). The Quiet Lakes Association was contacted immediately and volunteers were gathered to be trained and hand pull the EWM in known locations. The Sawyer County AIS Coordinator went out with 4 volunteers on Monday, August 5th, 2013 to locate and hand pull EWM locations found by GLIFWC. The volunteers were trained to hand pull the plants using mesh bags to collect all

of the fragments. Volunteers snorkeled in the shallow water where the EWM was located, dove to the bottom of the lake, covered the plant with a mesh bag, and pulled the plant up from the sediment (including the roots). Most plants pulled out of the soft sediments very easily. Five locations were hand pulled by volunteers on August 5th. The volunteers went out on other days to survey and look for additional plants that may have been missed. All plants were hand pulled and removed from the lake. The Sawyer County AIS Coordinator surveyed the lake again on August 21st and found no EWM. The AIS Coordinator again went out on September 5th and surveyed the remaining areas on the lake where no EWM had been found. Again, no EWM was found. Volunteers for the Quiet Lakes Association surveyed areas of the lake over the remainder of the growing season and no EWM was found. The lake will again be surveyed the spring and summer of 2014 for EWM.

The EWM that was found in Lost Land Lake was difficult to distinguish from native milfoil (*Myriophyllum sibiricum*) in the water, though its growth habitat was slightly different than the native milfoil in the same area. Upon removal from the water, leaflet numbers identified it as EWM. It is likely that the EWM was introduced at the boat landing and fragments drifted over to the NE end of the lake with wind currents.

Additional EWM Lakes

Lake Hayward

Eurasian watermilfoil was first identified in 2011 on Lake Hayward in a very small location. The EWM was chemically treated by Sawyer County in 2011 (less than .25 acres). No EWM was identified in the treatment area in 2012 and no other EWM was found. However, in 2012 plants were found throughout the lake that appeared to be EWM when in the water, but did not possess the normal number of leaflets for EWM (plants had 10 or less leaflet pairs). In 2012, the DNR assessed the plants and thought they were robust *Myriophyllum sibiricum* (native milfoil). Plants were collected by the WI DNR and samples were sent in for DNA analysis to determine if the plants were *Myriophyllum sibiricum* (native), *Myriophyllum spicatum* (EWM), or a hybrid. Results came back during the winter of 2012 that the plants were a hybrid of *Myriophyllum spicatum x Myriphyllum sibiricum*. Lake Hayward had no active lake association at the time, so the AIS Coordinator began by sending a notification to all property owners on Lake Hayward about the EWM discovery. A meeting was held on April 30, 2013 to discuss the situation with all property owners. Over 40 people were in attendance. Establishment of a lake association became a high priority of the property owners and the Lake Hayward Lake Association was established in August of 2013.

Lake Hayward was first surveyed on May 29, 2013 to determine the status of the EWM for 2013. Over the winter it was expected to find around 1 acre of EWM based on areas of concern from 2012. The survey discovered that the EWM was scattered across the west bay of the lake and along the NW shoreline. Over 20 acres had scattered EWM, indicating a very rapid growth and distribution of EWM from the previous year. Lake Hayward also has a large infestation of curlyleaf pondweed (Potamogeton crispus) that was also found in areas with EWM. The Sawyer

County AIS Coordinator worked with the Lake Hayward Lake Association (which was in the process of formation) to determine the course of action. Sponsored by Sawyer County Zoning and Conservation, the Lake Hayward Lake Association applied for a rapid response grant from the WI DNR for chemical treatment of the EWM.

On July 2nd, 23 acres of EWM were treated with liquid 2,4-D (DMA 4). Pre- and post- treatment plant surveys were conducted to determine the effect of the herbicide treatment on the EWM and the native plants. See: Eurasian water milfoil (Myriophyllym spicatum) Pre/Post Herbicide Treatment Surveys Lake Hayward by Endangered Resource Services, LLC (Matthew Berg) for more information.

Overall, the EWM in Lake Hayward was damaged, but was not eliminated or reduced in overall numbers. The large beds of EWM seem to have been impacted by the herbicide, but the overall amount of EWM did not change post-treatment. Factors affecting this most likely include aggressive growth of EWM in areas where no herbicide treatment was conducted, only partial injury to plants, expansion of EWM into other areas of the lake, and a dense population of Curlyleaf pondweed that has been present in the lake for some time. The lake association volunteered to collect herbicide concentration samples and monitor the lake for additional EWM outbreaks.

Clear Lake

No chemical treatment for EWM was done on Clear Lake in 2013. The WI DNR, with assistance from the Sawyer County AIS Coordinator, did complete a point-intercept plant survey on the lake to determine the amount of EWM. EWM was present at very few points on the lake, was not to the surface, and did not appear to be flowering anywhere on the lake. Even though the results from the point intercept survey are encouraging, the Clear Lake Property Owners Association is concerned about the scattered plants that are found throughout the lake and will be considering a more aggressive treatment in 2014.

Connors Lake

Connors Lake was chemically treated in 2013 for EWM using Sculpin-G. Eleven (11) spots were treated for a total of 0.14 acres.

Callahan/Mud Lake

Callahan and Mud Lakes were treated on June 24, 2013 using Navigate (2,4-D). Ten (10) acres of EWM were treated around the littoral zone of Callahan Lake and in Mud Lake. A total of 29 spots were treated.

Round/Little Round Lake

Round Lake was treated on July 15th-20th with liquid (DMA 4) and granular (Navigate) 2,4-D to target EWM. A total of 19 acres was treated in Leder Bay, Schoolhouse Bay, Richardsons Bay, Musky Bay, and spot treatments around the lake. Both liquid and granular herbicides were used to have a greater impact in areas where EWM was growing in depths greater than 8 feet. Surveys in September showed a lot of damage to plants and many areas free of EWM.

Little Round was treated on August 5th, 2013. A total of 0.76 acres of EWM were treated with Navigate (granular 2,4-D). Four, small, scattered beds were treated around the lake.

Osprey Lake

Osprey Lake has had Eurasian watermilfoil (EWM) since 2005. In 2013, 9.0 acres were treated using Renovate MaxG (no treatment was done in 2012). The treatment occurred on June 26, 3013. Late ice-off and an unusually cold spring/early summer, delayed timing of the treatment relative to previous years. Visual surveys done by the Sawyer County AIS Coordinator on October 2, 2013 found very little EWM in the entire lake. These findings also match the monitoring results from the OLPOA (Osprey Lake Property Owners Association). Factors that may also be contributing to the chemical treatment success are water levels higher than recent years and water that seems darker than usual. A few heavy fall rains prior to the October survey are most likely the cause of these observations and may be reducing/inhibiting EWM growth.

Lake Chetec

The Big Chetac Chain of Lakes Association sponsored a treatment for curlyleaf pondweed on Big Chetac in 2013. 90 acres were treated using Aquathol K on May 28th, 2013. The treatment was very successful. See Curly-leaf pondweed Pre/Post Herbicide Treatment Surveys Big Chetac Lake- WBIC: 2113300 Sawyer County, Wisconsin by Endangered Resource Services, LLC (Matt Berg) for more information on the status of the Curly-leaf and native plants.

Lac Courte Oreilles

The Courte Oreilles Lake Association (COLA) treated 36.38 acres of Curlyleaf pondweed in 3 different areas around Lac Courte Oreilles in 2013. 29 acres were treated in Musky Bay, 5.38 acres in Barbertown Bay, and 2.0 acres in Stucky Bay. Clearcast (imazamox) was used at a rate of 250 ppb in Musky Bay and 300 ppb in Barbertown Bay. Stucky Bay was treated with granular Clearcast 2.7g at 250 ppb. In Stucky Bay near the canal that leads to a cranberry marsh, liquid Aquathol K was applied at 3 ppm. See Stantec's 2013 Aquatic Plant Management Report for Lac Courte Oreilles for more specific information.

Overall, only a slight decrease was seen in the CLP in Musky Bay from pre-treatment levels. CLP was reduced in Stucky Bay and Barbertown Bay, however new areas were discovered in both of these bays during the post-treatment survey.

Little Grindstone Lake

Little Grindstone Lake was treated for Curlyleaf pondweed for the second time in 2013. 2.0 acres of CLP were treated on June 4, 2013 with Tribune^R (diquat) at 300 ppb. A post-treatment survey showed no decrease in the amount of CLP found in the lake, but unfortunately an increase to 3.0 acres. The location of the treatment area is a high flow area making retention of herbicide very difficult. See Stantec's 2013 Aquatic Plant Management Report for Little Grindstone Lake for more information.

Overall

2013 proved to be a year with new discoveries of EWM in Sawyer County and a mixed bag of increasing and decreasing EWM populations. Other lakes in Sawyer County were found to not need herbicide treatments including Whitefish Lake (EWM) and the Spider Chain of Lakes (CLP) and Lake Hayward was the only known large outbreak of EWM found. While the new findings of EWM in Lake Hayward, Tiger Cat Flowage, and Lost Land Lake kept the AIS Coordinator busy, other lakes were also surveyed and a lot of education for local residents and visitors took place. Overall, AIS work in Sawyer County seems to be slowing the spread and greatly helping in the control of the AIS that is found in the county.

January-February-March 2012 Work Report

Sawyer County AIS Coordinator Kristy Maki

- · Attended AIS Coordinators meeting in Hayward;
- · Met with lake associations to discuss grant options;
- · Assisted lake associations in writing grants, developing projects, and supporting grant proposals;
- Finished final report for WI DNR AIS Grant 2009-2011 project and all accompanying grant payment request forms;
- Passed Wisconsin Pesticide Applicator Exam, now re-certified to apply herbicides to waters of the state;
- · Worked with Hayward High School student on invasive species project;
- Attended an herbicide meeting in Hayward;
- Attended the Wisconsin Wetlands Association meeting in Spooner;
- Met with lake associations about purple loosestrife;
- Attended a meeting in Rhinelander hosted by the WI DNR on EWM treatments in WI;
- Much of the winter was spent closing out the previous grant, researching, and following up on email requests;
- 2012 is the beginning of a new 3 year grant for the AIS program.

June/July 2012 Work Report

Sawyer County AIS Coordinator Kristy Maki

- Attended 7weekend meetings and trainings for lake associations including: Nelson Lake Association, Tiger Cat Lake Association, Sand Lake Association, Quiet Lake Association, Windigo Lake Association, and Spider Chain of Lakes Association, and Osprey Lake Association.
- Provided AIS Monitoring trainings for: Whitefish Lake, Windigo Lake, Sand Lake, Quiet Lakes, and Spider Chain of Lakes.
- Attended, and hosted other county AIS Coordinators, the Invasive Species Education Summit.
- Attended Northwest Lakes Conference in Spooner and set-up a display on AIS in Sawyer County.
- Held a Story Hour at the Weiss Community Library.
- Surveyed and mapped: Osprey Lake, Clear Lake, Lake Hayward.
- Assisted with an Outdoor Education class for kids offered through Community Education.
- Helped the Chippewa Flowage Area Property Owners Association write an AIS grant for submittal to the DNR.
- Worked with lake associations to distribute purple loosestrife beetles for biocontrol rearing.
- Provided educational materials for lake association meetings and other events.
- Provided maps of aquatic invasive species to lake associations for meetings and newsletters tailored to their needs.
- Provided and encouraged lake associations to place signage at boat landings for fishing tournaments and special events (i.e. Bandedinker).

August-December 2012 Work Report

Sawyer County AIS Coordinator Kristy Maki

August

- Attended a meeting with the Spider Chain of Lakes Association's invasive species committee;
- Met with Tiger Cat Lake Association;
- Surveyed Osprey Lake for EWM and purple loosestrife. Pulled purple loosestrife from around the lake shore;
- Pulled purple loosestrife from the wetland at the Weiss Community Library;
- Worked on a document for Windigo Lake Association;
- Surveyed Clear Lake for EWM;
- Surveyed Round Lake for EWM;

September

- Monitored Nelson Lake with the DNR Monitoring Team for all invasive species;
- Monitored Windigo Lake with the DNR for all invasive species;
- Participated in the DNR's Species Assessment Group to determine new invasive species to be listed in Wisconsin;
- Surveyed Lake Hayward for EWM;
- Surveyed Round Lake and Little Round for EWM;
- Wrote an article for the Spider Lake Association newsletter;

October

- Surveyed Callahan and Mud Lakes for EWM;
- Developed a display for the fall Muskies, Inc. tournament;
- Judged the Conservation Speech Contest;
- Put up posters around town advertising the first AIS Coffee Hour;

November

- Met with a representative from Whitefish Lake Association about grants and future work;
- Attended the DNR's AIS Coordinator Fall Meeting in Stevens Point;
- Held an AIS Coffee Hour at the Weiss Community Library to discuss AIS grants from the DNR. Alex Smith and Jane Malishcke were the invited guests. 20 people attended the event;

December

- Attended a meeting with the DNR and the Lake Chetac Association on grant possibilities for AIS work on Lake Chetac;
- Provided maps and GIS info on Spider Chain of Lakes to the consultant developing an Aquatic Plant Management Plan for the lake;
- Worked on the Osprey Lake AIS grant.

2013 Spring Update

Kristy Maki

Spring is finally here and that means a flurry of activity in the Aquatic Invasive Species area:

- Held a meeting for property owners on Lake Hayward. They are going to form a lake association and work on controlling AIS in the lake. The main driver of this is the hybrid milfoil (a cross between Eurasian watermilfoil and the native northern milfoil) that was identified by DNA analysis over the winter.
- Developed maps for herbicide treatment on Round Lake.
- Assisted with herbicide treatment maps and plans on Clear Lake.
- Assisted with herbicide treatment maps and plans on Osprey Lake.
- Held 2 AIS Coffee Hours at the Weiss Community Library. One coffee hour was on the DNR's AIS Grant process, the second was on AIS control options. Approximately 20 people attended each coffee hour. Four more coffee hours are scheduled throughout the summer.
- Attended a series of Aquatic Plant Management meetings throughout the winter/spring. Sawyer County hosted the meeting in March at the Weiss Community Library.
- Trained monitors for Clean Boats, Clean Waters from Nelson Lake and Grindstone Lake.
- I've been speaking/emailing with many lake associations about annual meetings, monitoring, grants, Clean Boats, Clean Waters programs, mapping, and activities for this summer.
- Getting ready for purple loosestrife digging and beetle rearing. Lake associations involved this year include Spider Chain of Lakes, Chippewa Flowage, and Tiger Cat Flowage.

The winter was spent assisting lake associations with grant reports, questions, and proposal writing. I wrote articles for lake association newsletters, attended meetings, worked on mapping projects, and planned things for this summer.

2013 Summer Update

April:

Held an AIS Coffee Hour at the Weiss Community Library. Topic was Controlling Aquatic Invasive Species.

Held a Clean Boats, Clean Waters Training for monitors of Grindstone Lake. Monitors also attended from Nelson Lake.

Met with herbicide applicator, Tom Connell, to discuss potential herbicide control treatments on Round Lake for EWM.

Met with representatives from Whitefish Lake, Osprey Lake, and Round Lake to discuss AIS programming for the summer of 2013 on their respective lakes.

A meeting was held for property owners on Lake Hayward to discuss AIS issues on the lake. Property owners were notified by letter (based on tax role data) that a meeting was to be held to discuss aquatic invasive species and the problems on Lake Hayward. Lake Hayward has a large infestation of Curlyleaf pondweed and hybrid Eurasian watermilfoil was confirmed in the lake by DNA analysis over the winter. Over 40 people were in attendance. It was agreed upon that some action needed to be taken and that the formation of a lake association was a good way to start. Another meeting will be held in a few weeks with individuals that volunteered to represent property owners on a committee to form a lake association.

May:

Met with a smaller group of interested individuals from Lake Hayward to begin the planning process for the lake association and the projects to be undertaken in the summer of 2013. Discussion included raising funds to perform a small herbicide treatment to combat Eurasian watermilfoil.

Attended a meeting with Windigo Lake to discuss their Aquatic Plant Management Plan.

Gave a presentation at the 3rd Grade Chippewa Flowage Field Day on AIS. More than 140 3rd graders from the Hayward Intermediate School spent the day at the Chippewa Flowage rotating through different natural resource presentations. I presented information on aquatic invasive species and how to clean your boat.

Spoke at annual meetings for Clear Lake, Grindstone Lake, and Windigo Lake.

Surveyed Lake Hayward with Alex Smith and found a lot more EWM than anticipated.

Dug purple loosestrife rootstock for biocontrol projects on the Tiger Cat Flowage and the Chippewa Flowage.

Very late spring!

Eurasian watermilfoil was discovered in Tiger Cat Flowage and Lost Land Lake by Great Lakes Indian Fish and Wildlife Commission. The respective lake associations were contacted and volunteers were assembled to begin monitoring littoral zones for EWM.

Tiger Cat Flowage was surveyed for known areas of EWM. All found EWM was hand pulled. Pat Brown assisted with the hand pulling and surveying.

August

Tiger Cat Flowage was surveyed every week by the boat landing for additional EWM that may have been missed. No new EWM was found. A training was given to volunteers from the Tiger Cat Flowage Lake Association to survey for EWM along the shoreline. Look-a-like plants were shown along with EWM plants to help in identification. Also gave a presentation at their annual meeting to encourage people to monitor for EWM.

Lost Land Lake was surveyed in areas known to have EWM. Volunteers assisted in the monitoring and then hand pulled all areas found. All of Lost Land Lake was surveyed on a different day. No new areas of EWM were found. The volunteers continued to survey and monitor the lake for the remainder of the growing season.

Assisted the DNR on a survey of Grindstone Lake for AIS. None were found.

Provided and display and samples of plants for the Nelson Lake annual summer picnic.

Assisted with a meeting for Lake Hayward. It was officially approved to form a lake association.

Assisted Whitefish Lake Association with a grant proposal. Also surveyed the lake for EWM.

Took a group of volunteers out on Grindstone Lake to look at native plants in the lake and discuss AIS.

A whole lake point intercept survey was done on Clear Lake with help from the DNR.

A dispay was developed for the Spider Chain of Lakes Association meeting.

September-November

Surveyed: Lost Land Lake, Round Lake, Osprey Lake, Lake Hayward, and Clear Lake.

Held an AIS Coffee hour: What's new in Sawyer County?

Attended a meeting about Big Chetac and the herbicide treatment that occurred to control Curlyleaf pondweed.

Provided a display for the Muskies, Inc. Fall Fishing Tournament.

Met with the DNR about a grant proposal for Whitefish Lake.

December 2013 Work Report

Kristy Maki AIS Coordinator

Winter means things slowdown in the aquatic world! There are a few projects that are still happening for Sawyer County.

AIS grants are due to the WI DNR by February 1st. A few lake associations will be submitting proposals. Spider Chain of Lakes is already in the process of developing a proposal. We are assisting them with development of the proposal and writing a letter of support. Whitefish Lake is also submitting a grant proposal. I have been in discussions with them and the DNR about the proposed grant project.

Grant reports and reimbursements are being submitted to the WI DNR. The Osprey Lake grant reimbursement has been received for \$10,602.50. The Osprey Lake Property Owners will be billed for the remaining project expenditures of \$3,246.50. We are still waiting on a bill for Lake Hayward, but that grant will be submitted soon and we will receive \$10,836.62. The grant for the AIS Coordinator will also be submitted soon and we will receive \$27,911.80. These are all reimbursement grants and the dollars have been paid out already. A total of \$52,597.42 will be received in the next 1-2 months for AIS grants.

I will be working with the Lake Hayward Property Owners Association on the development of an Aquatic Plant Management Plan for Lake Hayward. The Lake Association is going to retain the county to write their APM Plan.

Vandalism of AIS boat landing signs was a problem this fall. Stickers were placed on the signs altering the message. An email was sent out to lake associations to check signs at their boat landings. Around 10 signs were found to have been vandalized. Signs were replaced by me or Pat Brown.

I attended a meeting to look at the results of the curlyleaf pondweed treatment on Lac Courte Oreilles and discuss future plans. The treatment in Musky Bay was not as successful this year as in year's past.





