

Itasca SWCD-AIS 2015 Season Report

Biological Control –Purple Loosestrife Defoliating Beetles were collected from North Twin Lake (Marble, MN) and The SW Corner of Bowstring Lake. These Beetles were released throughout known dense stands of Purple Loosestrife in these locations:

1st Season Total of 14,790

- 1057 Beetles released just East of Hwy 65, South of Swan River
- 400 Beetles released throughout East portion of Long Lake (Cohasset, MN)
- 5150 Beetles released along Plum Creek (East of Hwy 6, South of Hwy 1)
- 455 Beetles released along the West shore of Crystal/Ice Lake (Grand Rapids)
- 500 Beetles released on the North Shore of Ink Lake(Along South shore Deer Lake)
- 1500 Beetles released on the south shore of Little Turtle Lake (Both sides of Hwy 286)
- 200 Beetles released along the Bowstring South Access Road (South of private road)
 - 3783 Beetles released on the Eastern shore of Twin Lake (Pengilly, MN)
- 630 Beetles released throughout the Boggy bays in the NW corner of McKinney Lake
 - 1115 Beetles released along the Western Shore of Cow Bay, Bowstring Lake

2nd Season Total of 30,369

- 1843 Beetles released just East of Hwy 65, South of Swan River
- 6302 Beetles released throughout entire shore of Snaptail Lake
- 4481 Beetles released on Turtle Lake throughout the Maple Creek stand of PL
 - 3223 Beetles released along Plum Creek, both sides of Hwy 6
- 1000 Beetles released in the SW corner of Little Turtle Lake & South of Hwy 286
 - 5920 Beetles released North of the Inger Bridge, East side of the Bowstring River
- 7600 Beetles released on Little Long Lake throughout the bay South of the access, along the western shore, and among the large island

Total of 45,159 Beetles Collected and Released in 2015

Complete Lake Surveys – AIS Infestations Found

(All Lakes Surveyed for: Eurasian Water Milfoil, Curly Leaf Pondweed, Purple Loosestrife, Flowering Rush, Faucet Snails, Zebra Mussels, Quagga Mussels, Spiny Water Fleas, and Fish Hook Fleas). Refer to the LAKE SURVEY PROTOCOL at the end of this report.

Bass Lake (Cohasset, Deer River) – 8/7/2015 - Purple Loosestrife was found along the residential shoreline on the west shore, North of the Cohasset Landing. There were approximately 30 plants total found along this stretch, most of them single stemmed and non-flowering. There was one single PL plant found on the Deer River Side of the lake; on the long skinny point north of the river channel. All Loosestrife was treated with herbicide and will be revisited in 2016 for a follow up treatment. There were no other invasive species found in Bass Lake at the time of our survey.

Blandin Reservoir (From Pokegama Dam to Blandin Dam) – 6/10/2015 - There is an abundance of Curly Leaf Pondweed in this section of the Mississippi. Approximately 12 separate patches of dense CLP were found from The Sylvan Bay Access to the West. There were many free floating fragments of CLP found throughout the lake. No other invasive species were found at the time of our survey.

Blind Lake – 7/15/2015 - There is Purple Loosestrife present along the North shore, predominantly east of the canoe access/ federal dispersed campsite. There was one new location found in the NW corner with just 2 PL plants. There were no plants found on the South shore where they were discovered last season. The beetle population does not seem to be reproducing where they were released in the past 2 seasons. If there is no evidence of beetle damage in 2016, all PL will be considered for chemical treatment.

Bowstring Lake – 6/29-7/1/2015 - Purple Loosestrife is abundant along most of the shoreline except from Cow Bay to the South for approximately 2 miles. Almost all of the PL plants found showed significant beetle evidence. All PL plants, outside of our biological control areas, that appeared healthy were treated with herbicide and will be revisited in 2016 to evaluate the biological control efforts. 15 random substrate samples around the lake revealed NO faucet snails, which have been reported as a known infestation in the lake. No other invasive species were located on Bowstring Lake at the time of our survey.

Clubhouse & Mike Lakes – 6/24/2015 - The Purple Loosestrife population has decreased dramatically on Clubhouse and Mike Lakes. There were approximately 20 seedlings found from the point along the North shore to the West side of the creek. In Mike Lake, there were 10 seedlings found from the East side of the creek down to the beaver house. All PL plants were treated with herbicide and will be revisited in 2016 to ensure eradication. No other invasive species were located in Clubhouse and Mike Lakes at the time of our survey.

Coon/Sandwick Lakes – 8/13/2015 - Eurasian Water Milfoil is abundant throughout much of Coon Lake, being most abundant near the boat access. The EWM population does decrease in the flowage to Sandwick and is much less dense in the south portion of the lake. There were no other invasive species located at the time of our survey.

Crooked Lake – 8/20/2015 - 20 purple loosestrife plants were found in a previously known location on Crooked Lake. The site is right of the North public access. These plants were treated with herbicide and will be revisited in 2016 for a follow up treatment if necessary. No other invasive species were found at the time of our survey.

Cut Foot Sioux Lake – 8/28/2015 -There were approximately 10 smaller single stemmed Purple Loosestrife plants found in the same location as previous seasons, east of the Hwy 46 Bridge, where the DNR puts in the dock for the walleye egg extractions. These plants were treated with herbicide and will be revisited in 2016 for a follow up treatment. There were no other invasive species found at the time of our survey.

Deer Lake – 6/23&6/25/2015 – Purple Loosestrife is abundant throughout much of Deer Lake being most prominent along the South shore. The known population along the North shore has significantly decreased from herbicide treatments in past seasons. There is widespread beetle population in most of the dense patches of PL along the South and East shore. All PL with no beetle damage was treated with herbicide and will be revisited in 2016 for a follow up. We did not locate any Curly Leaf Pondweed on Deer Lake where it has been found in past years. No other invasive species were found on Deer Lake at the time of our survey.

Dunbar Lake – 9/16/2015 - Purple Loosestrife was found in 3 separate locations on the lake. Two of the sites are along the western shore, in close proximity to the Boat Access. The third site is along the eastern shore, almost directly across from the access. The Loosestrife was completely flowered out at the time of our survey so no herbicide treatments were made. We will return in 2016 to treat the sites and resurvey the lake.

Eagle Lake – 7/23/2015 - The South half of Eagle Lake has a steady population of Purple Loosestrife. One out of the three beetle sites showed significant plant damage, the plants that did not show damage were treated with herbicide. There were no other invasive species found on Eagle Lake at the time of our survey. We will return in 2016 to assist the bio-control efforts with a follow-up herbicide treatment.

Forest Lake – 6/9/2015 - Purple Loosestrife is found sporadically along the south shoreline between the lake and 5th st NW, but most dense in the NW corner of the lake where there is a good beetle population present. No other invasive species were found at the time of our survey. Any PL plants found outside of the densely populated areas were treated with herbicide in order isolate the plants to the bio-control sites.

Hale Lake (Grand Rapids) – 6/9/2015 – The creek at the SW end of Hale Lake is densely lined with Purple Loosestrife and will be a beetle release site in 2016. Overall the Purple Loosestrife population has decreased dramatically in most known locations on Hale Lake due to the herbicide treatments over past seasons. There are still patches of PL in our Bio-control sites near the boat access and in the extreme West end of the lake. Eurasian Water Milfoil was found in two separate small patches in the East portion of the lake.

Hart Lake (Pengilly) – 9/3/2015 - Flowering Rush is found periodically throughout the lake, mainly along the south/ Southwest shorelines. We will return in 2016 to monitor the spread. There were no other invasive species found in Hart Lake.

Holman Lake – 8/1-/2015 - Approximately 90% of the entire shoreline of Holman Lake is infested with Purple Loosestrife. This has been a designated biological control Site since 2013. The Galerucella beetle population is present but has not yet reached large enough numbers to control the PL infestation. We will add beetles to the site in 2016 and also treat any accessible plants with herbicide that lie outside of the biological control areas. Flowering Rush is also present on Holman with patches existing on both sides of the public access. One other FR patch was found west of the southern island.

Ice Lake – 6/9 & 8/18/2015 - Eurasian Water Milfoil is present along approximately 90% of the shoreline in the 6'-12' depth range. Scattered patches of Purple Loosestrife are present along the South and West shores, being most abundant at the far western point of the lake. Purple Loosestrife Beetle evidence was found on most plants. No other invasive species were found at the time of our survey. After a call from a lake shore owner, Ice lake was resurveyed (8/18). Any flowering Purple Loosestrife was treated chemically in hopes of narrowing the Loosestrife down to existing bio-control sites on the lake.

***Jay Gould Lake – 8/25/2015** - There is a known infestation of Curly Leaf Pondweed in Jay Gould Lake and the Mississippi flowage coming from Blackwater Lake, although we DID NOT locate any at the time of our survey due to the mid-summer die off of CLP. There were no other invasive species found.

Leighton Lake – 6/11/2015 - Purple Loosestrife is present near the access about 20 yards in each direction (to the North and South). There is minimal beetle evidence at this location. We will consider a chemical treatment in 2016 if the biological control population does not increase dramatically. *Curly Leaf Pond weed has been documented on Leighton but none was found at the time of our survey.

Lily Lake/ GR Airport Pond – 7/28/2015 - There is a 30 yard stretch of Purple Loosestrife with approximately 100 plants between Lily Lake and the security fence on Airport Road. This patch has been continuously mowed in the past. There does appear to be some beetle evidence. We treated non-damaged plants with herbicide and plan to make this a beetle release site in 2016.

***Little Jay Gould Lake - 8/25/2015** - Refer to Jay Gould Lake above. No Invasive Species located at the time of our survey.

***Little Jessie Lake – 7/13/2015** - At the time of our survey, there were no invasive species found on Little Jessie, although, Harold Goetzman had informed us of a property owner who had pulled up some Loosestrife on the SW corner of the lake. We again, found no loosestrife on our follow up visit. We will Survey Little Jessie again in 2016 to see if Purple Loosestrife is present.

Little Long Lake – 7/22/2015 – 8,000 beetles were released on Little Long lake in 2015, mainly in the southern most bay as well as around the small island and adjacent western shoreline. 4500 beetles were released in 2014 and it appears that the population had not been established as little beetle damage was observed besides one isolated patch on the south part of the western peninsula. The two biological control sites are the lakes most dense infestations. PL was found to be scattered along the eastern side with the SE being the most consistent. This area will be a candidate for a future biological control site due to the hazard of its floating bog predominance. In attempt to isolate biological control colonies all outlying purple loosestrife was chemically treated. We will return in 2016 to monitor our control efforts.

Little Turtle Lake – 7/21/2015 - There is a steady population of Purple Loosestrife on the residential shoreline in the SW corner of the lake. All PL plants found that had no Beetle damage were treated with herbicide. We added 1500 beetles to the boggy/cattail portion of this SW corner. There were no other invasive species found on Little Turtle Lake at the time of our survey. We will return in 2016 to re-evaluate the biological control sites and spot spray any outlying PL plants.

Long Lake (Cohasset) – 6/10/2015 - Purple Loosestrife is present along a 60 yard stretch of shoreline near the access (to the East and West) and also lightly scattered on the North shore of the Eastern portion of the lake. The Western portion of Long Lake has no invasive species present. There is a strong beetle population among these Loosestrife locations.

Loon Lake (Cohasset) – 6/11/2015 - 5 plants of Purple Loosestrife were found approximately 40 yards west of the public access. These plants were treated with herbicide and will be revisited in 2016 to ensure eradication. No other invasive species were present on Loon Lake at the time of our survey.

Lower Lawrence Lake – Purple loosestrife was found along the residential northwestern shoreline. It appears to be reduced but still present. We will return in 2016.

Maple Lake (Marcell) – 6/24/2015 - There has been dramatic improvement in the Purple Loosestrife population on Maple Lake. There were 2 plants of PL located on the tip of the point which is about 2/3 of the way down the Western shore from the public access. This point had 5 dense patches of Loosestrife last season. There were no other PL plants located in the other 2 locations where PL has been found in the past. There were no other invasive species located on Maple Lake at the time of our survey.

McKinney Lake – 6/9/2015 - Eurasian Water Milfoil is present throughout most of the lake in the 6'-12' foot depth range. There is also an abundant population of Purple Loosestrife scattered throughout entire shore, but most abundant among the NW bays. There is a good beetle population present on most PL plants. No other invasive species were found.

McKinney was also resurveyed on August 18th to narrow down the Loosestrife to designated bio control sites. All stand alone flowering plants along the perimeter of the lake were treated with herbicide. *There is direct correlation between the Ice and McKinney Lake PL infestations via the creek that flows from Ice into McKinney. All plants found along the creek were chemically treated.

Mississippi River (From GR Public Library to Happy Hollow Rd. Access) - 8/26/2015 - There is abundant Purple Loosestrife along both the east and west river banks from the library almost all the way to the confluence of the Prairie River. There were just a few single plants found randomly scattered down-stream from there. All Loosestrife found was treated with herbicide and will be revisited in 2016 for a follow up treatment. There were no other invasive species found at the time of our survey. *The Loosestrife is accessible only during low-water periods and the infestation varies depending on water levels making consistent control efforts difficult.

Moose Lake – 6/17/2015 - There are 3 points on the lake with Purple Loosestrife. One patch along the Eastern shore between the accesses, scattered plants along the North shore near Moose Lake Resort, and there is an abundant amount of Loosestrife in the NW Corner of the lake and throughout the Deer/Moose Creek. There is devastating biological control damage on most of the plants. All healthy looking plants were treated with herbicide and will be revisited in 2016 for a follow up. There were no other invasive species found on Moose Lake at the time of our survey.

Napoleon Lake- 7/23/2015 - The bay directly to the North of the access had fairly consistent flowering Purple Loosestrife plants that were treated with herbicide. The main target zone of Napoleon was a point located along the Western shore across from the access. In past seasons, the Loosestrife population was very dense with sprouts from a residual seed bank, however, this season the landowner has mowed most of this area. A small western bay has also long time been densely infested and is still accessible enough for chemical treatments. We treated any PL plants found with herbicide and will return in 2016 for a follow up treatment. No other invasive species were found at the time of our survey.

Pokegama Lake – 6/15/2015 - There was one small patch of Curly Leaf Pondweed (10ft X 10ft) found in Tioga Bay about 100 yards South of Tioga Beach. It had obviously crept into the lake from the river/Jay Gould Flowage. This was the only Invasive Species found besides Purple Loosestrife which is most prominent in a very small bay on the west side of Sherry's Arm which has significant beetle damage from a release we did in 2013. PL is also found fairly dense in front of a residence in SE Sherrys arm. The North Shore of Wendigo Arm has periodic loosestrife as well . We will return in 2016 to monitor the CLP and to treat any Purple Loosestrife present.

Portage lake – 8/5/2015 – Although Portage Lake has been one of our Biological Control sites since 2009, The Purple Loosestrife along the eastern shore has not shown much improvement. We treated the PL along this section of shore with herbicide to help reduce the seed production. We will return in 2016 to add to the beetle population.

Prairie Lake – 6/22/2015 - There is Curly Leaf Pondweed in the Southeast bay of Lower Prairie Lake, found from the South access to the East. We estimated the main patch of this CLP to be around 20 acres with many smaller patches throughout the bay. There was one more small (20ftX20ft) patch of CLP discovered 600 yards NE of the Northern access. There were no other Invasive species found in Prairie Lake at the time of our survey.

Rush Island Lake – 7/13/2015 - There was one large flowering plant of Purple Loosestrife located about 10 yards east of the Public Access. This was the only Loosestrife plant found and it was treated with herbicide. There were no other invasive species found on Rush Island at the time of our survey. We will return in 2016 to resurvey and ensure eradication.

Sand Lake (Hwy 49, Forestry Rd) – 7/14/2015 - There were around 10 flowering Purple Loosestrife plants and about 40 single stem, smaller plants found in the SW corner of the lake. This was the only PL location found on Sand this season. There were no other invasive species found on Sand at the time of our survey. We will return in 2016 to resurvey and ensure eradication.

Sand Lake (Sand Lake Twp) – 8/5-6/2015 - There was 1 new Purple Loosestrife location found in the SE arm of Sand lake. Most of the usual sites from seasons past contained PL but the populations had decreased significantly. The PL site near the creek going into Birds Eye Lake had no PL this season. All Loosestrife plants found were treated with herbicide and will be revisited in 2016 for a follow up treatment. Every sediment sample taken from Sand Lake had strong evidence of Zebra Mussels and they were found among every section of the lake.

Smith Lake – 7/14/2015 - The Loosestrife population has thinned out in most previous locations. The South shore still has a pretty steady population but it is showing improvement from herbicide treatments. The creek flowage in the NW corner of the lake had a pretty dense patch of PL spanning about 30 yards. We will return in 2016 to follow up on the herbicide treatments. We also found and collected hundreds of free-floating fragments of Curly Leaf Pondweed all over the lake. We could not locate any rooted patches of CLP, which we think is due to the mid-summer die off of CLP. We will resurvey Smith Lake earlier in 2016 in attempt to locate the rooted patch of CLP.

Snaptail Lake – 6/11/2015 - Purple Loosestrife is present in scattered dense patches along approximately 80% of the shoreline. There is strong beetle evidence on about 50% of the plants found. If the Biological control population does not increase dramatically this season, we will also chemically treat any non-beetle damaged plants in 2016. There were no other invasive species found on Snaptail Lake at the time of our survey.

South Sugar Lake – 6/12/2015 - Purple Loosestrife was found in front of a residence along the North shore, approximately 350 yards East of the access. These plants were treated with herbicide and will be revisited in 2016 to ensure eradication. There were no other invasive species found on South Sugar Lake at the time of our survey.

Spider Lake – 7/27/2015 - Flowering Rush was discovered near the boat access and the majority of it was hand-pulled in 2014. We returned this season to pull the remaining sprouts. There are no other FR locations on the lake and we will return in 2016 to confirm eradication or remove any remaining sprouts near the landing to ensure it does not spread around the lake. There were no other invasive species found at the time of our survey.

Swan Lake (Pengilly) – 6/26/2015 - Curly Leaf Pondweed is very abundant in the west bay. Approximately 80% of this bay is infested with CLP. There was one other small patch (10ftX10ft) of CLP found just to the East of the bridge on the North side of the Flowage. There were multiple free-floating fragments of CLP found among the lake but no other rooted patches. Purple Loosestrife was found in the known locations from previous surveys but the population and density has dramatically decreased due to the herbicide treatments in past seasons. The PL is mostly located in the NW corner of the lake and also along the Western Shore of the Southeastern portion of the lake. No other invasive species were located on Swan Lake at the time of our survey.

Trout Lake (Colereine)- 7/27/2015 - There was a small patch of Flowering Rush located approximately 20 yards out from the North Boat Access. After confirmation of the infestation from Rich Rezenka of MN DNR, we hand-pulled the FR on 8/21/2015 and will return in 2016 to confirm eradication. There was no loosestrife found on Trout Lake this year. Last year there were a few large flowering plants along the drainage ditch to the East of the North Landing. There was also a patch of 10-15 flowering plants last season in the extreme SE bay of Trout Lake closer to Crooked Rd than open water. No PL was located there this season.

Trout Lake (Wabana Chain) – 8/4/2015 - There were 6 PL plants found in the NE corner of Trout Lake. This is a site that has been treated since 2010. All plants found are obvious sprouts from the residual seed bank and the PL population has decreased dramatically. The other 2 sites on the lake where PL has been located in the past had no plants present. All Loosestrife was treated with herbicide and will be revisited in 2016 for a follow up treatment. There were no other invasive species located at the time of our survey.

Turtle Lake – 7/7-10/2015 - After 9 seasons of herbicide treatments, most of the Purple Loosestrife locations on Turtle have either been eradicated or have been reduced to sprouts from the residual seed bank. The Biological Control sites within the extremely boggy areas in Moose Bay, Alex Bay, Newburg Bay, and along Maple Creek Still have an abundant amount of Loosestrife but do show good beetle production and plant damage. There were no other Invasive Species located on Turtle Lake at the time of our survey.

Twin Lake (Hwy 65, South of Pengilly) – 8/11/2015 - The PL population is down in most areas of the lake due to our herbicide treatment last season. The Biological control site on the East end of the lake showed great improvement as there were only 2 flowering plants found. The rest of the PL present had shown significant beetle damage. We will return in 2016 to add beetles to the bio-control areas and to treat any outlying plants with herbicide. There were no other invasive species found at the time of our survey.

Twin Lakes (Marble) – 9/3/2015 - There are abundant amounts of Purple Loosestrife, Flowering Rush, and Eurasian Milfoil throughout Twin Lakes, being most prominent in North Twin. The Purple Loosestrife along the North shore has a strong breeding population of Galerucella beetles and has long been one of our main collection sites. The Eurasian Milfoil is mostly found along the East shore of North Twin and in small patches scattered randomly around the lake. Flowering Rush is established along most of the shore in North Twin and is creeping through the channel into South Twin.

Purple Loosestrife Highway Sites

7/21/2015 – Jess Harry Rd (Near Fire Number 2000) - There were approximately 100 Purple Loosestrife plants along the North ditch. All plants were obvious sprouts from the residual seed bank. There was one plant found in the south ditch. All PL plants were treated with herbicide. We will revisit this site in 2016 to ensure eradication.

7/28/2015 – LaPlant Road – There were approximately 40 Purple Loosestrife plants in the North ditch of LaPlant road and 1 plant in the South ditch. The PL population is much less dense than last season when there were 75+ plants. All PL plants were treated with herbicide and this site will be revisited in 2016 for a follow up treatment.

7/28/2015 – Junction of Hwy 2 & Airport Rd. – There was one larger flowering PL plant in the ditch between Hwy 2 and the railroad tracks. This plant was treated with herbicide and will be revisited in 2016 for a follow up treatment.

7/28/2015 – Hwy 2 E (Between DNR office & Trailer Park) – There were about 20 Purple Loosestrife plants scattered along the North side of the ditch, the population density is down considerably from past seasons. All PL plants were treated with herbicide and will be revisited in 2016 for a follow up treatment.

7/28/2015 – Hwy 63 (.1 mile East of the 3-way stop) - There were 3 scattered, non flowering, PL plants in the wetland on the North side of 63. There were 20+ flowering plants at this site last season. We treated these plants with herbicide and will revisit this site in 2016 for a follow up treatment.

8/3/2015 – Hwy 2 (East of Blackberry) - There were 15 Purple loosestrife plants along the ATV trail on the south side of Hwy 2. All Loosestrife found was treated with herbicide and this site will be revisited in 2016 for a follow up treatment.

8/3/2015 – Hwy 65 (In Pengilly) – There were approximately 15 plants of Purple Loosestrife found within the East and West ditches, directly East of the Pengilly Liquor store. These plants were treated with herbicide and will be revisited in 2016 for a follow up treatment.

8/3/2015 – Hwy 169 (South of Snowball Rd.) – There were approximately 35 PL plants found divided throughout the wetlands on both sides of 169. All PL was treated with herbicide and will be revisited in 2016 for a follow up treatment.

8/3/2015 – Hwy 169 (Train Bridge West of Marble) – There were approximately 100+ PL plants divided between the North and South Ditches of 169. There were many large flowering plants among the deep wetland under the bridge. All plants that were accessible were treated with herbicide. Due to the inaccessibility (high water) of many of the PL plants on the North side, this site will be considered for a biological control site in 2016.

8/3/2015 – Togo (Junction Bar) – There were about 15 small, single stemmed PL plants found within all four corners of the junction of Hwy's 65 and 1. The North side of this site was overrun with Loosestrife last year which shows evidence that the population has decreased dramatically due to our herbicide treatment in 2014. All plants found were treated again with herbicide and will be revisited in 2016 for a follow up treatment.

8/3/2015 – Hwy 6 (Deer River to Koochiching County Line) – There were multiple PL sites found and treated with herbicide along the highway; most sites being just 1 or 2 plants with exception of the residence just South of junction 14 (West side of highway), and the site near mile marker 95 which had approximately 25 PL plants. All plants found were treated with herbicide and will be revisited in 2016 for a follow up treatment.

8/12/2015 – Hwy 169 E of Bovey (North Ditch ATV Trail) - A 100 yard long stretch of mature flowering Purple Loosestrife was newly discovered here during this seasons survey. This will be a biological control site in 2016. We intend to treat plants along the trail that have the potential to spread via ATV's with herbicide to prohibit further spread down the trail.

8/12/2015 - County Rd 50 – Two Purple Loosestrife plants were found along Cty. Rd. 50 West of Snaptail. The Loosestrife at this site has steadily declined since its discovery in 2010. The proximity of this site to the densely populated Snaptail Lake still makes it vulnerable to future infestations. We will return in 2016 to continue to monitor and treat the Purple Loosestrife.

8/12/2015 - County Rd 343 – There were two large flowering Purple Loosestrife plants found in the West ditch which were treated with herbicide. We will return in 2016 for a follow up treatment if necessary.

8/12/2015 – Hwy 7 South of Cty. Rd. 57 – There was one flowering plant found in the west ditch. This plant was treated with herbicide and will be revisited in 2016 for a follow up.

8/17/2015 -Lost Creek – Lost creek runs out of the SE corner of Hale Lake and flows under the city of Grand Rapids. Some stretches pop in and out of private residences as it makes its way into the Mississippi river near the Library. Purple Loosestrife lines the creek coming out of Hale Lake and flows under the road into Lost Creek Park. The pond in Lost Creek Park has Loosestrife around its entire perimeter and was treated with herbicide. We followed the flow to a location where the creek is present again. This site had five PL plants, which all received chemical treatment. One block to the Southeast the creek pops up again. Only one large flowering plant was discovered and treated with herbicide. Two blocks east, the creek pops up again. A dozen plants were treated in this stretch. The creek flows entirely under the city at this point until it reaches the river. There is also a wetland across from Lost Creek to the West that has prominent Loosestrife. Only one plant was flowering and the rest had present but minimal beetle damage. We will return in 2016 for a follow up treatment and to monitor the biological control population.

8/17/2015 - 4th Street SE Grand Rapids at YMCA – Both sides of 4th street have an abundant amount of Purple Loosestrife throughout the wetlands just South of the YMCA. All

Loosestrife found was treated with herbicide and this location will be revisited in 2016 for a follow up evaluation.

8/18/2015 - Bowstring South Access Rd – The East ditch has Purple Loosestrife densely scattered from about 1 mile North of Oteneagen Rd. stretching for 1.4 miles to the north. Only 2 plants were found in the West ditch to the corner. From the corner headed west to the private road, there are dense patches of loosestrife on both sides of the road. This area has been considered a bio-control site since before 2007 and we intend to add to that beetle population in 2016.

8/18/2015 Cty. Rd. 142 - Loosestrife was not found in previously recorded sites but was discovered in two other locations along the road. Each site had 2 plants which were treated with herbicide. We will revisit these sites in 2016 for a follow up treatment.

8/18/2015 4th St SW Beaver Pond Grand Rapids/ Creek into Blandin Lake – South side of 4th St SW has a large beaver pond with a lot of Purple Loosestrife present. This site was documented and will be a bio-control site in 2016. From the pond, a small creek flows into Blandin Lake. Where the creek hits the lake, there is a large patch of loosestrife that was treated with herbicide. We will continue to treat and monitor the creek flowage to prevent seed from entering Blandin Lake.

8/18/2015 Donovan pond – Between Donovan Dr. and Golf Course Rd there is a wetland system that has abundant Purple Loosestrife. There appears to be a good Galerucella beetle population among most of the Loosestrife. We treated any non-damaged plants with herbicide to assist the bio-control. We will return in 2016 to release additional beetles.

8/24/2015 – NE 2nd St (Grand Rapids) – Loosestrife was found in multiple locations along the LaPrairie trail from the junction of 2nd St NE and 10th Ave, to the North, all the way to the Lakes Inn motel. All plants found appeared to be already seeded out. We will return to this site in 2016 to treat all plants with herbicide except the large dense patch found throughout the marsh, just south of the L&M warehouse which we will make a bio-control site.

8/27/2015 – Cty Rd 158 (Dinner Creek Rd.) – There were two Purple Loosestrife plants found alongside the road just to the West of the Dinner Creek Bridge. These two plants were treated with herbicide and will be revisited in 2016 for a follow up treatment.

8/28/2015 – Junction of Hwy 2 & Hwy 46 – There were two Purple Loosestrife plants found in the ditch/wetland in the NE corner of this junction. These two plants were treated with herbicide and will be revisited in 2016 for a follow up treatment.

9/1/2015 – Hwy 38 (70 yards south of the address 33414) - There was one small flowering Purple Loosestrife plant found in the East ditch. This plant was treated with herbicide and will be revisited in 2016 for a follow up treatment.

9/10/2015 – North Little Sweden Rd.- There were two large plants of Purple Loosestrife found along the South side of the road, approximately 30 yards East of Hwy 65. These plants were treated with herbicide and will be revisited in 2016 for a follow up.

9/15/2015 – Hwy 54 (North of Nashwauk) – There was one Purple Loosestrife plant found along the South ditch about 3.8 miles East of Hwy 65. This plant was treated with herbicide and will be revisited in 2016 for a follow treatment if necessary.

9/15/2015 – Cty. Rd. 539 (Shafer Creek) - Purple Loosestrife was Located to the North and South of Cty. Rd. 539 along shafer creek. The Loosestrife was flowered out at the time of discovery so no treatments were made. We will return in 2016 to evaluate the infestation.

Complete Lake Surveys – NO AIS

6/11/2015 – Guile Lake	9/9/2015 - Burnt Shanty Lake
6/12/2015 – Splithand lake	9/10/2015 – Island Lake(Wabana Twp)
6/12/2015 – Little Splithand Lake	9/10/2015 – Hay Lake
6/12/2015 – Sugar Lake (Sissebakwet)	9/10/2015 – O’leary Lake
6/12/2015 – Smith Lake (Near Hill City)	9/10/2015 – New Lake
6/17/2015 – Woodtick Lake	9/11/2015 – Little Deer Lake
6/17/2015 – Reed Lake	9/11/2015 – Little Moose Lake
6/18/2015 – Grave Lake	9/11/2015 – Little Bass Lake
6/18/2015 – Caribou Lake	9/16/2015 – Dixon Lake * CLP reported but not found at time of survey
6/18/2015 – Cottonwood Lake	9/18/2015 – Lammon Aid Lake
6/18/2015 – Pughole Lake	9/18/2015 – Day Lake (Hwy 38)
6/19/2015 – Big Jessie Lake	9/18/2015 – Loon Lake (Marble)
7/6/2015 – Round Lake (Squaw Lake)	9/22/2015 – Lower Panasa
8/4/2015 - Ruby Lake	9/22/2015 – Long Lake (Goodland)
8/12/2015 – Balsam Lake	9/22/2015 – Little Sand Lake (Calumet)
8/12/2015 – Scrapper Lake	9/22/2015 – Tank/Helen Lake
8/20/2015 – Stingy Lake	9/25/2015 – Bello Lake
8/25/2015 – Cavanaugh Lake	9/28/2015 – Beauty lake
8/27/2015 – Whitefish Lake	9/28/2015 – Pancake Lake
8/31/2015 – Wabana Lake	9/30/2015 – Holland Lake
8/31/2015 – Bluewater Lake	9/30/2015 – Trestle Lake
9/1/2015 – Northstar Lake	9/30/2015 – Arrowhead Lake
9/1/2015 – Tioga Pit	9/30/2015 – Forest Lake (Marcell)
9/2/2015 – Island Lake (Northome)	10/1/2015 - Erskine Lake
9/9/2015 – King Lake	

Zebra Mussel Trap Locations

Pokegama Lake –

- 1 ZM trap @ Tioga landing
- 1 ZM trap @ Tioga beach on the pier, 10 posts down on the right side.
- 1 ZM trap @ kings landing
- 1 ZM trap @ the Laplant landing
- 1 ZM trap @ Casper/ Troop Town landing
- 1 ZM trap @ Mishawaka landing
- 1 ZM trap @ off of the sherry's arm bridge

Swan Lake- 1 ZM trap on the end of the dock at the public landing. Left Side of Dock @ End

Twin Lakes (Marble) -1 ZM trap on the right side of the dock @ End

Trout Lake(Coleraine) – 1 ZM trap @ North Landing - End of dock

Prairie Lake- 1 @ Gunn Park on the left side of the pier

- 1 @ Prairie Lakes Resort - left dock on the end, left side.

North Star- 1 ZM trap @ the public access on the end of the dock.

Spider Lake- 1 ZM trap @ the public access dock at the end of the dock.

Wabana lake – 1 ZM trap @ Southeast access at the end of the dock.

Bass lake (Cohasset) - 1 ZM trap @ Pincherry access resort dock – End of Dock

Blandin Reservoir – 1 ZM trap @ the Sylvan Bay access dock - End of dock.

Ice lake- 1 ZM trap @ the end of the fishing pier, on the right side of the pier at the T intersection.

Forest lake (Grand Rapids) -1 ZM trap on the fishing pier on the chains on the right side of the dock on the t intersection.

Little Jay Gould- 1 ZM trap @ the end of the dock on the right.

Splithand lake- 1 ZM trap @ the end of the public access dock.

Little splithand lake- 1 ZM trap @ the end of the access dock.

Deer Lake- 1 ZM trap @ end of access dock

Moose Lake- ZM Mussel trap @ end of South access dock

Cut Foot Sioux lake- 1 ZM trap @ Bowens access dock

- 1 ZM trap @ East Sealy Point Access dock

****Sand Lake (Inger)-** 1 ZM trap @ end of access dock. Known ZM infestation at this site.

Found countless rocks at access that had ZM on them.

Clubhouse Lake – 1 ZM trap @ the end of the dock.

Bowstring Lake - 1 ZM trap @ South Access – End of Dock

1 ZM trap @ West Access – End of Dock

1 ZM trap @ North Access – End of Dock

Itasca County SWCD

AIS - Lake Survey Protocol

Zebra Mussels / Quagga Mussels / Faucet snails

- Set Mussel Trap at end of dock or pier
 - As deep of water as possible, trap suspended one foot off the bottom.
- Scour the shoreline near access for last year's snail and mussel shells, using aqua viewers, and flipping over rocks.
- Take multiple substrate samples along the shore in a grid pattern working from shallow to as deep as is reachable.
 - Sift out samples in a strainer and key out any suspicious shells.
 - Bag and label any suspicious shells and bring to Rich Rezenka for ID confirmation.

Eurasian Water Milfoil / Curly Leaf Pondweed

- Travel the perimeter of the lakeshore searching for dense mats of weeds and anything that may resemble EWM and CLP. Take samples using a double sided weed rake and key out/identify all plants present in the samples. Document infested area and location on the lake.

Flowering Rush/ Purple Loosestrife

- Mid July through rest of the season. Travel the perimeter of the lakeshore as close to land as possible searching for the showy pinkish purple flowers. Document infested area and location on the lake.

Spiny Water Fleas / Fishhook Fleas

- Drag multiple transects around the lake and across areas of deep water; using a heavy weight and high test down rigger line. Drift speed or a little faster. Pull up the line occasionally checking for the gelatinous masses of fleas that collect on the line. Collect any suspicious samples for further identification.

Itasca County Aquatic Invasive Species Maps

Although these maps depict GPS locations of Aquatic Invasive Species infestations found in Itasca County during the 2015 season, they are meant to be a REPRESENTATION of the infestations. There may be AIS locations outside of what is shown on the maps.

The maps are in alphabetical order by Lake Name.