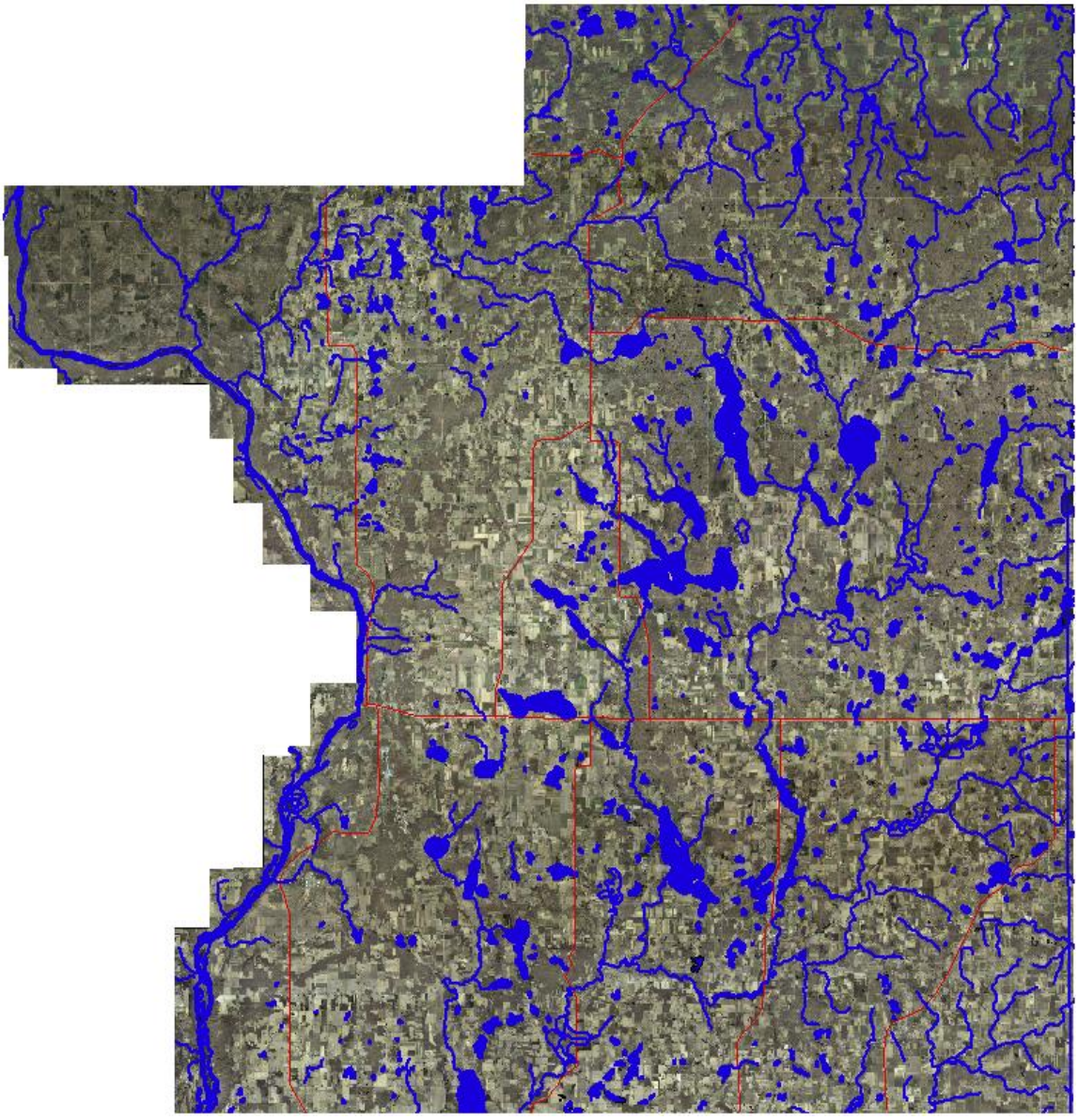
Polk County WDNR Aquatic Invasive Species Education, Prevention, and Planning Control Grant Final Report

AEPP-352-12
2012 and 2013



Polk County Land and Water Resources Department
100 Polk County Plaza—Ste 120
Balsam Lake, WI 54810

In April 2012, the Polk County Land and Water Resources Department received a two year Aquatic Invasive Species Education, Prevention, and Planning Control Grant from the Wisconsin Department of Natural Resources. The following report details the tasks completed from April 2012 through December 2013.

Camelia Lake, 2012.

AIS Early Detection Smart Prevention Protocol

In 2012 the Polk County LWRD partnered with the WDNR to implement the AIS early detection smart prevention protocol on Polk County Lakes. Seven Polk County lakes were randomly chosen for monitoring in 2012 and three were randomly chosen in 2013.

The monitoring protocol involves the collection of basic water quality data (secchi depth and conductivity) along with numerous detection methods for aquatic invasive species including:

- ✓ Snorkeling all boat landings for 30 minutes each
- ✓ Snorkeling 5 sites for 10 minutes each
- ✓ Three spiny water flea tows
- ✓ Three zebra mussel veliger tows
- ✓ Meander survey including rake throws and D-nets

Lakes monitored in 2012 include:

- ✓ Ward lake
- ✓ Antler Lake
- ✓ Big Blake Lake
- ✓ White Ash Lake (South)
- ✓ Big Lake
- ✓ North Twin Lake
- ✓ Camelia Lake

Lakes monitored in 2013 include:

- ✓ Sand Lake [1]
- ✓ Pine Lake
- ✓ Big Blake Lake [2]

Pine Lake, 2013.

Data for secchi depth, conductivity, and GIS location of AIS populations was entered into the Surface Water Integrated Monitoring System (SWIMS). Aquatic plant specimens were sent to the UW-Stevens Point Herbarium, waterflea and veliger samples were sent to the Wisconsin DNR, and snail specimens were sent to the UW-La Crosse Biology Department.

Under a previous aquatic invasive species grant, an additional ten lakes were monitored by LWRD in 2011 using the AIS early detection smart prevention protocol.

In total since 2011, nineteen lakes in Polk County have been monitored for AIS through the early detection smart prevention protocol. The number of invasive species found per lake ranged from zero to four. Sixteen percent of lakes sampled had zero invasive species, 21% had one invasive species, 42% had two invasive species, 11% had three invasive species, and 11% had four invasive species.

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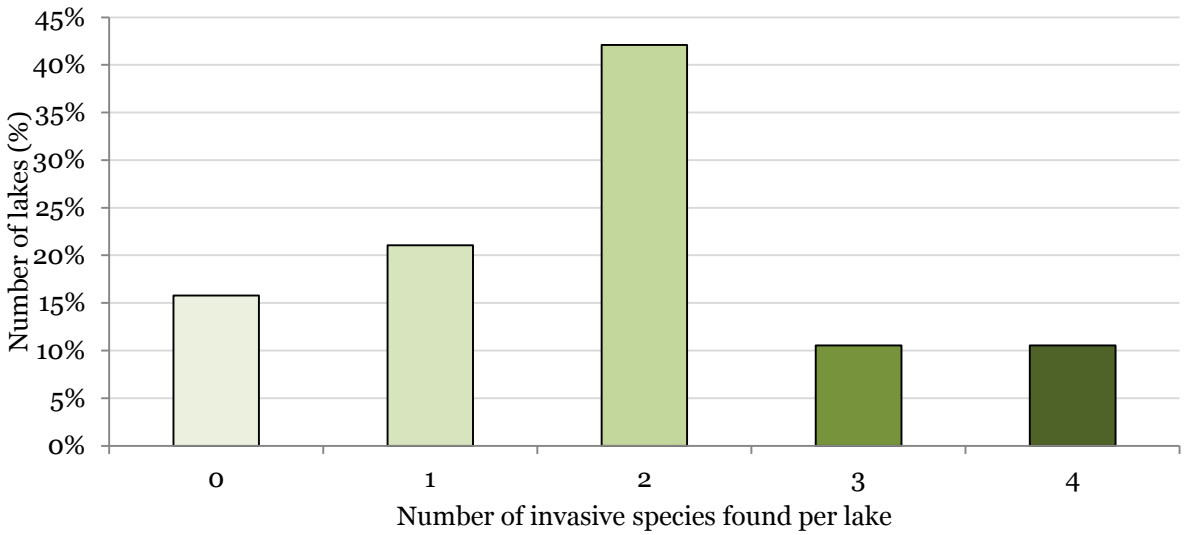
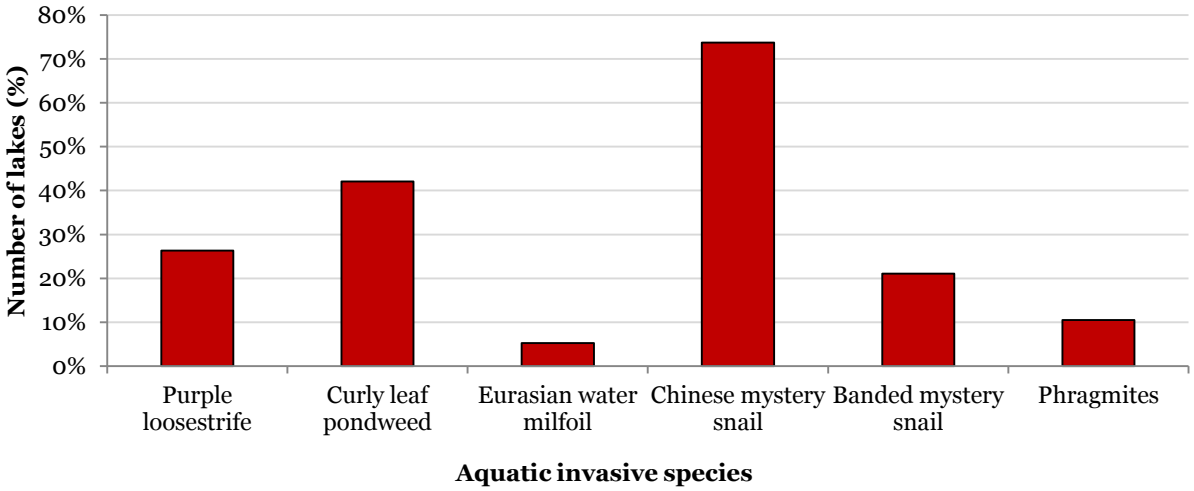
[1] Sand Lake was sampled in partnership with GLIFWC. Zebra mussel veliger tows, spiny waterflea tows, meander surveys, and vouchers were completed by GLIFWC. The remainder of the protocol was completed by LWRD.

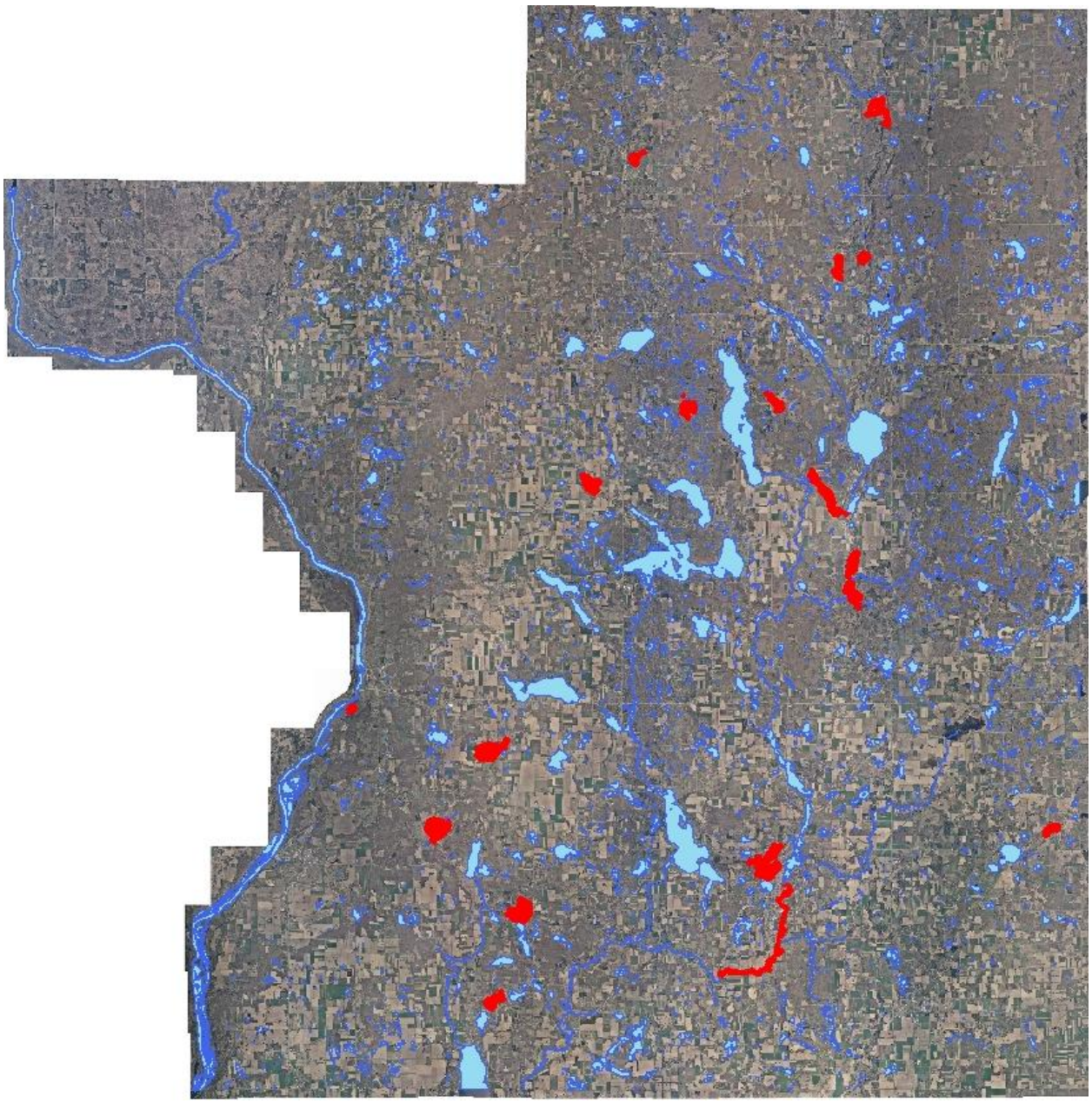
[2] Big Blake Lake was chosen as a revisit lake.



Species detected through the protocol include: purple loosestrife, phragmites, curly leaf pondweed, Eurasian water milfoil, Chinese mystery snail, and banded mystery snail.

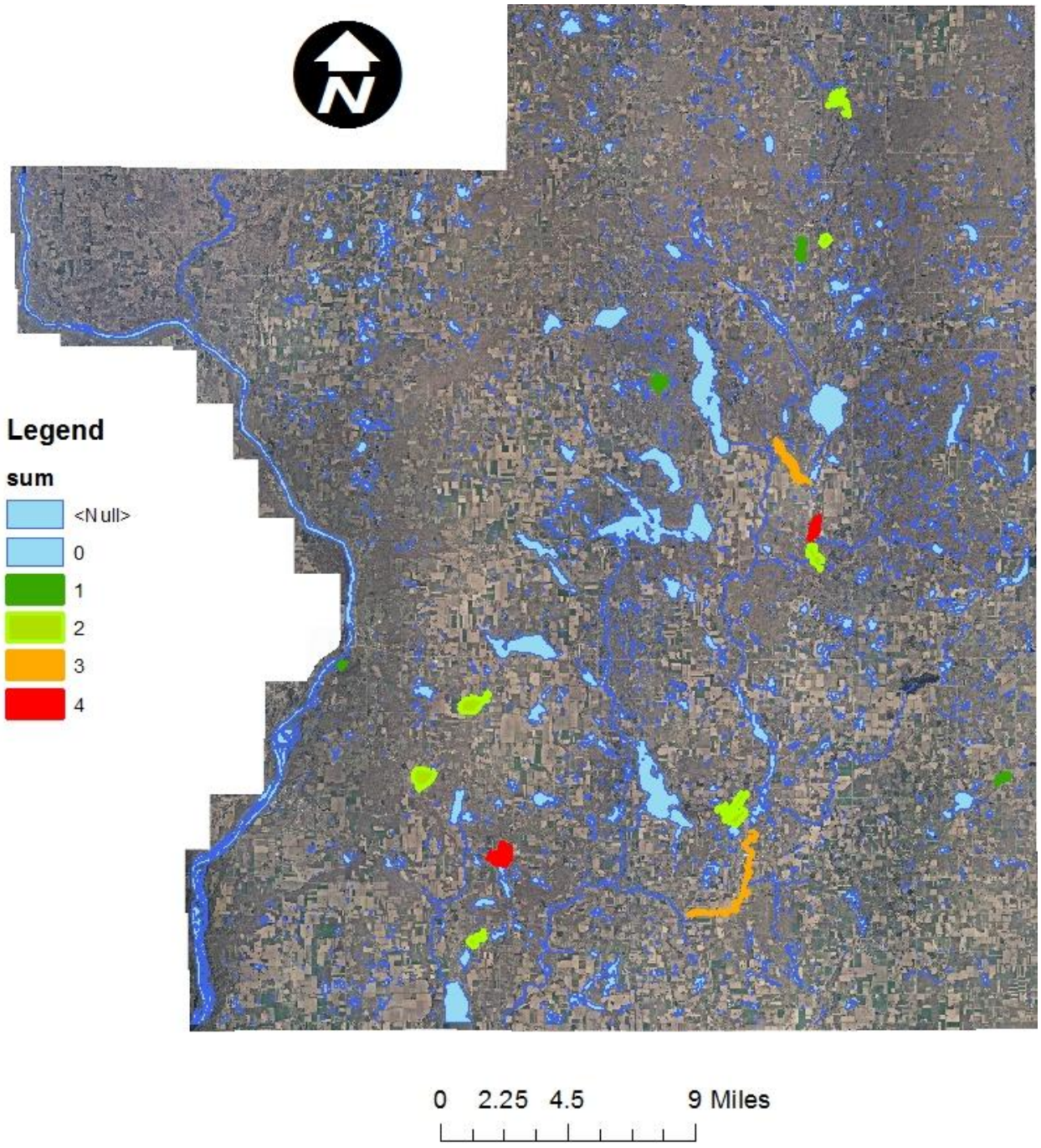
Chinese mystery snails were the most common invasive species detected, being found in three quarters (74%) of the lakes which were monitored. Curly leaf pondweed was detected in nearly half of lakes monitored (42%) and purple loosestrife and banded mystery snails were detected in approximately a quarter of lakes monitored (26% and 21%, respectively). Phragmites and Eurasian water milfoil were the least commonly documented invasive species, with phragmites being found in 11% of lakes sampled and Eurasian water milfoil in 5% of lakes sampled.





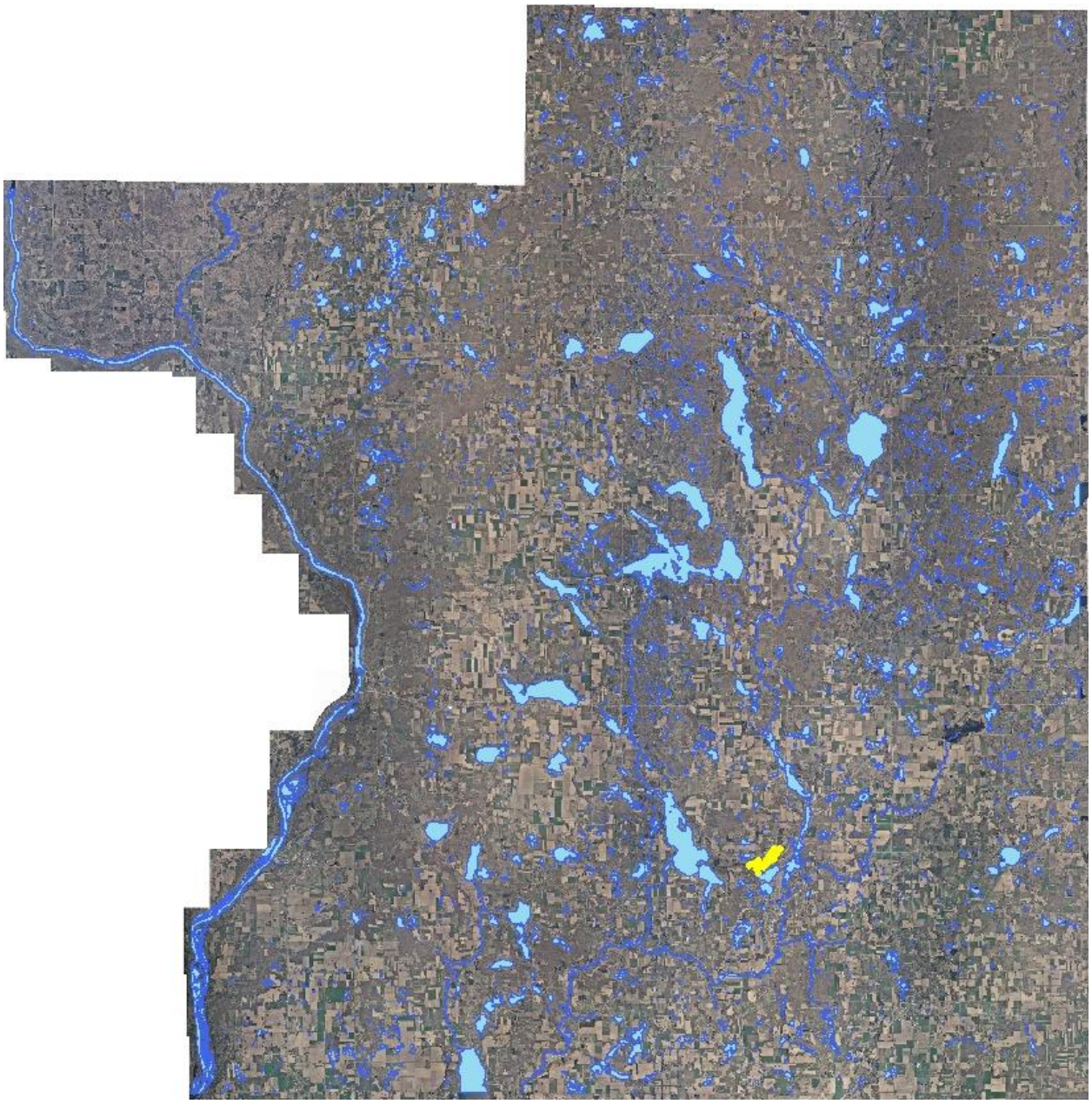
AIS Early Detection Smart Prevention Protocol Lakes, 2011-2013.

Lakes: Antler Lake, Big Blake Lake, Big Lake, Black Brook Flowage, Camelia Lake, Clam Falls Flowage, Coon Lake, Lake O' the Dalles, Lotus Lake, McKenzie Lake, North Twin Lake, Pike Lake, Pine Lake, Rice Lake, Sand Lake, Vincent Lake, Ward Lake, White Ash Lake, North White Ash Lake



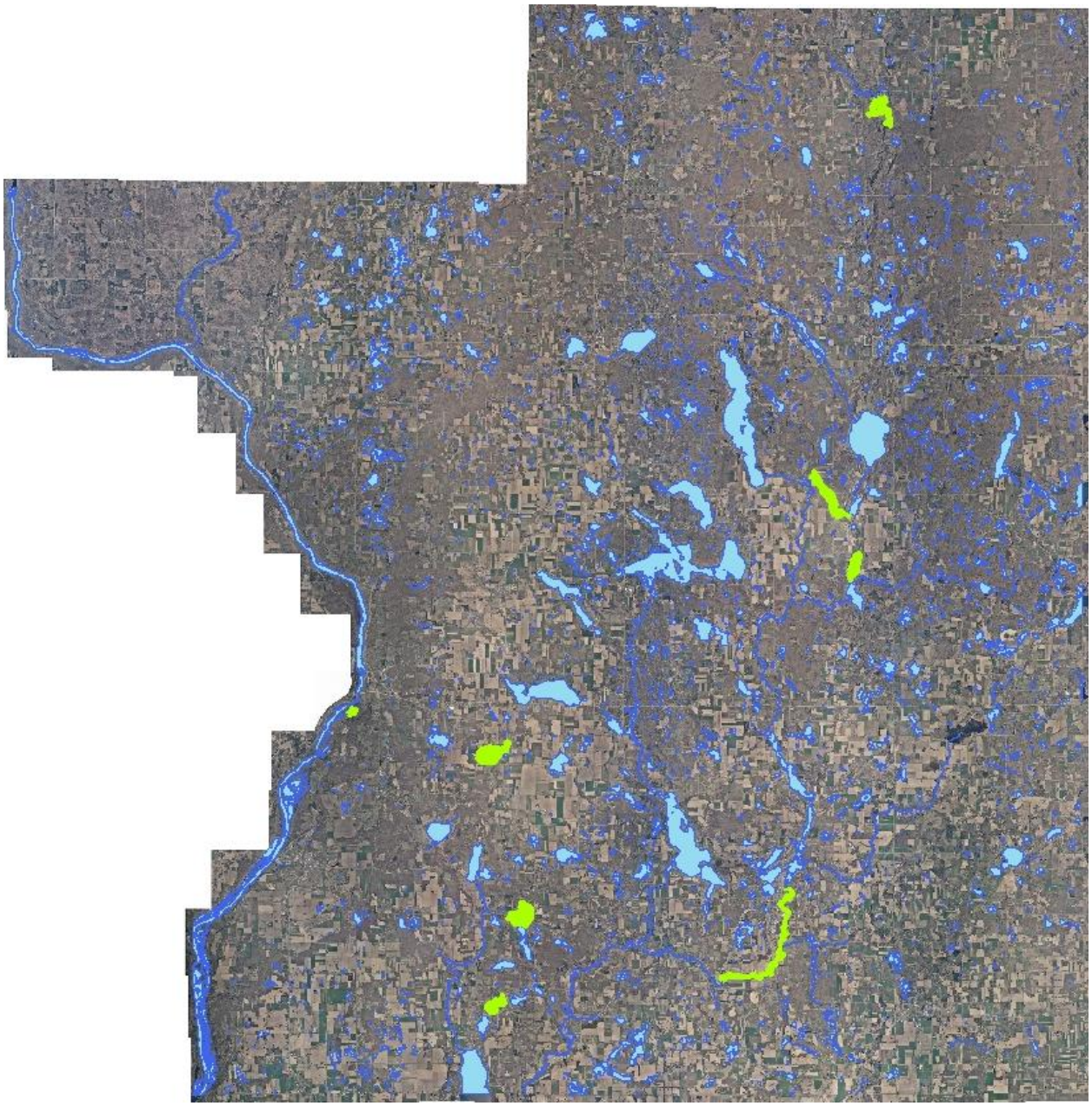
AIS Early Detection Smart Prevention Protocol Lakes, number of aquatic invasive species found per lake, 2011-2013.

Lakes with 0 AIS: Coon Lake, Rice Lake, Vincent Lake
Lakes with 1 AIS: Antler Lake, Camelia Lake, Lake O' the Dalles, Ward Lake
Lakes with 2 AIS: Clam Falls Flowage, Lotus Lake, McKenzie Lake, North Twin Lake, Pike Lake, Pine Lake, Sand Lake, White Ash Lake
Lakes with 3 AIS: Big Blake Lake, Black Brook Flowage
Lakes with 4 AIS: Big Lake, North White Ash Lake



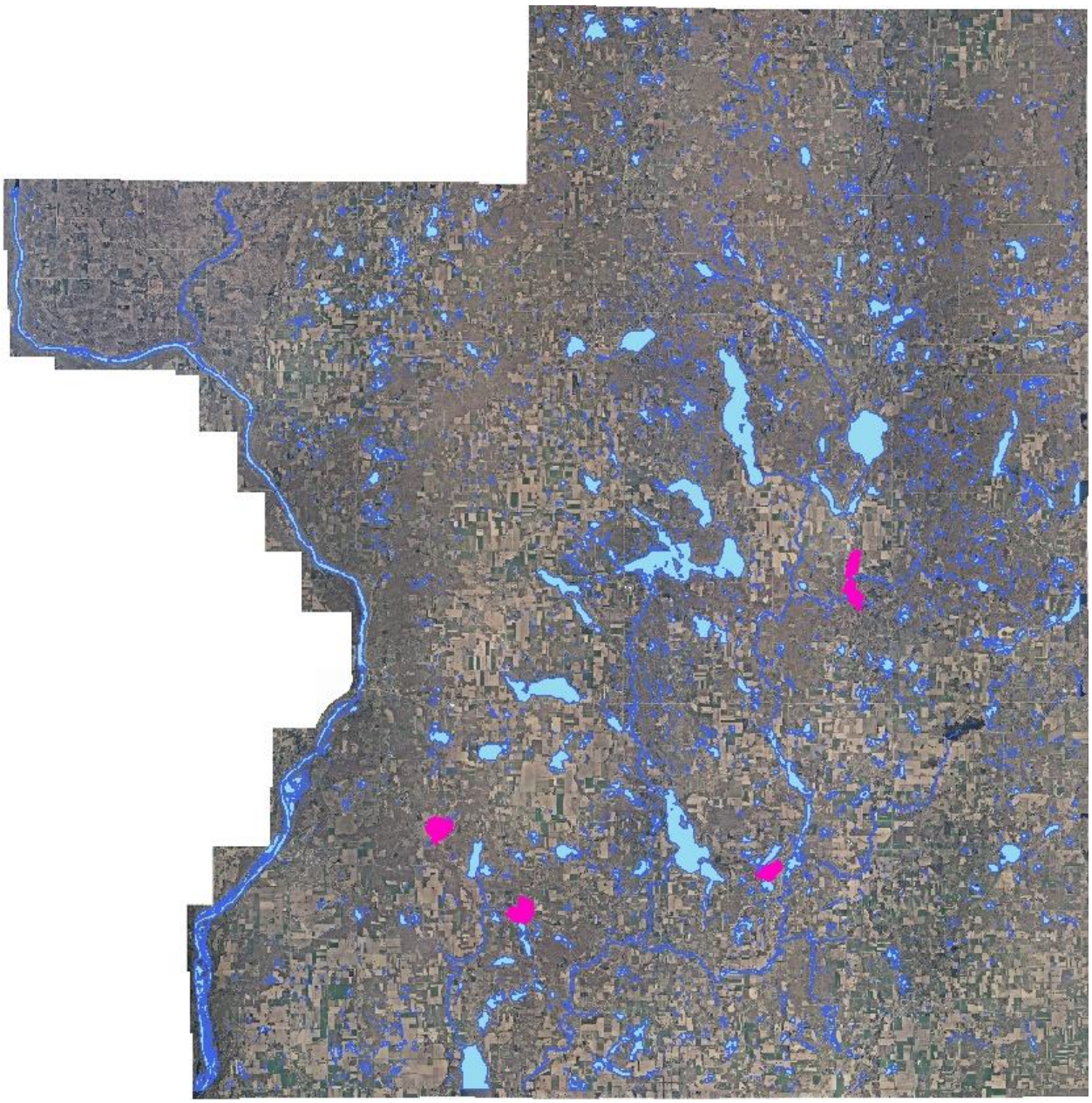
Eurasian water milfoil, AIS Early Detection Smart Prevention Protocol Lakes, 2011-2013.

1 Lake: Pike Lake



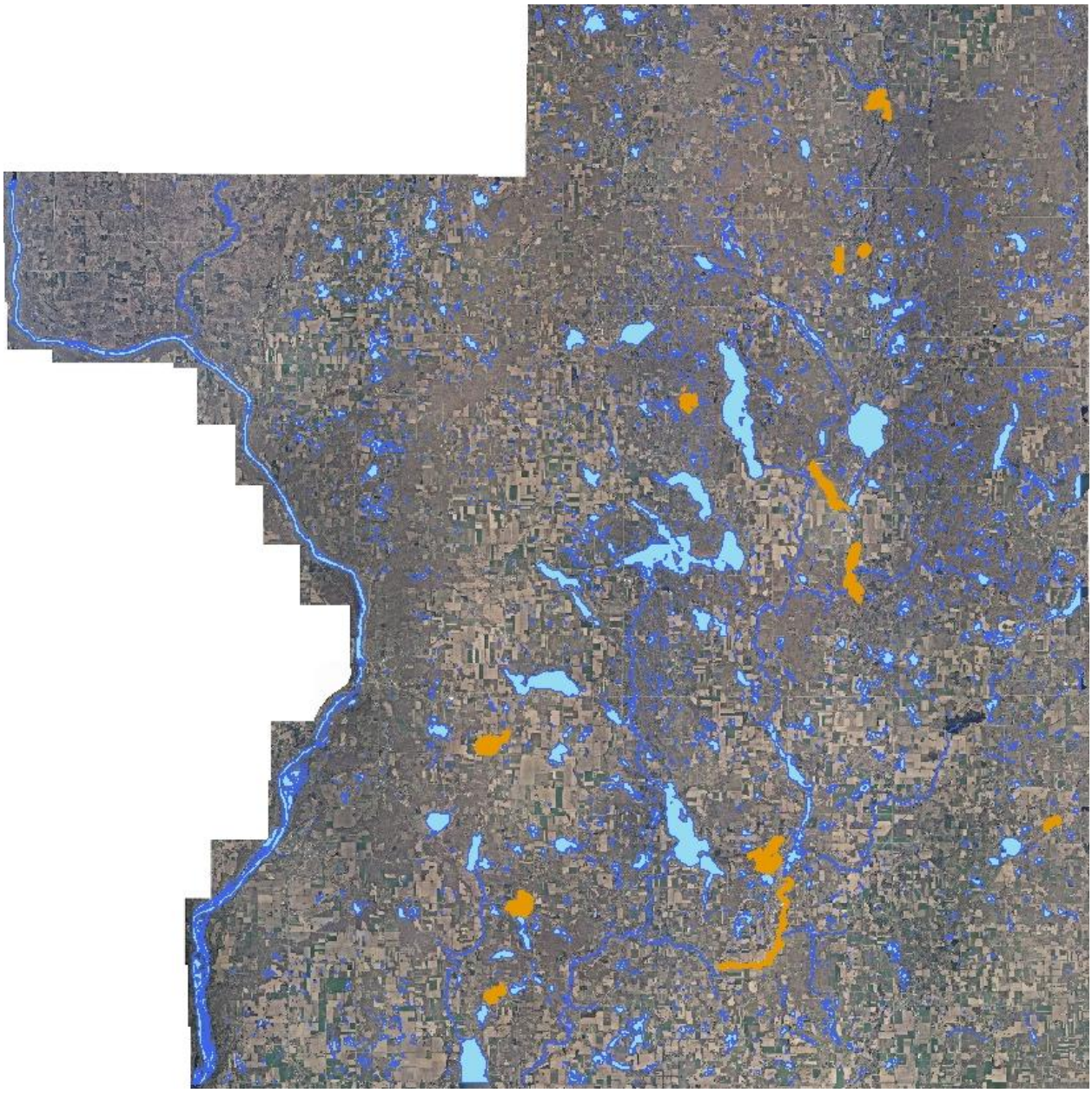
Curly leaf pondweed, AIS Early Detection Smart Prevention Protocol Lakes, 2011-2013.

8 Lakes: Big Blake Lake, Big Lake, Black Brook Flowage, Clam Falls Flowage, Lake O' the Dalles, Pine Lake, Sand Lake, North White Ash Lake



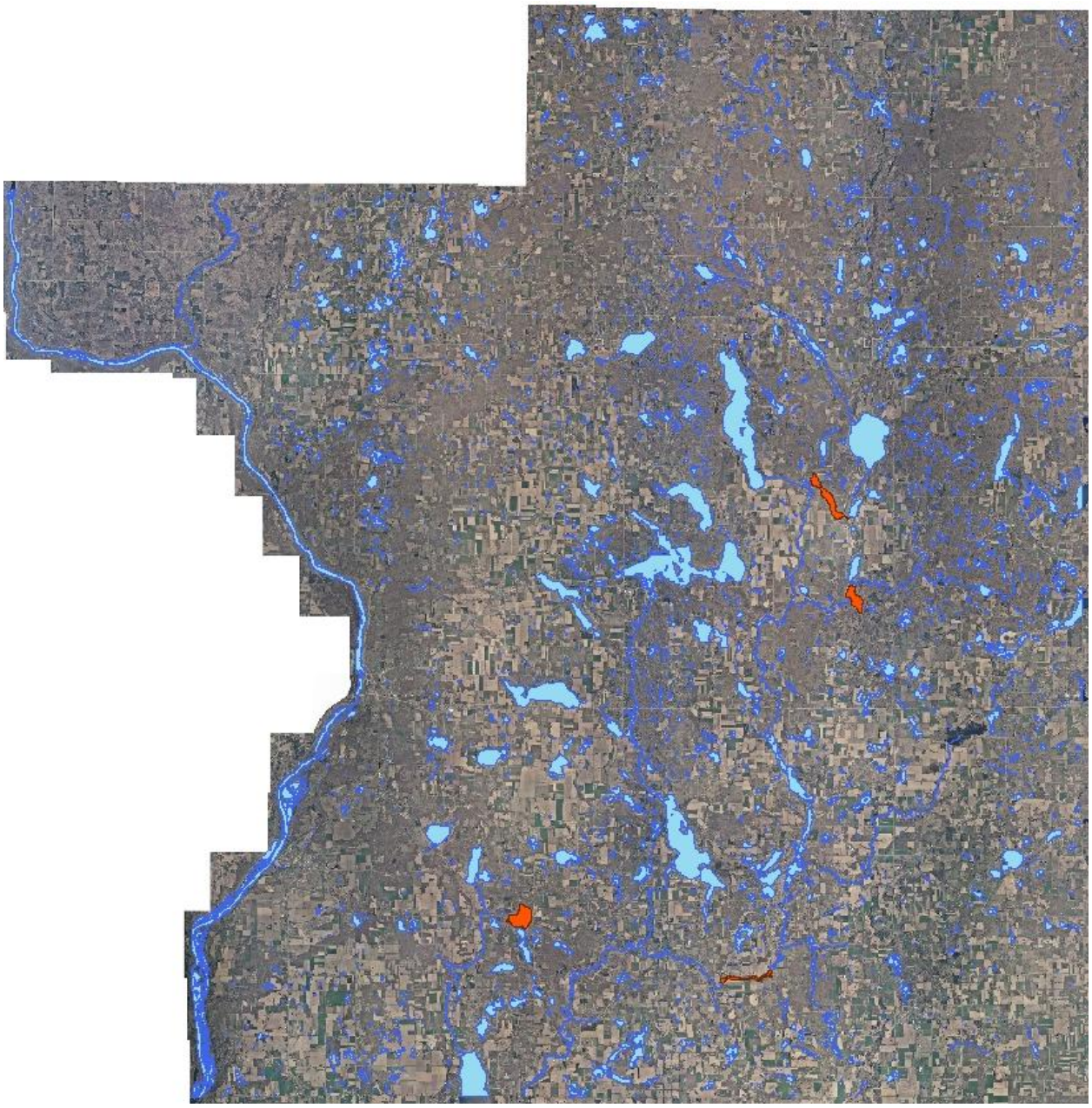
Purple loosestrife, AIS Early Detection Smart Prevention Protocol Lakes, 2011-2013.

5 Lakes: Big Lake, Lotus Lake, North Twin Lake, White Ash Lake, North White Ash Lake



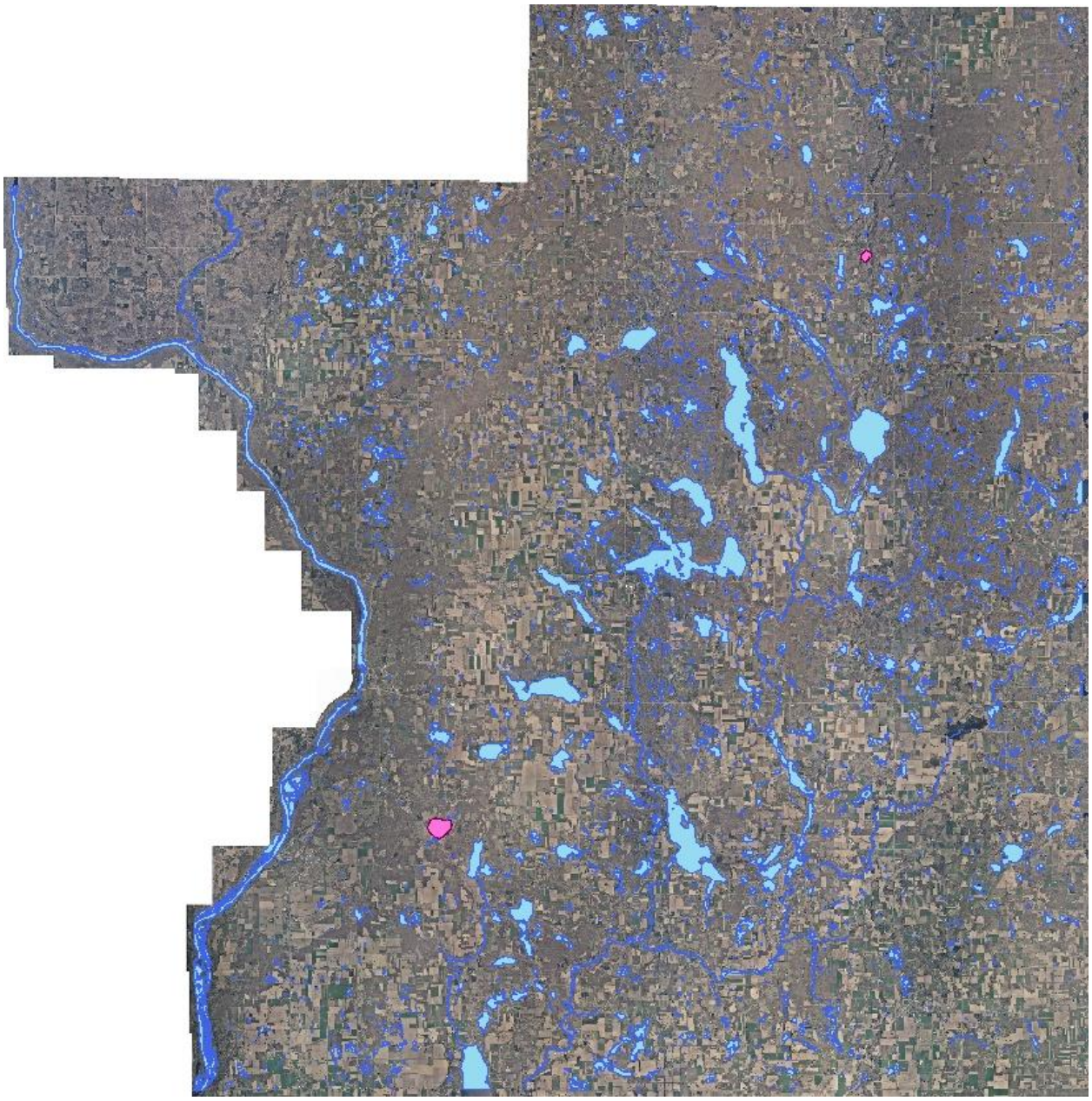
Chinese mystery snail, AIS Early Detection Smart Prevention Protocol Lakes, 2011-2013.

14 Lakes: Antler Lake, Big Blake Lake, Big Lake, Black Brook Flowage, Camelia Lake, Clam Falls Flowage, McKenzie Lake, North Twin Lake, Pike Lake, Pine Lake, Sand Lake, Ward Lake, White Ash Lake, North White Ash Lake



Banded mystery snail, AIS Early Detection Smart Prevention Protocol Lakes, 2011-2013.

4 Lakes: Big Blake Lake, Big Lake, Black Brook Flowage, White Ash Lake



Phragmites, AIS Early Detection Smart Prevention Protocol Lakes, 2011-2013.

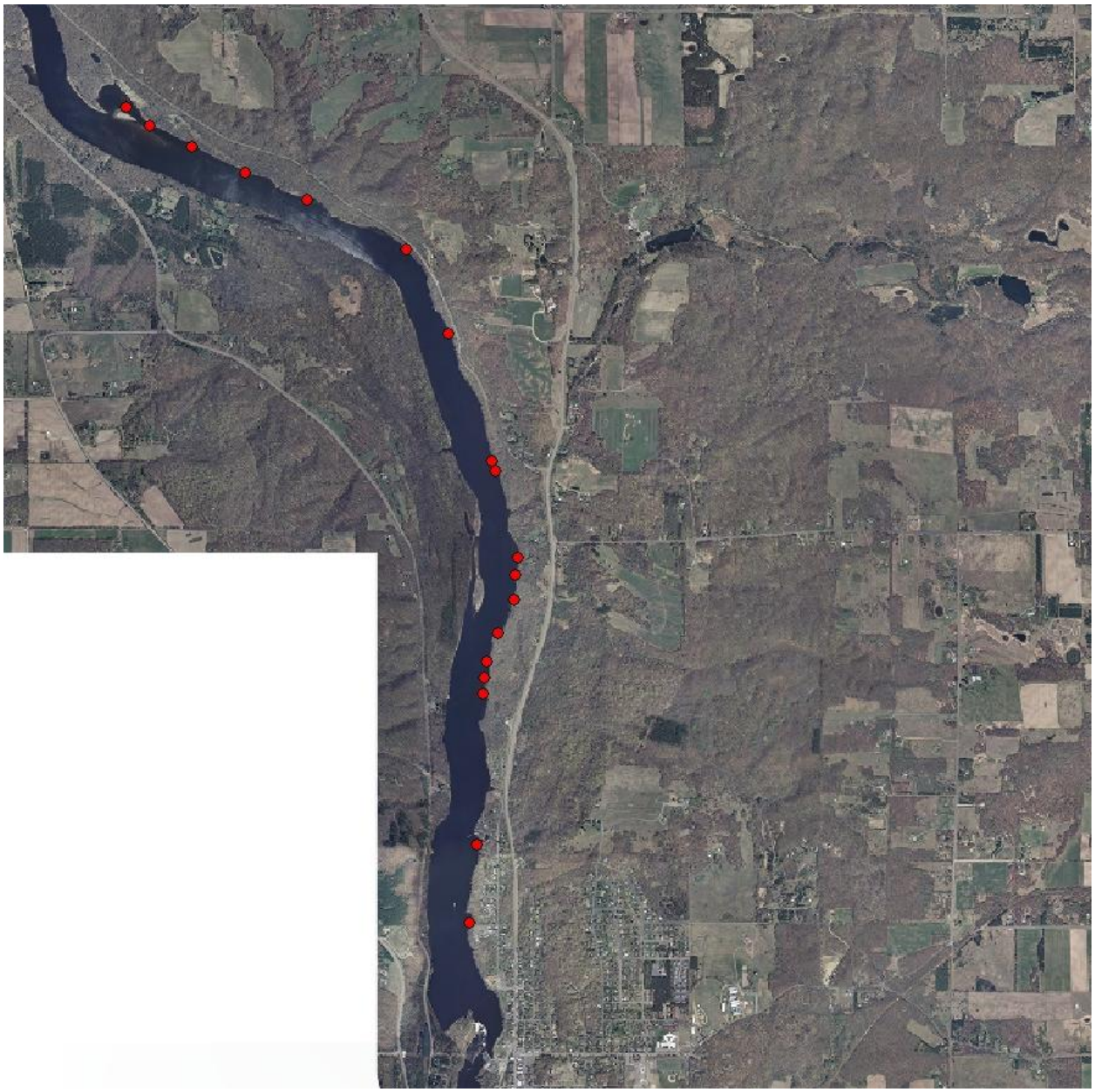
2 Lakes: McKenzie Lake, Lotus Lake

St. Croix River Monitoring

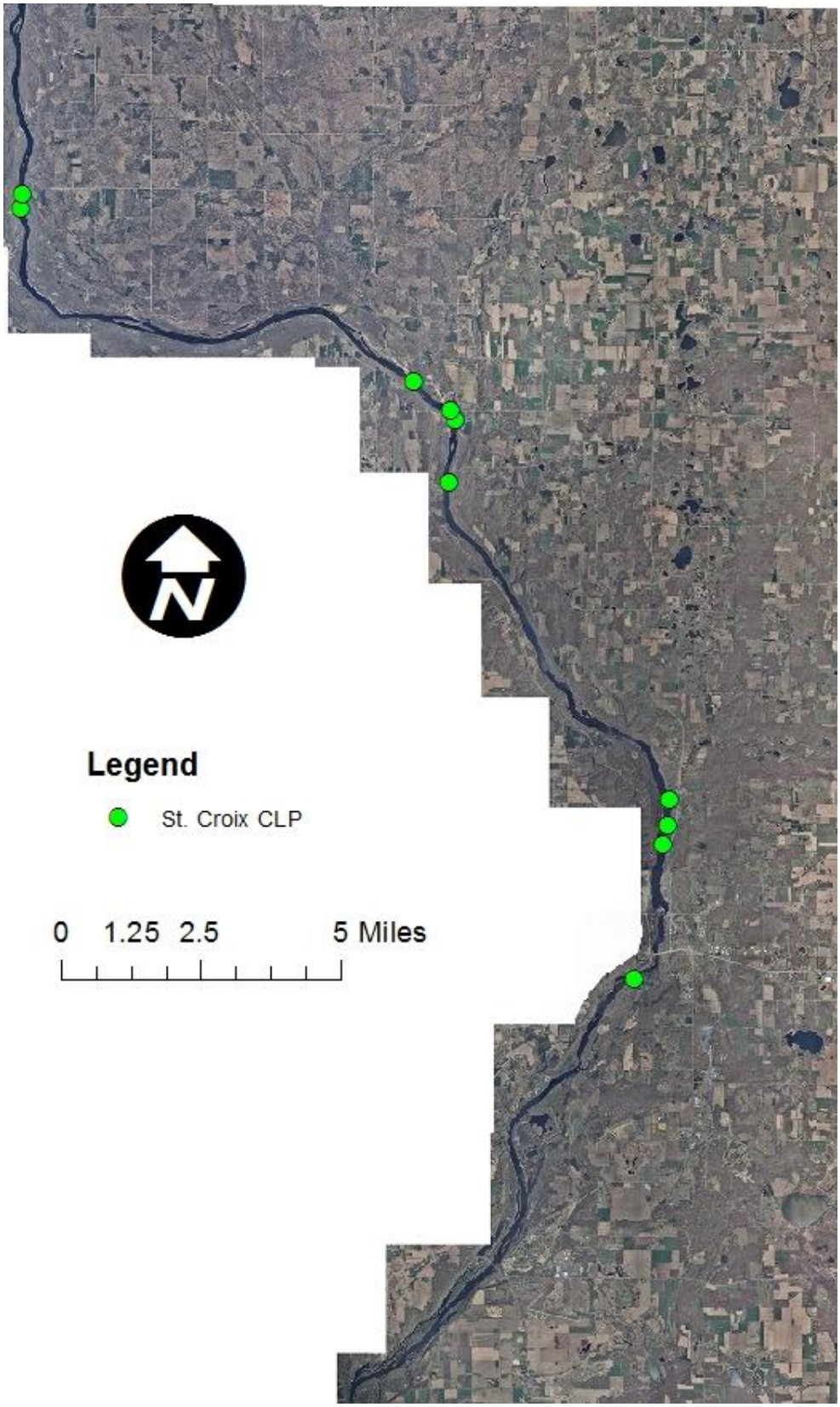
In 2013 LWRD undertook an extensive monitoring effort on the St. Croix River. Due to extreme low water levels, the northern most and southern most stretches of the river were not accessible. However, the remaining areas of the river were monitored using an adapted version of the AIS early detection smart prevention protocol for lakes. In addition to meandering the entire Wisconsin shoreline for invasive species, rakes and D-nets were thrown when visibility was low. Due to extreme currents, the protocol did not include snorkeling. However, at random locations along the river, the shoreline was traversed on foot to search for invasive species. Additionally, each tributary entering the St. Croix River on the Wisconsin side was monitored by motoring or walking upstream until navigation was not possible.

Two invasive species were detected on the St. Croix River: curly leaf pondweed and Eurasian water milfoil. Curly leaf pondweed was located throughout the entire river system, whereas, Eurasian water milfoil was confined to the area between Spanglers Landing and the hydroelectric dam in St. Croix Falls. In this area, Eurasian water milfoil was dotted in most places in the littoral zone in depths ranging from 1.5 to 5 feet. Although curly leaf pondweed has been found in many Polk County Lakes, Eurasian water milfoil has only been documented in three Polk County Lakes. As a result, the discovery of Eurasian water milfoil in the St. Croix River is a concern.

St. Croix River, 2013.



Eurasian water milfoil locations on the St. Croix River between Spanglers Landing and the hydroelectric dam in St. Croix Falls, 2013.



Curly leaf pondweed locations on the St. Croix River, 2013.

Eurasian Water Milfoil

Eurasian water milfoil is a submerged aquatic invasive plant with delicate, feather-like leaves arranged in a whorl around the stem of the plant. Eurasian water milfoil can be distinguished from native milfoils by the numerous (usually 12-21 leaflets) that make up each leaf. Additionally, whereas the leaves of most native milfoils remain erect when out of water, the leaves of Eurasian water milfoil are usually limp when out of water. Eurasian water milfoil is highly invasive and is capable of forming large, thick mats which interfere with swimming, boating, fishing, and waterfowl hunting. Additionally, Eurasian water milfoil can have devastating effects on native ecosystems, displacing native aquatic plants and impacting fish and wildlife populations.

Eurasian water milfoil was first discovered in North America in the 1940's. Since this time Eurasian water milfoil has invaded nearly every state in the United States. Eurasian water milfoil spreads when small fragments of the plant break off and float on water currents or are transported by boater traffic. Eurasian water milfoil is able to reproduce from small fragments, which sprout roots and are able to colonize new areas.

Establishment of Eurasian water milfoil populations in Polk County has occurred relatively recently. Eurasian water milfoil was first found in Polk County in Long Trade Lake in 1995. Long Trade Lake is part of the Trade River System, which includes Little Trade, Big Trade, and Round Lakes in Burnett County. Eurasian water milfoil was discovered in Round Lake in 2003 and in Little Trade Lake in 2009.

In addition to the Trade River System, Eurasian water milfoil was found in Horseshoe Lake in 2006, in Pike Lake in 2010, and most recently in the St. Croix River between Spanglers Landing and Lions Park Landing in 2013.

Eurasian water milfoil, St. Croix River, 2013.

Eradicating established populations of Eurasian water milfoil is nearly impossible, making monitoring and management of early detection pioneer populations crucial.

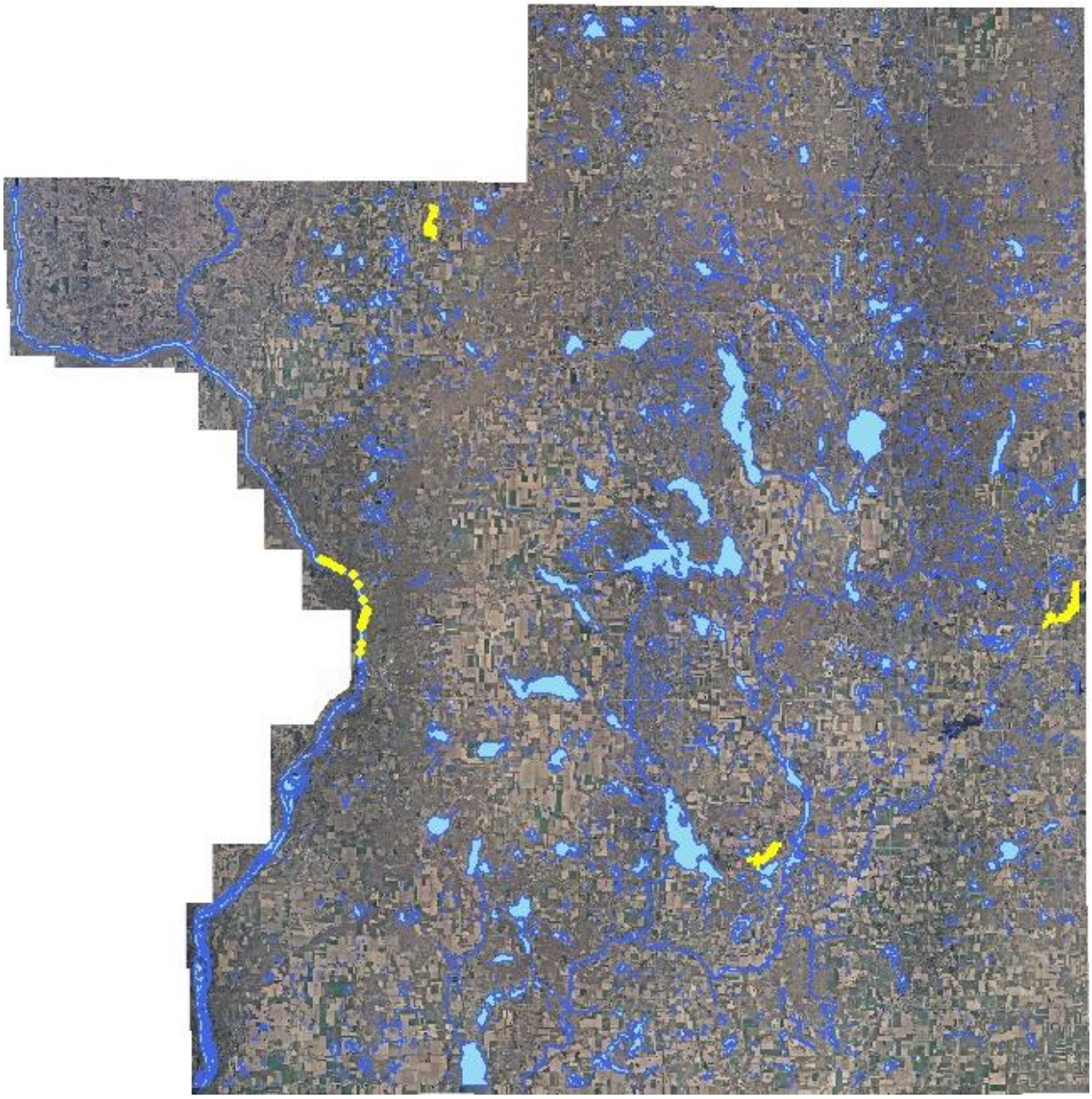
The following lakes were monitored for Eurasian water milfoil in 2012 and 2013 either due to proximity to an infested lake, an alert of an invasive species from a concerned citizen, or because the lake was visited for other reasons[3]: Wapogasset Lake, Bear Trap Lake, North Twin Lake, South Twin Lake, the Apple River Flowage, Long Lake, Big/Round/Church Pine Lakes, Lotus Lake, Big Round Lake, Big Blake Lake, and Clear Lake. Fortunately, Eurasian water milfoil was not found on any of the lakes monitored.

In July 2012, LWRD hand pulled Eurasian water milfoil on Pike Lake with Steve Schieffer, lake resident and Amery Lakes Board President. In July 2013, LWRD visited Long Trade Lake following an herbicide application for Eurasian water milfoil. At this time, LWRD was unable to locate any Eurasian water milfoil, indicating a successful 2013 herbicide application.

Big Blake Lake, 2013.

[3] Time for lakes visited for other reasons were not charged to the AIS grant.

Eurasian water milfoil has been documented on 4 Polk County waterbodies as of December, 2013: Horseshoe Lake, Long Trade Lake, Pike Lake, and the St. Croix River.



Curly Leaf Pondweed

Curly leaf pondweed is a submerged aquatic invasive plant. The leaves of curly leaf pondweed are easily distinguished by their rounded tip, prominent mid-vein, and finely toothed edges. In certain growing conditions, the leaves appear wavy or crimped.

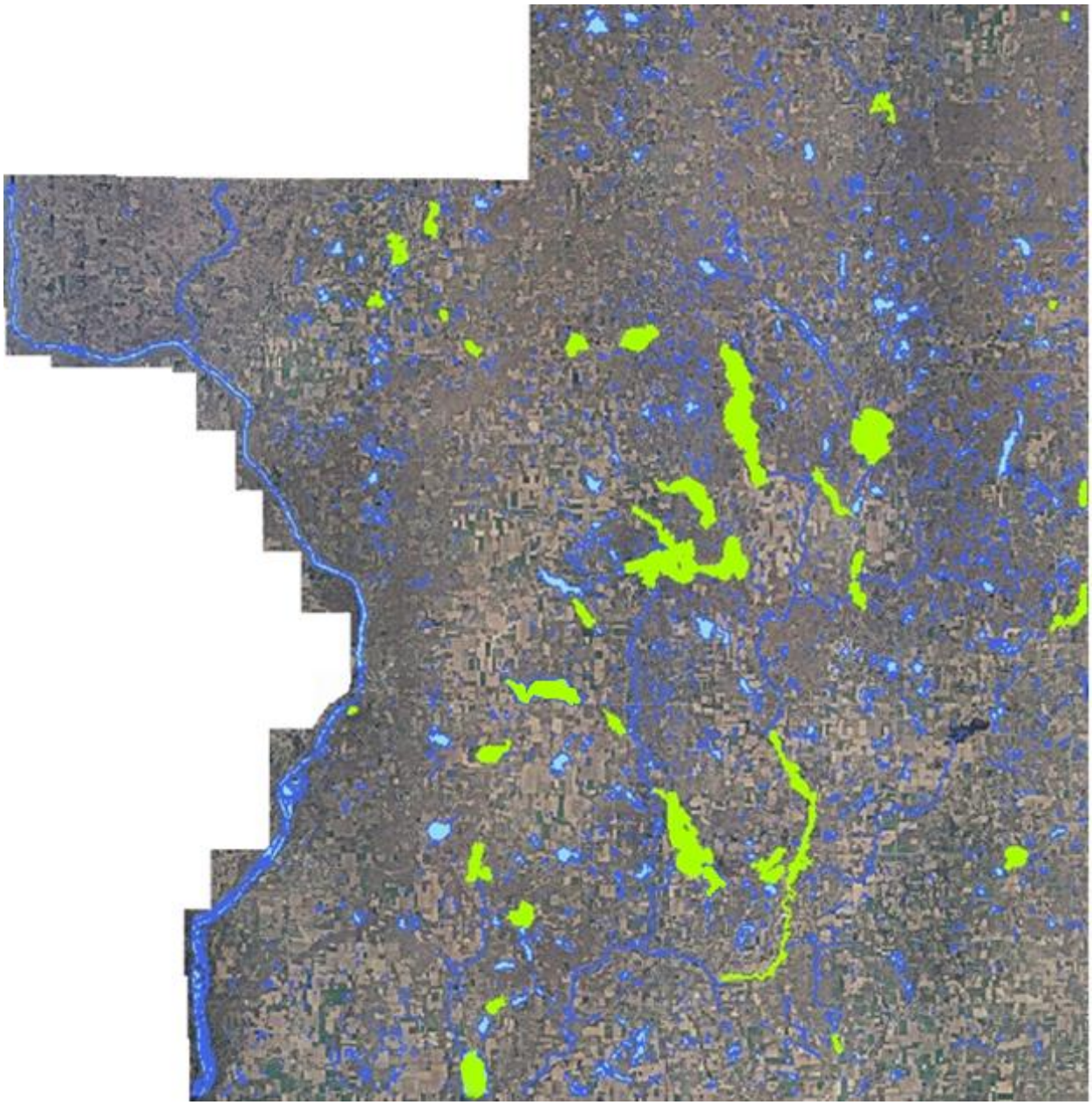
Curly leaf pondweed, Apple River Flowage, 2012.

Curly leaf pondweed is found in a wide variety of habitats, although it prefers alkaline and high nutrient waterbodies and typically grows in less than 3 meters of water.

This invasive species is able to outcompete native aquatic plants because it exhibits rapid growth in the early spring, sometimes growing beneath ice cover. Curly leaf pondweed forms large, dense mats on the surface of waterbodies inhibiting the light necessary for native plant growth and interfering with navigation and recreational activities such as fishing, boating, and swimming.

Curly leaf pondweed was first discovered in Polk County in the Apple River Flowage in 1977. Since this time it has been documented in 38 waterbodies in Polk County.

Curly leaf pondweed has been documented on 38 Polk County waterbodies as of December, 2013 including: Alabama Lake, Apple River, Apple River Flowage, Balsam Lake, Bear Trap Lake, Big Blake Lake, Big Butternut Lake, Big Lake, Big Round Lake, Black Brook Flowage, Bone Lake (2454500), Bone Lake (2628100), Bridget Lake, Cedar Lake, Clam Falls Flowage, Deer Lake (2619400), Deer Lake (2460500), Dwight Lake, Half Moon Lake, Herby Lake, Horse Lake, Horseshoe Lake, Lake O' the Dalles, Little Butternut Lake, Little Mirror Lake, Long Trade Lake, Loveless Lake, Magnor Lake, North Twin Lake, Pike Lake, Pine Lake (2490400), Sand Lake, Sandhill Lake, Staples Lake, Unnamed (2658800), Wapogasset Lake, White Ash Lake, North White Ash Lake.



Purple Loosestrife

Purple loosestrife is an aquatic invasive perennial plant that grows 3-7 feet tall and develops a spike of small purple flowers in late summer. The leaves of the plant are oblong and arranged oppositely along a square shaped stem. Purple loosestrife spreads rapidly and colonizes wetlands, shorelines, and roadside ditches. Thick stands of purple loosestrife crowd out native vegetation and reduce food, shelter, and nesting sites for a variety of wildlife including birds, turtles, and frogs.

Purple loosestrife, North Twin Lake, 2012.

This plant, native to Europe and Asia, was introduced in North America in the 1800's for beekeeping and as a garden ornamental. Purple loosestrife has been present in Polk County for many years. An elaborate inventory was conducted in 2000 by Polk County LWRD to identify the extent of purple loosestrife in the county and to reduce its spread.

In 2012, Polk County LWRD partnered with the Luck Girl Scouts to raise and release *Galerucella* beetles for purple loosestrife control. On May 29th LWRD presented background information to the girl scouts regarding aquatic invasive species with a specific focus on purple loosestrife and assisted the girl scouts with collecting rootstock, collecting beetles, and adding beetles to the plants. The beetles were later released in the Luck wetland.

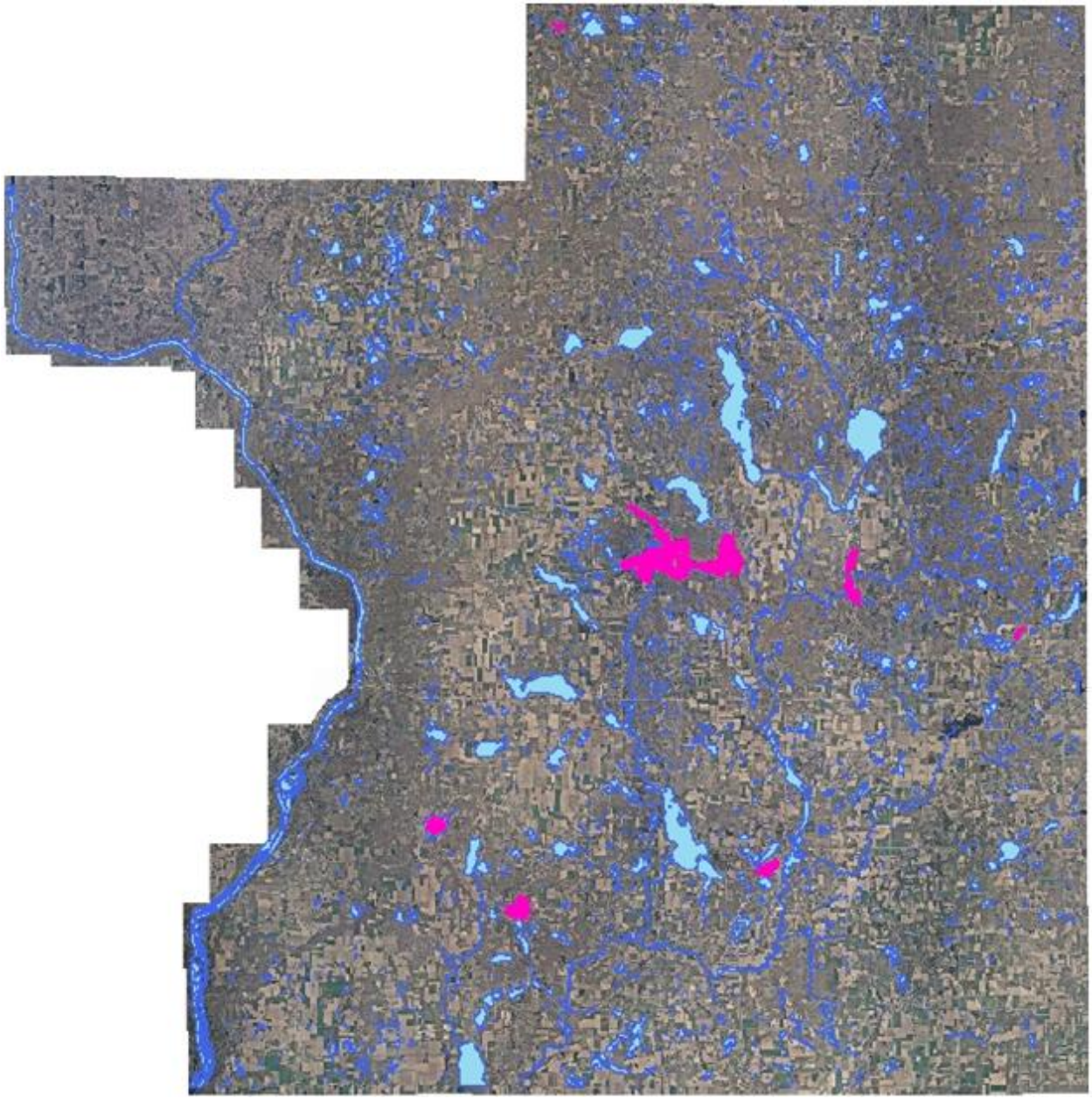
Luck Girl Scouts, *Galerucella* beetle project, 2012.

Three novel purple loosestrife sites were found in 2012. At two of the sites LWRD cut and bagged flowers and sprayed the remaining foliage with herbicide. The remaining stand was located in a wetland just south of Balsam Lake and was large enough to warrant the introduction of beetles.

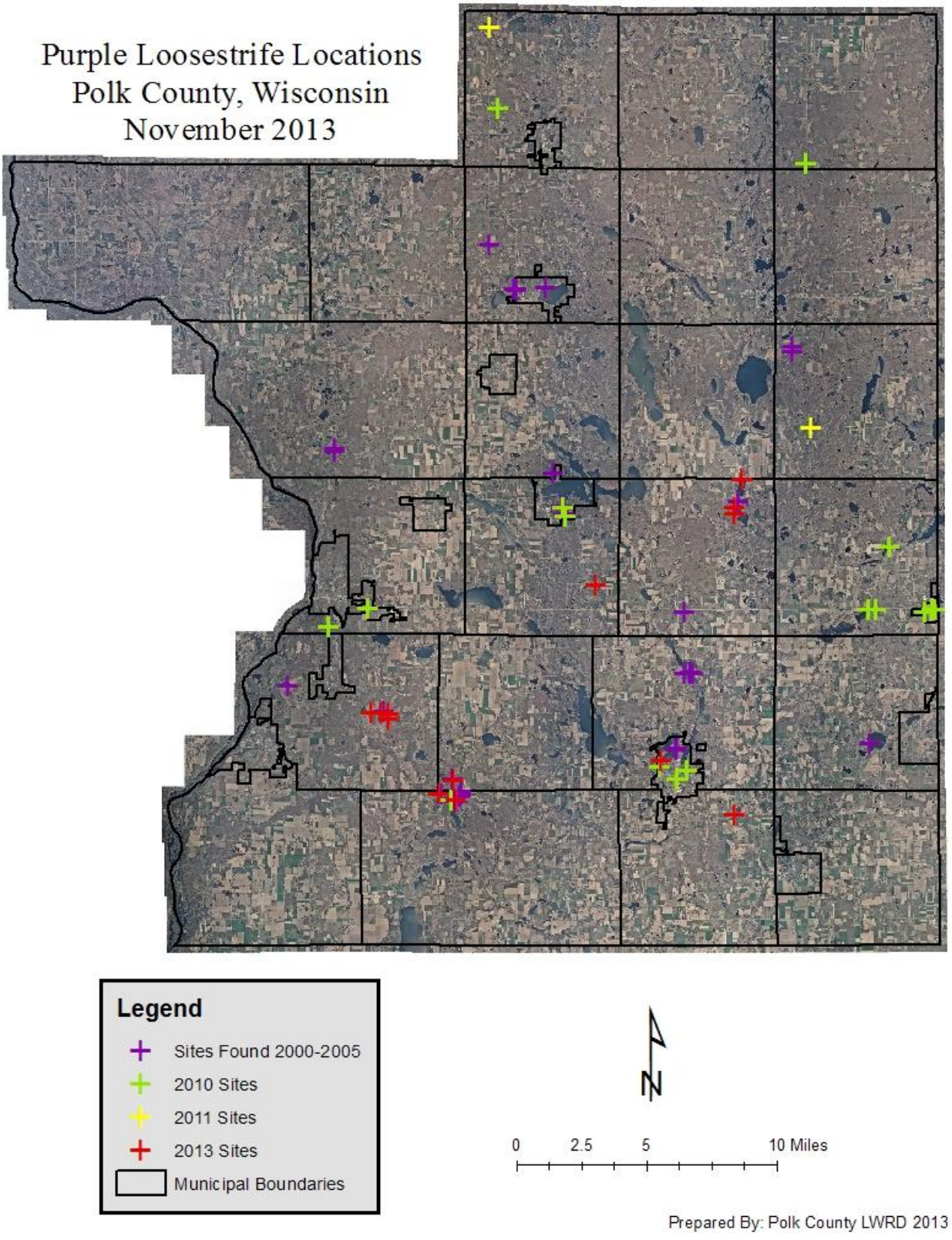
In 2013, LWRD partnered with a dedicated volunteer to raise *Galerucella* beetles. LWRD assisted the volunteer with collecting rootstock, adding beetles to the plants, and releasing beetles. Beetles raised in 2013 were released in the large stand south of Balsam Lake that was found in 2012. Late in the summer of 2013, commissioners with the Balsam Lake Protection and Rehabilitation District met with LWRD regarding a large stand of purple loosestrife on Balsam Lake. This site has been designated as a beetle release site for 2014.

2013 beetle release site, wetland south of Balsam Lake.

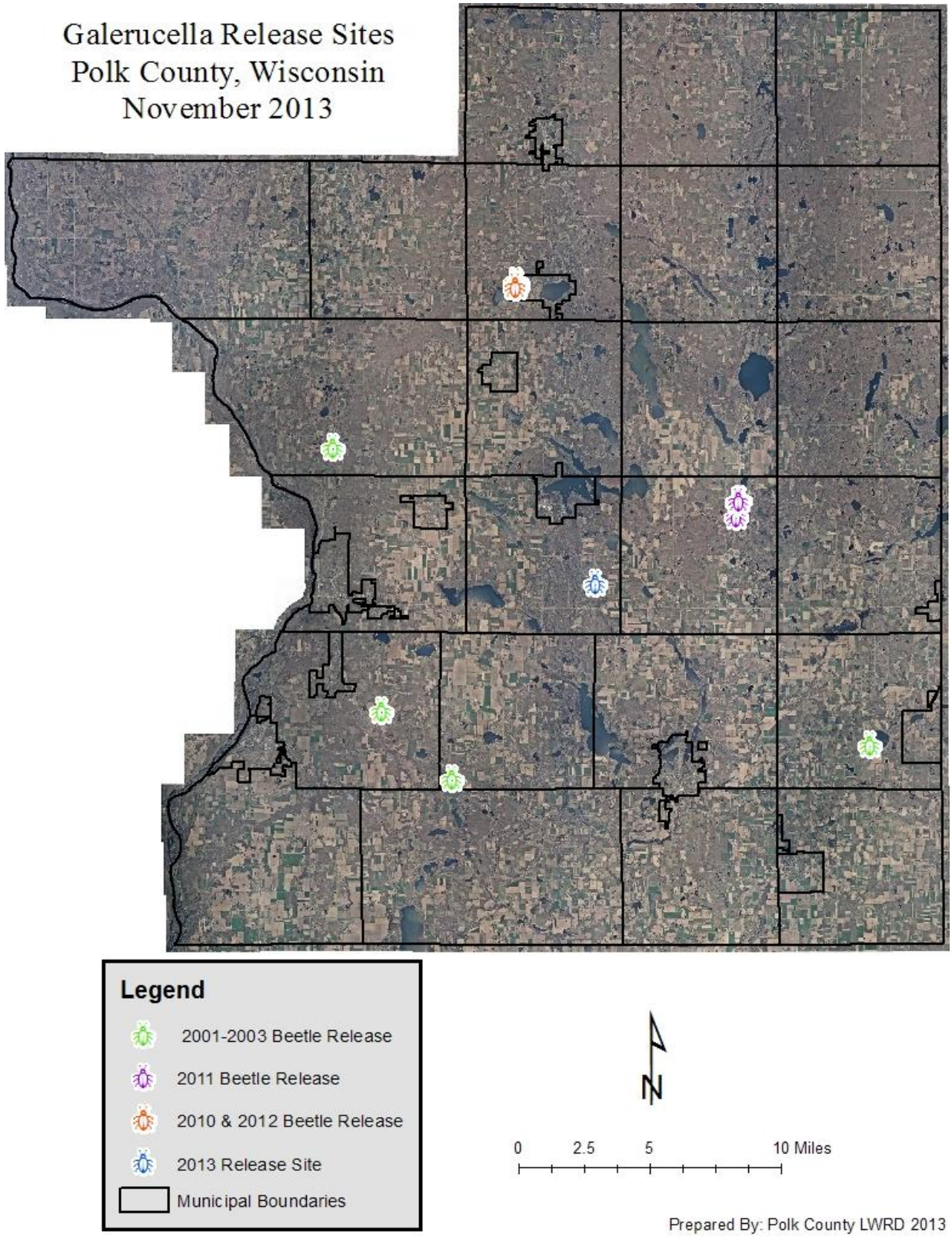
Purple loosestrife has been documented on 8 Polk County lakes as of December, 2013 including: Balsam Lake, Big Lake, Grimhs Lake, Lotus Lake, North Twin Lake, Silver Lake, White Ash Lake, and North White Ash Lake.



Polk County purple loosestrife sites as of December, 2013.



Polk County beetle release sites as of December, 2013.



Japanese and Giant Knotweed

Both Japanese and giant knotweed are native to Asia and were imported to the United States in the mid 1900's as ornamental plants. These species have begun to escape landscaping conditions, becoming more prevalent in the wild.

Japanese and giant knotweed are large robust perennial plants with very aggressive growth habits. Both species grow extremely fast and form a dense canopy of foliage which blocks sunlight from reaching the ground. As a result, native vegetation is unable to grow beneath a knotweed stand. When knotweed establishes on stream banks, the lack of understory can promote intense erosion causing soil and knotweed roots to move downstream.

Knotweed is a perennial, meaning that each spring it re-grows from its extensive root system. In the peak growing season knotweed can grow two to four inches per day. The maximum height of Japanese knotweed is 8 to 10 feet tall; whereas, giant knotweed can reach heights of 12 to 15 feet.

While height is one way to distinguish Japanese and giant knotweed, it is not the most reliable. Leaf size and shape are the most reliable way to distinguish the two species of knotweed. Typically, Japanese knotweed leaves are up to 6 inches in length with flat or truncated leaf bases. Giant knotweed leaves are much larger, growing up to 12 inches in length. The leaves of giant knotweed also differ slightly in shape, taking on a pronounced heart shape.

Both species of knotweed are easily distinguished by their hollow bamboo-like stalks. Additionally, in the late summer both species develop sprays of white flowers which are favored by bees and flies. Both species of knotweed are dioecious, meaning that a male and female plant are required to produce viable seed.

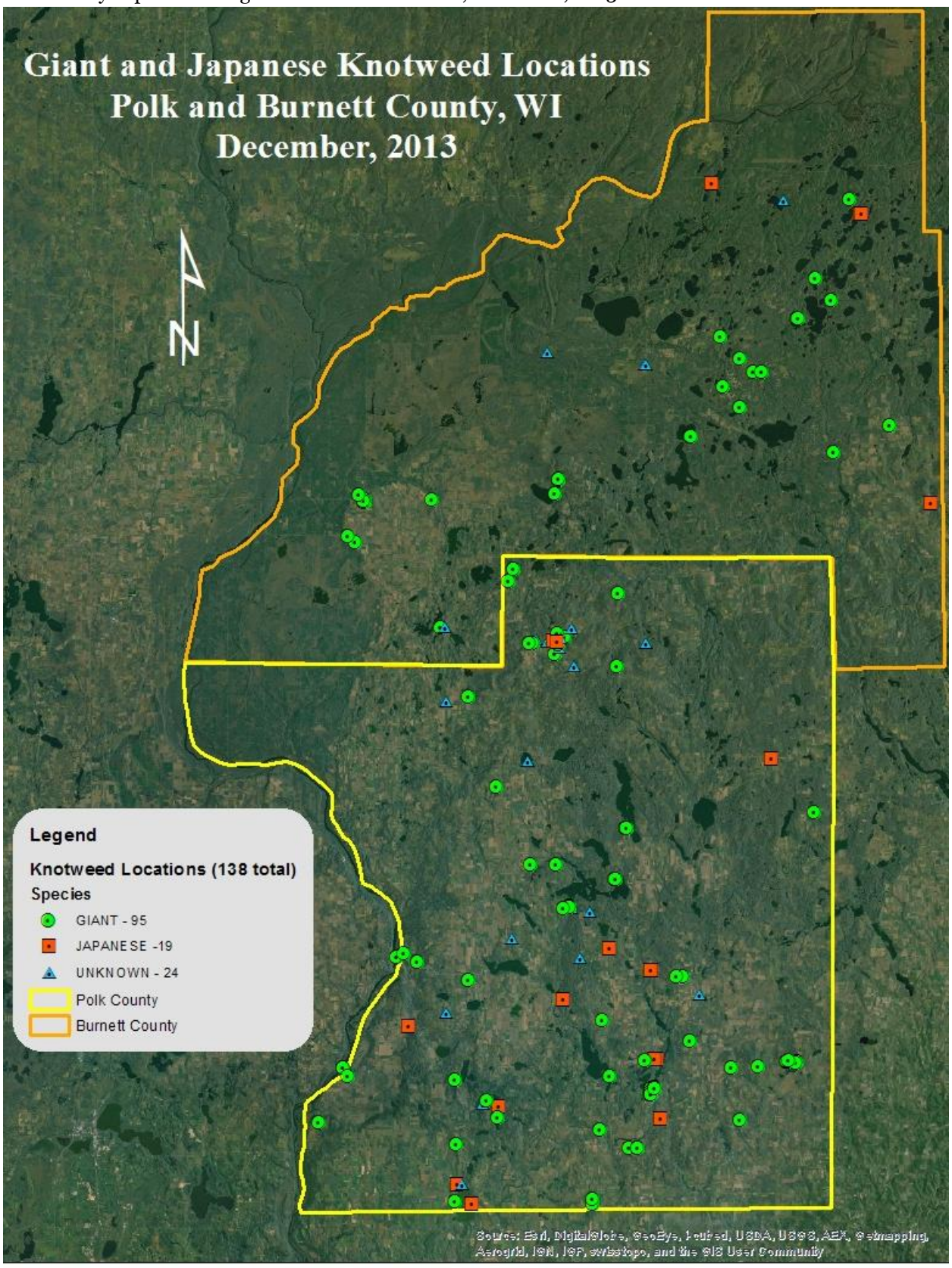
Since knotweed was sold as an ornamental it was thought that cultivars would not produce viable seed. However, as time passed, imports from many sources have likely introduced knotweed colonies of the opposite sex, making germination by seed a likely source for reproduction. In 2011, seed collected from a Polk County knotweed stand were analyzed by UW-Madison and found to be viable.

In addition to seed production, both species of knotweed can establish new clones from cut stems and root segments. Cut stems can develop roots at each node along the stem and a root segment as small as ¼ inch can develop into a new stand of knotweed.

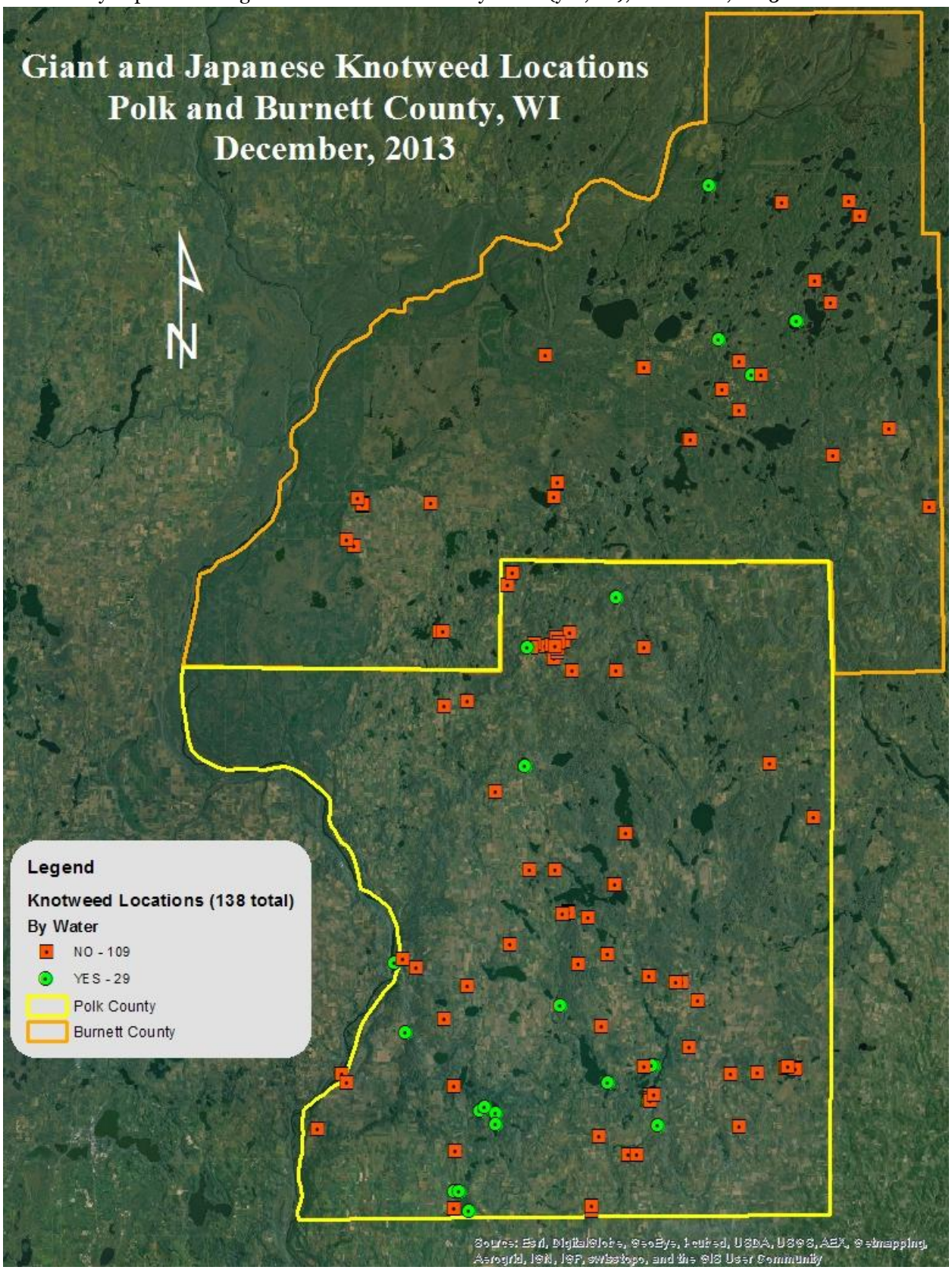
Knotweed is rhizominous, producing horizontal growing roots that can extend 60 ft from the parent colony. Rhizomes are responsible for colony expansion, making this species especially difficult to control.

Japanese and giant knotweed were first discovered in Polk County in 2009. As of 2013, knotweed has been documented at 93 sites in Polk County. In 2012 and 2013 knotweed control measures were conducted by LWRD under an early detection and response grant. The report for this grant can be located in the Appendix files for this report.

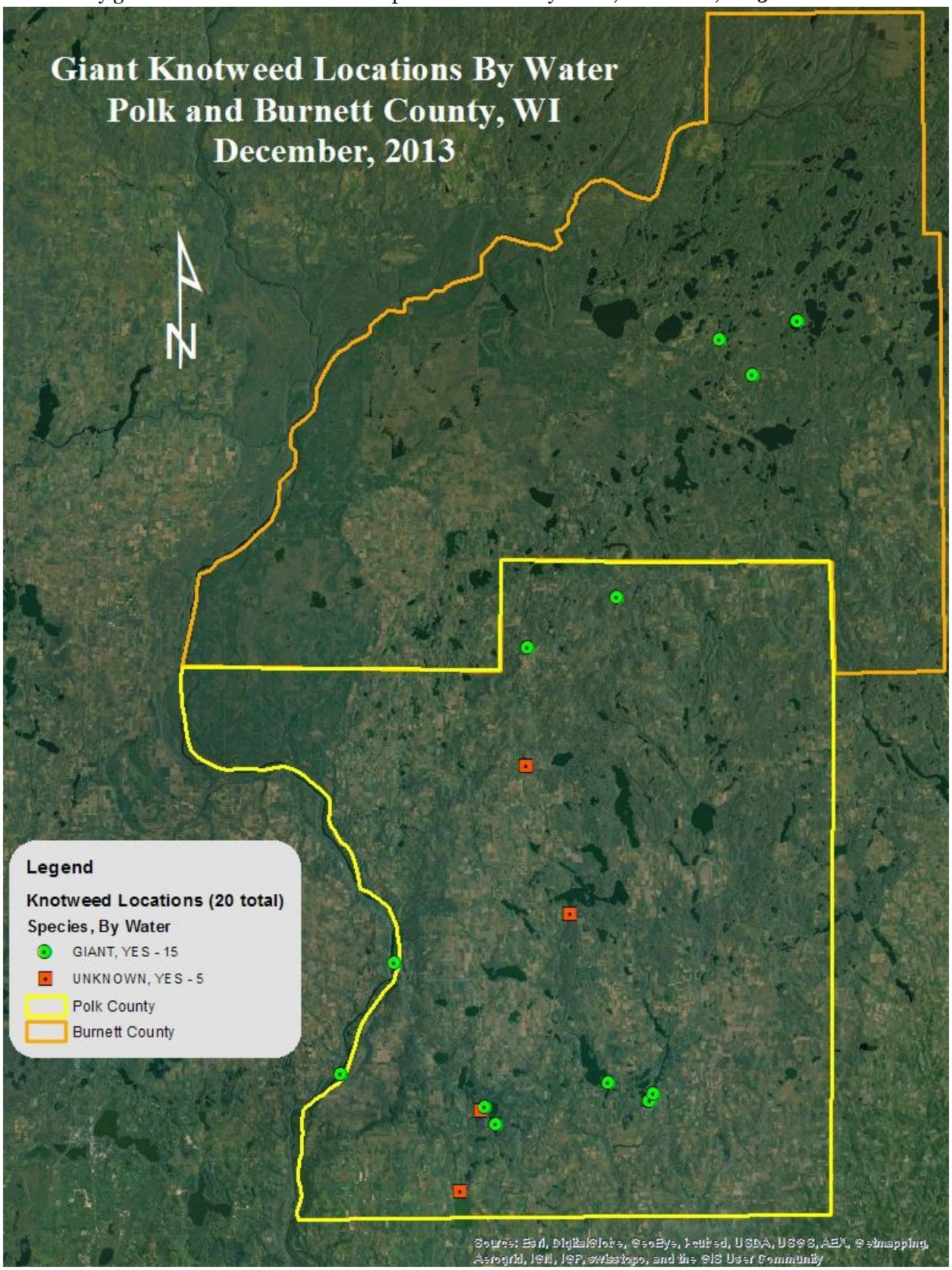
Polk County Japanese and giant knotweed locations, December, 2013.



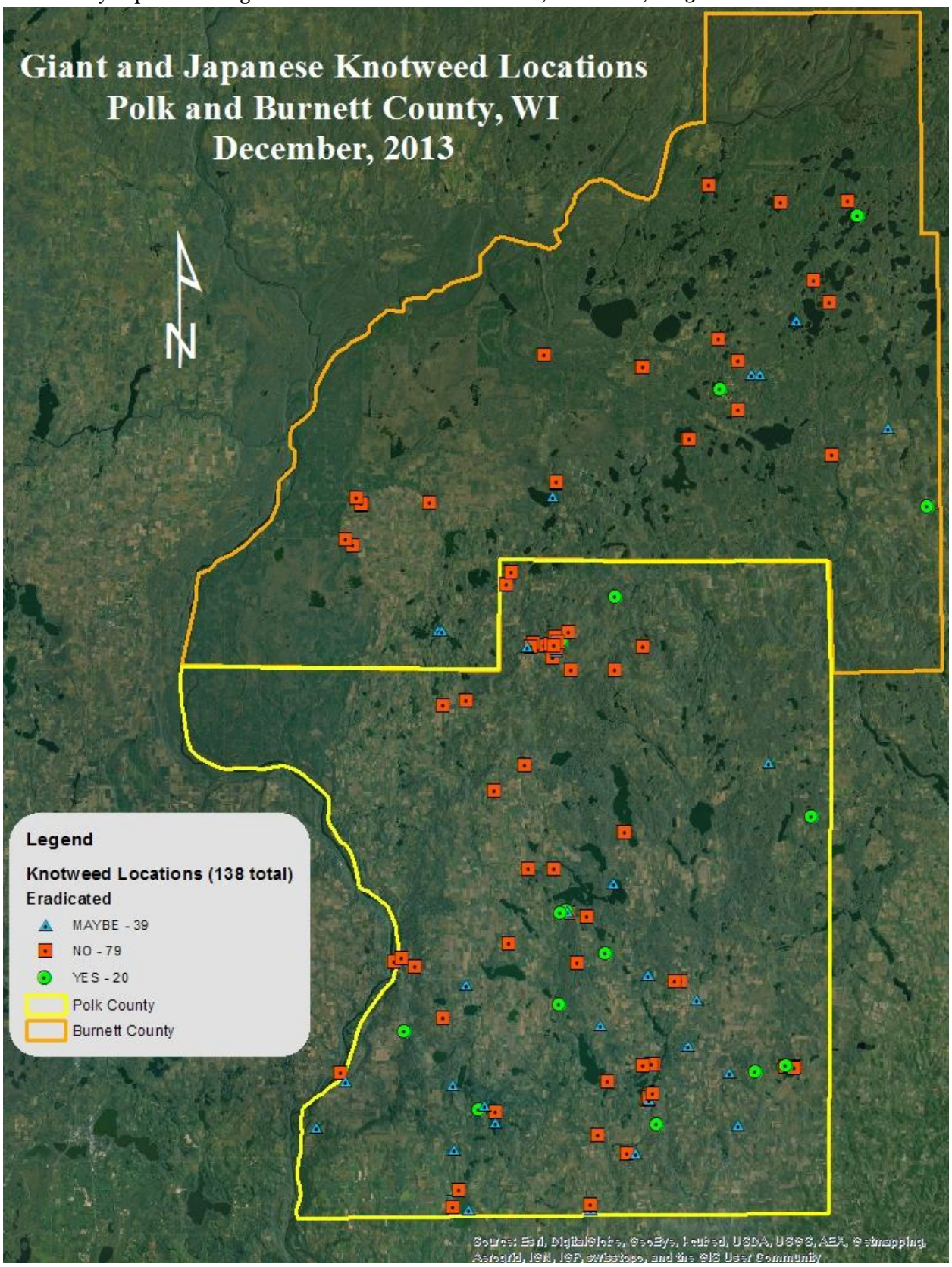
Polk County Japanese and giant knotweed locations by water (yes, no), December, 2013.



Polk County giant knotweed and unknown species locations by water, December, 2013.



Polk County Japanese and giant knotweed eradication status, December, 2013.



Zebra Mussels

Zebra mussels are aquatic invasive mussels with a D-shaped shell exhibiting alternating black and white stripes. Since they are able to attach to hard surfaces, zebra mussels can clog water intakes and damage equipment such as boat motors. When water bodies are infested with zebra mussels their shorelines become littered with sharp shells, impeding human recreational opportunities. Additionally, zebra mussels damage ecosystems by harming fisheries and smothering native mussels, snails, and crayfish.

Zebra mussels arrived in the Great Lakes in the late 1980's from contaminated ballast water. Since that time they have expanded in range via the Mississippi River. Zebra mussels have not been found in Polk County; however, in 2010 they were discovered in Bass Lake in St. Croix County.

The following lakes in the Horse Creek watershed were monitored for adult zebra mussels in 2012 and 2013 due to their proximity to Bass Lake: Big/Round/Church Pine Lakes, Lotus Lake, Paulsen Lake, and Pine Lake.

Zebra mussels, Bass Lake, St. Croix County, 2010.

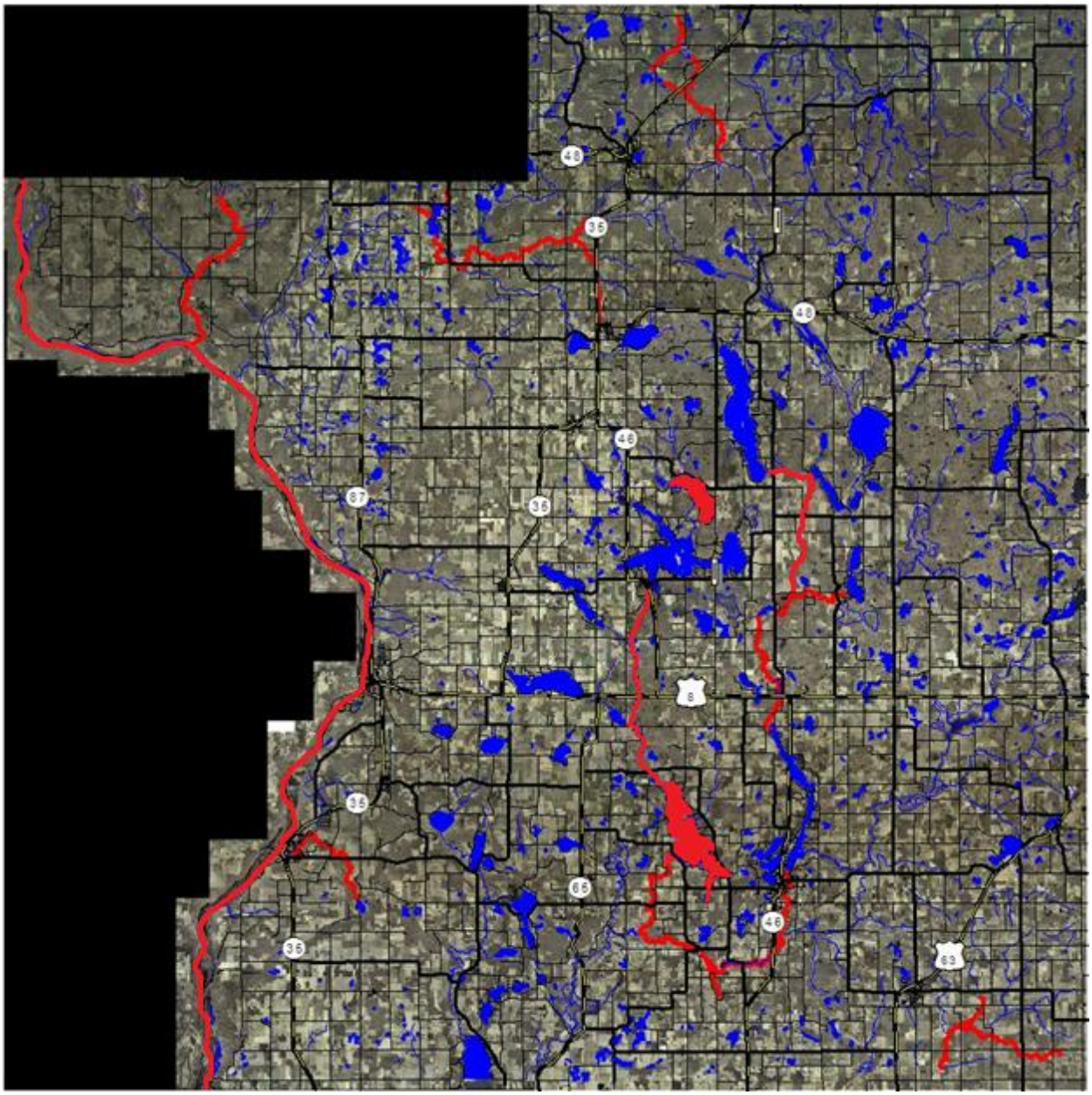
Rusty Crayfish

Rusty crayfish are invasive crustaceans that can have profound impacts on lakes, rivers, and streams. They are more aggressive than native crayfish and are better able to avoid predation than native crayfish. Rusty crayfish can also harm native fish populations by eating their eggs and young.

In August 2012 LWRD assisted in the positive identification of rusty crayfish brought in by a volunteer from Fox Creek.

Photo credit: WDNR

Rusty crayfish have been documented on 10 Polk County waterbodies as of December, 2013 including: Apple River, Balsam Branch, Fox Creek, Half Moon Lake, Osceola Creek, St. Croix River, Trade River, Wapogasset Lake, Willow River, and Wood River.



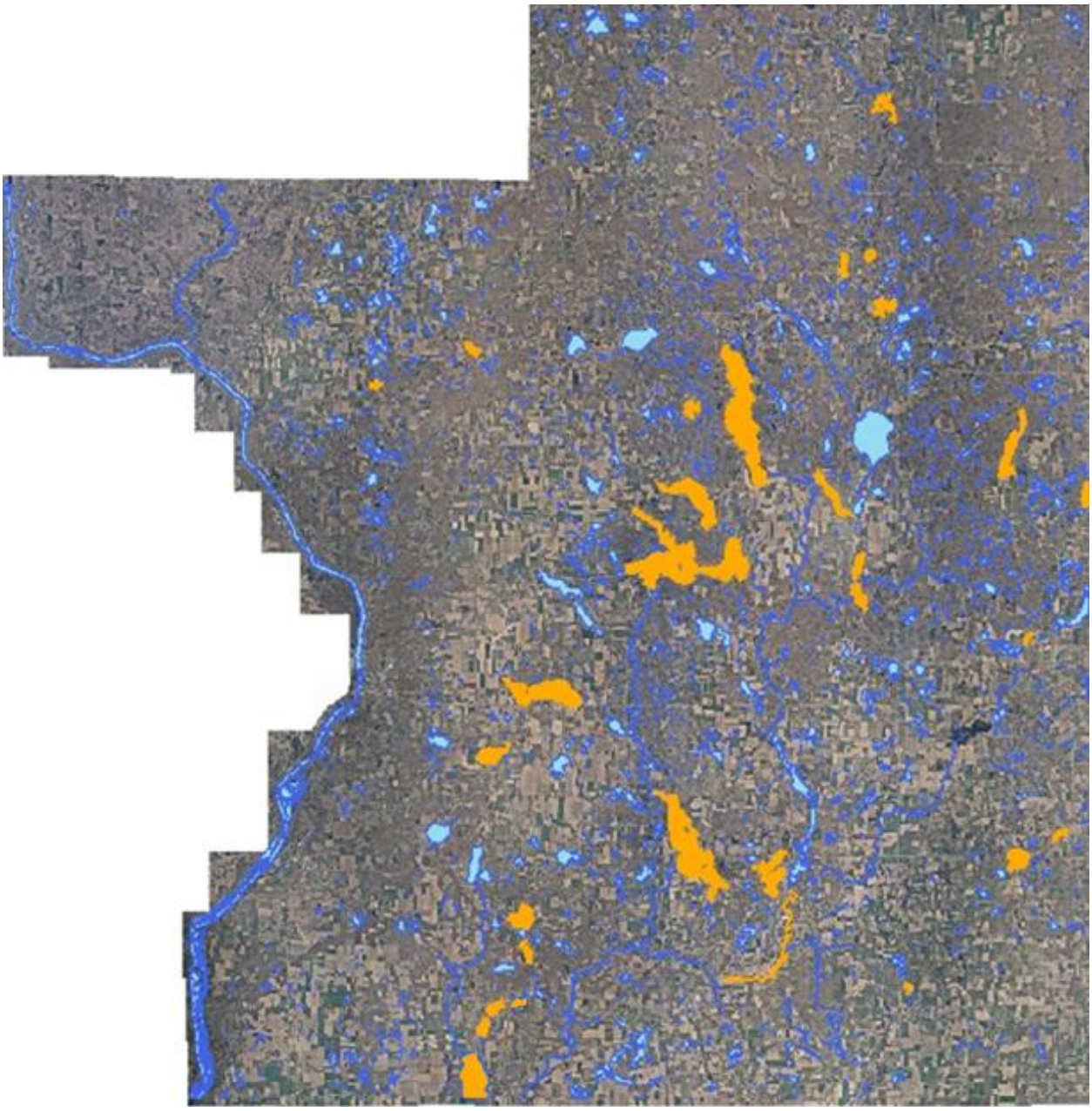
Chinese Mystery Snail

Chinese mystery snails were imported to the west coast in the late 1800's as a food source for the Asian market and have spread via aquarium release and other accidental and intentional introductions. When introduced to a new water body, the Chinese mystery snail alters the ecosystem composition, structure, and function by competing with native snails for food and space.

Populations of Chinese mystery snails are now established in many Northern Wisconsin lakes. At this time Chinese mystery snails have been documented in 35 waterbodies in Polk County.

Sand Lake, 2013.

Chinese mystery snails have been documented on 35 Polk County waterbodies as of December, 2013 including: Antler Lake, Apple River, Balsam Lake, Bear Trap Lake, Big Blake Lake, Big Lake, Black Brook Flowage, Bone Lake, Camelia Lake, Cedar Lake, Church Pine Lake, Clam Falls Flowage, Clear Lake, Deer Lake, Half Moon Lake, Horseshoe Lake, Lower Pine Lake, Magnor Lake, McKenzie Lake, Middle Pine Lake, North Pipe Lake, North Twin Lake, Pike Lake, Pine Lake, Pipe Lake, Sand Lake, Sandhill Lake, Silver Lake, South Twin Lake, Staples Lake, Swede Lake, Wapogasset Lake, Ward Lake, White Ash Lake, and North White Ash Lake.



Banded Mystery Snails

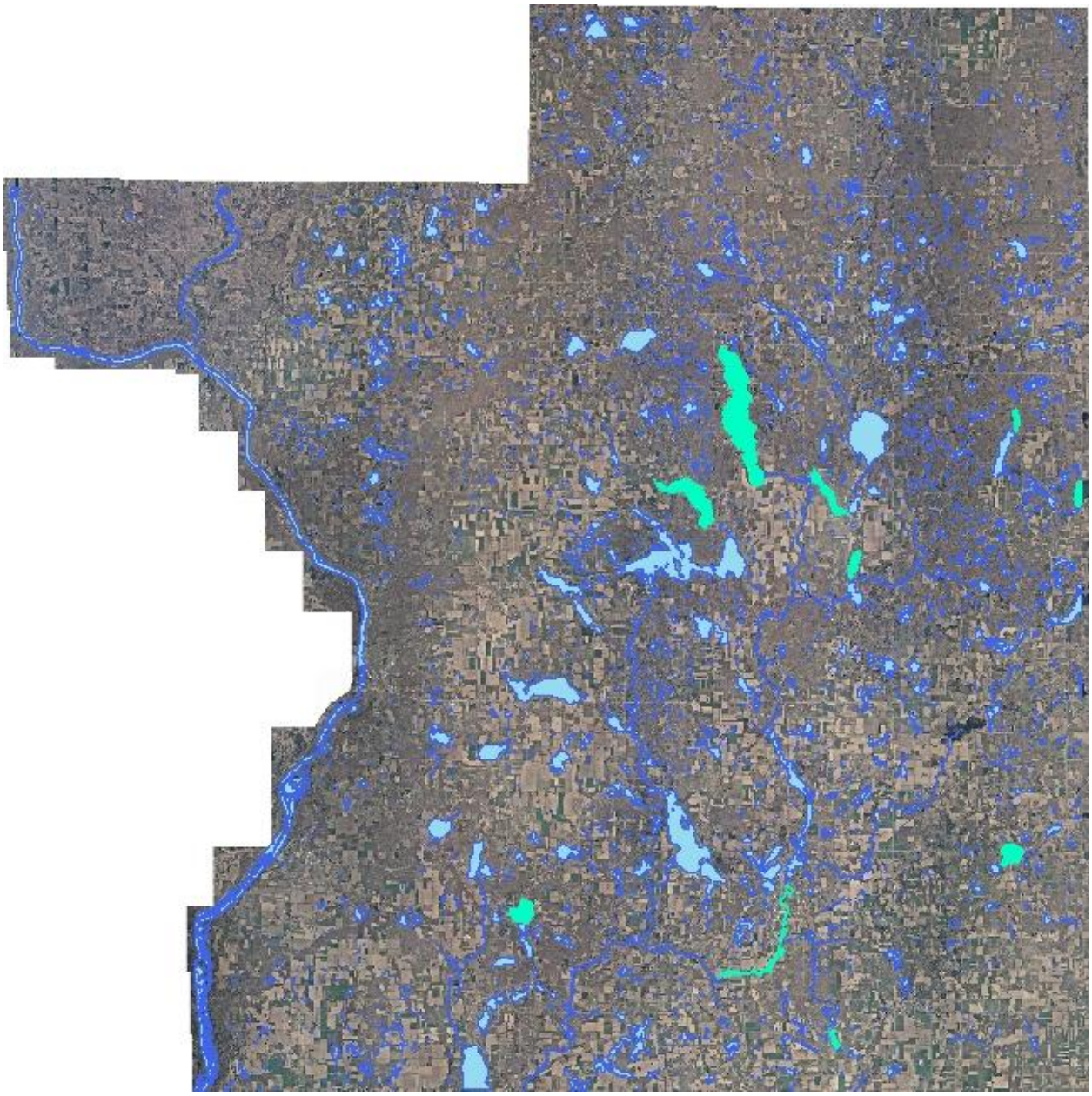
Banded mystery snails are native to the southeastern United States, being found primarily in the Mississippi River System up to Illinois. This invasive snail species is popular in the aquarium trade which likely explains it's presence outside its native range.

Besides causing aesthetic problems, banded mystery snails can cause mortality of largemouth bass embryos if nests are invaded.

The banded mystery snail is easily distinguished by the presence of reddish bands which are arranged parallel to the whorl of the shell.

Banded mystery snails were first documented in Polk County in 2003 in Half Moon Lake. Although their spread had continued, they are still much less common in Polk County as compared with the Chinese mystery snail and have been documented on only 10 Polk County waterbodies as of December, 2013.

Banded mystery snails have been documented on 10 Polk County waterbodies as of December, 2013 including: Big Blake Lake, Big Lake, Black Brook Flowage, Bone Lake (2454400), Bone Lake (2628100), Half Moon Lake, Magnor Lake, North Pipe Lake, North White Ash Lake, and Staples Lake.



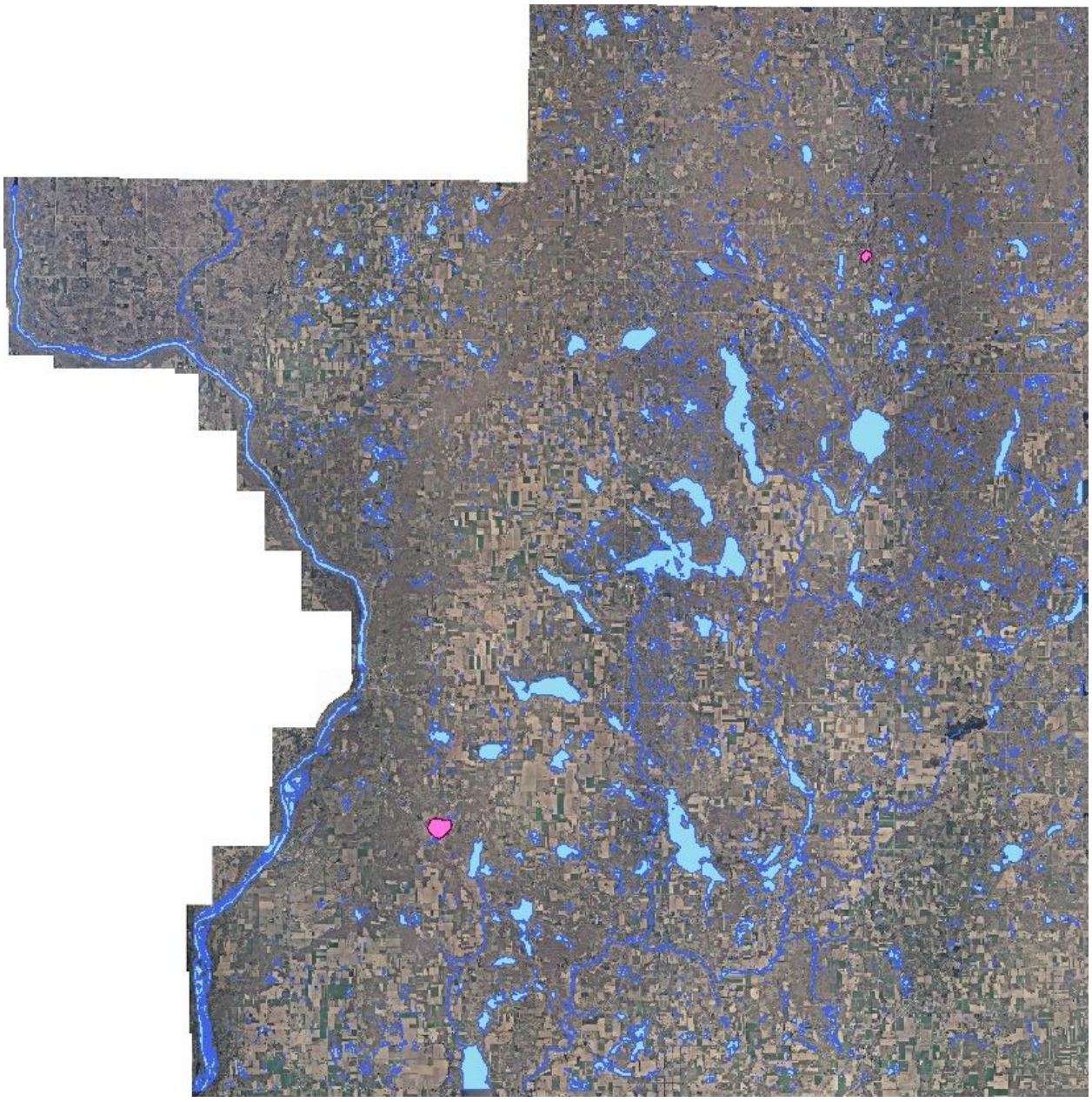
Phragmites

Phragmites is a wetland grass that invades moist habitats, although it can tolerate dry conditions. It can grow from 3-20 feet in height and has dull, rigid, hollow stems.

Phragmites has only been documented on two Polk County lakes: Lotus Lake and McKenzie Lake.

A comprehensive effort to inventory phragmites has never occurred in Polk County.

Phragmites has been documented on 2 Polk County lakes as of December, 2013 including: Lotus Lake, McKenzie Lake.



Clean Boats, Clean Waters

The Clean Boats, Clean Waters program is an opportunity for citizens to conduct a boater education campaign in their community. Through Clean Boats, Clean Waters, volunteers are trained to organize and conduct watercraft inspections that help stop the movement of aquatic invasive species across the state.

Polk County LWRD provided Clean Boats Clean Waters training for two lake organizations in 2012 and three lake organizations in 2013.

Balsam Lake, April 24th, 2012: 29 participants

Horseshoe Lake, June 9th, 2012: 36 participants

Balsam Lake and Long Lake, April 16th, 2013: 19 participants

Church Pine, Round, and Big Lakes, May 11th, 2013: 4 participants

Balsam Lake and Long Lake CBCW Training, 2013.

Additionally, LWRD presented an overview of the Clean Boats Clean Waters program at the Big Round Lake District Annual Meeting on June 23rd, 2012. This presentation included a copy of the data collection sheet for each attendee.

LWRD also provided answers about the Clean Boats, Clean Waters program to lake organizations interested in starting a Clean Boats, Clean Waters program including the Apple River Flowage, Amery Lakes, Big Butternut Lake, Paulsen Lake, and Wild Goose Lake.

Balsam Lake CBCW Training, 2012.

Clean Boats, Clean Waters Story Hour

In 2012, LWRD implemented the Clean Boats, Clean Waters Story Hour developed by the WDNR for nine groups across Polk County.

- ✓ Balsam Lake Library, June 13th: 10 participants
- ✓ Dresser Library, June 25th: 18 participants
- ✓ Clear Lake Library, June 27th: 11 participants
- ✓ Clear Lake Library, June 28th: 13 participants
- ✓ Family Camp at West Denmark Church, July 3rd: 13 participants
- ✓ Milltown Library, July 10th: 23 participants
- ✓ Amery Library, July 25th: 90+ participants
- ✓ Osceola Library, July 25th: 5 participants
- ✓ St. Croix Falls Library, August 1st: 15 participants

Dresser Library CBCW Story Hour, 2012.

Landing Blitz

In 2013, LWRD assisted in organizing the Landing Blitz by providing information to all lake organizations in the County and gathering participant information. Nineteen Polk County Lakes participated in the 2013 Landing Blitz including:

- ✓ The Apple River Flowage
- ✓ Pike Lake
- ✓ North Twin Lake
- ✓ South Twin Lake
- ✓ Big Round Lake
- ✓ Bone Lake
- ✓ Balsam Lake
- ✓ Big Butternut Lake
- ✓ Pipe Lake
- ✓ North Pipe Lake
- ✓ Half Moon Lake
- ✓ North White Ash Lake
- ✓ White Ash Lake
- ✓ Church Pine Lake
- ✓ Big Lake
- ✓ Lake Wapogasset
- ✓ Bear Trap Lake
- ✓ Big Blake Lake
- ✓ Paulsen Lake

LWRD wrote a press release regarding the nineteen Polk County lakes participating in the Landing Blitz. The article was published in all local papers including: the Leader, the Ledger, the Osceola Sun, and the Amery Free Press. LWRD also served as a central location for picking up the free Landing Blitz towels.

Project RED (Riverine Early Detectors)

In 2013 LWRD partnered with the St. Croix River Association, the National Park Service, the River Alliance, and the Wisconsin Department of Natural Resources to offer two Project RED trainings.

The first training was held on July 16th, 2013 and was attended by 12 volunteers. The second training occurred on July 27th, 2013 and was attended by 9 volunteers. Although both trainings were scheduled to include a paddle, the second group decided to forgo the paddle due to severe weather.

In total, 5 volunteers monitored a total of 35 times in 2013. Data that has been verified has been entered into SWIMS.

Project RED, 2013.

Education and Outreach

Polk County LWRD delivered AIS education and outreach at numerous events and meetings throughout Polk County for a variety of audiences.

- ✓ Earth Day at the Recycling Center (4th and 5th graders County-wide), April 20th, 2012
- ✓ Clayton School 3rd grade field trip, May 29th, 2012
- ✓ Loveless Lake Association, May 2012 Newsletter
- ✓ NW WI Lakes Conference (display board), June 21st, 2012
- ✓ White Ash Lakes District Fair, June 23rd, 2012
- ✓ Wild Goose Lake Annual Meeting, July 14th, 2012
- ✓ 2012 Polk County Fair Education Tent: July 26th-29th, 2012
- ✓ Loveless Lake, August Newsletter 2012
- ✓ Bone Lake Annual Meeting, August 11th, 2012 (display board and specimens)
- ✓ Hunters Night Out, August 29th, 2012
- ✓ Amery 4th grade presentation, September 27th, 2012
- ✓ Boy Scouts Invasive Species Merit Badge Pilot, October 6th, 2012
- ✓ Mr. Y's St. Croix Falls 5th grade camp, October 9th, 2012
- ✓ Amery Lakes, 2012 newsletter
- ✓ Osceola 4th grade presentation, March 22nd, 2013
- ✓ Luck High School Conservation Class presentation, May 9th, 2013
- ✓ Amery Free Press AIS article, May 28th, 2013
- ✓ Clayton School 3rd grade field trip, June 3rd, 2013
- ✓ NW WI Lakes Conference (display board), June 21st, 2013
- ✓ Big Round Annual Meeting, June 22nd, 2013
- ✓ Family Camp, July 1st, 2013
- ✓ 2013 Polk County Fair Education Tent, July 25th-28th, 2013
- ✓ Ward Lake AIS plant training, August 9th, 2013
- ✓ LCC Committee presentation, August 14th, 2013
- ✓ County Board presentation, September 17th, 2013
- ✓ Clayton High School presentation, October 11th, 2013
- ✓ Amery School 5th grade presentation, October 18th, 2013
- ✓ Amery Lakes, 2013 newsletter

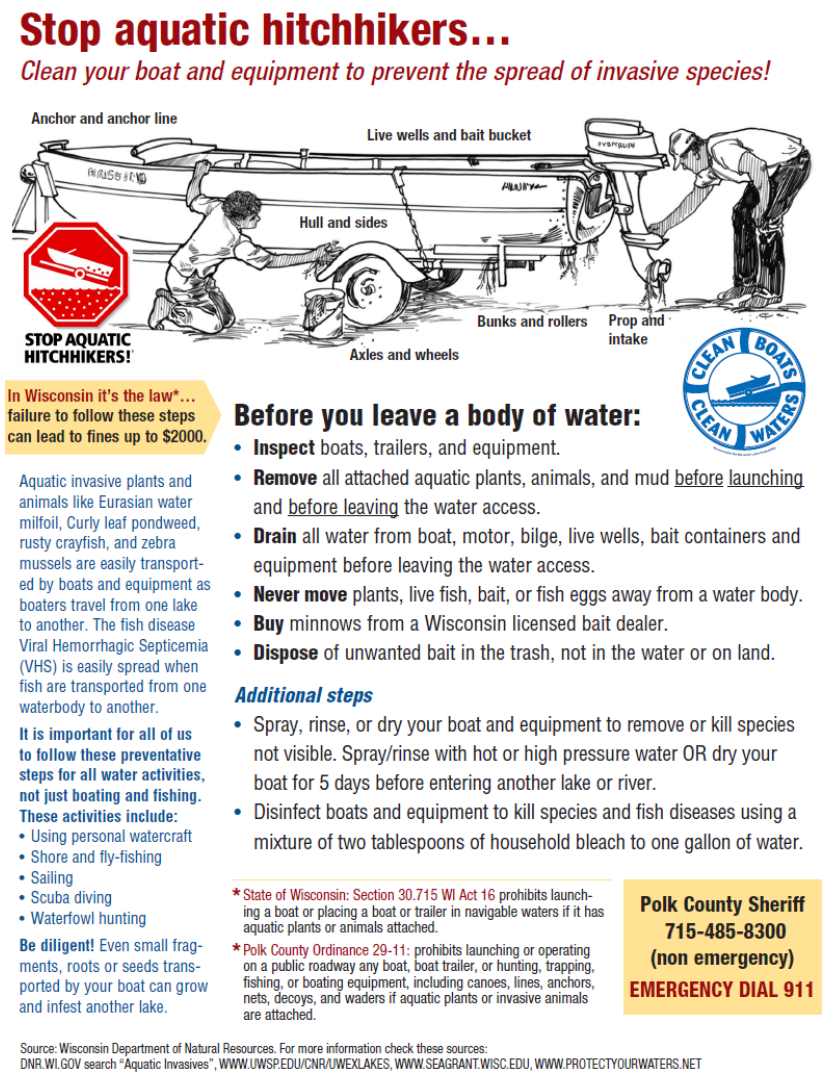
Lake Maps

Polk County LWRD, in collaboration with the Polk County Association of Lakes and Rivers, produced and printed lake/AIS flyers for seven lake organizations. The two sided flyers were printed in full color on waterproof paper, 8.5 x 11 inches. One side of the flyer has a contour bathymetric map of the lake with relevant information such as maximum depth, acres, and species of fish present and the other side of the flyer has AIS prevention information, Clean Boats, Clean Waters information, and emergency phone numbers.

Although the grant paid for the professional design work of the flyers, lake organizations were required to pay for individual printing costs.

Participating lakes included:

- ✓ Pipe and North Pipe Lakes
- ✓ Apple River Flowage
- ✓ Big Butternut Lake
- ✓ Bone Lake
- ✓ Big, Round, and Church Pine Lakes
- ✓ Big Blake Lake
- ✓ Balsam Lake



Lake Map Flyer.

AIS Signs

In 2012 and 2013 an extensive effort was made to install the new WDNR AIS signs at Polk County Boat Landings. Whenever possible, outdated AIS signage was removed. LWRD provided signs to numerous lake organizations. Lakes where volunteers installed signs provided by LWRD are indicated with an * below.

Signs were installed at the following lakes (multiple landings are indicated in parenthesis):

- ✓ Diamond Lake
- ✓ Godfrey Lake
- ✓ Somers Lake
- ✓ Clam Falls Flowage
- ✓ Long Trade Lake
- ✓ Coon Lake
- ✓ Herby Lake
- ✓ Little Mirror Lake
- ✓ Sandhill Lake (2)
- ✓ Big Twin Lake
- ✓ Little Butternut Lake
- ✓ Big Butternut Lake
- ✓ Rice Lake
- ✓ Half Moon Lake (2) *
- ✓ Bone Lake
- ✓ Big Round Lake *
- ✓ Pipe Lake *
- ✓ Big Blake Lake (2) *
- ✓ Little Blake Lake
- ✓ Balsam Lake (4) *
- ✓ Long Lake (Johnston) *
- ✓ Long Lake (Centuria) (2)
- ✓ Loveless Lake
- ✓ Wild Goose Lake *
- ✓ White Ash Lake (3) *
- ✓ North White Ash Lake *
- ✓ Horseshoe Lake *
- ✓ Lake Wapogasset (3)
- ✓ Deer Lake
- ✓ Sand Lake
- ✓ Bridget Lake
- ✓ Apple River Flowage (2) *
- ✓ Magnor Lake
- ✓ Camelia lake
- ✓ Clear Lake
- ✓ Pike Lake
- ✓ North Twin Lake
- ✓ South Twin lake
- ✓ Pike Lake
- ✓ King Lake
- ✓ Black Brook Flowage
- ✓ Lotus Lake
- ✓ Horse Lake
- ✓ Dwight Lake
- ✓ Church Pine Lake *
- ✓ Paulsen Lake *
- ✓ Swede Lake
- ✓ Lower Pine Lake
- ✓ Cedar Lake

AIS Billboard

In August 2012 an AIS billboard was installed along HWY 87 north of the Lions Park in St. Croix Falls. The billboard was designed by the Wisconsin Lakes Partnership. The billboard serves as a reminder that Wisconsin state law requires everyone to inspect boats, trailers, and equipment; remove all attached aquatic plants, animals, and mud before launching / leaving the water access; and to drain water from all equipment before leaving the water access.

Additionally, in 2013 LWRD partnered with the Bone Lake Management District and Wildlife Forever to locate billboard space along HWY 8 near the Wisconsin/Minnesota boarder. Unfortunately, there were no available billboard spaces for 2013. However, banners were purchased through this partnerships for the 2013 season (banners were not purchased by LWRD).

AIS billboard, Hwy 87.

Protect Wisconsin Waters/It's the Law Media Campaign

Whenever applicable, Polk County LWRD submitted news articles to promote the AIS educational message to local newspapers. Articles were published related to:

- ✓ Balsam Lake Clean Boats, Clean Waters Training
- ✓ Horseshoe Lake Clean Boats, Clean Waters Training
- ✓ Balsam Lake Clean Boats, Clean Waters and AIS laws
- ✓ Purple Loosestrife Beetle Rearing Project with Luck Girl Scouts
- ✓ Osceola Clean Boats, Clean Waters Story Hour
- ✓ AIS Billboard
- ✓ Healthy Lakes
- ✓ Landing Blitz Participation by 19 Polk County Lakes
- ✓ Zebra Mussel Fall Detection

Additionally, LWRD was interviewed by the Leader regarding the early detection smart prevention protocol although an article was never published.

LWRD was also a featured guest on WPCA radio bi-weekly throughout the 2012 and 2013 year. Interviews were used as an opportunity to discuss AIS.

The Polk County LWRD also filmed and produced three videos related to invasive species. Film topics included identification and control of three aquatic invasive species:

- ✓ Eurasian water milfoil
- ✓ Japanese and giant knotweed
- ✓ Purple loosestrife

Films were posted to YouTube and are available for viewing at the Polk County Land and Water Resources Department website: www.co.polk.wi.us/landwater/videos.asp

Lastly, LWRD distributed Babe Winkelman AIS wallet size maps and the WDNR Stop Aquatic Hitchhikers brochures to area sporting goods and bait shops. Additionally, LWRD distributed the WDNR Stop Aquatic Hitchhikers brochures at area libraries, convenience stores, and coffee shops where display areas were available.

YouTube videos.

Augmented Enforcement

In 2012, Polk County LWRD partnered with the Polk County Sheriff's Department and planned to provide augmented enforcement of the Balsam Lake Boat Landing on the morning of Saturday, June 30th to coordinate with the 4th of July festivities during Balsam Lake's Freedom Festival. However, due to other priorities deputies were not able to provide augmented enforcement. A similar attempt was made to provide augmented enforcement in 2013. As another attempt to fulfill this grant requirement, LWRD contacted the Polk County Water Guard in regards to providing a presentation and decontamination unit for Polk County in 2013.