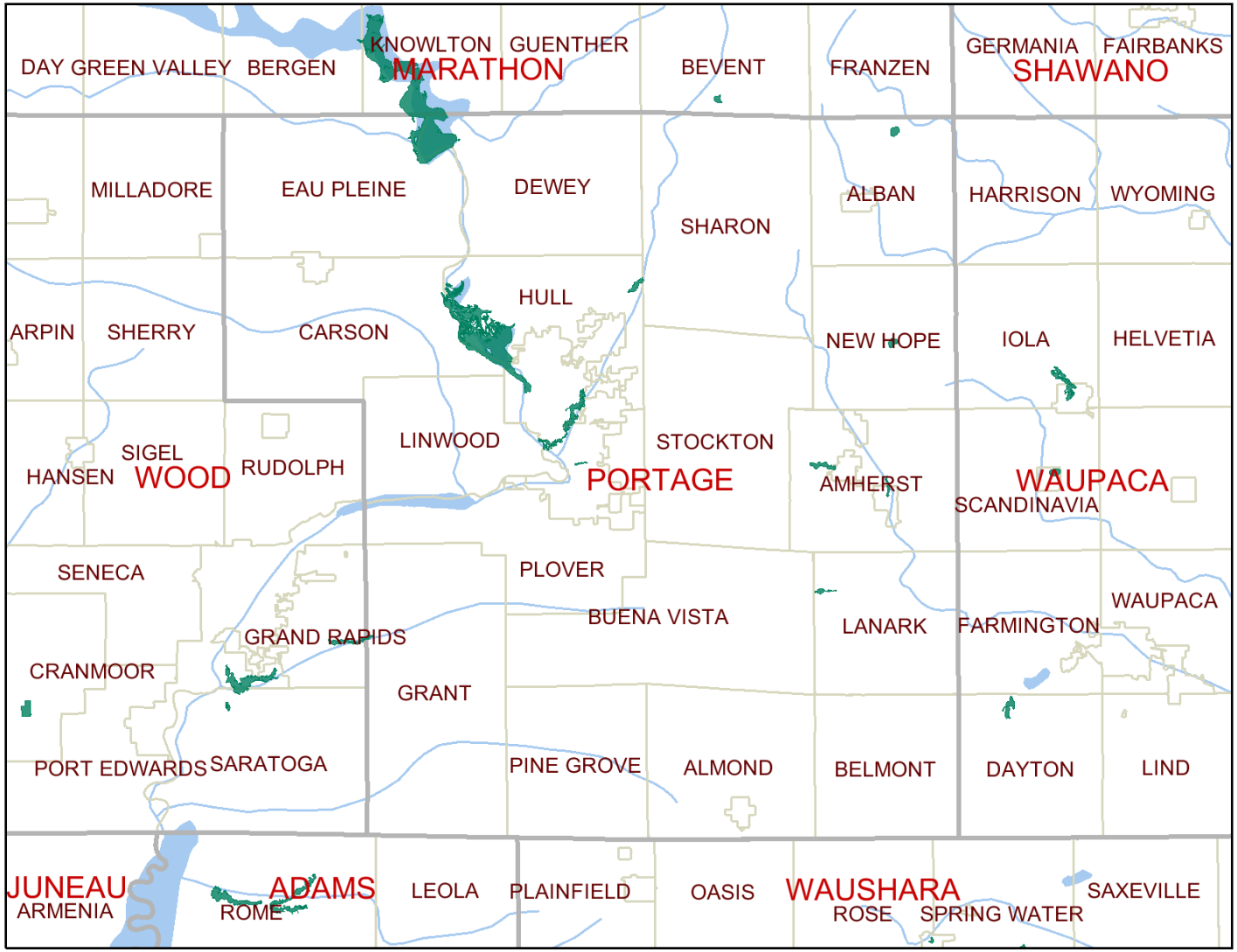
CLP in Portage County, Dec 2010



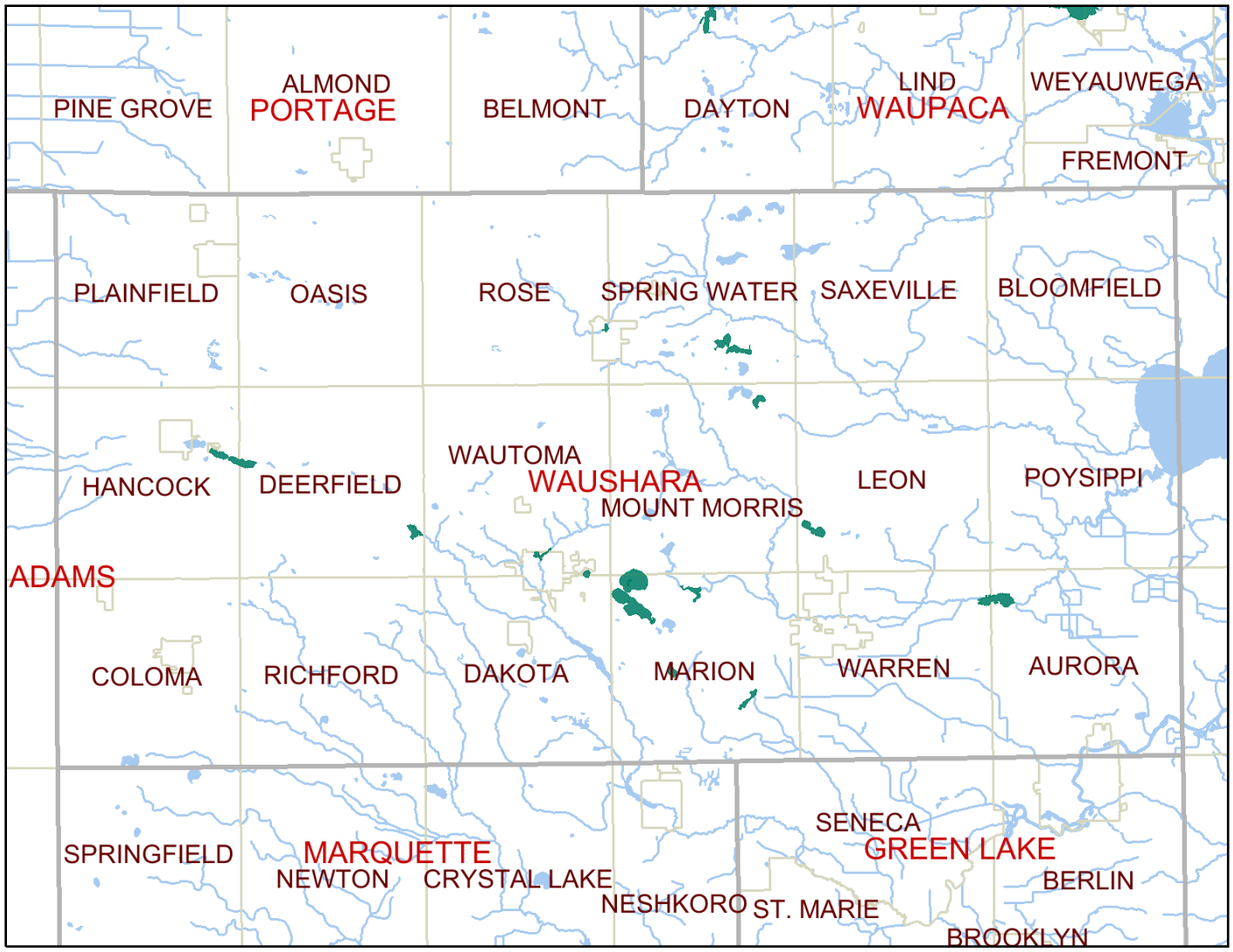
Legend

- Curly Leaf Pondweed Lines
- Curly Leaf Pondweed Areas
- 24K County Boundaries
- Civil Towns
- Civil Town
- 2M Open Water
- 2M Rivers and Streams

0 8 16 24 mi.

Scale: 1:446,081

CLP in Waushara County, Dec 2010



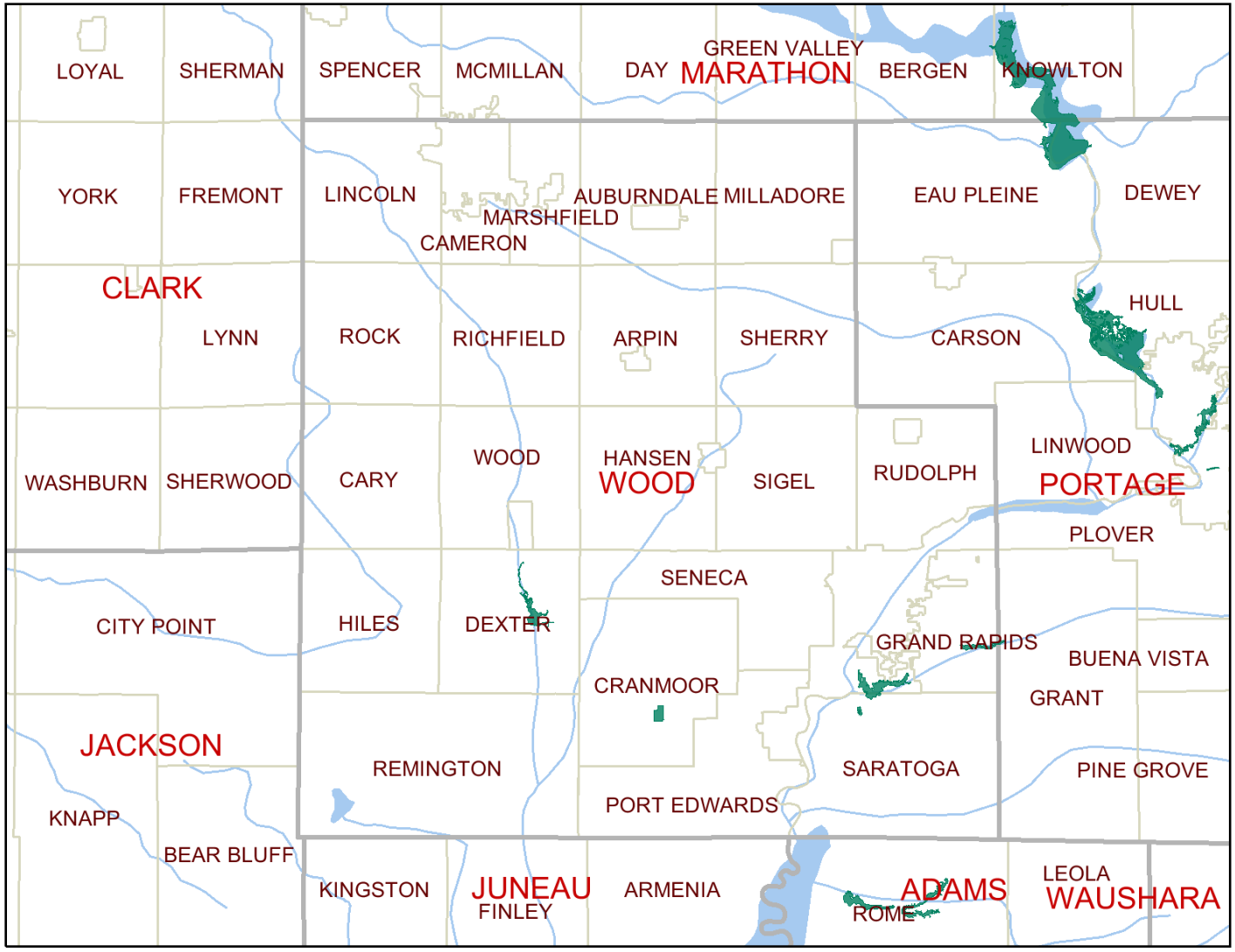
Legend

- Curly Leaf Pondweed Lines
- Curly Leaf Pondweed Areas
- 24K County Boundaries
- Civil Towns
- Civil Town
- 100K Open Water
- 100K Rivers and Streams

0 6 12 18 mi.

Scale: 1:334,561

CLP in Wood County, Dec 2010



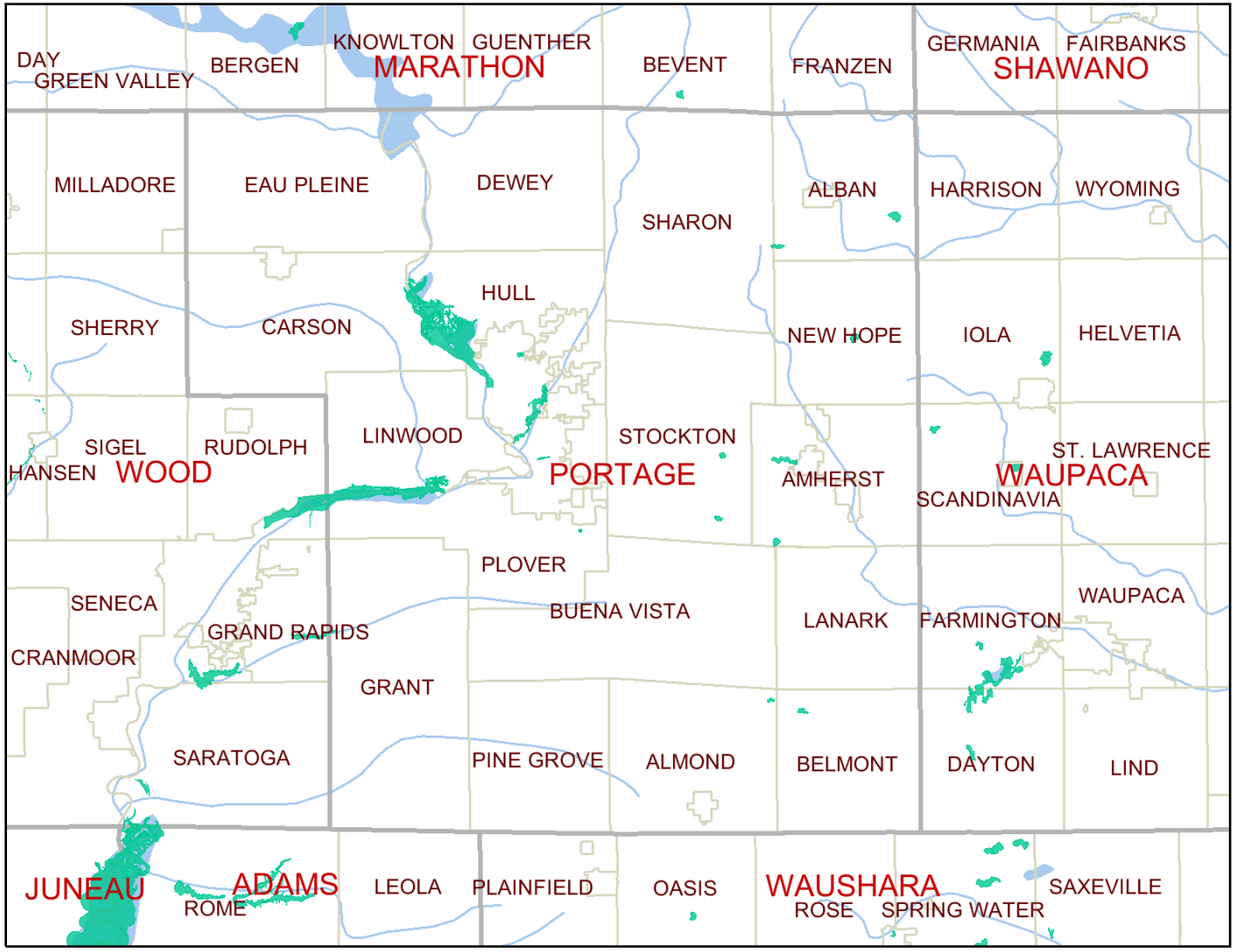
Legend

- Curly Leaf Pondweed Lines
- Curly Leaf Pondweed Areas
- 24K County Boundaries
- Civil Towns
- Civil Town
- 2M Open Water
- 2M Rivers and Streams

0 8 16 24 mi.

Scale: 1:446,081

EWM in Portage County, Dec 2010



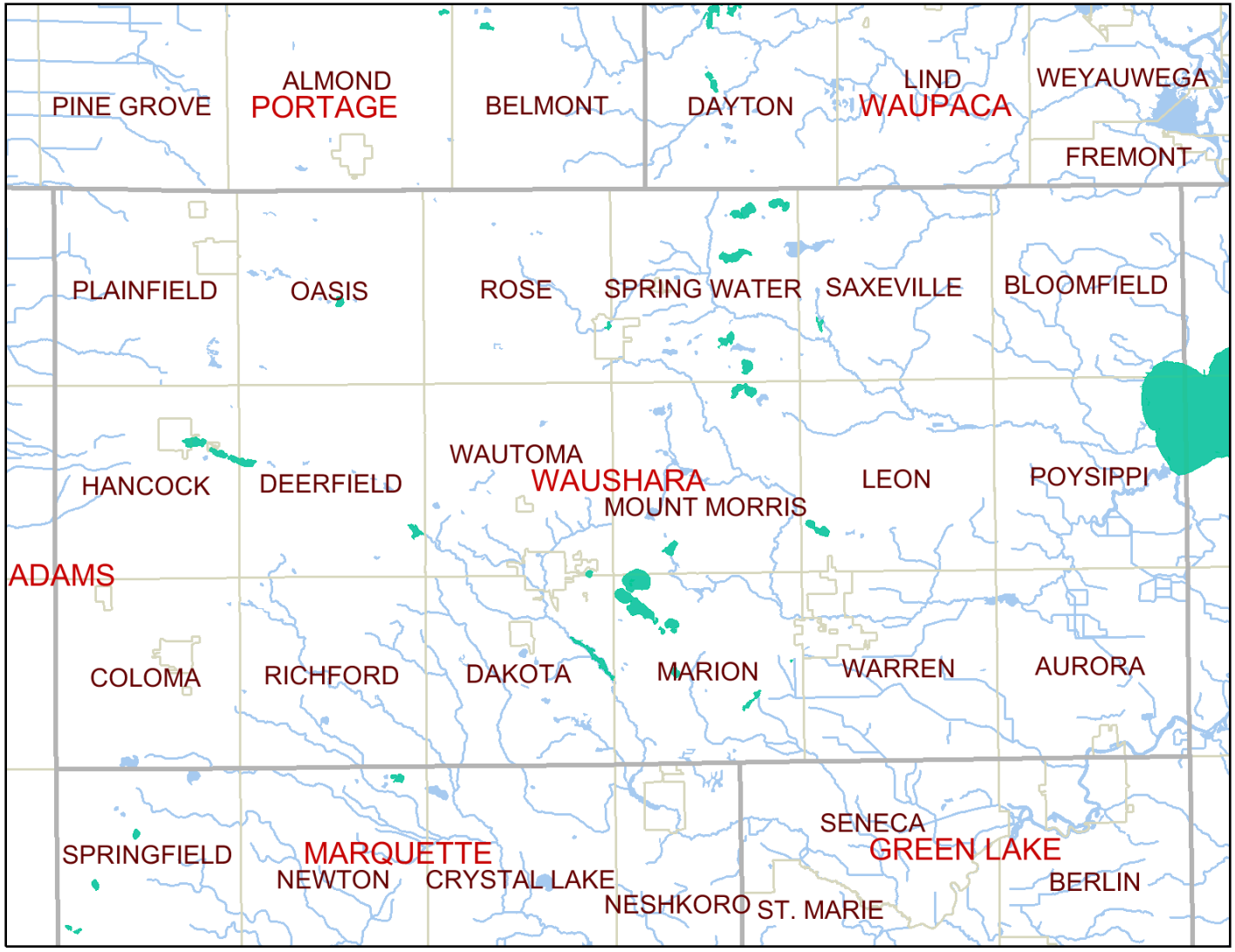
Legend

- Eurasian Milfoil Lines
- Eurasian Milfoil Area
- 24K County Boundaries
- Civil Towns
- Civil Town
- 2M Open Water
- 2M Rivers and Streams

0 8 16 24 mi.

Scale: 1:446,081

EWM in Waushara County, Dec 2010



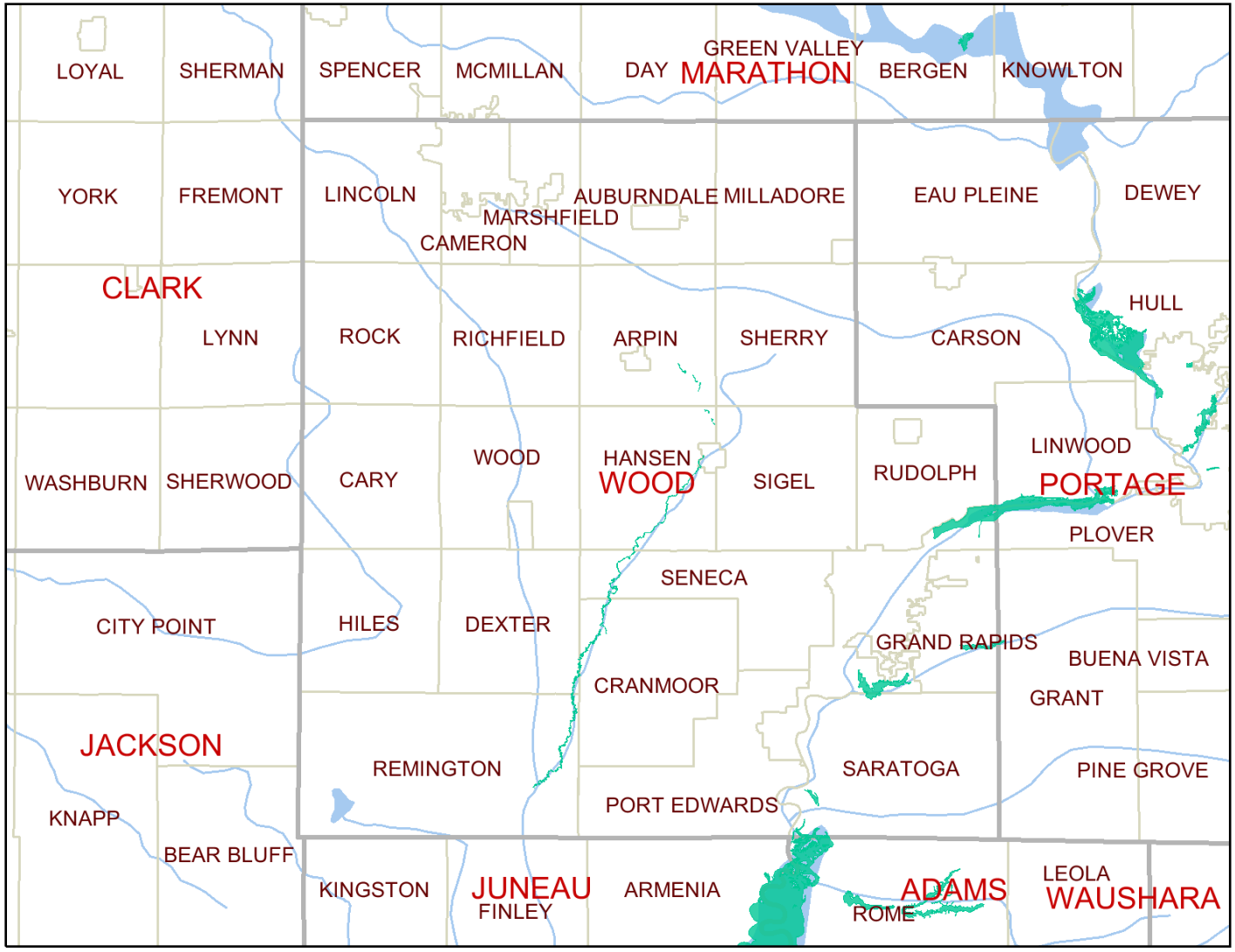
Legend

- Eurasian Milfoil Lines
- Eurasian Milfoil Area
- 24K County Boundaries
- Civil Towns
- Civil Town
- 100K Open Water
- 100K Rivers and Streams

0 6 12 18 mi.

Scale: 1:332,576

EWM in Wood County, Dec 2010



Legend

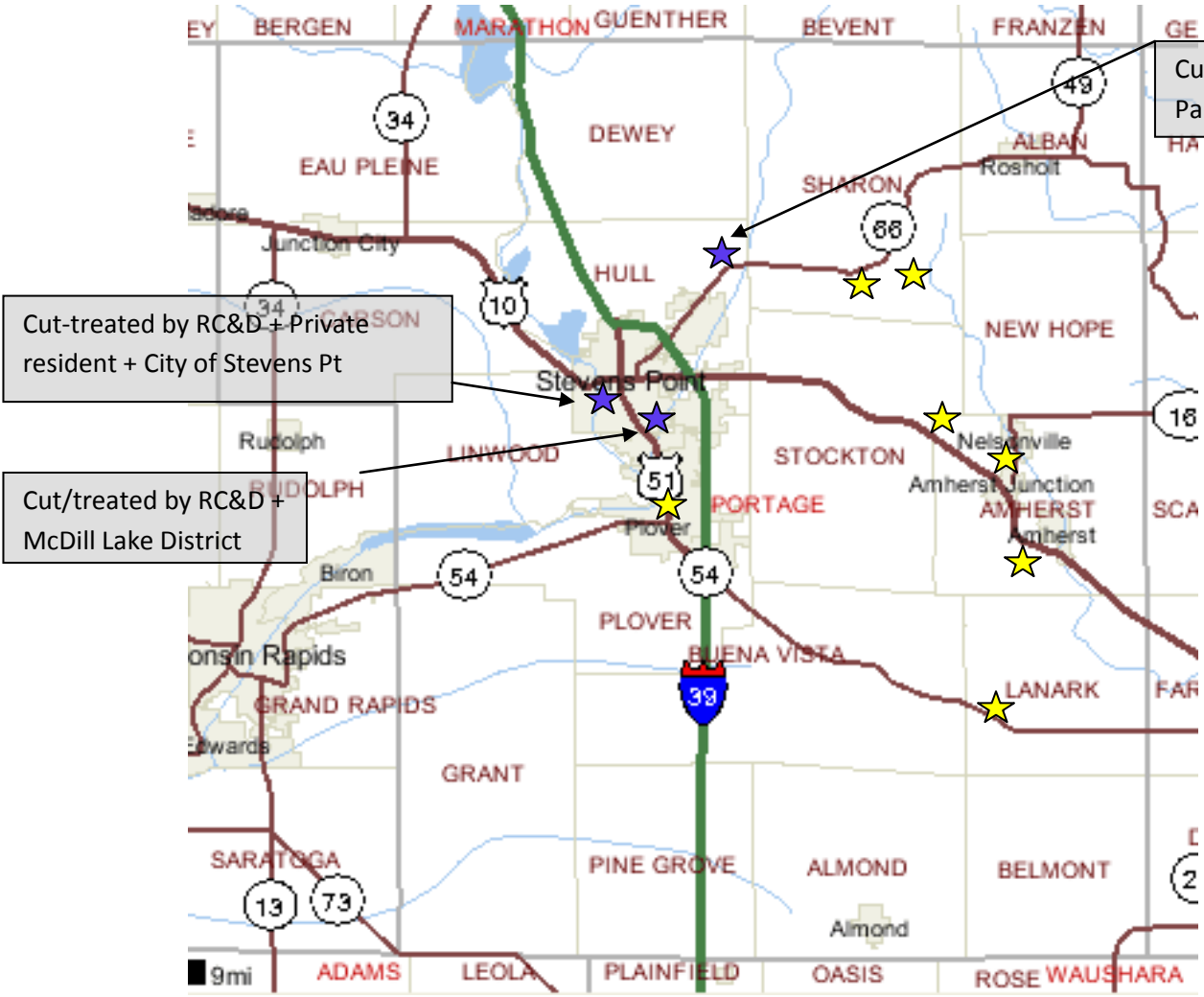
- Eurasian Milfoil Lines
- Eurasian Milfoil Area
- 24K County Boundaries
- Civil Towns
- Civil Town
- 2M Open Water
- 2M Rivers and Streams

0 8 16 24 mi.

Scale: 1:446,081

Japanese Knotweed (*Polygonum cuspidatum*) in Portage County

Contact: Paul Skawinski, AIS Coordinator, 715-343-6278 skawinsp@co.portage.wi.us

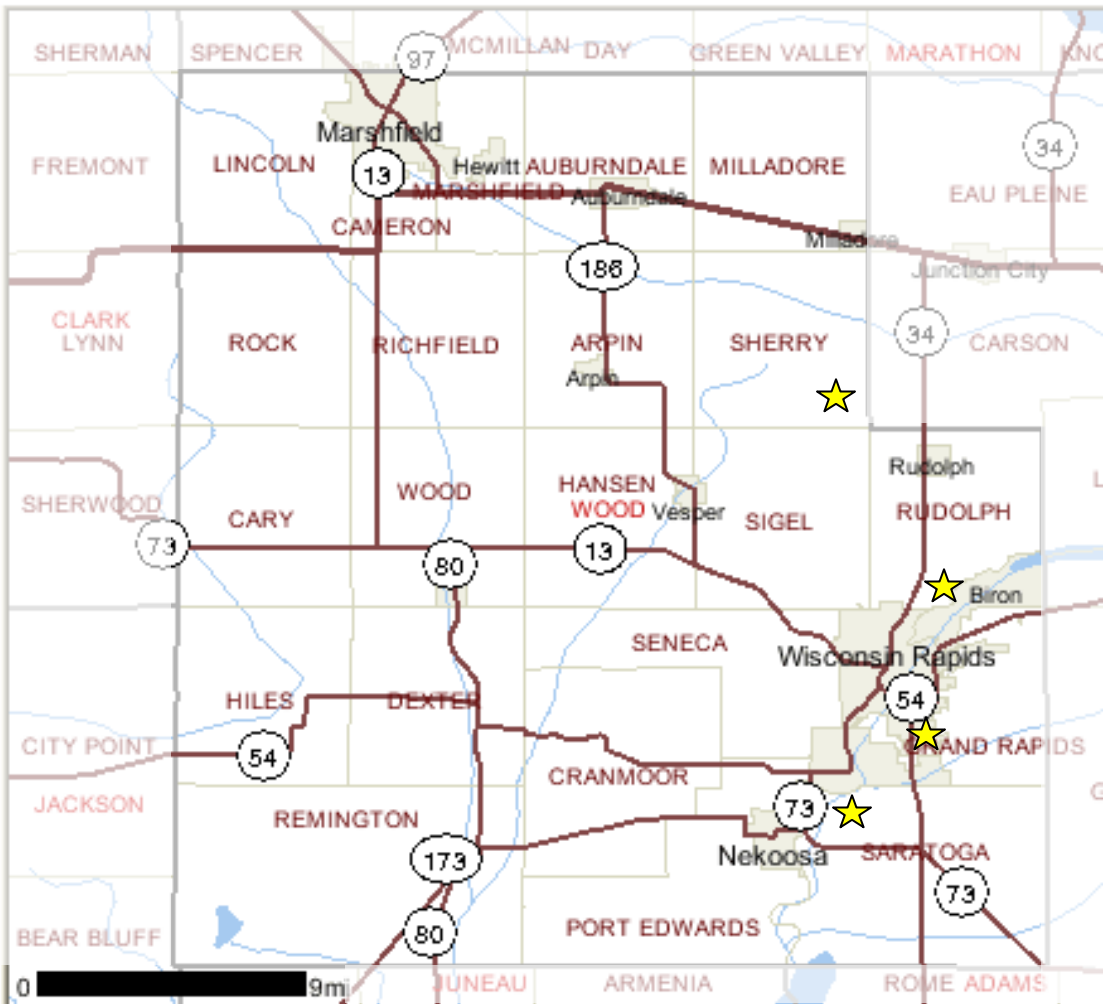


Clockwise from northernmost point:

Jordan Park (Portage Co Parks Headquarters) (cut, treated)
Cty Z and Hwy 66 (Confirmed by PS)
Cty Z near Pallen Lake Rd. (Confirmed by PS)
Hwy SS near Sky View Rd. (Confirmed by PS)
West side of Hwy 161, north of Hwy KK (unconfirmed)
Hwy Q south of River Rd, Amherst 5189 Cty Q (2 patches [barn, phone pole]+ 1 across road)
Hwy 54 just west of Hwy A, Lanark (confirmed by PS)
Springville Pond, behind dental clinic (confirmed by PS)
McDill Pond (2 patches) in side channel south of Heffron St. (both cut, treated)
Cypress St, across from Stevens Point Water Dept / Wastewater Dept Property (cut, treated)

Japanese Knotweed (*Polygonum cuspidatum*) in Wood County

Contact: Paul Skawinski, AIS Coordinator, 715-343-6278 skawinsp@co.portage.wi.us

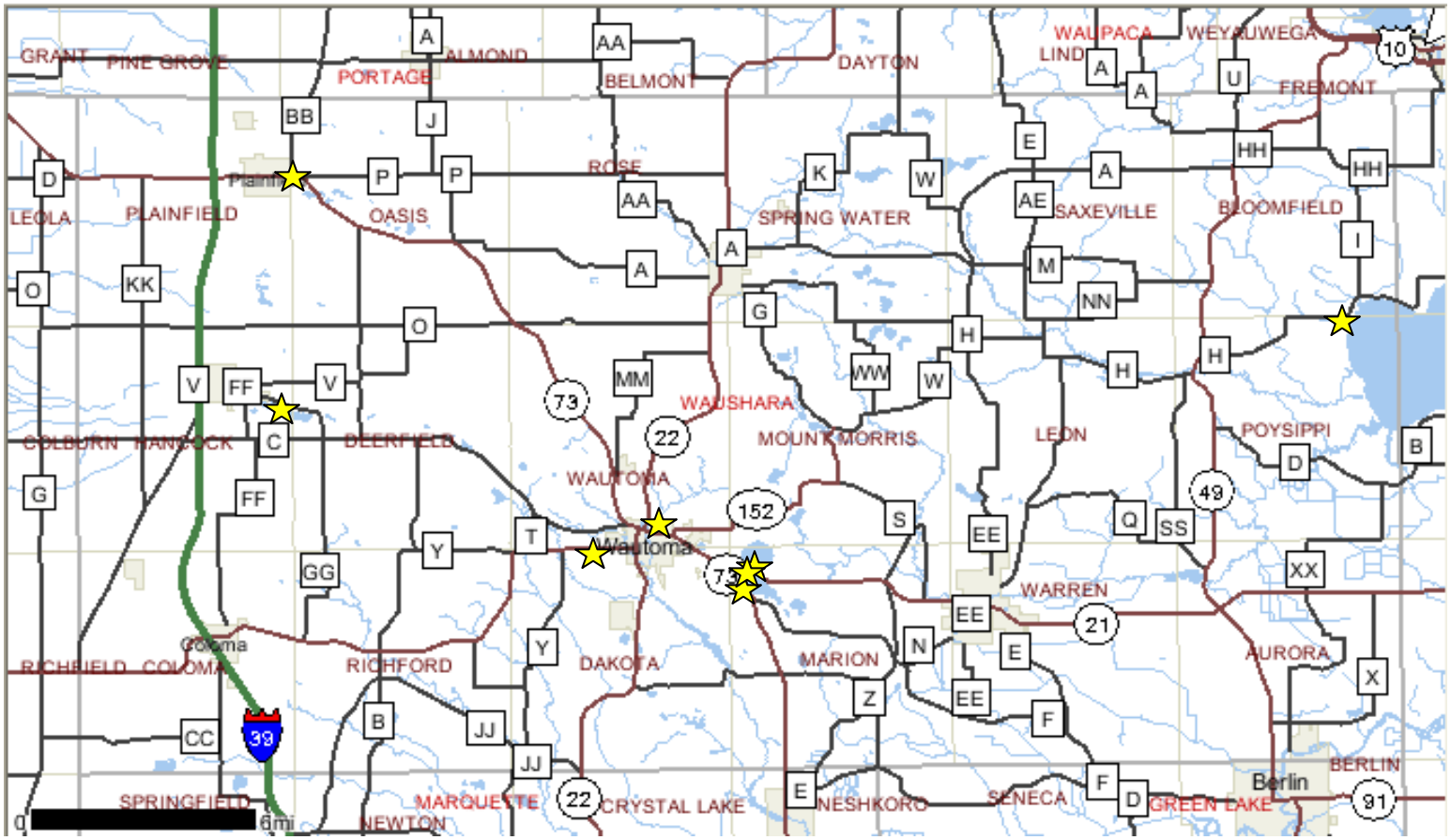


Clockwise from northernmost point:

Near intersection of Rose Rd. and Hetze Rd, Town of Sherry
Reddin Rd, on west side (7-10ft off side of road), near 4931. 2 patches, approx 5x5' each.
Twomile Rd and 20th St, Town of Grand Rapids
County Hwy Z north of Ranger Rd, along cranberry bogs, Town of Saratoga.

Japanese knotweed (*Polygonum cuspidatum*) in Waushara County

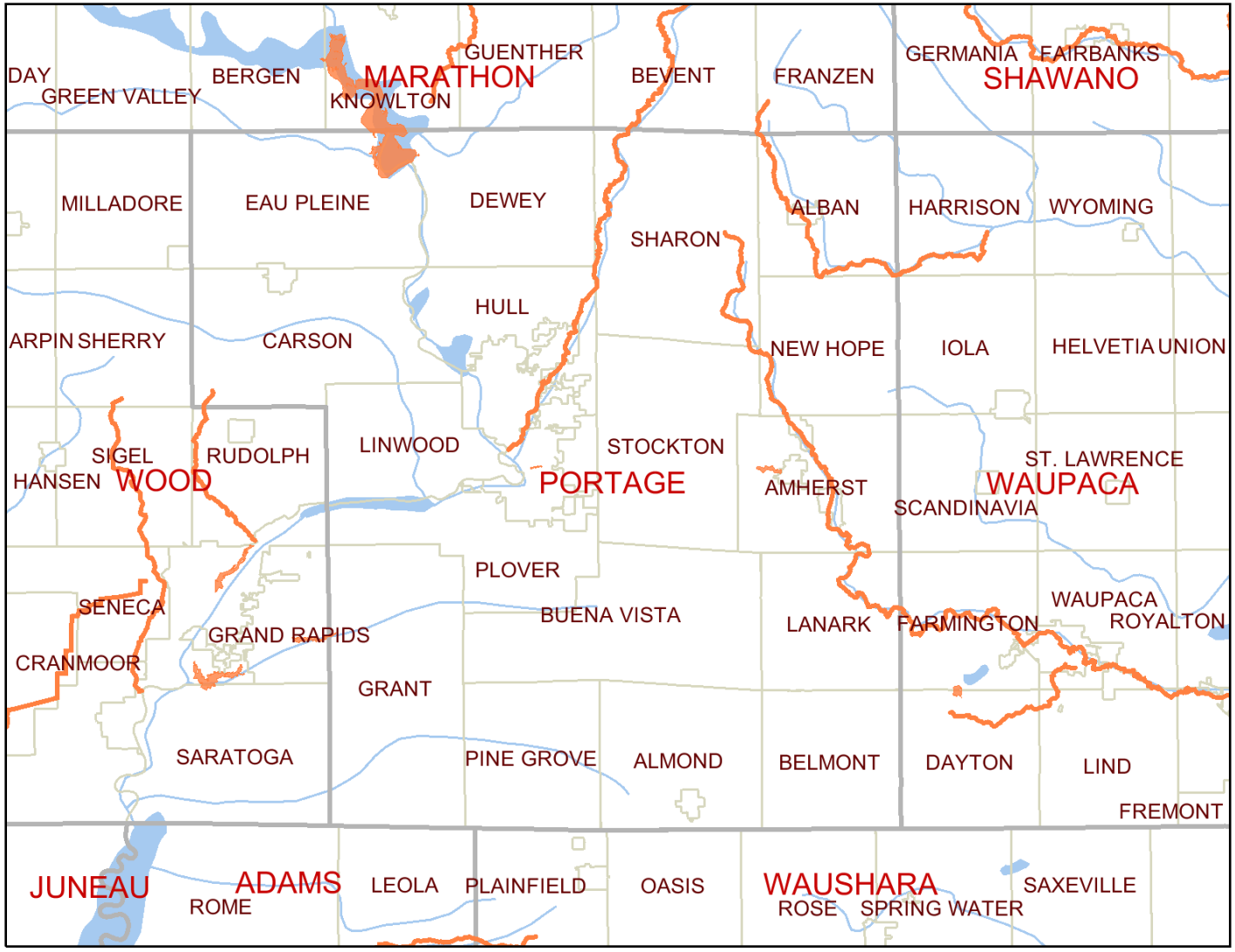
Contact Paul Skawinski, AIS Coordinator 715-343-6278 or skawinsp@co.portage.wi.us



Left to right:

1. Forest Drive, riparian property on Fish Lake. JK planted prior to current owner purchasing the property. Current owner raises bees and has taken a liking to the abundant flowers on the knotweed patch. (Confirmed by PS)
2. Hwy 73 at edge of Plainfield (confirmed by PS)
3. South side of Hwy 21, west of Wautoma. “Easy to spot heading west”. (Confirmed by PS)
4. Downtown Wautoma, along fenceline near Ed Hernandez residence (confirmed by PS)
5. Chicago Point Rd, two riparian properties on Big Silver Lake. Both patches of Japanese knotweed planted intentionally for ornamental purposes. (Confirmed by PS)
6. Next to garage on W. Silver Lake Rd, parallel to Hwy 21.
7. North side of Hwy 21, between Irogami and Big Silver. (Confirmed by PS)

Rusty crayfish in Portage County, Dec 2010



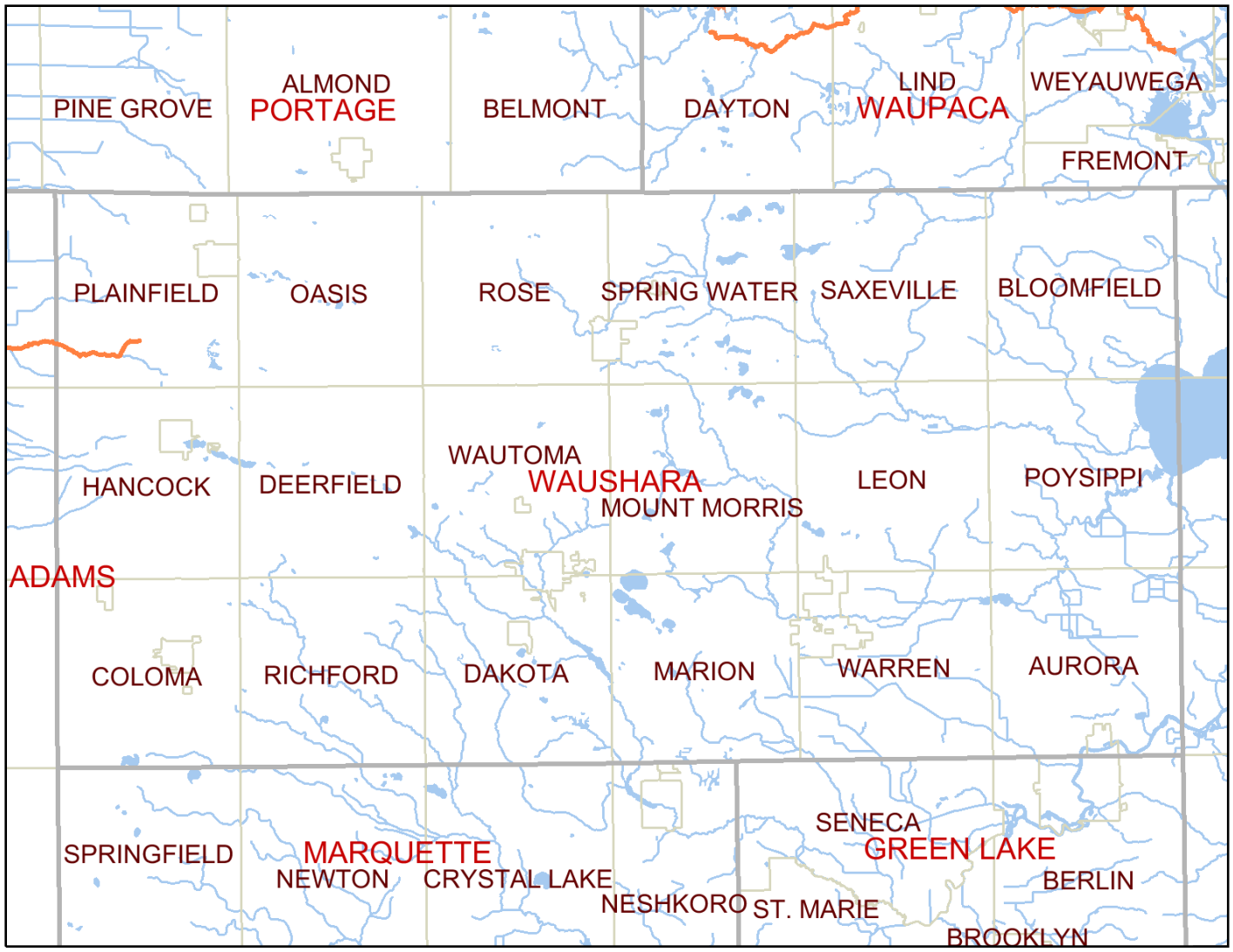
Legend

- Rusty Crayfish Lines
- Rusty Crayfish Areas
- 24K County Boundaries
- Civil Towns
- Civil Town
- 2M Open Water
- 2M Rivers and Streams

0 8.5 17 25.5 mi.

Scale: 1:461,518

Rusty Crayfish in Waushara County, Dec 2010



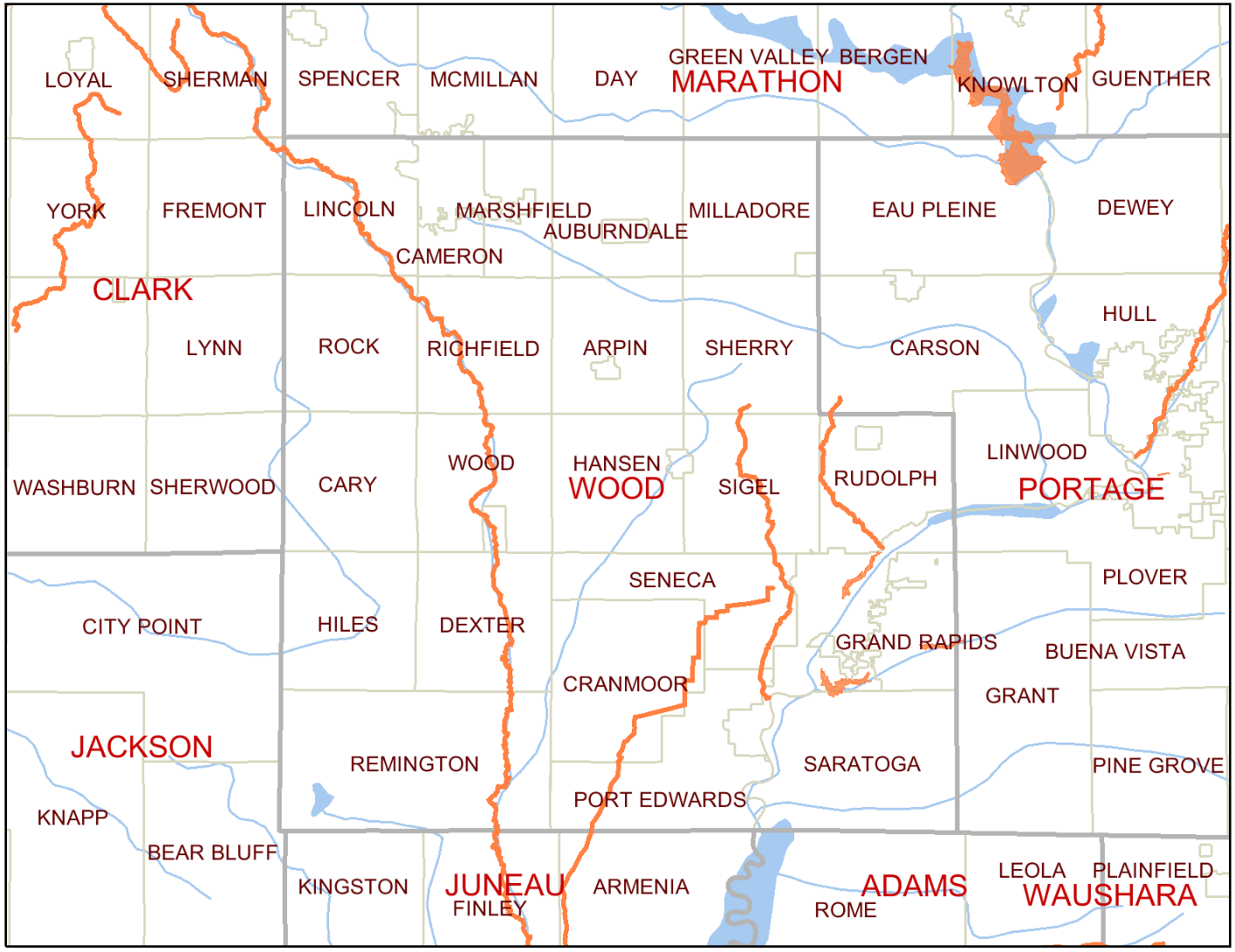
Legend

- Rusty Crayfish Lines
- Rusty Crayfish Areas
- 24K County Boundaries
- Civil Towns
- Civil Town
- 100K Open Water
- 100K Rivers and Streams

Scale: 1:334,561

Notes: Known only from Roche-A-Cri Creek in Western Waushara County.

Rusty crayfish in Wood County, Dec 2010



0 8.5 17 25.5 mi.

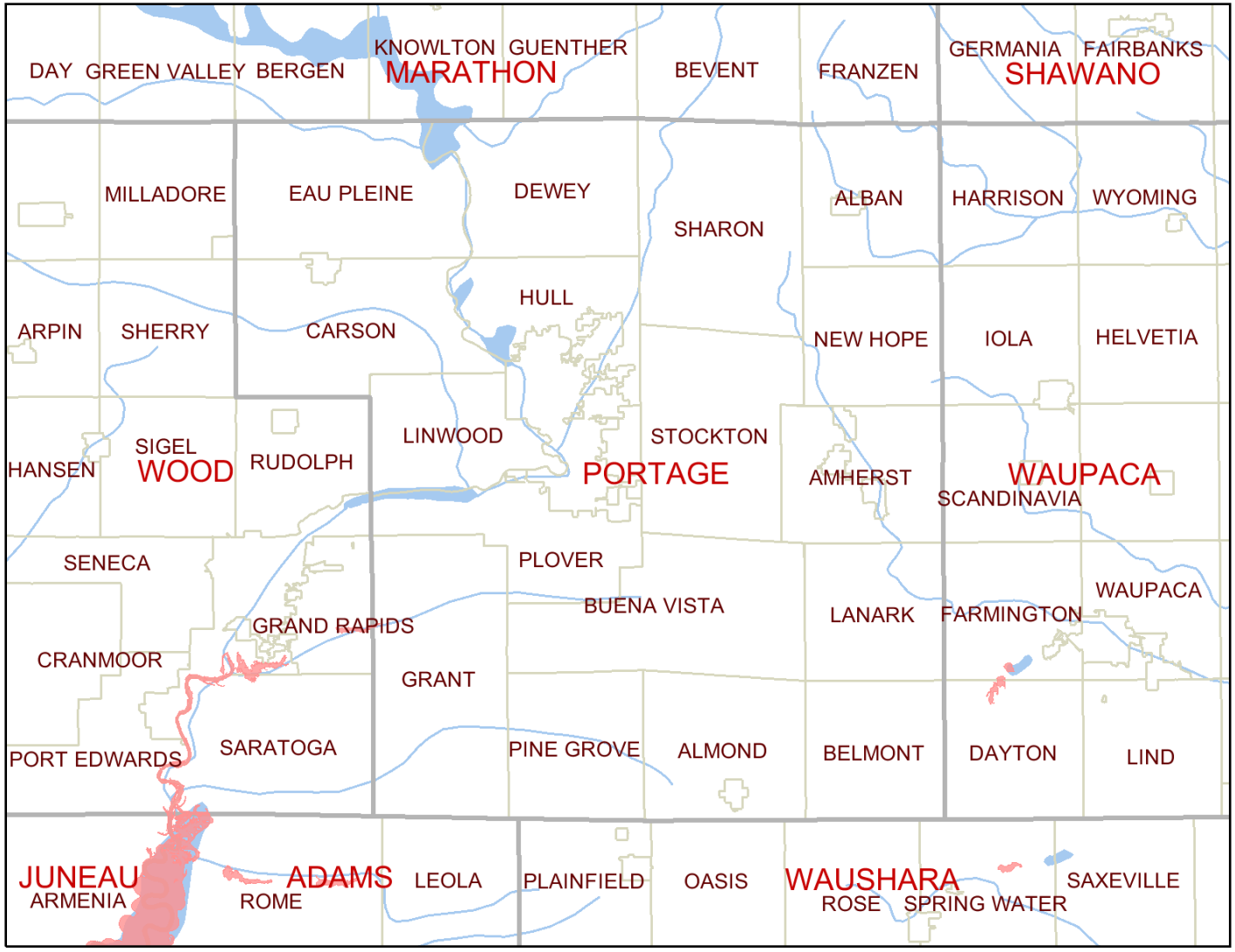
Legend

- Rusty Crayfish Lines
- Rusty Crayfish Areas
- 24K County Boundaries
- Civil Towns
- Civil Town
- 2M Open Water
- 2M Rivers and Streams

N

Scale: 1:461,518

Zebra mussels in Portage County, Dec 2010



Legend

- Zebra Mussels Lines
- Zebra Mussels Area
- 24K County Boundaries
- Civil Towns
- Civil Town
- 2M Open Water
- 2M Rivers and Streams

0 8.5 17 25.5 mi.

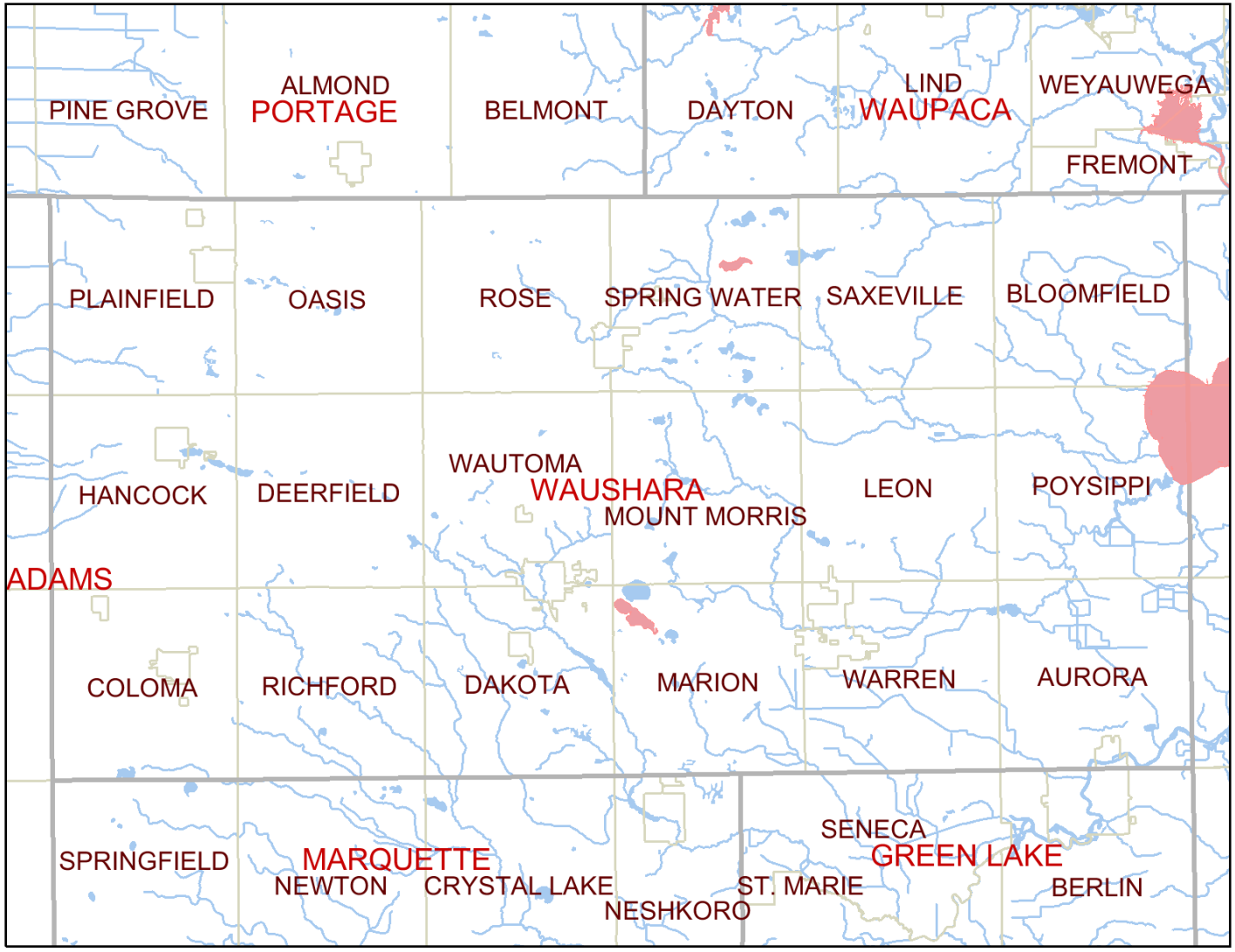
N

Scale: 1:461,518

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Notes: Only known from Lake Wazeecha

Zebra mussels in Waushara County



Legend

- Zebra Mussels Lines
- Zebra Mussels Area
- 24K County Boundaries
- Civil Towns
- Civil Town
- 100K Open Water
- 100K Rivers and Streams

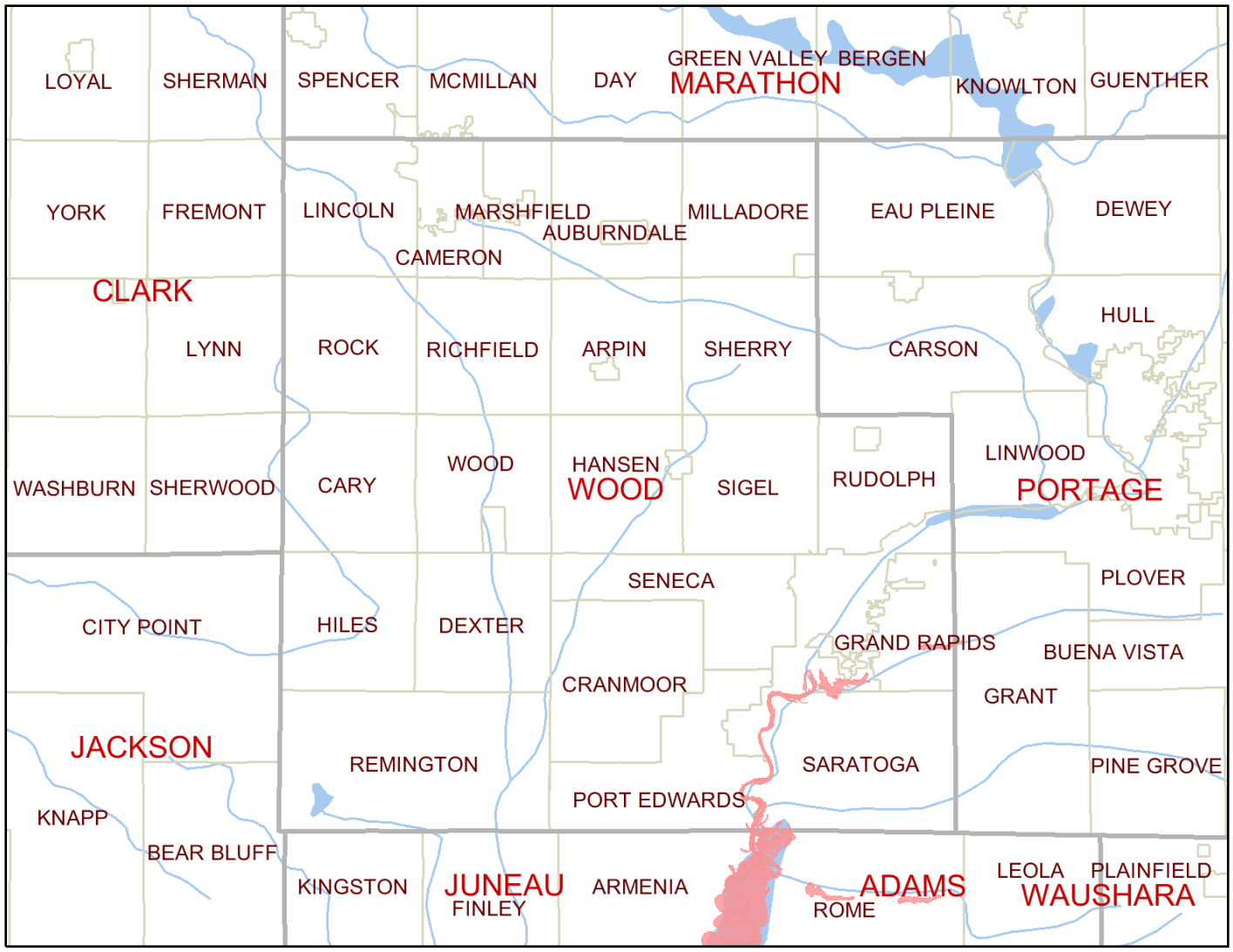
0 6 12 18 mi.

Scale: 1:330,620

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Notes: Known from Gilbert Lake, Big Silver Lake, and Lake Poygan

Zebra mussels in Wood County, Dec 2010



0 8.5 17 25.5 mi.

Legend

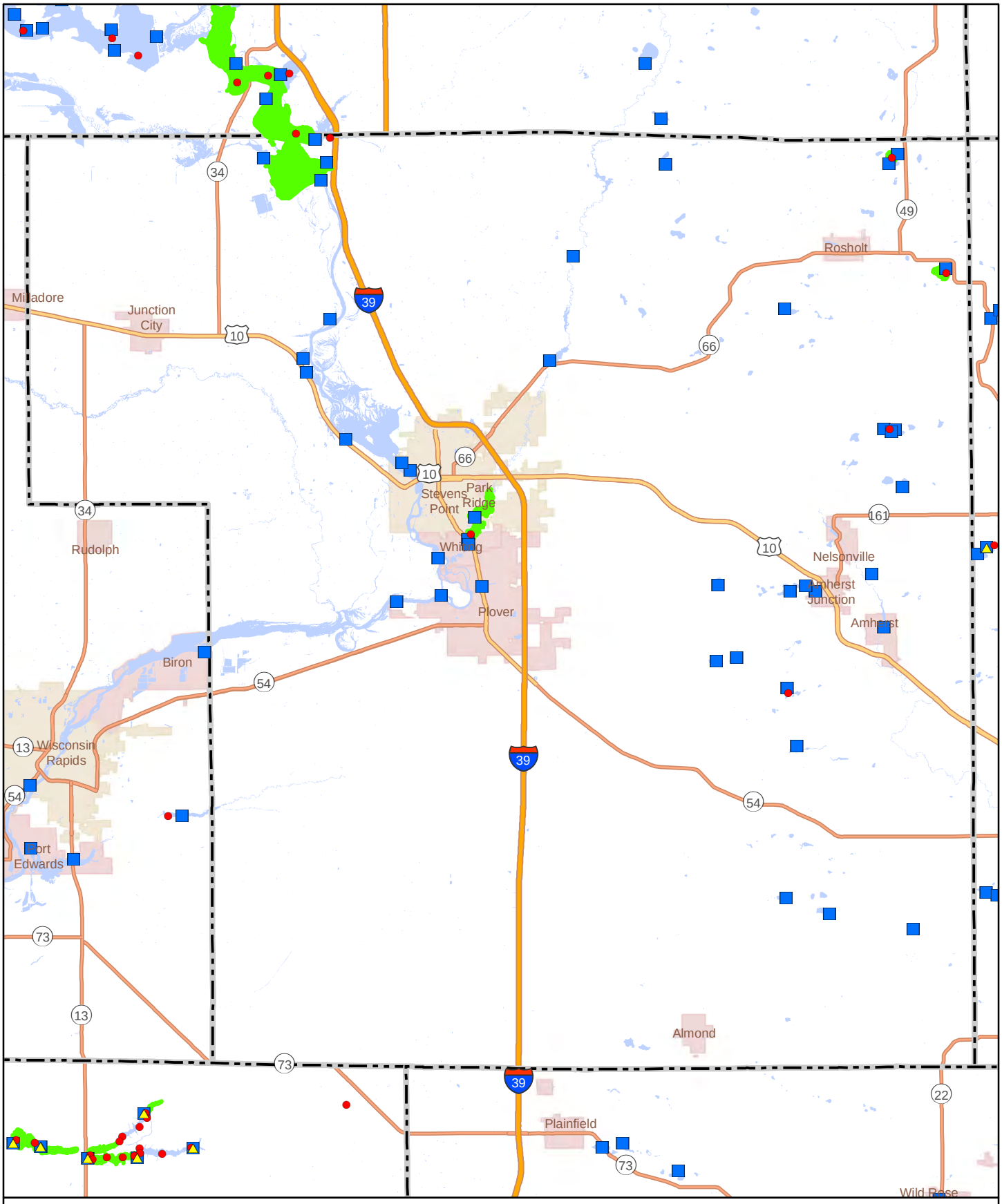
- Zebra Mussels Lines
- Zebra Mussels Area
- 24K County Boundaries
- Civil Towns
- Civil Town
- 2M Open Water
- 2M Rivers and Streams

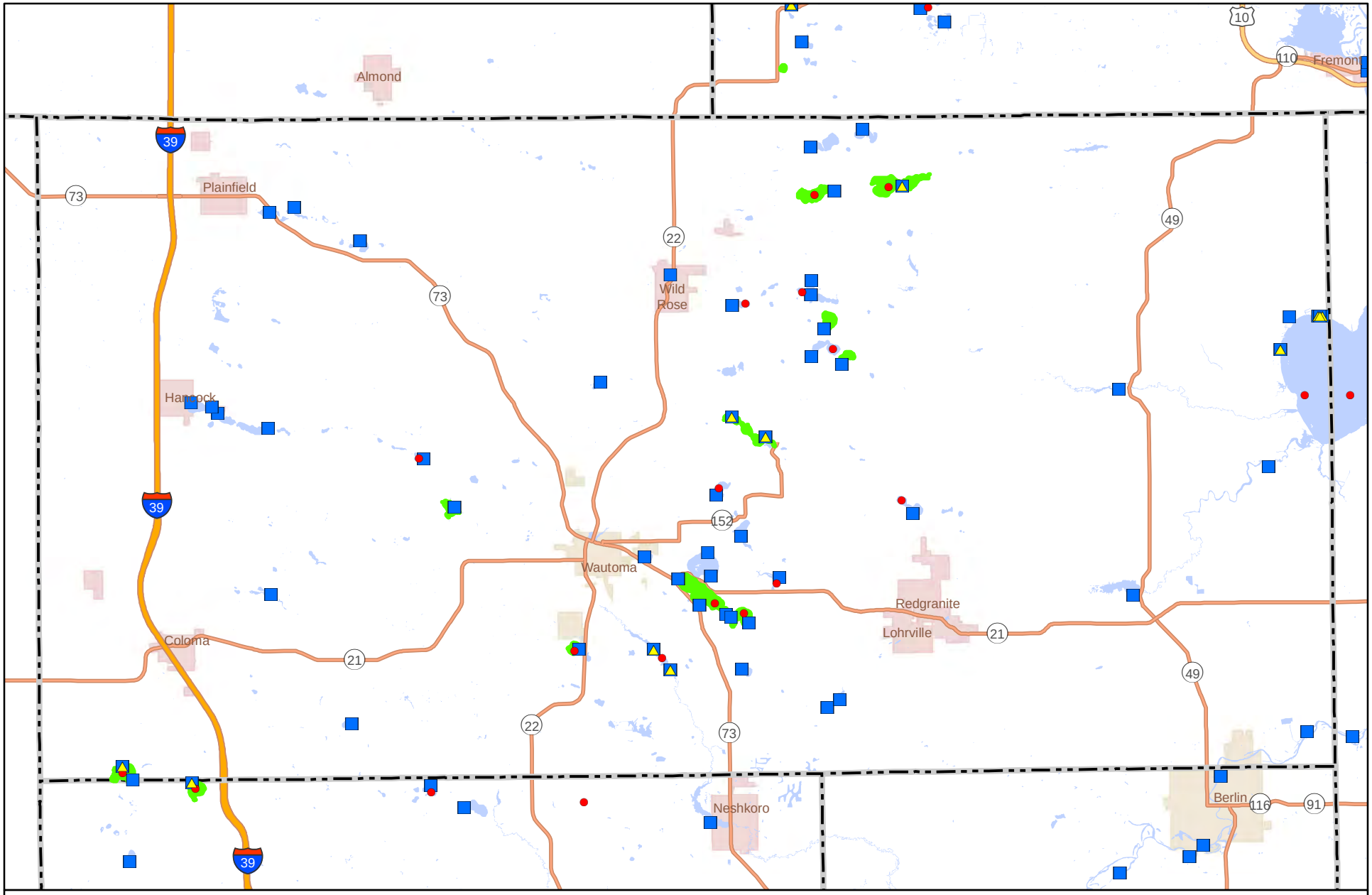
N

Scale: 1:461,518

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Notes: Known only from Lake Nepco, Lake Wazeecha, Lake Petenwell


Legend
CBCW - Watercraft Inspections
CLMN - Water Quality Monitoring
Landings (Public & Private)
AIS Volunteer Monitoring
Volunteer Efforts
Portage County
NOTE: Highway data copyrighted by ESRI StreetMap
Junction City
Rosholt
Rudolph
Stevens Point
Park Ridge
Plover
Nelsonville
Amherst Junction
Amherst
Biron
Wisconsin Rapids
Port Edwards
Almond
Plainfield
Wild Rose
34
49
39
10
66
161
54
13
73
22

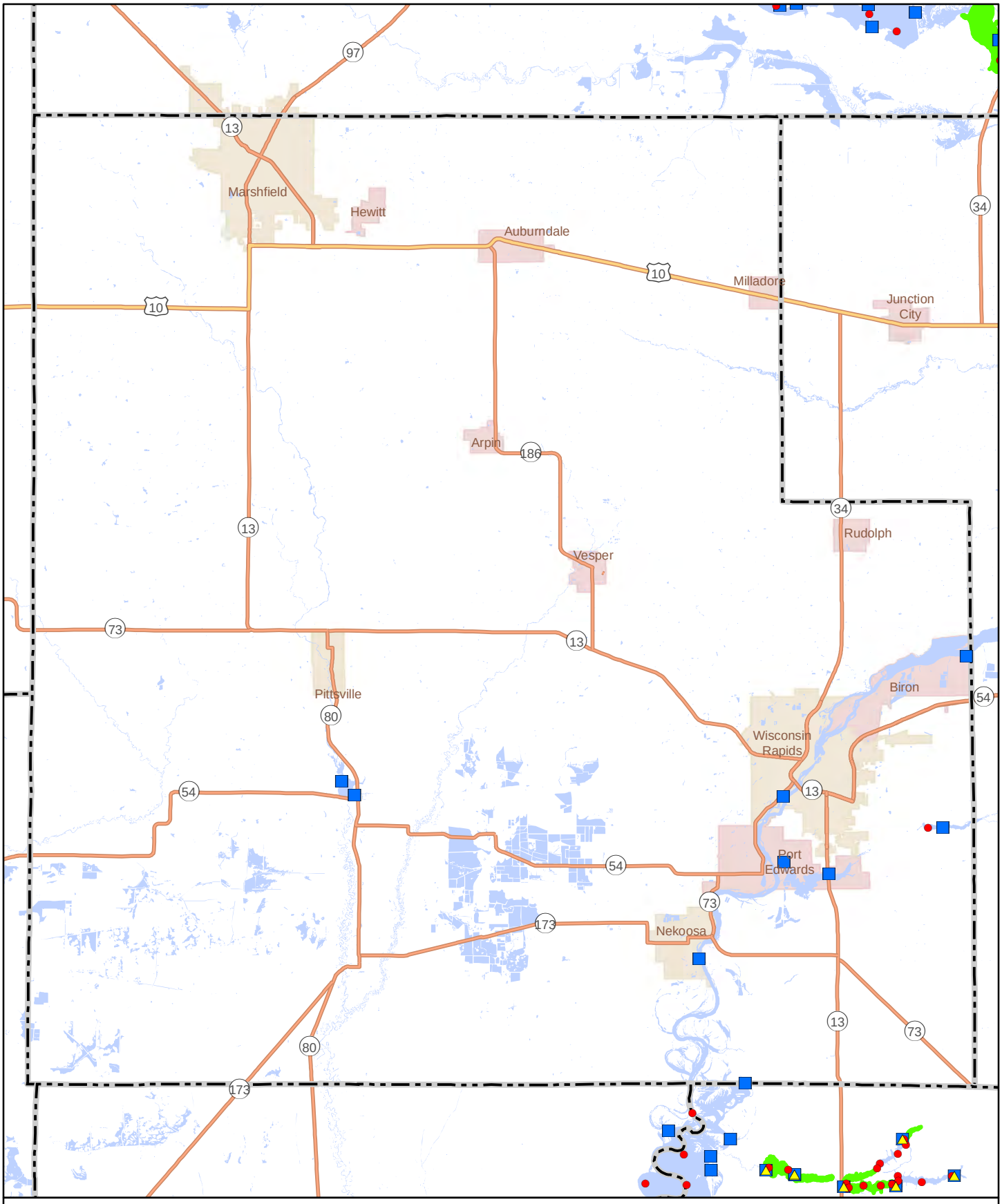


Legend

- CBCW - Watercraft Inspections
- CLMN - Water Quality Monitoring
- Landings (Public & Private)
- AIS Volunteer Monitoring

Volunteer Efforts

Waushara County



Legend

- CBCW - Watercraft Inspections
- CLMN - Water Quality Monitoring
- Landings (Public & Private)
- AIS Volunteer Monitoring

Volunteer Efforts

Wood County

NOTE: Highway data copyrighted by ESRI StreetMap

Preserve our Fishing Tradition

Prevent the spread of aquatic invasive species!

- Inspect boats, trailers, and equipment
- Remove plants, animals, and mud
- Drain water from boats and all equipment
- Ice your catch; don't leave the landing with live fish
- Rinse your boat with hot or high pressure water
- OR Dry your boat for five days
- Buy minnows from a licensed Wisconsin bait dealer
- Use leftover minnows only under certain conditions
- See website for details

Visit http://dnr.wi.gov for more!

STOP AQUATIC HITCHHIKERS!™

Developed by Golden Sands RC&D Council, Inc. with funding support from the DNR Aquatic Invasice Species grant program.

Kaycie Stushek
Zachary Strack
2009 Regional AIS Coordinator LTE Report

Goals and Objectives:

1. A minimum of 200 hours of Clean Boats, Clean Waters (CBCW) reported
2. Assist Education Specialist in surveying, and mapping pioneer infestations
3. Assist Education Specialist in hand pulling pioneer infestations

1) A minimum of 200 hours of Clean Boats Clean Waters (CBCW) reported

- **a)** A total of 425.25 hours were reported to SWIMS for Clean Boats, Clean Waters. A total of 444 boats were inspected, and 711 people were contacted during this time. CBCW inspections were performed at 85% of the boat landings in Portage, Waushara, and Wood Counties.
- **b)** There was no trouble in talking to boaters. Many questions, especially involving bait laws and water transportation were answered. Boaters had feedback on ways to improve the ease of aquatic plant removal from their boats, as well as on how much they had learned from CBCW inspectors. Boaters showed an obvious increase in aquatic invasive species (AIS) and CBCW knowledge throughout the summer, with increasing comments on how they had heard about AIS from other inspectors or their friends. The highest sources of AIS knowledge by almost equal percentages were: 1. News sources, as well as 2. Signs at landings such as the billboards put up by Portage and Wood County in 2008 and 2009.
- **c)** A sign was made and taken to the boat landings during CBCW, announcing "Courtesy Boat Inspections," in order to help sway the negative connotation that sometimes occurs with people carrying clipboards asking questions. Boaters were able to see right away that this was intended to benefit them.
- **d)** Hands-on education about AIS was presented at landings to people of all ages. Live samples (if available) were collected and shown to boaters and fisherman, with great response. Participants showed great enthusiasm in handling and inspecting live specimens rather than simply looking at pictures.
- **e)** An inventory was created for the boat landings in Portage, Waushara, and Wood Counties. In Portage County, 93% of boat landings were inventoried, along with 86% in Waushara County, and 100% in Wood County. The inventory included: boat landing location, aquatic invasive species reported at that site, the AIS signs present at the landing, along with the AIS stickers located on the signs. (AIS stickers corresponded with the aquatic invasive species that were previously present.) The signs and stickers that were needed were also inventoried at each boat landing.

2) Assist Education Specialist in surveying, and mapping pioneer infestations

- **a)** Assisted in surveying and mapping 13 lakes in Portage, Waushara, and Wood Counties. Water bodies surveyed include: Amherst Mill Pond, Collins Lake, McDill Pond, Onland Lake, Pickerel Lake, Sunset Lake, Wolf Lake, Fish Lake, Lake Lucerne, Lake Dexter, Lake Nepco, Lake Wazeecha, and Yellow River system in North Wood County Park.
- **b)** Collected and reported new occurrences of aquatic invasive species. Fourteen new occurrences of AIS were reported in the three counties by the LTE's alone. Three were found in Portage County, and eleven were found in Waushara County.

3) Assist Education Specialist in hand pulling pioneer infestations

a) Hand pulling events were held at Lake Helen, Pickerel Lake, Sunset Lake, Wolf Lake, and McDill Pond. Lake residents are now competent in the hand removal of EWM without the assistance from AIS Education Specialists. Total eradication is expected for Lake Helen. Problems in hand pulling were evident with Lime Lake, where the EWM was spread throughout the cattails and, although there was not a large population of EWM, it was too difficult to reach. Wolf Lake had been hand pulled in 2008, and the results were dramatic, with no EWM occurring in 2009 where it had been pulled in 2008. There was a small population left in another area of the lake, and plans to hand pull the remaining plants remain for the fall of 2009.

b) Three floating EWM devices were constructed for the temporary on-water storage of EWM during the hand pulling process. They increased mobility of hand-pullers, and reduced the amount of fragments created by other means of transport, while letting water pass through and keeping plants intact. The construction was designed to be easily duplicated by lake residents, and photo instructions were documented and shared with other AIS Coordinators around the state.

c) Assisted Education Specialist in the trapping and hand removal of the rusty crayfish from the Yellow River in Wood County. The decreased population of rusty crayfish by about 15,000 in one month resulted in the observation of an immediate increase in fish species like darters and stonecats.

A focus for next year would be to further monitor the lakes that were pulled this year for EWM. Education of volunteers and lake residents is essential and greatly appreciated, made evident in donations to the project and letters of support. More hand pulling would be in order next year. With the steady increase of lake groups that requested meetings toward the end of this summer, a further increase in interest in monitoring and controlling AIS is not just hoped for, but expected, for next year.

Boat Landing AIS Monitoring Protocol

Walk along the **public property** for 100 feet in each direction from the boat landing (or to the public boundary). Stop every 10 feet and look around for 20 seconds at each location. Look for snail shells along the shoreline, or live snails crawling in the shallow water—do you see any Chinese mystery snails? Banded mystery snails? Rusty crayfish? Zebra mussels? Water socks or waders will allow you to see plants and animals better by walking in the water, but are not required.

Chinese mystery snail

Banded mystery snail

Rusty crayfish

Zebra mussel

Look at the aquatic plant community. Examine plant fragments that are washed up on shore, and look for growing beds of aquatic plants away from the shore—Do you see any Eurasian watermilfoil? Curly-leaf pondweed?
Optional: Toss a rake on a rope into the lake to sample suspicious-looking plants. Only throw the rake once in each location to avoid damaging the native plant community.

Eurasian watermilfoil

Curly-leaf pondweed

On your way back to the boat landing, **examine the shoreline**. Do you see any purple loosestrife? *Phragmites*? Japanese knotweed?

Purple loosestrife

Phragmites

Japanese knotweed

If you found any suspicious plants or animals, place them into a bag and bring them to your local AIS Coordinator or DNR office. Be sure to add water to the bag if the species came from the water. Keep the specimen moist and cool until it has been delivered to an expert for confirmation.

Fill out the DNR Aquatic Invasive Species Presence/Absence Report, Form 3200-124.

If you think you have identified an aquatic invasive plant or animal that has not yet been documented in that waterbody, follow the directions at http://dnr.wi.gov/invasives/aquatic/whattodo/ and fill out a WDNR Aquatic Invasive Species Incident Report.

Adopted from Golden Sands RC&D, photos courtesy of Paul Skawinski
Rev. 5/2010

Boat Landing AIS Monitoring Data Sheet

(refer to Boat Landing AIS Monitoring Protocol sheet)

Boat landing location _____County_____

Name of person monitoring _____

Date _____

Did you find Eurasian watermilfoil?	Yes / No / Maybe (unconfirmed)
Did you find curly-leaf pondweed?	Yes / No / Maybe (unconfirmed)
Did you find purple loosestrife?	Yes / No / Maybe (unconfirmed)
Did you find Japanese knotweed?	Yes / No / Maybe (unconfirmed)
Did you find *Phragmites* (giant reed grass)?	Yes / No / Maybe (unconfirmed)
Did you find any rusty crayfish?	Yes / No / Maybe (unconfirmed)
Did you find any banded mystery snails?	Yes / No / Maybe (unconfirmed)
Did you find any Chinese mystery snails?	Yes / No / Maybe (unconfirmed)
Did you find any New Zealand mudsnails?	Yes / No / Maybe (unconfirmed)
Did you find zebra/quagga mussels?	Yes / No / Maybe (unconfirmed)

List any native aquatic plant species you were able to identify during this monitoring event.

_____ _____

_____ _____

_____ _____

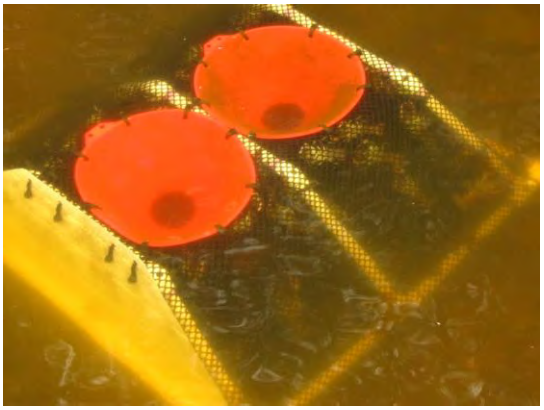
_____ _____

_____ _____

If you found any aquatic invasive species during this monitoring event, who did you deliver the specimens to?

Did you find any invasive species that are not listed on this sheet? If so, which species?

Rusty Crayfish (*Orconectes rusticus*) Trapping Study
Yellow River, Pittsville, Wisconsin
June 29th – July 31st, 2009



Paul Skawinski, Regional AIS Education Specialist,
Golden Sands Resource Conservation & Development Council, Inc.

In partnership with:
Wisconsin Department of Natural Resources
Wood County Land Conservation Department
University of Wisconsin – Stevens Point

Acknowledgements

Funding for this study came from an Aquatic Invasive Species (AIS) grant from the Wisconsin Department of Natural Resources. Thanks to Wood County Land Conservation Department and our many volunteers for assisting with the project.

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Purpose

The purpose of this trapping study was to determine whether it was feasible for a citizen group to trap rusty crayfish and effectively reduce their local population. Every effort was made to ensure that all equipment and techniques could be easily replicated by an average citizen.

Location

Three locations were identified as possible trapping sites. All three were on the Yellow River in Wood County, Wisconsin. Ideally, a site would have a "barrier" of unsuitable habitat on both the upstream and downstream sides, to minimize immigration and emigration at the trapping site. This would give a more accurate assessment of the impact on the local rusty crayfish population. However, this ideal situation proved difficult to find.

The first location identified was at North Wood County Park, 44.52011N, 90.14159W. The population was assessed by a simple question—how many rusty crayfish ("rusties") can two adults catch with dip nets in 10 minutes? At this location, Tracy Arnold, (Conservation Programs Coordinator, Wood County Land Conservation Department) and I caught 3 rusties and zero native crayfish.

Advantages to this location:

1) great, rocky habitat
2) Site was very easy to access, close to park road.

Disadvantages to this location:

1) Close proximity to park road could result in vandalism to traps or other disruption of project.
2) No barriers to immigration/emigration.
3) Children from park campground often play in the water at this location. Possible interference with the project.

The second location was under the Highway 13 bridge in Pittsville, 44.45351N, 90.14969W. At this location, the same methods were used to catch crayfish, and 10 minutes yielded 49 rusty crayfish and zero natives.

Advantages to this location:

1) Ideal habitat.
2) Site was somewhat easy to access, only ~50ft from parking area.
3) Very little traffic on this area of river.
4) Very high abundance of rusty crayfish.

Disadvantages to this location:

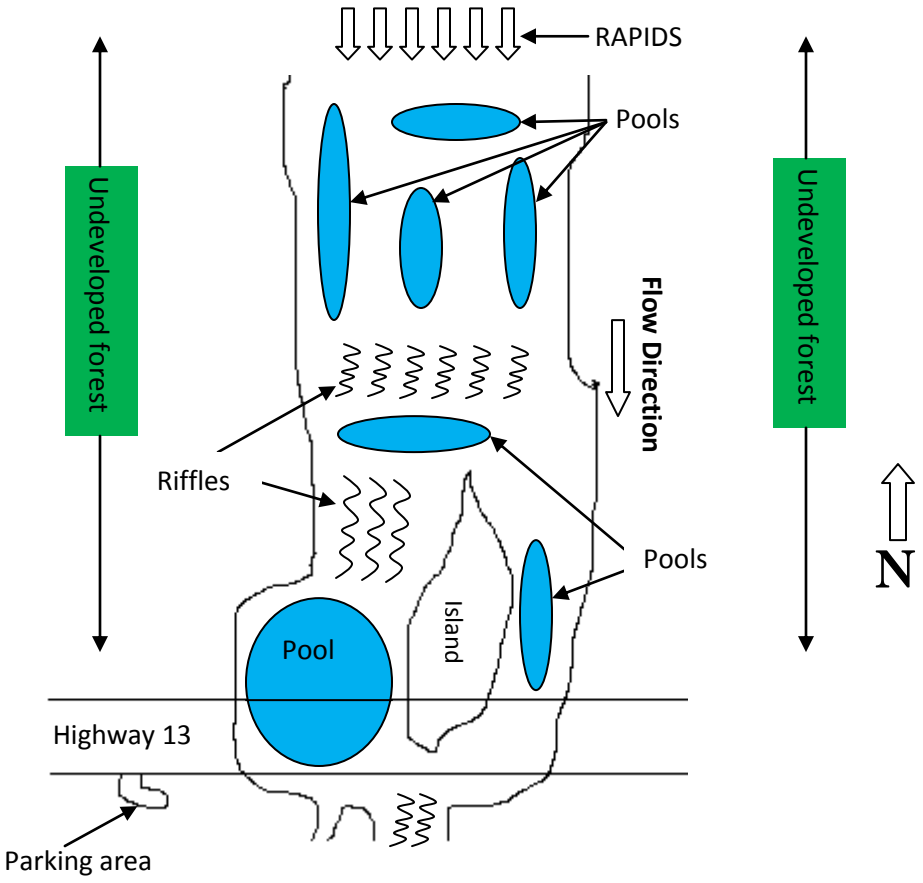
1) Deep pool under the bridge would be most likely to hold fish. If someone came down to fish in this location, they would likely concentrate on that pool. Traps should be placed with this in mind.

The third location we examined was below the Lake Dexter dam, 44.37756N, 90.11638W. The water level was high, and the current in this area was dangerously strong during this high water level. This site was disregarded as a potential site for the following reasons:

1) Current was very strong during high water. High risk of traps being washed downstream.
2) Water was too deep. Depth and current pose a hazard to staff and volunteers.
3) Site reported to be popular with fishermen. Possible risk of disruption/vandalism to project.

Site #2 (see Figure 1) under the Highway 13 bridge was chosen to be the project site. The advantages to this location clearly outweighed the disadvantages, and it seemed to be far better for the project than the other sites. Although the deep pool presented a possible disadvantage, we would place the traps only on the island side of the pool (see Figure 2). This way, the traps were not near the bank where fishermen would likely be standing. Our hope was that this would prevent possible vandalism or disruption of the project.

Figure 1. Map of Yellow River trapping location



Trap placement

The crayfish traps for this study were generously donated by Dr. Stan Szczytko of UW-Stevens Point. Traps were placed in areas that had visibly high abundance of crayfish, and had enough depth to keep water flowing over the traps. The traps were seven inches high, so traps were placed in no less than ten inches of water. A variety of substrate types and depths between 10 and 16 inches were covered.

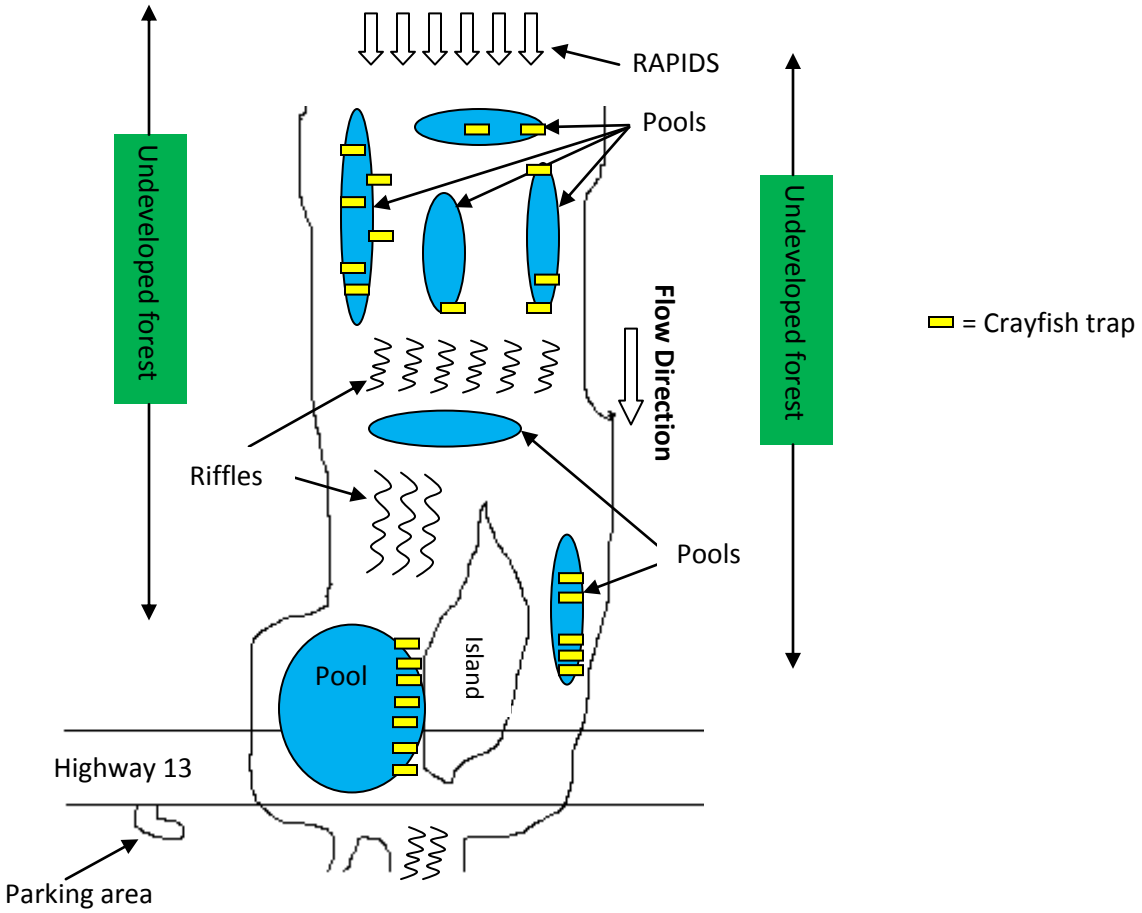
Table 1. Locations of crayfish traps

Trap #	Substrate	Depth (in.)	Latitude	Longitude
1	C	14	44.45376	90.15022
2	S	16	44.45376	90.15018
3	S	14	44.45371	90.15013
4	C	14	44.4537	90.15012
5	C	10	44.45369	90.15013
6	C	15	44.45358	90.15028
7	C	14	44.45356	90.15026
8	C	14	44.45352	90.15026
9	C	16	44.45355	90.15022
10	C	16	44.45354	90.15025
11	C	16	44.4536	90.15028
12	B	16	44.45362	90.15034
13	C	12	44.4541	90.15066
14	C	12	44.45415	90.15061
15	C	15	44.45422	90.15041
16	C	12	44.4542	90.15063
17	B	11	44.45426	90.15071
18	B	10	44.45431	90.15073
19	C	12	44.4544	90.15062
20	B	12	44.45445	90.15081
21	C	10	44.45443	90.15072
22	B	10	44.45461	90.15069
23	C	11	44.45477	90.15063
24	C	11	44.45438	90.15203

Legend

C=cobble, **S**=sand, **B**=boulders

Figure 2. Map of trap locations 6/29/2009



Bait

At the beginning of the project, we baited the traps with beef liver wrapped in cheesecloth. This was recommended to us by Dr. Szczytko at UWSP, because it was the same bait that he used during his 2007 trapping study on the Plover River. For the first two days, we used the beef liver with great results. Then we were able to secure free expired beef and other meat scraps from the meat counter at the Stevens Point County Market grocery store, so we baited the traps with that to save money. It worked equally well. On July 7th, we decided that it may be impractical to expect lake residents to wrap bloody meat in cheesecloth for bait every day. Since many lake residents (especially children) would likely be unwilling to do this (or may not have the budget to do this), we experimented with canned cat food. Two traps (#4 and #8) were rebaited with "Fancy Feast turkey & giblets with gravy". Cans of cat food were punctured with a knife in several locations in the lid and side of the can. A twist-tie was wrapped around the ring on the can lid and tied to the ceiling of the crayfish trap (Figures 3,4). This prevented the crayfish from reaching the can from outside the trap, or even once they were inside the trap. A big problem with the meat in cheesecloth was that once a crayfish got inside the trap, it would tear apart the cheesecloth and consume the bait (Fig. 5). The canned cat food did not allow the crayfish access to

the food itself—only to the smell of the food. Since the crayfish were unable to reach the food, we were able to reuse the cat food for multiple days. Use of cat food also greatly reduced the cleanup time, as the cheesecloth would often be torn to pieces or pulled through the trap holes by crayfish tugging from the outside.

The cat food was used exclusively during the last 4 days of trapping. According to the data, the average catch during this period was 27. By comparison, the average catch during the previous 4 days (baited with meat) was 25. Not only was the cat food easier, faster, cleaner, and safer than raw meat, it also caught more crayfish.

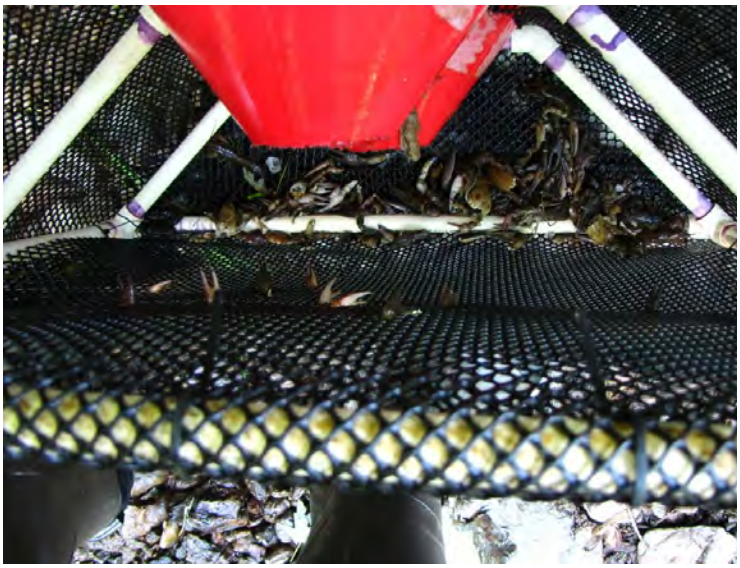
In traps where the bait was all eaten or was unavailable to the crayfish (canned cat food), we often had piles of crayfish pieces in the traps (see figure 6). Whether the crayfish were hungry or just intolerant of each other was unclear.

Figure 3. Canned cat food bait

Figure 4. Cat food hanging inside trap

Figure 5. Clean pork chop bone

Figure 6. Crayfish pieces in trap



Trapping results

A total of 14,762 rusty crayfish were removed from the Yellow River during this study. Not even a single native crayfish was observed. Single-trap catch rates varied between a maximum of 225 and a minimum of zero (see figures 7,8, table 2). Beginning with the 3rd trap check, the catch rates plummeted. During the second half of the study, average catch rates were usually less than one-fourth of the catch rate of the first trap check.

Crayfish were removed from the traps every other day, and were placed into 5-gallon buckets. These buckets were then hauled back to the vehicles, emptied into Ziploc bags, and the bags were frozen by Wood County LCD (see figures 9,10). A raccoon rehabilitation center in Nekoosa was contacted, and they were happy to take the crayfish to feed to their raccoons. They ended up with a surplus of crayfish, so some were shared with Bay Beach Wildlife Center in Green Bay.

Since inserting a hand into a trap with 200+ rusty crayfish is obviously a risky proposition, we used metal grilling tongs to remove them. We also used thick rubberized gloves (without tongs), which allowed us to remove several crayfish at a time without getting pinched. Only the very largest crayfish could pinch the glove hard enough that we could detect it.

Figure 7. **Total** crayfish caught per bi-daily trap check (7/1/09 – 7/31/09)

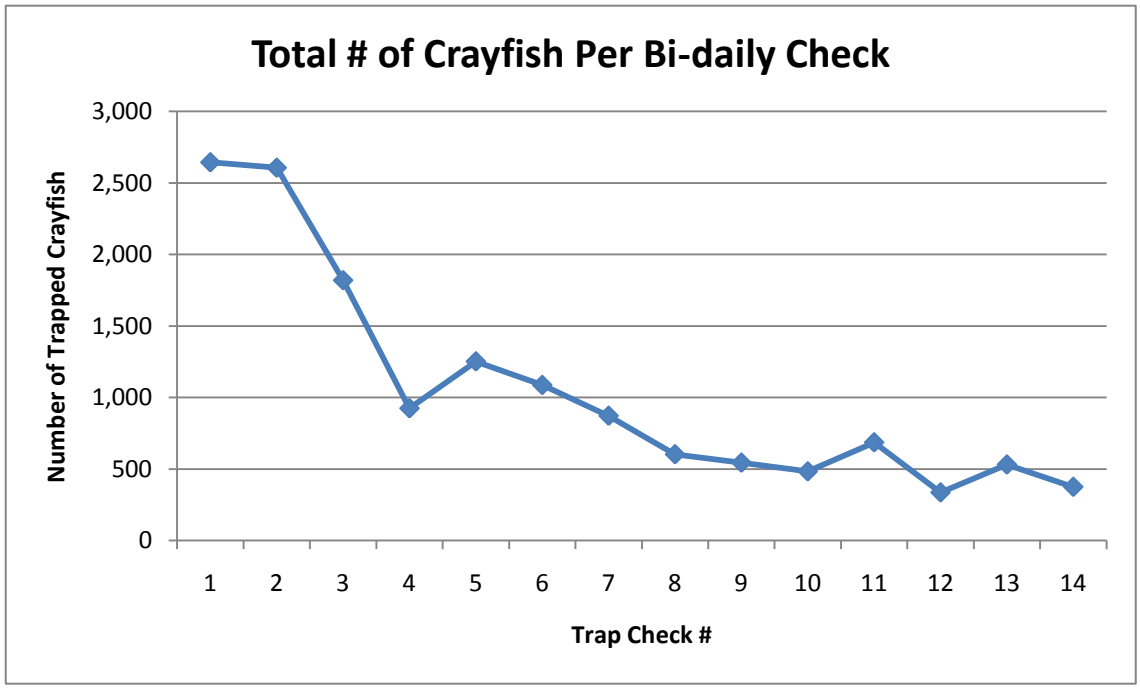


Figure 8. **Average** crayfish caught per bi-daily trap check (7/1/09 – 7/31/09)

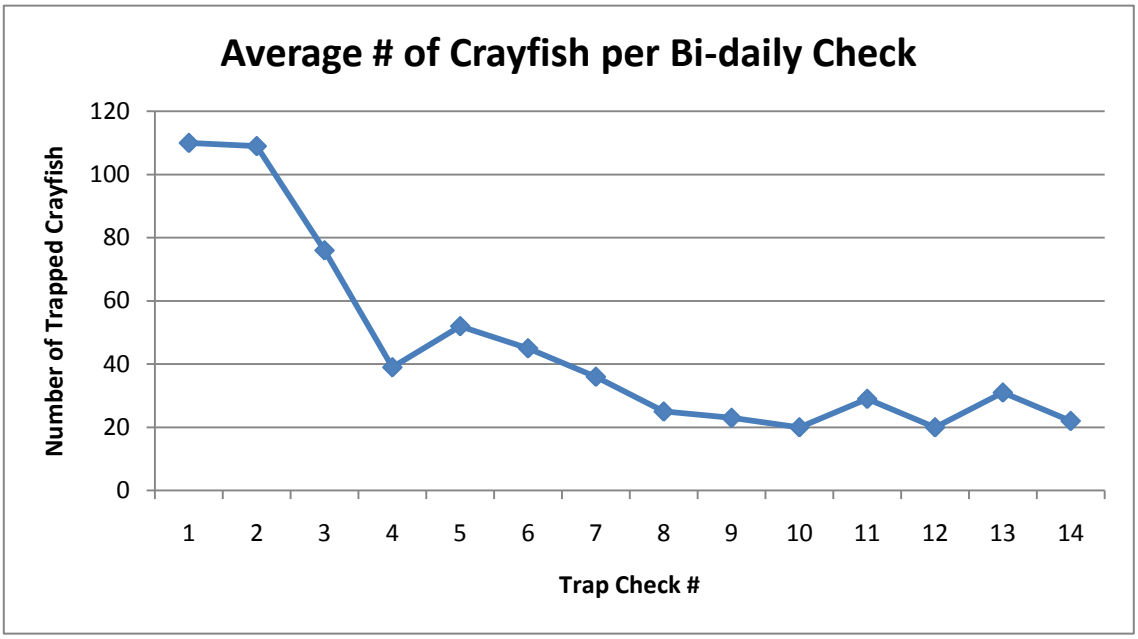


Figure 9. 1,809 crayfish on 7/7/09

Table 2. Trapping results

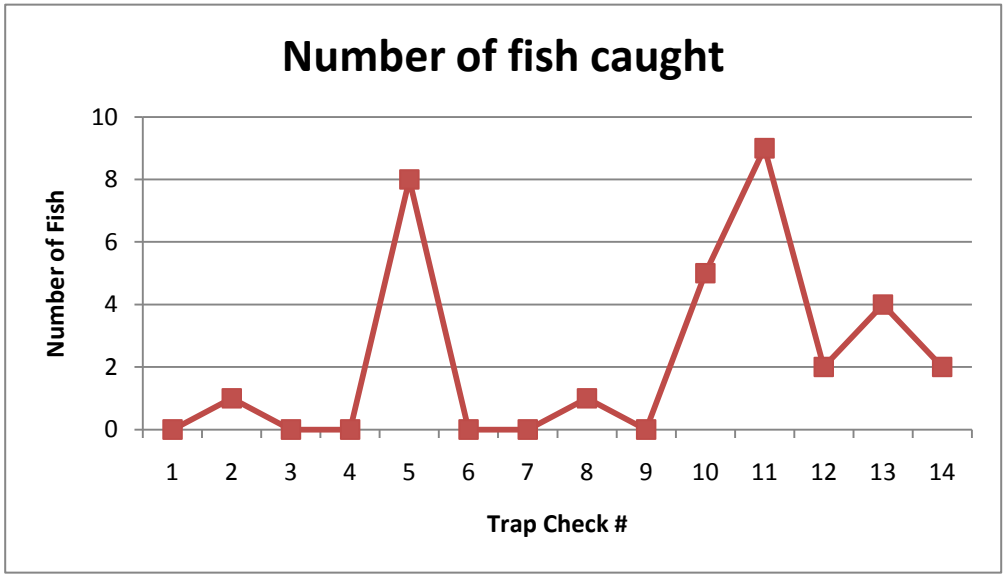
	Total crayfish	Average
Trap Check 1	2,644	110
Check 2	2,606	109
Check 3	1,819	76
Check 4	924	39
Check 5	1,252	52
Check 6	1,087	45
Check 7	872	36
Check 8	603	25
Check 9	544	23
Check 10	483	20
Check 11	686	29
Check 12	336	20
Check 13	531	31
Check 14	375	22
Cumulative	14,762	46

Figure 10. Bucket o' rusties

Bycatch

The crayfish traps used were designed to catch more crayfish and fewer other creatures. During the extent of our study, a total of 32 trapped fish were recorded (figure 11). The majority of these fish were stonecats (*Noturus flavus*) and creek chubs (*Semotilus atromaculatus*), with a few other minnow species comprising the remainder. This bycatch increased toward the end of the project, as did the number of visually observed fishes. By the end of July, schools of creek chubs and other minnows were frequently seen in pools throughout the study area. Stonecats could often be seen darting out from underneath rocks as we walked through the river. It was apparent that with the decrease of rusty crayfish came an increase in the native aquatic fauna.

Figure 11. Number of fish caught in traps



Stolen traps

Unfortunately, on July 27th, seven traps were missing from the stream. These were the seven traps placed under the Highway 13 bridge, in the deep pool. Wood County LCD and Golden Sands RC&D immediately contacted local law enforcement including WDNR and the Wood County Sheriff's Department, and filed a police report. Press releases were issued to local media, encouraging the public to watch for the traps and to contact Golden Sands, Wood County LCD, or the Wood County Sheriff's Dept. with any information. A project summary article was published in the Wood County Conservation Connection newsletter, and again included a paragraph about the missing traps. At this time, no information on the stolen traps has been received. Wood County LCD and Sheriff's Dept. staff have returned to the location several times to see if the traps had been returned to the area, but no traps have been found.

Summary and Recommendations

With the exception of the stolen traps, the 2009 rusty crayfish trapping study was very successful. A substantial decrease in the rusty crayfish population was visually observed, and also supported by the data. Comparing the first trapping day to the last day, the data show an 86% decrease in the rusty crayfish catch. We did not collect data on the local fish population, but a substantial increase in their populations was observed in the field. There seems to be a strong negative impact of rusty crayfish on the native fish community. A likely inference is that the crayfish were pushing the stonecats out of their habitat under large rocks, and were simply eating the minnow species. On more than one occasion, we released minnows that were caught in the trap, only to watch dozens of rusty crayfish in the river attempt to catch them, often successfully.

Type of substrate did not appear to have an effect on the catch rate. The vast majority of the Yellow River is cobble-sized or boulder-sized rocks, so the amount of undesirable habitat is minimal. Areas of sand were present, but were generally small and of close proximity to cobble or boulders. In this section of the Yellow River, rusty crayfish are never far from shelter.

Citizen groups could easily replicate this project. Projects should use the trapezoidal trap design like those we used; they are very effective at catching crayfish, and tend to not catch large numbers of fish. Various baits were effective, but the canned cat food was the best in terms of catch rates and safety. Trapping for sheer numbers of adults is probably best in midsummer, but to maximize the reduction in rusty crayfish population, it is recommended to trap in late spring, before the young crayfish have hatched. Female crayfish carry their eggs around until they hatch, so removal of these females with the eggs would be more beneficial to the population reduction effort.

Appendix A – Additional photos from project

Figure 12. Abundant crayfish at Hwy 13 trapping site (before trapping)

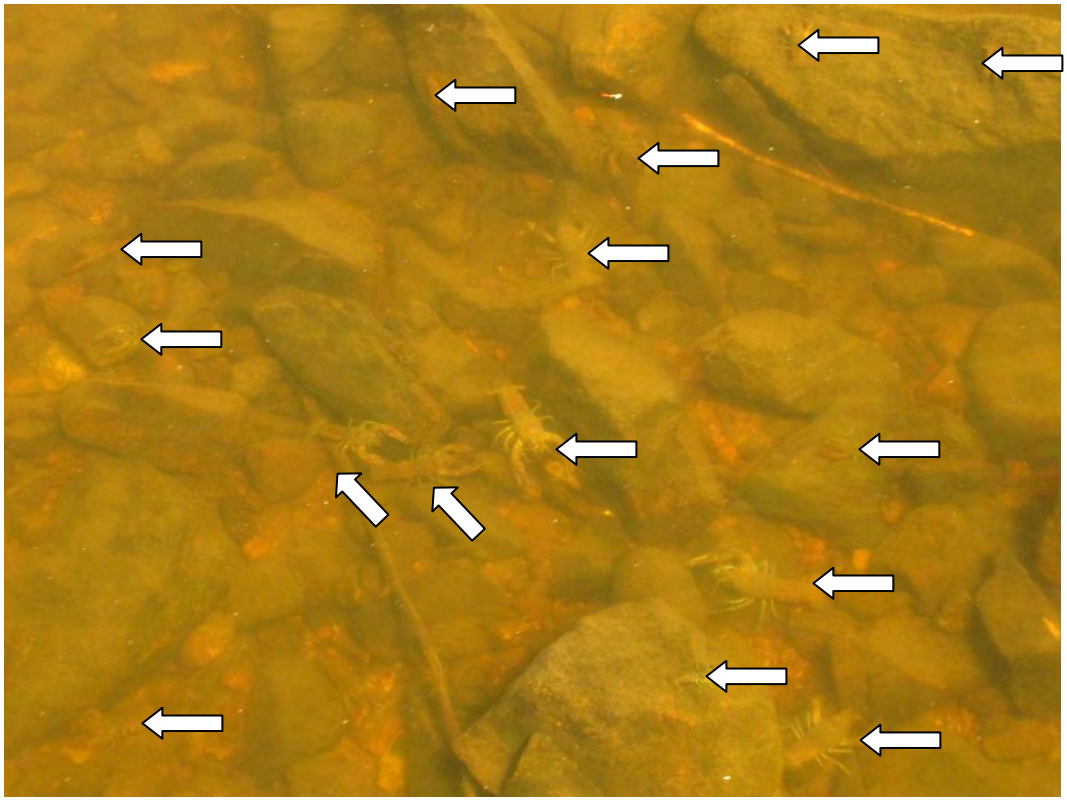
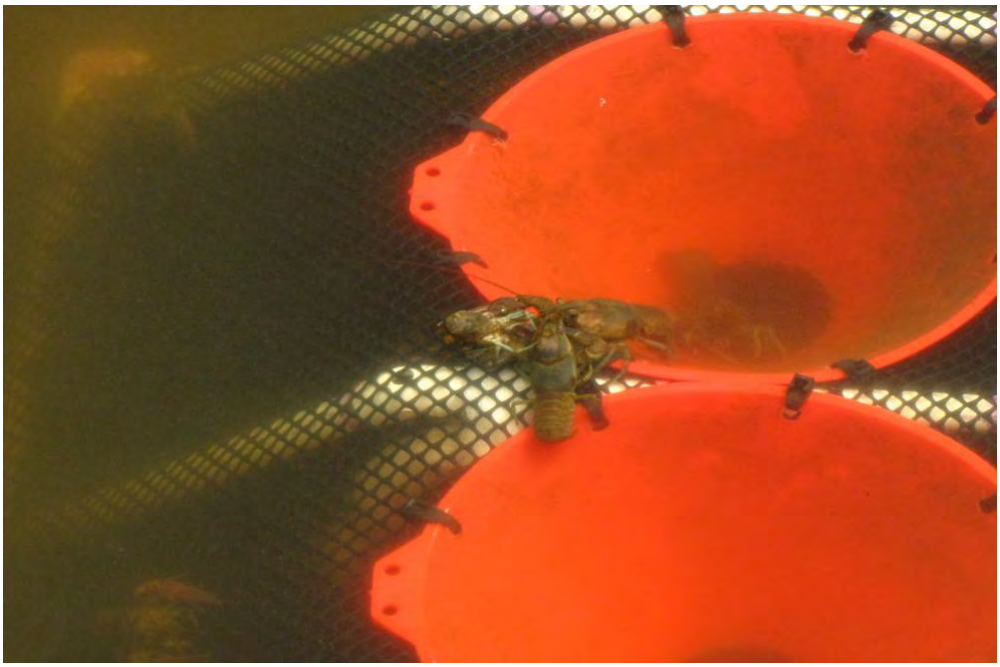


Figure 13. Rusty crayfish fighting over a piece of cheesecloth pulled through the trap



Appendix A (cont.)

Figure 14. Upstream half of trapping site

Figure 15. Traps 1-3, set on east side of island

Appendix A (cont.)

Figure 16. Rusty crayfish inside cheesecloth

Figure 17. Trap full of rusty crayfish

Aquatic Invasive Species Plan

A guide for Proactive AIS Management in Wood County

Purple loosestrife
National Park Service

Zebra mussel -Sea Grant

Eurasian watermilfoil – Paul Skawinski

Curly-leaf pondweed – Paul Skawinski

Rusty crayfish – Paul Skawinski

2009

By

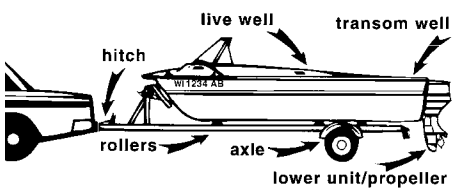
Paul Skawinski

Regional AIS Education Specialist

Golden Sands Resource Conservation & Development Council, Inc.

In partnership with

Wood County Land Conservation Department



Acknowledgements

This county-wide aquatic invasive species (AIS) plan was developed using "Aquatic Invasive Species: A Guide to Proactive and Reactive Management, 2006", written by Carolyn Scholl, Vilas County Land & Water Conservation Department. Thanks to Carolyn for her permission to use her guide in the development on this AIS plan.

Also used as a guide was the Waushara County AIS plan, written by Amy Thorstenson, Golden Sands Resource Conservation & Development Council, Inc. Thanks to Amy for her permission to use her document as a template in the development of this plan.

Further input was provided by:
Jerry Storke, County Conservationist, Wood County Land Conservation Department (LCD)
Tracy Arnold, Conservation Program Coordinator, Wood County LCD
Amy Thorstenson, Regional AIS Specialist, Golden Sands RC&D
Chad Schooley, Park Administrator, Wood County Parks and Forestry Department

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Introduction

Wood County has six public access lakes, and many rivers and streams, including the Wisconsin River. Two of the lakes (Lakes Kaunewinne and Manakiki) are entirely contained within North Wood County Park, and do not have any boat launches. These are both impoundments of the Yellow River. The remaining four lakes are also impoundments: Lake Dexter (Yellow River), Lake Wazeecha and Lake Nepco (Fourmile Creek), and Petenwell Reservoir (Wisconsin River). These four lakes have developed boat access.

No lake groups exist on Wood County's lakes. The majority of waterfront property is owned by paper companies or the Wood County Parks Department. A concern of the Wood County Land Conservation Department (LCD) is creating interest in AIS prevention to residents that don't own property on the lakes. With more and more lakes struggling with AIS infestations, the Wood County LCD acknowledged the need for AIS management on a county-wide level. The LCD collaborated with Portage and Waushara Counties and Golden Sands Resource Conservation & Development Council, Inc (RC&D) to acquire grant funding from the Department of Natural Resources (DNR) to support a Regional AIS Specialist position.

Through the Regional AIS Specialist position, information was gathered about the status of AIS infestations in Wood County, volunteer activity levels, training and education needs, and other information regarding AIS in Wood County.

The purpose of this AIS plan is to identify short-term and long-term goals toward establishing a coordinated, county-wide approach to protecting Wood County's lakes.

This AIS plan is meant to be a dynamic document, to be updated annually and changed as new goals and challenges are identified.

Proactive Management Steps

It is in the best interest of any citizen organization or community to initiate actions today in order to avoid AIS problems tomorrow. Take a proactive management approach to lake protection. Proactive management activities need not be costly, but they can make a world of difference.

As the old saying goes—an ounce of prevention is worth a pound of cure. The same is true for preventing an invasion of AIS in your favorite lake. If efforts are kept at a "prevention" level, the costs to your group (in time, money, and frustration) will be far lower than the costs involved with dealing with AIS at a "control" level.

Take action today to avoid AIS problems tomorrow. Be prepared and be proactive!

Step 1: Gather Information about Aquatic Invasive Species

In Wood County, aquatic invasive species data was gathered from sources including the Wood County LCD and Wisconsin DNR files. The following aquatic invasive species have been confirmed in Wood County:

Table 1: AIS presence in Wood County

Eurasian watermilfoil	
Lake Nepco	1997
Lake Wazeecha	1997
Petenwell Flowage	1992
Hemlock Creek	1994
Ross Lake	2000

Curly-leaf pondweed	
Lake Nepco	2000
Cranberry Flowage	1995
Unnamed pond SHAID 21004767	1986
Lake Wazeecha	

Rusty crayfish (no dates available)
Lake Wazeecha
Wisconsin Rapids Flowage
Yellow River
Cranberry Creek
Moccasin Creek
Mosquito Creek

Zebra mussel (no dates available)
Lake Nepco
Lake Wazeecha
Petenwell Flowage
Wisconsin River (Petenwell to Nepco)

Currently, there are no active lake groups in Wood County. As stated before, the majority of lakefront property is owned by the paper companies or the County. A Clean Boats, Clean Waters workshop was offered last year, but was cancelled due to lack of interest.

Recommended Actions

1. **Determine AIS information for lakes that have not had AIS surveys completed**
   a. Use CLMN-AIS monitoring protocol.

2. **Develop an official AIS occurrences record for all lakes within Wood County**
   a. EWM
   b. CLP
   c. Zebra mussels
   d. Purple loosestrife
   e. Develop a map of this record
   f. Determine who will maintain this record – DNR? County?

3. **Develop official AIS volunteer activity record - DNR**
   a. Clean Boats, Clean Waters
   b. Citizen Lake Monitoring Network
   c. Develop a visual map of this record
   d. Determine who will maintain this record – DNR? County?

Step 2: Gather Information about Lake Ecosystems

Every lake has physical, chemical, and biological characteristics that make it a unique ecosystem. All lakes are different, so it is very important to understand what is "normal" for a particular lake under everyday circumstances.

AIS management is only one component of holistic lake management. Updated background data about the lake ecosystem, such as water chemistry, water clarity, and aquatic plant surveys would be helpful to lake groups and DNR lake managers. Portage and Adams Counties were able to complete county-wide lake surveys with funding support from DNR's Lake Grants Program. These surveys have provided valuable information to citizen groups and local governments in those counties.

Recommended Actions

1. Conduct a county-wide lakes survey
   a. Work with UW-Stevens Point to plan a county-wide lakes survey, similar to that of Portage or Adams Counties.
   b. Apply for funding assistance from the DNR Lake Grant Program.

Why is a lake inventory important for proactive AIS management?

1. A lake inventory tells you what is "normal" for a given lake system, and makes it easier to detect changes, such as new AIS infestations, early. The earlier the detection and response, the better your chances of controlling the problem. Treatments for pioneer populations are much more likely to have a successful outcome than if the population is well-established.

2. In order to receive approval to treat a lake chemically, an aquatic plant management plan (APM plan) is normally required. If a baseline aquatic plant inventory has already been completed as part of a lake inventory, management options to control invasive species may move forward more quickly. Consult the "Guide to an Aquatic Plant Management Plan" for complete information about Wisconsin's APM plan requirements.
   http://www.uwsp.edu/cnr/uwexlakes/ecology/APMguide.asp

Step 3: Protect and Restore Native Vegetation

Terrestrial vegetation that grows on the banks of a water body is also known as the "shoreland buffer". This buffer works indirectly in several ways to keep invasive plants from colonizing in a lake:

1) The buffer protects the lake by reducing soil erosion and diverting nutrients that would otherwise enter the lake and provide fuel for nuisance-level aquatic plant growth.

2) A healthy shoreland buffer also provides biologically diverse and healthy habitats that are important to wildlife, including the native *Eubrychiopsis* weevils that are used for biological control of Eurasian watermilfoil.

3) Dense vegetative cover occupies areas that would otherwise be open and available to colonization by invasive species, and provides a degree of privacy to shoreline property owners.

Native vegetation is the lake's "immune system"

Wood County regulations require a 35-foot shoreline buffer zone above the ordinary high water mark. Above this 35-foot line, no more than 30 feet per 100 feet can be clear-cut. The remaining 70% should serve to screen human activity and erosion. These regulations are in place to protect water quality by reducing sedimentation and erosion.

Counties have the option to create local ordinances that go beyond the state standard if they choose. The shoreline buffer serves as the lake's "immune system", fending off new invaders. Wood County also plans to hire a summer intern in 2009, who will accomplish tasks such as surveying shoreline vegetation.

Local government can protect shoreland buffers through policy and education. Wood County Planning and Zoning protects lake health with strong enforcement of shoreland zoning ordinances. In Wood County, a strong shoreland zoning ordinance is routinely enforced, and with enforcement comes education. The county LCD provides technical assistance with shoreland restoration or enhancement, and has a cost-sharing program through a DATCP soil & water resource management (SWARM) grant that may help finance a shoreland project.

Use of newsletters, informational packets, news articles, and videos can be valuable tools to introduce the concept of shoreline restoration to landowners in Wood County. These tools can help to illustrate what a healthy shoreline looks like, why it's beneficial to their property and the lake, and how a restoration project can be utilized to produce a healthy shoreline.

Figure 1: Shoreline in need of restoration (photo: Tom Littwin)

Figure 2. Restored shoreline (photo: Tom Littwin)

Educational campaigns can also play a role in promoting healthy shoreland buffers. It would be in the best interest of the County to provide a small packet of information to new lakeshore property owners regarding aquatic invasive species and the importance of healthy shoreland buffers.

Native Aquatic Vegetation

Although aquatic plants are commonly thought of as "weeds", a healthy and diverse population of native aquatic plants is a *vital* component in the prevention of aquatic invasive species. Research has shown that the abundance of EWM in a lake is inversely related to cumulative native plant cover (Madsen, 1998). For this reason, it is important to maintain healthy and diverse stands of vegetation. A thriving native plant population will compete for nutrients and living space, making it difficult for invasive species to become established. Other benefits to maintaining native plant populations include:

- Improves health of the sport fishery
- Protects against bank erosion
- Stabilizes the bottom sediment
- Decreases likelihood of algae blooms
- Increases water clarity
- Increases value to desirable wildlife species

Recommended Actions

1. County-wide promotion of native vegetation
   a. Enforce shoreland zoning ordinances
   b. Annual review of shoreland zoning ordinances
   c. Annual review of funding for cost-sharing incentive programs
   d. Create or expand county ordinances to also address native *aquatic* vegetation
      i. Develop mechanism for enforcement of the new ordinance
   e. Create a webpage for shoreland restoration projects
   f. Create and distribute informational packets to new lakeshore property owners
   g. Promote native vegetation in annual County newsletter
   h. Promote native vegetation in citizen organization newsletters
   i. Promote native vegetation in news articles and press releases
   j. Promote native vegetation with public service announcements and local radio.

Step 4: Conduct AIS Monitoring

With the growing concern over the spread of aquatic invasive species to Wisconsin's inland lakes, many concerned citizens are looking for ways to get involved. AIS monitoring and volunteer boat inspection programs are opportunities to take a front-line defense against the spread of AIS.

As stated earlier, there are currently no citizen organizations in Wood County. The formation of lake groups would be extremely beneficial to the lakes of the County. Training workshops are available to train volunteers on protocols of the Clean Boats, Clean Waters program, and also the Citizen Lake Monitoring Network program.

Clean Boats, Clean Waters

Volunteers and lake organizations are essential for early detection of AIS and maintenance of healthy lake

Clean Boats, Clean Waters (CBCW) is a watercraft inspection volunteer training program sponsored by DNR, UW-Extension, and the Wisconsin Association of Lakes (WAL). Upon completion of the three-hour workshop, CBCW participants are equipped with the tools, knowledge, and confidence needed to educate lake users and perform watercraft inspections at boat landings, potentially preventing a new infestation from coming into their lake. An additional benefit of the CBCW program is that the data collected by volunteers is used to support requests for more funding and legislative support for AIS issues.

Citizen Lake Monitoring Network

The Citizen Lake Monitoring Network is a well-established program designed to involve citizens in collection of pertinent lake management data. The program has historically included the collection of water chemistry and Secchi readings, a measure of water clarity.

Figure 3: A Secchi disc, which is lowered into the water to measure water clarity

Recent research has developed solid correlations between Secchi readings and many other water quality parameters. Therefore, this one inexpensive, easy-to-operate sampling tool can tell our lake managers a great deal about a lake's condition. To have Secchi monitors on every lake in Wisconsin would be a terrific advantage for managing our state's lakes.

A new component has been added to the CLMN program for the monitoring of eight AIS species. The data collected by volunteers in the CLMN-AIS program is used to support requests for more funding and legislative support for AIS issues. Citizens can monitor for any or all of the species included in the program. Monitoring means early detection of new AIS infestations, and can result in huge savings in treatment expenses and a reduction of impacts to the lake. Ideally, every lake would have trained AIS monitors.

The Wood County Parks Department is also a valuable group that could serve as monitors. Parks staff work throughout the county, frequently at waterfront locations. If these staff are trained to identify and report new AIS sightings, they could provide valuable assistance with early detection.

Recommended Actions

1. **CLMN-AIS monitoring activity on ALL lakes**
   a. Promote the CLMN-AIS monitoring program county-wide, with frequent news articles to promote awareness of the program and the importance of it.
   b. Offer CLMN-AIS training workshops county-wide

2. **CLMN-Secchi monitoring activity on ALL lakes**
   a. Promote the CLMN-Secchi monitoring program county-wide, with frequent news articles to promote awareness of the program and the importance of it.
   b. Offer CLMN-Secchi training workshops county-wide

3. **Watercraft inspectors at ALL landings**
   a. Promote the Clean Boats, Clean Waters program county-wide, with frequent news articles to promote awareness of the program and the importance of it.
   b. Offer CBCW training workshops county-wide

4. **Train County Parks staff to identify and report AIS sightings**

5. **Monitor the rusty crayfish population in the Yellow River, and begin a trap-and-remove activity.**

Step 5: Spread the Word about AIS

Increasing public awareness of AIS is an important strategy in minimizing their spread. To facilitate proactive efforts from the general public regarding AIS prevention, people need to be made aware of the problems that AIS can cause.

Students and youth organizations can get involved in AIS issues through purple loosestrife beetle rearing programs for biological control. This program includes an instructional manual for utilizing the beetle-rearing project as an educational tool. Interested individuals can contact Wood County LCD for information.

How else can youth get involved? Kids have a great time at volunteer EWM "pulling parties", performing watercraft inspections at boat landings, helping in a purple loosestrife rearing project, or participating in the CLMN-AIS monitoring program. These are all great ways for lake groups to include youth in their AIS activities.

Attending workshops and conferences on lake issues and AIS issues is a great way for lake residents to learn about protecting the health of their lake. Citizens county-wide are encouraged to attend events like this. Nearby Adams County hosts an annual Lake Fair, and the Wisconsin Association of Lakes (WAL) hosts an annual statewide Lakes Convention, which provides valuable training for both citizens and professionals alike.

Figure 4: Volunteers collecting plant samples for a plant ID workshop

Figure 5: Identifying each plant species that the volunteers collected

Other methods of public education and outreach may include the distribution of written materials, such as AIS pamphlets, videos, brochures, and "watchcards" developed by DNR and UW-Extension. These can be ordered free or at a minimal cost at www.uwsp.edu/cnr/uwexlakes/CBCW/pubs.asp and can be distributed through local bait shops, dive shops, boat rental and sales shops, local chambers of commerce, resorts, restaurants, and other local businesses.

News articles in local papers can also be very effective ways to reach lake users. Articles can discuss specific AIS species, laws and ordinances, or volunteer programs.

Figure 6: "Prevent the spread" sign

Signs at the boat landings can be another tool for education and outreach. The DNR has posted all public landings in the state with "Exotic Species Advisory" signs (if the lake has confirmed AIS), or with "Prevent the Spread" signs (if the lake has no confirmed AIS). If any signs are seen to be damaged or missing, this should be reported to DNR immediately.

Figure 7: "Exotic Species Advisory" sign

Some citizen groups have created additional boat landing signage to reinforce the AIS message to lake users. These projects are eligible for funding assistance from the DNR AIS Grant Program.

Another common method of spreading AIS is through water gardening practices. Many of the plants that are desirable for water gardens are fast growers, can tolerate a wide range of conditions, and are extremely strong competitors. These are exactly the characteristics that describe an invasive species. If these plants are released, they can quickly destroy the balance of our native ecosystems. A possible solution to this important issue would be to work with distributors of water garden plants, and encourage them to insert a "Do not release to waterways" stake into each pot. These stakes might also have a website printed on them for the consumer to visit if they wish to learn more about AIS and the dangers of releasing non-native species.

Recommended Actions

1. **Promote beetle-rearing projects for biological control of purple loosestrife**
   a. Promote to schools
   b. Promote to citizen groups to partner with youth groups
   c. Target lakes with reported purple loosestrife infestations

2. **Promote lake fairs, workshops, and conferences to county residents county-wide**
   a. Postcard notices
   b. Email notices

3. **Print AIS placemats for distribution in restaurants that are near lakes**

4. **News articles**
   a. New AIS species to watch for
   b. AIS prevention
   c. New AIS laws
   d. Volunteer programs available

5. **Maintain AIS signage at boat landings**
   a. Include reporting procedures for damaged boat landing signs in AIS training to Parks Department staff

6. **Staff AIS education table at Fleet Farm "Kid's Fishing Day"**

7. **Encourage water garden suppliers to insert "Do not release to waterways" stakes into pots containing an AIS.**

Step 6: Develop a Contingency Plan

Are Wood County citizen groups prepared to respond quickly to an AIS infestation? The best way to address this problem effectively is to develop and follow a plan of action **before** an infestation occurs. A contingency plan is your best insurance in the event that an invasive species should colonize the lake. Thoughtful planning and prioritizing now will reduce the potential for hasty decision-making in the future.

An AIS primer for citizen groups may help them prepare a contingency plan for AIS infestations.

Wood County can help citizen groups to be prepared to handle an AIS infestation by offering an AIS primer on how to monitor for AIS, report a new occurrence, and what the first steps would be for control and funding assistance.

Part of that primer may also include familiarizing the citizen group with the step-by-step instructions outlined in the manual this plan is based on—*Aquatic Invasive Species: A Guide for Proactive & Reactive Management, 2006*, by Carolyn Scholl, Vilas County Land & Water Conservation Department. The Guide has detailed information about funding options, treatment protocols for various invasive species, permitting requirements, and a comprehensive list of resources.

To Report an Infestation

1) **Collect a sample, if possible**
   a. Roots, stems, flowers
   b. Place in plastic bag with water
   c. Keep it in the freezer

2) **Contact DNR**
   Scott Provost, Water Resource Management Specialist
   715-421-7881

Some of the questions an AIS primer may help a citizen group answer are:

- Are we knowledgeable about aquatic invasive plants and animals?
- Do we have a functional proactive management strategy?
- What would we do if an invasive species was discovered in the lake today?
- Who would handle the situation? Who would take the lead?
- Who do we call to report it?
- What are the treatment options available for AIS and what are the "pros" and "cons" of each?
- How would we finance treatment operations?
- Do we need an emergency AIS treatment fund?

Recommended Actions

1. Offer an AIS primer to citizen groups
   a. Species identification
   b. AIS monitoring
   c. Reporting procedures

d. What to do next (based on guidelines outlined in *Aquatic Invasive Species: A Guide for Proactive & Reactive Management, 2006*, by Carolyn Scholl, Vilas County Land & Water Conservation Department)

Step 7: Distribute the Workload

Managing invasive species, even on a proactive level, can be a tremendous workload. By distributing the workload and allocating tasks as per individual interest, a great deal can be accomplished.

In Wood County, various tasks are being accomplished by the County LCD and individuals. The Regional AIS Technician's role has been to begin to collect information about those activities, and to begin coordinating them together and filling in the gaps. Since the AIS workload is not expected to disappear, this position should be considered a permanent need, and funding secured to keep the position filled.

Since Wood County has more streams than lakes, it would be in the best interest of the County to involve local stream volunteers and groups in their AIS efforts. Rivers can be a major source of AIS just as lakes can.

To strengthen the county lake community and the county AIS programs, the AIS Coordinator may want to consider whether the following subcommittees are needed at the County or town level:

- Invasive Species Monitoring Committee
- Aquatic Plant Monitoring Committee
- Boat Launch Monitoring Committee
- County Lakes Survey Committee

Recommended Actions

1. **Secure funding to continue the AIS coordinator position in Wood County**
2. **Consider developing committees to assist with various AIS needs**
3. **Involve local volunteer stream groups or "river alliances" in AIS activities.**

Step 8: Involve Local Government

Local town or county governments can be wonderful resources to tap in AIS matters. Below are a few creative ways that local government actions have been beneficial in community AIS efforts.

Town Government

Boat patrols—town boat patrols are an important resource for volunteers regarding the "Illegal to Launch" law. CBCW volunteers active in the County may need to submit violation report forms to the local boat patrol for enforcement. Good cooperation between local boat patrols and CBCW volunteers is important.

Grant sponsorship—many town governments in Wisconsin have recognized an increasing need and inherent responsibility to support local lake and stream management efforts. Town governments can take an active role in the sponsorship of state lake grants. Because of their grant eligibility status of local governments, local lake or stream associations can work directly with their town boards to support grant applications on AIS-focused lake projects or other lake projects. To learn more about the state lake grant programs, log on to http://www.dnr.state.wi.us/lakes.

County Government

Community AIS partnerships—County governments can offer a unique community support system pertaining to AIS efforts. Counties can coordinate and encourage townships to work together in unified lake protection efforts. One method of accomplishing this is by supporting an AIS Coordinator position to coordinate AIS activities within the county.

Grant sponsorship—County government can take an active role in the sponsorship of state-administered AIS grants. Counties can help local lake associations seek grants for many types of lake protection projects, including projects focused on AIS issues. County governments can also initiate AIS projects to be completed by County personnel. The AIS Coordinator position can be funded through the AIS grant program with the DNR to accomplish such projects as AIS partnership coordination, volunteer monitoring support, educational campaigns, and more.

Conservation departments—the actions of Land Conservation Departments (LCD) are directed by elected county board supervisors. LCD personnel are natural resource management professionals and are often well-versed in all aspects of AIS matters. The LCD is a natural home for county-wide lake protection and AIS initiatives, such as

supporting an AIS Coordinator position, enforcing and promoting shoreland buffers, and assisting with shoreland restoration or enhancement projects.

Recommended Actions

1. **Boat patrol support of volunteer activities coordinated as needed by AIS Coordinator**
2. **County LCD continue AIS involvement through support of AIS Coordinator position**

Step 9: Plug in to the Lakes Community Network

Wisconsin is proud of its lake-rich heritage, and is host to hundreds of lake organizations. It is important for lake groups and lake managers to stay well connected with the "lakes community" and to stay up-to-date on local and state lake stewardship issues.

Below are suggestions on networking within the lakes community.

Statewide Lake Organizations

Wisconsin Association of Lakes (WAL) is a nonprofit statewide lake group working to protect Wisconsin's lakes through public policy, education, and local lake group assistance. Through WAL, the lakes community can stay updated on current public policies that may ultimately affect the health of lakes throughout Wisconsin, they can attend annual regional workshops that target key lake issues, and they can gain the support they need for individual lake group projects. For more information about WAL, log onto their website at http://www.wisconsinlakes.org.

Lake managers with the DNR and UW-Extension come together quarterly at Lake Team meetings to keep up-to-date with emerging lake issues, policies, and science. County AIS Coordinators have been invited to join this circle to stay in tune with DNR and UW-Extension initiatives. This is a highly recommended network for the Wood County AIS Coordinator to stay in touch with.

DNR and UW-Extension AIS coordinators have begun holding biannual meetings for county AIS Coordinators, to update coordinators with regard to state initiatives, new available resources, policy changes, and to give coordinators around the state a chance to network. This is another highly recommended network for the Wood County AIS Coordinator to stay in touch with.

Statewide Lakes Convention

The Wisconsin Lakes Convention is an outstanding educational event that has brought

hundreds of lake groups, state leaders, and natural resource professionals together in a celebration of Wisconsin's lakes. The convention is an excellent opportunity for learning, sharing, and discussing issues important to lake management. For more information about the annual Wisconsin Lakes Convention, log onto the UW-Extension Lakes Program website at http://www.uwsp.edu/cnr/uwexlakes. This convention is a highly recommended opportunity for the Wood County AIS Coordinator and representatives of the County LCD or individual lake groups.

County-wide Citizen Organizations

County-wide citizen organizations provide an excellent opportunity to stay connected with the local lakes community. These organizations provide a network for communication and sharing resources between and amongst citizen organizations in the county. Membership in a county-wide citizen organization offers a collective voice for advocating for regulatory changes, influencing public policy discussions, and discussions regarding the future growth of the community.

Individual Citizen Organizations

Citizen groups range from informal social groups to formalized lake associations or districts. An organized, functional citizen group can make a big difference in lake health protection. Citizen groups can be twice as effective when networking with other lake organizations who have struggled with similar issues—lack of funding, lack of volunteer interest or commitment, or lack of information, to give a few examples.

Recommended Actions

1. **Promote attendance at the Wisconsin Lakes Convention**
    a. AIS Coordinator
    b. Local governments
    c. Lake groups or other citizen groups
2. **Keep AIS Coordinator networked with the "lakes community"**
    a. WAL
    b. Statewide Lake Team
    c. AIS Coordinators' meetings
3. **100% inclusive county lake and stream community, with a contact person to disseminate news and information through, even on lakes/streams without organized citizen groups**

Step 10: Be Creative!

Just as each lake is unique, so are the individuals that make up lake organizations. There is no "one size fits all" management criteria made to fit all lake situations.

The important similarity between lake organizations is that they all need to create and follow a plan of action that is conducive to a healthy lake ecosystem and is realistic in time, money, and commitment. Consider using several of the proactive management steps for the best results.

If the proactive management section has not spurred any thoughts to fit your unique group situation, sit down with your membership and brainstorm ideas that will work for you. The important thing is that you DO talk about it.

Wisconsin waterways will always be vulnerable to invasions of aquatic invasive plants and animals. Proactive management is the best way of avoiding future AIS infestations.

Creative Kids

"Milfoil Masters" was a creative school project that kids from Minocqua-Hazelhurst-Lake Tomahawk Middle School came up with. Working off of a $25,000 start-up grant, their idea evolved into the Clean Boats, Clean Waters program, and is now the statewide protocol for slowing the spread of AIS.

Summary Table: Recommended Actions					
Proactive Step	**Recommended Action**	**Who**	**How**	**When**	**Progress**
1) Gather info about AIS	Determine AIS information for lakes with no AIS surveys	AIS Coord. with support of LCD, Parks	Letters, emails, phone calls	2008-09	
					IP
	Develop official AIS occurrences record	AIS Coord.	Confirm reports with vouchers, create map	2009	IP
	Develop AIS volunteer activity record	AIS Coord. With support of LCD, DNR	Confirm activity from database, create map	2009	IP
2) Gather info about lake ecosystems	Conduct county-wide lakes survey	AIS Coord., LCD	LCD apply for DNR Lake Planning Grant	2009-10	
3) Protect and Restore Native Vegetation	<u>County-wide promotion of native vegetation</u>				
	Enforce shoreline zoning ordinances	LCD	Established process	ongoing	√+
	Annual review of cost-sharing funding	LCD, P&Z	Established review process	annually	
	Create/expand county ordinances to address native aquatic vegetation	LCD	Through ordinance process	2009+	
	Create webpage for shoreland projects	LCD	County will develop and maintain	2009	
	Create/distrib. Info to property owners	LCD	Established distribution method	ongoing	
	Promote native veg. in County newsletter	LCD, AIS Coord.	AIS Coord will write articles, LCD produces	ongoing	√+
	Promote native veg. in cit. org. newsletters	LCD, AIS Coord.	AIS Coord write articles, group produces	ongoing	√+
	Promote native veg. in articles and press rel.	LCD, AIS Coord.	Write and submit press releases	ongoing	√+
	Promote native veg with PSAs and radio	LCD, AIS Coord.	write and submit PSAs	ongoing	√+
4) Conduct AIS Monitoring					
	CLMN-AIS monitoring activity on ALL lakes	LCD, citizen groups	AIS Coord. will train volunteers	2009+	
	CLMN-Secchi monitoring activity on ALL lakes	LCD, citizen groups	AIS Coord. will train volunteers	2009+	
	Watercraft inspectors at ALL landings	LCD, citizen groups	AIS Coord. will train inspectors, LCD hire?	2009+	
	Train County Parks staff to identify and report AIS sightings	AIS Coordinator			
			AIS Coord. will train Parks staff	2009+	
	Monitor rusty crayfish population in Yellow River, and begin trap-and-remove activity	LCD, AIS Coord.			
			AIS Coord. and LCD will monitor and study	2009	IP

5) Spread the word about AIS	Promote beetle-rearing projects for biological control of purple loosestrife	LCD, AIS Coord.	LCD and AIS Coord. will contact schools and groups, and offer supplies	2008+	IP
	Promote lake fairs, workshops, and conferences to County residents				
		LCD	Use established mailing lists	ongoing	
	News articles	LCD, AIS Coord.	Write and distribute press releases		
	Maintain AIS signage at boat landings	AIS Coord.	Keep record of boat landing signage, train others to collect signage info	2009+	
	Staff AIS education table at Marshfield Fleet Farm "Kid's Fishing Day"	AIS Coord.	Staff table and offer information to public	2009+	
6) Develop a contingency plan					
	Offer an AIS primer to citizen groups, Parks	AIS Coord.	Develop and present primer on AIS ID, monitoring, reporting procedures	2009+	IP
7) Distribute the workload	Secure funding to continue the AIS Coordinator position in Wood County	AIS Coord.	Apply for DNR grant to continue program	2009+	IP
	Consider developing committees to assist with various AIS needs	LCD, AIS Coord.	Evaluate AIS plan annually and discuss needs for committee	2009+	
	Involve local volunteer stream groups in AIS activities	LCD	Encourage creation of "Friends" groups to assist with local AIS activities	2009+	
8) Involve local government	Boat patrol support of volunteer activities coordinated as needed by AIS Coordinator	AIS Coord.	Keep in touch with DNR water guards and boat patrols to enforce AIS violations	2009+	
	County LCD continue AIS involvement through support of AIS Coordinator position	LCD	Continue to place AIS in high priority, and provide County match on AIS grant	2009+	IP
9) Plug into the lakes community network	Promote attendance at the Wisconsin Lakes Convention	LCD, AIS Coord.	Send direct mailings and email notices to contacts, LCD add to website	2009+	
	Keep AIS Coordinator networked with the lakes community	AIS Coord.	Attend WAL, Lake Team, and AIS Coordinator meetings	2009+	IP
	100% inclusive county lake/stream community	AIS Coord.	Review contact list from county, fill in gaps in contact info, if any exist	2009+	

Appendix A – Contacts List

County

Wood County LCD
400 Market Street
Wisconsin Rapids, WI 54495
715-421-8475

Wood Co Parks
400 Market St.
WI Rapids, WI
715-421-8422

Wood Co Planning & Zoning
400 Market St.
WI Rapids, WI
715-421-8466

Region

Amy Thorstenson, Regional AIS Coordinator
Golden Sands Resource Conservation & Development Council, Inc
1462 Strongs Ave, Stevens Point, WI 54481
thorstea@co.portage.wi.us 715-346-1264

Paul Skawinski, Regional AIS Education Specialist
Golden Sands Resource Conservation & Development Council, Inc
1462 Strongs Ave, Stevens Point, WI 54481
skawinsp@co.portage.wi.us 715-343-6278

State

Wisconsin Department of Natural Resources
473 Griffith Avenue
Wisconsin Rapids, WI 54494
715-421-7800 Fax 715-421-7830

University of Wisconsin Extension – Lakes Program
College of Natural Resources, University of WI – Stevens Point
800 Reserve St., Stevens Point, WI 54481
715-346-2116 http://www.uwsp.edu/cnr/uwexlakes

Laura Herman
Citizen Lake Monitoring Network Coordinator
715-346-3989 Laura.herman@uwsp.edu

Erin Henegar
Clean Boats, Clean Waters Volunteer Coordinator
715-346-4978 Erin.henegar@uwsp.edu

Wisconsin Association of Lakes
One Point Place, Suite 101, Madison, WI 53719
608-662-0923 or toll-free (WI only) 800-542-5253 http://www.wisconsinlakes.org

Appendix B – Aquatic Plant Management Laws & Regulations

Regulated and Unregulated Aquatic Plant Management Activities in Waters of Wisconsin

Activities	**Water Bodies**					
	Wetlands (non-navigable)[1]	Streams	Flowages	Lakes <10 acres entirely confined on one property	Lakes	Fish farms (s. 95.96)
Manual removal of native plants	No Permit	No Permit	109 Permit required if > 30ft wide	No Permit	109 Permit required if > 30ft wide	No Permit
Manual removal of exotic plants	No Permit	No Permit	No Permit	No Permit	No Permit	No Permit
Mechanical harvesting	No Permit	109 Permit required	109 Permit required	No Permit	109 Permit required	No Permit
Chemical control	107 Permit required	107 Permit required	107 Permit required	107 Permit required	107 Permit required	No Permit
Biological control[2]	Stocking permit required	Stocking permit required	Stocking permit required	Stocking permit required	Stocking permit required	No Permit
Burning	No Permit	Permit required	Permit required	Permit required	Permit required	No Permit
Purple loosestrife control[3]	107 Permit required	107 Permit required	107 Permit required	107 Permit required	107 Permit required	No Permit
Native planting/stocking	No Permit	No Permit	No Permit	No Permit	Approval of Project	No Permit
Non-native planting/stocking	109 Permit required	109 Permit required	109 Permit required	109 Permit required	109 Permit required	No Permit
Incidental or scientific removal	No Permit	No Permit	No Permit	No Permit	No Permit	No Permit

- All activities must be conducted in an environmentally sound manner.

- All activities on privately owned land or land adjacent to privately owned lakefront property, or lakes confined on the property of one person must have the permission of that property owner.

[1]Confirm with DNR Water Management Specialist that wetland is non-navigable to be exempt of permit.

[2]Use stocking permit for Eurasian watermilfoil weevils, form 9400-60, pursuant to s. 29.753 and NR 19.05.

[3]Must be a state cooperator if using purple loosestrife beetles for biocontrol.

Exerpted from "Aquatic Invasive Species: A Guide to Proactive and Reactive Management", Carolyn Scholl, Vilas County LWCD, May 2006