11 New Zealand Mudsnail

Monitoring Protocol

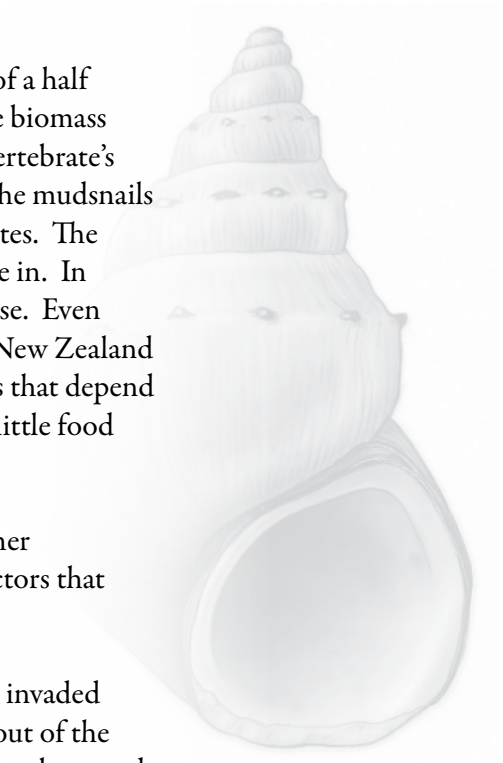
To keep current on New Zealand mudsnail updates including disinfection protocols, visit http://dnr.wi.gov **and type "New Zealan Mudsnail" in the search box.**

Much of the information for this section was taken directly from the: National Management and Control Plan for the New Zealand Mudsnail (Potamopyrgus antipodarum). May 2007. Prepared for the Aquatic Nuisance Species Task Force by the New Zealand Mudsnail Management and Control Plan Working Group.

Background/Overview

The New Zealand mudsnail (*Potamopyrgus antipodarum*, pronounced POT-a-mo-PIER-gus an-tee-poh-DAR-um) is indigenous to New Zealand and its adjacent islands. In New Zealand, the snails are found in nearly every aquatic habitat including large rivers, forested tributary streams, thermal springs, ponds, glacial lakes and estuaries. Over the past 150 years, New Zealand mudsnails have spread to three continents: North America, Europe, and Australia. In 2005 the New Zealand mudsnail was found in Lake Superior in the Duluth-Superior Harbor (St. Louis River harbor area). In 2007 ecologists at the Lake Michigan Biological Station discovered New Zealand mudsnails south of the Waukegan Harbor in Lake Michigan. The mudsnail populations in Lake Superior and Lake Michigan are the same clone as what has been found in the eastern United States. This clone (Clone 2) is not as prolific or problematic at the New Zealand mudsnail clones found in the western United States. This clone is speculated to have arrived in the US in ballast water from Europe.

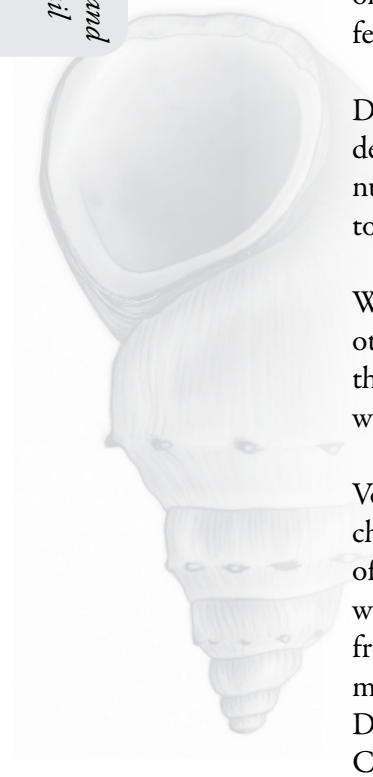
In fall 2013New Zealand mudsnails were found in a macroinvertebrate (insect) sample collected on Black Earth Creek in southern Wisconsin. This sample was collected in 2012 but not analyzed until 2013. 2014 monitoring has shown populations in a 4-mile stretch of Black Earth Creek. Additional monitoring in state steams is underway. No lake sampling is scheduled. Lake sampling will probably come later once we know the range of the Wisconsin streams population. The Black Earth Creek New Zealand mudsnails are the same clone (Clone 1) as is found out in western United States. This is the first known population of Clone 1 east of the Mississippi River. Clone 1 is more aggressive than Clone 2.



In western streams in the US, mudsnails have been found to reach a density of a half million per square meter, frequently comprising over 95% of the invertebrate biomass in a river. This has devastating consequences to native mussels and other invertebrate's populations as the mudsnails compete for the same food base and habitat. The mudsnails are "grazers" eating algae and periphyton normally eaten by native invertebrates. The mudsnails alter the primary production (food web) of the waterbody they are in. In waterbodies with these mudsnails, the insect diversity and abundance decrease. Even insects, such as caddisflies and mayflies, are impacted by the densities of the New Zealand mudsnails. These insects are normally a food base for fish so fish populations that depend on these natives as a food source are threatened as well. The mudsnails have little food value for fish.

On some Colorado streams, the population has gone from boom to bust, other populations have remained high. We do not yet know the environmental factors that impact the abundance and survival of New Zealand mudsnails.

The New Zealand mudsnails are nearly impossible to contain once they have invaded an aquatic ecosystem. Highly resilient, the snails can survive up to a month out of the water. They can close their operculum (trap door cover) and withstand being submerged in chemicals for almost a month – making control and containment complicated. New



Zealand mudsnails can withstand a wide range of temperatures, including 3-4 months of winter conditions. The US clones of New Zealand mudsnails females are born "pregnant". They carry up to 230 neonates (juveniles) in brood pouches. These juveniles are released once the female mature (3 to 9 months depend upon water temperatures). Therefore, one female is sufficient to initiate a new population.

Densities of Clone 1 New Zealand mudsnails can fluctuate greatly. Densities fluctuate depending upon season, with higher numbers found in the summer months and lower numbers found in winter months. Densities also fluctuate between locations. Densities up to 500,000 snails/square meter have been found in western states.

While the snails can be transported to new waterbodies if they are attached to birds and other wildlife, human activities can play a major role in their spread. Biologists indicate that these organisms can be transported on boats and other watercraft, and on boots, waders, nets and other fishing gear.

Volunteers play an integral part in learning to recognize the New Zealand Mudsnail and checking local lakes, streams and rivers for the presence of this snail. Early identification of the mudsnail makes containment easier, and can help prevent the spread into other waterbodies. If you detect the invasives early enough, you may be able to prevent them from spreading throughout your lake system. At present, control of the New Zealand mudsnail is unlikely. Since the New Zealand mudsnails have been discovered in the Duluth-Superior Harbor, in the Waukegan Harbor in Lake Michigan, and in Black Earth Creek, volunteers are especially needed to monitor local lakes, streams and rivers in these portions of the state.

Life Cycle

In New Zealand, the New Zealand mudsnail is dioecious (separate male and female sexes) and bears live young (Winterbourn 1970a, b, Wallace 1978). Female mudsnails in New Zealand may be either sexual or asexual. Asexual females develop eggs that can grow without fertilization and produce cloned genetically identical offspring. Therefore, one female is sufficient to initiate a new population. Although New Zealand mudsnails reproduce both sexually and asexually in New Zealand, introduced populations to the United States appear to be clonal (asexual). In the United States, the known populations of these tiny snails (up to ¼ inch) are almost all females. They are born "pregnant" and give birth to live young (no external eggs). Depending upon water temperatures, females each reproductive age anywhere from 3 to 9 months of age.

"The New Zealand mudsnail inhabits both brackish and fresh waters. It can be found in estuaries, lakes, rivers and streams. It survives in waters with high and low calcium content, on hard and soft substrates, in turbid or clear water, and among vegetation. It is capable of tolerating a wide range of temperatures with upper thermal limits of 83°F and lower thermal limits near freezing, allowing it to overwinter here in Wisconsin." (MacFarland, 2008). The mudsnail does well in eutrophic (high nutrient) waterbodies.

The New Zealand mudsnail is both a grazer and a detritivore, preferring to eat diatoms, plant and animal detritus, and attached periphyton (algae that attaches to surfaces of plants, rocks, etc.).

Identification

In your packet is a card with a picture of the New Zealand mudsnail (Potamopyrgus antipodarum). One of the main identification features of the New Zealand mudsnail is their size. Adult snails are less than 1/4 inch in length. Shell length is measured from the lip of the shell to the tip of the whorl. Adult native snails are larger than the New Zealand mudsnail adults. New Zealand mudsnails have opercula (singular operculum), which are "trap doors" that can be closed. The mudsnail pulls its body back into the shell and closes it operculum to protect its soft body from danger. This operculum is solid in consistency and if the operculum is kept closed, the snail can live through dry conditions (and even in alcohol) for up to a month. With the operculum kept closed, the snail can pass through the digestive tract of fish unscathed. Since New Zealand mudsnails give birth to live young, you may find small snails inside of the adult females.

Refer to pictures below as well as reference materials in your packet to see the characteristics listed below:

New Zealand mudsnail characteristics:

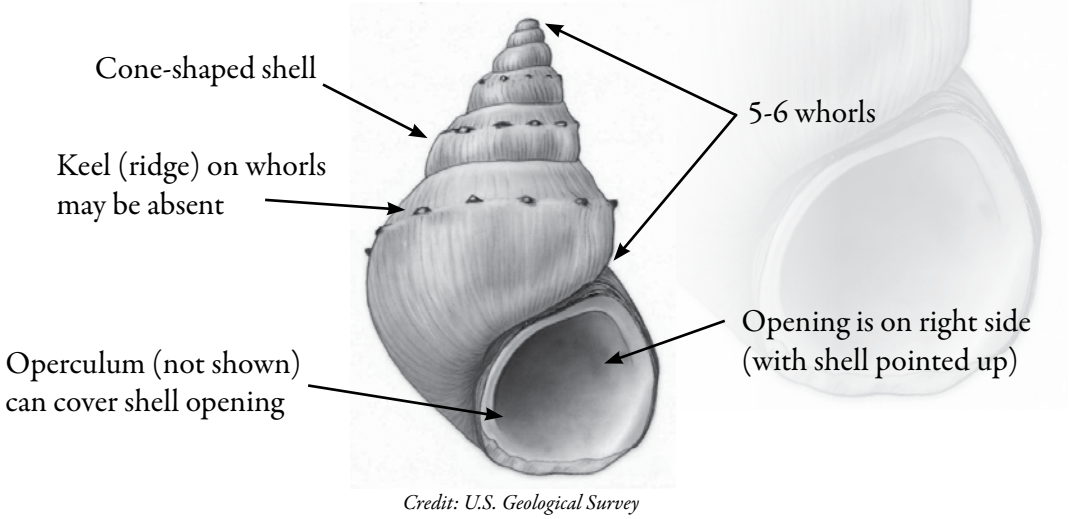
- Adult mudsnails normally range from 3 mm (1/10 inch) to 5 mm (2/10 inches) although Clone 1 (Wisconsin Clone) have been found to reach 6 mm (1/4 inch).
- Operculum (trap door) present.
- Shell ranges from light to dark brown
- The shell is cone shaped and has 5 to six whorls.
- Whorls are dextral (opening is on the right side – see drawing below).
- Some New Zealand mudsnails have raised keels on their shells (see drawing below).

New Zealand Mudsnails

Photo by Laura Herman

New Zealand Mudsnails

Photo by Larry Mayer



Credit: U.S. Geological Survey

New Zealand Mudsnail Monitoring

Black Earth Creek, southern Wisconsin, is the first documented "inland" waterbody with Clone 1 New Zealand mudsnails. Clone 2 New Zealand mudsnails were discovered in the Duluth-Superior Harbor and in the Waukegan Harbor in Lake Michigan. Volunteers are especially needed to monitor lakes, streams and rivers in these areas.

When to Monitor

Prevention Monitoring
The best time of the year to monitor for New Zealand mudsnails is late summer to early fall, but monitoring can take place anytime you are on the water.

Where Do I Look for New Zealand mudsnails?

Prevention Monitoring
The New Zealand mudsnail inhabits both brackish and fresh waters. It can be found in estuaries, lakes, rivers and streams. It survives in waters with high and low calcium content, on hard and soft substrates, in turbid or clear water, and among vegetation. It is capable of tolerating a wide range of temperatures with upper thermal limits of 83°F and lower thermal limits near freezing, allowing it to overwinter here in Wisconsin.

Look for the mudsnails throughout the entire lake when you are recreating. Look for large numbers of tiny snails or shells along the shoreline. Shells of dead snails are often found near the high water mark of the lake, particularly on the downwind side of the lake. You may also want to look for them while boating. New Zealand mudsnails can be found in **shallow-water areas** and **deep-water areas**. Mudsnails can live in depths of 45 meters (150 feet).

How to Monitor

New Zealand mudsnails occur in a wide variety of water bodies and on a wide variety of substrates including sand, leaf litter, organic detritus, silt, algae, aquatic plants, gravel, cobbles, and boulders, as well as any other type of stable substrate (natural or artificial). With such a wide variety of habitats capable of being invaded, no single sampling method can be developed that is applicable in all situations. We have listed several monitoring techniques that can be used. Other methods may also be used. Make sure to note your sampling method on your reporting forms.

Prevention Monitoring
Shorelines
Even before looking for colonies of New Zealand mudsnails you will want to look for shells along the shoreline. Look in shallow water areas or along shorelines where piles of plant matter and shells wash up along the shoreline. It is especially important to visit

these areas after storms and high boat traffic times, as this is when shells will blow up along the shoreline. You can also conduct a 10 minute "rapid assessment" of the lake shoreline. Walk the shore and look for shells on the shoreline and in the shallow water area. Collect different size shells for identification. If you find/collect lots of "small" snails, there is no need to continue monitoring for the full 10 minutes. If you find lots of tiny shells, you will want to preserve some of them and bring them in for identification.

Shallow-water Areas
Boat or walk around the shoreline of your lake and look for snails in the shallow water areas. Remember they colonize quickly and become dense (thousands per square meter). You can collect snails/shells with a long handled net (net needs to have very fine mesh) if you cannot reach the shells by hand.

If your group is monitoring macroinvertebrates from the streams near your lake, consider looking through these samples for the mudsnails. Many river groups use a surber square or kick net for this sampling. You can find more information on the square at http://www.adopt-a-stream.org/pdf/monitoring_tools/the_surber_sq_ft_sampler.pdf. You can find more information on kick nets at http://www.lamotte.com/pages/common/pdf/instruct/3-0021-p.pdf. Kick nets can be used to collect snails. The kick nets need to be fine meshed (0.3- 0.5 mm mesh) so that the snails are collected.

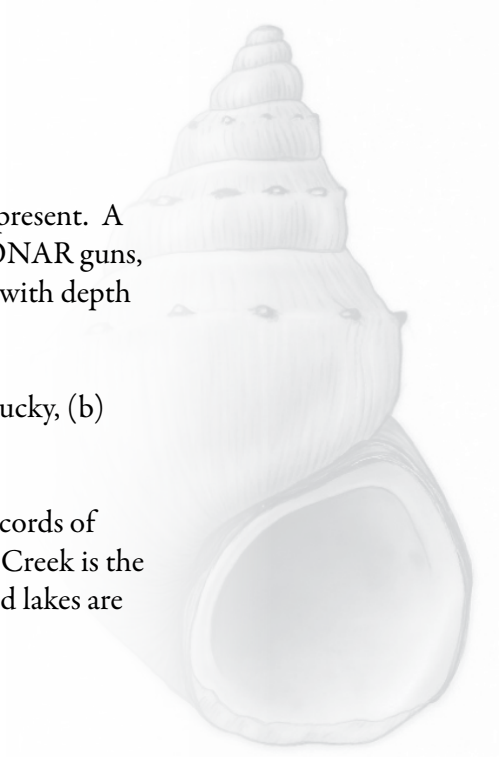
Deep-water Areas
Some groups collect sediment through the use of bottom samplers (Eckman dredges, ponar dredges, etc.). You can sort through the materials pulled up by the dredge but this sampling will only sample/monitor a small area of the lake bed. You can also look for colonies of small snails when you snorkel or scuba dive.

Other Information You May Want to Collect

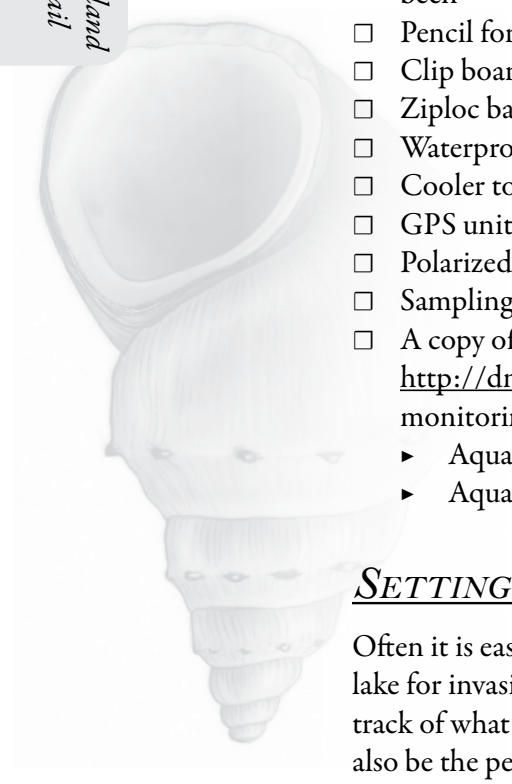
Sample Location
: Record the sample GPS position.

Depth
: Measure depth at each sampling site regardless of whether snails are present. A variety of options exist for taking depth measurements, including SONAR guns, depth finders that attach to the boat, or an anchor attached to a line with depth increments.

Dominant Sediment Type
: Record sediment type at each site where snails are sampled as: (a) mucky, (b) sandy, or (c) rocky.



The goal of the Citizen Lake Monitoring Network is to collect any and all records of New Zealand mudsnails in Wisconsin lakes. As of spring 2014, Black Earth Creek is the only documented inland waterbody with New Zealand mudsnails. No inland lakes are documented as having New Zealand mudsnails.



Equipment Needed

- ☐ Lake map for marking suspect mudsnail locations and keeping track of where you have been
- ☐ Pencil for marking on map
- ☐ Clip board or other hard surface for writing
- ☐ Ziploc bags
- ☐ Waterproof sharpie pen (to write on Ziploc bags)
- ☐ Cooler to keep snails in
- ☐ GPS unit (optional)
- ☐ Polarized sunglasses (optional)
- ☐ Sampling gear you plan to use.
- ☐ A copy of appropriate report form(s) (found at the end of this section and at http://dnr.wi.gov/lakes/monitoring/forms.aspx), depending on the type of monitoring you are conducting:
  - ▸ Aquatic Invasives Surveillance Monitoring Report, Form 3200-133
  - ▸ Aquatic Invasive Animal Incident Report Form, 3200-126

Setting up a Monitoring Team

Often it is easier to "divide" up the work than to rely on one volunteer to monitor an entire lake for invasives. Designate a team leader (and maybe an assistant) who is willing to keep track of what areas are being monitored and who is doing monitoring. The team leader can also be the person who enters the monitoring results on the CLMN website http://dnr.wi.gov/lakes/CLMN and the person to whom other volunteers can bring suspect species. If assistance in identification is needed, the team leader can take the species to DNR, UW-Extension, or the County Land and Water Conservation staff for vouchering. Be creative and most importantly, do not burn out your team leaders!

Consider having a mini-training session for your team. The CLMN Coordinator for your area may be able to assist you with a training session. If not, contact your local CLMN contact to see if an Aquatic Invasive Species training session will be scheduled for your area. These sessions are often set up in conjunction with local lake fairs and conventions. AIS workshops / training sessions are also listed at http://www.uwsp.edu/cnr/uwexlakes/CLMN/training.asp.

Mapping

A map is a very quick and reliable way to assure that everyone knows the place you are talking about when you describe a certain point on your lake. A map will assist you in locating plant communities, recreational and habitat use areas, and more. At the end of the season, you can map all of the sites visited.

If you have a team of monitors, a map will also assist your team in deciding who will monitor where. Once you have your "team" together, print out a map so that you can mark

which areas each volunteer is monitoring. Your team leader should keep the master copy of the map. It may be easiest to have volunteers monitor the areas by their homes or where they fish. Assigning smaller (1/2 or 1-mile) stretches of shoreline per volunteer will be less overwhelming than monitoring larger areas of the lake.

You can get maps from your local DNR office, Fishing Hot Spots, fishing map books, etc. Basic lake maps can also be generated through the DNR web site: http://dnr.wi.gov/lakes/lakepages/search.aspx. Type in the name of the lake and choose the county, then click "search." Click on the lake name (if there are two or more lakes with the same name in the same county, select the lake you are after). This site will give you a plethora of information about your lake, but to find a map, scroll down to the map section and either click on "Contour (Bathymetric) Map" for a printable version, or click on "Interactive Map." The interactive map (in the Surface Water Viewer) allows you to add in "layers" such as invasive species or monitoring sites.

Use a map source that is most convenient for you. Make sure the following information is on your lake map: lake name, county, sites monitored, date(s), volunteer(s), and any additional observations.

Reporting

What would all the work that goes into gathering accurate information be worth if others could not read and review it? Reporting is one of the most important parts of monitoring for invasive species. Knowing where species are not, as well as where they are, is extremely important in being able to track and understand their spread. Knowing how often monitors are looking for species and what they are finding is very important information.

NOTE

There is a note of caution on "not finding New Zealand mudsnails". With the snails being so small, we have to be cautious in our assumptions that if we do not find them, they are not there. One may miss a newly established population if the population is in the early stage and the numbers are small.

The DNR, lake managers, researchers, and others use the information that is reported through the Citizen Lake Monitoring Network to study lakes and better understand aquatic invasive species. The information reported by volunteers is also provided to the state legislature, federal, tribal and local agencies/organizations who in turn may use this data to help determine funding for invasive species grants and programs.

You can enter your monitoring results on the CLMN website: http://dnr.wi.gov/lakes/CLMN (click "Enter Data" on the left side bar). If you don't yet have a user id & password, click 'Request a Wisconsin User ID and Password'. Then email Jennifer at jennifer.filbert@wisconsin.gov with your User ID and what monitoring you are involved in. Jennifer will set up your accounts and email you back. Once you receive an email back, you can log in. Once you're logged in, go to the Submit Data tab and click "Add New" to start entering data. Choose the AIS monitoring project for your lake in the Project dropdown box.

- For prevention monitoring, report your results using the: Aquatic Invasives Surveillance Monitoring Report, Form 3200-133.

- If you find what you believe to be New Zealand mudsnails on your lake, report your results using the: Aquatic Invasive Animal Incident Report, Form 3200-126. Be sure to take extra decontamination/preventative measures to ensure you do not spread the New Zealand mudsnails to other locations. http://dnr.wi.gov/topic/invasives/fact/pdfs/NZMFactsheet.pdf

You can report your results as often as you wish, but be sure to at least report results once a year, at the end of the monitoring season. If you have any questions about reporting, contact your local DNR CLMN contact (*page viii*).

What to do with Suspect Snails

Collect up to 10 of the suspect snails. Place them directly into a container of 70-95% ethanol (rubbing alcohol will also work) and place vials in the freezer. The easiest "sure way" to kill the mudsnails is to freeze them for at least 8-hours. All monitoring equipment and gear needs to be decontaminated. If you clean your equipment, the wash water that came in contact with the mudsnails should also be frozen. Note the "suspect" snail's location on your map, making sure you can find the spot(s) again. Fill out the Aquatic Invasive Animal Incident Report (Form 3200-126) (found at the end of this section and at http://dnr.wi.gov/lakes/monitoring/forms.aspx and deliver the report form along with the suspect snails to your team leader or local DNR CLMN contact. It is illegal to mail alcohol, so please arrange delivery or pick-up of the sample(s). Suspect snails need to go to a snail identification expert for vouchering. DNR staff can arrange for transportation of the snails to the appropriate taxonomist for the lake group. Remember to make a copy of your map and reporting forms for your records.

Remember if you find "something," don't give up; early detection is the key to controlling the situation!

Prevention Starts With Us

- If you have an aquarium at home or your child brings home a snail from school, a lake, or a river, please do not release the snail into the environment. The snail could be an invasive species. Female New Zealand mudsnails reproduce asexually (clone themselves) so even adding one snail may cause problems.
- Whether you are out monitoring, or just boating for fun, be sure to remove all aquatic plants and animals from boating equipment, including your trailer, boat, motor/propeller and anchor before launching and after leaving the water. Snails, mussels and other organisms are often found attached to plants that have been removed from boating equipment. By removing aquatic plants and animals from boating equipment and encouraging others to do the same, you can help protect Wisconsin lakes from New Zealand mudsnails.
- Drain lake or river water from boats. Rinse gear with hot water (113°F/45°C) or freeze gear before reuse.
- Anglers need to wash waders, hip boots, and other gear before transporting from one water body to another.
- Fishermen are encouraged not to use felt bottom wading boots as they are more likely to harbor mudsnails and other invasive species.
- Make sure your lake group purchases fish and aquatic plants from reputable dealers if your lake groups stocks fish or plants in your lake. Work with local DNR staff to acquire proper permits.
- Do not plant water garden plants in your lake. Work with your local DNR staff if you are going to add plants to your lake
- http://dnr.wi.gov/topic/invasives/fact/pdfs/NZMFactsheet.pdf

Additional Materials and Supporting Documentation

Snail Identification and Information Sources

http://www.wisconsinrivers.org/documents/AIS/New Zealand Mudsnail_WT903_Final.pdf

http://www.seagrant.umn.edu/ais/newzealand_mudsnail

http://el.erdc.usace.army.mil/ansrp/potamopyrgus_antipodarum.pdf

References:

National Management and Control Plan for the New Zealand Mudsnail (Potamopyrgus antipodarum), May, 2007. Prepared for the Aquatic Nuisance Species Task Force by the New Zealand Mudsnail Management and Control Plan Working Group.

MacFarland, Laura, etal. 2008. *New Zealand mudsnail factsheet.* http://dnr.wi.gov/topic/invasives/fact/pdfs/NZMFactsheet.pdf

State of Wisconsin
Department of Natural Resources
Wisconsin Lakes Partnership

Aquatic Invasives Surveillance Monitoring
End of Season Report

Form 3200-133 (02/10)
Previously Form 3200-124

This monitoring is designed to help detect new invasive species on your lake, so DNR can be alerted and lake residents and/or professionals can respond appropriately. The purpose of the DNR collecting this data is to let us know what methods trained citizens and professionals use when actively looking for aquatic invasive species. You are often the ones to alert us of new invasives in our waters. Remember for surveillance monitoring, a report of "no invasive" at a location is just as important as finding an invasive. One cannot confidently state that the invasive is not present in an area if no one has looked and reported their findings. Knowing where invasives are not, as well as where they are, is extremely important in being able to track and understand their spread. Knowing how often monitors are looking for species and what they are finding is very important information.

Notice: Information on this voluntary form is collected under ss. 33.02 and 281.11, Wis. Stats. Personally identifiable information collected on this form will be incorporated into the DNR Surface Water Integrated Monitoring System (SWIMS) Database. It is not intended to be used for any other purposes, but may be made available to requesters under Wisconsin's Open Records laws, ss. 19.32 - 19.39, Wis. Stats.

Data Collectors

Primary Data Collector Name	Phone Number	Email

Additional Data Collector Names

Total Paid Hours Spent (# people x # hours each)	Total Volunteer Hours Spent (# people x # hours each)

Monitoring Location

Waterbody Name	Township Name	County	Boat Landing (if you only monitor at a boat landing)

Dates Monitored

Start Date (when you first monitored this season)	End Date (when you last monitored this season)

Did at least some data collectors monitor in... May? June? July? August? (circle all that apply)

Did you monitor…	Did you…
All Beaches and Boat Landings? Frequently Some of the Time Not Often/Never	Walk along the shoreline? Frequently Some of the Time Not Often/Never
Perimeter of whole lake? Frequently Some of the Time Not Often/Never	Observe entire shallow water area (up to 3 feet deep)? Frequently Some of the Time Not Often/Never
Docks or piers? Frequently Some of the Time Not Often/Never	Use rake to extract plant samples? Frequently Some of the Time Not Often/Never
	Check underwater solid surfaces (boat hulls, dock legs, rocks)? Frequently Some of the Time Not Often/Never
Other: _____	Other: _____

Did you find…(even if not a new finding for the lake or stream)

Banded Mystery Snail?	Yes	No	Did not look for	Hydrilla?	Yes	No	Did not look for
Chinese Mystery Snail?	Yes	No	Did not look for	Purple Loosestrife?	Yes	No	Did not look for
Curly-Leaf Pondweed?	Yes	No	Did not look for	Rusty Crayfish?	Yes	No	Did not look for
Eurasian Water Milfoil?	Yes	No	Did not look for	Spiny Waterfleas?	Yes	No	Did not look for
Fishhook Waterfleas?	Yes	No	Did not look for	Zebra Mussels?	Yes	No	Did not look for
Freshwater Jellyfish?	Yes	No	Did not look for	Other?: _____			

If you find an aquatic invasive	*If you don't find an aquatic invasive*
If you find an aquatic invasive and it is not listed at http://dnr.wi.gov/lakes/AIS fill out an incident report for the species. Then bring the form, a voucher specimen if possible, and a map showing where you found it to your regional DNR Citizen Lake Monitoring Coordinator as soon as possible (to facilitate control if control is an option).	**If you submit your data online, that is all you need to do. Otherwise, please mail a copy to your regional DNR Citizen Lake Monitoring Coordinator. http://dnr.wi.gov/lakes/contacts**

State of Wisconsin
Department of Natural Resources
Wisconsin Lakes Partnership

Aquatic Invasives Surveillance Monitoring
Multiple Locations, One Date

Form 3200-130 (R 2/10)

This monitoring is designed to help you detect new invasive species on your lake, so you can then alert the DNR and so lake residents and/or professionals can respond appropriately. The purpose of the DNR collecting this data is to let us know what methods trained citizens and professionals use when actively looking for aquatic invasive species. You are often the ones to alert us of new invasives in our waters. Remember for prevention monitoring, a report of "no invasive" at a location is just as important as finding an invasive. One cannot confidently state that the invasive is not present in an area if no one has looked and reported their findings. Knowing where invasives are not, as well as where they are, is extremely important in being able to track and understand their spread. Knowing how often monitors are looking for species and what they are finding is very important information.

Notice: Information on this voluntary form is collected under ss. 33.02 and 281.11, Wis. Stats. Personally identifiable information collected on this form will be incorporated into the DNR Surface Water Integrated Monitoring System (SWIMS) Database. Personally identifiable information collected on this form will be incorporated into the DNR aquatic invasive species database. It is not intended to be used for any other purposes, but may be made available to requesters under Wisconsin's Open Records laws, ss. 19.32 - 19.39, Wis. Stats.

Data Collectors		
Primary Data Collector Name	Phone Number	Email
Additional Data Collectors		
Date and Time		
Date	Start Time	End Time

			Record one of the following: Y=Yes N=No N/A = Didn't Look For																			
			Did you monitor?				**Did you?**				**Did you find?**											
Waterbody	**County**	**Township**	**Boat Landing (if you only monitor at boat landings)?**	**All Beaches and Boat Landings?**	**Perimeter of Whole lake?**	**Docks or piers?**	**Walk along the shoreline?**	**Observe entire shallow water area (up to 3 feet deep)?**	**Use rake to extract plant samples?**	**Check underwater solid surfaces (boat hulls, dock legs, rocks)?**	**Banded Mystery Snail?**	**Chinese Mystery Snail?**	**Curly-Leaf Pondweed?**	**Eurasian Water Milfoil?**	**Fishhook Waterfleas?**	**Freshwater Jellyfish?**	**Hydrilla?**	**Purple Loosestrife?**	**Rusty Crayfish?**	**Spiny Waterfleas?**	**Zebra Mussels?**	**Other?: _____**

If you find an aquatic invasive

If you find an aquatic invasive and it is not listed at http://dnr.wi.gov/lakes/AIS fill out an incident report for the species. Then bring the form, a voucher specimen if possible, and a map showing where you found it to your regional DNR Citizen Lake Monitoring Coordinator as soon as possible (to facilitate control if control is an option).

If you don't find an aquatic invasive

If you submit your data online, that is all you need to do. Otherwise, please mail a copy to your regional DNR Citizen Lake Monitoring Coordinator.
http://dnr.wi.gov/lakes/contacts

State of Wisconsin
Department of Natural Resources
Wisconsin Lakes Partnership

Aquatic Invasive Animal Incident Report

Form 3200-126 (R 02/10)

The purpose of this form is to notify DNR of a new species of AIS in a waterbody. Only use if you found an aquatic invasive species on a lake where it hasn't been found previously.

To find where aquatic invasives have already been found, visit: http://dnr.wi.gov/lakes/ais.

Notice: Information on this voluntary form is collected under ss. 33.02 and 281.11, Wis. Stats. Personally identifiable information collected on this form will be incorporated into the DNR Surface Water Integrated Monitoring System (SWIMS) Database. It is not intended to be used for any other purposes, but may be made available to requesters under Wisconsin's Open Records laws, ss. 19.32 - 19.39, Wis. Stats.

Primary Data Collector

Name	Phone Number	Email

Monitoring Location

Waterbody Name	Township Name	County	Boat Landing (if you only monitor at a boat landing)

Date and Time of Monitoring or Discovery

Monitoring Date	Start Time	End Time

Information on the Aquatic Invasive Animal Found (Fill out one form for each species found.)

Which aquatic invasive did you find? ☐ Zebra Mussel ☐ Quagga Mussel ☐ Spiny Waterflea ☐ Freshwater Jellyfish
☐ New Zealand Mud Snail ☐ Banded Mystery Snail ☐ Chinese Mystery Snail ☐ Rusty Crayfish ☐ Red Swamp Crayfish

Where did you find the invasive animal?

Latitude:	Longitude:

Measurements from where the invasive was found (optional)

Water Temperature Degrees F / Degrees C (circle one)	Dissolved Oxygen (mg/l)

Estimated percent cover in the area where the invasive was found (optional)

Substrate cobble, %	Substrate muck, %	Substrate boulders, %	Substrate sand, %	Bottom covered with plants, %

If you found Zebra Mussel(s)

Water depth where Zebra Mussels were found _____ Feet / Meters (circle one) | Total Number of Zebra Mussels Found _____

What were the Zebra Mussels attached to?

☐ Dock/pier ☐ Dam ☐ Rocks ☐ Plants ☐ Boats or Gear ☐ Plate Sampler(s) ☐ Logs, acorns, pine cones or other woody structure
☐ Other: _____

Size of Largest Zebra Mussel Found	Size of Smallest Zebra Mussel Found (individual measurements on back of page)

Voucher Sample

Did you collect a sample (voucher specimen) and bring it to your local DNR office? If so, which office?

☐ Rhinelander ☐ Spooner ☐ Green Bay ☐ Oshkosh ☐ Did not take sample to a DNR office
☐ Fitchburg ☐ Waukesha ☐ Eau Claire ☐ Superior ☐ Other Office: _____

Please collect up to five specimens and bring a copy of this form, along with the sample and a map showing where you found the suspect invasive species to your regional AIS or Citizen Lake Monitoring Coordinator at the DNR.

While field collecting, specimens can easily be kept alive in a bucket or other container with just about 1/2 inch of water in the bottom. Freeze specimens at the end of the day in a ziploc bag without water. If freezing is not possible for a long period of time preservation in rubbing alcohol (except for Jellyfish - leave fully in water) is sufficient.

For DNR AIS Coordinator to fill out

AIS Coordinator or qualified field staff who verified the occurrence: _____

Statewide taxanomic expert who verified the occurrence: _____
(for list see http://dnr.wi.gov/invasives/aquatic/whattodo/staff/AisVerificationExperts.pdf)

Was the specimen confirmed as the species indicated above? ☐ Yes ☐ No	If no, what was it?
Museum where specimen is housed: _____	Museum Specimen ID:
Have you entered the results of the voucher in SWIMS? ☐ Yes ☐ No	

AIS Coordinator: Please enter the incident report in SWIMS under the Incident Report project for the county the AIS was found in. Then, keep the paper copy for your records.

Length of Zebra or Quagga Mussels from Sample (if applicable)

If more than 20 zebra or quagga mussels are found, measure 20 mussels chosen randomly from the sample. If less than 20 mussels are found, measure all mussels.

Number	Length (mm)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

Note: All initial discoveries should be placed in rubbing alcohol until verification by an expert is obtained.