

Procedures and Policies for Milfoil Genetic Identification – Watermilfoil Drying

The Montana State University Department of Plant Sciences and Plant Pathology offer genetic identification services for watermilfoils. Wisconsin DNR regional managers will coordinate the collection of milfoil samples from lakes in their regions and submit the samples following the procedure outlined below. Sample analysis can be funded through Lakes and AIS grants or 678 AIS Technical Assistance. To track these monitoring efforts and due to 678 budgetary constraints, copy Maureen.Ferry@wisconsin.gov when submitting samples or if you need 678 AIS Special Technical Assistance funds. **Please only analyze 1-2 milfoil samples per lake using 678 AIS Technical Assistance, unless otherwise approved.**

Priorities for HWM testing identified by members of the APM Tech Team and the Lake Tech Team include (in order of priority):

1. Collecting samples prior to treatment, including on lakes that had a genetic analysis that was previously positive for only pure EWM.
2. Collecting samples for genetic testing for creating or updating APM plans. This could include lakes that have had a genetic analysis that confirmed only pure EWM.
3. Collecting samples from lakes that have had no genetic analysis in the past, even if there is no plan for management in the future.

DNR AIS grants can also be used to support analysis. This Regional DNR Lake/APM Coordinator and AIS Coordinator should coordinate on this. The chain of custody form for samples collected by non-DNR will be submitted to the Regional DNR AIS Coordinator for SWIMS data entry. Other non-DNR funded genetic analysis can be integrated into SWIMS if the funding source agrees. This will also be coordinated by the Regional DNR AIS Coordinator.

1. Notify lab via e-mail least one week prior to shipping samples: ryan.thum@montana.edu.
2. Prepare samples according to **Collection and Shipping Protocol**
3. Complete the **Chain of Custody Record**. It will also act as your field data sheet. The record will include the following information:
 - a. Date collected
 - b. Lake / County / WBIC
 - c. Location within waterbody
 - d. Latitude and longitude
 - e. Suspected ID of specimen(s)
 - f. Number of samples for which you wish to pay for sequencing results (i.e. 1-2 per lake)
 - g. Other comments
 - h. Collector's name
 - i. Contact information: Name, organization, phone and email.
4. Fill out, sign, scan, and then include the **Chain of Custody Record and lab slip in each bag you send**, for each milfoil sample you would like analyzed. Be sure to indicate the number of samples (1-2) for which you would like results.

Submit a copy of the **Chain of Custody Record** to the regional DNR AIS Coordinator to enter into **SWIMS**. See SWIMS cheat sheet on page 15.

Important note 1- Plants need to be placed in silica within 8 hours of collection and must be dry within 24 hours of collection in order to properly preserve the DNA. Dry Samples **MUST** remain in silica beads through the entire duration of storage as well as during shipping to prevent any potential rehydration before processing. Rehydration of the tissues will result in degradation of the DNA.

Important note 2- Silica beads that change color to indicate saturation are highly recommended. Since non-indicating silica beads are cheaper, we suggest mixing 5g indicating beads in to 15g non-indicating beads (1:3). We recommend beads from silicagelpackets.com with indicating beads. They are much cheaper than and as reliable as silica beads from a laboratory supply company. To provide an idea of how much to order, for 22 samples, approximately 1LB of beads is needed including what is placed in a 7.5" x 6"W x 3.5"H storage box.

Here are some distributors for silica beads for examples – there are other vendors that you are welcome to explore:

- *Indicating beads: 2LBS Loose Blue Indicating Silica Gel Beads- Turn pink when saturated- 3-5mm- \$35.99*

SKU: 2LBS_BLUE_3-5MM

<http://silicagelpackets.com/silica-gel-packets/loose-bulk-silica-gel-non-indicating-and-indicating-white-orange/blue-moisture-indicating-silica-gel-desiccant-3-5mm-beads/loose-bulk-blue-indicating-silica-gel-desiccant-3-5-mm-beads-moisture-absorber-55.html>

- *Non-indicating beads: White Non-Indicating Silica Gel Beads- Bead Size 2-4mm- \$16.99/pound, price per pound decreases with additional pounds.*

SKU: WHITE-2-4MM

<http://silicagelpackets.com/silica-gel-packets/loose-bulk-silica-gel-non-indicating-and-indicating-white-orange/white-non-indicating-silica-gel-loose-bulk/loose-bulk-white-silica-gel-2-4-mm-non-indicating-beads.html>

Saturated beads can be placed in a drying oven and reused. We suggest having half stored in an oven and half in use to be switched out as necessary.

Important note 3- Envelopes can be ordered from Staples for \$26.49 for a box of 500.

Here is an example of envelopes to use – you are welcome to use others vendors:

- Item No.: #5-1/2, 3-1/8" x 5-1/2"

http://www.staples.com/Staples-5-1-2-3-1-8-inch-x-5-1-2/product_535104

Important Note 4- Dry box long term plant storage can be found in the sporting goods sections of various local stores. The following is a link for one at Walmart that can be ordered and delivered:

Example of dry box:

- http://www.walmart.com/ip/Flambeau-Outdoors-14in-Dry-Storage-Box/23578648?action=product_interest&action_type=image&placement_id=irs_middle&strategy=PWVUB&visitor_id=63610408569&category=0%3A4125%3A546956%3A4155%3A1079944%3A1080084&client_guid=ef60d788-870e-4094-aeba-bd2144b83330&config_id=0&parent_item_id=21854607&guid=ee15a921-5a2c-4082-b2d4-46b1b237c3de&bucket_id=irsbucketdefault&findingMethod=p13n#Item+Description

Instructions:

1. Collect 5-6 inches of meristem tissue (or the length from the bottom on your palm to the tip of your middle finger).
 - a. **IMPORTANT:** Be sure that each stem collected for ID has a healthy growing meristem on its tip (Figure 1). The meristem has the highest quality of DNA in the plant and is necessary for the best results.
 - b. **IMPORTANT:** If plants are sitting out of silica gel for more than a few minutes, 5-6 inches help keep the stem from degrading as quickly.

Figure 1.



2. Rinse each stem free of any debris or algae using gentle agitation in water. Brush tips gently against one fingertip to ensure a clean meristem.
 - a. It is best to clean them under gently running water, however this can be done in lake water as well.
 - b. **IMPORTANT:** DNA from any other algae or debris cannot be rinsed off after the plants are dry and will contaminate the sample when they are processed.
3. Blot plants dry using paper towel.

- a. **IMPORTANT:** *Blotting plants dry removes excess water and helps keep silica beads from becoming saturated too quickly.*
4. GENTLY roll the tip of each plant between two fingertips to bunch the leaves together (Figure 2.)
 - a. Wipe off fingertips between plants to avoid transferring DNA between plants.
 - b. **IMPORTANT:** *Rolling tips will help fit plant tissue into processing tubes with minimal cross contamination of samples.*

Figure 2.



5. Place ONE plant stem individually into a 3 1/8" x 5 1/2" paper envelope being sure that the tips are clear of the rest of the stem (Figure 3.)
 - a. **IMPORTANT:** *We mainly use the tip (meristem) of the plant for identification, only resorting to the lower leaf tissue if the tip is too degraded. Keeping the tip clear of the rest of the plant reduces the amount of contamination when removing the tip for the bulk of the dry plant material.*

Figure 3.



6. Seal the envelopes.
 - a. **IMPORTANT:** *DO NOT PUT SILICA BEADS DIRECTLY IN THE PAPER ENVELOPE WITH THE PLANT. It is critical that silica beads should never come in direct contact with the plant tissue. They will damage the plant tissue and contaminate the beads eliminating chances for re-use.*
7. Label envelope with:
 - a. Label envelope and Ziploc bag with:
 - Lake name
 - County
 - Location within the lake
 - Sample Number

GPS coordinates (optional)

Date

8. Place each envelope with plants into 1 quart heavy duty Ziploc freezer bags labeled with the same information as the envelope (one envelope per bag).
 - a. Try to keep both the envelope and Ziploc bag as dry as possible to avoid saturating the silica beads too quickly.
 - b. **IMPORTANT:** *The Ziploc bag will help each plant dry independently and prevent a wetter plant from inhibiting the drying of other plants.*
9. Weigh out a minimum of 20g of silica beads and add to each bag (more beads means faster dehydration and more time before beads need to be replaced).
 - a. **IMPORTANT:** *Do not put beads directly in envelope. The envelopes are porous enough to allow the plants to dry completely without direct contact with the tissue.*
10. Force as much air as possible out of the Ziploc bags before sealing them.
 - a. **IMPORTANT:** *Removing the air will not only make it possible to store more bags in one container, but remove air that could saturate the beads faster and cause plants to take too long to dry (Figure 4.).*

Figure 4.



11. Place all bags into one watertight container (available in sporting goods sections of Walmart or Meijer) with ~1 inch of silica beads on bottom.
 - a. **IMPORTANT:** *This is an extra measure to ensure that the plant will not rehydrate during storage.*
 - b. For container size: 22 samples was the maximum limit for a 7.5" L x 6" W x 3.5" H container bought from the Meijer sporting good section.
12. Check silica beads for saturation after 24 and 48 hours for newly dried plants and then every 3 or 4 days afterwards (this is especially important when adding new samples to the box).
PLEASE SEE "IMPORTANT NOTE 1."

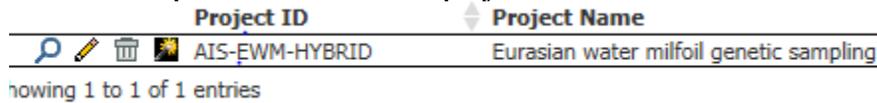
- a. Silica beads should be replaced in any bag that has greater than 50% saturation (more than 50% of the color changing beads have changed color).
- b. Samples can be stored in the watertight container at room temperature for 2-3 months. *If it is unlikely that beads can be checked on a regular basis, plants should be sent in for ID as soon as they are dry, rather than waiting the maximum 2 months.*

13. Print out a lab slip on waterproof paper, and include information on lake name, county, WBIC, date collected, suspected ID, collectors name and contact information. Place this slip in the Ziploc bag along with the milfoil sample.

14. Fill out the Chain of Custody Form

a) Complete the Chain of Custody and attach a copy to the “[Eurasian water milfoil genetic sampling](#)” project. This step can wait until you create the fieldwork event in SWIMS. Please note that you can add documents directly to the projects without having to add them to the SWIMS’ document library first. However, only previously loaded projects can be added to a ROI. In SWIMS:

- a. Click on the Find Data Tab
- b. Click on Projects and in the query window type or paste AIS_EWM_HYBRID into the project ID field. Submit query.
- c. Click on the pencil in front of the project name



- d. Click on the scrap of paper icon on the blue bar for Documents



- e. Complete the form to add the document as shown in the example below.
Document title: **Lake_Station_County_Genetic Testing Chain of Custody_Name_Collection Date**
- f. Then Click on Save and Return

Surface Water Integrated Monitoring System (SWIMS)

My Projects Find Data Submit Data Stations Forms Reports, Maps, and Documents Manage Data

Home -> Associate Project Document
Fields denoted with an asterisk (*) are REQUIRED.

Add New Document - fill in the fields below and click "Add New" or Associate Existing Document Reset

ID* SYSTEM GENERATED
Document Title (*) Big Blue Lake_10046666_Jackson Co_Genetic Testing Chain of Custody_Scherer_2
Author Name Jeanne Scherer
Published Date Precision: Day Date 12/11/2017
Upload File
JURL
Description Chain of Custody form for genetic testing of water milfoil collected at Big Blue Lake, Jackson County on 9/1/2017
Comments for Document/Project
Document Descriptors
DOCUMENT_TYPE Scanned, filled out forms or field notes
WBIC 54628
KEYWORD Water Milfoil
KEYWORD Genetic testing
County Jackson
Keyword Thum
Descriptors Additional Descriptors
Interested Parties Add People to Document
Scherer, Jeanne S Find Person Data Collector
Thum, Ryan Find Person Lab or Lab Contact
Save and Return

Browse to the document on your computer to upload it

15. Please include as much of the following information as possible with your shipment

- a. Copy of the Chain of Custody.
- b. Lake / County
- c. Date collected
- d. Collector's name
- e. Lat/long GPS coordinates of collection sites (or lake, if sites not possible)
- f. Contact information: Name, organization, phone and email
- g. Any other comments that you feel are important to you or noteworthy

16. Enter data from the Chain of Custody as a fieldwork event in the "Eurasian water milfoil genetic sampling" SWIMS project

- a. Before you can enter the data into SWIMS, make sure the project "[Eurasian water milfoil genetic sampling](#)" is included in your project list. If not, contact Maureen Ferry to have it added.
- b. Use the link above to open the project's page. Open SWIMS, click on the Find Data Tab. Next click on Projects on the left side of the screen and use the query form to search by the name of the project or the project ID: AIS-EWM-HYBRID
 - i. If your station is not already in the project, you will need to add it. Since these samples are generally collected from lakes or impoundments, add the polygon station for the entire waterbody. First, click "enable edit" Then click the little piece of paper next to "Stations".

Stations						
X	X	X	Station Id	Station Name	Water Body	WBIC
			10003523	Cedar Lake	Cedar Lake	45100
			10001430	Crescent Lake	Crescent Lake	1564200
			10002778	Delos Lake	Delos Lake	585500

- c. When the new window opens, click on Search Stations to see the window below. Since you only need the station for the whole lake, you can search by WBIC. Enter the WBIC as shown below and click on Submit Query.

home -> Query Monitoring Stations

Submit Query Reset

Search Type Advanced Search

Station ID

Station Name

Station Type

Station Status

WBIC 45100 Search WaterBody

Official Waterbody

- d. Look for the Station with the Station Type LAKE and Feat. Type AREA. To ensure you have the correct lake in the correct county, click on the magnifying glass in front of the Station Name. The Station profile will open. In it you will find the county, DNR Region, Watershed, and other hydrological location information listed. By clicking Open Map on the same page, you can further confirm that you have the correct waterbody.

New Search

Show 100 entries

Station ID	Station Name	Station Type	Official Waterbody Name	Station Status	Feat. Type	Replaced?	Replaced By	Last Updated
10038941	Cedar Lake - Camp Rokilio Beach	LAKE-BEACH	45100 Cedar Lake	Active, Usable.	POINT	No	0	10/30/20
10019218	Cedar Lake -- Access Nr Split Rail Rd	LAKE-BOAT LANDING	45100 Cedar Lake	Active, Usable.	POINT	No	0	02/23/20
363287	Cedar Lake - Deep Hole	LAKE-DEEPEST SPOT	45100 Cedar Lake	Active, Usable.	POINT	No	0	02/13/20
363120	Cedar Lake - Deep Hole	LAKE-DEEPEST SPOT	45100 Cedar Lake	Active, Usable.	POINT	No	0	02/13/20
10003523	Cedar Lake	LAKE	45100 Cedar Lake	Active, Usable.	AREA	No	0	12/08/20

Showing 1 to 5 of 5 entries

Home -> View Monitoring Station

Station ID	233117
Station Name	Beckman Lake - Deep Hole
WBIC	894700
Official WaterBody Name	Beckman Lake
Station Type	LAKE-DEEPEST SPOT
Station Status	Active, Usable
Requester Name	RONALD MARTIN
Request Date	03/11/2004
Reviewer Name	
Monitoring Station Comments	STATION FOR RON MARTIN OF MADISON (608)266-8270 SAMPLED AT DEEPEST PORTION OF LAKE. LAKE WAS SAMPLED AS PART OF GROUND TRUTH COLLECTION FOR CLASSIFICATION OF WISCONSIN LAKES BY REMOTE SENSING. ANALYSIS DONE BY THE LAB OF HYGIENE.
Storet Org Code	21WIS
Report to EPA	Y
Latitude	42.58463
Longitude	-89.77483
WTM Easting	538476.0
WTM Northing	234715.0
Feature Type	POINT
Last Updated	2006-02-13
Last Updated By	GIS INTERSECTION

[Click](#) | [Station Location](#) | [Station Details](#) | [Fieldwork Events](#) | [Projects](#) | [Reports/Graphs](#) | [Enable Editing](#) | [Download](#)

Existing Mapped Location	
Open Map	
Waterbodies	
WBIC	Official Waterbody Name
894700	Beckman Lake
Watersheds	
Watershed Code	Watershed Name
SP02	Jordan and Skinner Creeks
Watershed Management Units	
WMU Code	WMU Name
SP	Sugar + Pecatonica
Hydrologic Unit Codes (8)	
HUC 8 Code	HUC Name
07090003	Pecatonica River
Hydrologic Unit Codes (10)	
HUC 10 Code	HUC Name
0709000310	Honey Creek-Pecatonica River
Hydrologic Unit Codes (12)	
HUC 12 Code	HUC Name
070900031003	Skinner Creek
Hydro IDs	
Hydro ID	
600092079	
Assessment Units	
Assessment Unit ID	
353638	
Showing 1 to 1 of 1 entries	
Counties	
County Code	County Name
23	Green
Regions	
Region Code	Region Name
SC	South Central Region
Eco Regions	
Eco Region Code	Eco Region Name
32	Driftless Region

- i. Once you are certain you have the correct waterbody, close the Station Profile page to return to the station search results and click on the little black arrow to add the station to the project. Once you click Save and Return, the station will be added to the project.

[My Projects](#) | [Find Data](#) | [Submit Data](#) | [Stations](#) | [Forecast](#)

Home -> Enter New PlanStationXref Information

Fields denoted with an asterisk (*) are REQUIRED.

Plan SeqNo* 145852804

Station Id* [Search Stations](#)

Comments

[Save and Return](#)

[Back](#)

- e. Next you will use the information from the Chain of Custody form to enter your fieldwork event. In SWIMS, the electronic form that is used to enter data is the same form as that used for AIS Early Detection Monitoring.
- ii. In SWIMS, click on the “Submit Data” tab and then on the blue box that says “Add New”.
- iii. The next window is the first page of the electronic form. Use the dropdowns to choose the “Eurasian water milfoil genetic sampling project.” Use the dropdown lists to select data collectors, station, and start date. For the form, make sure the “Aquatic Invasive Species (AIS) Early Detection Lake Data Form (2016)” is selected. All the fields with an asterisk are required.

iii. If there happens to be two waterbodies with the same name in the project, click on the binoculars or Show Map to view the station by using the Station ID and confirm you are choosing the correct waterbody.

- f. Add a comment: “Sample collected for genetic testing. Submitted to Ryan Thum, Montana State University on (Date).” When the first page of the form is completed, click “Next” at the bottom of the page. After you click next, the first page is automatically saved.

My Projects	Find Data	Submit Data	Stations	Forms	Reports, Maps, and Documents	Manage D
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Create Monitoring Data
Fields denoted with an asterisk (*) are REQUIRED.

Project * Eurasian water milfoil genetic sampling

Data Collectors * JEANNE SCHERER

Station * 10003523, Cedar Lake

Start Date * 11/08/2017

Time

Form * Aquatic Invasive Species (AIS) Early Detection Monitoring Lake Data Form [2016]

Optional Fields

I want to enter latitude and longitude on the next page (optional)

End Date

Time

Comments
Sample collected for genetic testing. Submitted to Ryan [Thum](#), Montana State University on 11/9/2017.

Fill in the weather here, lake or streamside observations, wildlife spotted, names of additional helpers etc

- g. On the second page of the form, you are reporting what you looked for, not necessarily what you found. In the species list, you only need to choose “YES” for EWM and type in “hybrid EWM” or another species of milfoil you would like confirmed in the Other Species box. Choose “NO” for all of those you didn’t look for. The fields, such as Secchi and conductivity, are not necessary - they are just relicts from the ED form.

You Are Entering Data For:		Start Date Time:	11/13/2017
		Station:	10003523 - Cedar Lake
Aquatic Invasive Species (AIS) Early Detection Monitoring Lake Data Form [2016]			
	Parameter	Result	
	Total Paid Hours Spent		
	Total Volunteer Hours Spent		
	SECCHI DEPTH - FEET		
	CONDUCTIVITY FIELD		
Did you look for - Aquatic plants/algae	Starry Stonewort?	NO ▾	
	Yellow floating heart?	NO ▾	
	Brazilian waterweed?	NO ▾	
	European frogbit?	NO ▾	
	Hydrilla?	NO ▾	
	Curly leaf pondweed?	NO ▾	
	Fanwort?	NO ▾	
	Parrot Feather?	NO ▾	
	Water hyacinth?	NO ▾	
	Water lettuce?	NO ▾	
	Eurasian water milfoil?	YES ▾	
	Water chestnut?	NO ▾	
	Didymo?	NO ▾	
Did you look for - Riparian plants	Flowering rush?	NO ▾	
	Phragmites?	NO ▾	
	Purple Loosestrife?	NO ▾	
	Yellow flag iris?	NO ▾	
	Japanese knotweed?	NO ▾	
	Japanese hops?	NO ▾	
Did you look for - Invertebrates	Zebra mussels?	NO ▾	
	Quagga mussels?	NO ▾	
	Asiatic clam?	NO ▾	
	New zealand mudsnail?	NO ▾	
	Chinese mystery snail?	NO ▾	
	Banded mystery snail?	NO ▾	
	Rusty crayfish?	NO ▾	
	Red swamp crayfish?	NO ▾	
	Spiny waterflea?	NO ▾	
	Fishhook waterflea?	NO ▾	
	Faucet snail?	NO ▾	
Did you look for - Other	Other species	Hybrid EWM	
Next Date	Next Station	Save	Save and Return to List
	Site 1		

- h. Click on the box at the bottom of the page that says “Site 1”.
- i. Now you will see the third page of the form. On this page, you are reporting what you suspect you found. Entries made on this page are pulled into a ROI monitoring list and an “Others” list run by Central Office and provided to DNR Regional AIS Coordinators for ROI creation/updating. Because the fieldwork is part of the EWM genetic testing project, the biologist who reviews the list for their region, will know they should not create/update a ROI if the fieldwork event has not been updated with analysis results.

Enter the site as a Boat Landing or Search Site, whichever is appropriate. Enter the latitude and longitude. For species, choose Hybrid Eurasian/Northern Water-milfoil and Eurasian watermilfoil. Since density is not on the chain of custody, you don’t need to worry about entering it, but you are welcome to if you have it. If you are asking for confirmation that the

species is actually native, note the species you suspect in the comment box after “Site Information” at the end of the page.

If you collected additional samples from other sites on the lake, click on the box at the bottom of the page that says “Next site/Landing”. Complete a page for each collection site. If not, click on “Save and Return to List” to complete your data entry.

Site Information	Site	Boat Landing 1
	Latitude (i.e. 43.1234)	44.12345
	Longitude (i.e. -89.4567)	-89.11111
	Snorkel	
	If N snorkel, indicate why	
Species 1	Species	Hybrid Eurasian / Northern Water-Milfoil
	Density	
	Live or dead?	
	Sample?	
	Photo?	
Species 2	Species	Eurasian Water-Milfoil
	Density	
	Live or Dead?	
	Sample?	
	Photo?	
Species 3	Species	
	Density	
	Live or Dead?	
	Sample?	
	Photo?	
Species 4	Species	
	Density	
	Sample?	
	Live or Dead?	
	Photo?	
Species 5	Species	
	Density	
	Live or Dead?	
	Sample?	
	Photo?	
Species 6	Species	
	Density	
	Live or Dead?	
	Sample?	
	Photo?	
Site Information	Comments (about site, species found)	
Next Date	Next Station	Save
Save and Return to List	Next Site/Landing	

- j. Contact Maureen Ferry (Maureen.ferry@wisconsin.gov 608-261-6450) if you have questions.

17. Sample shipping

- a. If available, ship in an airtight container
- b. Ship to:

Ryan Thum
Montana State University
Department of Plant Sciences and Plant Pathology
119 Plant BioSciences Building
Bozeman, MT 59717-3150

Please also notify Ryan Thum (Montana State University) that you have sent the samples so we know to be on the lookout for them: ryan.thum@montana.edu; phone: 406-994-4039. You must also copy Maureen Ferry (WDNR) for reporting and tracking purposes. Results must be sent to the collector and Maureen.

18. Results

- a. The lab will send results to the collector and Maureen Ferry.
- b. Enter the results document to the “[Eurasian water milfoil genetic sampling](#)” project just as you added the Chain of Custody to it in Step 3. Name the results document:

Waterbody or County for multiple_County (if not given first) Milfoil Identification Results_Date of results

- c. If the genetic results indicate that the specimen was different from what was entered into SWIMS, the collector will update their fieldwork event in SWIMS. (Also see step 7f if your species was identified as a native.)
 1. Open your fieldwork event and enable edit. Go to the third page of the form where you entered sites and species. Edit so that only the confirmed species is noted in the dropdown (EWM or Hybrid Eurasian/Northern) or in the comment box at the end of the page.
 2. After editing and saving your work, return to the fieldwork event to determine if the changes were saved. If not, contact Maureen.
- d. The collector will work with the Regional DNR AIS Coordinator to create/update the ROIS once EWM or the hybrid is confirmed. If you have already attached the Chain of Custody and the results to the project, give the ROI creator the titles.

Locating the documents in both a ROI and the project may seem redundant; however, for tracking both negative and positive results, they need to be in the project. For any ROIS created, it is easiest to find a specific result when it's attached to the ROI. The [Resource of Interest Creation and Editing](#) document will lead you through the steps needed. Be sure to attach the following to the ROI:

- i. The fieldwork event
- ii. The pdf of results
- iii. A copy of the Chain of Custody sent with the samples

- iv. Emails related to the sampling event/testing that contain important information
- v. Text for the Comments area of the ROI:

Eurasian water milfoil has also been documented in the lake. At this time it cannot be determined if the hybrid milfoil (northern watermilfoil x Eurasian watermilfoil) found in the lake was introduced as hybrid watermilfoil or created by hybridization of northern watermilfoil and Eurasian watermilfoil within the lake. Record updated by (name, date).

- e. Associate the “Eurasian water milfoil genetic sampling” project to the ROI: While on the ROI Detail page with edit enabled, click on the scrap of paper icon on the blue bar for Projects and add as you have done for fieldwork, stations, etc.

Projects					Create New Project	ink
Project ID	Project Name	Project Start	Project End	Status		
No data available in table						

- f. If a native species is confirmed, you will need to update the third page of the SWIMS form in your fieldwork event as described in 7b. In the Site Information box, indicate that the genetic results identified a native species (i.e. *Myriophyllum verticillatum*).
- i. To ensure the fieldwork event does not show up on the “Others” species list run by Central Office (noted in 5j), the fieldwork event needs to added to:
 - **Project ID:** AIS-Occurr-Other
 - **Project Name:** AIS Occurrence Records - 'Other' Records Reviewed
 Open the project as you did the milfoil project in step 5b, add the fieldwork event to the project by clicking on the scrap of paper icon on the blue bar for Fieldwork and use the query windows that come up as you have done to add stations, etc. throughout this process.

SWIMS Cheat Sheet for Entering Data for Water Milfoil Genetic Testing

Check the Project first:

In SWIMS → Find Data tab → Click on Projects → query with the Project ID: AIS-EWM-HYBRID

- 1) Make sure your name and the name of the sample collector, if not you, are listed under People/Organizations Involved
- 2) Check that the station is listed
- 3) If you are able to add them yourself, do so: enable edit → click on the paper icon at the end of the blue bar for the item you want to add → query the person or station and add it. (See Step 5c of guide) If it won't work for you, contact Maureen or Jeanne

Documents to have on hand:

You can upload documents directly to the project without having to upload them to SWIMS separately. It may be helpful to keep a spreadsheet or Word doc with the titles of anything you saved so that you have them for ROI creation if the hybrid or EWM are confirmed. Directions are in Step 3 of the full guide.

Chain of Custody Form:

- 1) The form should have all of the information you need to complete the field work event entry
- 2) Make sure it's complete and scanned before sending it to the lab
- 3) Upload the scanned copy to the Documents section of the Project

Results documents

- 1) Once these arrive, save them to the project

Entering the fieldwork event:

In SWIMS → Submit Data tab → Add New → use the dropdowns to find the "Eurasian water milfoil genetic testing," the collector(s), and the station → enter the date

Comments: "Sample collected for genetic testing. Submitted to Ryan Thum, Montana State University on Date of submission." It's ok to add additional pertinent comments. Then click NEXT.

Page two of the form: Choose YES for EWM and in the Other Species box enter Hybrid EWM Click on Site 1 → choose the site location, enter lat/long → for species choose both EWM and Hybrid Northern/EWM from the dropdowns → If testing is to confirm another water milfoil species note it in the comments box.

Repeat for Additional sites, if any. If none, click on Save and Return.

If the results are in, create or update an existing ROI.

CHAIN OF CUSTODY RECORD

Received from

Name (print):

Organization:

Street Address:

City, State Zip:

Phone:

Email:

Released to

Ryan Thum

Montana State University

Department of Plant Sciences and Plant Pathology

119 Plant BioSciences Building

Bozeman, MT 59717-3150

Phones: 406-994-4039

Email: ryan.thum@montana.edu

To be filled in by sender							To be filled in by Thum lab		
Date Sampled	Lake Name (include State and County)	Location within waterbody	Latitude (DD)	Longitude (DD)	Putative ID	No. stems to process	Date Rec'd	Pop ID Assigned to samples	Sample condition & notes

Relinquished by: (sign/date) _____

Received by: (sign/date) _____

This page intentionally left blank

Last update 03/27/2019

Lake Information

Name: _____

County: _____

WBIC: _____

Date Collected: _____

Lake coordinates: _____

Indicate Decimal Degrees, Lat/Long, UTM etc.

Sample Information

ID: _____

Sample Location: Point # _____

E.g. Lat/long, east basin, lakewide

Reason for collection: _____

Collected by: _____

E.g. Baseline survey, recent milfoil increase, plant looks weird, etc., include as much detail as you want

Comments: _____

OF SAMPLES TO TEST:

Contact Information

Name: _____

Organization: WIDNR or OTHER

update 03/27/2019

Phone: _____

Email: _____

CC: maureen.ferry@wisconsin.gov

Lake Information

Name: _____

County: _____

WBIC: _____

Date Collected: _____

Lake coordinates: _____

Indicate Decimal Degrees, Lat/Long, UTM etc.

Sample Information

ID: _____

Sample Location: Point # _____

E.g. Lat/long, east basin, lakewide

Reason for collection: _____

Collected by: _____

E.g. Baseline survey, recent milfoil increase, plant looks weird, etc., include as much detail as you want

Comments: _____

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Email: _____

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Contact Information

Name: _____

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Phone: _____

Email: _____

CC: maureen.ferry@wisconsin.gov