VERNAL POOL CADDISFLIES, AMPHIBIAN EGG MASSES, AND FAIRY SHRIMP PROTOCOL

Gulf of Maine Research Institute

Ecosystem Investigation Network

Team Name: _____ Date: _____Time: _____

Coordinates (Decimal Degrees):

Latitude: _____._____Longitude:-_____._____

Materials	
For the whole group: • Small vials • Isopropyl alcohol **Recommended** • Polarized sunglasses • Boots/waders	**For each fieldwork team:** • Light colored frisbee or tray • Ice cube tray • Small net • Spoon • Fairy shrimp species ID card • Caddisfly Larva Species ID card • Caddisfly Family ID card • Clipboard and pencils • Camera (smartphone camera is fine)

Protocols *The instructions in this column specify how to answer the questions on the right-hand side of the page.*	Data and Photos to Collect *Questions are required unless otherwise marked. Each question has a " ▢ " beside it to help you track your progress.*
Vernal Pool Study Site	
1. Take a clear photo of your field site into the pool and in each direction around the pool.	❏ Clear photo of the pool taken ❏ Clear photos of my field site taken from each direction (4 total)
2. Determine the type of habitat	❏ Habitat (circle one): Open water (no plants coming out of the pool) Emergent marsh (grasses or sedges in the pool) Shrub swamp (shrubs or bushes in the pool) Forested wetland (trees in the pool)

3. Check the substrate by reaching down into the water and feeling the bottom surface.	❏ Substrate (circle one): Muck (mostly muddy, swampy) Leaf litter (mostly pieces of plants) Cobble (mostly small rocks or pebbles) Other

Criteria for being a vernal pool

4. Check to make sure the body of water is a vernal pool.
   a. Look around the pool to see if there is an inlet or outlet. If you do not see one, it may be a vernal pool.
   b. Listen carefully. If you hear wood frogs or spring peepers in this area, it may be a vernal pool.
   c. If you have been to this spot before, think back to what it has looked like at other times of the year. If you have seen it dry out before, it is likely a vernal pool.
	❏ Vernal pool criteria (circle all that apply):
	The pool is located in a forested landscape.
	
	The pool is NOT connected to a permanent stream or river
	
	NO fish are present.
	
	There is evidence of wood frogs, fairy shrimp, or salamanders inhabiting or using the pool (eggs, larva, adults, remains, sounds, or other evidence)

Species found

5. Scan the pool for amphibian egg masses: Walk carefully around the edge of the pool, looking for amphibian egg masses. Do NOT touch amphibian egg masses.	❏ Amphibian egg masses (choose one): FOUND NOT FOUND
6. Take a photo of the egg masses.	❏ Three clear photos of egg masses taken

7. Search for fairy shrimp:
   a. Look for sunny spots along the edge of the pool (fairy shrimp congregate in the sunshine).
   b. Dip the frisbee into the water and see if fairy shrimp are swimming past.
	❏ Fairy shrimp (circle one):
	FOUND
	NOT FOUND

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c. If you don't see fairy shrimp, take one step into the pool and try again. d. If you think you find fairy shrimp, use your spoon to place them into an ice cube tray with some water. Keep Fairy shrimp submerged in water at all times. Do NOT touch them with your hands.	
8. If you think you found fairy shrimp, review your evidence with another fieldwork team.	❏ We shared three pieces of evidence our team used to identify the fairy shrimp. ❏ The other team has correctly identified fairy shrimp
9. Take three clear photos of the fairy shrimp showing the entire body.	❏ Three clear photos of fairy shrimp taken (full body)
10. Search for caddisflies: a. Dip your net into the water and down into the substrate. b. Drag the net along the bottom of the pool so that you gather some substrate into the net. c. Dump the contents of the net into your frisbee or tray. d. Watch the debris in the frisbee or tray for at least a minute to see if anything moves. e. Sort through the debris carefully looking for caddisflies. f. Place any specimen that might be a caddisfly in the ice cube tray with a small amount of water. g. Sort and ID the caddisflies using the ID resources. You may need to gently pull back the cases to view the thorax. Empty caddisfly cases can also be included in your ID.	❏ Northern casemaker caddisfly (circle one): FOUND NOT FOUND ❏ Giant casemaker caddisfly (circle one): FOUND NOT FOUND ❏ Unidentified caddisfly (circle one): FOUND NOT FOUND
11. If you think you found caddisflies, review your evidence with another team.	❏ We shared three pieces of evidence that our team used to identify the caddisflies. ❏ The other team has correctly identified caddisflies

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12. Take representative photos for each caddisfly category. 　　The thorax is the area just above the legs, close to the head.	Northern casemaker caddisfly photos: ❏　head ❏　thorax ❏　case Giant casemaker caddisfly photos: ❏　head ❏　thorax ❏　case Unidentified caddisfly photos: ❏　head ❏　thorax ❏　case
13. Select ONE fairy shrimp and/or ONE caddisfly collected from this trip. Place it in a small vial with isopropyl alcohol and send to the following address: 　　Hamish Greig 　　Assistant Professor of Stream Ecology 　　School of Biology & Ecology 　　212 Deering Hall, University of Maine 　　Orono, ME 04469 Return the rest to the water.	❏　ONE caddisfly and/or fairy shrimp packaged and the rest returned to the water.

Field Notes (optional)

Checklist

I certify that I: 　　collected data in a vernal pool 　　completed peer review in the field 　　searched for egg masses, Caddisflies, and Fairy Shrimp and reported all species that I found	❏　Checklist complete? (Circle one) 　Yes 　No ❏　Signature: _____