

## **SURVEYING AMPHIBIANS IN WETLANDS**

1. Make sure that you have a Scientific Taking Permit, that you know the property boundaries, and that the project boundaries have been clearly marked. If the site is too large to completely survey all wetlands, start with the most likely sections, which include shallow temporary ponds and the north edges and shallow benches of larger ponds.
2. Pond surveys can be conducted in very early to late spring for egg masses, in spring and summer for larvae, and in summer and early fall for metamorphs. Any weather is okay, but lots of sunlight and no rain or wind are best for visibility.
3. Make sure your boots and nets were disinfected and cleaned of weed seeds after previous visits to other wetlands. Avoid getting suntan lotion or insect repellent on your hands.
4. Check and record air temperature and weather conditions. Record the number of surveyors and the start and end times of the survey.
5. Start the survey by approaching the pond cautiously, scanning with binoculars for adult frogs and toads (and turtles) that often sit on the edge or under a cutbank, on logs, or on floating vegetation. Scan the water surface for protruding frog eyes (and turtle noses). Then check and record water temperature and any other water quality parameters.
6. Survey the pond by walking around it at the waterline, wearing polarized sunglasses to cut the glare. It is best to have 2 surveyors working in tandem, one on the shore and one in the shallow water. Scan ahead for animals sitting on the edge. Look under cover objects adjacent to the pond (bark, wood, rocks) and replace them. Search in the water for egg masses attached to vegetation or branches. Sweep a dipnet and/or an aquarium net through the shallow water and aquatic vegetation every few steps. Examine the net contents carefully for small larvae, then replace contents in the water. If there is a broad area of shallows, wade through it in a zigzag pattern using the nets. (For complete coverage of larger ponds, use a raft or boat to search for amphibians in water too deep or mucky to safely wade.)
7. For wetland sections other than discrete ponds, walk a zigzag pattern back and forth across the site, looking under cover objects and sweeping a net through vegetation to flush frogs and toads.
8. Record any amphibians found. If unsure of identification, take close-up photos and/or sketch details. During identification and measurement, keep tadpoles and larval salamanders in water and all amphibians cool and damp, preferably in a clean plastic bag or tub. Release all amphibians as close as possible to exact capture sites. Record any dead amphibians separately (if more than a few, preserve some in alcohol for analysis).
9. Clean and disinfect all field gear.

## **EQUIPMENT LIST FOR AMPHIBIAN SURVEYS IN WETLANDS**

Scientific Taking Permit from the state, if required to handle protected amphibians  
Bleach, alcohol, or other disinfectant (if surveying sites in several drainages in one day)  
General field gear, sun protection, & emergency kit  
Maps and site descriptions  
GPS, compass  
Notebook & pens, pencils  
Watch  
Waders, rubber boots, or wading sandals  
Polarized sunglasses  
Binoculars  
Dipnet (1/2 to 1 cm mesh, long handle), or fish landing net & long handle & hose clamps  
Aquarium nets (12-15 cm wide, with duct tape around rim)  
Very shallow plastic tub, large bottle cap, or 1/4 cup measure  
(Small plastic viewing box)  
Hand lens (10X) on a string  
Several plastic ziplock bags  
Wide plastic tubs & lids  
Amphibian books and ID keys  
(Camera, preferably with macro lens & flash)  
(Thermometer)  
(15 cm plastic ruler)  
(Bug-net jacket and thin cotton gloves)

**\*\*CLEAN & DISINFECT** all footwear, nets, thermometers, rulers, tubs, bags, and anything else that will be in the water, before you head for the site. This is best done at home (office) at the end of every field day, so your gear is always clean and ready to go.