

Amphibian Migrations and Road Crossings

Unlike many of their aquatic relatives, forest amphibians spend most of their lives in wooded habitat. However, many migrate great distances each year to breed in temporary woodland pools—small wetlands that typically hold water in spring but dry by late summer. In the developed landscape of the Hudson Valley, migrating amphibians may encounter roads, yards, and barriers on their way to breeding pools, often becoming easy prey or getting killed by vehicles. Amphibians that breed in woodland pools include spotted salamander, Jefferson/blue-spotted salamander complex, and wood frog. This group of species has been declining in the Hudson Valley due to wetland loss and forest fragmentation.

These forest amphibians emerge from under ground on rainy nights, usually in March or April, when the soil is thawed and night-time air temperatures are above 40°F. Heavy rain earlier in the day is also typical. In some years when conditions are just right, there may be hundreds, if not thousands, of amphibians on the move to breeding pools on the same evening or evenings; these explosive migration events are referred to as “Big Nights” among nature enthusiasts.

There are several ways that volunteers can help:

Find New Crossings

If you don't know of a migration location, you can scout for road crossings in your car. To conduct road surveys, you should bring a friend (the driver can pay attention to the road and traffic, while the spotter looks for amphibians) and drive slowly (10-15mph) on roads near forested areas. We're interested in knowing the routes you searched and where you did or didn't find migration activity; this information can be marked on a photocopy of a map and submitted along with the first page of the data form. If your municipality has detailed habitat or wetland maps, focus your search in forested areas near vernal pools.

Document the Migration

Use the data form to record basic information. We're interested in learning about the timing and conditions of migrations, as well as locations of road crossings where animals are especially vulnerable. It's best to monitor migration areas with at least two people. When you arrive at a road crossing, park in a safe place and walk carefully along the road, scanning for amphibians. (Unless it's unsafe, keep your feet on the street! It's hard to see amphibians in vegetated shoulders along roads.) There is space on the project data form to record temperature, weather, traffic conditions, the crossing location, and live and dead amphibians. Species identification guides are available on our project website. If you have a camera, take photos of unknown amphibians from several angles; we'll help you identify them. To avoid double-counting dead amphibians, they should be removed from the road after being recorded (spatulas and small shovels are helpful for picking up road-kill.) Even if you *don't* see many amphibians, please write that down – we're curious about areas of low activity, too. To determine “direction of travel,” look at the road crossing on a map and determine the general direction of migration movement.

Help Salamanders, Frogs, and Toads Cross the Road

After you've recorded an amphibian on the data form, gently pick it up and move it across the road in the same direction it was traveling. For fast-moving frogs and toads, keep watch or follow them to safety. Before handling any amphibians, make sure your hands are clean and free of soap, lotion, perfume, insect repellent, or any other chemicals that can be absorbed through the animals' skin. Cup the animals gently but firmly in both hands so they're not accidentally dropped. Do not pick them up by their tails! If you use a bucket or container to help move the animals to safety, make sure it's clean and free of any chemical residues. *Note that NYS law prohibits the collection and possession of amphibians without a NYSDEC permit. The NYSDEC does not interpret the momentary assistance or incidental movement to help an amphibian avoid injury or death as collection or possession, provided it is immediately released and placed back into its environment.*

IMPORTANT TIPS ON SAFETY and PREPARING FOR THE FIELD

You are responsible for your own safety. Carry a bright light and/or wear a head lamp, wear a reflective vest, and stay alert to traffic. Dress for cold, rainy weather. Useful items to bring include: digital camera, compass, thermometer, watch, field guide, spatula, clipboard with plastic covering, extra data forms (use one for each location), pencils, and copies of the “Amphibian Migrations” fact sheet (http://www.dec.ny.gov/docs/remediation_hudson_pdf/amrcfact.pdf) in case you encounter curious residents or passersby. You should not interfere with drivers or traffic.

The **Amphibian Migrations and Road Crossings** project is part of a larger Hudson River Estuary Program effort to partner with local communities to conserve the diversity of plants, animals, and habitats that sustain the health and resiliency of the entire estuary watershed.

For more information about this project or the Hudson River Estuary Program, contact:

Laura Heady, Conservation and Land Use Program Coordinator

NYSDEC Hudson River Estuary Program, 21 South Putt Corners Road, New Paltz, NY 12561

E-mail: woodlandpool@dec.ny.gov

www.dec.ny.gov/lands/5094.html



Cornell University

Guidance for Collecting and Submitting Data

Thanks again for your assistance with the AM&RC project! Here are a few guidelines to make sure your data are the best they can be.

1.) Complete all fields on the data form. Please double check your form to make sure all sections have been completed before you submit it. Your data will have much greater value and utility to the project if the form is complete. Reviewing the form *before* you go out on a migration night will serve as a good reminder of what you'll need to consider while in the field.

2.) Submit a separate data form and map for each crossing location. Please do not compile data from separate locations onto the same data form.

3.) Attach a map that shows the stretch of road you surveyed. A simple way to create a map is to use www.Bing.com:

- On the Bing site, select "Maps" from the menu along the top. You can view your area as a road map or aerial photo by selecting from the drop down menu in the upper right corner.
- Search for your location by address, or by panning and zooming within the map view.
- Once you have your desired location in the view, right-click with your mouse on an endpoint of the stretch of road that you surveyed, and select "Add a pushpin." Do the same for the other endpoint of the surveyed stretch of road. You'll now have your surveyed road section demarcated and can print the map as a PDF for submitting by email or send to a printer for a paper copy.
- If you'd like, you can use your map to determine the distance between the pushpins. You can either use the driving directions function to calculate the distance, or if you have a Bing account, you can use the measurement tool. Having a Bing account also lets you save places.
- Latitude and longitude coordinates for each endpoint can be obtained by left-clicking on the pushpins with your mouse. You can add this information to your map or data form for extra clarity.

Here is an example of a map you can create very easily in Bing Maps. You can also generate a distance calculation, provide locations, and add comments in the "Notes" box that appears when you print the map. All of this information is very helpful when we are entering data into our project spreadsheets and maps, which cover the entire Hudson estuary watershed.



bing maps

From: 336 Huckleberry Tpke, Walkill, NY 12589

To: 385 Huckleberry Tpke, Walkill, NY 12589

Notes: We monitored migration activity between the two pushpins on Huckleberry Tpke, for a distance of 0.3 miles.

336 Huckleberry Tpke, Walkill, NY 12589

↑ 1. Depart **Huckleberry Tpke** toward Huckleberry Tpke 0.3 mi

2. Arrive at **Huckleberry Tpke**
If you reach Huckleberry Tpke, you've gone too far

385 Huckleberry Tpke, Walkill, NY 12589

4.) When reporting "direction of travel" on the data form, don't overthink it. For example, in the map above, if most of the amphibians were generally moving from the left side of the map to the right side, you would indicate "east" on the data form. If they're moving across in both directions, write in "variable."

5.) To report on the # of amphibians you observe, include the numeral (e.g., 2) and not just hash marks or tally marks (e.g., II). It's OK if you want to keep count with tally marks, but be sure to add them and write in the numeral when you're finished, to avoid confusion. (You may want to keep a copy of the data form for note-taking in the field, and then transfer the information on a clean copy for submitting.)

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Return the completed form to: Woodland Pool Project, NYSDEC Hudson River Estuary Program, 21 South Putt Corners Rd., New Paltz, NY 12561. You can also e-mail a scanned copy or photos to woodlandpool@gw.dec.state.ny.us. Please submit forms by April 20, 2018. Thanks for your help!

Downloadable data form, fact sheet, and ID guides at: www.dec.ny.gov/lands/51925.html

PLEASE USE A SEPARATE DATA FORM FOR EACH ROAD CROSSING!

Date:		Start	End
	Time of observation:		
	Temperature (F):		

Current precipitation conditions (circle the one most appropriate condition): no rain light rain rain heavy rain downpour	Weather conditions in the past 24 hours (circle all that apply): overcast no rain light rain rain heavy rain downpour snow sunny clear OTHER:
Additional observations on weather during the migration: fog light breeze windy	

Traffic during migration:
 ___light (0-3 cars in 20 min) ___medium (4-20 cars in 20 min) ___heavy (21+ cars in 20 min)

CROSSING LOCATION INFORMATION	
Road name:	Approximate length of road stretch you surveyed: (TIP: see directions about using Bing maps)
Have you surveyed this road ever before? Y or N	_____ (in feet or miles – please specify)
Town, Village, or City:	County:
Nearest crossroads:	Additional comments on crossing location:
PLEASE ATTACH MAP WITH CROSSING CLEARLY MARKED	

VOLUNTEER INFORMATION (Please fill out all sections; we may need to contact you with questions.)

Name of key contact:	Phone number of key contact:
Mailing address of key contact:	E-mail address of key contact:
	Total number of volunteers in group: _____

Names of other volunteers in group (If you attach separate sheet with contact information, we can keep in touch!):

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AMPHIBIAN INFORMATION			
<p>Indicate all species observed crossing or dead in the road. Write in additional observed species in the blank rows of the table (see example below). If you're uncertain about an ID, mark as unknown and take photos. For "direction of travel," write the general compass direction of most of the migration movement or "variable" as appropriate.</p>			
species observed	direction of travel	# live	# dead
<i>SALAMANDERS</i>			
spotted salamander			
Jefferson/blue-spotted salamander complex*			
marbled salamander			
eastern (red-spotted) newt			
unknown salamander			
<i>FROGS AND TOADS</i>			
wood frog			
spring peeper			
American toad			
pickerel frog			
unknown frog			
<i>Example: four-toed salamander</i>	<i>east</i>	 	<i>8</i> <i> </i> <i>4</i>

*Distinguishing between blue-spotted and Jefferson salamanders is virtually impossible in the field. For this project, we'll consider all blue-spotted and Jefferson salamanders to be hybrids.

<p>Approximately how many of the recorded live animals did you or your group help cross the road? _____</p>	<p>Did you send any photos? Yes _____ No _____</p>
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Additional comments (attach extra pages as necessary):

Thank you! Please remember to submit all data forms by April 20, 2018.