Amphibian Migrations and Road Crossings Project

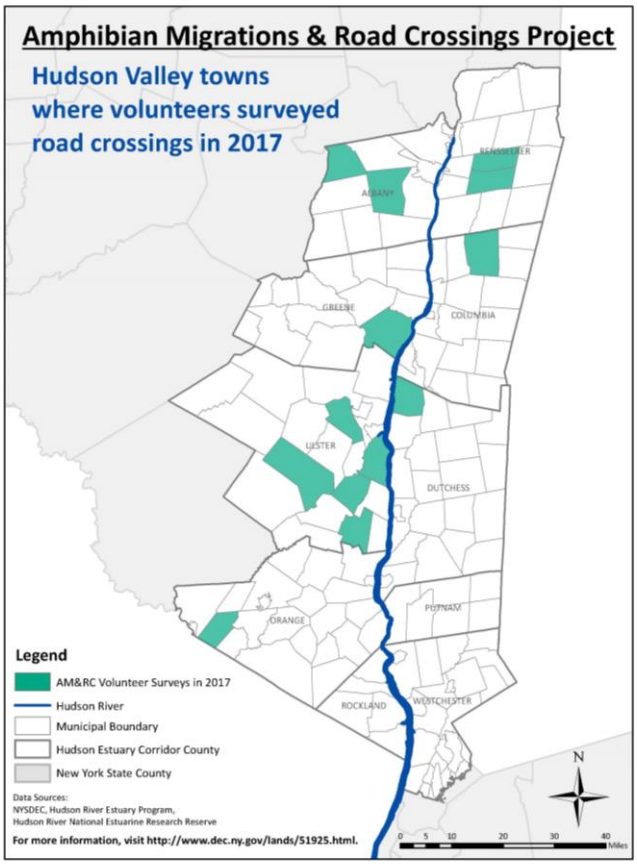
NEW YORK STATE OF OPPORTUNITY. | Hudson River Estuary Program

2017 Project Summary

Spotted salamander photographed during migration on March 28, 2017. By L. Heady

Thank You, 2017 Volunteers!

This year, 34 dedicated volunteers donned their rain gear, searched roads for migrating amphibians, surveyed known crossings, and submitted data forms. Thanks to all! Without those 34 pairs of eyes on the roads, it would be difficult—if not impossible—to observe the migration season from a regional perspective. (The ten counties along the Hudson River estuary span more than 4 million acres!) This year, volunteers collected data in 13 municipalities in (from north to south) Albany, Rensselaer, Greene, Columbia, Ulster, and Dutchess counties.



> ***"We very much enjoyed this experience with citizen science, and my daughter (age 7) used it for a learning fair project at school."***
>
> *-- new volunteer in Greene County*

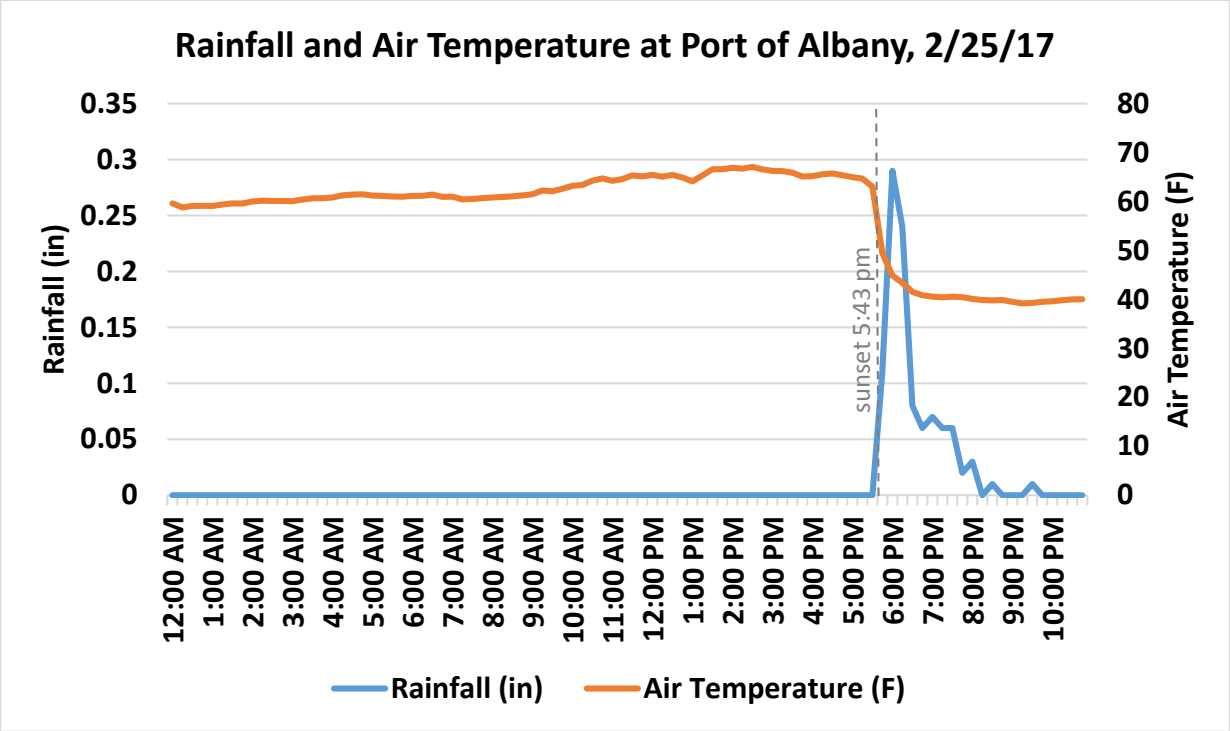
2017 Migration Activity

An unseasonably warm February followed by a colder-than-average March in the Northeast made for yet another challenging season of predicting and observing amphibian migrations. Below are some highlights from the Hudson Valley.

The first movement was documented by a volunteer in Greene County on February 25, when day temperatures exceeded 60F in the Hudson Valley, and then dropped rapidly as thunderstorms came through much of the region.

Four-toed salamander in Greene County, February 25, 2017. By Kelly McKean

Here are the rainfall and temperature conditions in Albany for that date (from the Hudson River Environmental Conditions Observing System, or HRECOS, at http://www.hrecos.org/):



Dead wood frogs in a Dutchess County vernal pool on March 8, 2017. By L. Heady

While it started out quite warm, the month of March put an end to a very long streak of above-average temperatures. March 5 stood out as a particularly cold day, followed by a few milder days, and by mid-March, we were digging out from winter storm Stella. It's not clear what happened region-wide, but it's possible that some salamanders and frogs that started migration before the cold snap and snowstorm succumbed to the conditions.

Additional photos of migration activity in early March: *(L) Jefferson-blue spotted egg mass at a Dutchess County pool on March 8, 2017 (by L. Heady) and (R) a female wood frog crossing a road on March 7, 2017 in Columbia County (by John Horton).*

The date with the greatest amount of surveys and observed activity was March 28, when volunteers assisted 175 amphibians, nearly half of the total that were crossed this year. The second most active date was April 4, when 97 amphibians were assisted. Note that these are dates when volunteers were out looking at the right time during the right conditions; with the erratic weather and early migrations that started this season, as well as other factors, it's likely that many crossed undetected.

2017 Migration by the Numbers

372 amphibians assisted across roads

10 amphibian species documented

446 live amphibians counted

75 dead amphibians counted

285 live salamanders counted

47 dead salamanders counted

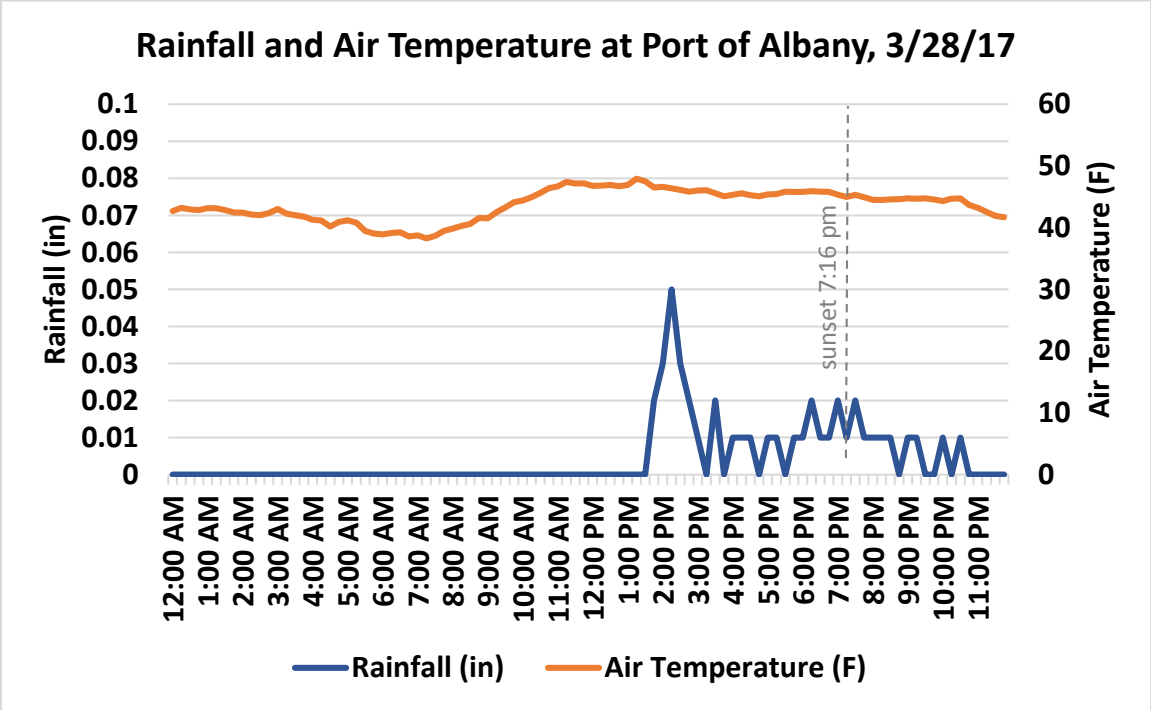
161 live frogs and toads counted

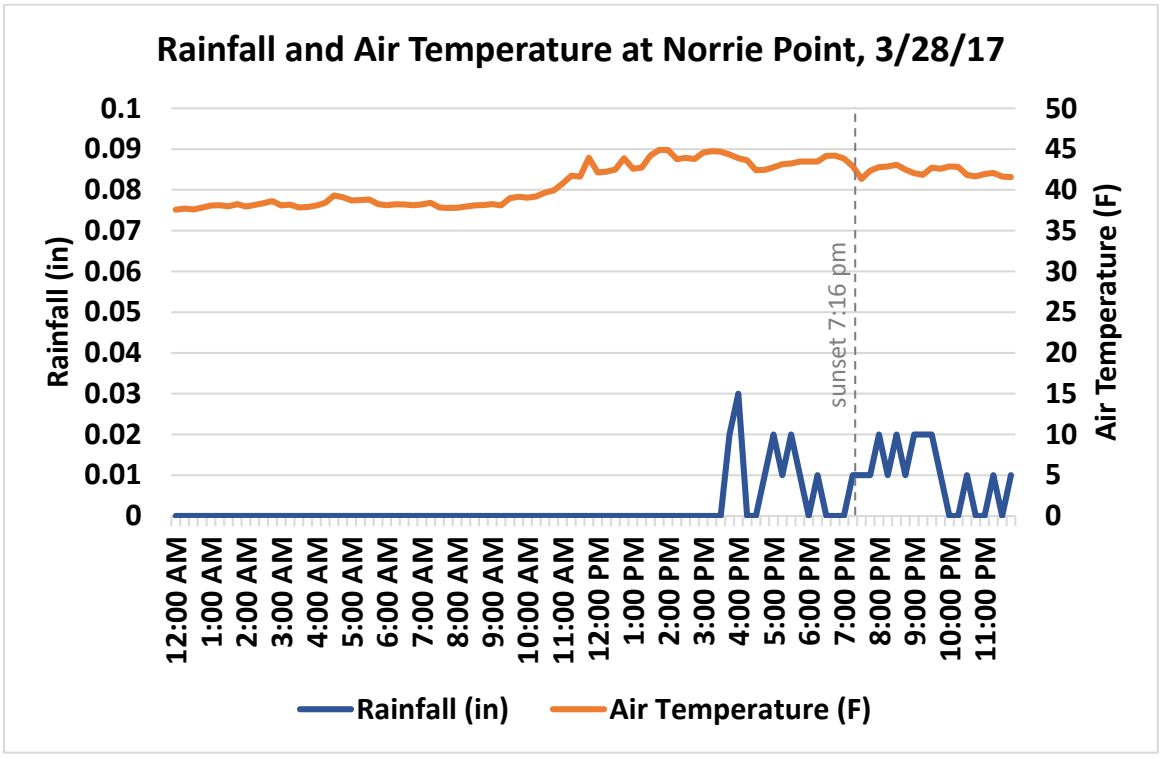
28 dead frogs and toads counted

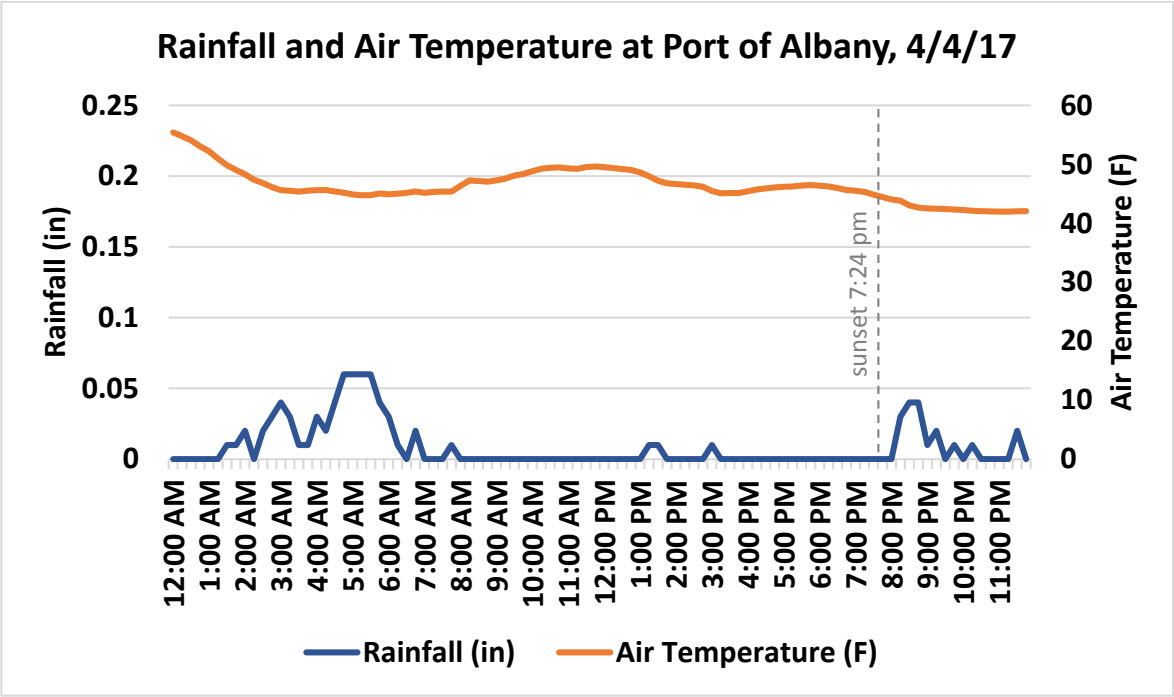
34 volunteers

55.3 volunteer hours

Depending on their location and the time of their survey, on March 28, volunteers reported light rain with temperatures between 36F and 45F, and on April 4, they reported primarily light rain with some heavy rain further north, and temperatures primarily in the 40s (F). Here are the weather conditions for these two dates for locations in the upper (Albany) and mid-Hudson Valley (Norrie Point in Staatsburg, Dutchess County), as reported by HRECOS:






Rainfall and Air Temperature at Port of Albany, 4/4/17
Rainfall (in)
Air Temperature (F)
0.25
0.2
0.15
0.1
0.05
0
60
50
40
30
20
10
0
sunset 7:24 pm
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
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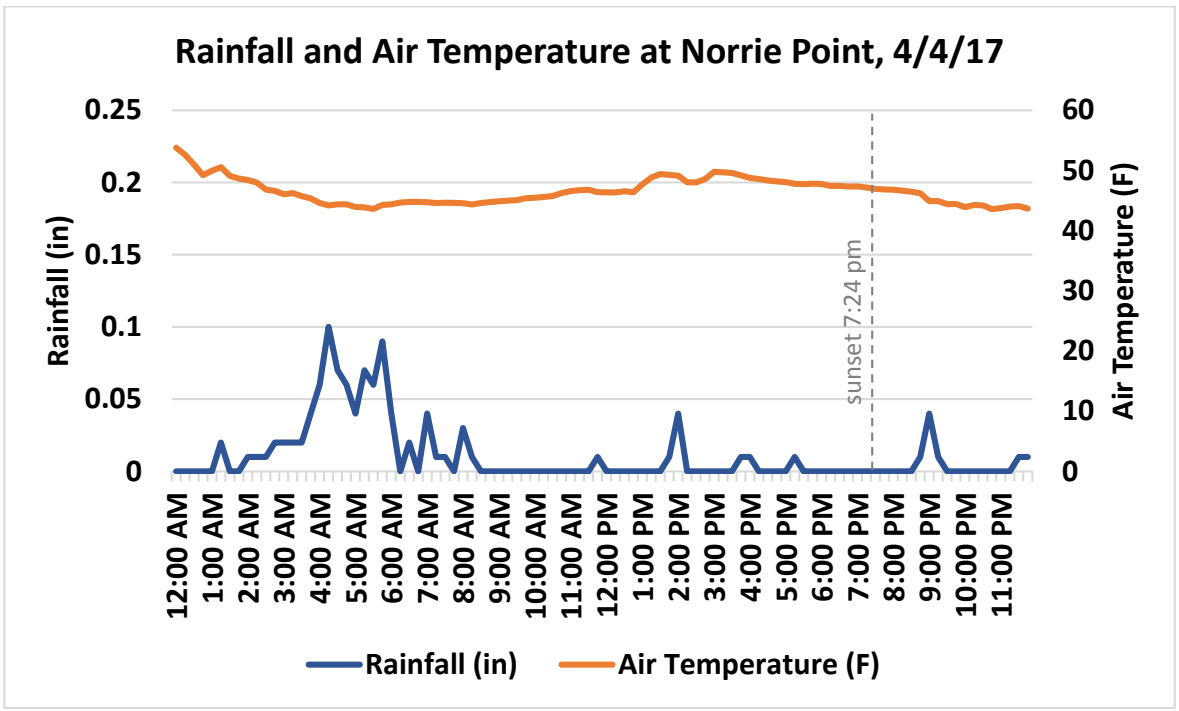
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Rainfall (in)
Air Temperature (F)


Rainfall and Air Temperature at Norrie Point, 4/4/17
Rainfall (in)
Air Temperature (F)
0.25
0.2
0.15
0.1
0.05
0
60
50
40
30
20
10
0
sunset 7:24 pm
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Rainfall (in)
Air Temperature (F)

Analysis of the full 9-year set of AM&RC data is not yet available to compare 2017 to past years, but one noteworthy observation is the high number of four-toed salamanders that were reported this year. Four-toed salamander (*Hemidactylium scutatum*) is the smallest salamander in New York, with a slender body of about 2-3.5 inches in length (see photo on p.2). It's possible that they weren't present at survey locations in the past, or perhaps they were missed due to their small size and volunteers are becoming more vigilant. In any case, it's an encouraging observation. Four-toed salamander was listed as a "High Priority Species of Greatest Conservation Need" in the 2015 New York State Wildlife Action Plan. Like obligate vernal pool breeders, they emerge from forested winter habitat to migrate to aquatic nesting sites, including vernal pools, in late winter to early spring.

Species reported by volunteers during 2017 amphibian migrations:

Species	Number Live	Number Dead
spotted salamander	128	19
Jefferson-blue spotted salamander complex	15	1
eastern newt	15	8
four-toed salamander	112	14
northern redback salamander	11	1
wood frog	105	14
spring peeper	48	12
pickerel frog	0	2
American toad	6	0
leopard frog	2	0
unknown species	4	4
TOTAL	446	75

Staying in Touch

This year, the Amphibian Migrations & Road Crossings email list was switched over to "DEC Delivers" (see example of email update in image to the right). DEC Delivers is a much more efficient way of managing the more than 760 subscribers who signed up to receive migration alerts and project updates. If you're interested in subscribing, please visit the project website at http://www.dec.ny.gov/lands/51925.html and sign up in the blue box with the heading "DEC Delivers."


DEC DELIVERS
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AMPHIBIAN MIGRATIONS & ROAD CROSSINGS
A Project of the NYSDEC Hudson River Estuary Program and Cornell University
<<< 7 April 2017 - Email Update >>>

Jefferson-blue spotted salamander, observed crossing the road during the March 28, 2017 migration. Photo by L. Heady.

"There is something soothing and suggestive of halcyon days in this low but universal breeding-note of the frog. Methinks it is a more unmistakable evidence of warmer weather - of the warmest we have at this date - than almost anything else."
- Henry David Thoreau

2017 Amphibian Migrations
As we await next week's warm sunshine, and this week of April showers comes to a close, this

Many thanks again to all of the AM&RC volunteers!

Stay tuned for updates for 2018 and a more comprehensive AM&RC project summary in the coming months. And please consider helping to recruit new volunteers so more of the region can be covered next year!

One of AM&RC's newest and youngest volunteers points out a spotted salamander during migration in Greene County on April 4, 2017. By Anne Rhoads

> ***"Volunteering with the AM&RC project reminded me of how much life there is around us that we do not see unless we know to look for it, and how vulnerable those individual lives are. What a great reminder to keep my eyes open and pay attention."***
>
> *– New AM&RC volunteer Julia Palmer,*
> *Assistant Land Steward, Wallkill Valley Land Trust*

The NYSDEC Hudson River Estuary Program and Cornell University work together to assist Hudson Valley communities with conservation and land-use planning to conserve important forests, wetlands, and natural areas. The Amphibian Migrations and Road Crossings (AM&RC) project was initiated in 2009 to help raise awareness about woodland pools and habitat fragmentation; engage volunteers to collect valuable data and reduce mortality of local amphibian populations; and increase our understanding of breeding migrations throughout the Hudson Valley so conservation priorities and actions can be developed. For more information, contact Laura Heady, Conservation and Land Use Coordinator, at 845-256-3061 or laura.heady@dec.ny.gov.

CONTACT INFORMATION

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