

# Cross the Road?

# Why Did the Salamander

**TO  
REPRODUCE,  
OF COURSE.  
AND A BAND OF  
VOLUNTEERS  
GATHERS AT NIGHT  
TO HELP IT—AND  
COUNTLESS OTHER  
AMPHIBIANS—GET TO  
THE OTHER SIDE**

**THE GANTLET**  
A rare sighting of a northern spring salamander on migration night. These nocturnal creatures spend their days hiding under logs and stones.

— — —  
photographs  
and text by  
**JOANNA LENTINI**



**BIG NIGHT**

Right, Laura Heady, outfitted for crossing guard duty in the spring of 2021, founded the Amphibian Migrations and Road Crossings Project, which has several hundred volunteers. Below, a volunteer holds a member of the Jefferson/blue-spotted salamander complex. Bottom, a spotted salamander slithers over the pavement. In the vernal pool, the females of this species will lay clutches of about 100 eggs.



**E**ach spring as the ground begins to thaw, an epic migration unfolds in New York's Hudson River estuary watershed. Amphibians emerge from their winter shelters and head for woodland breeding pools. Some of these creatures must hop or slither as far as a quarter-mile—a long way for a small, coldblooded vertebrate. For those who survive the labyrinth of predators, human development and fast-moving cars, an uncanny orgy awaits.





On a brisk, rainy evening last March, Laura Heady, a biologist, was wearing a reflective orange vest and headlamp, scouring a road near New Paltz, New York. Heady is the director of the Amphibian Migrations and Road Crossings Project, a joint effort between the New York State Department of Environmental Conservation and Cornell University. Since the program began in 2005, around 850 volunteers have been trained to escort amphibians out of harm's way.

Heady emphasized the importance of taking slow, careful steps as she led us across the dark, slippery terrain. Tiny jumping wood frogs blended

**BY LINES**

**Joanna Lentini**, a photographer specializing in watery realms and the conservation of nature, is based in upstate New York. This is her first appearance in *Smithsonian*.

in with the wet brown leaves. Salamanders covered in bright yellow dots scampered all around, members of a regional group of hybrids called the Jefferson/blue-spotted complex. These three species were headed toward vernal pools—temporary bodies of water created by rain and snowmelt. The pools dry out under the summer sun and are devoid of predators, making them ideal nurseries for tadpoles and salamander larvae.

As we walked, Heady pointed out a wide range of other spring-breeding amphibians, including green frogs, four-toed salamanders, northern spring peepers, eastern newts, bullfrogs and Eastern American

toads. A euphony reminiscent of a New Year's Eve celebration floated through the night.

"Many volunteers have communicated the joy they feel getting to witness their first migration, seeing these beautiful amphibians that are typically quite elusive," Heady told me. "When we get those first rainy nights of spring, and I know that residents are braving the cold, damp, uncomfortable conditions to help amphibians, my conservationist's heart just sings."

Heady is also the conservation and land use program

**STRIKE UP THE CHORUS**

Left, a volunteer extends a helping hand to a wood frog, a species that can lay hundreds or even thousands of eggs in a single clutch. Top, a tiny northern spring peeper, about an inch long, rests beside a vernal pool. Above, a female Eastern American toad carries two males on her back. They'll attempt to fertilize her eggs once she lays them at the vernal pool.





**FERTILITY DANCE**

The white specks in the pool beneath this spotted salamander and wood frog are sperm-filled capsules deposited by male salamanders and collected by females.





**REFLECTION** — — —

Laura Heady considers a vernal pool teeming with life. The dependence of amphibians on these wetlands, which dry up by summer, is a marvel of evolutionary adaptation.



### METAMORPHOSIS

Right, a sign directs hikers toward seasonal breeding pools. Far right, a mass of spotted salamander eggs found in the shallow water. Below, wood frog tadpoles recently hatched from fertilized eggs. During their time in the water, tadpoles grow legs (salamanders have legs when they hatch). A few months after the eggs are first deposited, they emerge from the pool as terrestrial adults.



coordinator at the Hudson River Estuary Program, which makes her the custodian for all sorts of creatures. But she has a special love for amphibians, which usually hatch from eggs in the water and then divide their life cycles between the aquatic and terrestrial worlds. She traces her devotion to the time, some 20 years ago, when a local ecologist introduced her to the woodland breeding pools that are so vital to the amphibians' existence.

My husband, John, was there with me that night. As someone who has gone on eco-driven adventures all over the world, John had been surprised to discover that such a remarkable wildlife phenomenon took place near our home every single year. We spent five hours ferrying amphibians across the road, and by the time we headed home at 11 p.m., we were cold and tired but exhilarated.

In New York, as in many other states, there's no protection for wetlands less than 12 acres in size, so amphibian migration routes often get bisected by roads and construction projects. That's also a problem for larger creatures like deer. But when an amphibian gets run over by a car, the death usually goes unnoticed.

Since amphibians blend in with their surroundings and hide underground all winter, people are often unaware of the crucial role they play in the ecosystem. "They eat invertebrates along the forest floor, like earthworms, slugs and spiders, and they themselves are food for owls, turkey, fox and other predators," Heady told me. Researchers also speculate that salamanders contribute to the carbon cycle of the forest by consuming insects that shred and eat leaves; because shredding releases carbon into the atmosphere, salamanders may be doing their part to slow climate change.

Last year, those of us who volunteered helped more than 11,000 amphibians safely reach their vernal pools. Heady is hopeful that her growing email list is a sign of growing stewardship for these vulnerable creatures. ♦

**"THEY EAT INVERTEBRATES ALONG THE FOREST FLOOR, LIKE EARTHWORMS, SLUGS AND SPIDERS, AND THEY THEMSELVES ARE FOOD FOR OWLS, TURKEY, FOX AND OTHER PREDATORS."**