

## Salamander March

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March 2025



If there were a calendar of Kent wildlife, March would have to be represented by a salamander. Given that most of us likely won't lay eyes on many amphibians this month, they're a less obvious mascot than the bright warblers that ought to characterize May or the glowing fireflies that exemplify July – but it's the salamanders that rule our muddy, misty Marches all the same.

On warm, wet nights, they begin to appear as if from nowhere: wet toes digging through the leaf litter, long tails wriggling, wide eyes peering into the dark. They come from safe havens under bark, logs, and leaves; they dig out of winter burrows, freshly thawed from the winter's ice; they make their way, one small step at a time, towards the water.



Our woods are home to quite the variety of salamanders. We've got two main groups – the smaller 'lungless' salamanders and the chunkier 'mole' salamanders' – and two outliers, the aquatic Common Mudpuppy and the terrestrial Eastern Newt. Aside from the newts, whom you are likely to encounter throughout the summer months trundling around on the forest floor in all their orange splendor, the easiest salamanders

to see all belong to the 'lungless' group, also known as *Plethodontidae*. As odd a moniker as 'lungless' may seem, it's very apt. These little salamanders have evolved an incredibly novel feature: unlike nearly every other animal in the world, they lack internal lungs and instead breathe through their skin. This amazing adaptation allows them to thrive in moist environments: you can find the most common species, the Red-Backed Salamander, under practically every damp log in sight during



warmer months. It has also proved to be very well-suited for our neck of the woods: the Appalachian Mountains have the highest diversity of lungless salamanders found anywhere in the entire world, and 6 of them (Red-Backed, Four-Toed, Two-Lined, Dusky, Slimy, and Spring) live here in Connecticut.

But while lungless salamanders do emerge from hibernation in March, it's the other group – the mole salamanders, or genus *Ambystoma* – that truly make it Salamander Month. Our 4 species of mole



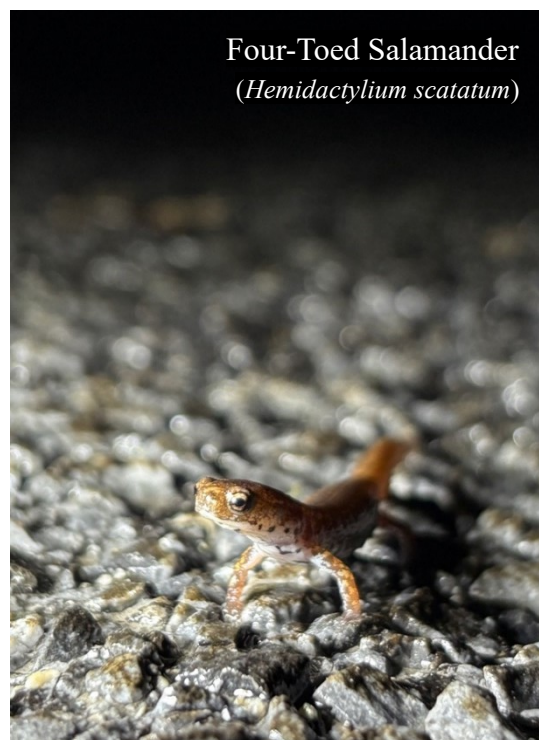
salamander (Spotted, Blue Spotted, Jefferson, and Marbled) – also very well named, this time after the mammalian type of moles that tend to make a mess of vegetable gardens – spend almost their entire lives digging around by themselves in underground burrows. March is the only time of year that you can reliably see them, because every spring, they dig their way to the surface for an annual journey back to the pond where they were born.

It is this migration that keeps me checking the weather throughout the start of spring, eagerly

awaiting the first nights when heavy rains and warm temperatures coincide. The first one this year was March 5<sup>th</sup>. All day at work, the salamander-minded folks caught each other in the hallways to ask: *Do you think it will be tonight? Do you think it's too early? Are you going out?*

Despite the crusty snow drifts still lingering on roadsides, I had to go have a peek. My group was initially disappointed: no peepers were singing and the swamp we regularly visit for the occasion was still crusted over with ice. But just as we were stepping back into the car, the flashlight caught it: sliding over the ice and onto the curb, the glimmer of a wet, gray creature – a Jefferson Salamander!

From the excitement, you'd think we'd come across a pot of gold, not the first salamander of the year (and a rather plain, gray one, at that). But it's wonderful to know these creatures survived another year, miraculous to see them emerge from the soil again as proof. We took its photograph, carried it gently across the road, texted the other groups out hunting – they'd found a couple of very early Spotted Salamanders – and began the annual debate about whether this was a true Jefferson Salamander or a hybrid with another of our mole salamander species, the Blue-Spotted (it was the



Four-Toed Salamander  
(*Hemidactylium scotatum*)



latter, but the hybrid species is formally called the ‘Unisexual Mole Salamander Species Complex,’ which is much more of a pain to type out).



Size comparison between an 8-in Spotted Salamander and my hand

Our next attempt – March 16<sup>th</sup> – turned out to be much more akin to the classic ‘Big Night,’ or the fabled evening when most species first emerge from hibernation in force. While the forecasted rain was not hitting nearly as hard as expected, the ground was damp, the thermometer read 60°, and the swamp was thawed, so we gave it a go.

And there they were: Spring Peepers and Wood Frogs, taking flying leaps across the road. Four-Toed and Red-Backed Salamanders, skittering through

the leaves. And most spectacular of all, the half-foot-long Spotted Salamanders, backs aglow with the golden speckles that give them their name, trundling dutifully towards the water.

Most of these species were just out and about because warm, wet nights are great conditions for them, but Spotted Salamanders (and any other mole salamanders around) were on their migration mission into a vernal pool. Vernal pools are a special type of forest wetland that only exist seasonally. Because vernal pools don’t persist year-round, fish – voracious predators of baby salamanders – can’t survive in them, and they consequently provide the perfect haven for the mole salamanders to leave their eggs.

These chunky, subterranean salamanders thus make an annual pilgrimage to deposit their young in safe pools before returning to their underground burrows. Once laid and fertilized, those eggs take a month or two to mature before hatching out tadpole-like larvae. They will live underwater for months until they metamorphose into their adult forms in late summer to early fall and crawl onto land.

It's a pretty amazing life cycle, and it's all the more awe-inspiring when you see the hefty adult salamanders dutifully making their way to and from their ponds. Mole salamanders can live remarkably long lives for such small animals – they’ve been observed surviving up to 20 years in the wild – and still, they remember where they hatched, figure out which nights of the year the conditions will be just right, and meet up to navigate the long journey back to their ancestral homes.



Spotted Salamander swimming in the vernal pool



Like too much of the natural world, these species are facing unprecedented risks. Habitat fragmentation is making their annual migrations ever more difficult. New developments and encroaching invasive species drain wetlands they rely on. Busy roads make the journey itself a daunting task, since individuals max out at 10 inches long and are flat enough to be nearly invisible to even the most conscientious drivers.

Increasingly unpredictable weather makes things even more challenging. Long droughts are difficult for amphibians that must stay wet to survive, and it's becoming more and more common for once reliable vernal pools to dry up during summer heat waves before juvenile salamanders have time to develop the lungs they need for terrestrial life.

But I am always encouraged by the little communities that seem to appear from nowhere when salamander season begins. People start asking each other when they

think Big Night will be. I start receiving emails from the NY State Department of Environmental Conservation's 'Amphibian and Migration Crossings' unit, which offers trainings for volunteers to monitor known amphibian crossings and reports of the numbers of different species seen ([sign up here if you're interested!](#)). We share salamander photos over group texts, discuss the state of the vernal pools, and spend evenings looking for the little amphibians – not just because it's amazing to see them, but because if we find them, then we can carry them safely across the roads.



Flower of the  
American Hazelnut  
(*Corylus americana*)

While we wait for the leaves, flowers, and warmth of true spring, nature is already waking up. The peepers have begun to sing their seasonal chorus; the first tiny pink buds on the hazelnut bushes have opened; the Eastern Phoebes are back to their tail-wagging chorus in the backyard. Out in the woods, new eggs sit submerged in the vernal



pools, waiting with us for the heat of summer to burst out and explore. Below us, the mole salamanders use their blunt noses to dig back into the wet leaf litter, resting their tiny legs after another successful Salamander March.