

Of Frogs and Vernal Pools

by Claudia Knab-Vispo

Mud season has its obvious inconveniences. But this time of the year is also a time of hope and expectation. It carries the promise of the cycle of life entering the next round; of birds returning and beginning to claim their territories with song; of green shoots tentatively peeking out of the earth; of willow, elm, and red maple buds swelling and finally breaking open to present the first flowers of the season, long before the trees leaf out. This time of the year also makes me eager to hear the chorus of frogs again.

Spring peepers are often the first to be noticed, because their chorus is so loud and they breed in almost any place that has some water. They may be singing from swamps, marshes, bogs, wet meadows, and a variety of ponds, where their minute eggs are attached singly or in small groups to aquatic vegetation. Although we have all heard the peeper's chorus, it is not so easy to actually see one of these tiny frogs.

Male spring peepers are less than an inch long and very good at stopping their singing before you can get close enough to find them. It can be done, but it takes a mild spring night, a lot of patience, and a strong flashlight to get a peek at a peeping spring peeper. For me, it seems to be easier to randomly stumble upon them later in the year in bright daylight on high ground. After their long breeding season is over, spring peepers leave the water and return to the forest where they spend the summer and fall hunting for tiny insects and other invertebrates in the leaf litter.

When you are in the forest, far from a waterbody, and see a frog-like creature jump away to avoid being stepped on, try to get a closer look. If it is tiny (around one inch) and gray-brown with round toe pads and a dark "X" on its back, you are definitely seeing a spring peeper. A tiny frog without the "X" might still be a spring peeper, but could also be a young gray tree frog, although they are usually pea-green. If it does not have round toe pads or an "X", but instead features dark patches behind the eyes, you are seeing a young wood frog. And then, of course, if it didn't really *jump* to start with and is covered with bumpy warts, you are looking at a young American toad.

Interestingly, lone peepers can occasionally be heard calling from a tree far away from water late in the year. They overwinter in the forest, buried in the litter or hidden under loose bark. And it is during mud season that they emerge from their winter den, make their way to watery breeding grounds and join the chorus which will be heard on and off over the next couple of months.

The other frog that emerges very early in the year is the aforementioned wood frog. Like the spring peeper, this species spends most of the year (including the winter) in upland forest, but seeks out water in early spring for breeding. The males likewise sing in a chorus and can sometimes be heard singing together with the spring peepers for the first few weeks. A little later, the frog chorus will become more diversified with American toads, green frogs, pickerel frogs, gray tree frogs, and, eventually bull frogs joining in.

Compared to all their other cousins, the wood frog's breeding period is very short and highly synchronized; in some years, most wood frogs travel from forest to breeding pool in a single night. If March stays cold throughout, then the "big night" usually happens right around the beginning of April, when a first warm spring rain finally breaks winter's hold. At that time, wood frogs can be seen traveling over any remaining snow and sometimes coping with partially frozen breeding pools. In milder years, the wood frog's breeding activity may be spread out over a couple of weeks and begin by mid-March.

Wood frogs call from their breeding pools and their chorus can be as deafening as that of the spring peepers, if you are nearby and a lot of frogs are calling simultaneously. However, their call is very different, almost like a flock of quacking ducks.

Wood frogs are much more selective with their breeding pools than spring peepers. They tend to choose shallow, temporary pools. So called “vernal pools” or “intermittent woodland pools” are the ideal nursery for wood frogs, whose eggs are laid in large, grapefruit-sized, free-floating clusters. Vernal pools (“ver” is Latin for “spring of the year”) are shallow depressions filled by melt water or spring rains. They might hold water for a few months, but usually dry out by mid-summer. Their temporary nature results in the absence of fish, fully aquatic frogs, newts, and several other potential predators of wood frog eggs and tadpoles. Their temporary nature also results in the need for a very brief breeding season and for quick development of the eggs and tadpoles. Fully metamorphosed young wood frogs leave their drying pools after approximately three months. They are usually less than an inch long when they move to take up residence in the leaf litter on high ground.

Because they are small and transitory during a given year, vernal pools are often not recognized for what they are: a unique element in our landscape, important not only for wood frogs, but also for other rare and uncommon species, such as spotted salamanders, fairy shrimps, and fingernail clams.

And mud season is when the most action happens in vernal pools!



The wood frog can reliably be recognized by its dark patch behind the eye. These frogs can be found breeding in vernal pools early in the spring. By late June, tiny wood frogs disperse from their wet nurseries into the surrounding forest to take up life on high ground. Over the next few years, they can grow to 3 inches long and return every spring to breed in the pool where they were born.