

# *Wild Things in Your Woodlands*

## Seasonal Woodland Pools

In late March or early April, as longer days and warmer weather beckon you to step out into the woods, you may notice shallow pools of water. Lured by the quacking and clucking sounds of wood frogs (*Lithobates sylvatica*) calling out to potential mates as they float on the water, or the loud calls of spring peepers (*Pseudacris crucifer*) camouflaged at the water's edge, you can't help but notice that spring has arrived. To many, woodland pools appear to be insignificant wet places in the forest, but they are actually a source of incredible abundance and diversity, and are important components of the forest ecosystem. Serving as breeding habitat for amphibian and invertebrate species, and feeding habitat for many others, they are so abundant with life that some have likened them to the 'coral reefs of the forest.'

These shallow, woodland pools, often called vernal pools, are valuable to many species of wildlife and essential for the survival others. Typically small (< 1 acre), and isolated from streams or other bodies of water, they fill with water during the spring and other rainy periods, but regularly or periodically dry up during the driest months of summer. The amount of time they contain water, called hydroperiod, may vary from year to year. Pools that hold standing water for at least two and one-half months in the spring are ideal because they provide adequate time for frog and salamander eggs to hatch, and their larvae to grow and leave the water. In drier seasons, these seasonal pools are easy to overlook. However, if you keep an eye open, there are certain telltale signs that indicate water is present during at least part of the year. Look for topographic depressions in the forest floor with compacted leaves, covered lightly with sediment and darkened by water stains. You can also look for wetland plants, such as sphagnum moss, sensitive fern, sedges, and some wetland shrubs growing in a depression.

Many species of wildlife may benefit from the presence of these woodland pools. Invertebrates like dragonflies, damselflies, and water boatman find refuge in the water. Reptiles such as the spotted turtle (*Clemys guttata*) and blanding's turtle (*Emydoidea blandingii*) travel to woodland pools in the spring to feed and mate. Garter snakes (*Thamnophis sirtalis*) and ribbon snakes (*Thamnophis sauritus*) prey on young frogs as they emerge from the water, and water snakes (*Nerodia sipedon*) feed on tadpoles, adult frogs, and salamanders. Mammals, including shrews, mice, skunks and raccoons, also feed on the many invertebrates and amphibians found in or near the water. Wild turkeys may stop at pools to feed on insects, and songbirds nest in lush vegetation nearby. Some amphibians, such as the spotted salamander (*Ambystoma maculatum*), Jefferson

salamander (*Ambystoma jeffersonianum*), marbled salamander (*Ambystoma opacum*), wood frog, and others, have adapted to these habitats. Although these species live in the forest for most of the year, they depend on the water to breed and lay eggs, and for their larvae to grow and develop. Shallow pools that dry up periodically cannot support fish, which are major predators of wood frog eggs, and frog and salamander larvae. With recent increasing concerns about amphibian health and population declines, the role of these valuable forest refuges has gained increased attention.

If you suspect you have a seasonal woodland pool on your forestland, you can take steps to protect this valuable habitat and associated wildlife. Any activity that changes the amount of water a pool holds may also affect the length of time a pool holds water and its suitability as habitat for the animals that live there. Draining or diverting water from entering a pool has obvious negative consequences. However, deepening a pool so it can hold water longer may also change the suitability of the habitat for wildlife. A pool that holds water on a semi-permanent or permanent basis allows for fish and some larger invertebrate predators to survive and presence of these predators can change the biological community. In addition to the quantity of water that a pool holds, the quality of water that enters the pool is also important. Take care not to divert polluted runoff containing sediment or chemicals into woodland pools. Within the pool, avoid disturbance of the pool depression even during times when there is no standing water. This includes driving recreational vehicles or heavy equipment through the pool depression, or piling sediment or other debris in or near the pool.

The surrounding forests are just as important as the pools themselves. Many animals depend on woodland pools to complete just part of their life cycle. For example, wood frogs and spotted salamanders visit the pools in the springtime for a few short weeks to breed and lay their eggs. Once they deposit their eggs, they move out into the surrounding forest where they feed, grow, and find cover for the remainder of the year. Amphibians are generally very prone to drying out and to temperature extremes. Areas with deep leaf litter, abundant coarse woody debris (logs and branches), and patches of shade provide these animals with the opportunity to move across the forest floor and find suitable cover from the elements. Pool-breeding salamanders readily travel 130 yards or more from breeding pools, while juvenile wood frogs may disperse over half a mile.

While protecting woodland pools does not prohibit active forest management in the vicinity, you can take steps to protect the values of the surrounding forest for woodland pool dependent species. Encourage a mostly closed canopy ( $\geq 75\%$ ) in a pole or greater size class to provide shade, leaf litter, and woody debris within 30 yards of the edge of the pool. Avoid creating ruts, exposing mineral soil, or creating any sources of erosion or sedimentation. From 30 to 130 yards from the pool's edge, encourage a closed or partially closed canopy ( $\geq 50\%$ ) and minimize disturbance whenever possible. When other objectives prevent you from being able to protect a buffer around the entire pool, focus on maintaining a forested connection between or among clusters of pools, or between pools and large expanses of forest.

By taking a proactive approach to locate and protect woodland pools on your property, you can conserve these extremely valuable habitats and the animals that live there. You too, can benefit by visiting these pools in the spring, summer, or fall. Alive with jelly-like egg masses, tadpoles, aquatic insects, salamanders and frogs, vernal pools can provide endless hours of adventure and hands-on exploration for children and adults alike.

If you would like to learn more about woodland pools, or become a Woodland Pool Steward by helping to document locations of woodland pools on your land or in your community, visit the Woodland Pool Steward website at [www.woodlandpools.info](http://www.woodlandpools.info).

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