



Department of  
Environmental  
Conservation

## Woodland Pool Conservation

*Woodland pools* are a type of small, temporary wetland (or vernal pool) found in forested landscapes. They occur in isolated, shallow depressions that typically fill during the spring or fall, but dry by late summer or during droughts. Woodland pools are also found in floodplains, at the headwaters of streams, or in larger wetland complexes such as hardwood swamps, but they're usually not connected to permanent surface water flows. Instead, they fill from rain, snowmelt, or groundwater.

### Breeding Habitat

Woodland pools provide critical breeding habitat for a number of amphibians and invertebrates that have adapted to their unique conditions. In the Hudson Valley, these include the [mole salamanders](#), [wood frogs](#), and [fairy shrimp \(PDF, 950 Kb\)](#).

Fish, on the other hand, cannot tolerate the cycles of filling and drying in woodland pools. Without predatory fish, the pools are ideal nurseries for developing eggs and aquatic young of frogs and salamanders. The abundance of life associated with these relatively small wetlands has earned them the moniker, "the coral reefs of Northeastern forests."



*A Woodland Pool (Laura Heady)*

### Forest Food Web



*An adult spotted salamander (L.Heady)*

More than just breeding habitat, woodland pools are also important links in forest food webs. Leaves fall into pools from surrounding trees, and nourish invertebrates and tadpoles, which in turn become prey to salamander larvae as well as other animals that forage in pools, such as turtles and wading birds. Many of the amphibians that breed in woodland pools spend 90% of their lives in the surrounding forest, where they consume invertebrates like earthworms, slugs, and spiders, and themselves become consumed by larger forest animals such as shrews, raccoons, and owls. Through this complex food web, the energy that was originally stored in fallen leaves at the bottom of the pool cycles

through many animals and ultimately returns to the forest system - maintaining important connections between aquatic and terrestrial landscape elements.

### Watershed Connections and Ecosystem Health

The hydrologic role of woodland pools is less understood, but they likely contribute to storage and filtration of surface water, and recharge of aquifers. Although the value of one small wetland may be difficult to discern from a watershed perspective, the collective benefits of thousands of small wetlands to a watershed may be profound. And the presence of pool-breeding, woodland amphibians can be indicators of the ecological health and integrity of our larger forest systems, which also contribute to water quality and quantity, and our ability to adapt to climate change.

## Conservation Needs

Due to their small size, woodland pools are usually not afforded protection by state and federal wetland regulations, and are often missed during land-use planning reviews. Even when pools are protected through local initiatives, the surrounding forested habitat is often fragmented. There are few mechanisms in place to conserve both the pool and adequate upland forest necessary to support populations of pool-breeding amphibians, which may move as far as a quarter mile from the pool. In addition, the forecasted droughts and severe precipitation events associated with climate change may impact the timing of inundation in woodland pools, which is so closely linked to amphibian breeding cycles. Such changing conditions will make it especially important for future conservation plans to prioritize clusters of woodland pools in contiguous forested areas.

The [Hudson River Estuary Program's biodiversity initiative](#) offers training workshops and conservation guidance on woodland pools to local decision-makers, land trusts, and landowners. We are working with community partners to locate and prioritize important woodland pool resources, and the resulting maps and data will be available to inform local planning and conservation projects. There are several opportunities for citizen scientist involvement; see [Amphibian Migrations and Road Crossings](#) or contact:

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