

3.5 Vernal Pools

DEEP defines vernal pools as seasonal ephemeral wetlands. In the Northeast, these occur in glaciated areas covered by shallow water from winter to spring but may be completely dry during summer and fall. Vernal pools are named after the vernal equinox since they usually appear in the spring. In Meriden, vernal pools are often located near the traprock ridges, land contours, and in drainage areas of water tables.

The US Army Corps of Engineers says:

“Vernal pools are often small, seasonally flooded, and may be isolated from larger wetland systems. These characteristics make them particularly vulnerable to filling or direct alteration and also render vernal pools difficult to adequately protect through wetland regulations in the U.S. and Canada.”

Vernal pools are often confined, distinguishing them from marshes or streams. They have unique hydrology and rich species diversity, yet are free from breeding populations of fish. The temporal nature of vernal pools makes them hard to identify but results in the pools having less predation than permanent water bodies (Natural Resources Conservation Service Connecticut). This allows vernal pools to support many amphibian species like the Wood Frog, Spotted Salamander (pictured below), and Marbled Salamander. Fairy Shrimp, which also live in vernal pools, are an essential food source for other animals found in vernal pools. Some vernal pools in Meriden provide breeding sites for the Jefferson Salamander, a species of Special Concern in Connecticut. Amphibians depend on



vernal pools for breeding and development, while adult members of the species rely on adjacent habitats to live their adult lives. Most wetland regulations require 50-100 feet of forested buffer around vernal pools. This buffer maintains water quality. However, according to the Vernal Pool Association, maintaining the amphibian diversity of a vernal pool requires 500 feet or more.

Species living in a large area rely on vernal pools to sustain their population. Species living in a small area may depend on or even exist in only one vernal pool. These species often move to vernal pools before the ice melts because the larvae of these species develop over 2-3.5 months. Many animals in the Northeast migrate after coming out of long hibernation to travel to vernal pools. A

picture of a vernal pool is on the left (CT DEEP).

Birds, such as egrets, ducks, and hawks, often use vernal pools for seasonal water and food sources.

Regarding the vernal pools of the Northeast, the Maine Audubon Society suggests that conservation efforts should focus on diverse breeding for invertebrates and amphibians and pools with intact critical land. Juvenile amphibians rely on vernal pools for the secluded area as they adjust to living between terrestrial and aquatic habitats. The reproductive success of amphibians is linked to the hydrology of vernal pools.

Vernal pools are highly susceptible to water quality impacts when sediment or excess nutrients enter the water. This also causes effects on amphibian productivity. The Connecticut Association of Wetland Scientists notes that if large amounts of



sediment enter a vernal pool, amphibian reproductivity can be absent altogether. Vernal pool availability for the amphibian breeding season is sensitive to changes in precipitation.

References and Resources

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