

VERNAL POOL HABITATS AROUND MAINE

Vernal pools are defined by the animals using them as breeding habitat.

The physical settings and characteristics of pools, however, vary greatly geographically.



JAMIE HASKINS

Typical vernal pool depression in a deciduous forest. Common setting in southern Maine and southern New England.



MARK MCCOLLOUGH

Vernal pools often occur in oxbows or low-lying areas in floodplains. Wood turtles often use these pools.



ARAM J. K. CALHOUN

In central Maine, vernal pools are often found between tree hummocks in forested wetlands.



ARAM J. K. CALHOUN

In eastern Maine, vernal pools are often sphagnum-covered depressions associated with spruce-fir peatlands. This pool produced both wood frogs and spotted salamanders.



ARAM J. K. CALHOUN

Many vernal pools in northern Maine are large, oval depressions (up to 2 acres) within spruce-fir forests. Often, the pools are semi-permanent.

Pools also vary in hydrology. Some dry in most years while others may be semi-permanent.



MARK MCCOLLOUGH

Vernal pool in late April.



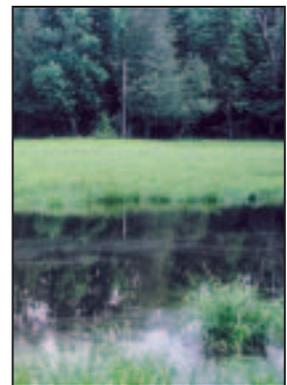
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Same vernal pool in late June. The pool may dry completely by summer's end.



ARAM J. K. CALHOUN

Temporary pool, in August.



ARAM J. K. CALHOUN

Semi-permanent pool, in August.

VERNAL POOL INDICATOR SPECIES

Vernal pools in Maine provide breeding habitat for one or more of these vernal pool indicator species.



LEO P. KENNEY

Fairy Shrimp
(*Eubranchipus* spp.)



MAINE DEPT. OF INLAND FISHERIES & WILDLIFE

Wood frog
(*Rana sylvatica*)



PHILLIP DEMAYNADIER

Spotted Salamander
(*Ambystoma maculatum*)

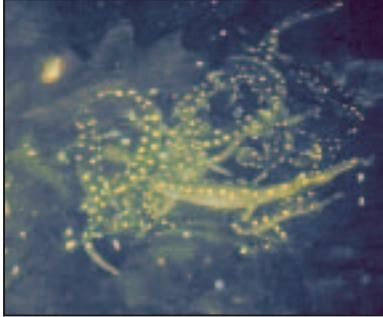


MARK MCCOLLOUGH

Blue spotted salamander
(*Ambystoma laterale*)

EVIDENCE OF BREEDING INDICATOR SPECIES

Adult breeding behavior



TOM TYNING

Salamanders engaged in a nuptial dance referred to as "congressing", after which males deposit up to 40 sperm packets which females then pick up into the cloaca for internal fertilization.



ARAM J. K. CALHOUN

Spotted salamander spermatophores or "sperm packets". At first glance, spermatophores look like specks of white paint on the bottom of the pool.



TOM TYNING

Wood frogs in amplexus (the position assumed during egg-laying and external fertilization).

Egg masses



ARAM J. K. CALHOUN

Wood frog egg masses.



MARK MCCOLLOUGH

Spotted salamander egg masses. They may be clear or cloudy. They vary in shape from spherical to cylindrical.



JAIPE HASKINS

Blue-spotted salamander egg masses. Note the cylindrical form of the masses (typically less than 30 eggs) attached lengthwise along vegetation.



MARK MCCOLLOUGH

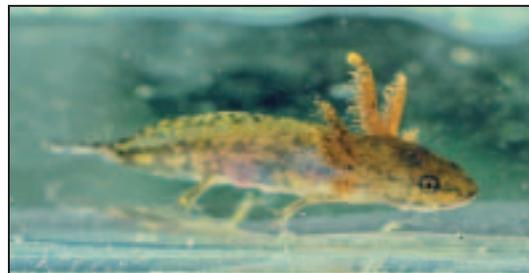
Blue-spotted, spotted, and wood frog egg masses.

Larvae



LEO P. KENNEY

Wood frog tadpole.



LEO P. KENNEY

Spotted salamander larvae. Note the external, bushy gills.

VERNAL POOLS AS WILDLIFE HABITAT

Vernal pools are important habitat for many other animals in addition to the four indicator species. They are extremely productive ecosystems that provide abundant food resources for a variety of species that may or may not breed in the pool. Below are some examples of species frequently associated with vernal pools.



RONALD B. DAVIS

Four-Toed Salamander

(Hemidactylium scutatum)

Maine Species of Special Concern

This salamander sometimes lays eggs in sphagnum moss overhanging vernal pools. The eggs are tended by an adult.



MARK MCCOLLOUGH

Spring Peeper

(Pseudacris crucifer)

Spring peepers often sing from vernal pools and may successfully breed in semi-permanent pools.



MARK MCCOLLOUGH

Eastern Newt

(Notophthalmus viridescens)

Adult newts are aquatic and may be found in vernal pools that are semi-permanent. This red eft is the terrestrial juvenile phase often found in woodlands near pools.



MARK MCCOLLOUGH

Wood Turtle

(Clemmys insculpta)

Maine Species of Special Concern

Wood turtles use vernal pools, especially oxbows associated with floodplains, extensively during the summer for feeding.



MAC HUNTER

Spotted Turtle

(Clemmys guttata)

Maine Threatened Species

Vernal pools are important to spotted turtles for feeding, courtship and mating.



MAINE DEPT. OF INLAND FISHERIES AND WILDLIFE

Blanding's Turtle

(Emydoidea blandingii)

Maine Endangered Species

Vernal pools are important feeding areas for Blanding's turtles in spring and summer. May hibernate in vernal pools.



MARK MCCOLLOUGH

Ringed Boghaunter

(Williamsonia lintneri)

Maine Endangered Species

This dragonfly is often associated with sphagnum-filled, acidic vernal pools.