

Appendix 3
Department of Environmental Protection
Rules for Vernal Pools

Vernal pools and their uplands play a crucial role in plant and animal ecosystems¹. A vernal pool or seasonal forest pool is a natural, temporary to semi-permanent body of water that typically fills during the spring or fall and is often dry during the summer. A vernal pool may provide the primary breeding habitat for wood frogs, spotted salamanders, blue-spotted salamanders, and fairy shrimp.

Due to their ephemeral nature, their small size and the fact that they are home to nocturnal feeding species, vernal pools have often slipped through the regulatory cracks. As of September 1, 2007, vernal pools identified as *significant vernal pool*² habitat are protected by the Natural Resources Protection Act, (§ 38 MRSA 480-B), administered through the Maine Department of Environmental Protection's, Bureau of Land and Water Quality.

Vernal pools are fragile water bodies which are an important wetland resource for the following reasons.

- Recent realization of the complexity and importance of an ecological ecosystem essential to the entire food chain.
- Vernal pools provide breeding habitats with plants, vertebrates and invertebrates, birds, reptiles, amphibians and mammals, as well as migratory birds and an increasing number of threatened species.
- They contribute to the local biodiversity.
- Amphibians are breeding indicator species that detect early environmental hazards, which have the potential to pollute ground and other water bodies.
- Where located near wetlands, these special aquatic sites contribute to the cleansing nature of the surrounding water.

As Harpswell continues to develop, it is important to locate and protect the *significant vernal pools* in our town. The HCC recommends that the Town identify and map the significant vernal pools in town and provide education to the public about the ecological significance of these pools.

The information provided below provides detailed information about the Department of Environmental Protection regulations in regard to vernal pools.

¹ An ecosystem is a natural system consisting of plants, animals and microorganisms in an area that function together with all of the non-living factors of the environment.

² Significant vernal pools are defined in Maine as having (1) a state listed threatened or endangered species using it for an important part of its life history and/or (2) there is a notable abundance of vernal pool species, such as blue spotted salamander, wood frog or fairy shrimp.

Significant Vernal Pools³.

A vernal pool, also referred to as a seasonal forest pool, is a natural, temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet and no viable populations of predatory fish. A vernal pool may provide the primary breeding habitat for wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*Ambystoma laterale*), and fairy shrimp (*Eubranchipus* sp.), as well as valuable habitat for other plants and wildlife, including several rare, threatened, and endangered species. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition.

Whether a vernal pool is a significant vernal pool is determined by the number and type of pool-breeding amphibian egg masses in a pool, or the presence of fairy shrimp, or use by threatened or endangered species as specified in Section 9(B). Significant vernal pool habitat consists of a vernal pool depression and a portion of the critical terrestrial habitat within a 250 foot radius⁴ of the spring or fall high water mark of the depression. An activity that takes place in, on, over, or adjacent to a significant vernal pool habitat must meet the standards of this chapter⁵.

Definitions

As used in this section, unless the context otherwise indicates, the following terms have the following meanings.

- (1) **Critical terrestrial habitat.** Uplands and wetlands associated with significant vernal pools used by pool breeding amphibians for migration, feeding, and hibernation, in particular, forested wetlands and forested uplands that provide deep organic litter, coarse woody debris and canopy shade.
- (2) **Egg mass.** Three or more individual eggs clumped in a gelatinous matrix constitute an egg mass. Egg masses often occur in clusters, but each mass within a cluster must be counted as an individual egg mass.
- (3) **Natural.** A natural vernal pool includes pools of natural origin that have been modified or excavated. A natural vernal pool does not include other natural wetland types (wet meadows, marshes, etc.) that have been altered and currently function as vernal pools.
- (4) **Pool-breeding amphibians.** Animals that, as part of their life cycle, reproduce in vernal pools. Most pool-breeding amphibians return to reproduce in the pool where they originated.

³ The term vernal (vernal = spring) pool is used in the Natural Resources Protection Act, and has typically been used to discuss the types of pools described in Section 9. However, because some pools are wet in both spring and fall, and others are never dry, they have also been referred to as “seasonal forest pools.” Vernal pool is still a common term, and will continue to be used in this section

⁴ The 250 feet of critical terrestrial habitat protected as significant vernal pool habitat is only a portion of the habitat used by adult wood frogs, ambystomatid salamanders, and threatened and endangered species. Tracking studies of adult pool-breeding amphibians have shown that they can travel over a third-mile away from their breeding pool, and that a radius of 750 feet around the pool is optimal for protecting viable amphibian populations. The department encourages efforts to protect more habitat adjacent to a vernal pool than this regulation has authority over.

⁵ For more information on identifying vernal pools, see “Maine Citizen’s Guide to Locating and Documenting Vernal Pools.” Maine Audubon Society, 2003 or the department’s fact sheet entitled “Locating and Documenting Significant Vernal Pools”.

Most adult pool-breeding amphibians spend less than one month in breeding pools; the rest of their annual cycle is spent in critical terrestrial habitat.

- (5) **Vernal pool depression.** This area includes the vernal pool depression up to the spring or fall high water mark, and includes any vegetation growing within the depression.

Significant Vernal Pool Identification Criteria

Vernal pool significance must be determined and documented by an individual who has experience and training in either wetland ecology or wildlife ecology and therefore has qualifications sufficient to identify and document a significant vernal pool.

- (1) **Abundance.** Any one of or combination of the following species abundance levels, documented in any given year, determine the significance of a vernal pool.

Species	Abundance Criteria
Fairy shrimp	Presence in any life stage.
Blue spotted salamanders	Presence of 10 or more egg masses.
Spotted salamanders	Presence of 20 or more egg masses.
Wood frogs	Presence of 40 or more egg masses.

- (2) **Rarity.** A pool that has documented use in any given year by state-listed rare, endangered or threatened species that commonly require a vernal pool to complete a critical portion of their life-history is a significant vernal pool. Examples of vernal pool dependent state-listed endangered or threatened species include, but are not limited to, Blanding's turtles, Spotted turtles, and Bog haunter dragonflies.
- (3) **Identification period⁶.** Egg masses must be counted just past the peak breeding period of pool-breeding amphibians. Abundance of pool-breeding amphibians can only be used to determine the presence of a significant vernal pool during the identification period. The presence of fairy shrimp or a state-listed endangered or threatened species may be used to determine the presence of a significant vernal pool at times of the year other than the identification period.

Optimal times for counting egg masses of pool-breeding amphibians vary according to geographic location and weather. For instance, during cold springs, breeding can begin as much as 2 weeks later than it does in warm, wet springs. The optimal time to count masses is just past the peak breeding period. For wood frogs, this occurs approximately 2 weeks after they start full choruses. Wood frog egg masses hatch very quickly and are more difficult to count much past peak breeding. Salamanders do not have one peak; they often take 4 to 6 weeks to complete egg-laying. Furthermore, their egg masses do not hatch quickly and can be surveyed later than those of wood frogs. The following are guidelines for optimal times for counting egg masses:

⁶ If present, additional rare indicator species are likely to be associated with a significant vernal pool from early spring through September. These species include ribbon snakes, wood turtles, and four-toed salamanders.

Geographic Region	Wood Frogs	Spotted & Blue Spotted Salamanders
Northern Maine	May 1 – May 21	May 10 – May 31
Southern Maine	April 7 – April 21	April 20 – May 21

- (4) **Geographic region.** For the purposes of this chapter, the Northern Maine region is considered to be approximately that part of the state north of a line extending from Fryeburg to Auburn to Skowhegan to Bangor to Calais. Similarly, the Southern Maine region is considered to be approximately that part of the state south of that same line.
- (5) **Seasonality.** The department may require an assessment of significance by a qualified individual during the identification period. In any season, indicators of a vernal pool may include flat topography with depressions or pit-and-mound topography, fingernail clams, caddisfly cases, and evidence of temporary flooding.
- (6) **Voluntary identification.** An individual may voluntarily submit documentation to the department or the Maine Department of Inland Fisheries & Wildlife (IF&W) regarding the significance of a vernal pool on that individual’s property. Documentation must be completed by an individual who has experience and training in either wetland ecology or wildlife ecology and therefore has qualifications sufficient to identify and document a significant vernal pool, or field verified by either the department or IF&W prior to its inclusion on a Geographic Information System (GIS) data layer maintained by either IF&W or the department. A landowner will receive written confirmation of such documentation from the department.
- (7) **Verification of significance.** A significant vernal pool documented on a Geographic Information System (GIS) data layer maintained by either IF&W or the department is eligible for removal from that data layer following IF&W verification of three consecutive years of data demonstrating that a vernal pool no longer meets the criteria in Sections 9 (B) (1) or (2). A written request to remove a significant vernal pool from the data layer must be submitted to both IF&W and the department and include documentation made during the identification period by an individual who has experience and training in either wetland ecology or wildlife ecology and therefore has qualifications sufficient to identify and document presence or absence of a significant vernal pool. A written department determination that a vernal pool is not significant remains valid regardless of timeframe⁷.

Habitat Management Standards for Significant Vernal Pools

To the greatest extent practicable, the following management practices must be followed within significant vernal pool habitat.

⁷ For more information on managing the critical terrestrial habitat surrounding vernal pools, see:
 Calhoun, A.J.K. and M.W. Klemens. 2002. Best development practices: Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.

Calhoun, A.J.K. and P. de Maynadier. 2004. Forestry habitat management guidelines for vernal pool wildlife. MCA Technical Paper No. 6, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.

- (1) No disturbance within the vernal pool depression;
- (2) Maintain a minimum of 75% of the critical terrestrial habitat as unfragmented forest with at least a partly-closed canopy of over story trees to provide shade, deep litter and woody debris.
- (3) Maintain or restore forest corridors connecting wetlands and significant vernal pools;
- (4) Minimize forest floor disturbance; and
- (5) Maintain native under story vegetation and downed woody debris.

If more than 25% of the critical terrestrial habitat has been previously developed, restoring a portion of that area through supplemental planting or regrowth of native forest species may be considered toward meeting these standards, or towards standards for avoidance, minimization, or compensation. For purposes of this chapter, developed area includes disturbed areas excluding areas that are returned to a condition with the same drainage patterns and the same or improved cover type that existed prior to the disturbance;

Permit by Rule

An activity occurring in, on, over, or adjacent to a significant vernal pool or a potential significant vernal pool is eligible for a Permit by Rule (PBR) as described in Chapter 305, Section 19, provided that the habitat management standards in Section 9 (C) above are met. An applicant submitting a Permit by Rule notification pursuant to Chapter 305, Section 19 is not required to provide a seasonal assessment of significance.

Submission of a PBR notification pursuant to this section does not negate an applicant's ability to submit subsequent documentation to verify or negate applicability of Section 9 of this chapter provided that documentation is completed during the identification period by an individual who has experience and training in either wetland ecology or wildlife ecology. GIS data points specific to Chapter 305, Section 19, will be uploaded to the GIS data layer maintained by IF&W only following submission and verification of such documentation by department or IF&W.

This section does not apply to an activity that is not or will not be in compliance with the terms and conditions of a permit issued under the Site Location of Development Law, 38 M.R.S.A. §§ 481 to 490, the Stormwater Management Law, 38 M.R.S.A. §420-D, or the Natural Resources Protection Act, 38 M.R.S.A. §§ 480-A to BB.

Permit Not Required.

A permit is not required from the department under the following circumstances.

- (1) **Forest management activities.** Forest management activities within 250 feet of a significant vernal pool do not require a permit pursuant to this section if the significant vernal pool is not defined and mapped according to 38 M.R.S.A. §480-I.
- (2) **Location of pool.** An activity impacting a significant vernal pool does not require a permit pursuant to this section if the significant vernal pool depression is not located on a parcel owned or controlled by the person carrying out the activity. A permit is required, however, if

the significant vernal pool is either defined and mapped according to 38 M.R.S.A. §480-I or is located on a Geographic Information System (GIS) data layer maintained by either IF&W or the department. This provision does not apply if evidence of property transfers indicate intent to evade regulation under the Natural Resources Protection Act.

- (3) **Department determination.** If, upon request from a landowner, department staff provide a written field determination or advisory opinion regarding the presence or absence of a significant vernal pool, a landowner acting on that determination or advisory opinion by carrying out an activity subsequently found to be in violation is not required to obtain a permit for that activity and will not be subject to enforcement action if jurisdiction or penalty would be based solely on that activity.
- (4) **Communications and electric facilities.** Construction of overhead communications and electric lines, poles, guy anchors, and related overhead infrastructure located within a public or private right of way, within 25 feet of the edge of the road right of way, or within an existing clearing created for a public or private road does not require a permit pursuant to this section provided that poles are not placed within a significant vernal pool depression.

Implementation Date

Section 9 may not be enforced or implemented until **September 1, 2007**. All other sections of this chapter will be enforced or implemented as of the effective date of this rule.