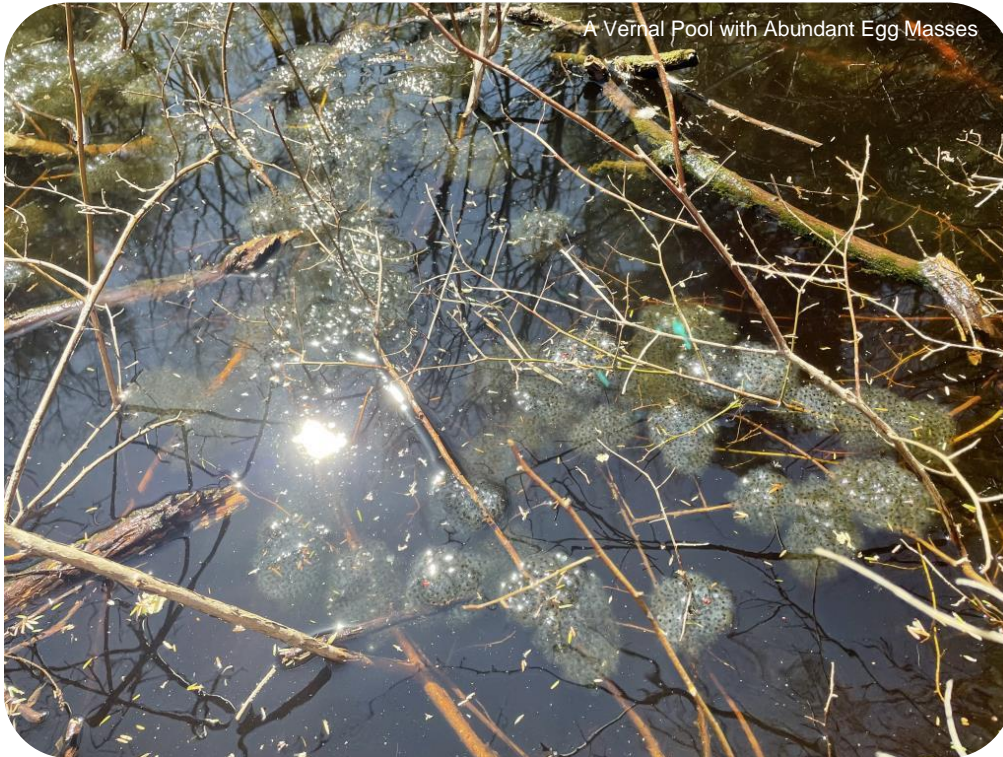


TRAINING TEAM

VERNAL POOLS

COLE PETERS | MARCH - 2024



A Vernal Pool with Abundant Egg Masses



Spotted Salamander Egg Masses



Mature Spotted Salamander Eggs



Wood Frog Egg Masses



Fairy Shrimp

WHAT IS THE DEFINITION OF A VERNAL POOL?

A vernal pool (VP) is a natural, temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall. VPs have no permanent inlet or outlet and no viable populations of predatory fish. A VP may provide breeding habitats to plants and wildlife such as wood frog, blue spotted salamander, spotted salamander, or threatened and endangered species such as fairy shrimp.

When is a VP significant?

Significant VPs (SVP) are recognized by the presence of fairy shrimp or more than 40 wood frog egg masses, or at least 10 blue spotted salamander, or 20 spotted salamander egg masses.

A significant vernal pool habitat (SVPH) is a SVP that contains portions of critical terrestrial habitat (CTH) within 250 feet of the spring or fall high water mark of the VP depression.

SOURCES

- Ch 335 §9A 7
- Ch 335 §9B (1-4)
- Ch 335 §9A (3)
- Ch 335 §9

For more information, refer to the pages below or reach out to the training team at sebagotrainingteam@sebagotechnics.com

VERNAL POOLS – A PRIMER

March 2024

RELEVANT DEFINITIONS (underline added for emphasis)

Maine DEP:

- A **VP** 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. VPs have no permanent inlet or outlet and no viable populations of predatory fish. A VP may provide the primary breeding habitat for wood frog (*Rana sylvatica*), spotted salamander (*Ambystoma maculatum*), blue spotted salamander (*A. laterale*) fairy shrimp (*Eubrandhipus* spp.) as well as valuable habitat for other plants and wildlife, including several rare threatened and endangered species. A vernal pool intentionally created for the purposed of compensatory mitigation is included in this definition.” [Chapter 335 §9].
- “A natural vernal pool includes pools of natural origin that have been modified or excavated. A natural VP does not include other natural wetland types (wet meadows, marshes etc.) that have been altered and currently function as VPs.” [Ch 335 §9A (3)]
- Significant vernal pools (**SVP**), a form of “*significant wildlife habitat*” [NRPA §480-B 10] are recognized by the presence of fairy shrimp or more than 40 wood frog egg masses, or at least 10 blue spotted salamander, or 20 spotted salamander egg masses. VPs documented to be used by state-listed rare, endangered or threatened species such as- Blanding’s turtles (*Emydoidea blandingii*), spotted turtles (*Clemmys guttata*), ringed boghaunter dragonflies (*Williamsoni linterni*), Eastern ribbon snakes (*Thamnophis sauritus*), wood turtles (*Clemmys insculpta*), four-toed salamanders (*Hemidactylum scutalum*), swamp darner dragonflies (*Epiaeschna heros*), and comet darner dragonflies (*Anax longipes*), are also considered to be SVPs [Ch 335 §9B (1-4)].
- “Significant vernal pool habitat (**SVPH**) is an **SVP** and that portion of critical terrestrial habitat (**CTH**) within 250 feet of the spring or fall high water mark of the vernal pool depression.” [Ch 335 §9A 7].

Corps of Engineers New England District (NED):

- “VPs are depressional wetland basins that typically go dry in most years and may contain inlets or outlets, typically of intermittent flow. Vernal pools range in both size and depth depending on landscape position and parent material(s). In most years, VPs support one or more of the following obligate species: wood frog, spotted salamander, blue spotted salamander, fairy shrimp. However, they should preclude sustainable populations of predatory fish.” [Maine General Permits- Effective: 10/14/2020, Expiration 10/14/2025, pg. 51]

Key points to unpack from above:

- NED definition, while very similar to MDEP's, does not reference "natural", and does not recognize or differentiate SVPs based on number of indicator species egg masses.
- Corps of Engineers regulates "waters of the United States" (**WOTUS**) under Section 404 of the Clean Water Act; a form of which includes "wetlands" which must meet specific requirements that do not include- mud puddles, ATV/skidder ruts in upland, excavated ponds, etc.
- Abundance (number) thresholds of indicator species egg masses is diagnostic of SVPs and hatched tadpoles means too late for current year determination, so MDEP assumes pool is an SVP.

FIELD IDENTIFICATION

West of Penobscot Bay and southward from Augusta to Fryeburg, the Maine Department of Inland Fisheries and Wildlife (MDIFW) recommends evidence of VP indicator species egg masses be observed on separate dates during periods established for wood frogs (April 10th to April 25th) and spotted salamanders (April 20th to May 10th). Northward to Rangely-Dover Foxcroft-Howland (i.e. above Bangor) the survey period is April 25th to May 25th.

Potential vernal pools (**PVPs**) can be identified outside (before/after) the recommended survey period, but are not necessarily indicative of regulatory jurisdiction. During survey periods, VP and SVP characteristics are to be documented on MDIFW data forms and located with submeter-accuracy GPS in order to identify the extent of the pool and surrounding 250 ft **SVPH**. With property-owner approval, data forms can be submitted to MDIFW for review and determination of: **SVP** or "Not Significant" which is then formalized in a letter from MDEP. The MDEP determination "runs with the land" and locational information is displayed on their online GIS map.

PERMITTING

"Activities in, on or over SVPH" (but with no disturbance within the VP depression) can be authorized under NRPA Permit by Rule provided specific standards are met [Ch 305 §19B]. An evaluation of existing site-specific conditions throughout the surrounding 250 ft SVPH is necessary and a determination from submittal of MDIFW data forms should be expected. Activities in an SVP, or SVPH not meeting PBR requirements are most likely subject to a NRPA Tier 3 permit application. In Lieu Fee can be used to compensate for impacts in non-wetland SVPH at rates of \$0.02 to \$0.96/SF (county dependent); with any wetland impacts at rates of \$9.46 to \$12.02/SF, where direct impact to any portion of the SVP requires the entire SVP be included under these ILF rates.

The NED Corps of Engineers generally does not apply jurisdiction to upland surrounding a VP but has discretionary authority to include such areas in the event wetland impacts require WOTUS approval elsewhere for the project.

Falmouth, Orono and Topsham are some of the few municipalities in Maine known (potentially incomplete list) to regulate vernal pools. Verification by review of Definitions in the Zoning Ordinance or the Shoreland Zoning Ordinance is therefore recommended.