Vernal Pool Presentation:

What is a Vernal Pool:

- Usually temporary bodies of water
- They have wet-dry periods that preclude fish
- They are usually filled by Snow melt and precipitation
- The most widely used definition is: A fish free , temporary wetland that supports indicator species

Identifying Vernal Pools:

- **Obligate** species are those species that have specifically adapted to breeding in fishless temporary ponds
- Examples of Obligate species include Fairy Shrimp, breeding Wood Frogs, Spotted, Blue-Spotted and Jefferson Salamanders
- They are considered direct indicator species
- **Facultative** species are those which use both vernal and other wetland habitats
- Examples of Facultative species include Spring Peepers, Gray Tree frogs Toads etc.
- They are considered indirect indicator species

Why are Vernal Pools Important:

- Obligate species biomass (Vernal pool surrounded by 50 acres of upland woods) exceeds the biomass of all birds and small mammals in the same area
- Vernal pools are an integral part of the food chain where they exist
- The Obligate and Facultative species reduce the carbon foot print in their habitat by eating earth worms and other leaf litter consumers
- The inhabitants of Vernal pools (especially amphibians) are quick indicators of environmental health

Protecting Vernal Pool Environments:

- Obligate species bond (Site Fidelity) to the pools they are born in: meaning the alteration or elimination of a vernal pool could cause the demise of the Obligate species in that area
- The elimination of forest cover around a Vernal pool will have the same effect on the Obligate species
- Obligate non breeding habitat is usually the upland area surrounding the Vernal pool
- Studies have shown that the Obligate species have the following ranges around a pool:

  Wood Frog - 633 feet to 1549 feet

  Spotted Salamander - 390 feet to 817 feet

  Jefferson Salamander - 476 feet to 2051 feet

Auditing a Vernal Pool:

The Vernal Pool Project Data Form was created by AVEO to facilitate the collection of data for the Vernal Pool project.

Vernal Pool Project Data Form

1. Date: _____ 2. Town: _____

3. Property Name: _____ 4. PVP ID Code: _____

"PVP" stands for "potential vernal pool." PVP ID codes can be found on the field maps provided by AVEO.

5. Volunteer Name: _____ Phone: _____ Email: _____

Volunteer Name: _____ Phone: _____ Email: _____

6. Start Time: _____ End Time: _____ Total Volunteer Hours: _____

LOCATION

7. Latitude: _____

Longitude: _____

Use NAD83/WGS84 for all coordinates, and enter coordinates in decimal degrees, with at least four decimal places, if possible. Example: **Latitude** 42.9505 **Longitude** -72.2955

8. Source of Coordinates (Lat/Long):

☐ GPS ☐ Google Earth ☐ AVEO ☐ Topo Map ☐ Other _____

9. This pool was: ☐ mapped by AVEO or other project partners as a PVP ☐ previously unmapped

Please mark the location of previously unmapped pools on your field map and label each "new" pool by adding A, B, C etc. to the number of the nearest PVP on the property (e.g., **RH-7A** for an unmapped pool discovered near Robin Hood Park Pool RH-7).

10. Written Directions to Site: _____

_____

_____

_____

Please include: (1) a description of a logical starting point, including parking information; (2) the distance from the starting point to the pool; (3) your direction of travel; and (4) any other distinctive landmarks that could help us re-locate this site in the future.

HABITAT

11. Is this site a vernal pool? ☐ Yes ☐ No ☐ Unknown ☐ Unable to Locate

12. Pool Type: Check one. ☐ Upland-Isolated ☐ Floodplain ☐ Wetland Complex

13. Origin of Pool: ☐ Natural Depression ☐ Natural, but Altered ☐ Constructed Pond

Check one. ☐ Quarry/Sand Pit ☐ Ditch or Tire Rut ☐ Created Wetland (for mitigation purposes)

☐ Unknown ☐ Other _____

14. Disturbances: ☐ None ☐ Dumping ☐ Ditching/Draining ☐ Ruts from Wheeled Vehicles

Check all that apply. ☐ Runoff/Siltation ☐ Other _____

15. Surrounding Habitat: ☐ Open (shrubs, agriculture, grasslands) ☐ Forest ☐ Wetlands

Check all that apply, within 250 feet of the pool.

☐ Open Water (lakes, ponds, rivers, streams)

☐ Residential (lawn, some pavement and structures)

☐ Industrial/Urban (mostly pavement and structures)

☐ Paved Roads/Driveways ☐ Unpaved Roads/Driveways ☐ Other _____

16. Did you observe water flowing out of the pool on the survey date? ☐ Yes ☐ No

HYDROLOGY

17. Pool Width (ft): _____ **Pool Length (ft):** _____ ☐ **Measured** ☐ **Estimated**

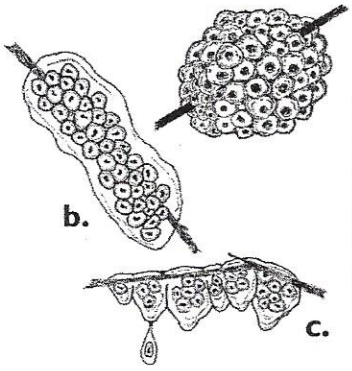
18. Maximum Water Depth on Survey Date: ☐ **Ankle-deep (< 6")** ☐ **Shin-deep (6-12")** ☐ **Knee-deep (1-2 ft)** ☐ **Hip-deep (2-3 ft)** ☐ **Chest-deep (3-4)** ☐ **Deeper than 4 ft**

19. Were fish observed in the pool? ☐ **YES** ☐ **NO**

Presence of fish may indicate a permanent body of water that is not a vernal pool. Please note if the PVP is connected to another water body, or is within a river floodplain.

OBLIGATE SPECIES

20. Please circle the estimated total number of egg masses for each obligate species.



If you have an exact egg mass count, enter it in this column:

a. Wood Frog Egg Masses	0	1-25	26-100	> 100	
b. Spotted Salamander Egg Masses	0	1-25	26-100	> 100	
c. Jefferson Salamander Egg Masses	0	1-25	26-100	> 100	

21. Was the <u>entire</u> pool surveyed for egg masses? ☐ **YES** ☐ **NO**

***If not*, why and what percentage of the pool was surveyed?** **Percent Surveyed** _____

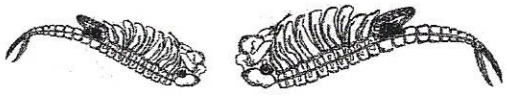
_____

22. How many branches and twigs were in the pool? Check one. ☐ **NONE** ☐ **1-10** ☐ **> 10**

Downed woody material is often used by amphibians for egg attachment.

23. Were spermatophores observed in the pool? ☐ **YES** ☐ **NO**

24. Were fairy shrimp present? ☐ **YES** ☐ **NO** ☐ **NOT SURE**



25. General Comments and Wildlife Observations:

_____

_____

Include comments about the pool, surrounding habitat, or additional wildlife observations. Note adult amphibians seen in and around the pool. Please share any questions that you have or advice for volunteers that may be conducting follow-up visits.

26. Which photos have you taken for this pool?

- Pool Overview ☐
- Field Sketch ☐
- Wood Frog Egg Mass ☐
- Spotted Salamander Egg Mass ☐
- Jefferson Salamander Egg Mass ☐
- Fairy Shrimp ☐

If you submit images to us, the name of each electronic image file should include: (1) the PVP ID code, (2) the subject of the photo, (3) the town name, (4) your last name, and (5) the date of survey. For example: RH7_SSeggs_Pboro_Thelen_42113. Send images and data to thelen@harriscenter.org or submit online at www.aveo.org.

This data form was adapted from the field data forms for the Maine and Vermont Vernal Pool Mapping Projects. All line drawings were created by Dawn Morgan.

HARRIS CENTER FOR CONSERVATION EDUCATION

AVEO Ashuelot Valley Environmental Observatory