

Vermont Vernal Pool Monitoring Project

Instructions for Completing the Vernal Pool Monitoring Data Sheet



Pool & Observer Information

Field Visit

Check which of the three VPMon annual field visits this data sheet describes.

Date

Field monitoring date.

Time

Identify start time of field monitoring (ie when you arrive at the pool and begin data collection).

Pool ID

If the pool was previously mapped as part of the Vernal Pool Mapping Project, it will have a Pool ID. The ID will be 3 letters followed by numbers. For example SDF34 or MLS23. If this was a previously unmapped pool you will be assigned a code by the Project Coordinator.

Town

Town where vernal pool is located.

GPS Coordinates

Record GPS coordinates of your pool only on your first visit to the pool prior to installation of the PVC pipe to measure water level. In areas with multiple pools, this ensures that you are visiting the correct pool. In future visits, the presence of the PVC pipe will indicate that you are at the correct pool.

Is Pool Mapped?

Check "Yes – by VPMon volunteer," "Yes – mapped as part of VPMP", or "Not mapped." If your pool has not been mapped, you will need to complete a Vernal Pool Mapping Project Vernal Pool Field-Verification Data Sheet.

Observer Name

Be sure observer names are listed in accordance with egg mass counts attributed to Observer 1 and Observer 2 (See Amphibian & Macroinvertebrate Survey section of data sheet).

Physical Parameters

% Ice Out

If on your first field visit to deploy the acoustic monitors, some of the pool has open water, estimate the percentage of the pool that is open water.

Water Temperature

Mark whether or not you were able to download temperature data on your field visit. If you are using a smartphone in the field, download water temperature data using the HOBOMobile app.

For details on how to download data using the HOBOMobile app or if you cannot download data using the app, see the Vermont Vernal Pool Monitoring Project manual for further instructions. If you use the app but faced technical difficulties, be sure to note that in the “Physical Parameter Notes” section of the data sheet.

Water Level

Use the marked PVC pipe to measure the water level of the pool. Markings are spaced 5 cm apart. Round up or down to the nearest mark. On your first visit to install the PVC pipe you will need to measure the water level using a measuring tape or meter stick.

Vegetation - % Cover

On your 3rd field visit, use the “Veg. - % Cover” scale found at the bottom of your data sheet to estimate percent cover for each of the following categories: submerged aquatic vegetation, floating, emergent vegetation, shrubs, and trees. Percent cover should account for any vegetation that covers or shades the pool (ie tree canopy) whether or not the vegetation emerges from the pool itself. If trees and other vegetation are not fully leafed out, simply estimate actual percent cover but do not attempt to predict percent cover under full leaf out.

Physical Parameter Notes

Any additional notes on physical parameters of the pool you care to add.

Weather

Humidity

Place the ThermoPro and its remote sensor on opposite sides of the pool at the beginning of the field visit, avoiding areas of direct sunlight and making sure both are within 200 feet of one another. Prior to departing the field at the end of the visit, record humidity readings listed on the ThermoPro and its remote sensor.

Air Temperature

When recording humidity, also record temperature readings listed on the ThermoPro and its remote sensor.

Wind (Beaufort Force)

Record wind speed according to the Beaufort Scale (see scale at bottom of data sheet).

Weather Notes

Any additional notes on weather condition you care to add.

Amphibian & Macroinvertebrate Surveys

Egg Mass Survey

If on your 1st field visit, some open water is present on the pool, search the open area(s) of the pool for signs of breeding. Count any egg masses visible within the open water area. Binoculars may be helpful for counting and identifying egg masses far from the edge of the pool. For every species recorded as having egg masses present in the pool, one egg mass should be

photographed for submission to the VPMon iNaturalist project. This survey can be completed by one volunteer.

For 2nd and 3rd field visits, volunteers will be using what is called a double-observer independent protocol. Volunteers may visit the pool independently or together but must both visit the pool but on the same day. This means that both volunteers will do a survey but that surveys will be independent from one another. If volunteers are visiting the pool independently, there are no special precautions that need to be taken when surveying for egg masses except that the first volunteer to survey the pool should not share their findings with the second volunteer until after the second volunteer has completed their survey. If volunteers visit the pool together, counts need to be conducted independently and separately – when one volunteer is counting, the other should not be watching. This is very important to avoid biasing the second observer's counts.

To survey the pool, mark the starting point and walk the entire perimeter of the pool. While walking the perimeter, record every egg mass by species within one meter of pool's edge on the data sheet. If Wood Frog egg masses have formed into a mat/raft and are uncountable, record the estimated dimensions of the raft in meters in the "Amphibian/Macroinvertebrate Notes" section. For every species recorded as having egg masses present in the pool, one egg mass should be photographed for submission to the VPMon iNaturalist project.

*Macroinvertebrate Survey**

If on your 1st field visit some open water is present on pool, count the number of fairy shrimp or caddisfly larvae present in the open water portion of the pool to the best of your ability and record the number in the "Total" section. On your 2nd and 3rd field visits, using a tape measure or walking stick marked at a meter in length, survey a square meter area for fairy shrimp and caddisfly larvae at each of the cardinal directions (or estimated cardinal directions) around the pool. In "Square 1" on your data sheet, record the count for the northern sample square and make your way clockwise around the pool, recording your counts until you finish with "Square 4" to the west. Count all fairy shrimp and caddisfly larvae present in each square to the best of your ability. Take one picture of each organism for submission to iNaturalist (see Appendix A of the VPMon manual for data submission instructions). Macroinvertebrate surveys can be completed by one volunteer.

*Same protocol for Fairy Shrimp and Caddisfly Larvae.

Date Acoustic Monitor Deployed/Collected

Record the date of when you deploy and collect your acoustic monitor.

Visual Impairment Level

Estimate proportion of your search area for both macroinvertebrate & egg mass surveys that is visually impaired due to water depth, surface reflection, particulate matter, algae, etc. and record visibility impairment using the Visual Impairment Level scale at the bottom of the data sheet. If you do an egg mass survey on your first field visit when only part of the pool has open water, estimate the proportion of the open water that is visually impaired. In this case the

visual impairment level for both egg mass and macroinvertebrate surveys will be the same (because the survey areas are the same). If you use polarized glasses be sure to note that, although do not use polarized glasses while estimating visual impairment level.

Spermatophores Found?

As you walk the perimeter of the pool, note whether or not spermatophores are present. If spermatophores are present, one photograph documenting the spermatophores should be taken and submitted to the VPMon iNaturalist project. This survey can be completed by one volunteer.

Amphibian/Macroinvertebrate Notes

Note any presence of amphibian disease (see Vermont Vernal Pool Monitoring Project manual for list of diseases and symptoms). If any evidence of disease is present, at least one photograph should be taken and submitted to the VPMon iNaturalist project. Record any additional notes or observations you may have from surveys.