

# PA VERNAL POOL SURVEY FORM

| COORDINATES   | GPS SETTINGS                           |
|---|--|
| Latitude:   | Projection:                            |
| Longitude:  | Datum:                                 |
| Est. Positional Error: (m/ft)                           | If using UTM coordinates, record zone: |
| Location of GPS point (e.g. North edge or pool center): |  |

**POOL NAME:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

| GENERAL DESCRIPTION  |
|--|
| <ul style="list-style-type: none"> <li>▪ Describe the pool and the vernal pool envelope (w/n 100 ft of pool edge):</li> <br/><br/><br/> <li>▪ List problematic invasive species:</li> <br/><br/><br/> <li>▪ Is this site a candidate for enhancement restoration, mitigation, or creation of new vernal pool wetlands? Describe need:</li> </ul> |

| ACTUAL POOL SIZE                                      |       |                |
|---|-------|----------------|
| (measure the maximum inundated area at time of visit) |       |                |
| MEASUREMENT   | VALUE | UNIT (CM/M/FT) |
| Length  |       |                |
| Width   |       |                |
| Depth   |       |                |
| Estimated percent fullness of pool:    %              |       |                |

| ESTIMATED MAXIMUM POOL SIZE   |       |             |
|---|-------|-------------|
| If pool is not fully inundated at time of visit, <u>ESTIMATE</u> the maximum potential length and width of pool based on clues such as water marks on trees, basin shape, gray leaves, mosses, etc. |       |             |
| MEASUREMENT   | VALUE | UNIT (M/FT) |
| Length  |       |             |
| Width   |       |             |

| CONNECTIVITY  |   |
|---|---|
| Apparently isolated   | √ |
| Seasonally connected to another seasonal pool   |   |
| Seasonally connected to 1 <sup>st</sup> or 2 <sup>nd</sup> order headwaters / small streams |   |
| Seasonally connected to a permanent wetland   |   |
| Seasonally connected to stream/river/floodplain   |   |
| Seasonally connected to other (describe):   |   |

Inlet? YES NO | If YES, connects to (describe):  
 Outlet? YES NO | If YES, connects to (describe):  
 Spring / seep influence YES NO UNK

| WOODY DEBRIS AND VEGETATED BUFFER  |
|--|
| <ul style="list-style-type: none"> <li>▪ Trees and shrubs around the pool perimeter? YES NO</li> <li>▪ Naturally fallen branches &amp; tree limbs in pool basin? YES NO</li> <li>▪ How many standing dead trees in envelope?<br/>0 1 2 3 4+ (recommended) Not Recorded</li> <li>▪ Abundant woody debris &amp; other shelter on the ground in envelope (including larger limbs &amp; trunks)? YES NO</li> </ul> |

| WATER COLOR              |   |
|--------------------------|---|
| Clear or lightly stained | √ |
| Moderately stained       |   |
| Highly stained           |   |
| Pool basin dry           |   |

| HYDROPERIOD                                       |   |
|---|---|
| Ephemeral, dries multiple times a year on average | √ |
| Annual, dries one time a year on average          |   |
| Semipermanent, dries every few years on average   |   |
| Permanent, never dries up completely              |   |
| Unknown   |   |
| Other (describe):                                 |   |

| POOL BASIN CANOPY                                |   | POOL BASIN VEGETATION                        | % COVER OF BASIN |
|--|---|--|------------------|
| Closed Canopy (tree branches close over basin)   | √ | Open Water with few or no aquatic plants     |                  |
| Partially Open Canopy (small opening over basin) |   | Marshy Herbaceous Vegetation                 |                  |
| Open Canopy (large opening over basin)           |   | Shrubby Woody Vegetation                     |                  |
|  |   | Trees and / or Tree Hummocks (pool interior) |                  |

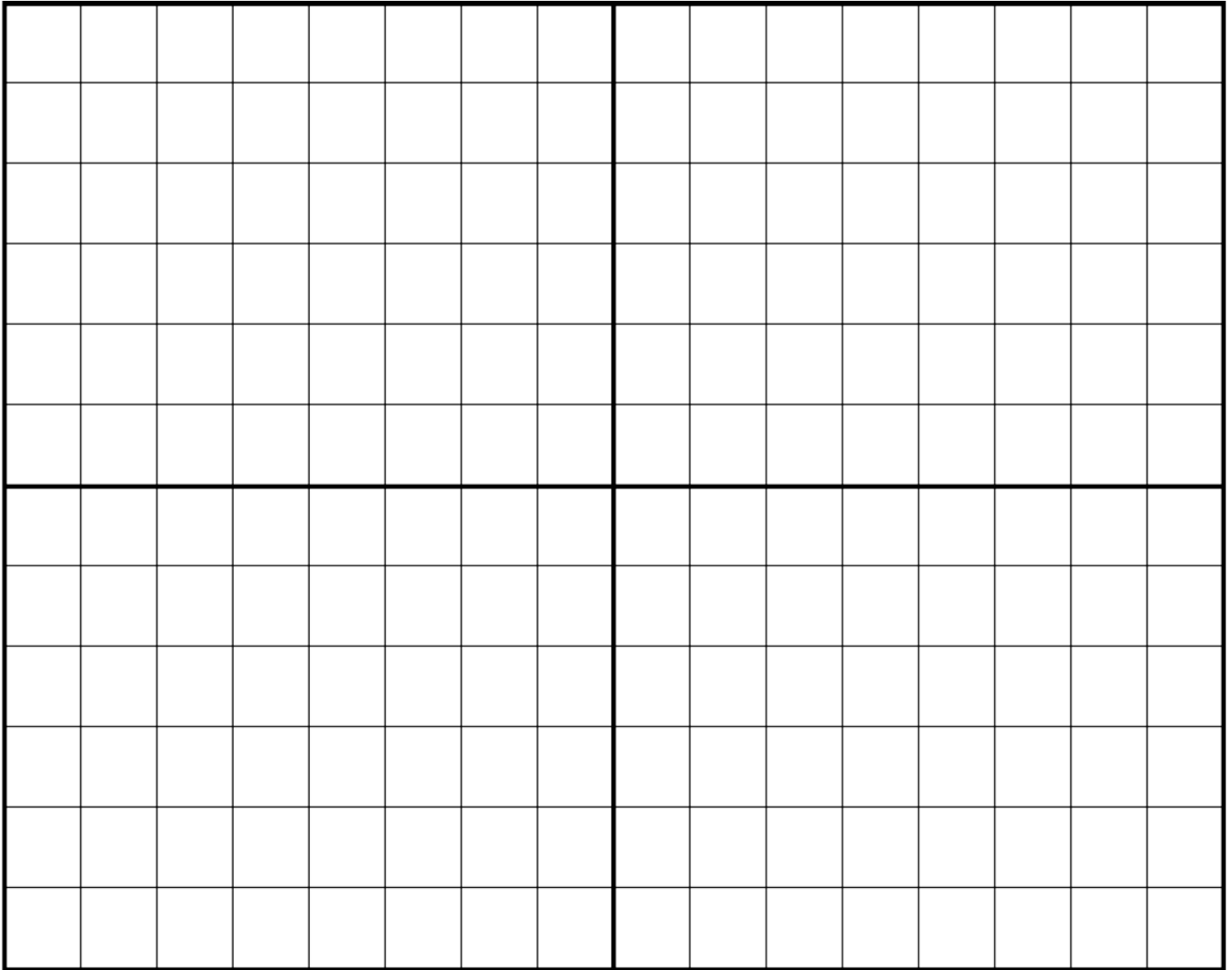
**VERNAL POOL ENVELOPE DISTURBANCE GRID:** List disturbances within ~100 feet of the pool perimeter. Where appropriate give the approximate distance (indicate ft or m) from the pool edge and/or the % disturbance of the pool envelope area.

| Disturbance   | Distance (ft/m) / % | Disturbance                                       | Distance (ft/m) / % | Disturbance  | Distance (ft/m) / % |
|---|---------------------|---|---------------------|--|---------------------|
| <input type="checkbox"/> Vehicle / ATV use          |                     | <input type="checkbox"/> Logging                  |                     | <input type="checkbox"/> Development               |                     |
| <input type="checkbox"/> Compacted or rutted soils  |                     | <input type="checkbox"/> Slash dumping            |                     | <input type="checkbox"/> Active agriculture        |                     |
| <input type="checkbox"/> Unnatural-shaped perimeter |                     | <input type="checkbox"/> Trash dumping            |                     | <input type="checkbox"/> Dirt road                 |                     |
| <input type="checkbox"/> Berm or dam                |                     | <input type="checkbox"/> Chemical contaminants    |                     | <input type="checkbox"/> Paved road                |                     |
| <input type="checkbox"/> Soil removal               |                     | <input type="checkbox"/> Siltation                |                     | <input type="checkbox"/> Power/Pipeline ROW        |                     |
| <input type="checkbox"/> Soil / fill dumping        |                     | <input type="checkbox"/> Oil / gas infrastructure |                     | <input type="checkbox"/> Drainage ditches or tiles |                     |
| <input type="checkbox"/> Mining                     |                     | <input type="checkbox"/> Invasive species         |                     | <input type="checkbox"/> Other                     |                     |

**POOL CODE:**      **DATE:**

**POOL DIAGRAM – ARIAL VIEW**

Indicate north heading, vegetation zones, large woody debris, water chemistry stations, location of inlet or outlet, etc.  
Mark locations of unique pool features (e.g. unusual shaped trees & rocks). Mark reference photo / GPS pt locations.  
Indicate approx. distance equivalent of each square (e.g. 1 sq = 5 ft).



**POOL DIAGRAM – PROFILE VIEW**

Draw profile of pool basin and surrounding upland.



**Instructions for Reptile, Amphibian, and Invertebrate Surveys**  
 Developed for the Landowner Technical Assistance Projects

**Call counts**

- Surveyors approach the pool quietly.
- Stop far enough away to avoid detection by the amphibians.
- Listen for 3 minutes and list species.
- Continue to note species heard during pool sampling.

**Egg mass surveys**

- Conduct a visual count of all egg masses. Walk transects as needed to cover the whole pool.
- Estimate area for wood frogs when laid in mats. Indicate area unit (meters or feet).
- Photo document egg masses observed.
- Count *Ambystoma* egg masses in the following fashion:  
 <25 = Low Abundance; report number of individual masses  
 26 -100 = Medium Abundance; report number of individual masses  
 >100 = High Abundance; report as 100+ or actual count

**Pool edge and envelope survey**

- Explore the vernal pool perimeter and adjacent upland up to 30 feet from the pool edge for herptiles. Turn over logs and stones (carefully put back in place) and investigate sphagnum hummocks.
- Quickly explore the remainder of the vernal pool envelope and note the abundance of woody debris, rocks, standing dead trees, etc. in the envelope and record under the 'Woody Debris and Vegetated Buffer' section.

**Observations**

- Record any additional observations made of reptiles, amphibians, and invertebrates during the site visit.

**D-frame dip netting**

- Take 1 d-frame scoop every 5 pole lengths around wetted pool perimeter (~every 10 meters)
- Take a minimum of 2 scoops.
- Alternate samples between the shallow edge and deeper water; do not go over hip-deep.
- Avoid scooping egg masses.
- Holding the net in the water, rinse and gently scrub leaves and large debris and remove from the net.
- Dump remaining contents into a white pan and take photographs of the contents.
- Count and identify amphibian larvae to genus or species if possible, identify macroinvertebrates to the lowest level possible in the field (usually order or family).
- If desired, keep a few specimens for verification (<5 of each type, send to Betsy Leppo of the PA Natural Heritage Program).
- If present, collect 5-10 large macrocrustaceans (fairly shrimp & clam shrimp) and send to Betsy Leppo of the PA Natural Heritage Program. Preserve specimens in 75% ethanol.

**Gear Decontamination**

- Prior to sampling a new vernal pool site, decontaminate gear according to PFBC protocols (see 2009-06-22\_PFBC\_Cleaning\_Equipment.pdf)

**Photo documentation**

- Photograph the vernal pool from several views
- Photograph vernal pool indicator species in each life stage encountered whenever possible (egg, larvae, metamorph. adult).

**REPTILE / AMPHIBIAN / INVERTEBRATE OBSERVATIONS**

| DATE: | OBSERVER(S): | TIME SPENT: |
|-------|--------------|-------------|
|       |              |             |
|       |              |             |
|       |              |             |
|       |              |             |

**FIELD NOTES (LIST BY DATE):**

**DOCUMENTATION:**

List supporting evidence for the Vernal Pool Habitat, Reptiles, Amphibians, Invertebrates (esp. **Vernal Pool Indicators**)

| SPECIES / HABITAT | PHOTO CODES | DESCRIBE PHOTOS | CALL RECORDING CODE &/OR DESCRIPTION |
|-------------------|-------------|-----------------|--------------------------------------|
|                   |             |                 |                                      |
|                   |             |                 |                                      |
|                   |             |                 |                                      |
|                   |             |                 |                                      |
|                   |             |                 |                                      |
|                   |             |                 |                                      |
|                   |             |                 |                                      |

**REPTILE / AMPHIBIAN OBSERVATIONS:** Check-mark for presence or report abundance. Vernal pool indicators in bold font.

| REPTILE/ AMPHIBIANS  | DATE | OBSERVER | ADULTS* | EGG MASS COUNT           | LARVAE | COMMENTS                 |
|--|------|----------|---------|--------------------------|--------|--------------------------|
| WOOD FROG  |      |          |         |                          |        |                          |
| EASTERN SPADEFOOT  |      |          |         |                          |        |                          |
| SPOTTED SALAMANDER   |      |          |         |                          |        |                          |
| JEFFERSON SALAMANDER   |      |          |         |                          |        |                          |
| MARbled SALAMANDER   |      |          |         |                          |        |                          |
| SPRING PEEPER  |      |          |         |                          |        |                          |
| CHORUS FROG (list species if known)  |      |          |         |                          |        |                          |
| GRAY TREEFROG  |      |          |         |                          |        |                          |
| GREEN FROG   |      |          |         |                          |        |                          |
| BULL FROG  |      |          |         |                          |        |                          |
| PICKEREL FROG  |      |          |         |                          |        |                          |
| AMERICAN TOAD  |      |          |         |                          |        |                          |
| FOWLERS TOAD   |      |          |         |                          |        |                          |
| RED-SPOTTED NEWT (ADULT)   |      |          |         |                          |        |                          |
| FOUR-TOED SALAMANDER   |      |          |         |                          |        |                          |
| SPOTTED TURTLE   |      |          |         |                          |        |                          |
| WOOD TURTLE  |      |          |         |                          |        |                          |
| SNAPPING TURTLE  |      |          |         |                          |        |                          |
| OTHER  |      |          |         |                          |        |                          |
| <b>FISH OBSERVED?</b>  |      |          | Yes     | <input type="checkbox"/> | No     | <input type="checkbox"/> |
| *ADULTS: Use a Check mark to indicate Presence if no additional info reported. When possible report # observed & breeding behaviors. Breeding codes: Calling (CA), Courting (CT), Amplexus (A), Spermatophores (S) |      |          |         |                          |        |                          |

**INVERTEBRATE OBSERVATIONS:** Check-mark for presence or report abundance. **Vernal pool indicators in bold font.** If higher or lower levels of taxonomy are determined, add as a new category under 'Other'.

| INVERTEBRATES   | √ or # | INVERTEBRATES                           | √ or # | INVERTEBRATES                                     | √ or # |
|---|--------|---|--------|---|--------|
| <b>Fairy Shrimp (Anostraca)</b>   |        | <b>Caddisflies - not ID'd further</b>   |        | <b>Aquatic Beetles - not ID'd further</b>         |        |
| <b>Clam Shrimp (Laevicaudata)</b>   |        | Log-cabin (Limnephilidae)               |        | Predaceous Diving Beetles (Dytiscidae)            |        |
| Water Fleas / Daphnia (Cladocera)   |        | Cigar-tube (Phryganeidae)               |        | Crawling Water Beetles (Halipidae)                |        |
| Copepods (Copepoda)   |        | Polycentropidae                         |        | Whirligig Beetles (Gyrinidae)                     |        |
| Seed Shrimp (Ostracoda)   |        | <b>Aquatic Flies - not ID'd further</b> |        | Water Scavenger Beetles (Halipidae)               |        |
| Sideswimmer Scuds (Amphipoda)   |        | Phantom Midges (Chaoboridae)            |        | <b>Aquatic Bugs - not ID'd further</b>            |        |
| Aquatic Sow Bugs (Isopoda)  |        | Blood worms (Chironomidae)              |        | Backswimmers (Notonectidae)                       |        |
| Fingernail Clams (Bivalvia)   |        | Craneflies (Tipulidae)                  |        | Water Boatmen (Corixidae)                         |        |
| <b>Snails (Gastropoda) – not ID'd further</b>   |        | Biting midges (Ceratopogonidae)         |        | Water Scorpions (Nepidae)                         |        |
| Lymnaeidae  |        | Mosquitoes (Culicidae)                  |        | Giant Water Bugs (Belostomatidae)                 |        |
| Physidae  |        | <b>Mayflies - not ID'd further</b>      |        | Water Striders (Gerridae)                         |        |
| Planorbidae   |        | Leptophlebiae                           |        | <b>Dragonflies-Damselflies - not ID'd further</b> |        |
| Leeches (Hirundinae)  |        | Siphonuridae                            |        | Aeshnidae   |        |
| Aquatic Worms (Oligochaeta)   |        | Fishflies / Dobsonflies (Megaloptera)   |        | Libellulidae                                      |        |
| Planaria (Turbellaria)  |        | Springtails (Collembola)                |        | Lestidae  |        |
| Water Mites (Hydrachnidia)  |        | Other                                   |        | Coenagrionidae                                    |        |
| Date of Survey (if multiple surveys list and code here and use code in table with check mark or # obs): |        |   |        |   |        |