

Logging Best Management Practices for Vernal Pools and the Blue-Spotted Salamanders and Eastern Spadefoot (adapted from PA Natural Heritage Program, February 2014)

Definitions:

Vernal Pool Basin: The vernal pool basin or depression is the area that holds water to its greatest area and depth in the fall or spring.

Vernal pool core habitat: The vernal pool core habitat, also known as the envelope or protection zone, encompasses the uplands immediately surrounding the pool. This area heavily influences conditions in the pool and regulates water quality. Adult amphibians concentrate in the vernal pool envelope as they move to and from a pool during the breeding season. The core also supports high densities of recently metamorphosed amphibians which leave the pool in the summer and fall. Young adult frogs and salamanders are especially vulnerable to drying out the first months after metamorphosis. They need close access to shaded, forested conditions as they leave the pool.

The core is a minimum 100 foot zone of upland surrounding a pool, measured from the edge of a pool when it is fully inundated. The core should be increased to a minimum 200 foot zone for good quality pools in natural forested settings, vernal pool complexes, and/or sites with rare species.

Management Considerations :

Vernal Pool Basin: The vernal pool basin is very sensitive to any sort of disturbance. Avoid any activities that disturb the pool water, soil, or vegetation. Such activities in the pool basin have the potential to damage adults, eggs, or larvae resting in the leaves on the pool bottom, as well as change and degrade the environment the animals require.

Vernal pool core habitat: Maintaining or encouraging native trees, shrubs, and ground cover within the vernal pool envelope helps keep a pool healthy by trapping sediments and increasing the ability of the system to purify water. Buffers reduce the inflow of chemicals used for pest and weed control of lawns. Buffers will help maintain good water quality in the pool so that a diverse and balanced animal community of predators and prey are present. Increasing naturally vegetated buffers around pools will also provide more suitable habitat for the adult, terrestrial life stage of predators including salamanders, frogs, and insects. Large pieces of woody debris and standing snags should be retained in this area because they provide food and shelter for amphibians outside of the breeding season and create suitable places where they can overwinter.

Logging Best Management Practices:

- Maintain a mostly closed forest canopy with at least 80% canopy cover of trees at least 20-30 feet tall (6.1-9.1 m). These trees should be distributed evenly throughout the vernal pool envelope. In understocked stands, wait to harvest trees until the overstory canopy cover has increased beyond 80%.
- Keep all logging activity and machinery out of the pool basin. Do not fell trees or place tree-tops and slash into the pool basin.
- Avoid use of heavy machinery. Utilize motor-manual crews, directional felling, and extended cable winching and/or booms whenever possible.
- Conduct harvests only when soils are completely frozen or dry.

- Implement erosion and siltation BMPS. Be aware that silt fences are a barrier to salamander migration. Do not use them in the core habitat area and remove them from nearby areas as soon as possible.
- Do not site new skid roads, haul roads, or log landings in the vernal pool core habitat. Follow siltation and erosion BMPs on existing skid or haul roads or landings.
- Ruts formed by skidding or haul road maintenance and repair should be no deeper than 6 inches. Ruts deeper than this should be repaired to original contour.
- Leave tree limbs and tops where felled, or return slash to the zone during whole-tree removal. However avoid very large or continuous slash piles that could potentially block migration of pond-breeding amphibians and limit access to the vernal pond by other wildlife such as turkeys, bears, and deer.
- Retire the road network properly at the completion of operations. Close roads to prevent access by off road vehicles to the pool basins or their terrestrial buffer zones.

For more information, see:

PA Natural Heritage Program (February 2013). Vernal Pool Conservation and Management - a landowner's guide to vernal pool stewardship. Retrieved from <http://www.naturalheritage.state.pa.us/docs/Vernal%20Pool%20Conservation%20Mgmt%20Full%20Doc.pdf>