

 UI Extension Forestry Information Series

Vernal Pools: What Do They Mean to Tree Farmers?

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Vernal pools are small, temporary bodies of water (seeps or wet spots). They are generally only a few feet deep, and perhaps only a few feet across. The pools typically fill with spring rains and snowmelt, or emerge from a seasonally high water table. They usually dry up after about two months, and often leave virtually no trace.

The most important thing about vernal pools is that wood frogs and several species of salamanders will lay eggs there and nowhere else. These species require vernal pools because they dry up in the summer and do not support a fish population. The eggs of these unique species would be instantly devoured by fish if they were laid in swamps, lakes, or streams. Other amphibians such as spring peepers, gray tree frogs, green frogs, American and Fowler's toads, four-toed salamanders and red-spotted newts also breed in vernal pools, but can also do so successfully in permanent wetland and other water bodies.

Timber harvesting on a Tree Farm doesn't necessarily represent a problem for vernal pools. If timber is harvested near a vernal pool, precautions should be taken to minimize impacts and preserve the physical environment that these rare species require. The most important measure that can be taken is to recognize pool locations even in the "dry" seasons, and take precautions to preserve their character. When they do not contain water, pool areas can be recognized by water marks on trees, or matted leaves. They can also be recognized by small dips in the land.

The following guidelines for vernal pool protection are suggested. Tree Farmers should keep these in mind if doing their own harvesting, or they should make the logger or forester aware of these measures:

1. Avoid locating landing, skid roads, or haul roads through vernal pool depressions at any time of the year. Ruts through the pool could allow the water to drain too early and leave eggs stranded high and dry before they hatch.
2. Avoid disturbing the soil near vernal pools at any time of the year. Sediment that might be deposited into a vernal pool could ruin the environment in which eggs are laid. Also, these amphibians need cool, moist soil conditions to migrate. Undisturbed leaf litter acts as insulation that protects migrating salamanders. Exposure of lots of mineral soil can create hot, dry conditions that are unfavorable to migration.
3. Avoid making ruts deeper than 6 inches within 200 feet of a vernal pool. Ruts of this depth are an effective barrier to migrating salamanders to and from vernal pools. These animals are creatures of habit, and they are known to use the same vernal pools and migratory routes for 15 to 20 years. Disruption of these critical routes could mean local extinction of these rare or endangered species. Harvesting under frozen or snowy conditions would be advisable to avoid rutting or disturbing the litter layer around vernal pools.
4. Avoid having tree tops or slash fall into vernal pools at any time of the year. While these amphibians often use small woody twigs up to an inch in diameter to attach their eggs, larger material should never be left in a pool.
5. Since it is important that the area around vernal pools remain cool and undisturbed, an area within 50 feet of the pool should be kept in a

CONTINUED ON PAGE 2

shaded condition. Forest cover, vegetation such as mountain laurel, hemlock, naturally established advanced regeneration, or vigorous hardwood sprouting can provide this continuous shade.

These suggested guidelines are meant to protect the environment around vernal pools, while remaining compatible with timber harvesting. They were developed cooperatively by wildlife biologists and foresters as a voluntary form of protection, instead of a mandatory regulation.

In one sense, timber harvesting benefits vernal pools. Income from timber harvesting represents an important source of Tree Farm income and an incentive to keep

land undeveloped. If forestland is developed, there will be no protection for vernal pools at all.

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About the Author: *David B. Kittredge, Jr.* is an Extension Forester with the Department of Wildlife Management, University of Massachusetts. *Editors Note:* *The following article is reprinted from TREE FARMER magazine. I've observed many vernal ponds in Idaho but never realized their ecological importance. While many of the species listed in the article may not occur in Idaho, we do have other frogs and salamanders and I suspect that these temporary ponds are important to other animal groups as well. – Ron Mahoney*

