

Home Rules, Home Tools: Locally Led Conservation Achievements

The Wayne and Readfield Vernal Pool Mapping and Survey Project:

A Community Endeavor

Conservation and development are typically portrayed as a tug-of-war between opposing forces; a gain by one side means a loss for the other. The Wayne and Readfield Conservation Commissions, partnering with Kennebec Land Trust and University of Maine at Orono, are rewriting that definition by offering free surveys to town landowners to determine if their property hosts a "significant" vernal pool, one that may fall under state-regulated protection if development is proposed nearby. This proactive approach both conserves a valuable natural resource and minimizes project delays for residents.

Vernal pools are small wetlands, often in forested settings, that fill temporarily with water from spring snowmelt, heavy rains or high water tables. Because they are dry for part of most years vernal pools are fishless and offer a safe haven for breeding amphibians and invertebrates. The abundance of these creatures provides a crucial food base for foraging birds, waterfowl, reptiles and mammals. Early season greens attract deer and moose.

"Significant" vernal pools are those with exceptional wildlife value, that attain a scientifically-based threshold of amphibian egg mass numbers, or that are frequented by rare or endangered species. Maine Legislature recognized vernal pools as Significant Wildlife Habitat as early as 1995. A law specifically regulating development in a 250 ft consultation zone around Significant Vernal Pools was implemented in 2007, with the burden of determining a pool's significance placed on the landowner.



A potential vernal pool in Wayne

Development within this zone may require permits from Maine Department of Environmental Protection.

The Wayne and Readfield Vernal Pool Mapping and Survey Project was launched when the town Conservation Commissions decided to take the sting out of land-use regulation by providing landowners with an expedient way to identify and assess their pools. The first step was to acquire high quality color infrared aerial photographs of the towns with which a wetland scientist, using specialized computer software, identified potential vernal pools. Landowners were notified by the Conservation Commissions if their property hosted a potential vernal pool and were offered free field inspections by trained volunteers. These volunteers were recruited from the communities and trained by university vernal pool experts to identify and count amphibian egg masses. Funding for the project's costs was almost entirely obtained through grants from Maine Audubon, Maine Community Foundation

and Davis Foundation, and in-kind services. Residents also approved a contribution by each town.

Introduction to vernal pool science and ecology, and state vernal pool regulations, was provided by Dr. Aram Calhoun and Dawn Morgan from UMO's Wildlife Ecology Department, at an information meeting attended by over 60 people, including 28 landowners of properties hosting potential vernal pools. The aerial photographs, with the locations of the 542 potential vernal pools in the two towns, were displayed.



Egg mass identification training at a local vernal pool.

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Half of the 220 landowners of these properties granted permission for volunteers to conduct field assessments. Fifty volunteers were trained by Dr. Calhoun and Ms Morgan at a second meeting that included a visit to a local vernal pool and hands-on identification of amphibian egg masses.

In 2010, the first year of field surveys, approximately half of the potential vernal pools in the two towns were visited at least once. Typically, field assessments coincide with two peaks in amphibian egg-laying, wood frogs earliest, followed by spotted and blue-spotted salamanders several weeks later. These events are variable, influenced by temperature, snowmelt and rainfall. An unusually early spring in 2010 meant peak wood frog egg-laying occurred before volunteers were trained; some of these pools will be revisited in 2011. However, preliminary results indicate that, in the two towns, approximately 13% of vernal pools surveyed are potentially significant based on egg mass numbers and other criteria. Upon completion of the project, data will be forwarded to Maine Department of Inland Fisheries and Wildlife, who makes the determination of "significance" and passes on regulatory recommendations to Maine Department of Environmental Protection who then notifies the landowner.

Individual property owners in Wayne and Readfield benefit from these surveys conducted at no cost to themselves by members of their own community. Through participation they can prevent development delays of up to a year since obligatory egg mass counts must occur during peak breeding season in spring. Armed beforehand with the knowledge that a pool on their property is significant, landowners can design building plans that minimize impacts and maximize wildlife benefits. Since implementation of the law in 2007, not one permit has been denied statewide due to Significant Vernal Pools.



Spotted salamander egg masses in a Wayne vernal pool

The extended communities of Wayne and Readfield also benefit. Information stressing the crucial role of vernal pools to forest ecosystems reached a wider audience through the public meetings, meetings with town Select Boards, newsletters and active participation by volunteers. Biology students at Maranacook Community High School participated, under adult supervision, in surveys; journalism students researched the topic for a class presentation. Some community members offered their expertise in geographical information systems (GIS) and database design while others contributed their time by addressing and stuffing envelopes. Field volunteers were often accompanied by landowners who shared valuable land-use and natural history about their parcels.

Mainers, worn out from months of hard winter, know spring has arrived when the dusk resonates with the duck-like quacking of a wood frog chorus. Many, however, may not realize how their actions impact the vernal pools and forested uplands essential to the life-cycle of these amphibians. The Wayne and Readfield Vernal Pool Mapping and Survey Project serves as an example of cooperation between individuals, towns, conservation groups and educational

institutions to reach a common goal that respects both the environment and personal property rights. The Conservation Commissions of our two towns offer encouragement and assistance to other communities who choose to follow our model.

LESSONS LEARNED

- **No need to reinvent the wheel:**
The experts at University of Maine at Orono have guided a dozen Maine towns through the process of identifying and surveying potential vernal pools. They can advise on the specifications for the high quality aerial photographs needed to locate potential pools; offer templates for landowner permission letters, volunteer maps and datasheets; and provide informative and entertaining volunteer training sessions.
- **Double up:**
Many foundations show preference to grant proposals that emphasize cooperation between towns or between towns and other agencies or non-profits. Sharing tasks among towns makes a daunting project manageable.
- **Invite everyone:**
Landowners can be any combination of hunter, logger, recreationist, town board member, teacher, or conservationist. Teach everyone the importance of vernal pools. Emphasize participation in the survey project is completely voluntary.

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