

## Introduction to the symposium: woodland vernal pools in northern temperate forests

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The ecological importance and conservation of isolated wetlands has become a priority issue in the United States. In 2001, the federal Supreme Court ruled that the U.S. Congress did not give authority to the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act to regulate the filling of isolated wetlands (*Solid Waste Agency of Northern Cook County (SWANCC) v. U. S. Army Corps of Engineers*, 531 U.S. 159; Downing et al. 2003). Before this ruling, the Clean Water Act held jurisdiction over isolated, intrastate, non-navigable waters, where the sole basis for jurisdiction was the actual or potential use of the waters as habitat for migratory birds that cross state lines in their migrations. The justices' decision in *SWANCC* led U.S. Environmental Protection Agency and Corps officials to issue guidance in January 2003 that made it more difficult for regulators to protect isolated wetlands, such as vernal pools, prairie potholes, and playa lakes, from development.

The recent turmoil created by this ruling has focused biologists' attention on isolated wetlands. The U.S. Fish and Wildlife Service recently summarized the ecological attributes and geographic distribution of isolated wetlands in the United States to assist resource managers and the general public in gaining a better perspective and understanding of these wetlands (Tiner et al. 2002, Tiner

2003). Among wetland ecologists, isolated wetlands were the focus of an invited symposium held at the 23rd annual meeting of the Society of Wetland Scientists (Nadeau and Leibowitz 2003).

In the northeastern United States, seasonal forest pools (often referred to as 'vernal' pools), a type of geographically isolated wetland (Tiner et al. 2002), have long been natural resources of concern. Legal recognition and protection of vernal pools and a surrounding 50-foot (30.5-m) buffer have existed in Massachusetts under the state's Wetlands Protection Act since 1983 (Colburn 1991; Kenney 1995, Burne and Griffin, *this issue*). In Connecticut, the Inland Wetlands and Watercourse Act (IWWA; C.G.S., Sections 22a-36 through 22a-45, Murphy and Golet 1998) allows municipal agencies to regulate activities within 30.5 m of wetlands and watercourses. The New Hampshire Department of Environmental Services has jurisdiction within delineated wetlands, although some isolated wetlands may not be protected due to their small size, isolated setting, and/or hydrological regime (Tappan 1997). The Rhode Island Fresh Water Protection Act, as amended in 1994, only protects the area within 'special aquatic sites' (i.e., wetlands less than 0.1 ha with standing water present for less than 6 months annually), thus surrounding uplands are not under state

jurisdiction (Murphy and Golet 1998). In addition to state regulations, voluntary Best Development Practices have been created to protect pool-breeding amphibians near residential and commercial developments (Colburn 1991; Calhoun and Klemens 2003), and Best Management Practices for forestry operations in forested landscapes (Calhoun and deMaynadier 2004).

A growing body of research has occurred concomitant with the increased public awareness of and legal conflicts over seasonal forest pools. Research has ranged from basic questions of the spatial distribution of season forest pools, to studies of the biotic and abiotic features of pools, and to issues regarding the effects of land use and land management on wildlife associated with seasonal forest pools. We felt that it was an appropriate time to convene a meeting to review the state-of-science and knowledge of these important habitats. We organized a one-day symposium that was held on September 9, 2003, at the 10th Annual Conference of The Wildlife Society in Burlington, Vermont. The Symposium was organized as three consecutive sessions, each with one or more invited speakers and several contributed papers. Invited speakers addressed the topics of: Context and Abiotic Features (Landscape setting: pool distributions and upland connections, Basin morphology and hydrology); Biotic Features (Vertebrate and invertebrate fauna); and Conservation Issues (Regulation and legal protection, Forest management, Land-use development and other threats). Not all Symposium speakers chose to contribute papers to these proceedings; generally their work has been or will be published elsewhere.

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