

Northeast Partners in Amphibian and Reptile Conservation

Land Use Guidelines Working Group Land Use Planning and Biodiversity References

Habitat conversion (whether for agriculture, resource extraction, or settlement) is a primary threat to our amphibian and reptile populations. Although the percentage of land protected as parks or natural areas varies from state to state, most land in the Northeast is privately owned and managed. For this reason, the actions of private landowners and local governments are vital to the successful conservation of amphibians and reptiles, indeed of all biodiversity.

While all development affects biodiversity, carefully planned, compact development can minimize the impacts. There are many ways that municipalities can plan for development or manage land that are less harmful to the natural world and its ecological processes while also encouraging protection of prime agricultural lands and sustained use of productive forest lands. We have compiled the information on this website as a resource for those involved in land use decision making and/or land management and who are interested in better conserving nature in their communities. Please let us know if there is additional information you would find useful, or whether you have other suggestions for resources that we might include in future updates.

Land Use Planning and Biodiversity References

The following is a list of references designed to better incorporate biodiversity into land use planning. Several references offer guidance on planning for biodiversity as a whole, which will often directly benefit amphibians and reptiles. In addition, we've included some references that provide land management guidelines specifically designed to address the complex habitat and movement requirements of amphibians and reptiles.

References on Planning and Biodiversity

Critter Crossings: Linking Habitats and Reducing Roadkill

<http://www.fhwa.dot.gov/environment/wildlifecrossings/>

Defenders of Wildlife, Habitat and Highways Campaign

<http://www.defenders.org/habitat/highways>

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Honachefsky, W. 2000. Ecologically-based municipal land use planning. Lewis Publishers, Boca Raton.

Johnson, E. A. and M. W. Klemens. 2005. Nature in fragments: the legacy of sprawl. Columbia University Press, New York.

Kennedy, C., J. Wilkinson, and J. Balch. 2003. Conservation thresholds for land use planners. Environmental Law Institute, Washington, DC.
<http://www.elistore.org> (available at no charge as PDF)

Klemens, M. W., M. F. Shansky, H. J. Gruner. 2006. From planning to action: biodiversity conservation in Connecticut towns. MCA Technical Paper: No. 10, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, NY.
<http://www.wcs.org/international/northamerica/mca/overview/publications>

McElfish, J. M. 2004. Nature friendly ordinances. Environmental Law Institute, Washington, DC.

Nature Friendly Communities. <http://www.naturefriendlytools.org/about/index.html>

Peck, Sheila. 1998. Planning for biodiversity. Island Press, Washington, DC.

Perlman, D. L. and J. C. Midler. 2005. Practical ecology for planners, developers, and citizens. Island Press, Washington, DC.

Wildlife Crossings Toolkit. <http://www.wildlifecrossings.info>

Williams, K. S. 2003. Growing with green infrastructure. Heritage Conservancy.
<http://www.heritageconservancy.org>

U.S. Environmental Protection Agency. 1997. Community-based environmental protection: a resource book for protecting ecosystems and communities. (EPA 230-B-96-003) Washington, DC. <http://www.epa.gov/CARE/library/howto.pdf>

References on Planning and Amphibians and Reptiles

Calhoun, A.J.K. and M.W. Klemens. 2002. Best development practices: conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.

Calhoun, A.J.K. and P.G. deMaynadier. 2004. Forestry habitat management guidelines for vernal pool wildlife. MCA Technical Paper No. 6, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.

Calhoun, A.J.K. and P.G. deMaynadier (editors). 2008. Science and conservation of vernal pools in northeastern North America. CRC Press, Boca Raton, FL.

Klemens, M.W. (editor). 2000. Turtle conservation. Smithsonian Institution Press, Washington, DC.

Mitchell, J. C., A. R. Breisch. and K. A. Buhlmann. 2006. Habitat management guidelines for amphibians and reptiles of the northeastern United States. Partners in Amphibian and Reptile Conservation. Technical publication HMG-3, Montgomery, AL.

Semlitsch, R.D. (editor). 2003. Amphibian conservation. Smithsonian Institution Press, Washington, DC.

Examples of Statewide Biodiversity Planning Initiatives

A. Maine's Beginning With Habitat Program

<http://www.beginningwithhabitat.org/>

Beginning with Habitat provides a landscape approach to assessing wildlife and plant conservation needs and opportunities. The goal of the program is to maintain sufficient habitat to support all native plant and animal species currently breeding in Maine by providing towns and land trusts a collection of maps and interpretive materials depicting and describing various habitats of statewide and national significance found in their jurisdiction.

Examples of State Regulations That Benefit Amphibians and Reptiles

Note: "Buffer areas" adjacent to a protected natural resource (such as wetlands, stream corridors, etc.) are referred to via terms that vary from state to state or agency to agency. Examples might include "conservation zones", "wetland buffers", "no-build zones", "transition areas", etc. While reference should always be made to each state or regulatory program to ensure proper terminology and requirements are understood, these buffers typically function as regulated areas in which development or disturbance is also prohibited or may be somewhat restricted, as might be found necessary to protect the adjacent natural resource.

A. New Jersey

1. New Jersey Freshwater Wetlands Protection Act

http://www.state.nj.us/dep/landuse/njsa_njac.html

In New Jersey, any wetland meeting the 1989 “Federal Manual for Identifying and Delineating Jurisdictional Wetlands” is protected by the Act, and most activities occurring within or around wetlands are regulated by the state. A transition area (buffer) of 50 feet is required adjacent to most New Jersey wetlands. However, wetlands valued for a state or federally-listed endangered or threatened species require a transition area of 150 feet.

2. New Jersey Flood Hazard Area Control Act

<http://www.state.nj.us/dep/landuse/se.html>

All stream corridors receive a 50-foot riparian zone (buffer). In addition, any watercourse supporting trout, or habitats of threatened or endangered species deemed to be “critically dependant on the watercourse to survive”, or watercourses that flow through areas containing acid-producing soil deposits, receive a 150-foot riparian zone. Any endangered and threatened species habitat is protected.

3. New Jersey Vernal Habitats

<http://www.state.nj.us/dep/landuse/fww/vernal/index.html>

“Certified” vernal habitats receive additional protection under the New Jersey Freshwater Wetlands Protection Act rules via prohibitions or increased restrictions on permitting. Typically vernal habitats require a 50-foot transition area (buffer), unless a 150-foot transition area is warranted due to the occurrence of endangered or threatened species.

4. New Jersey Category One Waters

<http://www.state.nj.us/dep/antisprawl/c1.html>

<http://www.state.nj.us/dep/cleanwater/c1.html>

“The rules provide protections preventing any measurable deterioration in the existing water quality.” This protection is typically realized through restrictions implemented via other jurisdictions.

5. New Jersey Pinelands Comprehensive Management Plan

<http://www.state.nj.us/pinelands/cmp/>

A municipal master plan or land use ordinance must include a standard for the protection of Pinelands fish and wildlife (Part III – Fish and Wildlife 7:50 – 6.32, page 161).

6. New Jersey Highlands Comprehensive Master Plan

<http://www.nj.gov/njhighlands/master/>

On November 30, 2007, the Highlands Water Protection and Planning Council (Highlands Council) officially released the Highlands Regional Master Plan - Final Draft November 2007 (Final Draft RMP) and the supporting technical information contained in the Draft Technical Report Addenda – November 2007 (Draft Technical Report Addenda).

The “Highlands Water Protection and Planning Act” (N.J.A.C. 7:38) establishes restrictions for applicability in the “Highlands Preservation Zone” which require 300-foot buffers on all “highlands waters,” which includes wetlands and vernal pools and all watercourses.

B. Maine

1. Maine Vernal Pool Protections

<http://maine.gov/dep/blwq/docstand/nrpa/vernalpools/index.htm>

Maine recently enacted new protections for this resource by establishing biological criteria for the designation of Significant Vernal Pools (SVPs), a subset of high value vernal pools now eligible for protection from development activity that could degrade the pool depression or 250 feet of the surrounding critical terrestrial habitat.

Examples of Municipal Regulations that Benefit Amphibians and Reptiles

1. Vernal Pool Protection in Massachusetts

For more information, links to many town bylaws, and a sample bylaw see Massachusetts Association of Conservation Commissions: <http://www.maccweb.org>

Many towns in Massachusetts (194) have Wetlands Protection Bylaws. The vast majority of towns with such bylaws are in eastern Massachusetts, where development pressure is greatest. The content of the bylaws varies considerably, but these generally provide some level of enhanced protection (beyond state requirements) to vernal pools, 100-foot buffer zone around wetlands, and state-non-jurisdictional wetlands. Sometimes, there is a 50 or 100 foot “no build” zone around vernal pools, and one or two towns may extend jurisdiction beyond 100 feet.

2. “Open Space Development” (Cluster) Bylaws in Massachusetts

For more information on such bylaws in Massachusetts, see MA Citizen Planner Training Collaborative: <http://www.umass.edu/masscptc/>

Some towns in Massachusetts have Cluster Development Bylaws (also called Flexible Development or Open Space Development). This allows a developer to build on a portion of a site at a higher density than otherwise allowable by local zoning, in exchange for protecting the rest of a site as open space. This has significant potential to protect amphibian and reptile (and rare species) habitat. However, many towns don't have this option, clustering is sometimes not dense enough, clustering is generally optional where it is available, clustering might be a less attractive option in more rural towns (where it is perhaps most needed and less likely to be available), and towns don't always have the technical expertise or interest to see that the open space is configured so as to maximize habitat protection. Despite these drawbacks, cluster development used in combination with MA Endangered Species Act Regulations can achieve good conservation outcomes.

3. Resource Protection Overlay Zone for Bog Turtle Protection in Maryland

Town of Hampstead, MD - Ordinance No. 376 www.townofhampstead.us
(Select "code" on the left list then enter 135-151.)

“The purpose of the Resource Protection Overlay Zone is to provide for the protection and conservation of endangered and threatened animal species and wildlife and fisheries habitat by preventing development that would disrupt significant species and/or habitat and ensuring the design of nearby development is done in such a manner as not to degrade significant species and/or habitat.”