

Development of Model Guidelines for Assisting Local Planning Boards with Conservation of Species of Greatest Conservation Need and their Key Habitats through Local Land-Use Planning

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Introduction

Land use planning is a complex and challenging, continuously evolving endeavor. Effective planners must be able to rapidly integrate a vast amount of information in the face of competing priorities of businesses, developers, politicians, private individuals. As conservationists, how do we ensure that protection of wildlife and habitat are also a priority in planning? In order to address wildlife conservation, decision-makers must be able to readily address not only questions such as: “what wildlife species and habitat is of concern in my jurisdiction?” and “where it is located?”, but also “how can we ensure that wildlife and habitat are conserved?” within this very challenging context.

How is wildlife and conservation information currently used?

In order to assess how (or whether) wildlife information is currently used in planning, NatureServe conducted a survey of wildlife program staff in the northeast (Anderson 2010). As expected, responses varied among states. The great majority of responses state that the program’s wildlife information is used for land use planning, some to a minor degree. The intended audience for wildlife information was noted to cover a broad spectrum – general public, other state agencies, federal agencies, planners, NGO’s, conservation commissions, natural resource consultants, and many others. In response to the type of information that is made available to planners, this, too, varied widely. In most cases, however, individual species location information is not publicly accessible, or if so, is buffered. More detailed information may be obtained in some cases by contacting the wildlife agency directly. Natural history information is much more widely accessible from wildlife agency sites, including generalized habitat maps, conservation planning and conducting natural history inventory how-to’s, and species life history information on a large number of species. When asked whether agency staff felt that they had access to the appropriate tools to include wildlife conservation in land use planning, most answered in the negative. Some respondents reported a lack of political will on the part of decision makers, that even when presented with good information, it may not be acted upon for political reasons. A common theme voiced in responses is that lack of funding and personnel to interpret information and to interact with planners is a significant obstacle to the use and application of wildlife information.

Another source of information regarding use of conservation information is through the natural heritage programs or wildlife programs who are directly involved in environmental review. As an example, the New York Natural Heritage Program (NYNHP) manages a continuously updated database of rare species and natural community information that provides baseline information

as part of the state environmental review process. The program receives thousands of information requests a year from a wide spectrum of requestors, including the general public, developers, non-governmental organizations, state and federal agencies, local governments, and conservationists. An Environmental Review Specialist from the NYNHP recently conducted a survey of requestors of biodiversity information housed in the Program's databases to determine how the data are used (Salerno 2010). Although the survey targeted only requestors of information for screening of development projects, the results suggested that many users of the information are in general taking, or attempting to take, appropriate steps to ensure conservation. Most respondents voiced a strong preference to submit information requests electronically.

In general, most natural heritage programs provide specific location information (as appropriate) only upon request, and in the majority of states, requests must be submitted by mail. Many charge a fee for the service to cover costs, although some states fill information requests free of charge for NGO's and others.

What resources do local planning boards need?

We addressed this question through Environmental Law Institute's Naturally Green Planning project, the goal of which is to advance science-based conservation planning.

One facet of this project was to conduct research to determine what the greatest barriers are to effective conservation planning. The research included 60 in-depth phone interviews with planners across the United States, including 21 interviews in the east and southeastern U.S. In addition, an on-line survey yielded 233 responses from the east and southeast (Environmental Law Institute 2009). The results of the research indicated that in general, planners have a high level of interest in including wildlife conservation in plans, and the interest is apparently growing. Planners were interested in the conservation of priority areas, and were either actively planning for their protection, and/or already taking action towards that goal.

The two most-often cited barriers to conservation were "competition between conservation and development interests" and "lack of political will". Many of the respondents voiced a need for a diverse toolbox that would provide many different tools that planners could employ under varying circumstances. A large majority (68%) found that funding sources for acquisitions, easements, and other mechanisms, were the most effective means to conservation. Strong land use regulation combined with land acquisition was thought to be the most powerful means to stemming loss of wildlife and habitat.

The results of the survey suggest several overarching themes:

- a) Conservation concerns should be addressed earlier and incorporated into the existing planning process
- b) Planners need help in making the case for conservation directly, or through allies, to local decision makers
- c) Broad communication should be made that wildlife and habitat conservation is a critical component of being “green” and “sustainable”.
- d) Case studies of successes in conservation that maximized benefits to the community while minimizing cost is a critical tool
- e) Communications materials aimed towards policy makers should include readily adaptable presentations, talking points, and slides that emphasize the benefits of wildlife conservation in community planning
- f) There should be greater opportunity for exchanges between conservationists and planners, and more opportunity for inclusion of conservationists in local planning

The Northeast Regional Conservation Needs (RCN) program of the Northeast Association of Fish and Wildlife Agencies (NEAFWA) identified as a priority the providing of technical assistance regarding species of greatest conservation need (SGCN) and their habitats to local planning boards. The major goals of this project were to integrate conservation information on species of greatest conservation need (SGCN) and their habitats with land use planning decisions. Our intent is for decision-makers, particularly those at a local scale and volunteers who may not have extensive training, to be able to access the information they need to answer their questions within a few simple keystrokes.

NatureServe, and its partners at Defenders of Wildlife (Defenders), the Environmental Law Institute (ELI), the Pennsylvania Natural Heritage Program (PNHP), and the Virginia Natural Heritage Program (VNHP) were awarded an RCN grant to develop an initial toolkit for planners that addresses: a) easily providing SGCN and habitat information; b) funding sources to aid wildlife resource planning; c) legal frameworks in each state that address SGCN; d) Best Management Practices; e) and delivery mechanisms for these information sources.

Project Outcomes

Partner Roles

NatureServe is a conservation organization that provides the scientific basis for effective conservation action. NatureServe and its network of natural heritage programs is a leading source for information about rare and endangered species and threatened ecosystems.

NatureServe, as the prime contractor, was responsible for:

- overall project management
- facilitating communication among partners and state wildlife agencies, including submitting quarterly reports
- compiling best management practices from State Wildlife Action Plans and other sources
- building the demonstration toolkit
- assembling the final deliverables

Environmental Law Institute (ELI) fosters innovative, just, and practical law and policy solutions to enable leaders across borders and sectors to make environmental, economic, and social progress. ELI's Naturally Green Planning Program is working to integrate conservation science into community based planning and provides science-based rules of thumb for planners. ELI's major role in this project was to:

- Compile existing relevant information from ELI's existing inventories, research, and publications
- Characterize current legal and planning frameworks and legal mechanisms for protecting endangered or at-risk species and their habitats in all northeastern states (Maine to Virginia, west to New York, Pennsylvania, and West Virginia)
- Develop case studies of the most innovative programs
- In collaboration with partners, scope out the appropriate steps, format, and content of a toolkit
- Summarize ongoing interviews by ELI to identify limitations to conservation of SGCN and habitats model ordinances
- Design outreach materials for local land use planners
- Work with NatureServe as part of ELI's Naturally Green Planning Program

Defenders of Wildlife is an organization that provides science-based, results-oriented wildlife conservation. Their major work targets saving imperiled wildlife and championing the Endangered Species Act, the landmark law that protects them. Defenders of Wildlife role in this project was to:

- Identify spending programs that can be used for habitat conservation
- Share results with land trusts through its Living Lands project designed to help land trusts protect biodiversity.

Virginia Division of Natural Heritage is a state natural heritage program and Member Program of NatureServe. The program's mission is to conserve Virginia's biodiversity through inventory, protection and stewardship. Virginia Division of Natural Heritage's role was to develop a case study of effective conservation planning in the state. The Virginia Priority Conservation Areas (PCA) dataset and GIS layer was recently developed, via funding from NOAA through the Virginia DEQ – Coastal Zone Management Program, to provide a geospatial foundation for various conservation planning efforts in Virginia, focused on green infrastructure planning to protect wildlife, open space and other natural resources.

Pennsylvania Natural Heritage Program is also a state natural heritage program and Member Program of NatureServe. The program provides scientific information, expertise, and assistance to support the conservation of biological diversity in Pennsylvania. Pennsylvania Natural Heritage Program's role in this project was also to develop a case study of effective conservation planning in the state. This study summarizes results of providing biodiversity and conservation data, as well as technical assistance, to municipalities through its County Natural Heritage Inventory (CNHI) Program, involvement with greenway and open space planning, comprehensive planning and other activities.

Products

Major products that resulted from this project are: a) an overview of wildlife and conservation information available from a national / regional and state level, as well as detailed information (see Appendices 1-14) – also provided separately in Excel spreadsheet format; b) case studies of integrating biodiversity conservation into planning in Virginia (Appendix 15) and Pennsylvania (Appendix 16); c) legal conservation frameworks for each state (Appendix 17) ; d) funding sources for conservation by state (Appendix 18); and e) links to a demonstration toolkit for three states (Virginia, Pennsylvania, and New Hampshire) on NatureServe's LandScope America.

The following provides an overview of how to access information on wildlife habitat and species, and on where to find conservation tools both nationally and regionally, and by state. This overview is not intended to be comprehensive, as more detail on where to find funding sources, legislation and model ordinances, Best Management Practices, planning, maps and spatial data, and other topics are provided for each state and DC in Appendices 1-14.

Regional / National

Wildlife Information

Information on wildlife is available from a great variety of sources. Two sources that offer comprehensive coverage for the country are the U.S. Fish and Wildlife Service and NatureServe. The U.S. Fish and Wildlife Service provides information on federally endangered wildlife species, including the federal listing process, habitat conservation plans, and recovery. NatureServe provides information on all plant species in the US, all vertebrate animals in the US, and a large number of selected groups of invertebrate animals, as well as additional information on what data are available (data coverage).

Links:

US Fish and Wildlife Service: <http://www.fws.gov/endangered/>

NatureServe Explorer: <http://www.natureserve.org/explorer/>

NatureServe data coverage: <http://www.natureserve.org/explorer/summary.htm>

State agencies are usually a very good source of information on wildlife, habitat, and its conservation. The organization and accessibility of this information varies widely by state. In general, the two major sources of wildlife information are the state wildlife agency and the state natural heritage program. In some states, the two agencies are integrated, and in others, they are organized within different departments.

Conservation Resources

Information on how to protect wildlife is also available from a myriad of sources. The following offers a few over-arching sources; there are many others as well. The information gained from links in Appendix A, even if listed for a particular state, can be more broadly applicable. For example, the publication, *Preparing a Conservation Plan*, from the University of New Hampshire Cooperative Extension, can be readily used in many northeastern states.

Other national or regionally based programs often have local state chapters. Nonpoint Education for Municipal Officials (NEMO) is a network of 32 state programs that focus on the impact that land use has on natural resources, with an emphasis on water quality. The program provides education on natural resource-based planning to land-use decision makers. The National NEMO network holds annual conferences, and presentations are available on-line. In the NEAFWA region, state NEMO programs include ME, NH, NY, VT, CT, RI, DE, MD, PA, VA; NJ is currently in development. Individual state programs can be accessed through the National NEMO network.

Other resources for planners interested in protecting open space and natural resources in general include:

- NEMO makes available a set of fact sheets prepared by a land use planner (Gibbons 1998). Although not a recent publication, and some topics are specific to Connecticut, it is an easy-to-understand source of information.
- The National Resource Conservation Service (formerly the Soil Conservation Service) has a Resource Conservation and Development Program, a voluntary national program that helps landowners conserve their natural resources through a locally organized and implemented council of private and government agencies. Federal assistance is available for development of regional plan (usually several counties) by the local stakeholders. This program is available in all 50 states.
- Pace University Law School's Gaining Ground database is an on-line research library of innovative land use laws and practices. The database can be searched by state, EPA jurisdiction, topic, and others. Examples of topics include natural resource protection, open space protection, water resource protection and a great many others.
- US Fish and Wildlife Service has a number of programs targeting conservation for landowners, including Habitat Conservation Plans, Safe Harbor Agreements, tax deductions, recovery credits, conservation banking, and more.

Links:

University of New Hampshire Cooperative Extension, Preparing a Conservation Plan:

http://extension.unh.edu/resources/files/Resource001227_Rep1568.pdf

National Nonpoint Education for Municipal Officials (NEMO) network:

<http://nemonet.uconn.edu/>

NEMO access to state programs: http://nemonet.uconn.edu/programs/program_contacts.htm

NEMO (Gibbons 1998 fact sheets):

http://nemo.uconn.edu/publications/open_space_fsCollection.pdf

National Resource Conservation Service Resource Conservation and Development Program:

<http://www.wv.nrcs.usda.gov/programs/rc&d/RcdPrDes.pdf>

Pace University Law School's Gaining Ground database: <http://www.landuse.law.pace.edu/SPT--Home.php>

Pace University Law School examples of topics: <http://www.landuse.law.pace.edu/SPT--BrowseResources.php?ParentId=172>

US Fish and Wildlife Service ("For Landowners" tab): <http://www.fws.gov/angered/>

Planning Resources

The availability of tools and resources for planners is increasing rapidly. For example, Placeways is a software company that developed CommunityViz, a GIS application that helps communities plan various planning scenarios. NatureServe's Vista is another decision support GIS application that can be downloaded free of charge. It allows the user to conduct planning and assessments, integrate conservation values with other land use activities, and design multiple scenarios. The US Fish and Wildlife Service's Information, Planning, and Conservation System (IPaC) provides

information on federally sensitive resources near potential development projects. Features include Initial Scoping, Project Builder, Conservation Measure Search, and FAQ's.

Links:

Placeways: <http://placeways.com/company/index.php>

CommunityViz: http://conservationtools.org/tools/general/show/75-CommunityViz-#heading_1

NatureServe Vista: <http://www.natureserve.org/prodServices/vista/overview.jsp>

Information, Planning, and Conservation System (IPaC) <http://ecos.fws.gov/ipac/>

Resources by State

Connecticut

Wildlife Information

The Department of Environmental Protection (DEP) is the overarching agency housing the Wildlife Division, as well as a great number of other programs. The Wildlife Division houses the Geological and Natural History Survey and the Natural Diversity Database, also known as the state natural heritage program. A wealth of information on wildlife can be accessed through the Wildlife Division web site, including links to recreation, flood management, greenways, invasive species, lakes management, open space, parks and forests, remediation, watershed management, wetlands management, and others.

Links:

CT Department of Environmental Protection:

http://www.ct.gov/dep/cwp/view.asp?a=2690&q=322478&depNav_GID=1511

CT Wildlife Division:

http://www.ct.gov/dep/cwp/view.asp?a=2723&q=325726&depNav_GID=1655

Geological and Natural History Survey:

http://www.ct.gov/dep/cwp/view.asp?a=2701&q=323434&depNav_GID=1641

Conservation and Planning Resources

The University of Connecticut Center for Land Use Education and Research (CLEAR) provides information to land use planners on how to protect natural resources while accommodating growth. This comprehensive resource includes courses and webinars for land use commissioners on roles and responsibilities, map reading for site plan review, and legal requirements and procedures of land use decision making. The Connecticut Department of Environmental Protection provides a municipal primer: "Your guide to creating a "green and growing" community. A pdf can be downloaded, or a hardcopy can be requested by email. The primer includes resources for grants and financial assistance, technical assistance, and training. Wildlife and conservation issues are not addressed directly, however. Connecticut River Estuary

Regional Planning Agency (CRERPA) has links to open space and environmental protection activities and resources in the watershed.

Links:

Center for Land Use Education and Research (CLEAR): <http://clear.uconn.edu/>

Department of Environmental Protection Municipal Primer:

http://www.ct.gov/dep/cwp/view.asp?a=2703&Q=423114&depNav_GID=1634 (or email at tatiana.abreu@ct.gov to request hard copy)

Connecticut River Estuary Regional Planning Agency (CRERPA): <http://www.crerpa.org/>

Delaware

Wildlife Information

The Department of Natural Resources and Environmental Control (DNREC) is the state agency that houses the Division of Fish and Wildlife. One of the major responsibilities of the Division of Fish and Wildlife is to conserve and manage the fish and wildlife resources of the state, as well as to conduct biological surveys throughout the state. The Division's information resources include a private lands assistance program, the Delaware Wildlife Action Plan, and wildlife species and habitat management information. The Natural Heritage and Endangered Species Program (ENHSP), also a part of the Division of Wildlife, manages a continuously updated database of biodiversity inventory in the state. Information regarding rare species or habitats in specific locations can be obtained by submitting a written request to the program. Information on how to submit the request is on the ENHSP web site, as is information on publications, rare species lists, and an interactive guide to the vegetation of Delaware.

Links:

Department of Natural Resources and Environmental Control (DNREC) Division of Fish and Wildlife home page: <http://www.fw.delaware.gov/Pages/FWPortal.aspx>

DNREC Division of Fish and Wildlife information resources:

<http://www.fw.delaware.gov/dplap/information/Pages/HabitatManagement.aspx>

Natural Heritage and Endangered Species Program (ENHSP) home page:

<http://www.dnrec.state.de.us/nhp/>

Guide to the vegetation of Delaware:

<http://www.fw.delaware.gov/Info/Documents/Guide%20to%20Delaware%20Vegetation%20Communities-Spring%202009-Web.pdf>

Conservation and Planning Resources

A number of resources are available to local planners in Delaware:

- The Delaware Department of Natural Resources and Environmental Control (DNREC) produced a publication in 2008 that provided guidelines for protecting ecological features of State Resource Areas (SRA's). SRA's are based largely on the State Wildlife

Action Plan maps of Species of Greatest Conservation Need and their habitats. The full report (Environmental Resources Management, Inc. et al. 2008) includes definition and importance of state resource areas ecological guidelines for land use planning, protection mechanisms, ordinance, and hypothetical case studies.

- The Landowner Incentive Program offers landowners technical and financial incentives to protect or restore habitat for species-at-risk. It includes information on funding mechanisms, as well as management guidelines for forest, successional lands, and wetlands.
- For addressing wetlands specifically, the Delaware Wetlands Participation Guidebook provides information about wetland types, their restoration, monitoring, assessment, and how the public can be involved in wetland protection in land use planning. The book can be downloaded in full or in sections.

Links:

Department of Natural Resources and Environmental Control (DNREC) guide to protecting State Resource Areas (SRA)'s:

<http://www.dnrec.delaware.gov/landuse/Documents/State%20Resource%20Areas/SRA%20Ecological%20Guidelines.pdf>

Landowner Incentive Program:

<http://www.dnrec.delaware.gov/fw/dplap/services/Pages/DELIP.aspx>

Delaware Wetlands Participation Guidebook (full):

<http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Delaware%20Wetlands%20Public%20Participation%20Guidebook%20Final.pdf>

Delaware Wetlands Participation Guidebook (by section):

<http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Pages/default.aspx>

District of Columbia

Wildlife Information

The District of Columbia's Department of the Environment houses the Fisheries and Wildlife Division is responsible for monitoring and managing the district's wildlife resources. Three branches comprise the district, including the Fisheries Research Branch, the Wildlife Research Branch, and the Aquatic Education Branch. The Wildlife Research Branch is a young program, having been established in 2002. Wildlife fact sheets for species of greatest conservation need are part of the wildlife action plan, and can also be downloaded as a separate document. Information includes status, range, ecology, habitat, etc.

Links:

Fisheries and Wildlife Division home page:

http://ddoe.dc.gov/ddoe/cwp/view,a,1209,q,492187,ddoeNav_GID,1486,ddoeNav,%7C31375%7C31377%7C,.asp

Wildlife fact sheets:

http://ddoe.dc.gov/ddoe/frames.asp?doc=/ddoe/lib/ddoe/information2/fisheries.wildlife/ch.6_Wildlife_Fact_sheet.pdf

Conservation and Planning Resources

The DC Office of Planning developed a comprehensive plan in 2006; this plan includes preservation and restoration of natural resources such as the Anacostia River. The Northern Virginia Conservation Trust protects land in northern Virginia; it also provides information on voluntary land preservation agreements, tax incentives, and other help to landowners interested in conserving their land.

Links:

DC Office of Planning:

<http://planning.dc.gov/DC/Planning/Across+the+City/Comprehensive+Plan/2006+Comprehensive+Plan>

Northern Virginia Conservation Trust, for landowners:

http://www.nvct.org/index.php?option=com_content&view=article&id=41&Itemid=11

Northern Virginia Conservation Trust, voluntary land preservation:

http://www.nvct.org/index.php?option=com_content&view=article&id=9&Itemid=10

Maine

Wildlife Information

Maine's biodiversity information is housed within two departments. The Department of Inland Fisheries and Wildlife (DIFW) maintains information on wildlife, including endangered animals, and also provides information on wildlife management, surveys and reports by state wildlife biologists, and lists threatened and endangered species. Detailed information on many individual species, including description, illustration, life history, and threats is also available at this web site. The Maine Natural Areas Program (MNAP) is part of the Bureau of Geology and Natural Areas, which is in the Department of Conservation. It the major source of information on ecosystems, natural communities and rare plants. To receive information about rare species and communities on specific sites, a data request can be submitted online or by phone. Ecosystems and plant communities are described in a recently published book, *Natural Landscapes of Maine* at (Gawler and Cutko 2009), which can be ordered online. General information on ecosystems, and detailed information on natural communities and plant fact sheets, can be obtained electronically from individual web pages, listed below. Maine's

Beginning with Habitat program, described in more detail below, also provides mapped information on Water Resources / Riparian Habitats; High Value Plant and Animal Habitats, and Undeveloped Habitat Blocks by town (as available).

Links:

Department of Inland Fisheries and Wildlife (DIFW):

http://www.maine.gov/ifw/wildlife/species/endangered_species/species.htm

Maine Natural Areas Program (MNAP) home:

<http://www.maine.gov/doc/nrimc/mnap/index.html>

MNAP data requests: <http://www.maine.gov/doc/nrimc/mnap/assistance/info.htm>

MNAP ecosystems: <http://www.maine.gov/doc/nrimc/mnap/features/ecosystems.htm>

MNAP plant communities: <http://www.maine.gov/doc/nrimc/mnap/features/commsheets.htm>

MNAP communities book:

http://www.maine.gov/doc/nrimc/mnap/about/publications/community_classification.htm

MNAP plant fact sheets: <http://www.maine.gov/doc/nrimc/mnap/features/plantlist.htm>

Beginning with Habitat (BwH) maps:

http://www.beginningwithhabitat.org/the_maps/index.html

Conservation and Planning Resources

Several state-wide conservation and planning resources are available to practitioners in Maine. Beginning with Habitat is a collaborative effort of federal, state and local governments and non-governmental organizations. The program uses a landscape approach to wildlife conservation across the state, and has a wealth of resources that are useful to planners, not just in the state, but to other conservation practitioners cross the region. The community involvement page provides information on local conservation planning, outreach and information, local regulations, land protection measures, as well as a Toolbox that assists town planners in identifying actions that can accomplish the town's conservation goals. Other features of the Toolbox include developing a conservation commission, land use and zoning ordinances (including model ordinances), and funding sources for land protection.

Maine state governments provides a detailed manual of comprehensive planning for Maine communities (Richert and Most 2005). In addition to planning for habitat and critical natural resources, elements include marine resources, historic and archeological resources, hazard mitigation, transportation, and agricultural and forestry resources, and numerous others.

Maine also has a local chapter of NEMO (Nonpoint Education for Municipal Officials), providing information on how land use relates to water quality. This organization works with multiple partners in the state and has a number of publications on-line, such as the Maine Resources Guide for Land Use Planning, as well as periodic workshops.

Links:

Beginning with Habitat (BwH) home page: <http://www.beginningwithhabitat.org/index.html>

Beginning with Habitat community involvement:

<http://www.beginningwithhabitat.org/community/index.html>

Beginning with Habitat toolbox:

http://www.beginningwithhabitat.org/toolbox/about_toolbox.html

Comprehensive planning manual:

http://www.maine.gov/spo/landuse/docs/compplanning/2005manual_mediumres.pdf

Maine Nonpoint Education for Municipal Officials (NEMO):

<http://www.mainenemo.org/about.htm>

Maine NEMO Resources Guide for Land Use Planning:

<http://www.mainenemo.org/publication/mrg.pdf>

Maryland

Wildlife Information

In Maryland, the wildlife program and the natural heritage program are housed within a single agency, the Wildlife and Heritage Service, in the Department of Natural Resources (DNR).

Information on wildlife (including game and nongame), plants, natural communities, invasive species, digital data, environmental review, and others can be accessed through this site.

Buffered locations of rare, threatened and endangered species can be accessed through as GIS data or as maps. More detailed information on specific location (as appropriate) can be obtained by mailing an environmental review data request. The request is processed free of charge in 30 days or less. Checklists, including lists of rare animals by county, as well as information on wildlife and habitat management are also available.

Links:

Wildlife and Heritage Service: http://dnr.maryland.gov/wildlife/Plants_Wildlife/nhpintro.asp

Rare, threatened and endangered species, buffered locations:

<http://dnrweb.dnr.state.md.us/gis/data/data.asp>

Rare, threatened and endangered species data request: see

<http://dnr.maryland.gov/wildlife/Habitat/er.asp> for mailing address

Animal checklists: http://dnr.maryland.gov/wildlife/Plants_Wildlife/rte/rteanimals.asp

Wildlife and habitat management: <http://dnr.maryland.gov/wildlife/Habitat/er.asp>

Conservation and Planning Resources

A number of resources for conservation planning are available through various sections of the Maryland state government, including a central listing of land trusts, as well as maps, data, support, and guidance for planners. The Maryland Department of Planning provides data, trend analysis, research assistance, and policy development and implementation support to towns, businesses, and organizations. In 2004, a study analyzing the effectiveness of conservation of rural land in the state was (Tassone et al. 2004) published and can be accessed online. The

Department of Planning also published a recently updated Smart, Green, and Growing Planning Guide, which provides summaries of recent legislation and planning tools.

Greenprint provides an interactive map that illustrates the ecological importance of every land parcel in the state.

Links:

Department of Planning: <http://planning.maryland.gov/OurWork/mdpoverview.shtml>

Local land trusts: <http://dnr.maryland.gov/met/landtrustslists.pdf>

Rural lands study: http://planning.maryland.gov/pdf/ourwork/rurallegacy/report_nomaps.pdf

Smart, Green, and Growing Guide:

http://planning.maryland.gov/PDF/OurProducts/Publications/otherPublications/SGG_Guide_09_Web.pdf

Greenprint: <http://www.greenprint.maryland.gov/map.asp>

Massachusetts

Wildlife Information

Two entities, MassWildlife and BioMap, provide state-wide comprehensive information on wildlife. The Massachusetts Department of Fish and Game, housed within the Executive Office of Energy and Environmental Affairs, is home to the Division of Fisheries and Wildlife, also known as MassWildlife. This department provides wildlife information, including fact sheets, publications, and laws relating to wildlife. MassWildlife also houses the Natural Heritage and Endangered Species Program (NHESP), which is responsible for inventory and conservation of nongame wildlife, plants, and natural communities.

BioMap is an innovative collaborative program that is the leading source of comprehensive wildlife and endangered species information in the state. This effort reflects a collaboration of the Natural Heritage and Endangered Species Program, the Division of Fisheries and Wildlife, and the Massachusetts Chapter of The Nature Conservancy. It integrates critical information from three major sources: NHESP rare species and community data; wildlife species and habitats identified in the State Wildlife Action Plan, and The Nature Conservancy's assessment of connected and intact landscapes. The map and report portray core habitat (NHESP and wildlife data) and critical natural landscape (TNC's large landscape blocks and buffer areas) throughout the state. Biomap was recently updated and released as Biomap 2.

Links:

MassWildlife, wildlife information:

http://www.mass.gov/dfwele/dfw/wildlife/wildlife_home.htm

Natural Heritage and Endangered Species Program (NHESP):

<http://www.mass.gov/dfwele/dfw/nhesp/nhesp.htm>

Biomap 2:

http://www.mass.gov/dfwele/dfw/nhosp/land_protection/biomap/biomap2_summary_report.pdf

Regulatory review data request:

http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/reg_review_contacts.htm

Conservation and Planning Resources

State-wide resources for planning in Massachusetts are available from several sources.

Comprehensive state mapping of wildlife, or rare wildlife and plants at specific sites, can be accessed through MassGIS. Information format includes individual GIS files or the entire Priority Habitat layer, as well as static maps or the hard-copy map book, BioMap 2. The maps portray polygons priority habitat polygons digitized on MassGIS 2005 color orthophotos. Polygons are identified by priority habitat number, but identification of the habitat details are accessed by sending a regulatory review data request to the Massachusetts Endangered Species and Natural Heritage Program by mail and referencing the habitat number of the polygon.

The Massachusetts Land Trust Coalition is a voluntary association of land trusts that provides a forum for exchange of information. Resources include map and lists of land trusts in the state, and libraries for conservation practitioners, landowners, and community resources.

Links:

MassGIS Prime Habitat: http://maps.massgis.state.ma.us/PRI_EST_HAB_TEST/viewer.htm

BioMap 2 hard copy:

http://www.mass.gov/dfwele/dfw/nhosp/publications/nhosp_pubs.htm#atlas

Regulatory review data request:

http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/reg_review_contacts.htm

Massachusetts Land Trust Coalition: <http://www.massland.org/>

New Hampshire

Wildlife information

The two primary sources of wildlife conservation information are the Nongame and Endangered Wildlife Program, within the NH Fish and Game Department (NHFG), and the Natural Heritage Bureau, within the Division of Forest and Lands. The NHFG has legal jurisdiction over the state's wildlife resources, while the Natural Heritage Bureau provides information and guidance to New Hampshire landowners and land managers to help them protect the State's natural heritage while meeting their land-use needs. The NHFG website includes information on wildlife, habitat management and the NH Wildlife Action Plan. Both programs work in partnership; the Endangered and Nongame Species Program contributes data to the Natural Heritage database, and is responsible for the review of rare animal species information housed in the database.

Links:

Nongame and Endangered Wildlife Program:

http://www.wildnh.com/Wildlife/nongame_and_endangered_wildlife.htm

Natural Heritage Bureau: <http://www.nhdf.org/about-forests-and-lands/bureaus/natural-heritage-bureau/>

Conservation and Planning Resources

Taking Action for Wildlife (TAFW) is a partnership of NH Fish and Game and the University of New Hampshire (UNH) Cooperative Extension. Its focus is on local communities and wildlife conservation: how to create a conservation plan, tools for implementation, examples of successful community conservation planning as well as regulations and public outreach. It also features stories of individuals and their success stories in wildlife conservation. There are additional resources on wildlife habitat management for twelve habitat types.

The UNH Cooperative Extension has developed a number of pertinent resources for integration of wildlife conservation into land use planning. The Land and Water Conservation Program provides guidance and training to community groups such as development of goals and work plans, and how to engage the public. The Natural Resources Outreach Coalition (NROC) provides assistance to the 42 communities making up New Hampshire's coastal watersheds. The coalition includes professionals in natural resources and in planning who work with communities to better understand their resources, how to protect and sustain them, and to use this information for conservation planning.

NH Department of Environmental Services has a handbook on Innovative Land Use Planning Techniques for municipalities which includes sample local ordinances on natural resources protection, including wildlife.

Links:

Taking Action for Wildlife: www.takingactionforwildlife.org

University of New Hampshire (UNH) Cooperative Extension:

<http://extension.unh.edu/Wildlife/Wildlife.htm>

UNH Cooperative Extension, Land and Water Conservation Program:

<http://extension.unh.edu/CommDev/CCAP.htm>

UNH Cooperative Extension, NROC: <http://extension.unh.edu/CommDev/NROC/CANROC.cfm>

NH Department of Environmental Services:

http://des.nh.gov/organization/divisions/water/wmb/repp/innovative_land_use.htm

New Jersey

Wildlife Information

The major sources of wildlife information are the Division of Fish and Wildlife and the New Jersey Natural Heritage Program, both housed within the Department of Environmental Protection. The Division of Fish and Wildlife is responsible for the protection and management of 500 wildlife species across the state, and provides information on wildlife species and their management, wildlife checklists, publications and other information, as well as the NJ Wildlife Action Plan. The Division also houses the Endangered and Nongame Species Program, which conserves endangered, threatened, and nongame wildlife populations. Major programs include the Landscape Project, Herp Atlas, and the Landowner Incentive Program. Fact sheets and management information on endangered and nongame wildlife species can be accessed through the web site. The New Jersey Natural Heritage Program (NJNHP) is housed within the Division of Parks and Forestry in the Office of Natural Lands Management. This program is responsible for conducting inventories of biological diversity, and maintains an extensive database of rare species and natural community information. Rare species and ecological community lists by county, as well more detailed information on individual species, are available on the program web site. Information from the database can be made in a data request to the program by mail, and can be used to prepare environmental impact assessments, and for planning. The programs work in partnership; the Endangered and Nongame Species Program contributes data to the Natural Heritage database, and is responsible for the review of rare animal species information housed in the database.

Links:

Division of Fish and Wildlife: <http://www.state.nj.us/dep/fgw/wildlife.htm>

Endangered and Nongame Species Program: <http://www.state.nj.us/dep/fgw/ensphome.htm>

New Jersey Natural Heritage Program home page:

<http://www.state.nj.us/dep/parksandforests/natural/heritage/index.html>

New Jersey Natural Heritage Program data request instructions:

<http://www.state.nj.us/dep/parksandforests/natural/heritage/index.html#datarequest>

Conservation and Planning Resources

In addition to the conservation data available from the Natural Heritage Program database, the Endangered and Nongame Species Program began the New Jersey Landscape Project to provide long-term protection of imperiled species and habitats in the state. The project offers training programs and links to download Landscape Project data. The New Jersey Landscape Project Map Book was developed by the New Jersey Endangered and Nongame Species Program, and depicts maps of critical wildlife habitats in the entire state that can be used for the incorporation of wildlife conservation into planning.

Links:

New Jersey Landscape Project: <http://www.state.nj.us/dep/fgw/ensp/landscape/>

New Jersey Landscape Project, how to access data for download:

<http://www.state.nj.us/dep/fgw/ensp/landscape/download.htm>

New York

Wildlife Information

The Department of Environmental Conservation houses the Division of Fish, Wildlife and Marine Resources, a large and complex entity whose functions are summarized in an on-line “At a Glance” document. The Division is comprised of five bureaus: Bureau of Fisheries (conservation of freshwater fishes), Bureau of Marine Resources (protection of marine species within the NY Marine Coastal District), Bureau of Habitat (wetland and aquatic protection), Bureau of Wildlife (management and protection of all wildlife species in the state), and Bureau of Fish and Wildlife Services (Division administration).

DEC also houses the New York Natural Heritage Program (NYNHP), which provides access to general and location information on rare plants, animals, and natural communities. A map viewer of locations of rare plants, animals, and communities is available, but only a general label rather than the identity of the species is not provided on the viewer. Additional information regarding specific locations needed for environmental review can be obtained by submitting an information request by mail. Information about species and natural communities (natural history and buffered locations) can be accessed at New York Nature Explorer, which allows one to search by species group, protection status, and criteria, and/or by county.

Links:

Division of Fish, Wildlife and Marine Resources: <http://www.dec.ny.gov/about/634.html>

Division of Fish, Wildlife and Marine Resources at a Glance:

http://www.dec.ny.gov/docs/wildlife_pdf/dfwmr2011.pdf

Bureau of Habitat: <http://www.dec.ny.gov/about/648.html>

Bureau of Wildlife: <http://www.dec.ny.gov/about/794.html>

New York Natural Heritage Program (NYNHP): <http://www.dec.ny.gov/animals/29338.html>

NYNHP map viewer: <http://www.dec.ny.gov/imsmaps/ERM/viewer.htm>

NYNHP information request: <http://www.dec.ny.gov/animals/31181.html>

New York Nature Explorer: <http://www.dec.ny.gov/natureexplorer/app/>

Conservation and Planning Resources

A number of publications are available through the Department of State:

- NY Land Use Tools: In 2008, the NYS Legislative Commission on Rural Resources published a survey of land use planning regulations in municipalities, although it does not specifically address wildlife protection.

- Creating the community you want: summarizes land use tools that municipalities can use to incorporate smart growth, and by extension, protect natural resources. Revised in 2009.
- Local open space planning guide, including protection of habitats and biodiversity, published in 2004 and reprinted in 2007.

The State Environmental Quality Review Act (SEQR) mandates environmental impact assessments be conducted on projects carried out by state or local agencies. The sponsoring body must identify and mitigate significant environmental impacts caused by the proposed activity.

The Smart Growth Clearinghouse is a web site created in 2007 to foster the use of smart growth principles to create livable communities and protect natural resources. The Conservation and Environment page provides links to grants and financial assistance, technical assistance, training events, success stories, and data.

Links:

NY Land Use Tools: http://www.dos.state.ny.us/LG/publications/Rural_Resource_Survey.pdf

Creating the Community You Want:

http://www.dos.state.ny.us/lg/publications/Creating_the_Community_You_Want.pdf

Local Open Space Planning Guide:

http://www.dos.state.ny.us/lg/publications/Local_Open_Space_Planning_Guide.pdf

State Environmental Quality Review (SEQR) Handbook:

<http://www.dec.ny.gov/permits/6188.html>

New York State Smart Growth home page: <http://smartgrowthny.org/index.asp>

New York State Smart Growth, Conservation and Environment:

http://smartgrowthny.org/hEnvironmental_Resources/index.asp?i=env

Pennsylvania

Wildlife information

Jurisdiction of wildlife in Pennsylvania is split between the Pennsylvania Game Commission (PGC) and the Pennsylvania Fish and Boat Commission (PFBC). Both commissions provide links to numerous wildlife species fact sheets, information on Species of Special Concern, nongame species regulations, and wildlife habitat. In addition, both of these commissions provide on-the-ground technical assistance to landowners and managers.

The PGC Wildlife page has information on habitat management, information for landowners, and further links to birds and bird watching, common mammals, wildlife grants and programs, wildlife reference guides, and wildlife diseases. The Threatened and Endangered Species page provides an overview of endangered species protection, as well as fact sheets on threatened and endangered species.

The PFBC habitat and non/game page provides links to extensive information on amphibians and reptiles, aquatic invasive species, species of special concern, selected species action plans, and the state Wildlife Action Plan.

Along with the Department of Conservation and Natural Resources and the Western Pennsylvania Conservancy, both the PGC and PFBC are partners in the Pennsylvania Natural Heritage Program (PNHP), which manages information on species of Special Concern and other biodiversity information. The Pennsylvania Natural Diversity Inventory (PNDI), the online environmental tool, is hosted here. PNHP recently introduced an online map providing location-specific and habitat information on rare plants, animals, and natural communities generated from its County Natural Heritage Inventory program.

Links:

Pennsylvania Game Commission (PGC) home page: <http://www.pgc.state.pa.us/>

PGC, wildlife in Pennsylvania:

<http://www.portal.state.pa.us/portal/server.pt/community/wildlife/9109>

PGC, Threatened and Endangered Species:

<http://www.portal.state.pa.us/portal/server.pt?open=514&objID=621014&mode=2>

Pennsylvania Fish and Boat Commission (PFBC) home page: <http://www.fish.state.pa.us/>

PFBC, amphibians and reptiles: http://fishandboat.com/amp_rep.htm

PFBC, aquatic invasive species: <http://fishandboat.com/ais.htm>

PFBC, species of special concern: http://fishandboat.com/nongame_concern.htm

PFBC, Wildlife Action Plan: <http://fishandboat.com/promo/grants/swg/00swg.htm>

Pennsylvania Natural Heritage Program (PNHP) home page:

<http://www.naturalheritage.state.pa.us/>

PNHP, Pennsylvania Natural Diversity Inventory (PNDI): <http://www.gis.dcnr.state.pa.us/hgis-er/default.aspx>

PNHP, online mapper: <http://www.naturalheritage.state.pa.us/cnhi/cnhi.htm>

Conservation and Planning Resources

PNHP provides technical assistance for regional planning organizations, counties, municipalities and conservation organizations on the use of its data.

Conservation Tools.org, maintained by the Pennsylvania Land Trust Association, provides a number of resources that connect conservation and planning, such as links to technical guidance and resources, tools, library, experts and events; basics of conservation including land trust standards and practices, model easements and other documents, and stories by landowners, and of people preserving special places in their communities. There are links to finding a conservation area within the state by county, as well as organizations in other states.

The Department of Community and Community Development (DCED) provides planning support and technical assistance for local governments to develop planning documents and land use controls. The goal of the Department of Community and Economic Development is to foster opportunities for businesses and communities to succeed and thrive in a global economy. Through a statutory responsibility, DCED reports on land use and growth management trends in the Commonwealth every five years.

Links:

Conservation Tools: <http://conservationtools.org/>

Pennsylvania Land Trust Association: <http://conserveland.org/>

Department of Community and Community Development (DCED): <http://www.newpa.com/>

Rhode Island

Wildlife Information

Information on wildlife is available through both the state and non-governmental institutions. The state Department of Environmental Management houses the Bureau of Natural Resources, which in turn houses the Division of Fish and Wildlife and the Division of Planning and Development. The Division of Fish and Wildlife provides information on wildlife management and hunter education. Information on both game and nongame species, as well as reports on rare plants and natural communities can also be found at this site. The Rhode Island Natural Heritage Program is housed within the Division of Planning and Development, which also provides access to information on rare plants and animals. For location-specific information on rare plants, animals, and natural communities, the Department of Environmental Management has an interactive map viewer of environmental resources. A number of data layers, including regulatory overlays containing locations of rare plants, wildlife, and natural communities, are accessible here. Other data layers include soils, surface water features, elevations, topographic maps, aerial photography, and others. The biodiversity database, formerly managed by the Rhode Island Natural Heritage Program, now resides with the Rhode Island Natural History Survey, a non-profit organization that accumulates and distributes natural history information for the state. For more detailed information identified on the Environmental Resource Map, a data request must be submitted to the Rhode Island Natural History Survey.

Links:

Division of Fish and Wildlife: <http://www.dem.ri.gov/programs/bnatres/fishwild/index.htm>

Rhode Island Natural Heritage Program:

<http://www.dem.ri.gov/programs/bpoladm/plandev/heritage/index.htm>

Department of Environmental Management map viewer:

<http://204.139.0.188/website/maps/viewer.htm>

Rhode Island Natural History Survey (biodiversity database): <http://www.rinhs.org/>

Rhode Island Natural History Survey , data requests: <http://www.rinhs.org/what-we-do/data/data-services/data-requests/>

Conservation and Planning Resources

Rhode Island has a state chapter of Nonpoint Education for Municipal Officials (NEMO) at the University of Rhode Island Cooperative Extension. NEMO offers technical assistance, workshops, watershed assessment tools, and online resources for planners, including use of GIS for site assessment. Narragansett Bay Research Reserve has a Coastal Training Program that assists municipal staff, volunteers, designers and developers, landscape architects, and many others, in making informed decisions on the preservation and protection of natural resources in the Narragansett Bay and watershed. A training course calendar and links to past trainings, with accompanying materials, are available on the web site.

Links:

Nonpoint Education for Municipal Officials (NEMO):

<http://www.uri.edu/ce/wq/NEMO/index.htm>

NEMO site assessment mapping: <http://www.uri.edu/ce/wq/NEMO/Tools/siteassess.htm#GIS>

Narragansett Bay Research Reserve Coastal Training Program: <http://www.nbwctp.org/>

Narragansett Bay Research Reserve, links to past trainings:

<http://www.nbwctp.org/programs.html>

Vermont

Wildlife Information

The Vermont Fish and Wildlife Department (VFWD) houses the Natural Heritage Information Project, also known as the Natural Heritage Program, which is responsible for collecting and maintaining data on nongame wildlife, plants, and natural communities. Fact sheets, species lists, recovery plans, natural community reports, information on vernal pools, and other information are available here. Additional information about individual occurrences is obtained by directly contacting district regulatory review staff at the VFWD. For location-specific information, the Department web site also links to the regulatory review page and to an interactive map viewer, the Agency of Natural Resources Environmental Interest Locator. This site has numerous data layers in addition to rare plants, wildlife, and natural community locations.

Links:

Vermont Fish and Wildlife Department, Natural Heritage Information Project:

http://www.vtfishandwildlife.com/wildlife_nongame.cfm

Vermont Fish and Wildlife Department regulatory review page:

http://www.vtfishandwildlife.com/nnhp_Regulationreview.cfm

Agency of Natural Resources Environmental Interest Locator (interactive map viewer):

http://maps.vermont.gov/imf/imf.jsp?site=ANR_NATRESViewer

Conservation and Planning Resources

The Vermont Fish and Wildlife Department (VFWD) hosts three integrated conservation programs within the Conservation Assistance Project to aid municipalities and landowners in planning and conservation of wildlife habitat. The Community Wildlife Program provides technical assistance and information in developing conservation strategies to municipalities and planners. The Landowner Incentive Program (LIP) provides funding to protect and restore habitat on private lands. The Wildlife Habitat Incentive Program (WHIP) is a partnership between the USDA Natural Resource Conservation Service and the Vermont Fish and Wildlife Department. WHIP provides technical and financial assistance to private landowners to enhance wildlife habitat.

Other resources available through the VFWD include a guide to community-based conservation and zoning bylaws to protect natural resources in the state.

Links:

VT Fish and Wildlife Department (VFWD), Conservation Assistance Project:

http://www.vtfishandwildlife.com/Conservation_Assistance.cfm

Community Wildlife Program: http://www.vtfishandwildlife.com/cwp_home.cfm

Landowner Incentive Program: http://www.vtfishandwildlife.com/lip_intro.cfm

Wildlife Habitat Incentive Program (WHIP): http://www.vtfishandwildlife.com/WHIP_main.cfm

VFWD guide to community-based conservation:

http://www.vtfishandwildlife.com/library.cfm?libbase =Reports_and_Documents/Conserving_Vermonts_Natural_Heritage

Zoning bylaws: http://www.vtfishandwildlife.com/cwp_zoning.cfm#Zoning_Bylaws

Virginia

Wildlife Information

The two main sources of wildlife information are the Virginia Division of Game and Inland Fisheries (DGIF) and the Virginia Natural Heritage Program, housed within the Virginia Division of Conservation and Recreation. Virginia Division of Game and Inland Fisheries provides information on wildlife species and habitat, and includes Habitat for Wildlife, a page on habitat improvement for landowners. Many other information resources are available from DGIF, including the State Wildlife Action Plan, list of threatened, endangered, and special concern wildlife species, and full list of the state's fauna. DGIF also hosts the Virginia Fish and Wildlife Service, which provides an interactive map that enables the user to search by species or by geographic location. A geographic search provides a report of wildlife species occurring within a selected radius; links to detailed information about the species are also available from within

the report. Additional more detailed information for research, management, and regulatory functions is also available to subscribers. The data are free of charge to government agencies, nongovernmental institutions, and public schools.

The Virginia Natural Heritage Program (NHP) conserves biodiversity through inventory, information management, and stewardship. General information available through the Natural Heritage Program includes species and natural community fact sheets, rare species lists, and information on invasive species and caves. NHP Information Services provides links to publicly available data, data available by subscription, and environmental review services.

Links:

Virginia Division of Game and Inland Fisheries (DGIF) home page:

<http://www.dgif.virginia.gov/wildlife/>

DGIF Habitat for wildlife: <http://www.dgif.virginia.gov/habitat/> .

Virginia Fish and Wildlife Service: <http://vafwis.org/fwis/?Menu=Home.Visitor+Options>

Virginia Natural Heritage Program (NHP):

http://www.dcr.virginia.gov/natural_heritage/index.shtml

NHP, species and natural community fact sheets:

http://www.dcr.virginia.gov/natural_heritage/factsheets.shtml

NHP, Information Services:

http://www.dcr.virginia.gov/natural_heritage/infoservices.shtml#lists

Conservation and Planning Resources

Resources for planners are available through the Virginia Division of Conservation and Recreation (DCR) and the Virginia Chapter of the American Planning Association, among others. DCR hosts the Virginia Conservation Lands Needs Assessment (VCLNA), a flexible tool allowing for prioritizing of conservation priorities among a set of stakeholders.

The Virginia Chapter of the American Planning Association authored the 2010 document *Managing Growth and Development in Virginia: A Review of the Tools Available to Localities*. In addition to a description of comprehensive planning and tools for zoning, managing growth, and other aspects of planning, the document includes a chapter on tools for rural and natural areas preservation.

Links:

Virginia Conservation Lands Needs Assessment:

http://www.dcr.virginia.gov/natural_heritage/vclna.shtml

Virginia Chapter of American Planning Association (APA): <http://apavirginia.org/aboutus/>

APA document, *Managing Growth and Development in Virginia*:

http://apavirginia.org/documents/legislation/APA%20Virginia%20Growth%20Tools_2010%20Edition.pdf

West Virginia

Wildlife Information

The Wildlife Diversity Program and the Natural Heritage Program are housed within the West Virginia Department of Natural Resources. The Wildlife Diversity Program is responsible for conserving the state's nongame species and habitats, including federally threatened and endangered plants and animals. The Natural Heritage Program conducts a statewide inventory of plants, animals, and ecological communities, and provides data for a variety of users who submit a data request. Non-profit groups and cooperators may receive data free of charge. General information on wildlife, as well as plants, is available on the web site. Hardcover books may be purchased, and other literature such as checklists and technical works can be downloaded.

Links:

Wildlife Diversity Program and Natural Heritage Program:

<http://www.wvdnr.gov/Wildlife/Wildlife.shtm>

Natural Heritage Program data requests: <http://www.wvdnr.gov/Wildlife/Data.shtm>

Publications: <http://www.wvdnr.gov/Publications/Publications.shtm>

Conservation and Planning Resources

NRCS provides technical assistance in conservation

http://www.wv.nrcs.usda.gov/programs/fb_08_FY_2011_Programs/cta_11/cta.html

Land Trusts of West Virginia: <http://www.mtnhome4u.com/LandTrusts.html>

West Virginia Wildlife Action Plan: http://www.wildlifeactionplans.org/west_virginia.html

West Virginia Planning Association: <http://www.wvplanning.com/index.php>

Model planning commission by-laws: <http://www.wvplanning.com/modelplanningbylaws.pdf>

Demonstration Toolkit

We chose LandScope America as a means of introducing a demonstration toolkit for local planning boards. LandScope America is an online resource for the land-protection community and the public developed as a collaborative project by NatureServe and the National Geographic Society (<http://www.landscape.org/>). Our goal is to inform and inspire conservation of our lands and waters by presenting maps, data, photos, and stories about America's natural places and open spaces. The site is in a Beta phase, with continuing active design and addition of content. As such, there is much still to be developed and improved and the user will find pages that aren't complete, images that may seem out of place, and aspects of the map viewer that need fine tuning. Our approach has been to open up the results of our work in order to receive and incorporate comments and suggestions.

The key features of LandScope America include an interactive map viewer of the United States, intended to allow the user to zoom smoothly from a national view to state and local scales anywhere across the country. One advanced feature of the LandScope America map viewer is that the data presented are context-sensitive based on the current extent of one's map view. If viewing a map of the entire country, for example, the map viewer lists those data layers that are most relevant and useful at a national scale. As the user zooms in to regional or local views, the map viewer shows and lists the data layers that are most relevant to that scale, such as state-scale data. Many other features – stories and related content about particular places can be accessed through the map viewer. The website includes a broad array of editorial content organized around three concepts: Explore Places and Topics, Focus and Plan, and Take Action. In addition, each state has its own home page, where one can find a conservation overview of the state, as well as other topics presented in a more general format on the main home page.

Our demonstration toolkit is referred to as “Wild and Green Planning”. Three states were chosen as pilots: Virginia, Pennsylvania, and New Hampshire. These three states represent several stages of content development of the Beta Phase of LandScope, prior to building the demonstration tool. Content for Virginia is the most advanced of the three; Pennsylvania content is under active development, and New Hampshire content is the most skeletal pending receipt of additional funding sources. As of this writing, links to the demonstration tool are live, but can only be reached using the following links and cannot be accessed by navigating through the LandScope site:

http://www.landscape.org/virginia/wild_green_planning

http://www.landscape.org/pennsylvania/sustainable_planning

http://www.landscape.org/new-hampshire/wild_green_planning/

Wild and Green Planning is accessed via the Explore Places and Topics tab on the individual state subsites of the LandScope home page. From Wild and Green Planning, the user can navigate to Land Use Planning and Protecting Endangered Species pages where legal frameworks for conservation are accessed; one can also navigate to Funding Conservation and Land Use Planning to reach links for funding options, and from Programs and Resources, to Protecting Biodiversity through Comprehensive Planning. On the protecting biodiversity through comprehensive planning page are links to a number of resources, including information on wildlife, state planning associations, success stories, additional financial assistance, list of SGCN, and many others.

Recommendations for an improved and expanded toolkit

LandScope America provided a compelling platform for the demonstration tool. LandScope's content covers the entire country, and provides access through individual states. The goals of providing information to those who wish to take conservation action are closely aligned with the goals of NEAFWA's project. These advantages, however, also present challenges to organizing easy-to-find content for planners while providing content that can be reached intuitively from national as well as state pages.

Testing the accessibility of information in the demonstration toolkit by planners and local decision makers would be the most effective means to determining an optimal design, as well as additional content. Improved navigation and content organization may be considered for two potential ways a planner may reach the site. In one scenario, direct outreach to planners could include information on the site, its description, a link, and brief, to-the-point guidance for its use. In this scenario, information could be organized within these categories:

- What is sustainable planning for nature, for biodiversity, for wildlife? Basic definitions with discussion on how this planning relates to the concept of sustainability, green architecture, and other concepts; to be reached from the main home page
- What is needed to do the planning? Links to expertise, data, partnerships, political support, and communications tools. This could be accessed from the main home page and from individual state pages
- What is the process of doing the planning? Includes high-level conceptual discussion, with links to more details
- Where can I find....? Data, expertise, tools, training. Combination of generic (from home page) and state-specific. Include links to other tools such as VISTA (powerful, flexible, decision-support system for conservation planners that can be downloaded at <http://www.natureserve.org/prodServices/vista/overview.jsp>) and many others.
- Special Topics: climate change; other integrated planning issues such as transportation

For users who reach the LandScope site directly, content may be organized in this way:

- Nature Facts: information about plants, animals, geography, special places
- Threats to nature
- Existing conservation priorities and places
- Resources – further organized for planners as noted above

Conclusion

To ensure that wildlife Species of Greatest Conservation Need and the habitats they depend on are protected, it is critical that planners and those making decisions about land use have access to tools they can access easily and navigate intuitively. The toolkit should include communications materials that are easily adaptable, are persuasive, are based on the best available science, and can demonstrate the great benefits communities will derive from preservation of wildlife.

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Appendices

Appendix 1: Connecticut Links

GENERAL		
Title	Description	Web Site
Department of Environmental Protection home page	Overarching agency housing the Wildlife Division	http://www.ct.gov/dep/cwp/view.asp?a=2690&q=322478&depNav_GID=1511
Department of Environmental Protection, Wildlife Division home page	houses the Geological and Natural History Survey and the Natural Diversity Database; links to recreation, flood management, greenways, invasive species, lakes management, open space, parks and forests, remediation, watershed management, wetlands management, wildlife	http://www.ct.gov/dep/cwp/view.asp?a=2723&q=325726&depNav_GID=1655
Wildlife pdf Library	links to fact sheets on general wildlife, habitat, endangered species; publications on wildlife management, habitat management and other topics; click on "Learn about CT's wildlife" on wildlife division home page to access fact sheets on endangered, threatened and special concern species, as well as wildlife and wildlife habitat fact sheets	http://www.ct.gov/dep/cwp/view.asp?a=2723&q=325718&depNav_GID=1655
Municipal Inland Wetlands Commissioners Training Program	training videos for understanding the Inlands Wetlands and Watercourses Act	http://www.ct.gov/dep/cwp/view.asp?a=2720&Q=434010&depNAV_GID=1907

Appendix 1: Connecticut Links (Continued)

Title	Description	Source / Web Site
Connecticut Geological and Natural History Survey	also known as the natural heritage program, is responsible for coordination and implementation of statewide natural resource data collection inventories in surficial and bedrock geology, land cover, remote sensing; inventories of fauna and flora, including endangered species; and the development and operation of resource oriented data base management system	http://www.ct.gov/dep/cwp/view.asp?a=2701&q=323434&depNav_GID=1641
Connecticut Comprehensive Wildlife Conservation Strategy	link to download entire report or individual chapters of the state wildlife action plan	http://www.ct.gov/dep/cwp/view.asp?a=2723&q=329520&depNav_GID=1719
FUNDING SOURCES		
Title	Description	Web Site
Department of Environmental Protection Lakes Grant Program	Provides matching funds for restoration of lakes that have public access; also provides contact information for Clean Water Fund, Long Island Sound Research Program, Nonpoint Source Grant Program	http://www.ct.gov/dep/cwp/view.asp?a=2687&q=322344&depNav_GID=1654#LakesGrant
Department of Environmental Protection Grants and Financial Assistance	Provides information on state and federal grant opportunities for environmental protection; application form can be downloaded, and grant opportunities are posted here.	http://www.ct.gov/dep/cwp/view.asp?a=2687&q=322332&depNav_GID=1511
Department of Environmental Protection; Landowner Assistance	Provides links to classifying land as forested for tax purposes; estate planning for landowners to keep forested land in its natural state	http://www.ct.gov/dep/cwp/view.asp?a=2697&q=322796&depNav_GID=1631&depNav=

Appendix 1: Connecticut Links (Continued)

Title	Description	Source / Web Site
Department of Environmental Protection; Recreation and Natural Heritage Trust Program	To expand the state's system of parks, forests, wildlife and other natural open spaces.	http://www.ct.gov/dep/cwp/vie w.asp?a=2706&q=323840&dep Nav_GID=1641
Department of Environmental Protection; Open Space and Watershed Land Acquisition Grant Program	Provides financial assistance to municipalities and nonprofit land conservation organizations to acquire land for open space and to water companies to acquire land to be classified as Class I or Class II water supply property.	http://www.ct.gov/dep/cwp/vie w.asp?a=2706&q=323834&dep Nav_GID=1642
Farmland Preservation Program	To preserve farmland soils by acquiring the development rights on farms in farm communities.	http://www.ct.gov/doag/cwp/vie w.asp?a=3260&q=399016
Conservation Tax Credits	To protect the state's unique natural and historical resources by rewarding and assisting habitat stewardship by private landowners.	http://www.ct.gov/drs/lib/drs/forms/2009forms/corpbusiness/c t-1120dl.pdf
Landowner Incentive Program	provides technical advice and cost assistance to private landowners for habitat management that will result in the protection, restoration, reclamation, enhancement, and maintenance of habitats that support fish, wildlife, and plant species considered at-risk; click on "Connecticut's Landowner Incentive Program" on wildlife division home page	http://www.ct.gov/dep/cwp/vie w.asp?a=2723&q=325734&dep Nav_GID=1655
RESTORATION / MANAGEMENT/ BMP		
Tidal wetland restoration	Summary of many tidal marsh restoration projects in the state; note: link to publication "Tidal Marshes of Long Island Sound" is not functional; publication can be accessed at http://www.conncoll.edu/green/arb o/9879.htm	http://www.ct.gov/dep/cwp/vie w.asp?a=2705&q=323828&dep Nav_GID=1654

Appendix 1: Connecticut Links (Continued)

Title	Description	Source / Web Site
Department of Environmental Protection's Watershed Management Program	Summary page of watershed management; many links to additional resources including the state watershed management program, information on watershed plans and documents; funding sources for watershed management, and many others	http://www.ct.gov/dep/cwp/view.asp?a=2719&q=325628&depNav_GID=1654
Urban Deer Management	Comprehensive report on deer management for landowners in suburbs and urban areas; includes deer reduction programs in municipalities, as well as non-lethal management options	http://www.ct.gov/dep/lib/dep/wildlife/pdf_files/game/urbandeer07.pdf
Comprehensive Wildlife Conservation Strategy	state wildlife action plan	http://www.ct.gov/dep/cwp/view.asp?a=2723&q=329520&depNav_GID=1719
Beavers in Connecticut	2001 downloadable document on natural history and management of beaver, including recommended water level control devices	http://www.ct.gov/dep/lib/dep/wildlife/pdf_files/habitat/beaverct.pdf
Forestry - Landowner Assistance	Description of the Forestry Service Program and contact information to request technical assistance	http://www.ct.gov/dep/cwp/view.asp?a=2697&q=329934&depNav_GID=1631
Nuisance Aquatic Vegetation Management	describes chemical and non-chemical control of invasive aquatic plants; also includes a guide to species identification, with illustrations	http://www.ct.gov/dep/lib/dep/pesticide_certification/Supervisor/aweeds.pdf
Caring for our Lakes: Watershed and in-Lake Management for Connecticut Lakes	1996 DEP publication on lake management; includes chapters on lake ecology, watershed Best Management Practices, in-lake management	http://www.ct.gov/dep/lib/dep/water/lakes/Caring_for_Our_Lakes.pdf

Appendix 1: Connecticut Links (Continued)

CONSERVATION		
Title	Description	Web Site
Vernal Pools	Provides overview of vernal pools in the state, with links to other sources of information	http://www.ct.gov/dep/cwp/vi ew.asp?a=2720&q=325676&de pNav_GID=1654
Department of Environmental Protection, land trusts	links to numerous land trusts in the state	http://www.ct.gov/dep/cwp/vi ew.asp?a=2706&q=323830&de pNav_GID=1641
Connecticut Forests and Parks Association (CFPA)	NGO that works with groups and individuals to protect the state's forests, parks, and walking trails	http://www.ctwoodlands.org/
Lower Connecticut River and Coastal Region Land Trust Exchange	links to member land trusts, meetings, other resources for land use planning	http://www.crerpa.org/LandTr ustCollaboration.html
LEGISLATION		
General Statutes of Connecticut	on-line access to state regulations; the user can search or browse one chapter or section at a time	http://cga.ct.gov/lco/Statute Web_Site_LCO.htm
PLANNING		
The Municipal Primer: Your Guide to Creating a "Green and Growing" Community	Includes links to many additional resources; content includes environmental and landscape stewardship; watershed management; floodplain management; aquifer protection; nonpoint source pollution management; coastal management	http://www.ct.gov/dep/cwp/vie w.asp?a=2703&Q=423114&dep Nav_GID=1634
University of Connecticut Center for Land Use Education and Research (CLEAR)	provides info to land use planners on how to protect natural resources while accommodating growth. Comprehensive, including courses (at UConn or online) for land use commissioners on roles and responsibilities, map reading skills	http://clear.uconn.edu/luu/onlin e/index.htm
Regional Planning Organizations in Connecticut	contact information and / or links to each of the state's 14 regional planning organizations	http://www.ct.gov/opm/cwp/vi ew.asp?a=2986&q=383046

Appendix 1: Connecticut Links (Continued)

Title	Description	Source / Web Site
Connecticut Environmental Conditions Online	maps and geospatial data for planning, management, education, and research. Geoprocessing tools not active but coming soon, on-line spatial analysis	http://www.cteco.uconn.edu/
Landscape Stewardship: Updated Green Plan	Connecticut's open space goals; land protection efforts to date; future acquisition priorities, as well as funding	http://www.ct.gov/dep/cwp/view.asp?a=2703&q=382162&depNav_GID=1634
Your guide to creating a “green and growing” community	Municipal primer pdf or can be requested by mail	http://www.ct.gov/dep/cwp/view.asp?a=2703&Q=423114&depNav_GID=1634
Connecticut River Estuary Regional Planning Agency	links to open space and environmental protection activities and resources in the watershed	http://www.crerpa.org/
MAPS AND GIS DATA		
Customized maps - "maps on demand"	hard copy maps of drainage basins, Natural Diversity Database, wetland soils, and others; maps are not ultraviolet or water resistant, but can be laminated with no bleeding of colors	http://www.ct.gov/dep/cwp/view.asp?a=2688&q=322398&depNav_GID=1511
Connecticut GIS Data	provides access to 11 different categories of data, including environmental and hydrography; options to download in CT state plane or WGS 84; can also download KML to view on Google Earth	http://magic.lib.uconn.edu/connecticut_data.html
Map Services	Link to GIS data for GIS software users interested in using map services from CT ECO with their own GIS software and data. geoprocessing services (link not active yet)	http://www.cteco.uconn.edu/map_services.htm
GIS data for download	numerous data sets, including critical habitats and Natural Diversity Database - mapped locations of habitats with natural community labels (see Endangered Species group)	http://www.cteco.uconn.edu/data.htm

Appendix 1: Connecticut Links (Concluded)

MAKING THE CASE FOR WILDLIFE CONSERVATION; CASE STUDIES		
Title	Description	Web Site
Nonpoint Education for Municipal Officials (NEMO) Successes	Case studies of towns or groups of towns that have worked with NEMO on planning, policy, and regulatory initiatives; illustrates a number of different approaches	http://nemo.uconn.edu/successes/case_studies.htm
Farmington Valley Biodiversity Project	example of a multiple municipality approach to fish and wildlife conservation	http://www.frwa.org/land_use.html
Connecticut River Gateway Commission	Describes a commission established to protect the Lower Connecticut River Valley, and its successes in protection of upland tracts, and its oversight responsibilities in the region.	http://www.crerpa.org/gateway.html

Appendix 2: Delaware Links

GENERAL		
Title	Description	Web Site
Delaware Department of Natural Resources and Environmental Control, Division of Fish and Wildlife	home page; many links to wildlife information, fisheries, services, state wildlife action plan	http://www.fw.delaware.gov/Pages/FWPPortal.aspx
Division of Fish and Wildlife, Natural Heritage and Endangered Species Program	home page; links to reports and lists of native and non-native plants and animals, and information on how to make data requests	http://www.dnrec.state.de.us/nhp/
Delaware Wildlife Action Plan	links to the plan, habitat classification, species of greatest conservation need, conservation issues, and other links	http://www.fw.delaware.gov/dwap/Pages/default.aspx
DNREC Division of Fish and Wildlife information resources	includes a private lands assistance program, the Delaware Wildlife Action Plan, and wildlife species and habitat management information	http://www.fw.delaware.gov/dplap/information/Pages/HabitatManagement.aspx
Guide to the vegetation of Delaware	online descriptions of Delaware's vegetation; links to National Vegetation Classification housed by NatureServe	http://www.fw.delaware.gov/Info/Documents/Guide%20to%20Delaware%20Vegetation%20Communities-Spring%202009-Web.pdf

Appendix 2: Delaware Links (Continued)

FUNDING SOURCES		
Title	Description	Web Site
Landowner Incentive Program	provides technical and funding assistance to landowners who wish to protect or restore habitat for species at risk.	http://www.fw.delaware.gov/dplap/services/Pages/DELIP.aspx
Delaware Private Lands Assistance Program	Assistance is provided to private landowners to improve and protect their lands for wildlife. Information about available programs, technical assistance and securing financial assistance	http://www.dnrec.state.de.us/DP LAP/default.shtml
Delaware Agricultural Lands Preservation Program	Preserves historic structures, wildlife habitats, important environmental features, wetlands, and forests	http://dda.delaware.gov/aglands/index.shtml
Delaware Agricultural Forestland Preservation Program	Delaware's Forestland Preservation Program protects forestlands through perpetual conservation easements. The program is available to any landowner in the state	http://dda.delaware.gov/forestry/Forestland%20Preservation%20Program%20Guidelines.pdf
Open Space Program	To protect designated State Resource Areas (SRAs); the purpose of the SRAs is to guide state acquisition of open space from willing sellers and to be incorporated by counties in their land use plans.	http://www.dnrec.delaware.gov/OpenSpaces/Pages/OpenSpaceProgram.aspx
Conservation Tax Credits	Delaware provides a tax incentives to individuals or corporations that donate land or conservation easements. The credit is equal to 40% of the fair market value of the donation with a maximum credit of \$50,000 for individuals per year. A 5-year carry forward period is available to individuals whom do not use up the entire credit in the year of its origination.	http://delcode.delaware.gov/title30/c018/sc01/index.shtml

Appendix 2: Delaware Links (Continued)

RESTORATION / MANAGEMENT/ BMP		
Title	Description	Web Site
Division of Fish and Wildlife, Delaware Private Lands Assistance Program, Habitat Management	Links to information on managing forests for fish and wildlife, early successional habitat, wetland habitat, ponds, buffers, native plants, invasive plant control, and management of selected wildlife species.	http://www.fw.delaware.gov/dpla/p/information/Pages/HabitatManagement.aspx
Delaware Wetlands Participation Guidebook (full)	provides information about wetland types, their restoration, monitoring, assessment, and how the public can be involved in wetland protection in land use planning	http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Delaware%20Wetlands%20Public%20Participation%20Guidebook%20Final.pdf
Delaware Wetlands Participation Guidebook (by section)		http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Pages/default.aspx
CONSERVATION		
Delaware Green Infrastructure Program	General information on green infrastructure conservation and planning	http://www.dnrec.delaware.gov/GI/Pages/index.aspx
Delaware Wetlands Conservation Strategy	Publication produced by Delaware Department of Natural Resources and Environmental Control in collaboration with other state agencies and conservation partners; strategy to improve wetland resources through restoration, coordination, monitoring, and education.	http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Pages/DelawareWetlandsConservationStrategy.aspx
Department of Natural Resources and Environmental Control (DNREC) guide to protecting State Resource Areas (SRA)'s	includes definition and importance of state resource areas, ecological guidelines for land use planning, protection mechanisms, ordinances, and hypothetical case studies	http://www.dnrec.delaware.gov/landuse/Documents/State%20Resource%20Areas/SRA%20Ecological%20Guidelines.pdf

Appendix 2: Delaware Links (Continued)

LEGISLATION (see also Appendix 3 for comprehensive review)		
Title	Description	Source / Web Site
Delaware's Land Protection Act (Delaware Code Title 7, Chapter 75)	requires Department of Natural Resources and Environmental Control (DNREC) to work with the Delaware Open Space Council to develop standards and criteria for "determining the existence and location of state resource areas; their degree of endangerment; an evaluation of their importance; and information related to their natural, historic or open space values."	http://www.dnrec.delaware.gov/landuse/Pages/DelawareLandProtectionAct.aspx
PLANNING		
Delaware Department of Natural Resources and Environmental Control, Planning Section	DNREC planning section links DNREC's science and regulatory programs with land-use decisions throughout the state.	http://www.dnrec.delaware.gov/landuse/Pages/Default.aspx
Better Models for Development in Delaware	publication produced by the Conservation Fund; Includes links to purpose, principles, and values	http://www.stateplanning.delaware.gov/info/better.shtml
Natural Areas and State Resource Areas: A Brief History and Update	Summary of open space acquisition for state resource areas; sustainable growth and resource protection	http://www.dnrec.delaware.gov/landuse/Documents/State%20Resource%20Areas/SRAS%20-%20August%206.pdf
State of Delaware Land Use Planning and Preservation	links to farmland preservation resources	http://dda.delaware.gov/aglands/landplan.shtml
Guidelines for Counties and Municipalities to Protect Ecological Features of State Resource Areas	2008 publication includes chapters on applying ecological guidelines to state resource areas, protection mechanisms, case studies, and facilitating protection	http://www.dnrec.delaware.gov/landuse/Documents/State%20Resource%20Areas/SRA%20Ecological%20Guidelines.pdf

Appendix 2: Delaware Links (Concluded)

MAPS AND GIS DATA		
Title	Description	Source / Web Site
General Delaware GIS Clearinghouse	list of geospatial data available for download; searchable, or by category	http://stateplanning.delaware.gov/dgdc/catalogue.shtml
MAKING THE CASE FOR WILDLIFE CONSERVATION; CASE STUDIES		
Guidelines for Counties and Municipalities to Protect Ecological Features of State Resource Areas	Chapter 4: detailed case studies outlining alternative protection scenarios	http://www.dnrec.delaware.gov/landuse/Documents/State%20Resource%20Areas/SRA%20Ecological%20Guidelines.pdf

Appendix 3: District of Columbia Links

GENERAL		
Title	Description	Web Site
District of Columbia, Department of the Environment, Fisheries and Wildlife Division	responsible for monitoring and managing the district's wildlife resources. Three branches comprise the district, including the Fisheries Research Branch, the Wildlife Research Branch, and the Aquatic Education Branch.	http://ddoe.dc.gov/ddoe/cwp/view,a,1209,q,492187,ddoeNav_GlD,1486,ddoeNav,%7C31375%7C31377%7C,.asp
District of Columbia Wildlife Action Plan	individual chapters available for download	http://ddoe.dc.gov/ddoe/cwp/view,a,1210,q,494364,ddoeNav,%7C31007%7C,.asp
Wildlife Fact Sheets	fact sheets for Species of Greatest Conservation Need are included as chapter 6 of the DC Wildlife Action Plan	http://ddoe.dc.gov/ddoe/frames.asp?doc=/ddoe/lib/ddoe/information2/fisheries.wildlife/ch.6_Wildlife_Fact_sheet.pdf
CONSERVATION		
Northern Virginia Conservation Trust home page	nonprofit land trust that aids local governments and landowners in preserving natural areas in northern Virginia	http://www.nvct.org/
Northern Virginia Conservation Trust, for landowners	provides information on land conservation tax incentives, and landowner stories	http://www.nvct.org/index.php?option=com_content&view=article&id=41&Itemid=11
Northern Virginia Conservation Trust, voluntary land preservation	provides information on conservation easements, land donations, bargain-purchases, and bequests	http://www.nvct.org/index.php?option=com_content&view=article&id=9&Itemid=10
PLANNING		
DC Office of Planning	conducts planning for neighborhoods, corridors, districts, historic preservation, public facilities, parks and open spaces, and individual sites.	http://planning.dc.gov/DC/Planning/Across+the+City/Comprehensive+Plan/2006+Comprehensive+Plan

Appendix 4: Maine Links

GENERAL		
Title	Description	Web Site
Beginning with Habitat: Local strategies for conservation	Collaborative program of federal, state and local government agencies and non-profit organizations working to protect wildlife in the state on a landscape scale	http://www.beginningwithhabit.org/index.html
Department of Conservation, Maine Natural Areas Program, Site Review	Source for reviewing wildlife considerations in specific areas. What particular plant and fauna are significant in a project area.	http://www.maine.gov/doc/nri/mc/mnap/assistance/review.htm
Department of Inland Fisheries and Wildlife (DIFW)	maintains information on wildlife, including endangered animals; on wildlife management, surveys and reports by state wildlife biologists, and lists threatened and endangered species. Detailed information on many individual species, including description, illustration, life history, and threats	http://www.maine.gov/ifw/wildlife/species/endangered_species/species.htm .
Maine Natural Areas Program (MNAP)	information on ecosystem, natural communities and rare plants	http://www.maine.gov/doc/nri/mc/mnap/index.html
Maine's Comprehensive Wildlife Conservation Strategy	state wildlife action plan	http://www.maine.gov/ifw/wildlife/groups_programs/comprehensive_strategy/index.htm
Maine Natural Areas Program data requests	instructions for submitting a request for information; may require a fee	http://www.maine.gov/doc/nri/mc/mnap/assistance/info.htm
Maine Natural Areas ecosystems information	links to individual descriptions of ecosystems, including plant communities associated within them, as well as state ranks and other information	http://www.maine.gov/doc/nri/mc/mnap/features/ecosystems.htm
Maine Natural Areas plant communities	links to individual descriptions of plant communities	http://www.maine.gov/doc/nri/mc/mnap/features/commsheets.htm
Maine Natural Areas plant communities book, how to order	paperback book includes all on-line information for ecosystems and plant communities	http://www.maine.gov/doc/nri/mc/mnap/about/publications/community_classification.htm

Appendix 4: Maine Links (Continued)

Title	Description	Web Site
Maine Natural Areas Program plant fact sheets	links to information on plants known to be rare in the state	http://www.maine.gov/doc/nrimc/mnap/features/plantlist.htm
FUNDING SOURCES		
Federal Aid for Wildlife Management	Short description of source of funds for wildlife management	http://www.maine.gov/ifw/wildlife/management/federalaid.htm
Maine Landowner Incentive Program	Funds offer a variety of tools to landowners for rare and endangered plants and wildlife habitat conservation, including funds for conservation easements, cooperative management agreements, and habitat management activities.	http://www.maine.gov/doc/nrimc/mnap/lip/index.htm
Maine Outdoor Heritage Fund	Established to fund priority areas identified within the state strategic plan. The sole purpose of the fund is maintaining, improving, and expanding state and local natural resource conservation programs and associated compatible public uses that are identified within the plan.	http://www.maine.gov/ifw/grants/outdoorheritagefund/index.htm
Land for Maine's Future Program	grant and cost-share program for land conservation	http://www.maine.gov/spo/lmf/about.htm
RESTORATION / MANAGEMENT/ BMP		
Wildlife Management in Maine	links to pdf's with information on wildlife management, including wildlife management areas and wildlife management districts	http://www.maine.gov/ifw/wildlife/management/howwemanage.htm

Appendix 4: Maine Links (Continued)

CONSERVATION		
Title	Description	Web Site
Beginning with Habitat home page	a collaborative program of federal, state and local agencies and non-governmental organizations . It is a habitat-based approach to conserving wildlife and plant habitat on a landscape scale	http://www.beginningwithhabitat.org/index.html
Beginning with Habitat Strategies for Conservation	Information on conservation planning, public outreach, land protection measures, regional coordination	http://beginningwithhabitat.org/community/index.html
Maine Department of Conservation; Resource Protection Plans	links to individual plans	http://www.maine.gov/doc/lurc/reference/resourceplans.html
Biodiversity Research Institution	Nonprofit institution, mission to identify threats to biological diversity and providing information to decision makers	http://briloon.org/science-and-conservation/
Maine Land Use Regulation Committee; Maine Wetland Compensation Guidelines	1998 publication defines compensation, types of compensation, and others.	http://www.maine.gov/tools/whatsnew/index.php?topic=lurcfiles&id=2811&v=tplfiles
Forest Society of Maine Projects	Land trust, mission to conserve Maine's forestlands in ecological, economic, cultural, and recreational sustainable manner	http://www.fsmaine.org/projects.htm

Appendix 4: Maine Links (Continued)

PLANNING		
Title	Description	Source / Web Site
Maine Department of Conservation, Land Use Regulation Commission; Maine Comprehensive Land Use Plan	link to entire plan or to individual chapters; chapter 5: natural and cultural resources	http://www.maine.gov/doc/lurc/reference/clup.html
Comprehensive Planning: A Manual for Maine Communities	2005 publication of the Maine State Planning Office; includes chapters on getting organized, public participation, contents of a comprehensive plan, planning elements, habitats and other critical natural resources, and many others	http://www.maine.gov/spo/landuse/docs/compplanning/2005manual_mediumres.pdf
Beginning with Habitat Toolbox	Links to comprehensive planning open space planning, developing a conservation committee, and tools: land use ordinance tools, zoning tools, performance standards, and financing habitat protection	http://beginningwithhabitat.org/toolbox/about_toolbox.html
Maine NEMO (Nonpoint Education for Municipal Officials) home page	educational program for land use decision makers that addresses the relationship between land use and natural resource protection, with a focus on water resources, nonpoint source pollution, and stormwater runoff	http://www.mainenemo.org/about.htm
Maine Resources Guide for Land Use Planning	NEMO (Nonpoint Education for Municipal Officials) publication	http://www.mainenemo.org/publication/mrg.pdf
MAPS AND GIS DATA		
Beginning with Habitat Maps for the State of Maine	Three primary maps: water resources and riparian habitats, high value plant and animal habitats, and undeveloped habitat. Download pdf or request paper copy by mail; also links to how to request GIS data	http://beginningwithhabitat.org/the_maps/index.html

Appendix 4: Maine Links (Concluded)

MAKING THE CASE FOR WILDLIFE CONSERVATION; CASE STUDIES		
Title	Description	Source / Web Site
Why conserve Maine's forestlands?	Brief talking points: recreational, economic, ecological, cultural values	http://www.fsmaine.org/whyconserve.htm
Defenders of Wildlife: Economic benefits of conserving natural lands: Case study, Mount Agamenticus Area, Maine	2008 Defenders of Wildlife publication outlining estimates of economic values of land uses	http://www.defenders.org/resources/publications/programs_and_policy/science_and_economics/conservation_economics/valuation/economic_benefits_provided_by_mt_agamenticus_area_maine.pdf
The Economic Benefits for Conservation	2001 publication of Maine Audubon; provides additional citations for economic value of conservation	http://www.beginningwithhabitat.org/pdf/Economic_Arguments.pdf

Appendix 5: Maryland Links

GENERAL		
Title	Description	Web Site
Wildlife Diversity Program and Natural Heritage Program home page	links to rare, threatened and endangered species, ecological communities, plants, fungi, animals, wildlife diversity program publications	http://www.wvdnr.gov/wildlife/wdpintro.shtm
The Maryland Department of Natural Resources, Wildlife and Heritage Service	Information on wildlife (including game and nongame), plants, natural communities, invasive species, digital data, environmental review, and others can be accessed through this site.	http://dnr.maryland.gov/wildlife/Plants_Wildlife/nhpintro.asp
FUNDING SOURCES		
Department of Natural Resources Grants and Loans Center	links to a number of state and federal funding programs	http://www.dnr.state.md.us/land/grantsandloans/grants.asp
Habitat for Wildlife: Maryland Landowner Incentive Program	Federal competitive grant program that establishes partnerships between federal and state government and private landowners. LIP is a voluntary state program that provides landowners with incentives to help conserve habitat for species-at-risk in the state of Maryland.	http://dnr.maryland.gov/wildlife/Habitat/LIP/index.asp
Habitat for Wildlife: Conservation Reserve Enhancement Program	Pays Landowners Attractive Land Rental Rates to Protect Environmentally Sensitive Areas	http://dnr.maryland.gov/wildlife/Habitat/milo.asp

Appendix 5: Maryland Links (Continued)

Title	Description	Web Site
Open Space Program	funds available to local government to help them buy land and build park facilities that will help meet specific land conservation and recreation goals.	http://www.dnr.state.md.us/land/pos/pos how to apply.asp
Small Creek and Estuaries Water Quality Restoration Cost-Share Program	financial assistance to local governments for voluntary stream and creek restoration projects that provide water quality and habitat benefits	http://www.mde.state.md.us
Maryland's Rural Legacy Program	provides the focus and funding necessary to protect large, contiguous tracts of land rich in natural and cultural resources from sprawl development	http://www.dnr.state.md.us/land/rurallegacy/index.asp
Conservation Property Tax Credit	encourages donation of conservation easements and gives participating landowners a 15-year property tax credit on unimproved land under easement to the Maryland Environmental Trust.	http://www.dnr.state.md.us/metadata/taxbenefits.html
State Income Tax Credit	encourages donation of conservation easements and gives landowners a state income tax credit in return for the donation of easement to the Maryland Environmental Trust or the Agricultural Land Preservation Foundation	http://www.dnr.state.md.us/metadata/sitc.html
Maryland Landowner Incentive Program	a voluntary state program that provides landowners with incentives to help conserve habitat for species-at-risk in the state of Maryland. The goal of the program is to provide cost-share assistance to private landowners to protect, enhance, and restore habitat for rare, threatened, and endangered species.	http://www.dnr.state.md.us/wildlife/Habitat/LIP/index.asp

Appendix 5: Maryland Links (Concluded)

CONSERVATION		
Title	Description	Source / Web Site
Maryland Environmental Trust Directory of Maryland Land Trusts / Land Conservation Organizations	list and contacts for local land trusts	http://dnr.maryland.gov/met/landtrustslists.pdf
PLANNING		
Planning Models and Guidelines	links to numerous pdf's on smart growth	http://planning.maryland.gov/OurProducts/publications.shtml#ModelsGuidelines
The Smart, Green, and Growing Guide	Updated in 2010, this publication provides summaries of recent legislation and planning tools.	http://planning.maryland.gov/PDF/OurProducts/Publications/OtherPublications/SGG_Guide_09_Web.pdf
Maryland Department of Planning	promotes growth that fosters vibrant, livable communities, preserves and protects the environment, and makes efficient use of State resources.	http://planning.maryland.gov/OurWork/mdpoverview.shtml
Maximizing Return on Public Investment in Maryland's Rural Land Preservation Programs	2004 report by the Maryland Department of Planning analyzing the effectiveness of conservation of rural land in the state	http://planning.maryland.gov/pdf/ourwork/rurallegacy/report_nomaps.pdf
State of Maryland; Smart, Green and Growing: Preserving Our Land	links to land conservation programs and planning tools for local governments	http://www.green.maryland.gov/land.html
MAPS AND GIS DATA		
Maryland Wildlife and Heritage Service, Wildlife Management Areas	links to wildlife areas by region, then by individual wildlife areas with pdf maps	http://dnr.maryland.gov/wildlife/Publiclands/wmacentral.asp
Greenprint - Track Land Preservation in Maryland	interactive map that illustrates the ecological importance of every land parcel in the state.	http://www.greenprint.maryland.gov/
Maryland Department of Natural Resources: Geospatial Data	GIS data or maps of buffered locations of rare, threatened and endangered species; also all spatial data available by county or by data layer can be accessed here	http://dnrweb.dnr.state.md.us/gis/data/data.asp

Appendix 6: Massachusetts Links

GENERAL		
Title	Description	Web Site
Massachusetts Aquatic Invasive Species Management Plan	Massachusetts Aquatic Invasive Species Working Group; 2002 publication of the Massachusetts Office of Coastal Zone Management	http://www.mass.gov/czm/invasives/docs/invasive_species_plan.pdf
Department of Fish and Game, Division of Fisheries and Wildlife (MassWildlife)	Wildlife Division home page; wildlife information, including fact sheets, publications, and laws relating to wildlife	http://www.mass.gov/dfwele/dfw/wildlife/wildlife_home.htm
Department of Fish and Game, Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program	natural heritage program home page; responsible for the conservation and protection of hundreds of species that are not hunted, fished, trapped, or commercially harvested in the state; highest priority is protecting the 176 species of animals and 259 species of native plants that are officially listed as Endangered, Threatened or of Special Concern in Massachusetts	http://www.mass.gov/dfwele/dfw/nhesp/nhesp.htm
State Wildlife Conservation Strategy	Can be downloaded in full or in sections	http://www.mass.gov/dfwele/dfw/habitat/cwcs/cwcs_home.htm
Natural Heritage and Endangered Species Program Regulatory review data request	A primary responsibility is the regulatory protection of rare species and their habitats; contact information is provided to submit a data request	http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/reg_review_contacts.htm
Biomap2	innovative collaborative program of Natural Heritage and Endangered Species Program, the Division of Fisheries and Wildlife, and the Massachusetts Chapter of The Nature Conservancy; comprehensive source of wildlife and endangered species information in the state.	http://www.mass.gov/dfwele/dfw/nhesp/land_protection/biomap/biomap2_summary_report.pdf
BioMap 2 hard copy	instructions for ordering publication	http://www.mass.gov/dfwele/dfw/nhesp/publications/nhesp_publications.htm#atlas

Appendix 6: Massachusetts Links (Continued)

FUNDING SOURCES		
Title	Description	Web Site
Conservation Partnership Grant Program	A grant program that provides reimbursements to non-profit organizations of up to 50 percent of the cost of acquiring land or interest in land for conservation or outdoor recreation purposes.	http://www.mass.gov/?pageID=eoeeterminal&L=4&L0=Home&L1=Grants+%26+Technical+Assistance&L2=Grant+%26+Loan+Programs&L3=Division+of+Conservation+Services+(DCS)&sid=Eoeea&b=terminalcontent&f=eea_dcs_dcs_conserv_partner_grant&sid=Eoeea
Agricultural Preservation Restriction Program	APR offers to pay farmers the difference between the "fair market value" and the "agricultural value" of their farmland in exchange for a permanent deed restriction, which precludes any use of the property that will have a negative impact on its agricultural viability.	http://www.mass.gov/agr/landuse/APR/index.htm
Forest Stewardship Planning Grants for Private and Town Forestlands	to encourage landowners to practice long-term guardianship through the development of a management plan for their woodlands. Grants are awarded to landowners and municipalities for the preparation of 10-year Forest Stewardship management plans.	http://www.mass.gov/dcr/stewardship/forestry/service/steward.htm
Urban Forest Planning and Education Grants	The Urban Forestry Program goal is to assist communities and nonprofit groups in building support for long-term protection and management of community trees and forests. The USDA Forest Service provides grant funds that DCR administers	http://www.mass.gov/dcr/stewardship/forestry/urban/urbanGrants.htm

Appendix 6: Massachusetts Links (Continued)

Title	Description	Web Site
MA Local Acquisitions for Natural Diversity (MA LAND) Program	now known as the Massachusetts Local Acquisitions for Natural Diversity Program and was established in 1961 to assist municipal conservation commissions acquiring land for natural resource (wildlife, habitat, trails) and passive outdoor recreation purposes (hiking, fishing, hunting).	http://www.mass.gov/?pageID=eoeeterminal&L=5&L0=Home&L1=Grants+%26+Technical+Assistance&L2=Grant+%26+Loan+Programs&L3=Division+of+Conservation+Services+(DCS)&L4=Grant+Programs+offered+by+Division+of+Conservation+Services&sid=Eoeea&b=terminalcontent&f=eea dcs dcs land program&csid=Eoeea
Drinking Water Source Protection Program (DWSP)	provides grant funding to municipalities and other eligible entities for the purpose of acquiring land to protect current or future public drinking water supplies. DWSP is a reimbursement program. In addition, grant funds cannot exceed 50 percent of the total project cost. Funds are derived from state bond issuances.	http://www.mass.gov/dep/water/dwgrant.htm
Conservation Tax Credits	state income tax credit for landowners who voluntarily donate qualifying conservation land to a municipality, the state or a nonprofit conservation organization.	http://www.mass.gov/legis/laws/seslaw08/sl080509.htm
Buzzards Bay Watershed Municipal Mini-grant Program	Funding to assist eligible Buzzards Bay watershed municipalities to protect open space, rare and endangered species habitat, and freshwater and saltwater wetlands, by restoring tidally restricted salt marshes and other activities	http://www.buzzardsbay.org/funding.htm
Community Preservation Act (CPA)	enables a municipality to impose a voter-approved surcharge of up to 3 percent on a local real property levy. In return, communities receive state matching funds derived from a \$20 surcharge on all real estate transactions.	http://www.communitypreservation.org/index.cfm

Appendix 6: Massachusetts Links (Continued)

Title	Description	Web Site
Parkland Acquisitions and Renovations for Communities (PARC)	established in 1977 to assist cities and towns in acquiring and developing land for park and outdoor recreation purposes. Any town with a population of 35,000 or more year-round residents, or any city regardless of size, that has an authorized park /recreation commission is eligible to participate in the program.	http://www.mass.gov/?pageID=eoeewaterterminal&L=5&L0=Home&L1=Grants+%26+Technical+Assistance&L2=Grant+%26+Loan+Programs&L3=Division+of+Conservation+Services+(DCS)&L4=Grant+Programs+offered+by+Division+of+Conservation+Services&sid=Eoeea&b=terminalcontent&f=eea_dcs_dcs_parc_program&csid=Eoeea
Riverways Program Grants for River Restoration and Revitalization Priority Projects	To restore and protect the health and integrity of the Commonwealth's rivers, wetlands, and watersheds for the benefit of people, fish, and wildlife. Note: funding not currently available	http://www.mass.gov/dfwele/der/index.htm
RESTORATION / MANAGEMENT/ BMP		
Department of Fish and Game Division of Ecological Restoration	coordinates restoration to improve fish and wildlife habitat	http://www.mass.gov/dfwele/der/
Massachusetts Forestry Conservation Management Practices for the Common Loon	pdf download of collaborative publication by several state agencies University of Massachusetts; includes role of forestry in loon protection; loon biology, and management practices	http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/pdf/common_loon_cmp.pdf
Massachusetts Forestry Conservation Management Practices for Rare Species	links to pdf's of conservation management practices for Blanding's turtle, common loon, Eastern box turtle, spotted turtle, wood turtle, four-toed salamander, and mole salamanders	http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/forestry/forestry_cmp.htm
CONSERVATION		
Massachusetts Land Trust Coalition	Voluntary association of land trusts founded to promote effectiveness of land trusts, provide an information exchange; includes links to map and list of state land trusts, protection practices, resource library, professional service providers	http://www.massland.org/

Appendix 6: Massachusetts Links (Continued)

Title	Description	Source / Web Site
Massachusetts Association of Conservation Commissions home page	Offers conferences and workshops, as well as specialized education programs	http://maccweb.org/index.html
LEGISLATION (see also Appendix 4 for comprehensive review of legislation)		
Massachusetts Association of Conservation Commissions: model bylaws for wetlands; links to towns	model non-zoning wetlands bylaw/ordinance is prepared by MACC and updated as needed to reflect changes in wetlands law, science and policy; can also download by municipality	http://maccweb.org/resources/bylaws.html
Mandatory Local Plan Elements Related to Biodiversity	A master plan must include a natural resources element and an open space element. The natural resources element must inventory significant natural resource areas in the municipality and set policies for their protection and management. The open space element must do the same for open space areas in the municipality.	Mass. Gen. Laws Ann., ch. 41, § 81D.
Additional Local Authorities and Responsibilities Related to Planning and Biodiversity	Cities and towns are authorized to create local conservation commissions that may prepare plans for the development of its natural resources and for the protection of its watershed resources. These plans may include “a conservation and passive outdoor recreation plan which shall be, as far as possible, consistent with the town master plan and with any regional plans relating to the area.”	Mass. Gen. Laws Ann., ch. 40, § 8C.
PLANNING		
Natural Heritage Resources for Biodiversity Protection Planning	Includes links to Biomap2 and Priority Habitats and Estimated Habitats	http://www.mass.gov/dfw/ele/dfw/nhosp/land_protection/land_protection_resources.htm
Natural Heritage Planning Contacts	contact information for staff expertise in rare species protection or a town's Open Space Plan	http://www.mass.gov/dfw/ele/dfw/nhosp/land_protection/planning_contacts.htm

Appendix 6: Massachusetts Links (Concluded)

Title	Description	Source / Web Site
Massachusetts Land Trust Coalition	includes links to land use planning resources	http://www.massland.org/?g=category/planning-land-conservation/land-use-planning
Mass Land Trust Coalition Forestry Planning	links to landowner's guide to internet resources, information on the Massachusetts Service Forestry Program (provides technical assistance to landowners), Forest Stewardship Program, and the Forest Legacy Program	http://www.massland.org/?g=category/landowner-information-managing-land-conservation/forestry-planning
MAPS AND GIS DATA		
Priority Habitat Viewer	Information on wildlife for rare wildlife at specific sites; priority habitat polygons are portrayed on MassGIS 2005 color orthophotos. Polygons are identified by priority habitat number, but identification of the habitat details are accessed by sending a data request to the Massachusetts Endangered Species and Natural Heritage Program	http://maps.massgis.state.ma.us/PRI_EST_HAB_TEST/viewer.htm
Natural Heritage and Endangered Species Program Core Habitat Maps and Reports	Maps of sites of sites critical for the long-term survival of the Commonwealth's biodiversity; includes lists of rare species by town	http://www.mass.gov/dfw/e/dfw/nhesp/land_protection/core_habitat_reports.htm
Natural Heritage GIS Resources	links to GIS layers on priority habitats of rare species, estimated habitats of rare wildlife, natural community polygons, certified vernal pools, potential vernal pools, and Biomap2 core habitat and critical habitat landscapes	http://www.mass.gov/dfw/e/dfw/nhesp/gis_resources.htm

Appendix 7: New Hampshire Links

GENERAL		
Title	Description	Web Site
Wildlife Action Plan	State Wildlife Action Plan: chapters and appendices download individually	http://www.wildlife.state.nh.us/Wildlife/wildlife_plan.htm
New Hampshire Fish and Game Department	Nongame and Endangered Wildlife Program has legal jurisdiction over the state's wildlife resources links to many other state resources including wildlife profiles, publications, small grants, as well as link to nongame and endangered wildlife program	http://www.wildnh.com/Wildlife/wildlife.htm
Taking Action for Wildlife	Partnership of New Hampshire Fish and Game and University of New Hampshire Cooperative Extension: provides a wide range of information for communities and individuals to effect conservation; links to information on habitats, wildlife action plan habitats by town, as well as publications and workshops	http://extension.unh.edu/fw/tafw/index.htm
New Hampshire Fish and Game Department	has legal jurisdiction over the state's wildlife resources; links to many other state resources including wildlife profiles, publications, small grants, as well as link to nongame and endangered wildlife program	http://www.wildnh.com/Wildlife/wildlife.htm
New Hampshire Nongame and Endangered Wildlife Program	responsible for the monitoring and stewardship of the state's nongame species; links to information on reptiles and amphibians, mammals, birds, invertebrates, habitats, the state wildlife action plan, workshops and presentations	http://www.wildnh.com/Wildlife/nongame_and_endangered_wildlife.htm
University of New Hampshire Cooperative Extension Forestry and Wildlife Program	Links to information on species, habitats, habitat management, presentations, and Taking Action for Wildlife for communities and landowners	http://extension.unh.edu/Wildlife/Wildlife.htm
Division of Forest and Lands, Natural Heritage Bureau	state natural heritage program; provides information and guidance to New Hampshire landowners and land managers to help them protect the State's natural heritage while meeting their land-use needs	http://www.nhdf.org/about-forests-and-lands/bureaus/natural-heritage-bureau/

Appendix 7: New Hampshire Links (Continued)

FUNDING SOURCES		
Title	Description	Web Site
Financial Assistance for Landowners	University of New Hampshire Cooperative Extension Program with links to the small grants program, federal funding mechanisms, and other	http://extension.unh.edu/Fostry/financial_assistance.htm
Landowner Incentive Program	Federally funded program that provides grants to landowners to conserve and restore habitats on private land. NOTE: As of April 1, 2011, Federal funds are not available for this program	http://www.wildlife.state.nh.us/Wildlife/Landowner_LIP_program.htm
Small Grants Program for Wildlife Habitat Restoration and Enhancement.	Program to help landowners with a minimum of 25 acres restore or enhance habitat for wildlife. Funding of up to \$2,000 per year (no more than \$6,000 over a ten-year period) is available for the creation and/or maintenance of wildlife habitat within the property.	For more information, contact the Wildlife Division at (603) 271-2461, or e-mail wildlife@wildlife.nh.gov
Opportunities to Obtain Financial Assistance for Wildlife Habitat Management Projects (see Managing Grasslands, Shrubland, and Young Forest Habitats for Wildlife, A Guide for the Northeast: Chapter 12)	Review of possible funding sources for management: 2002 Farm Bill, Farm Service Agency Programs, Natural Resources Conservation Service Programs, and many others	http://www.wildlife.state.nh.us/Wildlife/Northeast_Hab_Mgt_Guide.htm
Current Use Assessment	Tax relief for preservation of open space; rate is assessed based on current use of the land. Additional Recreational Discount for landowners to keep their land open to others for six low-impact land uses; skiing, snowshoeing, fishing, hunting hiking and nature observation. In exchange, the current use assessment is reduced by 20%.	http://www.nhspace.org/downloads/2008CUBooklet.pdf

Appendix 7: New Hampshire Links (Continued)

Title	Description	Web Site
Conservation License Plate Grant Program	to support and promote programs and partnerships throughout the state that protect, restore, and enhance the state's valuable natural resources. These grants can be used for physical and tangible environmental projects that foster stewardship and the sustainability of New Hampshire's natural environment.	http://www.nh.gov/scc/grants/index.htm
Water Supply Land Protection Grants (Currently there are no funds available)	To provide grant funds for the acquisition of land or conservation easements to assist in the protection of a community drinking water supply.	http://des.nh.gov/organization/divisions/water/dwgb/dwspp/land_acqui/index.htm
Wildlife Habitat - Small Grants Program	For restoring, sustaining, or enhancing wildlife habitat on privately owned land. Owners of private, municipal, corporate or other non-governmental lands can apply for funds to implement habitat-improving practices.	http://www.wildnh.com/Wildlife/wildlife.htm
Aquatic Resource Mitigation Program (ARM) grants	provides funding through grants for aquatic resource mitigation; requests for proposals announced through the web site	http://des.nh.gov/organization/divisions/water/wetlands/wmp/index.htm
RESTORATION / MANAGEMENT/ BMP		
Habitat Management	Links to management information by habitat, including open habitats, wetlands, and forests	http://extension.unh.edu/Wildlife/WLHabitatMgmt.html
Aquatic Resource Mitigation Program	Many links here. Includes publications, information about regulations, technical assistance, FAQ's, other resources	http://extension.unh.edu/FWT/HabitatMan.htm
Managing Grasslands, Shrublands, and Young Forest Habitats for Wildlife: A Guide for the Northeast	2007 publication by wildlife biologists; sections on managing specific habitats, habitat management tools, and case studies	http://www.wildlife.state.nh.us/Wildlife/create_wildlife_habitat.htm

Appendix 7: New Hampshire Links (Continued)

CONSERVATION		
Title	Description	Web Site
Wildlife Species of Special Concern	list of NH species of greatest conservation need; description of categories and rationale for selection of each species	http://www.wildnh.com/Wildlife/Nongame/Nongame_PDFs/Species_of_special_concern_0309.pdf
The Planning Board in New Hampshire: a Handbook for Local Officials	Recent publication (November 2010) covers wide range of topics for local officials; includes chapters on innovative land use controls and working with the conservation commission	http://www.nh.gov/oep/resource/library/handbooks/documents/pbhandbook.pdf
New Hampshire Estuaries Project Management Plan	2005 update of 2000 plan; includes land use and habitat protection action plans	http://www.prep.unh.edu/resources/pdf/nhepmanagementplan-nhep-05.pdf
Natural Resources Inventories: A Guide for New Hampshire Communities and Conservation Groups	Publication revised in 2001; chapters include getting started, mapping options, what to include in the inventory, and how to apply the inventory. NOTE: 29 MB file	http://extension.unh.edu/resources/files/Resource000215_Rep233.pdf
Addressing Wildlife Habitat and Natural Resource Protection in Land Use Documents: Ideas for New Hampshire Municipalities	2007 publication covering 26 natural resource categories, including wildlife habitat and natural vegetation	http://www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/WAP_map_info/Habitat_audits_for_communities_fall08.pdf

Appendix 7: New Hampshire Links (Continued)

Title	Description	Web Site
University of New Hampshire Cooperative Extension Land and Water Conservation Program	UNH Cooperative Extension helps New Hampshire communities and conservation groups with land and water conservation planning projects. Land & Water Conservation Program staff provide technical assistance, facilitation and guidance to communities interested in conserving their natural resources, prioritizing areas for protection, and working with local landowners to conserve land.	http://extension.unh.edu/CommDev/CCAP.htm
Natural Resources Outreach Coalition (NROC)	provides assistance to the 42 communities making up New Hampshire's coastal watersheds. The coalition includes professionals in natural resources and in planning who work with communities to better understand their resources, how to protect and sustain them, and to use this information for conservation planning	http://extension.unh.edu/CommDev/NROC/CANROC.cfm
PLANNING		
University of New Hampshire Cooperative Extension Forestry and Wildlife Program	assistance for communities interested in wildlife protection; includes landowner visit by foresters, workshops, assistance to communities, and financial assistance for landowners	http://extension.unh.edu/Wildlife/WLHelpYou.html
Resources and Publications (Taking Action for Wildlife)	links to a number of publications on conservation planning, natural resource inventories, land conservation options to protect habitat, and others.	http://extension.unh.edu/fwt/taw/TakingActionforWildlifeResources.htm
Innovative Land Use Planning Techniques: A Handbook for Sustainable Development	New Hampshire Department of Environmental Services handbook on land use controls; can be downloaded in full, as separate chapters, or model ordinance templates in Microsoft Word.	http://des.nh.gov/organization/divisions/water/wmb/repp/innovative_land_use.htm

Appendix 7: New Hampshire Links (Continued)

Title	Description	Source / Web Site
University of New Hampshire Cooperative Extension, community assistance	community assistance in conservation planning	http://extension.unh.edu/ComDev/CCAP.htm#CC_Nri
Taking Action for Wildlife, community tools	links to Planning Your Wildlife Conservation Project; Natural Resources Inventory and Wildlife; and Conservation Planning for Wildlife	www.takingactionforwildlife.org
New Hampshire Office of Energy and Planning Resource Library	NH regional planning associations	http://www.nh.gov/oep/resourceLibrary/regions/RegionalPlanningCommissions.htm
University of New Hampshire Cooperative Extension Land and Water Conservation Program	provides communities assistance in conservation planning, including slide shows on conservation planning, significant wildlife habitats, and natural resource inventories	http://extension.unh.edu/ComDev/CCAP.htm#CC_Nri
Taking Action for Wildlife, conservation planning	includes step-by-step instructions on creating a wildlife conservation plan	http://extension.unh.edu/fwt/tafw/ConservationPlanningforWildlife.htm
New Hampshire Office of Energy and Planning Resource Library	NH regional planning associations	http://www.nh.gov/oep/resourceLibrary/regions/RegionalPlanningCommissions.htm
MAPS AND GIS DATA		
New Hampshire Wildlife Action Plan habitats	Maps (pdf or jpg format) of habitat statewide; individual town maps as well as state map are available for easy use by planners	http://www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/using_maps.htm

Appendix 7: New Hampshire Links (Continued)

Title	Description	Source / Web Site
NHB DataCheck Tool	Interactive map that allows the user to draw a project boundary and locate specific points of activity, and identify the proposed project; the tool reports whether natural heritage elements are likely to be impacted. If elements are present, a further check must be made by the Natural Heritage Program	https://www2.des.state.nh.us/nhb_datacheck/signin.aspx
GRANIT home page	As New Hampshire's Statewide Geographic Information System (GIS) Clearinghouse, NH GRANIT offers an array of geospatial services, including: data development/distribution, spatial analysis, online mapping, image processing, application development, training, cartography, and related technical services.	http://www.granit.unh.edu/
GRANIT Data Mapper	The NH GRANIT Data Mapper is a web-based mapping tool offering New Hampshire's communities, agencies and organizations, and the general public access to a comprehensive collection of geospatial data archived in GRANIT. Our hope is that the data and related tools will be utilized to inform and expand decision-making at the local, regional, and statewide levels. Wildlife Action Plan data is in the wildlife theme.	http://mapper.granit.unh.edu/viewer.jsp

Appendix 7: New Hampshire Links (Concluded)

MAKING THE CASE FOR WILDLIFE CONSERVATION; CASE STUDIES		
Title	Description	Source / Web Site
Public Opinion on Fish and Wildlife Management Issues and the Reputation and Credibility of Fish and Wildlife Agencies in the Northeast	2003 results to public survey on wildlife attitudes conducted by Northeast Conservation Information and Education Association	http://www.responsivemanagement.com/download/reports/NCIEANH.pdf
Community Stories	Links to success stories of towns using conservation planning, natural resource inventories, regulations, land conservation, and managing and restoration of habitat	http://extension.unh.edu/fwt/tafw/CommunitySuccessStories.htm#planning
Does Open Space Pay?	1993-1994 analysis comparing residential, commercial, industrial, and open-space land use categories published by the Natural Resource Network	http://extension.unh.edu/resources/files/Resource000400_Report422.pdf

Appendix 8: New Jersey Links

GENERAL		
Title	Description	Web Site
New Jersey Wildlife Action Plan	Includes 2008 revisions	http://www.state.nj.us/dep/fgw/ensp/waphome.htm
New Jersey Department of Environmental Protection, Division of Fish and Wildlife	responsible for the protection and management of 500 wildlife species across the state. Information on wildlife species and their management, wildlife checklists, publications and other information, as well as the NJ Wildlife Action Plan	http://www.state.nj.us/dep/fgw/wildlife.htm
Endangered and Nongame Species Program	conserves endangered, threatened, and nongame wildlife populations. Major programs include the Landscape Project, Herp Atlas, and the Landowner Incentive Program	http://www.state.nj.us/dep/fgw/ensphome.htm
Office of Natural Lands Management, Division of Parks and Forestry, New Jersey Natural Heritage Program	responsible for conducting inventories of biological diversity, and maintains an extensive database of rare species and natural community information. Rare species and ecological community lists by county, as well more detailed information on individual species, are available on the program web site	http://www.state.nj.us/dep/parksandforests/natural/heritage/index.html
New Jersey Natural Heritage Program data request instructions	Request for information from the database can be made to the program by mail, and can be used to prepare environmental impact assessments, and for planning	http://www.state.nj.us/dep/parksandforests/natural/heritage/index.html#datarequest
FUNDING SOURCES		
Green Acres Program	Through partnerships develop a system of interconnected open spaces, whose protection will preserve and enhance New Jersey's natural environment and its historic, scenic, and recreational resources for public use and enjoyment.	http://nj.gov/dep/greenacres/staff.html

Appendix 8: New Jersey Links (Continued)

Title	Description	Web Site
Blue Acres Program	A program to acquire land in the floodways of the Delaware River, the Passaic River, and the Raritan River, and their respective tributaries, and other areas of New Jersey that are prone to flooding, and to dedicate those lands that are purchased for recreation and conservation purposes.	http://www.nj.gov/dep/greenacres/pdf/blue_acres_app.pdf
Traditional County Easement Purchase	To preserve farmlands in New Jersey.	http://www.nj.gov/agriculture/sadc/farmpreserve/programs/countyeasementpurchases.pdf
County Planning Incentive Grants	To preserve farmlands in New Jersey.	http://www.nj.gov/agriculture/sadc/farmpreserve/programs/countypig.html
Municipal Planning Incentive Grants	To preserve farmlands in New Jersey.	http://www.nj.gov/agriculture/sadc/farmpreserve/programs/municipalpig.html
Eight-Year Preservation Program	To protect and preserve farmlands in New Jersey.	http://www.nj.gov/agriculture/sadc/farmpreserve/programs/eightyearprogram.pdf
The Pinelands Development Credit Program	To redirect growth from the Pinelands	http://www.state.nj.us/dobi/pinelands/pinelandsbank.htm
RESTORATION / MANAGEMENT/ BMP		
New Jersey Forestry and Wetlands Best Management Practices Manual	1995 New Jersey Department of Environmental Protection intended to minimize environmental impacts of forestry operations	http://www.state.nj.us/dep/parkandforests/forest/nj_bmp_manual1995.pdf
New Jersey Department of Environmental Protection manual on stormwater management	revised 2009; includes chapters on bioretention systems, vegetative filters, and more	http://www.state.nj.us/dep/stormwater/bmp_manual2.htm

Appendix 8: New Jersey Links (Continued)

CONSERVATION		
Title	Description	Source / Web Site
Endangered and Nongame Species Program, New Jersey Landscape Project	established to provide long-term protection of imperiled species and habitats in the state. The New Jersey Landscape Project Map Book depicts maps of critical wildlife habitats in the entire state that can be used for the incorporation of wildlife conservation into planning.	http://www.state.nj.us/dep/fgw/ensp/landscape/
New Jersey Landscape Project, how to access data for download	New Jersey Landscape Project provides long-term protection of imperiled species and habitats in the state. The project offers training programs and links to download Landscape Project data.	http://www.state.nj.us/dep/fgw/ensp/landscape/download.htm
New Jersey Pinelands Commission home page	preserves, protects, and enhances the natural and cultural resources of the Pinelands National Reserve; links to land use planning and science programs	http://www.state.nj.us/pinelands/index.shtml
LEGISLATION (see also Appendix C for comprehensive review of legislation)		
New Jersey Department of Environmental Protection Division of Watershed Management	model ordinances for municipalities: riparian zone management, steep slope, stormwater control, septic, fertilizer application	http://www.state.nj.us/dep/watershedmgt/rules.htm
New Jersey Pinelands Commission; model ordinance for cell tower placement	link to model cell tower ordinance in the New Jersey Pinelands.	http://www.state.nj.us/pinelands/landuse/reg/cellular/
PLANNING		
Office of Smart Growth	coordinates planning for environmental protection; planning education programs	http://www.state.nj.us/dca/divisions/osg/
New Jersey Pinelands Commission Land Use and Planning	Regional land-use program that protects natural resources by zoning and planning actions. Links to permanent land protection initiatives, natural resource plans, and others.	http://www.state.nj.us/pinelands/landuse/

Appendix 8: New Jersey Links (Concluded)

MAPS AND GIS DATA		
Title	Description	Web Site
New Jersey Department of Environmental Protection, New Jersey's Landscape Project	Critical areas mapping for land use planning and imperiled species conservation; links to training and information sessions, downloadable GIS data, and the Landscape Project Report	http://www.state.nj.us/dep/fgw/en/sp/landscape/
New Jersey Pinelands Commission Science	links to GIS data for download: Pinelands integrity layers for aquatic, wetland-drainage, ecological integrity; watershed data, and drainage-units; full report available for download: Zampella et al., 2008. An ecological integrity assessment of the New Jersey Pinelands. New Jersey Pinelands Commission, Lisbon, NJ	http://www.state.nj.us/pinelands/science/complete/eia/index.html
New Jersey Pinelands Commission Science, ecological integrity assessment report	full report available for download: Zampella et al., 2008. An Ecological Integrity Assessment of the New Jersey Pinelands. New Jersey Pinelands Commission, Lisbon, NJ	http://nj.gov/pinelands/images/pdf/%20files/EIA_Final_Report.pdf
NJ-Geo Web	NJDEP geology and hydrology environmental mapping tool, updated September 2010. includes tutorials and training	http://www.state.nj.us/dep/gis/geo/websplash.htm
Department of Community Affairs - Smart Growth	Smart Growth site evaluator - interactive map	http://nigin.state.nj.us/OIT_BusinessMap/index.jsp
MAKING THE CASE FOR WILDLIFE CONSERVATION; CASE STUDIES		
Department of Community Affairs	smart growth success stories	http://www.state.nj.us/dca/division/osg/smart/success.html

Appendix 9: New York Links

GENERAL		
Title	Description	Web Site
New York Department of Environmental Conservation: Animals, Plants, Aquatic Life	links to fact sheets, information on endangered species, invasive species	http://www.dec.ny.gov/
The Department of Environmental Conservation, Division of Fish, Wildlife and Marine Resources	comprised of five bureaus: Bureau of Fisheries, Bureau of Marine Resources, Bureau of Habitat, Bureau of Wildlife, and Bureau of Fish and Wildlife Services, as well as an Office of Invasive Species.	http://www.dec.ny.gov/about/634.html
Division of Fish, Wildlife and Marine Resources at a Glance	summary of statutory authority, budget, and organizational structure of the Division	http://www.dec.ny.gov/docs/wildlife_pdf/dfwmr2011.pdf
Division of Fish, Wildlife and Marine Resources	Bureau of Habitat	http://www.dec.ny.gov/about/648.html
Division of Fish, Wildlife and Marine Resources	Bureau of Wildlife	http://www.dec.ny.gov/about/794.html
New York Natural Heritage Program	home page	http://www.dec.ny.gov/animals/29338.html
New York Nature Explorer	Detailed information about species and natural communities	http://www.dec.ny.gov/natureexplorer/app/
Comprehensive Wildlife Conservation Strategy	state wildlife action plan: links to download sections of the plan, including conservation recommendations by watershed; species of greatest conservation need; taxonomic group reports; habitat classifications	http://www.dec.ny.gov/animals/30483.html
NYNHP information request	information on the locations and identities of rare species is provided to requesters at the level of detail necessary to enable fully informed decision-making while protecting the sensitive resource.	http://www.dec.ny.gov/animals/31181.html
Natural Heritage Program Conservation Guide	links to animal, plant and natural community guides	http://acris.nynhp.org/
State Environmental Quality Review (SEQR) Handbook	Detailed description of the the State Environmental Quality Review process	http://www.dec.ny.gov/permits/6188.html

Appendix 9: New York Links (Continued)

FUNDING SOURCES		
Title	Description	Web Site
Parks, Recreation, and Historic Preservation Grants	Environmental Protection Fund: for projects to preserve, rehabilitate or restore lands, waters or structures for use by all segments of the population for park, recreation or conservation purposes	http://www.nysparks.state.ny.us/grants/
Environmental Protection Fund, Acquisitions	for the acquisition of a permanent easement in or fee title to lands, waters or structures for use by all segments of the population for park, recreation, conservation or preservation purposes, including open space, community gardens and properties on the State or National Register or identified in a local heritage area management plan.	http://www.nysparks.state.ny.us/grants/acquisition/default.aspx
Habitat/Access Stamp Funding Program	To provide funding through reimbursement for fish and wildlife habitat management and the improvement and development of public access for hunting, fishing, trapping and other fish and wildlife related recreation and study.	http://www.dec.ny.gov/docs/wildlife_pdf/hsappins.pdf
Hudson River Estuary Grant Program	protects and improves the natural and scenic Hudson River watershed for all its residents. The program was created in 1987 and extends from the Troy dam to upper New York harbor.	http://www.dec.ny.gov/lands/5091.html
Hudson River Valley Greenway Communities Grant Program	To preserve, enhance, and develop the world-renowned scenic, natural, historic, cultural and recreational resources of the Hudson River Valley, that is also consistent with economic development goals and the tradition of municipal home rule.	http://www.hudsongreenway.state.ny.us/GrantFunding/GrantsOverview.aspx

Appendix 9: New York Links (Continued)

CONSERVATION		
Title	Description	Web Site
Creating the Community You Want: Municipal Options for Land Use Control	State publication that summarizes land use tools that municipalities can use to incorporate smart growth, and by extension, protect natural resources.	http://www.dos.state.ny.us/lg/publications/Creating_the_Community_You_Want.pdf
LEGISLATION (see also Appendix 16)		
State Environmental Regulations	links to individual chapter pdf's; includes fish and wildlife, lands and forests, and division of water	http://www.dec.ny.gov/regulations/regulations.html
Guide to the State Environmental Quality Review Act (SEQR)	comprehensive publication with links to pdfs of nine chapters and an introduction	http://www.dec.ny.gov/permits/47636.html
PLANNING		
NY Land Use Tools	2008 publication by the NYS Legislative Commission on Rural Resources; survey of land use planning regulations in municipalities (does not specifically address wildlife protection).	http://www.dos.state.ny.us/LG/publications/Rural_Resource_Survey.pdf
Local Open Space Planning Guide	2004 publication, reprinted in 2007, prepared by the New York State Department of Environmental Conservation and the Department of State in collaboration with the Hudson River Valley Greenway, New York State Department of Agriculture and Markets, and the Office of Parks, Recreation and Historic Preservation. Local open space planning guide, including protection of habitats and biodiversity	http://www.dos.state.ny.us/lg/publications/Local_Open_Space_Planning_Guide.pdf

Appendix 9: New York Links (Concluded)

Title	Description	Source / Web Site
Smart Growth	includes information on grants and financial assistance, success stories, as well as technical assistance.	http://smartgrowthny.org/hPlanning/index.asp?i=pln
Cattaraugus County Economic Development, Planning and Tourism	includes links to planning guidebooks	http://www.co.cattaraugus.ny.us/planning/guide_books.asp
MAPS AND GIS DATA		
Department of Environmental Conservation Environmental Resource Mapper	A map viewer of locations of rare plants, animals, and communities	http://www.dec.ny.gov/imsmaps/ERM/viewer.htm
MAKING THE CASE FOR WILDLIFE CONSERVATION; CASE STUDIES		
New York Land Use Tools: Counties, Cities, Towns, and Villages	2008 survey of land use planning tools in New York State	http://www.dos.state.ny.us/LG/publications/Rural_Resource_Survey.pdf
Economic Benefits of Open Space Protection	2010 publication of the Office of the State Comptroller	http://www.osc.state.ny.us/reports/environmental/openspacepreserv10.pdf

Appendix 10: Pennsylvania Links

GENERAL		
Title	Description	Web Site
Pennsylvania Game Commission (PGC) home page	manages wild birds and mammals	http://www.pgc.state.pa.us/
Pennsylvania Game Commission, wildlife in Pennsylvania	information on habitat management, information for landowners, and further links to birds and bird watching, common mammals, wildlife grants and programs, wildlife reference guides, and wildlife diseases	http://www.portal.state.pa.us/portal/server.pt/community/wildlife/9109
Pennsylvania Game Commission, Threatened and Endangered Species	provides information on individual threatened and endangered animal species in the state	http://www.portal.state.pa.us/portal/server.pt?open=514&objID=621014&mode=2
Pennsylvania Game Commission 2009-2014 Strategic Plan	Game Commission Strategic Plan	http://www.portal.state.pa.us/portal/server.pt/document/737229/2009-2014_strategic_plan_pdf
Pennsylvania Fish and Boat Commission (PFBC) home page	protects, conserves, and enhances the state's aquatic resources	http://www.fish.state.pa.us/
Pennsylvania Fish and Boat Commission, amphibians and reptiles	individual links to information for a number of amphibian and reptile species	http://fishandboat.com/amp_rep.htm
Pennsylvania Fish and Boat Commission, aquatic invasive species	provides list of invasive species, including those banned in the state, with links to more information through USGS	http://fishandboat.com/ais.htm
Pennsylvania Fish and Boat Commission, species of special concern	links to information on endangered and threatened species, aquatic invasive species, and the Pennsylvania Natural Heritage Program	http://fishandboat.com/nongame_concern.htm
Pennsylvania Fish and Boat Commission, Wildlife Action Plan	Can be downloaded in sections or in full	http://www.fish.state.pa.us/promo/grants/swg/00swg.htm

Appendix 10: Pennsylvania Links (Continued)

Title	Description	Web Site
Pennsylvania Natural Heritage Program home page	manages information on species of Special Concern. PNHP is a partnership between The Department of Conservation and Natural Resources, the Western Pennsylvania Conservancy, the Pennsylvania Game Commission, and the Pennsylvania Fish and Boat	http://www.naturalheritage.state.pa.us/
Pennsylvania Natural Heritage Program, Pennsylvania Natural Diversity Inventory	access to Pennsylvania Natural Diversity Inventory database for environmental review; user must create an account and agree to terms of use	http://www.gis.dcnr.state.pa.us/hgis-er/default.aspx
FUNDING SOURCES		
Department of Environmental Protection Loan Programs	links to grants and loans for addressing environmental issues	http://www.ahs2.dep.state.pa.us/GrantsCenter/GrantAndLoanPrograms.asp
Wild Resource Conservation Program	for projects intended to protect and conserve biological diversity	http://www.dcnr.state.pa.us/wrcp/2010grants/index.aspx
Landowner Incentive Program	assist states by providing grants to establish or supplement programs that protect and restore wildlife habitats on private lands	http://fishandboat.com/promo/grants/lip/00lip.htm
Fish and Boat Commission Grants	links to grants that provide funding in support of fishing, boating and aquatic resource conservation	http://www.fish.state.pa.us/grants.htm
Conservation Tools.Org	includes links to funding sources, land use ordinances, many other resources	http://conservationtools.org/tools/general/all?sort=topic
Community Conservation Partnerships Program (C2P2)	C2P2 grants are awarded to municipalities and authorized nonprofit organizations for recreation, park and conservation projects. These include the rehabilitation and new development of parks and recreation facilities; acquisition of land for active or passive park and conservation purposes; and planning for greenway and open space	https://www.grants.dcnr.state.pa.us/LearnMore.aspx?GrantProgramId=18

Appendix 10: Pennsylvania Links (Continued)

Title	Description	Web Site
Wild Resource Conservation Grants	To maintain, manage, enhance and restore Pennsylvania's native wild flora and non-game fauna and their habitats	http://www.dcnr.state.pa.us/wrcp/2010grants/index.aspx
Growing Greener Watershed Grants	to address nonpoint sources of pollution such as abandoned mine drainage, urban and agricultural runoff, atmospheric deposition, on-lot sewage systems, earthmoving, stream hydromodification and timber harvesting through restoration of watersheds and streams, reclaim mined lands, and remediation	http://www.depweb.state.pa.us/portal/server.pt/community/growing_greener/13958/watershed_grants/588895
Farmland Preservation Program	slow the loss of prime farmland to non-agricultural uses. The program enables state, county and local governments to purchase conservation easements, or development rights from owners of quality farmland	http://www.agriculture.state.pa.us/portal/server.pt/gateway/PTARGS_0_2_24476_10297_0_43/http://10.41.0.36/AgWebsite/ProgramDetail.aspx?name=Easement-Purchase-&navid=12&parentnavid=0&palid=11&
RESTORATION / MANAGEMENT/ BMP		
Conservation Tools.Org Invasive Species Management Programs	invasive species management programs and links to other resources; help minimize the impact of invasive species on natural lands and encourage the health of native plants and wildlife	http://conservationtools.org/tools/general/show/31
CONSERVATION		
The Western Pennsylvania Conservancy Protecting Land	links to information on Forest Legacy Program, Landowner Options, Conservation Agreements	http://www.waterlandlife.org/96/protecting-land

Appendix 10: Pennsylvania Links (Continued)

Title	Description	Web Site
Conservation Tools.Org	provides a number of resources that connect conservation and planning, such as links to technical guidance and resources, tools, library, experts and events; basics of conservation including land trust standards and practices, model easements and other documents, and stories by landowners, and of people preserving special places in their communities. There are links to finding a conservation area within the state by county, as well as organizations in other states	http://conservationtools.org/organizations
Pennsylvania Land Trust Association Conservation Tools.Org	Many links to model land use ordinances	http://conservationtools.org/tools/general/all?sort=topic
Pennsylvania Department of Conservation and Natural Resources, Creating Sustainable Lands	links to conferences, publications, green grants program, case studies, and other resources	http://www.dcnr.state.pa.us/conservation/science/sustainablelands/index.htm
LEGISLATION (see also Appendix 16)		
Pennsylvania Land Trust Association Conservation Tools.Org	Many links to land use ordinances	http://conservationtools.org/tools/general/all?sort=topic

Appendix 10: Pennsylvania Links (Concluded)

PLANNING		
Title	Description	Web Site
Pennsylvania Department of Conservation and Natural Resources, Creating Sustainable Lands	links to conferences, publications, green grants program, case studies, and other resources	http://www.dcnr.state.pa.us/conservation/science/sustainablelands/index.htm
Conservation Tools.Org	matching conservation with planning tools; 46 topics including Land Use Ordinances & Development Standards > Protecting Specific Resources; Financing Conservation, Landowner Incentives, Education & Outreach, Resource Inventory & Prioritization	http://conservationtools.org/
Pennsylvania Land Trust Association	helps land trusts and other conservation practitioners improve their effectiveness, builds public understanding, and advocates for better governmental policy	http://conserveland.org/
MAPS AND GIS DATA		
Pennsylvania Natural Heritage Program, online mapper	interactive statewide county natural heritage inventory map	http://www.naturalheritage.state.pa.us/cnhi/cnhi.htm

Appendix 11: Rhode Island Links

GENERAL		
Title	Description	Web Site
Department of Environmental Management Division of Fish and Wildlife	Home page with links to marine fisheries, freshwater fisheries, and wildlife management	http://www.dem.ri.gov/programs/bnatres/fishwild/
Rhode Island Natural Heritage Program	links to rare animal and plant lists, natural community classification	http://www.dem.ri.gov/programs/bpoladm/plandev/heritage/index.htm
Rhode Island Natural History Survey	Houses natural heritage program data in Biota of Rhode Island Information System	http://www.rinhs.org/
Rhode Island Natural History Survey, data requests	instructions for submitting data request for more detailed information identified on the Environmental Resource Map	http://www.rinhs.org/what-we-do/data/data-services/data-requests/
FUNDING SOURCES		
Department of Environmental Management, Planning and Development, Grants	Links to grants for open space, park restoration, greenways land acquisition	http://www.dem.ri.gov/programs/bpoladm/plandev/grants.htm
Biodiversity Center, Rhode Island Natural History Survey, Grants and Research	John Wald Science Grant: small grant program for addressing Rhode Island Natural History Survey and The Nature Conservancy priorities	http://www.rinhs.org/category/grants/
Open Space and Recreational Development – Land Acquisition	For preservation of open space that possesses natural, ecological, agricultural or scenic values, by purchase of fee title or, development rights, or conservation easements.	http://www.dem.ri.gov/programs/bpoladm/plandev/grants.htm
Rhode Island State Coastal and Estuarine Habitat Restoration Program and Trust Fund	To restore ecological function to a coastal area that has been degraded by human impacts.	http://www.crmc.ri.gov/habitatrestoration/HabRestStrategy.pdf
Narragansett Bay and Watershed Restoration Bond Fund	Provides matching grants to restore and protect water quality and environmental sustainability of Narragansett Bay and the State’s watersheds.	www.dem.ri.gov/pubs/regs/regs/water/nbwsrbf2.pdf

Appendix 11: Rhode Island Links (Concluded)

Title	Description	Web Site
Public Drinking Water Protection or or “Penny per Hundred Program” (Funding currently not available)	To protect the quality of the public drinking water supply through land acquisition	http://www.wrb.state.ri.us/program_pdwp.htm
CONSERVATION		
RI chapter of Nonpoint Education for Municipal Officials (NEMO)	provide decision makers with the skills and resources that they need to identify local water quality problems and to adopt effective pollution controls.	http://www.uri.edu/ce/wg/NEMO/index.htm
PLANNING		
Rhode Island Department of Environmental Management, Division of Planning and Development	Links to land acquisition and real estate program, local grants programs, recreational trails program, and GIS	http://www.dem.ri.gov/programs/bpoladm/plan_dev/index.htm
Rhode Island Statewide Planning Program; Greenways Plan	publication can be downloaded in sections; includes descriptions of program initiatives (regulatory vigilance, corridor planning, acquisition, and other information	http://www.planning.state.ri.us/greenways/title.htm
Local Zoning Ordinances and Land Use Regulations		http://www.planning.state.ri.us/landuse/pdf/final%20148.pdf
MAPS AND GIS DATA		
Department of Environmental Management map viewer	interactive map of environmental resources (land use and land cover, surface water features, elevation, image layers, water quality and more)	http://204.139.0.188/website/maps/viewer.htm
Maps	full list of GIS and mapping information, including access to paper maps	http://www.dem.ri.gov/maps/index.htm#GR
Topos and Aerial Photos	Interactive map of topographic maps and aerial photos	http://204.139.0.188/website/topos/viewer.htm
RI NEMO Program Site Assessment Mapping	Technical assistance, workshops and online resources are available for planners, including use of GIS for site assessment	http://www.uri.edu/ce/wg/NEMO/Tools/siteassessment.htm#GIS
Rhode Island Greenway Council: Rhode Island Greenways Map	pdf map of parks, management areas, natural areas, and other features	http://www.planning.state.ri.us/greenways/greencouncil/rigwm2026.pdf

Appendix 12: Vermont Links

GENERAL		
Title	Description	Web Site
Vermont Fish and Wildlife Department, Natural Heritage Information Project	links to regulatory review, wildlife species fact sheets, species lists, recovery plans, and publications	http://www.vtfishandwildlife.com/wildlife_nongame.cfm
Vermont Fish and Wildlife Department regulatory review page	provides information on individual occurrences of plants, animals, and natural communities	http://www.vtfishandwildlife.com/nnhp_Regulationreview.cfm
Vermont's Wildlife Action Plan	Links to download the full document, or individual chapters	http://www.vtfishandwildlife.com/swg_cwcs_report.cfm
FUNDING SOURCES		
Conservation of Land or Historic Resources of Statewide Significance	To fund conservation projects of statewide significance as determined by Vermont Housing and Conservation Board using input from the Natural Heritage Program, Department of Forests, Parks and Recreation, the Division for Historic Preservation and others.	http://www.vhcb.org/naturalareaspolicy.html
Vermont Landowner Assistance Program	Vermont Housing and Conservation Board's conservation program helps maintain that relationship by conserving many of the state's most important lands and providing state residents access to those resources both now and in the future.	http://www.vtfishandwildlife.com/lip_intro.cfm
Vermont Department of Housing and Community Affairs Grant Programs	links to community planning grants and small grants to train volunteer Boards	http://www.dhca.state.vt.us/Admin/Grants.htm#Planning
Wildlife Habitat Incentive Program	Provides technical and financial assistance to landowners for enhancing wildlife habitat	http://www.vtfishandwildlife.com/WHIP_main.cfm

Appendix 12: Vermont Links (continued)

Title	Description	Web Site
Municipal Planning Grant (This grant is not scheduled for funding in 2011)	Promotes community planning, revitalization and development activities that maintain Vermont's land use goal of compact settlements separated by rural lands.	http://www.dhca.state.vt.us/Planning/GMS/OnlineApplication2010.htm
Landowner Incentive Program	Provides funding to protect and restore habitat on private lands	http://www.vtfishandwildlife.com/lip_intro.cfm
Vermont Watershed Grant Program	To support watershed education and recreation efforts and projects that protect, restore, or enhance Vermont's watershed resources.	http://www.vtwaterquality.org/lakes/htm/lp_watershedgrants.htm
Use Value Appraisal	By achieving a greater equity in property taxes on undeveloped land, the program has kept agricultural and forest land in active production.	http://www.vtfpr.org/resource/for_forres_useapp.cfm
Water Source Protection Loan Program	To protect public water sources in Vermont through purchasing of land or establishing conservation easements.	http://www.anr.state.vt.us/DEC/watersup/swapp.htm
RESTORATION / MANAGEMENT/ BMP		
Managing Grasslands, Shrublands and Young Forests For Wildlife	Department of Fish and Wildlife publication; Link to pdf's of 12 chapters and appendices	http://www.vtfishandwildlife.com/BOOKS.CFM?libbase =Managing_Grasslands_Shrublands_and_Young_Forests_for_Wildlife
Aquatic Habitat Conservation	Department of Fish and Wildlife description of aquatic habitat conservation	http://www.vtfishandwildlife.com/fisheries_habitat.cfm
CONSERVATION		
VT Fish and Wildlife Department (VFWD), Conservation Assistance Project	Community Wildlife Program, provides technical assistance in conservation of wildlife to municipalities and planners	http://www.vtfishandwildlife.com/Conservation_Assistance.cfm

Appendix 12: Vermont Links (continued)

Title	Description	Source / Web Site
Conserving Vermont's Natural Heritage: A Guide to Community-Based Planning for the Conservation of Vermont's Fish, Wildlife and Biological Diversity	2004 guide to community-based conservation, produced by the Vermont Fish and Wildlife Department and the Agency of Natural Resources	http://www.vtfishandwildlife.com/library.cfm?libbase =Reports and Documents/Conserving Vermonts Natural Heritage
Vermont Fish and Wildlife Department, Community Wildlife Program	helps regional and municipal planning commissions and non-governmental to protect wildlife habitat and significant natural communities; provides the most up-to-date information on conservation science, as well as help in implementation of conservation projects.	http://www.vtfishandwildlife.com/cwp_home.cfm
LEGISLATION (see also Appendix 17 for more detail)		
Vermont Department of Housing and Community Affairs, Planning Statutes and Regulations	links to municipal regional planning and development, and other statutes	http://www.dhca.state.vt.us/Admin/Statutes.htm
Natural Resources Board Land Use Panel	Act 250 (Environment Review) quasi-judicial process for reviewing and managing the environmental, social and fiscal consequences of major subdivisions and developments in Vermont.	http://www.nrb.state.vt.us/lup/index.htm
Vermont Fish and Wildlife, Zoning and Subdivision Bylaws	Zoning bylaws to protect natural resources in the state	http://www.vtfishandwildlife.com/cwp_zoning.cfm#Zoning Bylaws
PLANNING		
Department of Fish and Wildlife Conservation Tools	techniques that individuals and communities can use to implement conservation strategies	http://www.vtfishandwildlife.com/cwp_tools.cfm

Appendix 12: Vermont Links (continued)

Title	Description	Source / Web Site
Community Wildlife Program	provides technical assistance and resources for lay planners in the state	http://www.vtfishandwildlife.com/wp_home.cfm
Vermont Planning for Conservation	Fish and Wildlife Department overview of program, link to planning process	http://www.vtfishandwildlife.com/wp_planning.cfm
MAPS AND GIS DATA		
Vermont Center for Geographic Information	nongovernmental organization that provides storage, and provision of free GIS data, as well as training, and interactive map applications; links to a wealth of resources	http://www.vcgi.org/
the Agency of Natural Resources Environmental Interest Locator	interactive map viewer has numerous data layers in addition to rare plants, wildlife, and natural community locations	http://maps.vermont.gov/imf/imf.jsp?site=ANR_NATRESViewer

Appendix 13: Virginia Links

GENERAL		
Title	Description	Web Site
Virginia Division of Game and Inland Fisheries home page	provides information on wildlife species and habitat, the State Wildlife Action Plan, list of threatened, endangered, and special concern wildlife species, and full list of the states fauna, as well as links to the Virginia Fish and Wildlife Information Service, mapping and GIS	http://www.dgif.virginia.gov/wildlife/
Virginia Division of Game and Inland Fisheries, Habitat for Wildlife	encourages corporate landowners, private landowners, schools and homeowners to improve habitat in their community that will benefit Virginia's songbirds, mammals, amphibians and other wildlife; provides many links for improving habitat, including instructions for ordering Habitat for Home DVD	http://www.dgif.virginia.gov/habitat/
Virginia Division of Conservation and Recreation home page	mission is to conserve biodiversity through inventory, information management, and stewardship	http://www.dcr.virginia.gov/natural_heritage/index.shtml
Natural Heritage Program fact sheets and brochures	Species and natural community fact sheets	http://www.dcr.virginia.gov/natural_heritage/factsheets.shtml
Natural Heritage Information Services	Rare species lists, and links to publicly available data, data available by subscription, and environmental review services	http://www.dcr.virginia.gov/natural_heritage/infoservices.shtml#lists
FUNDING SOURCES		
Virginia Division of Game and Inland Fisheries; Landowner Incentive Program	federal grant program funded by US Fish and Wildlife Service and administered by VDGIIF	http://www.dgif.virginia.gov/habitat/lip/
Virginia Land Conservation Fund (VLCF)	provides state funding used to conserve certain categories of special land including open spaces and parks, natural areas, historic areas, and farmland and forest preservation	www.dcr.virginia.gov/virginia_land_conservation_foundation/index.shtml

Appendix 12: Virginia Links (Continued)

Water Quality Improvement Fund (WQIF)	provides water quality improvement grants to local governments, soil and water conservation districts and individuals for point and nonpoint source pollution prevention, reduction and control programs	www.dcr.virginia.gov/soil_and_water/wqia.shtml
Virginia Open-Space Lands Preservation Trust Fund (PTF)	provides monetary assistance to landowners related to the costs associated with the conveyance of an open-space or conservation easement	http://www.virginiaoutdoorfoundation.org/VOF_land_ptf.php
Land Preservation Tax Credit	protects the state's unique natural and historical resources by rewarding and assisting habitat stewardship by private landowners; allows an income tax credit for 40 percent of the value of donated land or conservation easements	http://www.dcr.virginia.gov/land_conservation/lpc.shtml
Department of Conservation and Recreation, Land Conservation: Tax advantages, other incentives related to land conservation	links to information on tax benefits of conservation easements, charitable donations, and more	http://www.dcr.virginia.gov/land_conservation/tools03.shtml
RESTORATION / MANAGEMENT/ BMP		
Virginia Department of Game and Inland Fisheries, Habitat for Wildlife	Detailed information on wildlife habitat for landowners, schools and businesses	http://www.dgif.virginia.gov/habitat/
Species Specific Habitat Management	Rural landowners receive on site habitat technical assistance to improve land management practices for a wide variety of upland wildlife species. Technical assistance includes recommendations for wildlife plantings and maintenance of existing habitats. Landowners will receive a written habitat management plan to follow	http://www.dgif.virginia.gov/habitat/landowners/#habitat-management

Appendix 12: Virginia Links (Concluded)

CONSERVATION		
Title	Description	Web Site
Virginia Department of Conservation and Recreation, Natural Heritage, Local Liaison Program	assists local conservation partners in fully utilizing natural heritage resource information as well as the consultative services we provide to ensure protection of natural heritage resources.	http://www.dcr.virginia.gov/natural_heritage/localityliaison.shtml
Conservation Land Needs Assessment	flexible tool allowing for prioritizing of conservation priorities among a set of stakeholders; the Virginia Division of Conservation and Recreation have begun to use this tool to prioritize land conservation in the Chesapeake Bay area	http://www.dcr.virginia.gov/natural_heritage/vclna.shtml
PLANNING		
Virginia Chapter of the American Planning Association home page	offers professional development for planners, promotes planning	http://apavirginia.org/aboutus/
Managing Growth and Development in Virginia: A Review of the Tools Available to Localities	2010 publication by the Virginia Chapter of the American Planning Association, pdf	http://apavirginia.org/documents/legislation/APA%20Virginia%20Growth%20Tools_2010%20Edition.pdf
MAPS AND GIS DATA		
Priority Conservation Areas; GIS Map Gallery	lands and surface waters identified as important for conservation of Virginia's wildlife, plants, and natural communities. The identified lands/waters can be used to prioritize areas for preservation, protection or specific management action	http://www.dgif.virginia.gov/gis/MOM.asp
Virginia Fish and Wildlife Service	interactive map that enables the user to search by species or by geographic location. A geographic search provides a report of wildlife species occurring within a selected radius; links to detailed information about the species are also available from within the report.	http://vafwis.org/fwis/?Menu=Home.Visitor+Options
Virginia Department of Game and Inland Fisheries Map Gallery	numerous links to map data	http://www.dgif.virginia.gov/gis/MOM-archive.asp

Appendix 14: West Virginia Links

GENERAL		
Title	Description	Web Site
Wildlife Diversity Program and Natural Heritage Program home page	links to rare, threatened and endangered species, ecological communities, plants, fungi, animals, wildlife diversity program publications	http://www.wvdnr.gov/wildlife/wdpintro.shtm
Natural Heritage Program data requests	provides data for a variety of users who submit a data request. Non-profit groups and cooperators may receive data free of charge	http://www.wvdnr.gov/Wildlife/Data.shtm
It's About Habitat: West Virginia Wildlife Conservation Action Plan	state wildlife action plan	http://www.wvdnr.gov/Wildlife/PDFFiles/wwwcap.pdf
FUNDING SOURCES		
Cooperative and Research Grants	provides funding for projects that benefit the state's non-game wildlife, botanical resources or fungi	http://www.wvdnr.gov/Wildlife/ResCoopGrant.shtm
Natural Resources Conservation Service Wildlife Habitat Incentive Program	voluntary program for people who want to develop and improve wildlife habitat primarily on private land. Through WHIP, NRCS provides both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat.	http://www.wv.nrcs.usda.gov/programs/fb_08_FY_2010_Programs/whip_10/whip10.html
Natural Resources Conservation Service, Environmental Quality Incentive Programs (Federal)	voluntary program that provides financial and technical assistance to agricultural producers through contracts up to a maximum term of ten years in length; provides financial assistance to plan and implement conservation practices that address natural resource concerns and for opportunities to improve soil, water, plant, animal, air and related resources on agricultural land and non-industrial private forestland	http://www.nrcs.usda.gov/programs/eqip/

Appendix 13: West Virginia Links (Concluded)

Title	Description	Web Site
Resource Conservation and Development Program	to accelerate the conservation, development and utilization of natural resources, improve the general level of economic activity, and to enhance the environment and standard of living in designated RC&D areas.	http://www.wv.nrcs.usda.gov/programs/rc&d/rc&d.html
West Virginia Division of Forestry Forest Legacy Program (Federal program)	conserve environmentally important forest areas threatened by conversion to non-forest uses; The mechanism of conservation is the purchase in fee of a conservation easement in the Forest Legacy Areas from willing sellers at fair market price as established by a standardized appraisal.	http://www.wvforestry.com/forest_legacy_program.cfm?menucall=flp
West Virginia Agricultural Land Protection Authority	to preserve farmland in the state of West Virginia	http://www.wvfarmlandprotection.org/stateAuthority.cfm
CONSERVATION		
Natural Resources Conservation Service Conservation Technical Assistance	provides technical assistance in conservation	http://www.wv.nrcs.usda.gov/programs/fb_08_FY_2011_Programs/cta_11/cta.html
West Virginia's Land Trusts and Environmental Organizations	links and contact information for 13 land trusts or conservation organizations in the state	http://www.mtnhome4u.com/LandTrusts.html
West Virginia Planning Association home page	Membership is open to professional planners employed in planning or a related field, lay planners who serve on planning commissions or boards of zoning appeals, student members who are enrolled in a course of study in planning or a related field, and citizens interested in planning for their communities.	http://www.wvplanning.com/index.php
West Virginia Planning Association	Model planning commission by-laws	http://www.wvplanning.com/modelplanningbylaws.pdf

Provided by Virginia Department of Conservation and Recreation – Division of Natural Heritage

Summary (full report appended)

Effective conservation depends on making strategic decisions that secure the best of our resources with the least amount of money. Planners must be able to prioritize among conservation opportunities. In Virginia, many such conservation priorities have been independently developed using disparate methods. Development of a single approach was clearly needed to facilitate the decision-making process. To address this, two state agencies (Division of Game and Inland Fisheries – DGIF), Department of Conservation and Recreation – Department of Natural Heritage (DCR-DNH) and the Virginia Commonwealth University Center for Environmental Studies (VCU-CES) partnered to develop a single, collaborative approach to prioritizing conservation areas in the coastal zone of Virginia.

The project to identify Priority Conservation Areas (PCA) had four specific goals:

1. Cooperatively identify and prioritize conservation areas, specifically for use by regional and local planners for green infrastructure initiatives;
2. Assess priority conservation areas for vulnerability to development, highlighting areas most at risk;
3. Collaborate with an individual county to explore implementation of data and tools at the local scale; and
4. Conduct a workshop to transfer information to all Planning District Commissions (PDCs) (a.k.a. regional planning organizations) in the Virginia Coastal Zone

Priority Conservation Areas contain features of importance, such as high-biodiversity areas, rare species habitat and/or communities, as well as a buffer to insure their continued health and existence. Conservation targets developed by each collaborator individually were pooled in the PCA project, and priorities identified using a more regional approach.

Division of Conservation and Recreation-Department of Natural Heritage Component

Virginia DCR-DNH takes a two-pronged approach to conservation pursued by most state natural heritage programs. A coarser scale targets relatively large areas such as large blocks of intact habitat, or significant community types. The finer scale targets individual species, usually those that are rare, threatened, or endangered, and high quality examples of vegetation communities.

The Virginia Conservation Lands Need Assessment (VaNLA) is a GIS-based landscape (coarse scale) tool that identifies, prioritizes and links natural habitats in Virginia. VaNLA uses satellite imagery to identify unfragmented areas of natural habitat greater than 100 acres, (Ecological Cores) and patches smaller than 100 acres (habitat fragments). Ecological cores were evaluated and ranked against criteria that included core size, core isolation, occurrence of rare species or communities within the core, variety and abundance of wetlands, and the predicted presence

of habitat for Species of Greatest Conservation Need. The ranked cores were grouped into larger blocks, called Natural Landscape Blocks, then natural corridors between the highest quality cores were then identified using Least-cost Path Analysis (LPA). LPA is an algorithm that identifies the least “expensive” distance between blocks by evaluating multiple criteria: urban areas, slope, and riparian and interior forests, as well as non-physical features such as legal protection status of lands and intended conservation management of lands. The most highly-ranked cores, corridors linking them, and all corridors of any rank intersecting these lands became one set of conservation targets for the Priority Conservation Areas project.

Natural Heritage Conservation Sites, or areas known to harbor known occurrences of rare species or high quality vegetation communities (i.e. Element Occurrences), provided the second set of conservation targets that DCR-DNH contributed to the Priority Conservation Areas project.

Division of Game and Inland Fisheries Component

Virginia DGIF maintains the State Wildlife Action Plan, which includes a prioritized list of Species of Greatest Conservation Need. The DGIF and partners also maintain other spatial datasets of important wildlife resources, including anadromous fish use streams, colonial waterbirds breeding areas, and Audubon important bird areas. To consolidate a practical spatial dataset for identifying SGCN and other wildlife resource conservation opportunities, DGIF set out to create a new GIS dataset, called the Priority Wildlife Diversity Conservation Areas (PWDCA). Four main data sets were compiled and mapped: high priority species habitats (from Tiered list of Species of Greatest Conservation Need), large blocks of contiguous habitat (DCR-DNH Cores), buffered wetlands, and riparian corridors (derived by DGIF using National Wetlands Inventory data and National Hydrography data). Other data sets included the Anadromous Fish Use Waters, Colonial Waterbird Database, and Audubon Important Bird Areas (IBA). The compiled data set was then reviewed and sites ranked by DGIF scientists before inclusion in the PCA.

Virginia Commonwealth University – Center for Environmental Studies Component

VCU-CES developed the Aquatic Resource Integrity Layer, a “Blue Infrastructure” component of the Priority Conservation Areas, which characterizes stream health in the Virginia coastal zone. Drawn from VCU’s Interactive Stream Assessment Resource (INSTAR) database, the stream reach assessment evaluates the ecological health of stream reaches. Stream health ratings are based on a Modified Index of Biotic Integrity (mIBI), which scores the ecological integrity of specific stream reaches based on the community composition of native and non-native, as well as disturbance-tolerant and intolerant species. These stream reaches entered the PCA with their associated mIBI scores. Watersheds were also assessed based on the mIBI scores of streams therein. Watersheds were then ranked using a more qualitative ranking of watershed health (6th Order HUC) and integrated into the PCA.

Component Integration

The datasets from DGIF, DCR-DNH and VCU-CES were converted to a common geographic scale and combined into a single GIS layer to create the PCA. The final dataset was prioritized using a maximum value operation in ArcGRID that allows all data to be filtered to capture the highest value for each cell. This operation allowed areas considered high priority by all three partners,

to be considered of equal highest priority, avoiding “double-counting” that would occur in an additive output. Each partner’s input to the PCA was also retained and can be viewed individually.

Vulnerability Assessment

In order to predict the degree to which certain areas of Virginia are under the greatest threat from new development, DCR-DNH developed a vulnerability model built from the methodology from the Chesapeake Bay Program’s Resource Lands Assessment (RLA) (<http://www.chesapeakebay.net/rla.htm>). This method integrates predicted growth in urban, suburban, and rural areas by first identifying and eliminating lands unsuitable for development such as steep slopes, wetlands, and others. Next, census data were overlain on a road density grid and a statistical function was developed to identify current hot spots. Travel distance calculations were then conducted using highway infrastructure data and threat of development was symbolized based on travel distance from hotspots. This allowed a prediction of where future growth would happen based on existing population and recent development patterns. These data were then integrated with the Priority Conservation Areas (PCA) data set to identify what natural lands are under the most immediate threat from spreading development. Each polygon in the PCA database was then prioritized using a numerical scale.

Application:

In order to assess the effectiveness of the PCA at the local level, a pilot project partnership was established with Northampton County, the most southern county on the Delmarva Peninsula. VCU-CES evaluated current and proposed zoning code impacts on PCAs in Northampton County using Community Viz, an ESRI ArcGIS extension developed by Placeways, LLC. Community Viz is commonly used by planners as a visualization and planning GIS tool, and Virginia Coastal Zone planners were interested in gaining experience with this software. A design model was created to calculate the impacts of each zoning type on the PCA, taking dynamic attributes, indicators and land use into account, producing a ‘working’ layer for exploring scenarios of change. In addition, zoning types were weighted to determine whether or not the zoning type was compatible with the PCA.

A workshop was held in August 2009 at which the results and methods were presented to planners from other towns in the Coastal Zone. Feedback from the workshop indicated that all but one participant planned to use the PCA, half of whom planned to use the datasets and/or the PCA with Community Viz software. Workshop participants appreciated the scale and comprehensive detail of the data, how easy the data were to use and understand, and the fact that the PCA output did not conflict spatially with many existing priorities assessments. Participants also identified areas for improvement, including refinement of the vulnerability model to extend development predictions beyond 10 years, and to integrate the most recent parcel data. Some participants also requested that local comprehensive plans be added to PCA.

Next Steps

A revision to the PCA is currently underway. This revision will include nine additional GIS layers that focus on priority estuarine features identified by the Virginia Institute of Marine Science

(VIMS) in their Coastal Resources Assessment. These additional layers include Shellfish Suitability, Reef Restoration Sites, Oyster Reefs, Artificial Fishing Reefs, Oyster Seed Areas, Aquaculture sites, Turtle Nests, Submerged Aquatic Vegetation areas, and Areas regulated for fisheries management.

VIMS, VCU-CES, DGIF and DCR-DNH will collaborate on this revision, as well as a follow-up outreach effort. This effort will consist of 8 months of intensive communication and training targeting local planners, Boards of Supervisors and other pertinent local partners on how the PCA can be used in their work. The revised PCA will also be analyzed alongside DNH's Conservation Lands Database and updated land use data to develop a Coastal and Estuarine Land Conservation Program (CELCP) map for prioritizing opportunities for land acquisition.

Virginia Case Study: FULL REPORT

Introduction

Effective green infrastructure planning is based on two fundamental guiding ideas. First, most land conservation happens locally. Secondly, some land and resources contribute more to biodiversity than others (DGIF 2009). With land prices rising and local conservation budgets shrinking, conserving land has come to depend on making strategic decisions that seek to secure the best of our resources with the least amount of money. An effective methodology for categorizing the most valuable natural resources in need of conservation can greatly aid local efforts. Developing effective methodologies into an easy to use tool allows local planners to prioritize opportunities.

A wide variety of these tools already exist in Virginia. Virginia Commonwealth University's Center for Environmental Studies (VCU-CES) has developed a method for measuring aquatic resource integrity based on biological sampling. The Virginia Department of Game and Inland Fisheries (DGIF) has developed the Virginia Wildlife Action Plan which uses mapped tiered species habitats to identify conservation opportunities. The Virginia Department of Conservation and Recreation's Division of Natural Heritage (DCR-DNH) has created the Virginia Conservation Lands Need Assessment (VCLNA) which spatially identifies priority conservation targets with its Ecological Model, also known as the Virginia Natural Landscape Assessment (VaNLA), to map high-priority conservation needs. The multitude of available methods and disparate tools for identifying priority lands means that conservation planners have to fully examine all of them in order to make the most informed choices.

Since examining conservation priorities within many different resources can become time consuming and thus costly, DGIF, DCR-DNH and VCU-CES partnered together to create a single, collaborative approach to prioritizing conservation areas in the coastal zone of Virginia. The project to identify Priority Conservation Areas (PCA) had four specific goals (DGIF 2009).

1. Cooperatively identify and prioritize conservation areas, specifically for use by regional and local planners for green infrastructure initiatives;
2. Assess priority conservation areas for vulnerability to development, highlighting areas most at risk;
3. Collaborate with an individual county to explore implementation of data and tools at the local scale; and

4. Conduct a workshop to transfer information to all Planning District Commissions (PDCs) (a.k.a. regional planning organizations) in the Virginia Coastal Zone

The PCA project team used these four goals to back their vision to cooperatively map and identify priority conservation areas, and to begin to implement the PCA as a planning tool, locally.

Priority Conservation Area Input Components:

PCAs contain features of importance, such as high-biodiversity areas, rare species habitat and/or communities, as well as a buffer to insure their continued health and existence. These areas may require certain management to maintain and possibly restore their biological integrity. Each partner involved in the PCA project had its own methodology for identifying conservation targets. Generally speaking, each PCA partner's targets, while developed from unique methods, were combined in the PCA project.

Department of Conservation and Recreation's Division of Natural Heritage (DCR-DNH) Component

DCR-DNH uses a fine and coarse filter approach to determining the conservation targets that provide their component of PCAs. In brief, a coarse filter looks to preserve larger areas of importance such as large blocks of intact habitat, and/or significant community types, and thus, variety of plant and animal species therein. A fine filter approach seeks to preserve specific species, usually rare, threatened or endangered species, via protection of the known locations of specific habitats they depend upon. DCR-DNH has two different methods for measuring their coarse and fine filters.

Coarse Filter

DCR-DNH uses the Virginia Conservation Lands Need Assessment (VaNLA) as its coarsest filter. The VaNLA is a Geographic Information System (GIS)-based, landscape scale tool that identifies, prioritizes and links natural habitats in Virginia. It was funded by a NOAA Grant for the Virginia Coastal Zone Management Program. VaNLA uses satellite imagery to identify unfragmented areas of natural habitat, called "Ecological Cores". These cores have at least 100 acres of interior conditions (Bulluck et al. 2007) and consist of habitat ranging from upland forest and wetlands to beaches, and marshes. Cores are bounded by anthropogenic lands such as roads, power and gas right of ways and railroads. The VaNLA also includes sub-100-acre areas of intact habitat, called "habitat fragments". Cores not only provide habitat for myriad species in Virginia, but they also provide ecosystem functions that translate to ecosystem services such as maintenance of water and air quality, flood control via wetlands, and carbon sequestration in forests and grasslands. All VaNLA cores receive an ecological integrity rank from C1 (outstanding) to C5 (general) based on a variety of factors including the core size, core isolation, occurrence of rare species or communities within the core, variety and abundance of wetlands, and the predicted presence of habitat for Tier I and II species of greatest conservation need.

Ranked cores are grouped into larger blocks that are slightly fragmented and include habitat fragments as buffers. These are called Natural Landscape Blocks (see Figure 1). Corridors are the most suitable, intact connectors of natural cover that link Natural Landscape Blocks together. These linkages allow for the movement of populations and transfer of genetic

material (i.e. via seeds, pollen and/or animals) between Natural Landscape Blocks. Corridors were identified between the best quality cores (C1 and C2 value) beginning with a least-cost-path (LCP) analysis.

LCP helped to determine the best “path” to link cores by finding the most suitable habitat features along the least expensive (to travel) distance between them. Determining the best corridors took into account landscape features such as proximity to urban areas, slope, and riparian and interior forests, as well as other non-physical features such as legal protection status of lands and intended conservation management of lands. After the locations of corridors were established, the corridors were widened where they intersected lower ranked cores (C3, C4 and C5 cores), interior forests, and wetlands. These intersected areas became nodes. Nodes act as “stepping stones” for populations to move among Natural Landscape Blocks over time. The final result is a statewide network that consists of lands with high ecological values which could be used to strategically target on-the-ground conservation efforts.

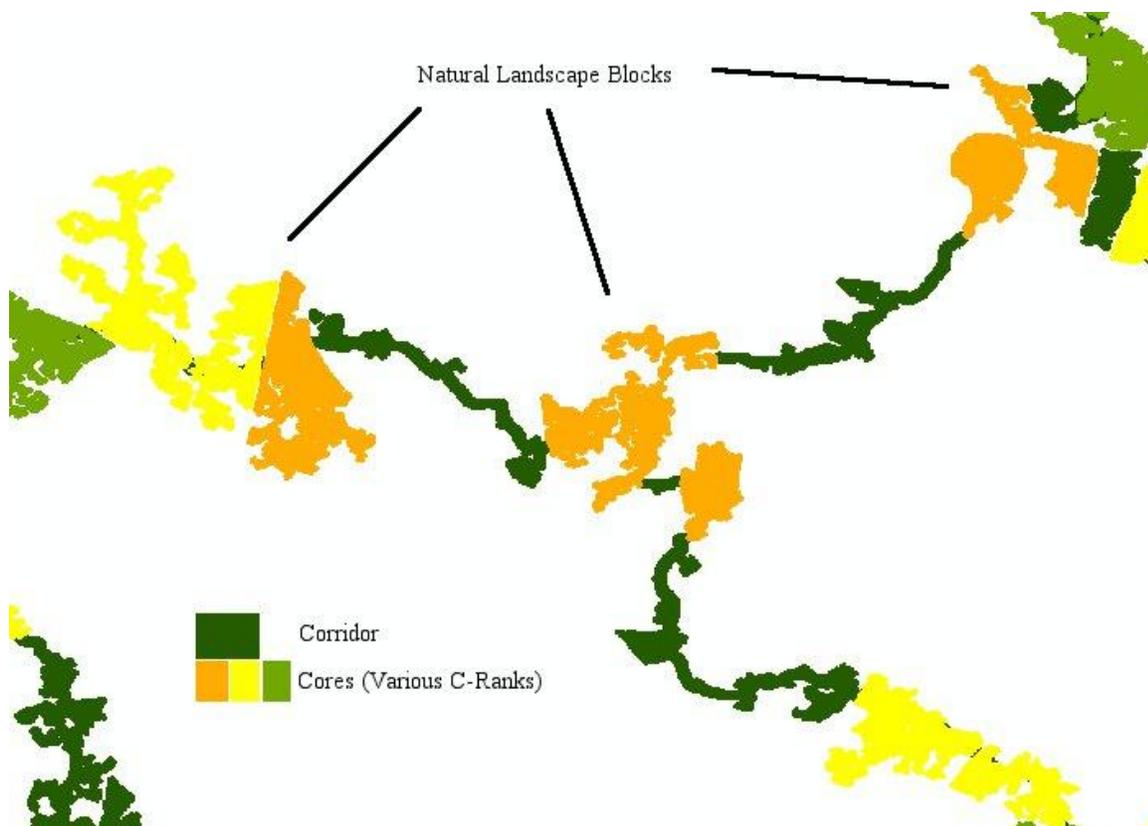


Figure 1: Example of Natural Landscape Blocks, Cores and Corridors

A subset of data from the VaNLA provided the DCR-DNH coarse filter input for the PCA project. This subset of VaNLA lands is referred to as the Virginia Natural Land Network (NLN). While the NLN covers the state, only the Coastal Zone portion was used for the PCA. The NLN consists of all C1- and C2- ranked cores, all landscape corridors providing linkages between these cores, and all cores of C3, C4 and C5 rank that intersect those landscape corridors. The VaNLA ecological integrity ranks (i.e. C1-Outstanding through C5-General) were transposed for the PCA, so that all final PCA input layers were consistently ranked from 1 (lowest) to 5

(highest) for incorporation into the PCA project. Lands included in interconnecting corridors that did not intersect any ecological cores were assigned a rank of 1 (lowest) in the PCA.

Fine filter

In addition to this coarse filter, DCR-DNH also contributed a fine filter component to the PCA, based on the DCR-DNH Conservation Sites GIS layer. The official DCR-DNH definition of a conservation site is:

“A conservation site is a planning boundary delineating the Virginia Natural Heritage Program's best determination of the land and water area occupied by one or more natural heritage resources (exemplary natural communities and rare species) and necessary to maintain ecological processes that will facilitate their long-term survival. The size and dimensions of a conservation site are based on the habitat requirements of the natural heritage resources present and the physical features of the surrounding landscape. Features taken into consideration include hydrology, slope, aspect, vegetation structure, current land uses, and potential threats from invasive species. Conservation sites do not necessarily preclude human activities but a site's viability may be greatly influenced by human activities. Conservation sites may require ecological management, such as invasive species control or water management, in order to maintain or enhance their viability. Each conservation site is given a biodiversity significance ranking based on rarity, quality, and number of natural heritage resources it contains.” (Wilson and Tuberville, 2003; definition revised May, 2010)

Conservation sites are invaluable spatial data for concentrating efforts on certain species *and* their known habitat. Conservation sites are built around Element Occurrences (EO), defined as “An element occurrence is an area of land or water in which a species or natural community is currently, or was once, present.” (Wilson and Tuberville, 2003). Element Occurrences can be aquatic or terrestrial plants, animals or vegetation communities. The overall quality of these elements receives a rank based on factors such as population quality and size, habitat condition, long term viability, and defensibility from anthropogenic disturbance (Wilson and Tuberville, 2003). Element Occurrences (see Figure 2) are geographically delineated and then appropriate surrounding habitat, as described above, becomes a Conservation Site (see Figure 3). The specific location of a Natural Heritage element, the EO, can be considered the basis of DCR-DNH's fine filter conservation tool, Conservation Sites.

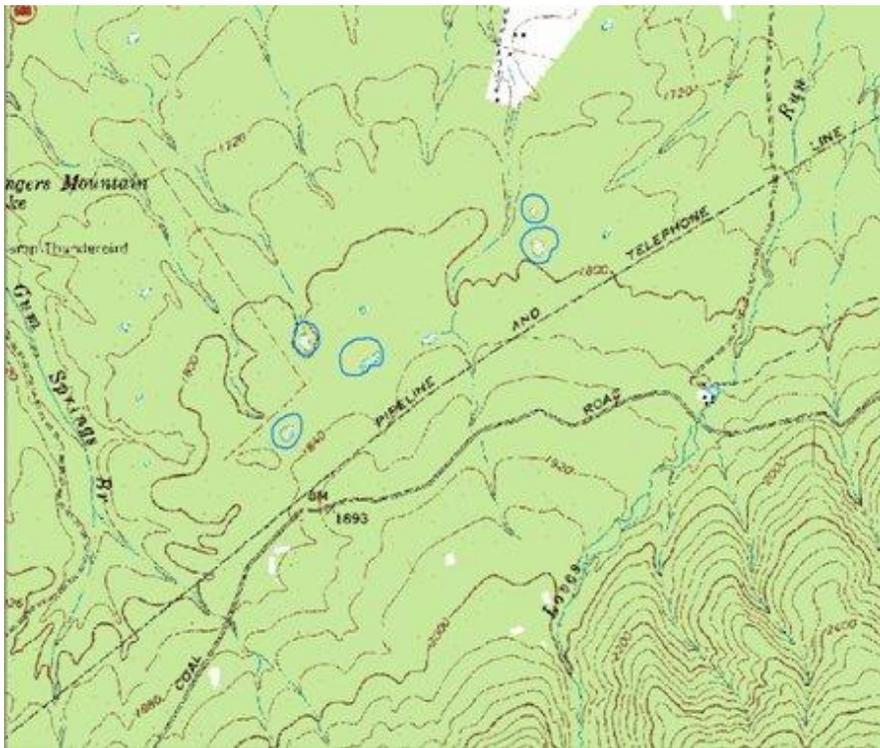


Figure 2: A Mapped Group of DCR-DNH Element Occurrences

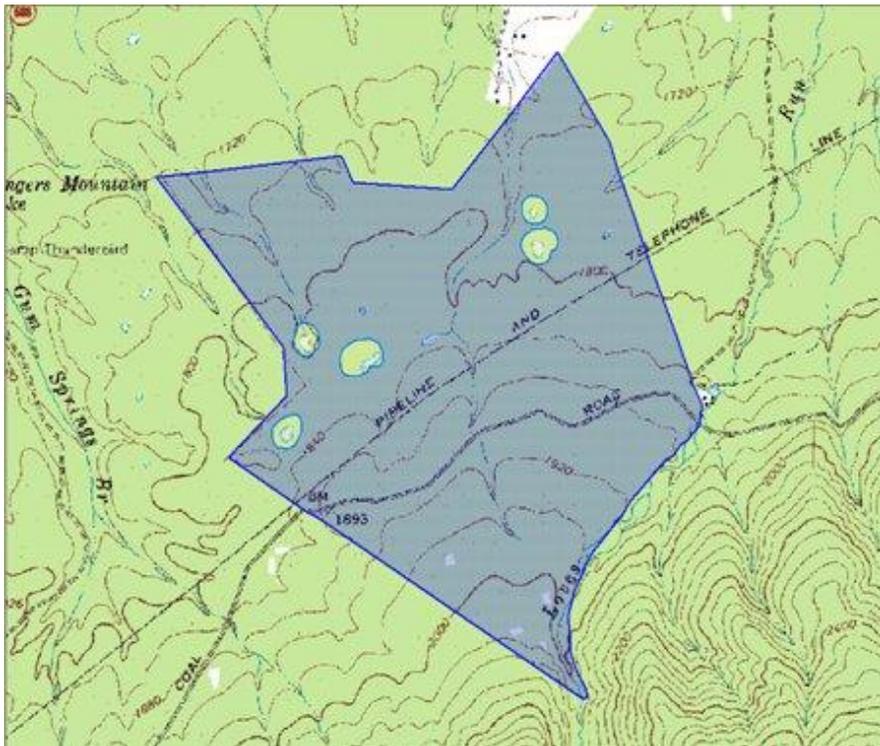


Figure 3: A DCR-DNH Conservation Site Built Around Element Occurrences

DGIF Component

The Virginia State Wildlife Action Plan (SWAP) is a ten year strategic plan for conserving wildlife in Virginia. The plan is part of a national effort which is funded by the U.S. Fish and

Wildlife Service. One of the goals of the SWAP is to help promote local conservation. By integrating SWAP data into the PCA tool, that goal can more readily be reached.

As part of the SWAP, DGIF maintains data on species of greatest conservation need. These are divided into four Tiers based on conservation need (See Table 1). Tier I species are in critical need of conservation while Tier IV only display moderate conservation need. DGIF has mapped potential and confirmed habitats of wildlife species in Tiers I and II and for all species of concern, both on the Federal and State level, which are in Tiers III and IV. The majority of species in Tiers III and IV have not yet been mapped (See Figure 4).

Table 1: DGIF Number of Species per Tier and of State and Federal Concern

	Tier I	Tier II	Tier III	Tier IV	Federal Species of Concern	State Species of Concern
Number of Species	93	251	185	396	330	61

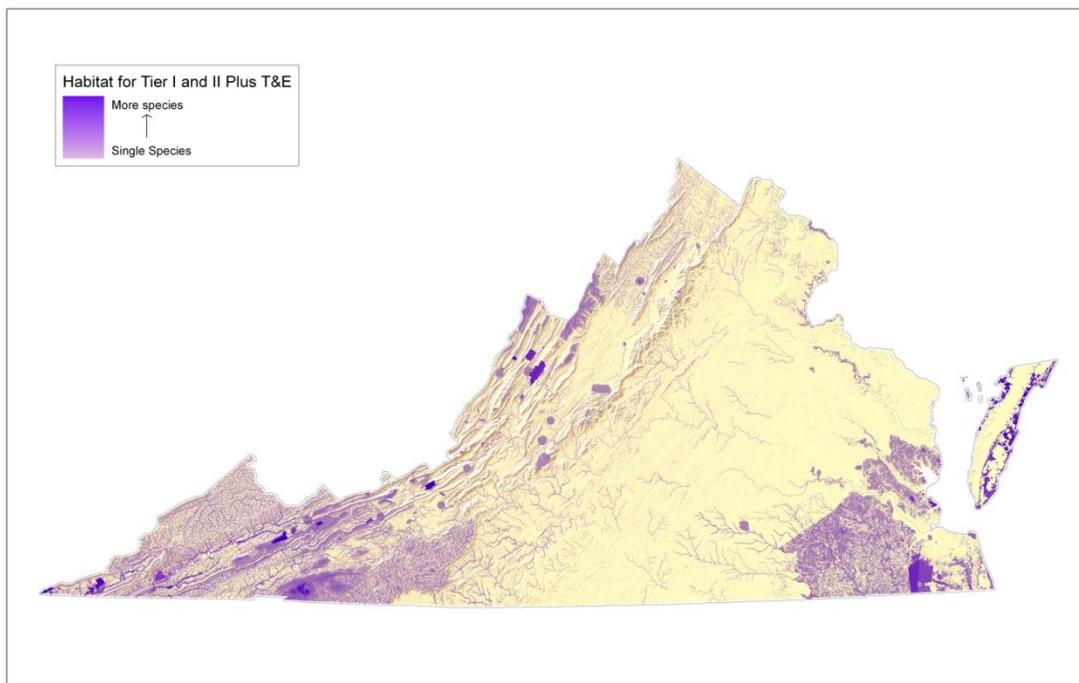


Figure 4: Composite map of potential or confirmed habitat of all DGIF SWAP Tier I and Tier II species, as well as all State and/or Federally listed threatened or endangered species.

DGIF and partners, also maintain other spatial datasets of important wildlife resources, including anadromous fish use, colonial waterbirds, and important bird areas. To establish a practical spatial dataset for identifying SGCN and other wildlife resource conservation opportunities, DGIF set out to create a new GIS dataset, called the Priority Wildlife Diversity Conservation Areas (PWDCA).

The PWDCA sought to map four distinct conservation actions. The first action was to “acquire or protect needed habitats”. DGIF had accomplished this with the Tiered Habitat data

for the SWAP. Another mappable action was to protect large blocks of contiguous habitat. DCR-DNH's VaNLA Cores fulfilled this requirement. The third mappable action was to create buffers, forested or upland, around wetland areas. DGIF used the U.S. Fish and Wildlife Service's National Wetlands Inventory data to identify wetlands in Virginia and then buffered these features with GIS software. Finally, DGIF wanted to map riparian areas by establish buffers and then protecting those buffers. DGIF used stream data from the National Hydrography Dataset from the U.S. Geological Survey and buffered with GIS. The PWDCa also used other data to protect other wildlife resources. These datasets included:

- Anadromous Fish Use Waters - shows migration, spawning and nursery areas for anadromous fish.
- Colonial Waterbird Database - contains colony nesting locations for waterbirds in Virginia.
- Audubon Important Bird Areas (IBA) - maintained by the Audubon Society and delineates important bird habitat.

The finalized data were sent to thirteen DGIF Wildlife Diversity biologists to review. The biologists prioritized features within the datasets and recommended buffer distances and priorities for planning and conservation purposes. Unique areas were also highlighted. The results of the reviews were averaged (See Tables 2 and 3), although scientists with specific expertise were given more weight in their specialty, and DGIF compiled a list of appropriate conservation priority, buffer size and buffer priority depending upon what tier a species occupies in the Tiered Species Habitat dataset and whether or not the species is confirmed or suspected. The sites were then ranked using a Standard Deviations method in ArcGIS. After the ranks were applied and DGIF biologists had reviewed the data, the PWDCa was complete.

Table 2: DGIF Aquatic Tiered Habitat

Aquatic Tiered Habitat ¹			
Confirmed DGIF	Tier I spp reach	Priority	10
		Buffer	300
		Buffer priority	10
	Tier II spp reach	Priority	9
		Buffer	300
		Buffer priority	9
	Tier III spp reach	Priority	7
		Buffer	300
		Buffer priority	7
	Tier IV spp reach	Priority	5
		Buffer	300
		Buffer priority	5
Potential DGIF	Tier I spp reach	Priority	7
		Buffer	150
		Buffer priority	7
	Tier II spp reach	Priority	6
		Buffer	150
		Buffer priority	6
	Tier III spp reach	Priority	4
		Buffer	150
		Buffer priority	4
	Tier IV spp reach	Priority	3
		Buffer	150
		Buffer priority	3

Table 3: DGIF Terrestrial Tiered Habitat

Terrestrial Tiered Habitat¹				
Confirmed DGIF (includes data from DCR-NH)	Tier I spp location	Priority ²	10	
		Buffer	200	
		Buffer priority	10	
	Tier II spp location	Priority ²	9	
		Buffer	200	
		Buffer priority	9	
	Tier III spp location	Priority ²	7	
		Buffer	200	
		Buffer priority	7	
	Tier IV spp location	Priority ²	5	
		Buffer	200	
		Buffer priority	5	
Potential DGIF	Tier I spp habitat	Priority	8	
		Buffer	100	
		Buffer priority	8	
	Tier II spp habitat	Priority	6	
		Buffer	100	
		Buffer priority	6	
	Tier III spp habitat	Priority	4	
		Buffer	100	
		Buffer priority	4	
	Tier IV spp habitat	Priority	3	
		Buffer	100	
		Buffer priority	3	
Audubon Society	Important Bird Areas	Priority ³	10, 5	
		Buffer Distance	0	
		Buffer Priority	0	
CWB DGIF, W&M's Cent for Cons. Biology	Colonial Waterbirds	Priority	8	
		Buffer Distance	300	
		Buffer Priority	8	
VaNLA Cores DCR-NH	Large	Priority	5	
	Medium	Priority	4	
	Small	Priority	4	
	Fragments	Priority	3	
Wetlands National Wetlands Inventory	Wooded	Priority	8	
		Buffer Distance	200	
		Buffer Priority	6	
	Non-wooded	Priority	5	
		Buffer Distance	150	
Buffer Priority		4		
Anadromous Fish Us Areas DGIF	Confirmed	Priority	4	
		Buffer	100	
		Buffer priority	4	
	Potential	Priority	2	
		Buffer	100	
Buffer priority		2		
Streams 1:100,000 NHD	Riparian Buffers	Priority	3	
		Buffer	100	
		Buffer priority	3	
Unique Terrestrial Areas ⁴		Priority	0.5, 1	
Unique Aquatic Areas ⁵		Priority	1	

¹Tier III and IV data is only included for Threatened and Endangered Species

²Birds were assigned priority of 1.

³Upper Blue Ridge IBA was assigned priority of 5, all others were 10.

⁴Maple Flat, Cat Ponds, Grafton Ponds, Breaks Interstate Park, Lower Bernard Island, Halfmoon Island, Webb Island, Parker Island, Scarborough Island, Finney's, Watts Island, Tangier Island, Goose Island, Chump Island, Great Fox Island South and Northeast Naval Annex were assigned a value of 1. An area on the Lower Peninsula with Canebrake habitat was assigned 0.5.

⁵Indian Creek, Paddy Run, Johns Creek/Mill Creek, Craig Creek, and Nottoway River

VCU-CES Component

The final component of the PCA project came from Virginia Commonwealth University's Center for Environmental Studies. VCU-CES developed the Aquatic Resource Integrity Layer, a "Blue Infrastructure" component of the PCA, which characterizes stream health in the Virginia coastal zone. This component combines both local scale assessment and a watershed approach to assessing stream health. The layer is based on data from VCU's Interactive Stream Assessment Resource (INSTAR) database.

The stream reach assessment evaluates the ecological health of stream reaches. Within each geo-referenced stream reach (100-200 meters stream length sampled, depending on stream width), fishes, macroinvertebrates, and stream habitat data are collected. Macroinvertebrates are collected using modified [EPA Rapid Bioassessment Protocols \(RBP III\)](#); major stream habitat types are sampled separately and invertebrate collections are returned to VCU for identification to the lowest practical taxon and enumeration. Data are compiled into databases and application macros calculate over 50 separate ecological metrics, including those typically generated for Index of Biotic Integrity (IBI) and Rapid Bioassessment Protocol (RBP) assessments. INSTAR evaluates the ecological health of stream reaches based on percent comparability of empirical data to the appropriate (e.g., basin, stream order) reference model and scores the stream (called the Virtual Stream Assessment). The score is then placed in one of four categories: Exceptional, Healthy, Restoration Potential, and Compromised.

Watershed assessments include a broader range of validated *qualitative* (e.g., species lists) biotic data from various sources, including state and federal agencies. These data are used to generate watershed health using six metrics or variables for the Commonwealth's 1275 6th-order watersheds. The modified IBI (mIBI) values are calculated using six different factors, each of which receives a score of 1 to 5. The variables measured are:

1. Native Species Richness – or the total number of indigenous species.
2. Number of rare, threatened or endangered species. This includes data from DGIF and DCR to determine species status.
3. Number of non-indigenous species.
4. Number of significant species. This includes both ecologically and/or economically important species.
5. Number of tolerant species. These are species that are tolerant to pollution, sedimentation, and/or habitat alteration.
6. Number of intolerant species. These are sensitive species that cannot tolerate degraded stream habitat.

The metric scores are added up to make a possible total score of 6-30. Watersheds with a score above sixteen are associated with generally high watershed integrity. Watershed health is calculated and placed in four categories: Exceptional, Healthy, Restoration Potential, and Compromised.

The Aquatic Resource Integrity Layer component of the PCA was created by merging the stream reach assessment layer with the watershed assessment layer, Virginia coastal zone-wide. A Mosaic operation was used where the stream reach assessment values were merged on top of the watershed values ensuring the stream health scores superseded watershed health scores. The end result is a raster hydrology layer that has watershed health and stream health scores combined.

Component Integration

The datasets from DGIF, DCR-DNH and VCU-CES (see Table 4) were combined into a single GIS layer to create the PCA.

Table 4: PCA Partners and Data Components Contributed

Partner	Components
VCU – CES	Aquatic Resource Integrity Layer
DGIF	Priority Wildlife Diversity Conservation Areas
DCR – DNH	Virginia Natural Landscape Assessment Cores
	Conservation Sites
	Vulnerability Model

This GIS-based integration required that all input layers have equal resolution. Since the PWDCAs were at 1:100,000 scale, and the DCR-DNH and VCU-CES datasets were at 1: 30,000 scale, all layers were converted to 1:100,000 for the final PCA layer. Once in this common map scale, and within a common ranking classification (i.e. 1 being lowest and 5 being highest ranking), the final dataset was prioritized using a maximum value operation in ArcGRID (See Figure 4). This operation allows all data to be filtered to capture the highest value for each cell. Thus, the greatest value of every grid cell, across all three final input datasets, serves as the final prioritization score for that cell in the final PCA map.

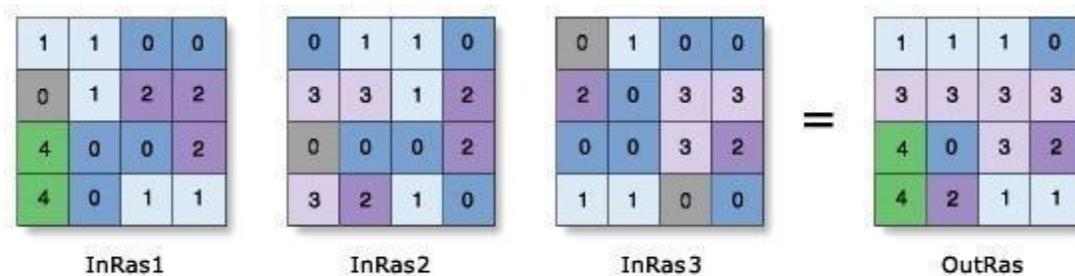


Figure 4: Example of maximum value operation using ArcGRID (ESRI). Data values in all corresponding grid cells, in all input rasters, are compared via map algebra, such that the highest value for each cell is maintained in the final Output Raster. In the PCA, some grid cells in each input layer contained “no data” (in grey above). “No data” values in input rasters were assigned zero values in the maximum value operation to assure that a numeric value appeared in all relevant cells in the final PCA map layer. In other words, the only areas in the final PCA map with “No Data” displaying, are those cells for which there were truly no data in any input datasets.

This max value operation allowed areas considered high priority by all three partners, to be considered of equal highest priority, avoiding “double-counting” that would occur in an additive output. For example, the habitat cores identified and ranked in the VaNLA were used in the PCA by both DCR-DNH (i.e. as the coarse filter component), and by DGIF (i.e. as a Terrestrial Tiered Habitat dataset in the PWDCA). Likewise, the fine filter DNH component, the Conservation Sites, was also captured in DGIF’s ranking of Terrestrial Tiered Habitats. Furthermore, locations of rare, threatened and endangered aquatic species, overlapping in DCR-DNH and DGIF datasets, also help constitute the Aquatic Resource Integrity Layer.

All project partners elected to maintain input datasets with their inherent spatial overlap (redundancy), and unique ranks for two main reasons. First, the use of the maximum value operation in ArcGIS assured that the highest rank calculated for a given PCA by any partner carries through to the final priority map. Thus, a lower rank assigned an area by a partner would not decrease the priority of that area in the overall map. This approach recognizes the expertise of all partners, and assures that all high priorities among partners are maintained in the final PCA map. If end users of the PCA are interested in a specific partner’s conservation ranking of a place, then that partner’s input to the PCA can be viewed individually. Secondly, this project did not seek the alteration of existing conservation planning tools and datasets, but their synopsis in order to achieve a comprehensive prioritization of potential conservation areas. Such alteration of existing datasets and tools would create additional versions of these tools in Virginia, at risk of potentially complicating their messages, and diminishing the likelihood that local planners and conservation practitioners would use these tools. Rather than change the outputs of existing tools, the PCA sought to bring these components together, to tell one comprehensive story and allow prioritization that takes multiple natural resource interests into account (Figure 5).

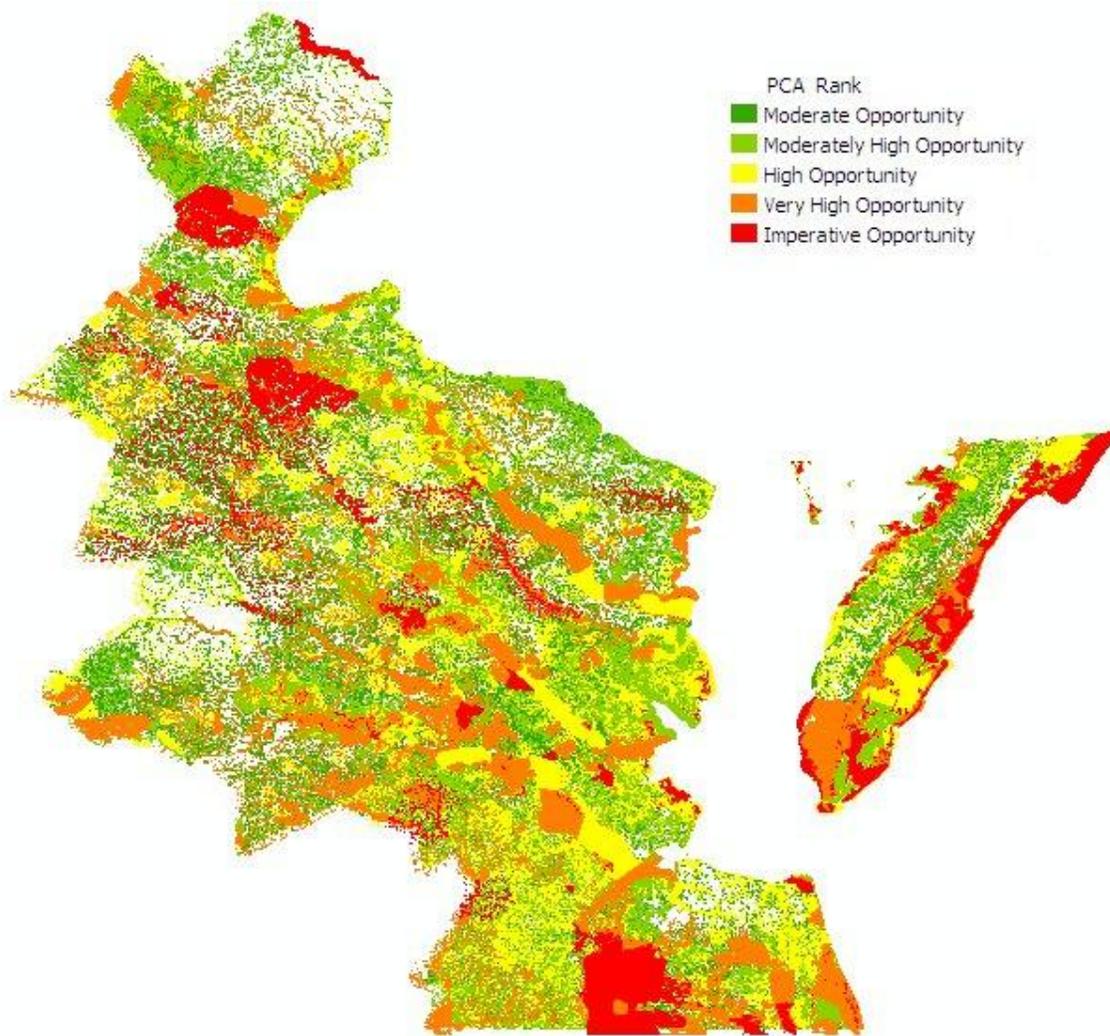


Figure 5: Final Priority Conservation Areas Map

Vulnerability Assessment:

In addition to the VaNLA, DCR-DNH developed a vulnerability model to predict the degree to which certain areas of Virginia are under the greatest threat from new development. The Virginia Vulnerability Model is a conglomerate of three growth models. These models each cover a different type of growth. The Virginia Urban Vulnerability Model shows the predicted growth of urban areas. The Virginia Urban Fringe Vulnerability Model examines predicted suburban growth. Finally, the Virginia Vulnerability beyond the Urban Fringe Model predicts rural growth pressures (Weber and Ciminelli 2006). These models were built from the methodology from the Chesapeake Bay Program’s Resource Lands Assessment (RLA). Please refer to the Chesapeake Bay Program’s Resource Lands Assessment (RLA) for a review of the CPB RLA Vulnerability Model methodology (<http://www.chesapeakebay.net/rla.htm>).

The RLA vulnerability assessment was built using GIS. The process started by identifying suitable land for development. Land “with steep slopes, emergent wetlands, open water, surface mines, major roads, and areas distant from roads as unsuitable for development” (Chesapeake Bay Program). After these lands were identified as potential development areas, U.S. 1990 and 2000 census data for single detached homes were overlaid on a road density grid.

A statistical relationship was developed for the density of roads and homes. From this, houses per square mile could be estimated based on the number of roads in that area. These square mile units were reclassified as urban, suburban or rural after analyzing their relationship with the 1990 Rural-Urban Commuting Areas data layer. Thus, it could be seen where hotspots of growth were occurring (Chesapeake Bay Program). Travel distance calculations were then conducted using highway infrastructure data and threat of development was symbolized based on travel distance from hotspots. This allows a prediction of where future growth would happen based on existing population and recent development patterns.

The vulnerability model not only maps areas under development threat but also can serve as a tool for state and local planners, consultants and developers. As a GIS tool, it can be integrated with other spatial data so that areas of interest, such as natural lands, can be assessed for the threat of development (Weber and Ciminelli 2006). This is the case with the PCA as the vulnerability model helps identify what natural lands are under the most immediate threat from spreading development.

The vulnerability model was updated for the PCA project. This update included integration of parcel data that were not included in the initial vulnerability model and new statistical methods to more accurately estimate land consumption by development in localities that still do not have GIS parcel data. The final result allows PCA users to assess the threat of development to high priority conservation areas. This allows planners to use both the PCA and vulnerability model with software like Community Viz or other planning tools to prioritize conservation efforts based on the most recently predicted growth. The newly updated vulnerability model allowed for the PCA dataset to be attributed based on predicted development. Each polygon in the PCA received a value of 1 (lowest) to 8 (highest) to show the threat from development. After updating the PCA with data on the threat of development, the project was ready for its pilot phase (see Figure 4).

Application:

In order to assess the effectiveness of the PCA at the local level, a pilot project partnership was established with Northampton County, the most southern county on the Delmarva Peninsula. Northampton was chosen because its northern neighbor, Accomack County, had recently begun the development of a now completed Green Infrastructure Plan (Green Infrastructure Center 2009), and because Northampton was in the process of revising its zoning. Additionally, Northampton planning staff were hoping to evaluate the PCA for their next revision of their comprehensive plan.

Community Viz, an ESRI ArcGIS extension developed by Placeways, LLC, was chosen as the platform for the PCA pilot phase in Northampton County. Community Viz is commonly used by planners as a visualization and planning GIS tool, and Virginia Coastal Zone planners were interested in gaining experience with this software.

VCU-CES evaluated current and proposed zoning code impacts on PCAs in Northampton County using Community Viz. A design model was created in order to calculate the impacts of zoning type on the PCA, taking dynamic attributes, indicators and land use into account. The model was made so that an end user could easily change zoning type of polygons so that the proposed zoning layer can be a 'working' layer for exploring scenarios of change. Further, for analysis, each zoning type had its own weight on the PCA. For example, a high density parcel will have a more negative impact on wildlife than a low density zoned parcel will. Thus,

attributes were created to determine the density type of proposed and current zoning for each parcel. These types were then overlaid with the PCA data to determine whether or not the zoning type was compatible with the PCA. In Northampton, this showed that proposed zoning types would have less impact on PCAs than current zoning does. While the PCA project showed that rezoning in Northampton County, Virginia, would aid in conservation efforts, the main advantage of pairing the PCA dataset with Community Viz software is that it allows for rapid assessment of a variety of different planning scenarios.

To transfer the results of the Northampton pilot project to other planners in the Coastal Zone, a workshop was held in August 2009 at Virginia Commonwealth University. Six of the eight coastal Planning District Commissions (PDCs) were represented as well as partner state agencies and Northampton County. The day-long workshop consisted of a morning of background of the project followed by an afternoon of hands on practice with Community Viz software. The PDC workshop helped to disseminate information about the PCA project, allowed Q&A with the PCA developing agencies and provide useful hands on experience with the Community Viz software.

Feedback from the workshop was received in the form of a survey from participants. The survey showed that all except for one participating group plans on using the PCA in the future. Roughly half of the groups planned on using the datasets and/or the PCA with Community Viz software. Workshop participants appreciated the scale and comprehensive detail of the data, how easy the data were to use and understand, and the fact that the PCA output did not conflict spatially with many existing priorities assessments. Participants also pointed out areas for improvement. The vulnerability model could be refined, extending its development predictions beyond 10 years, and so that the most recent parcel data could be integrated. Some participants also asked that local comprehensive plans be added to PCA output. There were also requests for cell size reduction, to increase the 1:100,000 scale resolution in output maps; for more background information on PCA development decisions; and for a statewide expansion of the project, to include non-Coastal Zone areas. Indeed, meaningful suggestions for improvement are as valuable to the project team, as the final project of the PCA is useful to planners and decision makers, as this will assure that the PCA continues to adapt to the needs of its users.

Furthermore, the Hampton Roads Planning District Commission (HRPDC) considered the PCA in its Revised Green Infrastructure Plan. Previously, Hampton Roads had used the DCR-DNH VaNLA data as its main source of Green Infrastructure data. The HRPDC commented that the PCA made riparian areas stand out more significantly. This is likely due to the incorporation of data from DGIF and VCU with VaNLA data in the PCA. However, the HRPDC acknowledged the extreme similarity of the PCA and VaNLA output maps, and decided not to use the PCA in the green infrastructure plan revision. This decision assured consistency between HRPDC's new and former Green Infrastructure plans in terms of data inputs, to better enable expected analyses of change. Additionally, the PCA only includes the Coastal Zone, leaving one HRPDC county (Southampton County) out of the analysis. Thus, HRPDC recommended that the PCA be updated and expanded to include all of Virginia so they may consider using it in future green infrastructure analyses and plans (HRPDC 2010).

Conclusion

The PCA project brought together state level datasets in order to create an effective tool for strategic planning and local decision-making, integrating the biodiversity conservation priorities of the Virginia Natural Heritage, and the Blue Infrastructure priorities from VCU-CES, with DGIF's SWAP-based priorities summarized in the PWDCa. However, while the PCA seeks to inform initial planning phases, it is not intended to replace on-the-ground field inventories by biologists, land managers and planners. Instead, it highlights areas of biological importance and ranks them according to known or expected biodiversity values. The PCA also does not include current protection status of lands, which should be a critical consideration in any planning process. When coupled with Community Viz, or similar planning tools, the PCA can aid in determining the areas most in need of protection based on a variety of user-created zoning scenarios. Ideally, the PCA will see use throughout the Coastal Zone, warranting its expansion throughout Virginia, as a practical planning tool that is both comprehensive and transparent to users.

Next Steps

A revision to the PCA is currently underway. This revision will include nine additional GIS layers that focus on priority estuarine features, which were identified by the Virginia Institute of Marine Science (VIMS) in their Coastal Resources Assessment. These additional layers include:

- Shellfish Suitability
- Reef Restoration Sites
- Oyster Reefs
- Artificial Fishing Reefs
- Oyster Seed Areas
- Aquaculture sites
- Turtle Nests
- Submerged Aquatic Vegetation areas
- Areas regulated for fisheries management

VIMS, VCU-CES, DGIF and DCR-DNH will collaborate on this revision, as well as a follow-up outreach effort. This effort will consist of 8 months of intensive communication and training targeting local planners, Boards of Supervisors and other pertinent local partners on how the PCA can be used in their work. The revised PCA will also be analyzed alongside DNH's Conservation Lands Database and updated land use data to develop a Coastal and Estuarine Land Conservation Program (CELCP) map for prioritizing opportunities for land acquisition.

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Appendix 16: Case Studies in Pennsylvania

Christopher Tracey, Pennsylvania Natural Heritage Program

Case Study #1 – County Natural Heritage Inventories

The Pennsylvania Natural Heritage Program¹ has been actively engaged in providing biodiversity and conservation data to municipalities through its County Natural Heritage Inventory² program since 1990. County Natural Heritage Inventories (CNHIs) are systematic studies of the critical biological resources of a county. The primary focus of CNHIs has been on species of concern—those plants, animals, natural communities, and habitats most at risk of extinction at the global or local level. The products of these comprehensive field-based inventories have generally been reports outlining locations and conservation recommendations for rare, threatened and endangered species and uncommon natural communities.

These studies were conceived as tools to assist in planning to avoid the destruction of habitats supporting species of concern at both the county and municipal levels and have been used effectively in that capacity. CNHIs have also been the primary source for much of the current Pennsylvania Natural Diversity Inventory (PNDI) permit review data. While not directly tied to the Pennsylvania's Wildlife Action Plan (WAP), CNHIs have been instrumental in providing information on many Species of Greatest Conservation Need (SGCN) to counties and municipalities for use in planning and decision making.

As part of this case study, we conducted an informal survey of county planning departments in Pennsylvania to assess their knowledge of the CNHIs and the WAP. A portion of the results of this survey are presented within the text as appropriate.

Origin and Development

CNHIs began in Lancaster County, a large county in southeastern Pennsylvania. Faced with being the most rapidly growing county in Pennsylvania at the time, the county officials came to The Nature Conservancy requesting conservation information to integrate into the planning process. This early inventory focused on rare, threatened and endangered species as well as other natural areas. Development of materials for this project led to the development of the first County Natural Heritage Inventory.

¹ The Pennsylvania Natural Heritage Program is currently a partnership between the Western Pennsylvania Conservancy, the Pennsylvania Fish and Boat Commission, the Pennsylvania Game Commission, and the Department of Conservation and Natural Resources. At the inception of the County Natural Heritage Inventory Program, the partnership was between the Western Pennsylvania Conservancy, the Pennsylvania Chapter of The Nature Conservancy, and the Pennsylvania Department of Conservation and Natural Resources. TNC was responsible for conducting inventories in the eastern half of the state, whereas the WPC was responsible for the western counties. TNC divested their interest in the program in 2006 and the PFBC and the PGC joined as full partners.

² Although all of the products are currently being referred to as County Natural Heritage Inventories, products produced before the consolidation of the program in 2006 were referred to as County Natural Area Inventories (CNAIs) in the eastern counties, while they were referred to as County Natural Heritage Inventories in the western counties. This has created much confusion among the users of our data. For sake of clarity, both products will be referred to as CNHIs in this case study.

After the Lancaster County project was completed, several counties in many different regions of the state followed with inventories of their own. TNC covered inventories in the eastern portion of the state, while the Western Pennsylvania Conservancy performed the inventories in the western half. These early inventories were composed as a narrative text with sites drawn on 1:24,000 scale topographic maps which were photo-reduced to letter sized maps for integration into the inventory document. Inventories proceeded at the rate of completing approximately two inventories every year.

Spurred in part due to an increase in funding from the Department of Conservation and Natural Resources' Bureau of Recreation and Conservation to support the development of county greenway and open space plans, the rate of CNHI completion increased starting in 2003. Improvements to individual inventory reports were typically integrated into the next report. Some of these improvements as are follows.

Mapped units from these reports include "Natural Heritage Areas" (also referred to as "Biological Diversity Areas") contains plants and/or animals of concern at state or federal levels, exemplary natural communities, or exceptional native diversity. In 2004, this mapping unit was split into two nested polygons to differentiate levels of sensitivity to disturbance. These two levels are:

- Core Habitat – denotes the area most closely associated with the species of concern habitat. This area can support little disturbance without adversely affecting the habitat of the species of concern. Core habitat polygons typically represent the aggregation of core habitats for the assortment of species of concern occurring in any one area.
- Supporting Landscape - represents the areas necessary to maintain vital ecological processes or secondary habitat that could be impacted by certain types of habitat-disturbing activities. Similar to the way site level polygons can represent an aggregation of core habitat polygons, supporting polygons can represent an aggregation of supporting habitats.

As core habitat and supporting landscape features were relatively recent mapping concepts, approximately half of Pennsylvania's 67 counties are mapped as core habitat and supporting landscape polygons. Most existing polygons are only generalized polygons with no differentiation between core habitat & supporting landscape. Some of these older existing polygons more closely reflect the current methodology for drawing core habitat while others more closely reflect supporting landscape. Currently, 3,407 Core Habitat polygons and 558 Supporting Landscape polygons have been developed by natural heritage program staff. The disparity in the numbers of the core habitat and supporting landscape polygons are due to the older style site-level polygons as well as some supporting landscapes encompassing multiple core habitat polygons.

In addition, the western counties developed a larger mapping unit known as a Landscape Conservation Area (LCA). LCAs are large contiguous areas that are important because of their size, open space, habitats and/or inclusion of one or more general polygons. These were initially developed as areas to highlight natural processes such as important watersheds, sand drift along Lake Erie, or blocks of habitat for wide-ranging species. Over time, the definition of LCAs has broadened and many of the inventories have highlighted just the largest blocks of forest within the county, which varies greatly due to the differences in development patterns

across the state. We are currently examining different approaches to identify LCAs and intend to expand the concept statewide into the future. There are currently 140 LCAs developed (all in the western half of the state).

Although all of the county inventory projects have typically had a 'draft review committee' that reviewed the final document, many counties have had an advisory committee to help guide the project through all phases. These advisory committees typically consist of local planners, naturalists, park managers and interested citizens that have been very helpful in providing local knowledge. In addition, we have found that these local advisory committees also typically 'carry the banner' after the inventories are complete and advocate for their use in local decision making.

These inventories represent one of the most accessible sources of data on SGCN in Pennsylvania. The majority of the species prioritized in the WAP as Immediate Concern and High-level Concern are included and mapped in the CNHIs.

Current Status

As of this writing, all of the 67 counties in Pennsylvania have inventories completed or underway. Several updates to individual counties have been conducted, and the planning of an approach to update data statewide is in progress.

Use in Planning

As outlined above, the intended utility of the CNHI projects has been as a pre-planning tool, to alert planners, conservation organizations and developers about the locations of species of concern, in advance of the permit review process. There are a number of limitations to this approach that should be resolved in the future.

CNHIs have often been marketed as a preview of the permit review process as the CNHI polygons are mapped around many of the same occurrences of rare, threatened and endangered species. Unfortunately, due to differences in methodology there has been limited spatial correlation between the CNHI polygons and the permit review polygons, leading to uncertainty on the usefulness of CNHI polygons by local decision makers. The permit review polygons are often generalized and uniform buffers on the element occurrence, while the CNHI polygons are usually drawn to capture the known and adjacent potential habitat. In addition, the static nature of the CNHI reports reflects only those species of concern known at the time of the completion of the report. Any species of concern records added to the PNDI database since that time would not be seen in the CNHI report. In addition, PNHP tracks numerous species that are not part of environmental review such as those on watch lists (typically species that are suspected to be declining or were recently delisted), or not currently with a state or federal legal status of rare, threatened or endangered at the state or federal level. Reconciling the differences between the publicly available CNHI polygons and the environmental review polygons would remove the confusion between the two systems.

Thirty-one out of 67 counties responded to our survey of county planning departments about CNHI and WAP use. Nearly two-thirds of the respondents indicate that they use information from the CNHI to assist in the review of development proposals. The majority of respondents indicated that the age of the inventory was not a limiting factor in the use of the data—this may reflect the perceived static nature of the report. Respondents also indicated that the data was used for a variety of uses in local government including comprehensive planning, greenway and open space planning as well as some ordinance development. We also asked survey participants what types of information was needed in the reports. Most participants agreed that the mapping and information about tracked species was the most important part of the product, but indicated that they would appreciate and attempt to use as much biodiversity information as we could provide.

In regards to the Pennsylvania Wildlife Action Plan, over 73% of the county planners were not aware of its existence and only two respondents indicated that it has directly influenced their planning efforts. However, all respondents indicated that activities such as fishing, hunting and wildlife viewing were important. There is likely a willingness by the planners to use information presented in the WAP, but they are not aware of it and/or may not understand how to use it their planning efforts. As CNHIs provide a direct and generally accepted pathway to local planners, increased effort should be placed on integrating WAP information into the CNHI products.

CNHIs have been incorporated into a number of county and municipal planning efforts. Many county planning officials have included this information as part of the Natural Resources Component of their Comprehensive Plans. Several municipalities have made attempts to use the CNHIs in zoning, subdivision, floodplain and other ordinances. These municipalities are typically in developed or rapidly developing areas in southeastern Pennsylvania, where planning tools such as zoning and subdivision ordinances are more generally used than many of the rural counties. PNHP has begun to provide technical assistance for counties and their municipalities to better use these data in land use planning efforts.

Beyond the use as a pre-planning tool, county inventories have provided data that has formed the backbone of many county greenway and open space plans. A conservation component typically involving CNHI data has been a major part of most of the county level greenway plans in the state.

Future of the Project

Although the CNHI project has been well-funded for the majority of its existence through a combination of public and private funding, recent declines in the state budget have inspired a realignment of the program. We are currently moving this approach from county-based to a state- or region-wide one. This will allow a more efficient update of records (e.g. working on all bogs, not just bogs in a particular county) and be able to prioritize the work in areas that need it the most. The results from all the completed inventories have recently been unified into one statewide layer. We are currently working to develop site level polygons for the more recently found occurrences and other data gaps. Data provided to the users through web-based GIS

should help improve the use of the data by planners and others involved in land use decision making.

Case Study #2 – Greenway Planning

The Pennsylvania Department of Conservation and Natural Resources (DCNR) established the County Greenways and Open Space Network Planning Program to provide funding and technical assistance to counties to plan for greenway corridors. Through this program, counties are developing visions for their county greenway networks and integrating those visions into county land use planning documents. Greenway planning, mandated through DCNR for project funding, has been a useful tool for county governments to make planners or the public aware of wildlife and conservation information. DCNR encourages counties to complete a County Natural Heritage Inventory (CNHI) as a prerequisite for developing a county greenways and open space network plan. As stated above, CNHIs identify areas that support rare, threatened and endangered species as well as uncommon natural communities.

Two types of corridors are generally designated in these county plans: recreation and conservation. Typical examples of recreational corridors are bike and pedestrian trails that connect one or more hubs (e.g. trail towns). Conservation corridors are typically wider and are designated around ecologically important features (e.g. watersheds, forest patches, and rare species habitat). Most completed greenway plans do include both types of corridors, however, the attention paid to them within the plan varies. In several instances, several counties have collaborated under a regional planning organization to develop multi-county greenway plans.

One recently completed greenway plan is the North Central Pennsylvania Greenway Plan. This plan was completed in 2010 and covers six counties. Natural systems greenways, defined as corridors whose main function is the conservation of natural infrastructure, were designated by a weighted overlay technique incorporating several conservation datasets ranging from County Natural Heritage Area Inventories to forest patches to wilderness trout streams. The process included inventories of hydrologic resources, natural infrastructure, and ecological infrastructure to identify natural systems building blocks. The study defined natural infrastructure as a network of natural areas and open space that, in aggregate, conserve natural ecosystem values and functions, sustain clean air and water, and provides value to wildlife and people.

Sources of hydrologic resource data included streams designated by the state as those with special protection uses, such as High Quality Cold Water Fisheries (waters that support fish, plants and animals that thrive in colder temperatures, with long-term water quality exceeding levels necessary to support propagation of fish, shellfish and wildlife). Another special protection use is waters that are designated as Exceptional Value. These include those occurring in national, state, or county parks or forests, wildlife refuges, or state game lands; are a source of unfiltered potable water; those characterized by the Fish Commission as Wilderness Trout Streams; and waters of substantial recreational or ecological significance. Other hydrologic resources include Class A and wilderness trout streams, and several data sets prepared by the Pennsylvania Natural Heritage Program, including riparian buffers, as well as

high priority conservation areas and least disturbed streams identified as part of the Pennsylvania Aquatic Communities Classification. All of the data were assembled into a Hydrologic Resources map.

Other components of Natural Infrastructure, including wetlands, 100-year floodplain, interior forest, steep slopes, and hydric soils, were identified and mapped. Sources of wetlands data included the National Wetlands Inventory and the Wetlands Center Database, Pennsylvania State University. The Federal Emergency Management Agency was the source for 100-year floodplain data. Interior forest patches were delineated by the Pennsylvania Natural Heritage Program. These patches were defined as forest separated by 300 feet from non-forested land, or primary, secondary, and local roads, excluding roads that were not wide enough to break the forest canopy. The patches were then scored and ranked for ecological and biodiversity values, including number of forest types, wetlands, and other criteria. Steep slopes (those greater than 25%) were delineated from the USGS Digital Elevation Model. Hydric soils were identified from individual County Soil Surveys.

Ecological infrastructure included the areas supporting rare, threatened, or endangered species, habitat, vegetation, or geologic resources of rare occurrence; important mammal areas, and important bird areas. A vital source of information was County Natural History Inventories (CNHI) conducted by the Pennsylvania Natural Heritage Program in partnership with the Department of Conservation and Natural Resources, the Fish and Boat Commission, and the Game Commission. CNHI's identified and mapped Biological Diversity Areas and Landscape Conservation Areas (described in more detail in the previous case study) support rare, threatened, or endangered species, as well as outstanding floral, faunal, and geological features. Source data for Important Bird Areas was from the Audubon Society. Important Mammal Areas were identified by the Important Mammal Areas Project, a partnership of the National Wildlife Federation, Pennsylvania Wildlife Federation, Pennsylvania Federation of Sportsmen's Clubs, Mammal Technical Committee / Pennsylvania Biological Survey, and the Carnegie Museum of Natural History.

Each of the described data layers, or building blocks, was weighted according to its significance toward achieving the North Central Greenways Plan. The data were then compiled in a GIS environment, and where more than one building block overlapped, their respective values were added to create a cumulative value, the sensitivity level.

As a result of this analysis, 132 conservation corridors were delineated in this region. These corridors follow the most highly functional existing natural features within the region, such as forests, significant stream corridors, and wildlife habitat. A cursory overview of these corridors shows significant overlap with identified conservation and wildlife priorities through government agencies and nonprofit conservation groups.

As the greenway concept is gaining in popularity, especially in regards to green infrastructure, greenway planning may be a viable method to promote wildlife and biodiversity conservation into local planning efforts. However, anecdotal evidence indicates that many of the larger scale conservation directed greenways have limited effort put towards their implementation

compared to recreation and trail orientated projects. PNHP is working to help develop conservation plans for these conservation greenways.

Integrating Conservation and Land Use Planning at the Regional and County Level: A Case Study from the Georgia Coast

Patrick Crist, Ian Varley, and Regan Smyth
NatureServe
Jon Ambrose and Matt Elliott
Georgia Department of Natural Resources

INTRODUCTION

Coastal Georgia is under intense development pressure and faces increased threats through global climate change. Although the state's coastal habitats are in a relatively natural condition compared to other east coast states, without immediate action these stressors are likely to cause irreparable loss of significant ecosystem processes and wildlife habitat that have supported Georgia's coastal communities for centuries. Coastal land use planning and resource management decisions are made at a variety of government levels from Federal to state/region to local. The regional and local agencies in charge of policy are in great need of increased technical capacity for conducting the kind of analyses and planning necessary to address coastal conservation challenges. Increased capacity is required in the form of better data and data management and distribution systems, science-based methodology, decision support tools, and training to apply the data and tools to coastal planning and management. Providing this capacity for use by state, regional, and local governments facilitated the establishment of concrete and scientifically-defensible plans of action for conserving Georgia's precious natural habitats and coastal ecosystems.

PROJECT DESCRIPTION

NatureServe was contracted by Georgia's Department of Natural Resources (GADNR) to provide scientific and technical consulting services to the Coastal Georgia Land Conservation Initiative, which included the eleven-county coastal region and two pilot county projects (Figure 1). The project goal was to conserve critical coastal lands and ecosystems while promoting appropriate economic growth and development and educating the public about the value of Georgia's shared coastal resources. In order to accomplish this goal, several key needs were identified:

- More detailed and comprehensive information on the location and condition of high priority habitats and species
- More effective tools for assessing threats and developing adaptive conservation plans
- Greater collaboration on education and outreach efforts to ensure conservation successes

The objective of this project was to provide a Decision Support System (DSS) to assist planners, resource managers, and local communities in managing coastal resources.

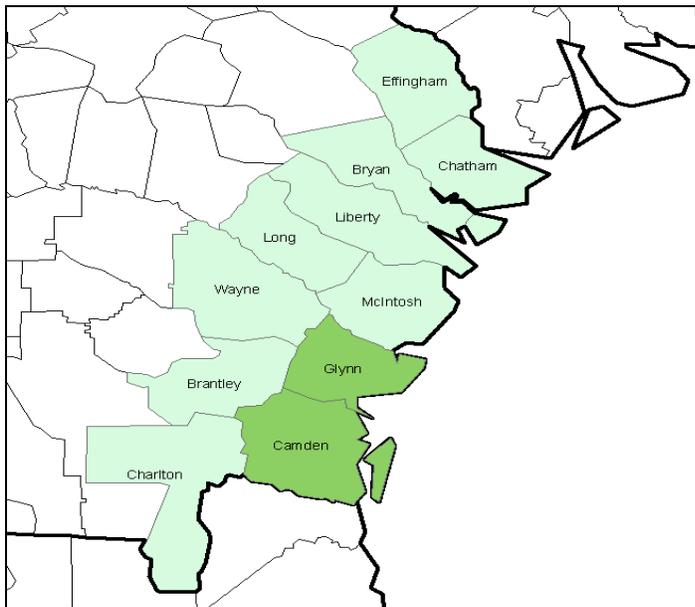


Figure 1 Project Area

The team consisted of collaborators from:

- Georgia Department of Natural Resources, Wildlife Resources Division and Coastal Resources Division
- Georgia Conservancy
- Association County Commissioners of Georgia
- NatureServe
- Glynn and Camden Counties

A broader group of stakeholders was comprised of data providers as well as users of the tools developed from this project. They came from a wide range of federal, state, and local agencies as well as private conservation organizations. Members of the Coastal Regional Development Commission, Glynn and Camden Counties, city of Kingsland, The Nature Conservancy, and others attended selected regional and county workshops held by NatureServe, and often were engaged directly for specific aspects of the project.

A number of specialized working groups were established for this project including:

- Planning and Analysis Working Group (P&A Group) identified the types of analyses and products necessary to support planning decisions, the types of data needed for the analyses, and the technology tools and analytical process that supported the product development.
- Ecology Working Group (EG) defined the conservation elements to be considered, the conservation requirements of the elements, and how to integrate the elements into the analyses.
- Data Management and GIS Working Group (GIS) created the data management structure and guidelines for data exchange, conducted the GIS work, and created spatial and tabular products.

NatureServe worked with Georgia Department of Natural Resources in the development and compilation of regional data. These included information about the conservation elements (species of greatest conservation need and their habitats and representative ecosystem types) and scenarios of current land use, future land use, and areas of potential inundation from global climate change.

Basic data needs for conservation elements included a) maps that depict location of the elements, as well as their condition; b) confidence level of the mapped data; c) how conservation elements respond to land uses, disturbances, and management; and d) conservation requirements for population and regional viability of conservation elements. Other data that was required to generate alternative conservation scenarios included a land use classification and map.

METHODS

Data Collection and Compilation

The overall approach consisted of several activities:

- Map the resources of concern
- Incorporate expert knowledge
- Define different land use scenarios
- Evaluate progress and achievement
- Provide a decision support tool

A coastal assessment was conducted to identify, document, and map high priority natural communities and rare species sites for consideration in land conservation programs. Data sources included:

- Vegetation classification and map
- DNR biodiversity databases of conservation element occurrences
- Land use / land cover map
- Modeled species distributions
- Databases of other elements
- Already Identified Priority Areas
- Non-Biological Elements: scenic views, cultural sites, trails, valuable agriculture soils

NatureServe also assisted GADNR with the development of a database of element conservation requirements and probable responses of the conservation elements to the range of existing and proposed land uses.

Tools

Five different tools were used in concert to develop an integrated toolkit (Figure 2). Biotics is the NatureServe database housing biodiversity information compiled from state natural

heritage programs; Maxent was used to develop species distribution models; Circuitscape was a program used to map habitat connectivity; NatureServe Vista was used for conservation planning; and Marxan was used to develop conservation scenarios and identify optimal solutions.

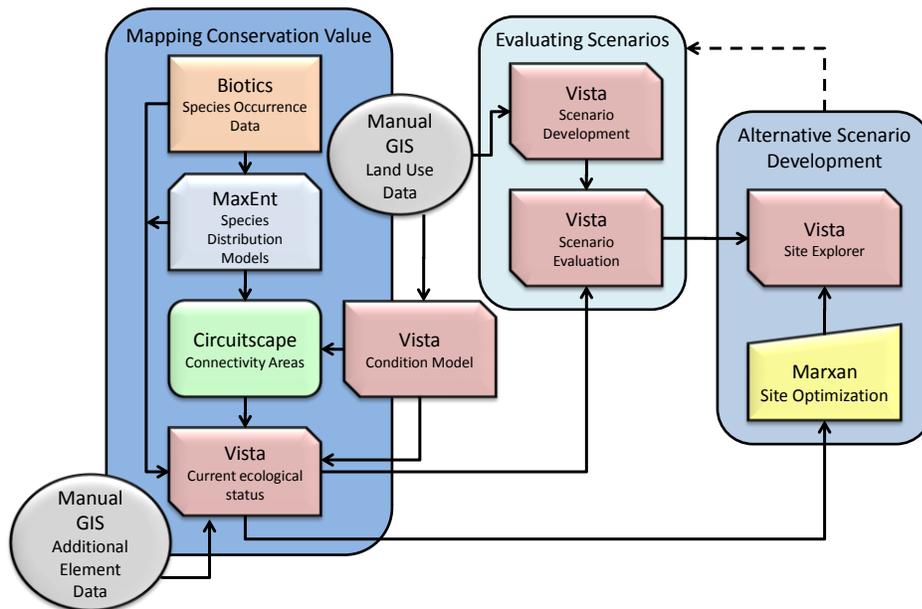


Figure 2 Integrated Toolkit

Analyses

Each data layer was entered into the NatureServe Vista decision support system (Vista), which was used to develop a regional project and two county projects (Camden and Glynn). These analyses documented the relative significance of existing conservation lands, identified areas of high conservation opportunity and vulnerability, and prioritized areas for efficient conservation action.

The analyses resulted in a Conservation Value Summary (Figure 3), defined as an index of the value of each location (pixel) in the region based on the element content and the element characteristics of interest. The analyses were conducted by selecting the elements or area of interest, then selecting the attributes to weight the cell values (importance weight, condition score, confidence score) individually or in any combination along with an operator of “sum” or “average” for the scores.

Conservation Value Summary: EOs Only CVS

Settings

Name: EOs Only CVS

Description: Element Occurrence Data Only

Filter: All Elements in Glynn County

Weighting System: Importance Weighting

Incorporates occurrence viability/integrity

Incorporates distribution confidence

Summary Function: Sum

Cell Size: [Minimum based on input layers]

Included Elements (with weighting):

<u>Name</u>	<u>Importance Weight</u>
Coastal Plain Spruce Pine - Oak Stream Forest	1
Northern Atlantic Right Whale	1
Blackwater Ogeechee Tupelo Swamp	1
Migrant Loggerhead Shrike	0.8
Rafinesque's Big-eared Bat	0.6
Bald Eagle	0.5
Sawgrass Head	1
Pine Woods Snake	0.5
Rouge Plant	0.8
Palafoxia	0.5
Sandhills Swamp Blackgum Hillside Seepage Forest	0.6
Gopher Tortoise	1
Pond Pine - Bay Swamp	0.6
Outer Coastal Plain Sweetbay Swamp Forest	0.6

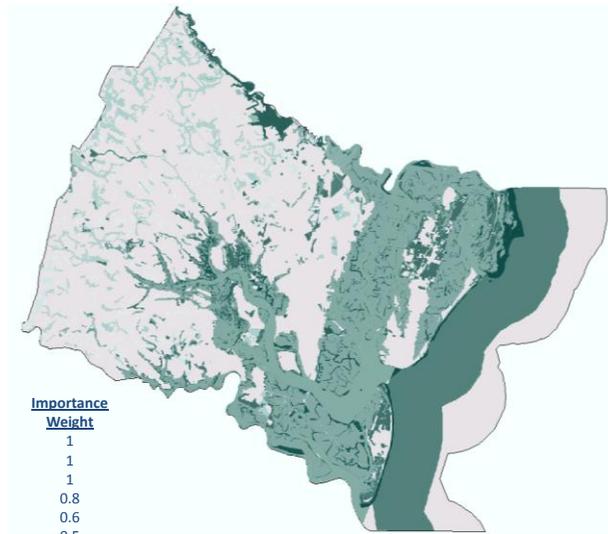


Figure 3 Conservation Value Summary

The next step was to compile information to represent scenarios of current land and water use and management and future threats from land use plans (Figure 4). The scenarios were created in Vista by importing various map layers from multiple sources to describe current land use, land management practices, infrastructure, etc. The current baseline land use scenario compared current actual land use to the conservation elements' compatibilities and goals. It generated a large number of maps and reports for individual element's performance under the scenario and synthesized reports for the region that mapped conflict areas and quantified goal achievement overall and for each element.

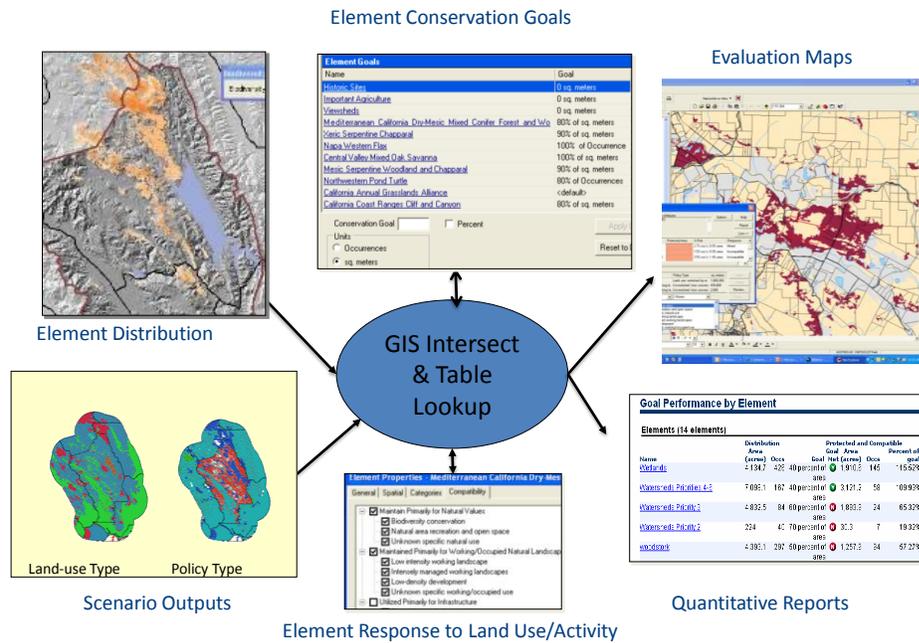


Figure 4 Vista scenario evaluation

Finally, analyses were conducted using the Conservation Value Summary and Land Use scenarios to identify optimized conservation priority areas. This analysis uses Marxan software to identify a set of planning units (any polygon unit of choice) that can most efficiently meet the stated set of conservation goals. In addition, Marxan can generate a map that indicates the number of times over many runs that any planning unit was selected thus giving a measure of “irreplaceability” or, in other words, how “required” that unit is for achieving conservation goals.

Dissemination of Data and Analyses

In order to ensure success, state and local partners were provided tools and training to continue analytical and planning work at all scales. Outreach was conducted to disseminate the knowledge gained through the project. To date, all groups involved in the project appear to understand and support the application. As a result, the team has increased the capacity for state, regional and local organizations to continue an adaptive planning and implementation process by providing the conservation database, methods, decision support tools, and training in the use of the system.

STATE PROFILES

This appendix identifies the major *statutory* provisions relevant to the protection of biodiversity through land use planning, direct protection of species, and incentive schemes in thirteen eastern states. For the local planner, policymaker, or government official who wishes to protect biodiversity and enact conservation strategies through comprehensive planning and/or incentives, these profiles list a variety of sources of authority in state law that support the inclusion of biodiversity protections in local plans and incentive schemes.

Many of the legal tools described here present opportunities for unique and effective wildlife protection strategies, but they are often overlooked because of their disparate locations within state government codes. Furthermore, because state land use laws may not specifically mention the terms “biodiversity” or “wildlife,” any land use code provision that can be interpreted broadly to authorize the use of biodiversity terms in a local plan has been included in the state profiles. Thus, for example, where a planning enabling law allows a local governing body or planning commission to take into account environmental protection, the protection of wetlands, conservation of open space lands, or even impacts on natural resources and waterways, these sections will be included in state profiles as possible sources of authority for biodiversity protection. The profiles do not include provisions in state *regulations* that may have been adopted to implement statutory authorities.

The next section contains the template used in each state’s profile, along with a brief explanation of the categories employed to describe the statutory provisions available in each state. Not every category within the template applies to every state. Where there is no information for a state in a particular category, that category heading will appear with no text following it.

Guide to the State Profile Template

I. Land Use Planning

A. State Planning Enabling Law

- In every state, local governing bodies (municipal, county, township, city, or otherwise) derive their authority to engage in comprehensive land use planning and to promulgate land use ordinances (*e.g.*, zoning) from their respective state governments. The states grant this authority to localities statutorily through acts known generically as *planning enabling laws*. This section does not seek to describe the form that each law takes in a particular state, but rather, to serve as a quick

reference for readers to identify the part of the state code that grants local planning and zoning authority.

B. State Land Use Planning Provisions

- Traditionally, planning enabling laws gave broad authority to local governments to engage in planning and zoning, while listing general aspects of planning that should be addressed in a comprehensive plan, such as land use, housing, and transportation. As it has become clearer that the results of good planning (or poor planning) on a local level affect many areas of state concern, and that good planning often contains components of regional planning and consistency between localities, some states have become more actively involved in the planning process. While not applicable to every state in this report, this section seeks to categorize elements of a state’s land use code provisions that go beyond the traditional non-prescriptive, locally deferential approach. These elements often embody “growth management” principles which may include state level goals and planning frameworks, specific requirements for localities, inter-jurisdictional elements, among other techniques.

1. State Planning Agencies/Responsibilities

- This heading explains the general responsibilities of the state in land use planning, and identifies the state agencies or departments primarily responsible for such duties.

2. State-Level Planning Goals/State Development Plan

- Several states require the creation of a state-wide comprehensive development plan. Others identify a set of goals and principles to guide all planning and development on a state-wide and local level. This heading explains what types of state plans are required and what elements are to be included in those plans, as well as what state-level goals and principles are established, and the implications of these measures for local planning.

3. Inter-Jurisdictional/Regional Elements

- Regional and inter-jurisdictional planning authority is categorized under this heading. Although county planning authority is often inter-jurisdiction in nature in that it frequently interacts and coordinates with the comprehensive plans of municipalities in the county, county planning authority *not* categorized here, but rather is included under the “Local Land Use Planning Provisions” portion of the outline (below).

4. Planning to Protect Specific Areas

- A few states have identified a specific region or regions as particularly important to the state as a whole due to the region's environmental, ecological, economic, historical, or cultural characteristics, and have created a land use planning framework specific to them. These regions and the specific land use planning framework are described under this heading.

5. State Assistance to Localities

- This heading highlights major state-wide assistance programs to help localities with their land use planning efforts. This assistance may include grants, as well as information, training and technical assistance.

C. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

- This heading identifies the land use planning bodies that counties, cities, towns, villages, or other local government entities are authorized or required to establish. Some states *require* certain local government entities to establish a planning body, while others merely *authorize* or recommend their establishment. Once established, it varies by state whether a planning body is required or simply authorized to prepare a local development plan for the area. In some states, certain local government entities are required to plan, while others are merely authorized. These requirements and authorizations are described in this heading.

2. Mandatory Local Plan Elements Related to Biodiversity

- Most state laws that require or authorize local development plans also establish certain elements that must be included in those plans. This heading describes mandatory local plan elements that promote biodiversity in some fashion. In general, these statutory provisions do not use the term "biodiversity," and many of the provisions are very broad – *e.g.*, state laws may require municipalities to address "conservation" in their local plans. A statutory provision is included here if the required planning element could be interpreted to authorize biodiversity protection as part of the land use planning process.

3. Discretionary Local Plan Elements Related to Biodiversity

- In addition to mandatory plan elements, many state laws explicitly mention certain plan elements that a locality *may* incorporate in its plan.

Again, such statutory provisions are included here if they address biodiversity protection directly or if they could be interpreted as authorizing such elements in a local plan.

4. *Additional Local Authorities and Responsibilities Related Planning and Biodiversity*

- Some state laws authorize the creation of local environmental or conservation commissions with resource-management responsibilities. These bodies can play an important role in supporting and advancing biodiversity protection in the municipal land use planning process. This heading includes statutory provisions that authorize such bodies and that explicitly require their input in the land-use planning process.

5. *Mechanisms for Monitoring and Enforcing Local Compliance*

a. *Funding Restrictions on Localities*

- The heading describes a variety of statutory provisions that use state funding to promote local land use planning that is consistent with state requirements and goals. Some states condition receipt of state funding on local compliance with state land use planning requirements. Such provisions may apply to specific grant programs or they may restrict state agencies generally from funding localities that are not in compliance with planning requirements. Other state statutory provisions encourage local land use planning by conditioning receipt of state funds (or by prioritizing their distribution) based on whether a locality has undertaken certain *discretionary* planning activities.

b. *Review of Local Plans*

- The goal of this heading is not to elucidate the mechanisms for reviewing local decisions on particular development permits, or to explain how a state ensures that localities follow master plans when approving development. Such a topic goes beyond land use planning, and into the areas of permitting, zoning, and site approval which are beyond the scope of these profiles. Instead, this heading only details the review process of the comprehensive plans themselves by state or regional entities to make sure that they are consistent with state specifications.

II. Legal Mechanisms Protecting Endangered Species and Their Habitats

A. Non-Game Fish and Wildlife Laws

- This heading discusses state legislation addressing wildlife species that are neither managed as game, nor designated as endangered, threatened, or at-risk species. Depending upon the state, this subsection may address officials' management authority, conservation strategies, or the establishment of voluntary wildlife conservation funds.

B. Threatened and Endangered Species Laws

- This heading provides a general overview of a state's endangered and threatened species statutes. Where separate state laws have been enacted to protect plant species, these laws are discussed separately. This heading describes takings, sale, and transportation restrictions, where applicable, and mentions relevant exceptions to those restrictions. Other aspects of states' endangered and threatened species programs are discussed in greater detail below.

1. Basis of Listing

- Many states have established a list of criteria used to classify wildlife species as endangered or threatened. Such criteria are highlighted within this heading, along with any requirements for state review of existing classifications.

2. Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species

- This heading contains information about state officials' authority to designate and protect the habitat of threatened and endangered species. In addition, some state profiles include statutory provisions that authorize state officials to acquire important lands for conservation purposes, where the criteria for acquisition explicitly include threatened, endangered or at-risk species.

3. Consultation Requirements

- This heading describes state policies that require the principal state agency in charge of implementing the threatened and endangered species law to consult with other state or outside entities before listing species or taking other certain actions under the law. This heading also includes requirements for state and local agencies to consult with the principal state agency prior to taking actions that could be detrimental to listed species.

4. Recovery Plans

- Few states have codified plans to assist threatened or endangered species recover their dwindling numbers. Where a state does have a program in place or has approved certain recovery techniques, it is discussed under this heading.

5. Penalties

- This heading discusses the type of activities that constitute a violation under a state's endangered species law and notes the type of statutory penalties provided for violations.

Connecticut

I. Land Use Planning

C. State Planning Enabling Law

- CONN. GEN. STAT. ANN. §§8-18 to 8-37.

D. State Land Use Planning Provisions

1. State Planning Agencies/Responsibilities

- The Connecticut Office of Policy and Management (OPM), a staff agency reporting directly to the governor, is charged with coordinating state and regional planning activities.³
- The governor created, by executive order, an Office of Responsible Growth within the OPM. This Office is charged with, among other things, coordinating policy among state agencies, coordinating input from local officials, and updating the state's "Green Plan" to "better identify sensitive ecological areas" for use by local planners in GIS format.⁴

2. State-Level Planning Goals/State Development Plan

- The OPM is charged with preparing state-wide or interregional plans for development that may include land use and water considerations, environmental considerations, and other elements.⁵
- The OPM has overall supervision of the process of adopting, amending and implementing the state plan of conservation and development ("state plan").⁶ The state plan serves as a statement of the development, resource management, and public investment policies for the State. State law lists numerous policy issues that must be addressed in the state plan, including the conservation and development of greenways.⁷
- A recently adopted state law requires the OPM to complete a revision of the current state plan by March 1, 2011. A draft of the

³ CONN. GEN. STAT. ANN. § 16(a)-4(a).

⁴ CONN. EXECUTIVE ORDER No. 15.

⁵ CONN. GEN. STAT. ANN. § 16(a)-4(a).

⁶ CONN. GEN. STAT. ANN. § 16(a)-26.

⁷ CONN. GEN. STAT. ANN. § 16(a)-27.

revised plan is due to the state legislature by September 1, 2010, with a public hearing to follow.⁸

- According to state law, certain state actions must be consistent with the state plan, including the acquisition or development of real property (or the awarding of state grants for this purpose) involving more than \$200,000. In addition, a state agency must take the state plan into consideration when preparing any plan that is required by state or federal law.⁹

3. Inter-Jurisdictional/Regional Elements

- Any region defined by the OPM may create a regional planning agency provided that two or more towns comprising at least 60% of the population of the region decide to create such an agency.¹⁰ Two or more regional planning agencies may establish one or more interagency commissions to recommend policies relating to interregional matters.¹¹
- At least once every ten years, a regional planning agency must make a plan for conservation and development, incorporating recommendations for land use and other elements. Among other things, the plan must note inconsistencies with several stated growth management principles, such as the “conservation and restoration of the natural environment.”¹²

4. Planning to Protect Specific Areas

5. State Assistance to Localities

- The state of Connecticut has established a Local Capital Improvement Fund, which provides funding to municipalities (through the OPM) for local capital improvement projects in accordance with a statutory formula. Under state law, the preparation and revision of municipal plans of conservation and development qualify as capital improvement projects under the Fund.¹³
- The Office of Responsible Growth within the OPM is responsible for developing support and initiatives for communities to engage in regional planning and to build capacity of municipal staff and agencies to make complex land use decisions. The Office is

⁸ CONN. GEN. STAT. ANN. §§ 16(a)-27; 16(a)-29.

⁹ CONN. GEN. STAT. ANN. § 16(a)-31.

¹⁰ CONN. GEN. STAT. ANN. §§ 8-31(a).

¹¹ CONN. GEN. STAT. ANN. § 8-35(e).

¹² CONN. GEN. STAT. ANN. § 8-35(a)(2)(D).

¹³ CONN. GEN. STAT. ANN. § 7-536.

charged with establishing a municipal training program toward this end.¹⁴

E. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

- Any municipality (defined as a city, town, borough, or district)¹⁵ is authorized to create a planning commission.¹⁶ If a municipal planning commission is established, a plan of conservation and development for the municipality must be adopted and revised every ten years.¹⁷

2. Mandatory Local Plan Elements Related to Biodiversity

- In developing a plan of conservation and development, the municipal planning commission must take into account, among other factors, the state and regional plans of conservation and development.¹⁸
- If a municipality is contiguous to Long Island Sound, its development plan must be consistent with municipal coastal management program requirements and must be made with reasonable consideration for “restoration and protection of the ecosystem and habitat of Long Island Sound. . . .”¹⁹
- Municipalities that have adopted a coastal management plan must, when revising their plan for conservation and development, consider, among other things, the capacity of and limitations on coastal resources to support development and the types of development compatible with “wise use, protection and enhancement of such resources....”²⁰
- In addition to recommending the most desirable uses of land, the plan must note any inconsistencies with several stated growth management principles, including the “conservation and restoration of the natural environment.”²¹

¹⁴ CONN. EXEC. ORDER NO. 15.

¹⁵ CONN. GEN. STAT. ANN. § 8-18.

¹⁶ CONN. GEN. STAT. ANN. § 8-19.

¹⁷ CONN. GEN. STAT. ANN. § 8-23(a)(1).

¹⁸ CONN. GEN. STAT. ANN. § 8-23(d).

¹⁹ CONN. GEN. STAT. ANN. § 8-23(e)(2).

²⁰ CONN. GEN. STAT. ANN. § 22(a)-102.

²¹ CONN. GEN. STAT. ANN. § 8-23(e)(1)(F).

3. Discretionary Local Plan Elements Related to Biodiversity

- The municipal plan of conservation and development may include the commission's recommendations for, among other things, open space acquisition and greenways protection and development.²²

4. Additional Local Authorities and Responsibilities Related Planning and Biodiversity

- The legislature of any town, city, or borough may establish a conservation commission for the development, conservation, supervision, and regulation of natural resources, including water resources, within its territorial limits.²³

5. Mechanisms for Monitoring and Enforcing Local Compliance

a. Funding Restrictions on Localities

- If a municipality does not amend its plan for conservation and development at least once every ten years, the municipality must submit a letter to the OPM and other state agencies explaining why the plan was not amended and must include a copy of the letter in any application by the municipality for discretionary state funding from any state agency.²⁴ However, following adoption of the revised state plan of conservation and development for the period 2012-2017, any municipality that does not adopt or revise its own plan in accordance with state law will be ineligible for state discretionary funding unless the Secretary of OPM expressly grants a waiver of this requirement.²⁵

b. Review of Local Plans

- Prior to holding a public hearing on adoption of a municipal plan of conservation and development, the municipal planning commission must submit the plan for review by the regional planning agency. That agency must submit to the commission an advisory report that comments on the consistency of the

²² CONN. GEN. STAT. ANN. § 8-23(f). See also CONN. GEN. STAT. ANN. §§ 12-107e; 7-131b.

²³ CONN. GEN. STAT. ANN. § 7-131a.

²⁴ CONN. GEN. STAT. ANN. § 8-23(a)(2).

²⁵ CONN. GEN. STAT. ANN. § 8-23(b).

proposed municipal plan with state and regional conservation and development plans.²⁶

- Municipalities that revise their plan of conservation and development in accordance with their coastal management program, must submit the proposed revision to the OEP and to the regional planning agency for review and comment prior to final adoption.²⁷

II. Legal Mechanisms Protecting Endangered Species and Their Habitats

A. Non-Game Fish and Wildlife Laws

- Under the law governing fisheries and game, Connecticut’s commissioner of Environmental Protection may assume the following wildlife management practices: investigate the relationships between wildlife and habitats, manage wildlife resources to ensure healthy and diverse populations, and develop public awareness campaigns aimed at enhancing privately-owned habitat.²⁸
- The commissioner also has the authority to “treat a species not listed as endangered or threatened” as if it fell within these categories when the species closely resembles a listed species so as to cause “substantial difficulty” to the endangered or threatened species, and when treating the unlisted species as threatened or endangered “would substantially facilitate enforcement” and further the state’s policy goals.²⁹

B. Threatened and Endangered Species Laws

- Connecticut law establishes a program to protect threatened and endangered species that empowers the commissioner to “conduct investigations of wildlife...to develop information relating to population, distribution, habitat needs, limiting factors, essential habitats, and other biological and ecological data to determine conservation and management measures necessary for their continued ability to sustain themselves successfully.”³⁰ Under this program it is unlawful for “any person to willfully take any endangered or threatened species on or from public property, waters of the state or property of another without written permission of the owner....”³¹ Individuals are prohibited from willfully taking endangered or threatened plants or animals with the intention of selling or exporting them.³²

²⁶ CONN. GEN. STAT. ANN. § 8-23(g)(4).

²⁷ CONN. GEN. STAT. ANN. § 22a-102.

²⁸ CONN. GEN. STAT. ANN. § 26-69.

²⁹ CONN. GEN. STAT. ANN. § 26-308(a).

CONN. GEN. STAT. ANN. § 26-305.

³¹ CONN. GEN. STAT. ANN. § 26-311(a)(1).

³² CONN. GEN. STAT. ANN. § 26-311(a)(2).

1. Basis of Listing

- In determining whether a species should be listed as threatened, endangered, or of special concern, the commissioner must consider the following factors: likely destruction of species' habitat, overutilization of the species for commercial, private, recreational, or scientific purposes, "disease, predation, or competition affecting the species," efficiency of current regulatory mechanisms, or other natural and man-made conditions that may affect a species continued existence.³³
- Every five years the commissioner must review its list to determine whether a species should be added, removed, or reclassified.³⁴

2. Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species

- The Commissioner of Environmental Protection must identify essential habitats.³⁵ These are defined as "geographic area[s] which contain[] those physical or biological features which are identifiable and have been demonstrated as being decisive to the continued existence of any endangered or threatened species...."³⁶ Every five years the commissioner must consider whether any areas should be added or removed from the list of essential habitats.³⁷
- Connecticut's law authorizes commissioner to "acquire for and on behalf of the state, essential habitat, or interests therein, for the conservation of endangered, threatened, or species of special concern by gift, devise, purchase, exchange, condemnation or any other method of acquiring real property or an interest therein."³⁸ The commissioner also has the authority to enter into agreements with federal and local governments, individuals, and private entities regarding the management of essential habitats.³⁹
- The commissioner has the authority to withhold information or maps regarding the location of an essential habitat from any person if such disclosure proves detrimental to the conservation of threatened or endangered species, or species of special concern.⁴⁰

3. Consultation Requirements

- State agencies are required to consult with the commissioner to ensure that authorized actions do not directly affect the existence of endangered or

³³ CONN. GEN. STAT. ANN. § 26-306(a).

³⁴ CONN. GEN. STAT. ANN. § 26-307(1)-(2).

³⁵ CONN. GEN. STAT. ANN. § 26-306(b).

³⁶ CONN. GEN. STAT. ANN. § 26-304(12).

³⁷ CONN. GEN. STAT. ANN. § 26-307(3).

³⁸ CONN. GEN. STAT. ANN. § 26-309(a).

³⁹ CONN. GEN. STAT. ANN. § 26-309(b).

⁴⁰ CONN. GEN. STAT. ANN. § 26-313.

threatened species or negatively impact protected species' essential habitat.⁴¹ Agencies must "take all reasonable measures to mitigate any adverse impacts" that their actions may have on listed species.⁴²

- The commissioner and the Secretary of the Office of Policy and Management must engage in consultations to determine whether a proposed agency action has "feasible and prudent alternatives" that do not jeopardize listed species.⁴³ When such alternatives do not exist, a state agency may apply to the commissioner for an exemption.⁴⁴ The commissioner and secretary also engage in consultation procedures regarding incidental takings.⁴⁵
- The Natural Area Preserves Advisory Committee, a seven-member panel, advises the Commissioner of Environmental Protection on matters of land acquisition, creates and disseminates literature, and consults with local naturalist and conservation groups.⁴⁶

4. Recovery Plans

5. Penalties

- Once the commissioner discovers a violation and issues an order to cease the activity in question, individuals are entitled to an opportunity to be heard on the matter.⁴⁷

⁴¹ CONN. GEN. STAT. ANN. § 26-310(a).

⁴² CONN. GEN. STAT. ANN. § 26-310(b).

⁴³ CONN. GEN. STAT. ANN. § 26-310(c).

⁴⁴ CONN. GEN. STAT. ANN. § 26-310(c).

⁴⁵ CONN. GEN. STAT. ANN. § 26-310(d).

⁴⁶ CONN. GEN. STAT. ANN. § 26-314.

⁴⁷ CONN. GEN. STAT. ANN. § 26-312.

Delaware

I. Land Use Planning

A. State Planning Enabling Law

- For counties: THE QUALITY OF LIFE ACT OF 1988, DEL. CODE ANN. tit. 9, §§ 2651-2662 (New Castle County)
DEL. CODE ANN. tit. 9, §§ 4951-4962 (Kent County)
DEL. CODE ANN. tit. 9, §§ 6951-6962 (Sussex County)
- For municipalities: DEL. CODE ANN. tit. 22, § 701, *et seq.*

B. State Land Use Planning Provisions

1. State Planning Agencies/Responsibilities

- The Delaware Planning Act establishes the Office of State Planning Coordination within the Office of the Budget. The head of this Office is the State Planning Coordinator, and the office generally is responsible for assisting in statewide planning matters and serving as an advisory, consultative and coordinating office.⁴⁸
- The Delaware Planning Act also created a Cabinet Committee on State Planning Issues, which is composed of several state agencies and serves in an advisory capacity to the governor.⁴⁹ The Committee is charged with issuing an annual report that considers, among other things, recommendations for desirable land use patterns, taking into account factors such as, “climate, soil and underground conditions, water courses and bodies of water and other natural or environmental factors.”⁵⁰
- State law establishes a Governor's Advisory Council on Planning Coordination, which consists primarily of local officials and non-governmental officials and serves to advise the governor on current and future state development and land use issues.⁵¹

2. State-Level Planning Goals/State Development Plan

- The Office of State Planning Coordination must provide counties with state land use and development goals and policies to aid in preparing county comprehensive plans. The Office must also provide other information,

⁴⁸ DEL. CODE ANN. tit. 29, § 9101(h).

⁴⁹ DEL. CODE ANN. tit. 29, § 9101(c)(1).

⁵⁰ DEL. CODE ANN. tit. 29, § 9101(c)(1).

⁵¹ DEL. CODE ANN. tit. 29, § 9102.

including “estimates of existing quantity of natural resources,” that “might reasonably influence the county's future land use decisions.”⁵²

3. Inter-Jurisdictional/Regional Elements

4. Planning to Protect Specific Areas

5. State Assistance to Localities

- State law directs the Office of State Planning Coordination to provide grants and technical assistance to county and municipal governments to build their capacity and help them coordinate planning activities.⁵³
- To promote information sharing, state law instructs all state agencies to “provide to each county upon request existing data or information necessary to expedite the development and preparation of the comprehensive plan. . . .”⁵⁴

C. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

- Incorporated municipalities are authorized to establish a planning commission.⁵⁵ If a municipality chooses to form a planning commission, it must develop a comprehensive plan.⁵⁶ The plan must be reviewed at least every five years and updated or revised every ten years.⁵⁷
- On the other hand, each of Delaware’s three counties (New Castle, Kent and Sussex) is required to adopt a comprehensive plan governing the unincorporated areas within the county,⁵⁸ and to establish a local planning agency that will prepare the comprehensive plan.⁵⁹ The comprehensive plans must be “reviewed on an annual basis and modified as necessary.”⁶⁰
- In addition, the Delaware Land Protection Act directs counties to “adopt and incorporate overlay zoning ordinances, guidelines and specific technically based environmental performance standards...where appropriate” to protect the “unique ecological functions” of “state resource areas.”⁶¹ The Act authorizes the creation of state resource areas and the purchase of real

⁵² DEL. CODE ANN. tit. 9, §§ 2657(b), 4957(b), 6957(b).

⁵³ DEL. CODE ANN. tit. 29, § 9101(h)

⁵⁴ DEL. CODE ANN. tit. 9, §§ 2657(a), 4957(a), 6957(a).

⁵⁵ DEL. CODE ANN. tit. 22, § 701.

⁵⁶ DEL. CODE ANN. tit. 22, § 702(a).

⁵⁷ DEL. CODE ANN. tit. 22, § 702(e).

⁵⁸ DEL. CODE ANN. tit. 9, §§ 2653(b), 4953(b), 6953(b).

⁵⁹ DEL. CODE ANN. tit. 9, §§ 2655(a), 4955(a), 6955(a).

⁶⁰ DEL. CODE ANN. tit. 9, §§ 2656(d), 4956(d), 6956(d).

⁶¹ DEL. CODE ANN. tit. 7, § 7508(a).

property by state agencies to “protect and conserve the biological diversity of plants and animals and their habitat.”⁶²

2. Mandatory Local Plan Elements Related to Biodiversity

- In general, state law requires county and municipal agencies to coordinate with other municipalities and counties in developing their comprehensive plans.⁶³
- For municipalities with a population greater than 2,000, state law requires that the comprehensive plan include “policies, statements, goals and planning components” addressing a variety of elements, including protection of sensitive areas, as well as open space and recreation.⁶⁴
- With respect to county-level comprehensive plans, Delaware law requires inclusion of a conservation element, a future land use element, and a recreation and open space element, among others.⁶⁵ The purpose of the conservation element is to plan “for the conservation, use and protection of natural resources in the area.”⁶⁶ At a minimum, natural resources should be identified in the element through the use of “such natural area classifications as wetlands, wood uplands, habitat areas, geological areas, hydrological areas, floodplains, aquifer recharge areas, ocean beaches, soils and slopes.”⁶⁷ The future land use element shall contain a map that spatially identifies the location of natural resources according to the natural area classifications just listed.⁶⁸ In addition, the recreation and open space element must include “a comprehensive system of public and private sites for recreation including, but not limited to, nature preserves, parks...water bodies including beaches and public access to beaches, open spaces and other recreational facilities.”⁶⁹

3. Discretionary Local Plan Elements Related to Biodiversity

4. Additional Local Authorities and Responsibilities Related to Planning and Biodiversity

5. Mechanisms for Monitoring and Enforcing Local Compliance

a. Funding Restrictions on Localities

- According to state law, the state is “not obligated to provide state financial assistance or infrastructure improvements to support land

⁶² DEL. CODE ANN. tit. 7, §§ 7503, 7504, 7507.

⁶³ DEL. CODE ANN. tit. 22, § 702, tit. 9, § 6956(e).

⁶⁴ DEL. CODE ANN. tit. 22, § 702(b).

⁶⁵ DEL. CODE ANN. tit. 9, §§ 2656, 4956, 6956.

⁶⁶ DEL. CODE ANN. tit. 9, §§ 2656(g)(4), 4956(g)(4), 6956(g)(4).

⁶⁷ DEL. CODE ANN. tit. 9, §§ 2656(g)(4), 4956(g)(4), 6956(g)(4).

⁶⁸ DEL. CODE ANN. tit. 9, §§ 2656(g)(4), 4956(g)(4), 6956(g)(4).

⁶⁹ DEL. CODE ANN. tit. 9, §§ 2656(g)(5), 4956(g)(5), 6956(g)(5).

use or development actions” in such a county where the comprehensive plan is determined to be “substantially inconsistent with State development policies.”⁷⁰

b. Review of Local Plans

- At the time it makes its comprehensive plan available for public review, a county must provide copies of the proposed plan to the Governor’s Advisory Council on Planning Coordination for review. Within the following 30 days, the Council holds a public meeting at which the County presents its “goals and development policies.”⁷¹ A similar requirement applies to municipalities that are adopting or revising comprehensive plans.⁷²
- The Office of State Planning Coordination must prepare a report that compares a proposed comprehensive plan with state goals, policies and strategies. The Office may negotiate with the local jurisdiction over changes to the proposed plan. The Office submits its final report to the state Advisory Council on Planning Coordination, which in turn submits a recommendation to the Governor. The Governor must then either certify the plan or make recommendations for revisions. The county or municipality makes the final decision on adopting the plan and is free to accept or reject the state’s recommendations.⁷³
- State law also requires state-level review of rezoning, conditional uses, site plan reviews and/or subdivisions, within environmentally sensitive areas, as identified within any local jurisdiction's comprehensive plan.⁷⁴
- Both counties and municipalities are required to submit a report on their comprehensive plans each year following adoption so that that state may review implementation of the plans and any new land use and development trends or conditions.”⁷⁵

⁷⁰ DEL. CODE ANN. tit. 9, §§ 2658(b), 4958(b), 6958(b).

⁷¹ DEL. CODE ANN. tit. 9, §§ 2658(a), 4958(a), 6958(a).

⁷² DEL. CODE ANN. tit. 22, § 702.

⁷³ DEL. CODE ANN. tit. 29, §§ 9103, 9203.

⁷⁴ DEL. CODE ANN. tit. 29, §§ 9203(a)(3).

⁷⁵ DEL. CODE ANN. tit. 9, §§ 6958(c), (d); tit. 22, § 702.

II. Legal Mechanisms Protecting Endangered Species and Their Habitats

A. Non-Game Fish and Wildlife Laws

- Delaware has found that “[i]t is in the best interest of the State to preserve and enhance the diversity and abundance of nongame fish and wildlife.”⁷⁶ To advance this goal, state law establishes a Nongame Fish and Wildlife, Nongame Habitat and Natural Areas Preservation Fund in the state treasury, whose proceeds are distributed to the Department of Natural Resources.⁷⁷ Contributions to the fund are to be exclusively from private sources, with no allocations from the state legislature.

B. Threatened and Endangered Species Laws

- Unless the Division of Fish and Wildlife issues a permit, “the importation, possession or sale of any endangered species of fish or wildlife, or hides or parts thereof...is prohibited.”⁷⁸ Exceptions are made for “zoological, educational, and scientific purposes,” as well as for the proliferation of species in captivity.⁷⁹

1. Basis of Listing

- Although no criteria are given, the statute explains that endangered species are those “designated by the Division of Fish and Wildlife as seriously threatened with extinction.”⁸⁰ The state’s list of endangered species includes, but need not be limited to, those species placed on the national list by the Secretary of the Interior.⁸¹

2. Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species

- Under Delaware’s conservation laws, habitat protection is discussed in the context of nongame wildlife. However, ‘nongame’ is defined as “fauna, including rare and endangered species, which are not commonly trapped, killed, captured or consumed...”⁸² Therefore, the law’s stated goal of “protect[ing] the habitat and natural areas harboring rare and vanishing species of fish, wildlife, and plants and areas of unusual scientific significance” would apply to listed species.⁸³

⁷⁶ DEL. CODE ANN. tit. 7, § 201(1).

⁷⁷ DEL. CODE ANN. tit. 7, § 201(4).

⁷⁸ DEL. CODE ANN. tit. 7, § 601.

⁷⁹ DEL. CODE ANN. tit. 7, § 604.

⁸⁰ DEL. CODE ANN. tit. 7, § 601.

⁸¹ DEL. CODE ANN. tit. 7, § 601.

⁸² DEL. CODE ANN. tit. 7, § 202(a).

⁸³ DEL. CODE ANN. tit. 7, § 201(1).

3. Consultation Requirements

4. Recovery Plans

5. Penalties

- All violators of Delaware's endangered species statute are guilty of an environmental misdemeanor for each offense committed.⁸⁴

⁸⁴ DEL. CODE ANN. tit. 7, § 605.

Maine

I. Land Use Planning

A. State Planning Enabling Law

- PLANNING AND LAND USE REGULATION, ME. REV. STAT. ANN. tit. 30-A, §§ 4301-4352

B. State Land Use Planning Provisions

1. State Planning Agencies/Responsibilities

- The State Planning Office, part of the Executive Department, is charged with evaluating the effectiveness of state, local, and regional efforts to implement the land use and growth management program established in the state's planning and land use regulation law.⁸⁵
- The Maine Land Use Regulation Commission (Commission), within the Department of Conservation, serves as the planning and zoning regulatory authority for the state's "unorganized and deorganized areas" – those areas that not part of an organized municipality.⁸⁶

2. State-Level Planning Goals/State Development Plan

- The planning and land use regulation law lists ten state goals intended to provide "overall direction and consistency to the planning and regulatory actions of all state and municipal agencies affecting natural resource management, land use and development."⁸⁷ One goal requires agencies "[t]o protect the quality and manage the quantity of the State's water resources, including lakes, aquifers, great ponds, estuaries, rivers and coastal waters."⁸⁸ Other goals include "preventing development sprawl" and protecting "the State's other critical natural resources, including without limitation, wetlands, wildlife and fisheries habitat, sand dunes, shorelands, scenic vistas and unique natural areas."⁸⁹
- A major responsibility of the Commission, with respect to unorganized and deorganized areas is to classify lands into land use districts and to prescribe land use standards for "the use of air, lands, and waters" in each district.⁹⁰ One type of classification is a "protection district," which applies to areas where any development would "jeopardize significant natural, recreational and historic resources, including, but not limited to . . . wildlife habitat and

⁸⁵ ME. REV. STAT. ANN. tit. 30-A, § 4331.

⁸⁶ ME. REV. STAT. ANN. tit. 12, §§ 681, 682(1), 683.

⁸⁷ ME. REV. STAT. ANN. tit. 30-A, § 4312(3).

⁸⁸ ME. REV. STAT. ANN. tit. 30-A, § 4312(3)(E).

⁸⁹ ME. REV. STAT. ANN. tit. 30-A, §§ 4312(3)(A),(F).

⁹⁰ ME. REV. STAT. ANN. tit. 12, § 685-A(1)(A), 685A(3).

other areas critical to the ecology of the region or State.”⁹¹ The land use standards adopted by the Commission should “[p]rotect and preserve significant natural scenic and historic features,” as well as “[r]eflect a consideration of the availability and capability of the natural resource base, including soils, topography or sufficient healthful water supplies.”⁹² The Commission is also directed to adopt a comprehensive land use plan for the unorganized and deorganized townships of the State and to use the plan to develop more specific land use standards and to delineate district boundaries.⁹³ The law provides enforcement and inspection authority to the Commission and establishes penalties for violations.⁹⁴

3. Inter-Jurisdictional/Regional Elements

- Maine allows two or more municipalities to conduct joint planning and regulatory programs upon adoption of a written comprehensive management plan and enforcement program.⁹⁵ In addition, any individual municipality or multimunicipal region that develops a comprehensive plan must include a section describing a regional coordination program developed with neighboring and nearby municipalities or multimunicipal regions to manage shared resources including “rivers [and] aquifers.”⁹⁶
- The government of seven or more municipalities or unorganized territory townships within one regional planning and development district may form a regional planning commission for the purposes of promoting cooperation in regional planning, preparing a comprehensive regional plan, coordinating state and federal planning and development programs, and assisting municipalities with planning.⁹⁷
- The Governor may designate regional planning and development districts throughout the state to encourage the coordination of plans and programs across all levels of government in each region.⁹⁸ Regional planning commissions or regional councils of government may be charged with reviewing federal, state and local projects and programs that will have a significant regional impact within the district.⁹⁹
- The Commissioner of the Department of Conservation may approve the formation of a river corridor commission if it is determined that “[t]wo or more municipalities, which collectively occupy enough of the shoreland on a

⁹¹ ME. REV. STAT. ANN. tit. 12, § 685-A(1)(A).

⁹² ME. REV. STAT. ANN. tit. 12, § 685-A(3)(B) & (D).

⁹³ ME. REV. STAT. ANN. tit. 12, § 685-C(1).

⁹⁴ ME. REV. STAT. ANN. tit. 12, § 685-C(8).

⁹⁵ ME. REV. STAT. ANN. tit. 30-A, § 4325(2).

⁹⁶ ME. REV. STAT. ANN. tit. 30-A, § 4326(4).

⁹⁷ ME. REV. STAT. ANN. tit. 30-A, § 2321(1). Four to six municipalities may form a regional planning commission if each proposed member municipality receives the consent of the county in which the municipality is located. ME. REV. STAT. ANN. tit. 30-A, § 2321(1).

⁹⁸ ME. REV. STAT. ANN. tit. 30-A, § 2341(1).

⁹⁹ ME. REV. STAT. ANN. tit. 30-A, §§ 2342, 2302.

river segment to be effective in managing the shorelands of the river, have entered into an agreement.”¹⁰⁰ Additionally, the approval of a river corridor commission hinges on whether the municipalities have adopted a joint comprehensive plan to protect the shoreland, and have enacted an ordinance to further the goals of this plan.¹⁰¹

4. Planning to Protect Specific Areas

5. State Assistance to Localities

- Maine has established a program within the State Planning Office for the purpose of “administer[ing] a technical and financial assistance program for municipalities and multimunicipal regions.”¹⁰² The program must include “direct financial assistance for planning and implementation of growth management programs, standards governing the review of growth management programs by the office, technical assistance to municipalities or multimunicipal regions and a voluntary certification program for growth management programs.”¹⁰³ Financial awards are available for preparing and implementing comprehensive plans.¹⁰⁴

C. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

- All municipalities that do not fall under the Commission’s regulatory jurisdiction may engage in planning and are authorized to adopt and amend growth management programs, including comprehensive plans that are consistent with the goals set forth in the state law.¹⁰⁵ If a municipality chooses to adopt a growth management program, the municipality must adopt a comprehensive plan as part of the program.¹⁰⁶ The municipal officers must also designate a planning committee which may, in turn, be directed to develop and maintain the comprehensive plan.¹⁰⁷
- Any locality that was formerly part of a Commission land use district (municipalities that formally organized after October of 1971 or plantations that adopted planning controls after that date), must gain Commission approval for its comprehensive plan and must meet at least the minimum

¹⁰⁰ ME. REV. STAT. ANN. tit. 30-A, § 4463.

¹⁰¹ ME. REV. STAT. ANN. tit. 30-A, § 4463.

¹⁰² ME. REV. STAT. ANN. tit. 30-A, § 4345.

¹⁰³ ME. REV. STAT. ANN. tit. 30-A, § 4345.

¹⁰⁴ ME. REV. STAT. ANN. tit. 30-A, § 4346(2-A).

¹⁰⁵ ME. REV. STAT. ANN. tit. 30-A, § 4323.

¹⁰⁶ ME. REV. STAT. ANN. tit. 30-A, § 4326.

¹⁰⁷ ME. REV. STAT. ANN. tit. 30-A, § 4324(2).

land use protection standards set out by the Commission for that area prior to organization.¹⁰⁸

2. Mandatory Local Plan Elements Related to Biodiversity

- Comprehensive plans must include sections on (1) inventory and analyses, (2) policy development, (3) implementation strategy, (4) regional coordination programs to manage shared resources, and (5) implementation programs.¹⁰⁹ The inventory and analysis section must analyze the “vulnerability of and potential impacts on natural resources,” and must incorporate a wide range of information, including: significant water resources and their vulnerability to degradation; marine-related resources; open space areas; and “[s]ignificant or critical natural resources, such as wetlands, wildlife and fisheries habitats, significant plant habitats, coastal islands, sand dunes, scenic areas, shorelands, heritage coastal areas ...and unique natural areas.”¹¹⁰
- Every comprehensive plan also must include a timetable and implementation strategy that describes the land use ordinances to be adopted in order to ensure that the goals of the comprehensive plan are met.¹¹¹ In these sections of the comprehensive plan, regions must be identified as either growth areas or rural areas, and all rural areas that qualify as critical rural areas must receive priority consideration for strategies to “manage wildlife and fisheries habitat and preserve sensitive natural areas.”¹¹² The implementation plan must also ensure that municipal land use policies and ordinances are “consistent with applicable state law regarding critical natural resources,” and the law further authorizes municipalities and multimunicipal regions to adopt ordinances that are more stringent than state law in this regard.¹¹³

3. Discretionary Local Plan Elements Related to Biodiversity

- Municipalities or multimunicipal regions that are coastal areas may designate “one or more critical waterfront areas” in the policy development and implementation strategy sections of their comprehensive plans.¹¹⁴

¹⁰⁸ ME. REV. STAT. ANN. tit. 12, § 685-A(4).

¹⁰⁹ ME. REV. STAT. ANN. tit. 30-A, § 4326.

¹¹⁰ ME. REV. STAT. ANN. tit. 30-A, § 4326(1).

¹¹¹ ME. REV. STAT. ANN. tit. 30-A, §§ 4326(3).

¹¹² ME. REV. STAT. ANN. tit. 30-A, §§ 4326(3-A)(A) & (D), (4-A).

¹¹³ ME. REV. STAT. ANN. tit. 30-A, § 4326(3-A)(D).

¹¹⁴ ME. REV. STAT. ANN. tit. 30-A, § 4326(3-A)(E).

4. Additional Local Authorities and Responsibilities Related to Planning and Biodiversity

5. Mechanisms for Monitoring and Enforcing Local Compliance

a. Funding Restrictions on Localities

- State agencies administering certain state funding programs are required to give priority, where feasible, to municipalities that have growth management programs and/or comprehensive plans that are consistent with the goals and guidelines established under state law.¹¹⁵

b. Review of Local Plans

- As noted above, any locality that was formerly part of a Commission land use district and that organizes and adopts planning control must gain Commission approval for its comprehensive plan.¹¹⁶
- Municipalities that lie within the jurisdictional area of a regional council must submit to the council, for comment and recommendation, its comprehensive plan “or any matter which in the council's judgment has a substantial effect on regional development, including, but not limited to, plans for land use.”¹¹⁷
- A municipality or multimunicipal region that receives a state planning grant must submit its comprehensive plan to the State Planning Office for review to ensure consistency with the goals and guidelines established by state law.¹¹⁸ Plans prepared without the benefit of a planning grant may also be submitted for review. The review process includes opportunities for written comments on proposed growth management programs, and a chance for the municipality in question “to respond to and correct any identified deficiencies in the plan or program.”¹¹⁹

¹¹⁵ ME. REV. STAT. ANN. tit. 30-A, §§ 4349-A(3-A).

¹¹⁶ ME. REV. STAT. ANN. tit. 12, § 685-A(4).

¹¹⁷ ME. REV. STAT. ANN. tit. 30-A, § 2342(4).

¹¹⁸ ME. REV. STAT. ANN. tit. 30-A, § 4347-A(1).

¹¹⁹ ME. REV. STAT. ANN. tit. 30-A, § 4347-A(3)(A),(C).

II. Legal Mechanisms Protecting Endangered Species and Their Habitats

A. Non-Game Fish and Wildlife Laws

- The Department of Environmental Protection has the authority to conduct investigations and gather information “relating to population size, distribution, habitat needs, limiting factors and other biological and ecological data” that pertains to the survival of all native fish and wildlife, regardless of whether or not they are endangered.¹²⁰ In addition, the agency may choose to establish programs that “enhance or maintain the populations” of these nongame species.¹²¹

B. Threatened and Endangered Species Laws

- It is Maine’s state policy to protect and conserve fish or wildlife species that are in danger of becoming extinct.¹²² The Department of Environmental Protection is required to develop and maintain a list of species that the state legislature has designated (upon Department recommendation) to be threatened or endangered.¹²³ With certain exceptions, it is considered a crime to negligently or intentionally import, export, hunt, take, trap, possess, sell, deliver, feed, or harass a threatened or endangered species.¹²⁴

1. Basis of Listing

- The Department of Environmental Protection may make recommendations that a species be listed as threatened or endangered when at least one of the following conditions is met: a species’ habitat is undergoing an alteration or is otherwise threatened; a species experiences excessive scientific, commercial or educational use; disease; predation; “inadequacy of existing regulatory mechanisms;” or other manmade factors.¹²⁵

2. Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species

- The Department of Environmental Protection may identify specific areas that “currently or historically provid[ed] physical or biological features essential to the conservation” of a threatened or endangered species” and that may require special management considerations.¹²⁶

¹²⁰ ME. REV. STAT. ANN. tit. 12, § 12802(1).

¹²¹ ME. REV. STAT. ANN. tit. 12, § 12802(2).

¹²² ME. REV. STAT. ANN. tit. 12, § 12801.

¹²³ ME. REV. STAT. ANN. tit. 12, §§ 12803(2)(C), (5).

¹²⁴ ME. REV. STAT. ANN. tit. 12, § 12808. The law also prohibits similar activities with respect to any species that had been on the state list, but has been delisted by the state legislature. ME. REV. STAT. ANN. tit. 12 § 12810.

¹²⁵ ME. REV. STAT. ANN. tit. 12, § 12803(1).

¹²⁶ ME. REV. STAT. ANN. tit. 12, § 12804(2).

3. Consultation Requirements

- One of the duties of the Commissioner of Environmental Protection is to consult with federal and state agencies, as well as with organizations from other states that have a shared interest in a listed species.¹²⁷ Likewise, when developing an incidental take plan the commissioner must “seek input from knowledgeable individuals or groups” regarding each proposed plan.¹²⁸

4. Recovery Plans

- The Department of Environmental Protection may develop programs “to bring any endangered or threatened species to a point where it is no longer endangered or threatened.”¹²⁹ Land acquisition, propagation, live trapping, and transplantation are all approved recovery techniques.¹³⁰

5. Penalties

- When there has been a violation of Maine’s endangered species statute or any permit granted there under, the state Attorney General may bring injunctive proceedings or a civil or criminal action.¹³¹ Additionally, if a court finds the activity in question to be in violation of the statute, the judge may order that the land be returned to “its condition prior to the violation or as near to that condition as possible.”¹³²

¹²⁷ ME. REV. STAT. ANN. tit. 12, § 12803(2)(B).

¹²⁸ ME. REV. STAT. ANN. tit. 12, § 12808(3)(B)(6).

¹²⁹ ME. REV. STAT. ANN. tit. 12, § 12804(1).

¹³⁰ ME. REV. STAT. ANN. tit. 12, § 12804(1).

¹³¹ ME. REV. STAT. ANN. tit. 12, § 12809(1). The statute also provides penalties for prohibited actions with respect to delisted species. See ME. REV. STAT. ANN. tit. 12, § 12809.

¹³² ME. REV. STAT. ANN. tit. 12, § 12809(2).

Maryland

I. Land Use Planning

A. State Planning Enabling Law

- General: MD. ANN. CODE art. 66B §§ 1.00-14.09.
- Municipal corporations: MD. ANN. CODE art. 23A § 2(b)(36).
- Charter counties: MD. ANN. CODE art. 25A § 5(X).

B. State Land Use Planning Provisions

1. State Planning Agencies/Responsibilities

- The Maryland Department of Planning is responsible for planning matters at the state level, including preparation of the State Development Plan. The Department is required to harmonize its activities with the activities of other state agencies and local planning agencies and must help local and regional planning agencies harmonize their plans with the State Development Plan.¹³³
- State law establishes a separate Office of Smart Growth within the Executive Department.¹³⁴ The Office is responsible for coordinating state actions to promote smart growth principles, providing information on smart growth, and assisting local governments and others with developing smart growth projects.¹³⁵

2. State-Level Planning Goals/State Development Plan

- Maryland's state land use law establishes a state-wide land use goal of increasing "the current percentage of growth located within the priority funding areas," and of decreasing "the percentage of growth located outside the priority funding areas."¹³⁶ Priority funding areas are listed in state law, and include municipal corporations, enterprise zones, and other densely populated and growth-targeted areas.¹³⁷
- This statutory goal was developed to advance principles of smart and sustainable growth, and to embody a set of twelve visions¹³⁸ established in

¹³³ MD. CODE ANN., STATE FIN. & PROC., §§ 5-401, 5-402(b)(1), (b)(2), (e).

¹³⁴ MD. CODE ANN., STATE GOV'T, § 9-1403.

¹³⁵ MD. CODE ANN., STATE GOV'T, § 9-1405(b).

¹³⁶ MD. ANN. CODE art. 66B § 3.10(b)(2)(i). Local jurisdictions must set a percentage goal toward achieving the statewide goal. MD. ANN. CODE art. 66B 3.10(b)(2)(ii).

¹³⁷ MD. CODE ANN., STATE FIN. & PROC., § 5-7B-02.

¹³⁸ MD. ANN. CODE art. 66B, § 1.01. The visions, which were revised in 2009, consist of short statements addressing: (1) quality of life and sustainability; (2) public participation; (3) growth areas; (4) community design; (5) infrastructure; (6) transportation; (7) housing; (8) economic development; (9) environmental protection; (10) resource conservation; (11) stewardship; and (12) implementation.

the statute.¹³⁹ One vision, “quality of life and sustainability,” promotes “universal stewardship of the land, water, and air resulting in sustainable communities and protection of the environment.” The vision for “environmental protection” is that “land and water resources, including the Chesapeake and coastal bays, are carefully managed to restore and maintain healthy air and water, natural systems, and living resources.”¹⁴⁰ To achieve “resource conservation,” the statute envisions conservation of “waterways, forests, agricultural areas, open space, natural systems, and scenic areas.”¹⁴¹

- Maryland’s state planning law establishes a State Economic Growth, Resource Protection and Planning Policy. This policy includes a resource conservation policy statement that “waterways, forests, agricultural areas, open space, natural systems, and scenic areas are conserved,”¹⁴² as well as an environmental policy statement that “land and water resources...are carefully managed to restore and maintain healthy air and water, natural systems, and living resources.”¹⁴³
- The Department of Planning is required to develop, and from time to time amend, a State Development Plan to promote coordinated development in the state.¹⁴⁴ The Plan must include recommendations for the most desirable land use patterns, based on, among other things, “environmental and natural factors, including climate, soil and underground conditions, topography, and water sources and bodies of water....”¹⁴⁵ The Plan must also identify, in consultation with political subdivisions and pursuant to guidelines developed by the Department, “areas of critical State concern.”¹⁴⁶

3. Inter-Jurisdictional/Regional Elements

4. Planning to Protect Specific Areas

5. State Assistance to Localities

- The Department of Planning offers planning assistance in the form of “surveys, land use studies, urban renewal plans, technical services, and other planning work, to local governments,” and can provide financial assistance to local governments if the state budget provides for it.¹⁴⁷

¹³⁹ MD. ANN. CODE art. 66B § 3.10(b)(1)(ii).

¹⁴⁰ MD. ANN. CODE art. 66B, § 1.01(9).

¹⁴¹ MD. ANN. CODE art. 66B, § 1.01(10).

¹⁴² MD. CODE ANN., STATE FIN. & PROC., § 5-7A-01(10).

¹⁴³ MD. CODE ANN., STATE FIN. & PROC., § 5-7A-01(9).

¹⁴⁴ MD. CODE ANN., STATE FIN. & PROC., § 5-602.

¹⁴⁵ MD. CODE ANN., STATE FIN. & PROC., § 5-612.

¹⁴⁶ MD. CODE ANN., STATE FIN. & PROC., § 5-611.

¹⁴⁷ MD. CODE ANN., STATE FIN. & PROC. § 5-403(a).

C. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

- As of 2009, all local jurisdictions (defined as county or municipal corporations)¹⁴⁸ and charter counties must develop, enact, amend and implement a land use plan. Local jurisdictions are authorized to establish by ordinance a planning commission to develop the plan for local legislative adoption.¹⁴⁹ Local jurisdictions must review and, if necessary revise, their plans every six years to ensure that all mandatory elements are included.¹⁵⁰
- As noted above, Maryland statutes emphasize smart growth principles, and the law requires that those principles be reflected in local comprehensive plans. Various provisions of state law require that a wide range of state and local actions be carried out in a manner that is consistent with local comprehensive plans.

2. Mandatory Local Plan Elements Related to Biodiversity

- Every comprehensive plan (whether for a municipal corporation, a county, or a charter county) must include several elements. A “sensitive area element” must contain “goals, objectives, principles, policies, and standards designed to protect sensitive areas from the adverse effects of development.”¹⁵¹ Sensitive areas are defined to include streams, wetlands, and their buffers; 100-year flood plains; habitats of threatened and endangered species; steep slopes; agricultural and forest lands intended for resource protection or conservation; and other areas in need of special protection, as determined in the plan.”¹⁵²
- Comprehensive plans must also include recommendations for the “determination, identification, and designation of areas within the county that are of critical State concern.”¹⁵³
- Comprehensive plans for municipal corporations that exercise zoning authority must include a municipal growth element that consider, among other things, protection of sensitive areas that could be impacted by development within the proposed municipal growth area.¹⁵⁴
- In addition to listing the specific elements that must be adopted in comprehensive plans, the state land use planning law requires that local jurisdictions adopt and include in their plans the set of “visions” enumerated in the law. When local jurisdictions review their comprehensive plans (at least every six years), they must “ensure that implementation of the

¹⁴⁸ MD. ANN. CODE art. 66B § 1.00(g).

¹⁴⁹ MD. ANN. CODE art. 66B §§ 1.04(a), 3.01(a); 3.05(a)(1).

¹⁵⁰ MD. ANN. CODE art. 66B, § 3.05(b)(2).

¹⁵¹ MD. ANN. CODE art. 66B §§ 1.04(b)(1)(v)(1), 3.05(a)(4)(ix)(1).

¹⁵² MD. ANN. CODE art. 66B § 1.00(j).

¹⁵³ MD. ANN. CODE art. 66B § 3.05(a)(4)(viii).

¹⁵⁴ MD. ANN. CODE art. 66B § 3.05(a)(4)(x)(9),

“visions,” as well as the mandatory “sensitive area element” is achieved “through the adoption of applicable zoning ordinances and regulations, planned development ordinances and regulations, subdivision ordinances and regulations, and other land use ordinances and regulations that are consistent with the plan.”¹⁵⁵

- Under state law addressing forests and parks, local governments that have planning and zoning authority must “support forestry by a reasonable exercise of these powers, including the consideration, development, and interpretation of planning and zoning requirements that beneficially impact the . . . practice of forestry in a manner consistent with” the state’s enumerated “visions.”¹⁵⁶

3. Discretionary Local Plan Elements Related to Biodiversity

- The state land use law lists a number of additional elements that may be included in comprehensive plans, including community renewal, housing, flood control, pollution control, conservation, natural resources, location of public utilities, and priority preservation areas (pursuant to the state’s agricultural law).¹⁵⁷

4. Additional Local Authorities and Responsibilities Related to Planning and Biodiversity

5. Mechanisms for Monitoring and Enforcing Local Compliance

a. Funding Restrictions on Localities

- Maryland’s planning law prohibits the state from providing funding for a growth-related project if the project is not located within a priority funding area, except as otherwise provided in the law.¹⁵⁸
- The Department of Planning will review the adequacy and competency of a local planning agency that has requested state funding assistance.¹⁵⁹

b. Review of Local Plans

- Prior to the adoption of local land use and zoning plans, copies of the proposed language must be circulated to “all adjoining planning jurisdictions, and to all State and local jurisdictions” that will play a

¹⁵⁵ MD. ANN. CODE art. 66B § 4.09.

¹⁵⁶ MD. CODE ANN., NAT’L. RES., § 5-102.1(e).

¹⁵⁷ MD. ANN. CODE art. 66B § 3.05(a)(6)(ii).

¹⁵⁸ MD. CODE ANN., STATE FIN. & PROC., §§ 5-7B-04 – 06. See text at n. 134-5, *infra*.

¹⁵⁹ MD. CODE ANN., STATE FIN. & PROC., § 5-403(c).

role in financing or constructing elements of the plan.¹⁶⁰ Each jurisdiction may comment on the proposed plan, and such comments will be “included in the planning commission’s report to the local legislative body.”¹⁶¹

- The sensitive area element of the comprehensive plan must be reviewed by the Department of the Environment and the Department of Natural Resources to determine if the plan is consistent with the goals and programs of the agency.¹⁶²

II. Legal Mechanisms Protecting Endangered Species and Their Habitats

A. Non-Game Fish and Wildlife Laws

- The Department of Natural Resources is responsible for conservation and management of wildlife and wildlife resources.¹⁶³
- Under Maryland’s Non-Game and Endangered Species Conservation Act, the Department of Natural Resources is required to “conduct investigations of nongame wildlife in order to develop information relating to population, distribution, habitat needs, limiting factors, and other biological and ecological data to determine conservation measures necessary for their continued ability to sustain themselves successfully.”¹⁶⁴ Based on these studies, the agency must develop conservation programs.¹⁶⁵
- The Act further requires the Department to issue regulations adopting “limitations relating to taking, possession, transportation, exportation, processing, sale or offer for sale, or shipment necessary to conserve nongame wildlife.”¹⁶⁶
- Except as provided by state regulation, the Act prohibits actions such as taking, possessing, and transporting, for any nongame wildlife deemed by the Department “to be in need of conservation.”¹⁶⁷

B. Threatened and Endangered Species Laws

- The Non-Game and Endangered Species Act establishes that plant and wildlife species listed as threatened or endangered under the national Endangered Species Act maintain the same status within Maryland’s borders.¹⁶⁸ The statute also requires the Department of Natural Resources to determine, by regulation, whether

¹⁶⁰ MD. ANN. CODE art. 66B, § 3.07.

¹⁶¹ MD. ANN. CODE art. 66B, § 3.07.

¹⁶² MD. ANN. CODE art. 66B, §§ 1.04(b)(1)(v)(2), 3.05(a)(3)(ix)(2).

¹⁶³ MD. CODE ANN., NATL. RES., § 10-202(a).

¹⁶⁴ MD. CODE ANN., NATL. RES., § 10-2A-03(a).

¹⁶⁵ MD. CODE ANN., NATL. RES., § 10-2A-03(a).

¹⁶⁶ MD. CODE ANN., NATL. RES., § 10-2A-03(b).

¹⁶⁷ MD. CODE ANN., NATL. RES., § 10-2A-03(c)(1).

¹⁶⁸ MD. CODE ANN., NATL. RES., § 10-2A-04(a).

any additional species are threatened or endangered.¹⁶⁹ The agency must develop regulations that are needed to protect wildlife and plant species determined to be threatened.¹⁷⁰ Furthermore, under the Act a person may not export or take endangered wildlife species from Maryland, nor may one “possess, process, sell or offer for sale, deliver, carry, transport, or ship the species by any means.”¹⁷¹ Similar restrictions apply to endangered plant species.¹⁷² The secretary has the authority to apply these prohibitions to threatened wildlife and plant species as well.¹⁷³

1. *Basis of Listing*

- The Department of Natural Resources must consider the following factors in determining whether any species “normally occurring within the State” should be classified as threatened or endangered: modifications to species’ range or habitat; overutilization of species for commercial, educational, or scientific purposes; disease; predation; “inadequacy of existing regulatory mechanisms;” and man-made factors effecting species’ continued existence within the state.¹⁷⁴ Such decisions are based on “the best scientific, commercial, and other data available.”¹⁷⁵

2. *Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species*

- The Department must create programs necessary for the conservation of nongame, threatened, or endangered species of wildlife or plants, including acquisition of land or aquatic habitat.¹⁷⁶

3. *Consultation Requirements*

- In developing conservation programs, the Department of Natural Resources must consult with the Department of Agriculture, as well as other states that share an interest in a particular, non-game, threatened, or endangered species.¹⁷⁷ The Department may enter into agreements with federal, state, local, or private agencies in order to design conservation programs.¹⁷⁸ Likewise, state departments must seek the assistance of the secretary to further the goals of this statute and ensure that their actions do not

¹⁶⁹ MD. CODE ANN., NATL. RES., § 10-2A-04(b).

¹⁷⁰ MD. CODE ANN., NATL. RES., § 10-2A-05(b).

¹⁷¹ MD. CODE ANN., NATL. RES., § 10-2A-05(c).

¹⁷² MD. CODE ANN., NATL. RES., § 10-2A-05(d).

¹⁷³ MD. CODE ANN., NATL. RES., § 10-2A-05(b).

¹⁷⁴ MD. CODE ANN., NATL. RES., § 10-2A-04(b).

¹⁷⁵ MD. CODE ANN., NATL. RES., § 10-2A-04(c).

¹⁷⁶ MD. CODE ANN., NATL. RES., § 10-2A-06(a).

¹⁷⁷ MD. CODE ANN., NATL. RES., § 10-2A-06(b).

¹⁷⁸ MD. CODE ANN., NATL. RES., § 10-2A-06(b).

“jeopardize the continued existence of the endangered species or threatened species.”¹⁷⁹

4. Recovery Plans

5. Penalties

- Persons who violate the terms of a permit, fail to obtain a permit, or violate recovery efforts outlined in the law shall be punished by not more than one year in prison, fines (not amounting to more than \$1,000), or both.¹⁸⁰

¹⁷⁹ MD. CODE ANN., NATL. RES., § 10-2A-06(c).

¹⁸⁰ MD. CODE ANN., NATL. RES., § 10-2A-07(a).

Massachusetts

I. Land Use Planning

A. State Planning Enabling Law

- MASS. GEN. LAWS ANN. ch. 41, §§ 81A-81GG

B. State Land Use Planning Provisions

1. State Planning Agencies/Responsibilities

- The Executive Office of Energy and Environmental Affairs is responsible for carrying out the state environmental policy and is comprised of six environmental, natural resources, and energy regulatory agencies. Among the numerous functions of the Office is “assist[ing] other state and regional agencies in developing appropriate programs and policies relating to land use planning and regulation in the commonwealth.”¹⁸¹ The Office is also directed to “promote the best usage of land, water, and air to optimize and preserve environmental quality by encouraging and providing for...planned...development...”¹⁸² The law further states that as “the primary agency of the commonwealth for environmental planning, the office shall utilize the services and plans of regional planning agencies, conservation districts, conservation commissions and historical commissions in fulfilling its environmental planning responsibilities.”¹⁸³

2. State-Level Planning Goals/State Development Plan

3. Inter-Jurisdictional/Regional Elements

- Any grouping of cities and towns may, by local legislative vote, form a regional planning district commission.¹⁸⁴ If a commission is established, it must adopt a comprehensive plan for the region.¹⁸⁵ Regional planning districts must provide technical assistance to member cities or towns to, among other things, “develop plans and incentives for residential and commercial development, while taking steps to mitigate the environmental and transportation impacts of new growth.”¹⁸⁶
- Any two or more towns or cities may come together to establish a growth and development policy committee. Such a committee has the authority to

¹⁸¹ MASS. GEN. LAWS ANN., ch. 21A, § 2(16).

¹⁸² MASS. GEN. LAWS ANN., ch. 21A, § 2(9).

¹⁸³ MASS. GEN. LAWS ANN., ch. 21A, § 2.

¹⁸⁴ MASS. GEN. LAWS ANN., ch. 40B, § 3.

¹⁸⁵ MASS. GEN. LAWS ANN., ch. 40B, § 5.

¹⁸⁶ MASS. GEN. LAWS ANN., ch. 40B, § 30(a).

“to engage in all acts and conduct for the purpose of intergovernmental planning of balanced growth and development issues.”¹⁸⁷ The list of “balanced growth and development issues” includes the “protection of environmentally sensitive areas; preservation of important land and water resources; growth management land use problems, including regional transportation systems, housing, water quality, open space, recreational land and agricultural land,” and “development which promotes the conservation and efficient use of natural resources, including...water, wetland, flood plains, ground water aquifers and aquifer recharge areas.”¹⁸⁸

4. Planning to Protect Specific Areas

5. State Assistance to Localities

- The Department of Housing and Community Development is “authorized, empowered and directed to . . . provide assistance to communities in solving local problems, including, but not limited to, problems in planning, zoning, housing and development....”¹⁸⁹
- Massachusetts law requires a mutual exchange of information between agencies of the commonwealth, regional planning district commissions, and political subdivisions to assist in preparing regional planning programs.¹⁹⁰
- Massachusetts law establishes an office of geographic and environmental information within the Executive Office of Energy and Environmental Affairs, for the purpose of maintaining and providing information “to improve stewardship of natural resources and the environment, promote economic development and guide land-use planning....”¹⁹¹ To further this goal, the agency is directed to, among other things, provide technical assistance, training, and computer resources to municipalities, regional agencies and political subdivisions.
- Massachusetts law establishes a District Local Technical Assistance Fund, which provides grants to regional planning agencies for technical assistance to municipalities on a range of subjects, including zoning, economic development and land use planning.¹⁹²

C. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

¹⁸⁷ MASS. GEN. LAWS ANN., ch. 40, § 4I.

¹⁸⁸ MASS. GEN. LAWS ANN., ch. 40, § 4I.

¹⁸⁹ MASS. GEN. LAWS ANN., ch. 23B, § 3.

¹⁹⁰ MASS. GEN. LAWS ANN., ch. 40B, § 19.

¹⁹¹ MASS. GEN. LAWS ANN., ch. 21A, § 4B(e).

¹⁹² MASS. GEN. LAWS ANN., ch. 29, §2XXX.

- Any town or city, except Boston, is authorized to establish a planning board.¹⁹³ Once a town reaches a population of 10,000, it must establish a planning board.¹⁹⁴ If a planning board is established, it must make a master plan for all or parts of the town or city.¹⁹⁵

2. Mandatory Local Plan Elements Related to Biodiversity

- A master plan must include certain required elements, two of which are a natural resources element and an open space element. The natural resources element must inventory significant natural resource areas in the municipality and set forth policies for their protection and management. The open space element must do the same for open space areas in the municipality.¹⁹⁶

3. Discretionary Local Plan Elements Related to Biodiversity

4. Additional Local Authorities and Responsibilities Related to Planning and Biodiversity

- Cities and towns are authorized to create local conservation commissions that may prepare plans for the development of its natural resources and for the protection of its watershed resources. These plans may include “a conservation and passive outdoor recreation plan which shall be, as far as possible, consistent with the town master plan and with any regional plans relating to the area.”¹⁹⁷

5. Mechanisms for Monitoring and Enforcing Local Compliance

a. Funding Restrictions on Localities

- A city or town which has a master plan and applies for a state grant must prepare and keep on file an economic development supplement setting forth “the goals of the city or town with respect to industrial or commercial development, affordable housing, and preservation of parks and open space.”¹⁹⁸

b. Review of Local Plans

¹⁹³ MASS. GEN. LAWS ANN., ch. 41, § 81A.

¹⁹⁴ MASS. GEN. LAWS ANN., ch. 41, § 81A.

¹⁹⁵ MASS. GEN. LAWS ANN., ch. 41, § 81D.

¹⁹⁶ MASS. GEN. LAWS ANN., ch. 41, § 81D.

¹⁹⁷ MASS. GEN. LAWS ANN., ch. 40, § 8C.

¹⁹⁸ MASS. GEN. LAWS ANN., ch. 41, § 81D.

II. Legal Mechanisms Protecting Endangered Species and Their Habitats

A. Non-Game Fish and Wildlife Laws

- The Division of Fisheries and Wildlife (within the Department of Fish and Game) is charged with administering the natural heritage and endangered species program of the Commonwealth.¹⁹⁹ The agency must promulgate rules for the program, including “criteria for the purchase of lands critical to nongame wildlife,” and for the “protection and enhancement of nongame wildlife.”²⁰⁰ The agency is also authorized to conduct biological research designed to “conserve, improve and increase the supply of reptiles, amphibians, fish, birds and mammals.”²⁰¹
- Additionally, the director of the Division must appoint a seven-member natural heritage and endangered species advisory committee to counsel the director on matters pertaining to both nongame wildlife and endangered species.²⁰²

B. Threatened and Endangered Species Laws

- Massachusetts’ endangered species law states in part that “no person may take, possess, transport, export, process, sell or offer for sale, buy or offer to buy...any plant or animal species listed as endangered, threatened, or of special concern” including those species listed under the federal law.²⁰³ The law provides for certain exceptions to this prohibition.²⁰⁴ The law also contains a general mandate that all “agencies, departments, boards, commissions and authorities shall...evaluate and determine the impact on endangered, threatened and special concern species of all works, projects or activities conducted by them and shall use all practicable means and measures to avoid or minimize damage to such species.”²⁰⁵

1. Basis of Listing

- Decisions as to whether or not a species should be listed are based on the following biological data: population growth trends, whether a species is native, vulnerability, threats to habitat, species’ specialization, range, and rarity.²⁰⁶ The Division of Fish and Wildlife must review the list every five years to determine whether any species should be added, removed, or reclassified.²⁰⁷
- The Division is authorized generally to “conduct investigations into non-game species of wildlife and wild plants to obtain information relating to

¹⁹⁹ MASS. GEN. LAWS ANN., ch. 131, § 5B.

²⁰⁰ MASS. GEN. LAWS ANN., ch. 131, § 5B.

²⁰¹ MASS. GEN. LAWS ANN., ch. 131, § 4(3).

²⁰² MASS. GEN. LAWS ANN., ch. 131, § 5B.

²⁰³ MASS. GEN. LAWS ANN., ch. 131A, § 2.

²⁰⁴ MASS. GEN. LAWS ANN., ch. 131A, § 3.

²⁰⁵ MASS. GEN. LAWS ANN., ch. 131A, § 4.

²⁰⁶ MASS. GEN. LAWS ANN., ch. 131A, § 4.

²⁰⁷ MASS. GEN. LAWS ANN., ch. 131A, § 4.

population, distribution, habitat requirements, limiting factors, and other biological and ecological parameters” and based upon such investigations to list species that are determined to be endangered.²⁰⁸

2. Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species

- The Division is charged with designating, by regulation, “significant habitats of endangered or threatened species populations.”²⁰⁹ The designations, which must be made and reviewed on a yearly basis, are based on the following criteria: “foreseeable threats to the population or its habitat,” population size, “potential benefits of designation to the population and to the status and welfare of the species generally,” and present and future uses of the land.²¹⁰
- Local zoning boards, planning boards or conservation commissions are required to notify the Division within twenty-one days of any petition, request or application regarding proposed activity within significant habitats.²¹¹
- Under Massachusetts law, no person may alter significant habitat without a written permit from the Division. The permit may be issued based on criteria enumerated in the law, only if the state finds that the proposed action “will not reduce the viability of the significant habitat to support the endangered or threatened species population involved.”²¹²

3. Consultation Requirements

- The director of the Division of Fisheries and Wildlife is required to consult with the natural heritage and endangered species advisory committee regarding whether a species should be listed, and if so, whether it should be listed as endangered, threatened, or of special concern.²¹³ In addition, regulations implementing the law are to be developed with the advice and assistance of a nine-person technical advisory committee, whose membership criteria are established by statute.²¹⁴

²⁰⁸ MASS. GEN. LAWS ANN., ch. 131, § 4(13A).

²⁰⁹ MASS. GEN. LAWS ANN., ch. 131A, § 4.

²¹⁰ MASS. GEN. LAWS ANN., ch. 131A, § 4.

²¹¹ MASS. GEN. LAWS ANN., ch. 131A, § 4.

²¹² MASS. GEN. LAWS ANN., ch. 131A, § 5.

²¹³ MASS. GEN. LAWS ANN., ch. 131A, § 4.

²¹⁴ MASS. GEN. LAWS ANN., ch. 131A, § 4.

4. Recovery Plans

5. Penalties

- A violation of the statute's take provisions and of the prohibition on altering significant habitat are punishable by fines and/or prison sentences enumerated in the statute, with subsequent violations punished by more severe penalties.²¹⁵

²¹⁵ MASS. GEN. LAWS ANN., ch. 131A, § 6.

New Hampshire

I. Land Use Planning

A. State Planning Enabling Law

- N.H. REV. STAT. ANN. §§ 672:1-674:4

B. State Land Use Planning Provisions

1. State Planning Agencies/Responsibilities

- The Office of Energy and Planning (OEP) within the Governor’s Office is responsible for planning “the orderly development of the state and the wise management of the state’s resources.”²¹⁶ State law directs OEP to serve as a leader in encouraging smart growth and preserving farmland, open space and traditional village centers.²¹⁷
- OEP is also charged generally with encouraging the coordination of planning among state agencies.²¹⁸ The Council on Resources and Development (CORD), made up of representatives from thirteen state agencies and chaired by the director of OEP, is the body through which planning activities among state agencies is coordinated and made consistent.²¹⁹

2. State-Level Planning Goals/State Development Plan

- The Governor, with the assistance and advice of the OEP, must develop a comprehensive state development plan, which is to be renewed or revised every four years.²²⁰
- The state plan must incorporate several elements, including: policies and principles to maximize smart growth; a land use section addressing the state’s role in land development and in funding land use programs; and a natural resources section addressing land protection, open space, and farmland preservation.²²¹
- The OEP is responsible for monitoring the planning activities of state agencies to ensure that agency plans are consistent with the policies and priorities of the state comprehensive development plan.²²²

3. Inter-Jurisdictional/Regional Elements

²¹⁶ N.H. REV. STAT. ANN. § 4-C:1(II)(a).

²¹⁷ N.H. REV. STAT. ANN. § 4-C:1(II)(h).

²¹⁸ N.H. REV. STAT. ANN. § 4-C:1(II)(d).

²¹⁹ N.H. REV. STAT. ANN. § 162-C:1.

²²⁰ N.H. REV. STAT. ANN. §§ 4-C:2(I)(a); 9-A:2(I); 9-A:1(V).

²²¹ N.H. REV. STAT. ANN. § 0-A:1(III).

²²² N.H. REV. STAT. ANN. § 9-A:2(III).

- If a regional planning commission does not already exist within an OEP-designated planning region, two or more municipalities that have planning boards may form a regional planning commission.²²³ Any municipality in a planning region where a regional planning commission exists may join that commission by an ordinance passed by the municipality's legislative body (consent of the other member municipalities is not necessary).²²⁴
- Once formed, a regional planning commission must develop, and update at least every five years, a comprehensive master plan for the area within its jurisdiction (the OEP-designated planning region), including recommendations for appropriate land uses in the region.²²⁵ However, a regional planning commission's powers are advisory only, and do not infringe on any of the powers of a municipal planning board to develop its local municipality's master plan.²²⁶ The regional planning commission is authorized to assist local planning boards in implementing the regional plan.²²⁷

4. Planning to Protect Specific Areas

5. State Assistance to Localities

- OEP is responsible generally for assisting planning, growth management, and development activities within and among cities and towns, in order to encourage smart growth.²²⁸
- State law establishes within OEP a program for municipal and regional assistance in the areas of resource protection and growth management.²²⁹ The OEP is responsible for providing technical assistance and training to local governments, including offering six hours of training to new members of municipal planning boards.²³⁰ In general, though, the regional planning commissions are envisioned in state law as the primary source of technical assistance to municipalities. The OEP is directed to provide technical assistance and financial grants (depending on appropriations) to the regional planning commissions for this purpose.²³¹
- As part of its broader responsibilities for gathering and publishing information to assist state, regional and local planning efforts, the OEP is required to develop and maintain a GIS database and to provide technical

²²³ N.H. REV. STAT. ANN. § 36:46(I).

²²⁴ N.H. REV. STAT. ANN. § 36:46(II).

²²⁵ N.H. REV. STAT. ANN. § 36:47(I).

²²⁶ N.H. REV. STAT. ANN. § 36:47(I).

²²⁷ N.H. REV. STAT. ANN. § 36:50.

²²⁸ N.H. REV. STAT. ANN. § 4-C:1(II)(c).

²²⁹ N.H. REV. STAT. ANN. § 4-C:7

²³⁰ N.H. REV. STAT. ANN. §§ 4-C:8(II); 673:3-a.

²³¹ N.H. REV. STAT. ANN. § 4-C:8(I).

assistance to municipalities in using GIS data for planning and growth management.²³²

- The OEP administers a housing and conservation planning program, which provides technical assistance grants to municipalities planning for growth and affordable housing opportunities.²³³ Technical assistance funding is based on consistency with several enumerated program principles, including: integrating housing and conservation plans with a comprehensive growth strategy; understanding the interrelationship between natural resources and housing development; and following smart growth principles set forth in state law.²³⁴
- New Hampshire law directs all state agencies to give due consideration to the state’s smart growth principles “when providing advice or expending state or federal funds, for their own use or as pass-through grants, for public works, transportation, or major capital improvement projects. . . .”²³⁵ The CORD is charged with overseeing state actions in this regard.²³⁶

C. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

- Any city, town, village district, or county (where the county has unincorporated towns or unorganized places) may establish a planning board.²³⁷
- If a planning board is established, it must prepare a master plan to guide development of the municipality.²³⁸ The board must update and amend the plan “from time to time,” with a recommended timeframe of every five to ten years.²³⁹ The master plan is to serve as a guide to municipal planning boards in performing their duties to achieve “principles of smart growth, wise resource protection, and sound planning.”²⁴⁰
- A local legislative body may only adopt a zoning ordinance after the local planning board has adopted the mandatory sections of the master plan as set out in the state statute (see below).²⁴¹ Similarly, local legislative bodies may adopt growth management ordinances to regulate the timing of development only after the local planning board has adopted a master plan.²⁴²

²³² N.H. REV. STAT. ANN. §§ 4-C:3(V); 4-C:8(IV).

²³³ N.H. REV. STAT. ANN. § 4-C:25.

²³⁴ N.H. REV. STAT. ANN. §§ 4-C:30(I), (II), (VI).

²³⁵ N.H. REV. STAT. ANN. §9-B:4.

²³⁶ N.H. REV. STAT. ANN. §162-C:2(X).

²³⁷ N.H. REV. STAT. ANN. § 673:1(I).

²³⁸ N.H. REV. STAT. ANN. § 674:1(I).

²³⁹ N.H. REV. STAT. ANN. §§ 674:1(I); 674:3(II).

²⁴⁰ N.H. REV. STAT. ANN. § 674:2(I).

²⁴¹ N.H. REV. STAT. ANN. § 674:18.

²⁴² N.H. REV. STAT. ANN. § 674:22.

2. Mandatory Local Plan Elements Related to Biodiversity

- Every master plan must contain a “vision” section and a land use section that “translate[s] the vision statements into physical terms.”²⁴³ The land use section must show existing conditions and the proposed location and extent of future land use.²⁴⁴

3. Discretionary Local Plan Elements Related to Biodiversity

- A master plan may include a natural resources section that inventories critical sensitive areas in order to provide a factual basis for land development regulation to protect natural areas. Such a section also identifies potential conflicts between other portions of the master plan and natural resource conservation. As part of this section, a water resources management plan is recommended.²⁴⁵
- The master plan may contain a “regional concerns” section describing “specific areas in the municipality of significant regional interest.”²⁴⁶ This section may address natural resources and open space resources bordering or shared with neighboring municipalities.
- The master plan may also contain an implementation section setting forth specific actions (including adoption of land use regulations) that the municipality may use to monitor the effectiveness of each section of the plan.²⁴⁷

4. Additional Local Authorities and Responsibilities Related to Planning and Biodiversity

- A city or town may establish a conservation commission for the proper utilization and protection of the natural resources and for the protection of watershed resources. A central function of a conservation commission is to keep an index of and collect information about all open space and natural, aesthetic or ecological areas. The commission may recommend to city or state officials a program for the protection, development or better utilization of wetlands resources.²⁴⁸

²⁴³ N.H. REV. STAT. ANN. § 674:2(II).

²⁴⁴ N.H. REV. STAT. ANN. § 674:2(II).

²⁴⁵ N.H. REV. STAT. ANN. § 674:2(III)(d).

²⁴⁶ N.H. REV. STAT. ANN. § 674:2(III)(i).

²⁴⁷ N.H. REV. STAT. ANN. § 674:2(III)(m).

²⁴⁸ N.H. REV. STAT. ANN. § 36-A:2.

5. Mechanisms for Monitoring and Enforcing Local Compliance

a. Funding Restrictions on Localities

b. Review of Local Plans

- Municipal planning boards are required to “inform” the OEP during the preparation of a master plan.²⁴⁹

II. **Legal Mechanisms Protecting Endangered Species and Their Habitats**

A. Non-Game Fish and Wildlife Laws

- New Hampshire’s Fish and Game Department has the authority to regulate the “taking, possession, and handling of nongame species” for their protection and proliferation.²⁵⁰ A nongame management program must be implemented to further these goals.²⁵¹ This program may include the following elements: public education about nongame species, research regarding species’ population and distribution, and “[m]anagement measures to maintain and promote the health of self-sustaining nongame populations.”²⁵²
- New Hampshire’s state treasurer is required to establish a separate account within the fish and game fund, specifically for nongame species.²⁵³ The account is funded by monies received by the Fish and Game Department, available federal monies, appropriated state funds, and public contributions.²⁵⁴

B. Threatened and Endangered Species Laws

- New Hampshire offers protection to both endangered plants and wildlife, with provisions regulating plants and animals located in separate statutes. The Endangered Species Conservation Act (ESCA)²⁵⁵ governs native wildlife species, and the New Hampshire Native Plant Protection Act²⁵⁶ governs native plant species.
- Under the ESCA, the Fish and Game Department must conduct studies regarding the population, range, habitat needs, and distribution of native wildlife species.²⁵⁷ This information is to be used to develop rules and conservation programs “designed to insure the continued ability of wildlife species deemed in need of conservation to

²⁴⁹ N.H. REV. STAT. ANN. § 674:3(III).

²⁵⁰ N.H. REV. STAT. ANN. § 212-B:4.

²⁵¹ N.H. REV. STAT. ANN. § 212-B:5(I).

²⁵² N.H. REV. STAT. ANN. § 212-B:5(I)(a)-(c).

²⁵³ N.H. REV. STAT. ANN. § 212-B:6(I).

²⁵⁴ N.H. REV. STAT. ANN. § 212-B:6(I).

²⁵⁵ N.H. REV. STAT. ANN. §§ 212-A:1, *et seq.*

²⁵⁶ N.H. REV. STAT. ANN. §§ 217-A:1, *et seq.*

²⁵⁷ N.H. REV. STAT. ANN. § 212-A:5(I).

perpetuate themselves successfully.”²⁵⁸ If a species is threatened or endangered under the Act, the ESCA prohibits its exportation, taking, possession, processing, transportation, or sale.²⁵⁹ The Act does not apply to marine or estuarine species of wildlife.²⁶⁰

- Similarly, under the Native Plant Protection Act, the Commissioner of the Department of Resources and Economic Development must conduct investigations on indigenous plants relating to “population, distribution, habitat needs, limiting factors, and other biological and ecological data,” and must determine protective measures and requirements necessary for their survival.”²⁶¹ The Department must also create rules regarding the development of conservation programs for enhanced native plant protection.²⁶² The Act prohibits any person from exporting, importing, transporting, taking, possessing, selling or delivering a protected plant species without the proper permits, with an exception is created for the owner of the private property on which the species is located.²⁶³

1. Basis of Listing

- Any species determined to be threatened or endangered under the federal Endangered Species Act is deemed to be threatened or endangered under the ESCA. The ESCA also gives the Department of Fish and Game the authority to determine that a federally-listed threatened species is an endangered species throughout all or any portion of the range of the species within the state.²⁶⁴
- The Department may also determine other species of wildlife normally occurring within the state to be endangered or threatened based on the following factors: “present or threatened destruction, modification or curtailment of its habitat or range,” overuse of species for commercial, recreational, scientific, or educational purposes, disease, predation, and “[o]ther natural or man-made factors affecting its continued existence within [the] state.”²⁶⁵
- With respect to plants, the Department of Resources and Economic Development is required to create an inventory of native plant species “which are threatened by the loss, drastic modification, or severe curtailment of their habitats, [or] their over-collection for aesthetic, commercial, educational, recreational, or scientific purposes....”²⁶⁶ The Department must make the determination as to which species to include

²⁵⁸ N.H. REV. STAT. ANN. § 212-A:5(I).

²⁵⁹ N.H. REV. STAT. ANN. § 212-A:7(I)(a)-(c).

²⁶⁰ N.H. REV. STAT. ANN. § 212-A:13.

²⁶¹ N.H. REV. STAT. ANN. § 217-4.

²⁶² N.H. REV. STAT. ANN. § 217-A:8.

²⁶³ N.H. REV. STAT. ANN. § 217-A:9(I)(a)-(d).

²⁶⁴ N.H. REV. STAT. ANN. § 212-A:6(I).

²⁶⁵ N.H. REV. STAT. ANN. § 212-A:6(II)(a)-(d).

²⁶⁶ N.H. REV. STAT. ANN. § 217-A:5(I).

“solely on the basis of the best scientific and commercial information available” and after appropriate consultation.²⁶⁷

- Interested parties may present a petition along with substantial evidence of population loss if they believe a plant species that is not on the federal list should be listed as a protected species within New Hampshire.²⁶⁸ Each plant species listed as threatened or endangered is reviewed by the department every five years to determine whether its classification should be altered.²⁶⁹

2. Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species

- The preservation of habitats necessary to sustain threatened and endangered species is mentioned briefly in the ESCA. The Act directs the Department of Fish and Game to develop conservation programs for listed wildlife species, including the acquisition of “land or aquatic habitat therein” as deemed necessary for the conservation of these species.²⁷⁰
- The Department of Resources and Economic Development is required to create programs to protect listed plant species, and may include in such programs the acquisition of land or interests in land for the protection of those species.²⁷¹

3. Consultation Requirements

- Under the ESCA, listing determinations must be made after consultation with federal and state agencies, other states, and organizations that have a shared interest in a particular species.²⁷²
- With regard to native plants, the Department of Resources and Economic Development may not make listing decisions without first consulting with the Natural Areas Council. The Department must also consult with federal and state agencies, other states, and organizations that have a shared interest in a particular species before listing decisions are finalized.²⁷³

4. Recovery Plans

5. Penalties

- Individuals who infringe upon the ESCA are guilty of either a violation or misdemeanor depending upon the provision implicated.²⁷⁴

²⁶⁷ N.H. REV. STAT. ANN. § 217-A:5(II).

²⁶⁸ N.H. REV. STAT. ANN. § 217-A:5(IV).

²⁶⁹ N.H. REV. STAT. ANN. § 217-A:5(IV).

²⁷⁰ N.H. REV. STAT. ANN. § 212-A:9(I).

²⁷¹ N.H. REV. STAT. ANN. § 217-A:6(I).

²⁷² N.H. REV. STAT. ANN. § 212-A:6(III).

²⁷³ N.H. REV. STAT. ANN. § 217-A:5(II).

²⁷⁴ N.H. REV. STAT. ANN. § 212-A:10.

- Similar infringements of the Native Plant Protection Act constitute a violation.²⁷⁵ Each “prohibited act with respect to each plant” is a separate violation.²⁷⁶

²⁷⁵ N.H. REV. STAT. ANN. § 217-A:11.

²⁷⁶ N.H. REV. STAT. ANN. § 217-A:11.

New Jersey

I. Land Use Planning

A. State Planning Enabling Law

- For municipalities: MUNICIPAL LAND USE LAW, N.J. STAT. ANN. § 40:55D
- For counties: N.J. STAT. ANN. § 40:27

B. State Land Use Planning Provisions

1. State Planning Agencies/Responsibilities

- New Jersey law creates a State Planning Commission within the Department of the Treasury, consisting of state, municipal and county officials, as well as members of the public.²⁷⁷ The Commission was created to advance the goal of “sound and integrated Statewide planning and the coordination of Statewide planning with local and regional planning.”²⁷⁸ The Commission is charged with a number of activities to advance its coordinating role, including the preparation and adoption of a State Development and Redevelopment Plan, which is to be revised every three years.²⁷⁹
- State law also establishes the Office of State Planning within the Department of the Treasury, which is charged with assisting the State Planning Commission.²⁸⁰ Among the Office’s specific duties are to submit to the Commission alternative growth and development strategies “which are likely to produce favorable economic, environmental, and social results,”²⁸¹ and to publish an annual report on the progress toward achieving the goals in the State Development and Redevelopment Plan and on “the degree of consistency achieved among municipal, county, regional, and State plans.”²⁸²
- In 2002, a state Executive Order created within the Office of the Governor a Smart Growth Policy Council, “to ensure that State agencies incorporate the principles of smart growth and the State Plan into their functional plans and regulations....”²⁸³

2. State-Level Planning Goals/State Development Plan

- The State Development and Redevelopment Plan (State Plan) is intended to provide “a coordinated, integrated and comprehensive plan for the growth,

²⁷⁷ N.J. STAT. ANN. §§ 52:18A-197.

²⁷⁸ N.J. STAT. ANN. §§ 52:18A-196(a).

²⁷⁹ N.J. STAT. ANN. § 52:18A-199(a).

²⁸⁰ N.J. STAT. ANN. §§ 52:18A-201(a), (b).

²⁸¹ N.J. STAT. ANN. § 52:18A-201(6).

²⁸² N.J. STAT. ANN. § 52:18A-201(1).

²⁸³ N.J. EXEC. ORDER. NO. 4.

development, renewal and conservation of the State and its regions and...[to] identify areas for growth, agriculture, open space conservation and other appropriate designations.”²⁸⁴ State law requires the State Plan to establish statewide planning objectives in a variety of areas, including land use and natural resources conservation.²⁸⁵ The State Plan must “[p]rotect the natural resources and qualities of the State, including, but not limited to, agricultural development areas, fresh and saltwater wetlands, flood plains, stream corridors, aquifer recharge areas, steep slopes, areas of unique flora and fauna, and areas with scenic, historic, cultural and recreational values.”²⁸⁶ The State Plan must also “[i]dentify areas for growth, limited growth, agriculture, open space conservation and other appropriate designations that the commission may deem necessary.”²⁸⁷

- Prior to adopting a new State Plan, the State Planning Commission is required to consult with county planning boards to “negotiate plan cross-acceptance” and attain compatibility between local, county, regional and state plans. County boards, in turn, negotiate with local planning boards for plan cross-acceptance.²⁸⁸

3. Inter-Jurisdictional/Regional Elements

- Two or more municipalities or counties are authorized to enter into an agreement to jointly administer any of the planning powers granted to them individually. The municipalities or counties entering such an agreement may also establish a regional planning board.²⁸⁹ If established, the regional planning board is required to prepare a master plan for the region, with elements similar to those required of municipal master plans.²⁹⁰ Any member municipality or county in the region may delegate to the regional planning board the powers given to its municipal or county planning board.²⁹¹

4. Planning to Protect Specific Areas

- The New Jersey Pinelands Protection Act²⁹² requires the establishment of a comprehensive management plan for the Pinelands region that incorporates numerous elements set forth in the act.²⁹³ One of the goals for this plan is to “[p]reserve and maintain the essential character of the existing pinelands

²⁸⁴ N.J. STAT. ANN. § 52:18A-199(a).

²⁸⁵ N.J. STAT. ANN. § 52:18A-200(f).

²⁸⁶ N.J. STAT. ANN. § 52:18A-200(a).

²⁸⁷ N.J. STAT. ANN. § 52:18A-200(d).

²⁸⁸ N.J. STAT. ANN. § 52:18A-202(b).

²⁸⁹ N.J. STAT. ANN. N.J. STAT. ANN. § 40:55D-77.

²⁹⁰ N.J. STAT. ANN. § 40:55D-84. The requirements of municipal master plans are discussed below.

²⁹¹ N.J. STAT. ANN. § 40:55D-84.

²⁹² N.J. STAT. ANN. §§ 13:18A-1 to -58.

²⁹³ N.J. STAT. ANN. §§ 13:18A-8.

environment, including the plant and animal species indigenous thereto and the habitat therefore....”²⁹⁴ Counties and municipalities located wholly or in part within the Pinelands area must revise their master plans to be consistent with the Pinelands comprehensive management plan. The Pinelands Commission has the power to review all master plans for affected counties and municipalities to ensure that they conform to the Pinelands comprehensive management plan.²⁹⁵

- Similarly, the Highlands Water Protection and Planning Act²⁹⁶ creates the Highlands Water Protection and Planning Council²⁹⁷ and requires the Council to prepare a regional master plan that aims to protect and enhance the resources of the region.²⁹⁸ Among the mandatory elements of the plan are a resources component and a smart growth component, both advisory in nature, as well as a component that details how state and local governments will achieve consistency and coordination in promoting the master plan.²⁹⁹ As with the Pinelands plan, the Highlands Act requires all county and municipal governments in the Highlands preservation region to revise their master plans to conform to the Highlands regional master plan.³⁰⁰ If counties and municipalities fail to comply, the Highlands regional planning commission is given all local enforcement authority conferred under the Municipal Land Use Law and other planning acts.³⁰¹
- New Jersey law authorizes the three municipalities located in the Dismal Swamp area, approximately 660 acres of freshwater wetlands, forested uplands, and meadows in a densely populated, highly developed region, to form the Dismal Swamp Preservation Commission.³⁰² Once established, the commission is charged by state law with preparing a master plan for the ecological and historical preservation of the area. The plan must contain elements similar to those found in municipal master plans, and must consider, among other things, designating “areas to be kept as undeveloped, limited-access areas restricted to conservation or passive recreation.”³⁰³ The commission is required to review and approve, reject or modify all applications for development within the Dismal Swamp, based on whether the activity is consistent with the commission’s master plan.³⁰⁴
- State law also establishes the New Jersey Meadowlands Commission to oversee development in the 21,000-acre metropolitan area consisting of swamps, marshes and meadows, known as the meadowlands.³⁰⁵ The law

²⁹⁴ N.J. STAT. ANN. §§ 13:18A-9(b)(1).

²⁹⁵ N.J. STAT. ANN. § 13:18A-12.

²⁹⁶ N.J. STAT. ANN. §§ 13:20-1 to -37.

²⁹⁷ N.J. STAT. ANN. § 13:20-4.

²⁹⁸ N.J. STAT. ANN. § 13:20-8.

²⁹⁹ N.J. STAT. ANN. § 13:20-11.

³⁰⁰ N.J. STAT. ANN. §§ 13:20-14(a), (b); 40:55D-28(d).

³⁰¹ N.J. STAT. ANN. § 13:20-14(d).

³⁰² N.J. STAT. ANN. § 40:55D-88.2--4.

³⁰³ N.J. STAT. ANN. § 40:55D-88.6.

³⁰⁴ N.J. STAT. ANN. § 40:55D-88.5.

³⁰⁵ N.J. STAT. ANN. § 13:7.1.

aims, among other things, to address “ecological factors constituting the environment of the meadowlands and the need to preserve the delicate balance of nature...to avoid any artificially imposed development that would adversely affect” the area and the state.³⁰⁶ The Commission is charged with adopting a master plan and adopting and enforcing codes and standards for the implementation of the plan, with notice to municipalities as provided in the law.³⁰⁷

5. State Assistance to Localities

- Both the State Planning Commission and the Office of State Planning must provide technical assistance and guidance to local and regional planning entities.³⁰⁸

C. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

- The purpose of the Municipal Land Use Act is to “promote the conservation of . . . open space, energy resources and valuable natural resources in the State and to prevent urban sprawl and degradation of the environment through improper use of land.”³⁰⁹ Under the Act, the chief legislative body of a municipality (city, town, township, village or borough)³¹⁰ is authorized to establish a planning board.³¹¹ A municipal planning board is authorized to prepare and adopt a master plan to guide land use in the community.³¹² The governing body must re-examine its plan at least every six years and issue a report of its findings.³¹³
- The board of chosen freeholders of a county is authorized to form a county planning board.³¹⁴ County planning boards are required to prepare and adopt master plans for the development of the county and to encourage municipalities within the county to cooperate in matters relating to the county master plan.³¹⁵

³⁰⁶ *Id.*

³⁰⁷ N.J. STAT. ANN. § 13:7.6.--.8.

³⁰⁸ N.J. STAT. ANN. §§ 52:18A-199(d); -201.

³⁰⁹ N.J. STAT. ANN. § 40:55D-2(j).

³¹⁰ N.J. STAT. ANN. § 40:42-1.

³¹¹ N.J. STAT. ANN. § 40:55D-23(a). See also § 40:55D-4.

³¹² N.J. STAT. ANN. § 40:55D-28(a).

³¹³ N.J. STAT. ANN. § 40:55D-89.

³¹⁴ N.J. STAT. ANN. § 40:27-1.

³¹⁵ N.J. STAT. ANN. § 40:27-2.

2. Mandatory Local Plan Elements Related to Biodiversity

- If a municipal master plan is enacted, it must contain a land use element, which takes into account the principles set forth in the master plan and addresses a range of elements, including natural conditions such as flood plain areas, marshes and woodlands.³¹⁶
- A municipal master plan must incorporate several additional elements “as appropriate.” These include a conservation plan element, which provides for “the preservation, conservation, and utilization of natural resources, including...open space, water supply, forests, soil, marshes, wetlands, harbors, rivers and other waters, fisheries, endangered or threatened species wildlife and other resources, and which systemically analyzes the impact of each other component and element of the master plan on the present and future preservation, conservation and utilization of those resources.”³¹⁷ In addition, a green buildings and environmental sustainability element must, among other things, “consider the impact of buildings on the local, regional and global environment [and] allow ecosystems to function naturally....”³¹⁸
- A municipal master plan must also include a specific policy statement describing the relationship of the proposed development of the municipality to the master plans of contiguous municipalities and the relevant county, as well as to the State Development and Redevelopment Plan.³¹⁹

3. Discretionary Local Plan Elements Related to Biodiversity

- County master plans may include “the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county.”³²⁰

4. Additional Local Authorities and Responsibilities Related to Planning and Biodiversity

- Municipalities are authorized under state law to create a municipal environmental commission. Among other things, the commission is directed to prepare an index of all “open areas” in order to obtain information on the proper use of those areas, and the commission may prepare recommendations for incorporating programs relating to these areas into the

³¹⁶ N.J. STAT. ANN. § 40:55D-28(b)(2).

³¹⁷ N.J. STAT. ANN. § 40:55D-28(b)(8).

³¹⁸ N.J. STAT. ANN. § 40:55D-28(b)(16).

³¹⁹ N.J. STAT. ANN. § 40:55D-28(d).

³²⁰ N.J. STAT. ANN. § 40:27-2.

master plans.³²¹ Alternatively, two or more municipalities are authorized to create a joint environmental commission with similar powers.³²²

5. Mechanisms for Monitoring and Enforcing Local Compliance

a. Funding Restrictions on Localities

b. Review of Local Plans

II. **Legal Mechanisms Protecting Endangered Species and Their Habitats**

A. Non-Game Fish and Wildlife Laws

- New Jersey’s Endangered and Nongame Species Conservation Act (ENSCA) directs the Department of Environmental Protection to “conduct investigations concerning wildlife in order todetermine management measures necessary for their continued ability to sustain themselves successfully.”³²³ Using this information, the agency is required to develop management programs “to insure the continued ability of wildlife to perpetuate themselves successfully.”³²⁴
- Under the ENSCA no person may “possess, transport, export, process, sell or offer for sale, or ship, and no common or contract carrier shall knowingly transport or receive for shipment any species or subspecies of wildlife appearing on. . .the list of nongame species regulated pursuant to this act.”³²⁵
- The ENSCA directs the Department of Environmental Protection to “establish such programs, including acquisition of land or aquatic habitats, as are deemed necessary for the conservation and management of nongame species.”³²⁶

B. Threatened and Endangered Species Laws

- Under the ENSCA, the Department of Environmental Protection is authorized to establish, by regulation, a list of wildlife species native to New Jersey that are determined to be endangered.³²⁷ The agency must periodically review the list.³²⁸ Listed species are subject to the same prohibitions as noted above with respect to nongame wildlife, with exceptions made for “scientific, zoological, or educational purposes....”³²⁹

³²¹ N.J. STAT. ANN. §§ 40:56A-1, -2.

³²² N.J. STAT. ANN. §§ 40:56A-8, -11.

³²³ N.J. STAT. ANN. § 23:2A-4.

³²⁴ N.J. STAT. ANN. § 23:2A-4.

³²⁵ N.J. STAT. ANN. § 23:2A-6.

³²⁶ N.J. STAT. ANN. § 23:2A-7.

³²⁷ N.J. STAT. ANN. § 23:2A-4(b).

³²⁸ N.J. STAT. ANN. § 23:2A-4(b).

³²⁹ N.J. STAT. ANN. § 23:2A-7(d).

- In addition to the ENSCA, New Jersey has enacted the Endangered Plant Species List Act, which directs the Department of Environmental Protection (Division of Parks and Forestry) to establish by regulation a list of plant species occurring in the state which are endangered.³³⁰

1. *Basis of Listing*

- The ENSCA does not provide detailed factors to consider in listing wildlife species. The act states generally that the list may be promulgated on the basis of the investigations of wildlife that are mandated under the law and on “other available scientific and commercial data.”³³¹ Additionally, the act defines “endangered species” as any species of wildlife whose survival is in jeopardy due to “destruction, drastic modification, or severe curtailment of its habitat;” over-utilization; the effects of disease, pollution or predation; or other natural or man-made factors.³³² The term is deemed to include species on any federal endangered species list.³³³
- With respect to endangered plant species, the Department is required to conduct research and investigations that will aid in determining whether to list a species as endangered.³³⁴ A plant species may be determined to be endangered due to: destruction, drastic modification, or severe curtailment of their habitat; over-collection; disease, pollution, or predation; or any other natural or man-made factors.³³⁵

2. *Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species*

- The ENSCA directs the Department of Environmental Protection to adopt wildlife conservation programs, which may include the acquisition of land or aquatic habitats.³³⁶

3. *Consultation Requirements*

4. *Recovery Plans*

³³⁰ N.J. STAT. ANN. § 13:1B-15.154.

³³¹ N.J. STAT. ANN. § 23:2A-4(b).

³³² N.J. STAT. ANN. § 23:2A-3(c).

³³³ N.J. STAT. ANN. § 23:2A-3(c).

³³⁴ N.J. STAT. ANN. § 13:1B-15.155.

³³⁵ N.J. STAT. ANN. § 13:1B-15.154.

³³⁶ N.J. STAT. ANN. § 23:2A-7(a).

5. *Penalties*

- When a violation of the ENSCA is deemed to have occurred, the commissioner may take the following actions: issue an order, bring a civil suit, seek a civil administrative penalty, or petition New Jersey's Attorney General to bring a criminal action.³³⁷

³³⁷ N.J. STAT. ANN. § 23:2A-10(5).

New York

I. Land Use Planning

A. State Planning Enabling Law

- For cities: N.Y. GEN. CITY LAW §§ 27-28
- For villages: N.Y. VILLAGE LAW §§ 7-700 to 7-722
- For towns: N.Y. TOWN LAW §§ 271 to 272-a
- For counties: N.Y. GEN. MUN. LAW §§ 239-a to 239-d

B. State Land Use Planning Provisions

1. State Planning Agencies/Responsibilities

- In 2007, an Executive Order created the Smart Growth Cabinet, consisting of representatives of numerous state agencies. The Order directed the Cabinet to undertake a comprehensive review of state policies and programs that impact economic development and land use and to recommend mechanisms for promoting smart growth.³³⁸

2. State-Level Planning Goals/State Development Plan

3. Inter-Jurisdictional/Regional Elements

- Any city, town, or village may enter into an intermunicipal agreement with another city, town, or village to create a consolidated planning board, to create a master plan that would be independently adopted by each municipality as its own, and to establish a land use administration and enforcement program.³³⁹
- The legislative bodies of contiguous municipalities are authorized to collaborate and form a regional planning council.³⁴⁰ The collaborating municipalities may decide, by agreement, to allow the regional planning council to prepare and adopt a regional comprehensive plan,³⁴¹ and to consult with state, regional, municipal, and public or private agencies regarding the planning issues affecting the region.³⁴² Among the elements that may be included in a regional comprehensive plan are “consideration of...coastal and natural resources and sensitive environmental areas” and “existing and proposed recreation facilities and parkland.”³⁴³

³³⁸ N.Y. EXEC. ORDER NO. 20.

³³⁹ N.Y. GEN. MUN. LAW § 119-u(4).

³⁴⁰ N.Y. GEN. MUN. LAW § 239-h(3)(a).

³⁴¹ N.Y. GEN. MUN. LAW § 239-h(4)(a)(iii).

³⁴² N.Y. GEN. MUN. LAW § 239-h(4)(a)(iv).

³⁴³ N.Y. GEN. MUN. LAW § 239-i(1)(d), (j).

4. Planning to Protect Specific Areas

- The Long Island Pine Barrens Maritime Reserve Act aims to “allow the state and local governments to protect, preserve and properly manage the unique natural resources of the Pine Barrens-Peconic Bay system and to encourage coordination of existing programs and studies affecting land and water resources in the region.”³⁴⁴ The Act creates the Central Pine Barrens joint planning and policy commission which, among other things, must develop a comprehensive land use plan for the region.³⁴⁵ The Act sets forth numerous mandatory components of the land use plan, including mapping of core preservation areas, compatible growth areas, and critical resource areas; development criteria and performance standards; and a “program for state, county and local governmental implementation of the comprehensive land use plan and the various elements thereof in a manner that will insure the continued, uniform, and consistent protection of the Pine Barrens ecosystem and development objectives.”³⁴⁶

5. State Assistance to Localities

- The 2007 Executive Order establishing the Smart Growth Cabinet directed the Cabinet to identify opportunities for new and improved state programs for providing “technical and other assistance to local governments for comprehensive land use and economic development planning that incorporates ‘smart growth’ principles.”³⁴⁷

C. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

- The legislative bodies of cities,³⁴⁸ villages,³⁴⁹ towns,³⁵⁰ and counties³⁵¹ are authorized to establish a planning board. The legislative bodies for cities,³⁵² villages,³⁵³ towns,³⁵⁴ and counties³⁵⁵ are also authorized to prepare and

³⁴⁴ N.Y. ENVTL. CONSERV. LAW §§ 57-0105.

³⁴⁵ N.Y. ENVTL. CONSERV. LAW §§ 57-0119, 0121.

³⁴⁶ N.Y. ENVTL. CONSERV. LAW §§ 57-0121(6).

³⁴⁷ N.Y. Exec. Order No. 20.

³⁴⁸ N.Y. GEN. CITY LAW § 27(1). This provision does not apply to cities with a population greater than one million.

³⁴⁹ N.Y. VILLAGE LAW § 7-718(1).

³⁵⁰ N.Y. TOWN LAW § 271(1).

³⁵¹ N.Y. GEN. MUN. LAW § 239-c(2)(a). County legislative bodies may establish a county planning board on their own or in collaboration with legislative bodies of municipalities within the county.

³⁵² N.Y. GEN. CITY LAW § 28-a(5).

³⁵³ N.Y. VILLAGE LAW § 7-722(4).

³⁵⁴ N.Y. TOWN LAW § 272-a(4).

³⁵⁵ N.Y. GEN. MUN. LAW § 239-d(2).

adopt a comprehensive plan, and they may direct the planning board to prepare the comprehensive plan.

- Cities and incorporated villages are authorized to establish planning commissions to advise the legislative bodies in the development of maps and plans for the jurisdiction.³⁵⁶

2. Mandatory Local Plan Elements Related to Biodiversity

3. Discretionary Local Plan Elements Related to Biodiversity

- State law lists a variety of topics that may be incorporated into the comprehensive plans of cities, villages, towns, or counties, including: the “existing and proposed location and intensity of land uses,” “consideration of...coastal and natural resources and sensitive environmental areas;” and “existing and proposed recreation facilities and parkland.”³⁵⁷

4. Additional Local Authorities and Responsibilities Related to Planning and Biodiversity

- The legislative body of a city, town, or village may create a conservation advisory council (sometimes called environmental conservation commissions) to advise the municipality and the planning board “in the development, management and protection of its natural resources.”³⁵⁸ The council must, among other things, develop an inventory and map of open lands, as well as marsh lands, swamps, and other wetlands.³⁵⁹
- A county may establish an environmental management council that is authorized “to advise on all matters affecting the preservation, conservation and ecologically suitable use of the natural resources of the county.”³⁶⁰ If established, the council must cooperate with the county planning agency to “prepare a plan for the protection of the county’s environment and the management of its natural resources.”³⁶¹

³⁵⁶ N.Y. GEN. MUN. LAW § 236.

³⁵⁷ N.Y. GEN. CITY LAW § 28-a(4); N.Y. VILLAGE LAW § 7-722(3); N.Y. TOWN LAW § 272-a(3); N.Y. GEN. MUN. LAW § 239-d(1).

³⁵⁸ N.Y. GEN. MUN. LAW § 239-x(1).

³⁵⁹ N.Y. GEN. MUN. LAW § 239-x(1).

³⁶⁰ N.Y. ENVTL. CONSERV. LAW § 47-0107(1).

³⁶¹ N.Y. ENVTL. CONSERV. LAW § 47-0107(3).

5. Mechanisms for Monitoring and Enforcing Local Compliance

a. Funding Restrictions on Localities

b. Review of Local Plans

- Before adopting or amending a comprehensive plan, the legislative bodies of cities, villages, towns, and counties are required to refer the proposal to the county planning agency or, in the absence of a county agency, to the regional planning council, for review and recommendations.³⁶²

II. **Legal Mechanisms Protecting Endangered Species and Their Habitats**

A. Non-Game Fish and Wildlife Laws

- New York's fish and wildlife law prohibits, except under state-issued license or permit, the use or control of certain "species of native or non-native live wildlife or fish where the department [of environmental conservation] finds that possession, transportation, importation or exportation of such species of wildlife or fish would present a danger to the health or welfare of the people of the state...or indigenous fish or wildlife population[s]." ³⁶³
- State law creates a Fish and Wildlife Management Practices Cooperative Program overseen by regional and state fish and wildlife management boards.³⁶⁴ The purpose of the program is to bring about, on privately owned or leased lands and waters, "practices of fish and wildlife management which will preserve and develop the fish and wildlife resources of the state and improve access to them for recreational purposes...." ³⁶⁵
- New York's fish and wildlife law also establishes a natural heritage program, which conducts data collection, ranks species by rarity, and maintains ecological databases.³⁶⁶ More specifically, this program is charged with the "taking [of] censuses of plant and animal populations...with an emphasis on rare species and rare ecological communities."³⁶⁷ In addition, the program aims to compile and analyze data regarding "the location and status or rare plants, animals, and ecological communities...for the purpose of conserving and managing the state's biological diversity."³⁶⁸

³⁶² N.Y. GEN. CITY LAW § 28-a(6)(b); N.Y. VILLAGE LAW § 7-722(5)(b); N.Y. TOWN LAW § 272-a(5)(b); N.Y. GEN. MUN. LAW §§ 239-d, 239-m.

³⁶³ N.Y. ENVTL. CONSERV. LAW § 11-0511. See also N.Y. ENVTL. CONSERV. LAW § 11-0515.

³⁶⁴ N.Y. ENVTL. CONSERV. LAW § 11-0501(4)(a) & (5)(a).

³⁶⁵ N.Y. ENVTL. CONSERV. LAW § 11-0501(1).

³⁶⁶ N.Y. ENVTL. CONSERV. LAW § 11-0539(1).

³⁶⁷ N.Y. ENVTL. CONSERV. LAW § 11-0539(1)(a).

³⁶⁸ N.Y. ENVTL. CONSERV. LAW § 11-0539(1)(c).

- New York’s wildlife law sets forth a general prohibition on allowing “deleterious or poisonous” substances to run into “any waters, either private or public, in quantities injurious to fish life, protected wildlife or waterfowl inhabiting those waters or injurious to the propagation of fish, protected wildlife or waterfowl therein.”³⁶⁹

B. Threatened and Endangered Species Laws

- Unless a license or permit is first obtained from the Department of Environmental Conservation, New York’s fish and wildlife law declares it unlawful for any person to take, import, transport, or sell any part of a species determined by state regulation to be an endangered or threatened “fish, shellfish, crustacea or wildlife” species.³⁷⁰ The law also authorizes the Department of Environmental Conservation to promulgate regulations designating “species of special concern,” (those determined to be at risk of becoming threatened) and establishing restrictions needed to protect those species.³⁷¹
- State law also authorizes the Department of Environmental Conservation to promulgate a rule adopting “a list of protected plants which by reason of their endangered, rare, threatened or exploitably vulnerable status should not be picked or removed from their natural habitat.”³⁷² The law prohibits any person from knowingly removing (or damaging by applying herbicides) any protected plant in an area designated by such a list.³⁷³

1. *Basis of Listing*

2. *Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species*

- Under the state’s natural heritage program, described above, state waters or lands may be designated as “natural heritage areas” in order to “conserve and manage plants, wildlife or ecological communities, with an emphasis on rare plants, wildlife, and ecological communities which support such plants or wildlife.”³⁷⁴ To be eligible for this designation, a site must be habitat for endangered, threatened, or rare species, or must contain “significant ecological communities.”³⁷⁵
- One of the stated bases for enactment of the Long Island Pine Barrens Maritime Reserve Act, discussed above, was to protect the habitat for “one of the greatest concentrations and diversities of endangered, threatened and special concern species of plants and animals to be found in the state....”³⁷⁶

³⁶⁹ N.Y. ENVTL. CONSERV. LAW § 11-0503(1).

³⁷⁰ N.Y. ENVTL. CONSERV. LAW § 11-0535.

³⁷¹ N.Y. ENVTL. CONSERV. LAW § 11-0535.

³⁷² N.Y. ENVTL. CONSERV. LAW § 9-1503.

³⁷³ N.Y. ENVTL. CONSERV. LAW § 9-1503.

³⁷⁴ N.Y. ENVTL. CONSERV. LAW § 11-0539(7).

³⁷⁵ N.Y. ENVTL. CONSERV. LAW § 11-0539(7)(a).

³⁷⁶ N.Y. ENVTL. CONSERV. LAW § 57-0105.

3. *Consultation Requirements*

- New York’s statute governing rare plants requires the Department of Environmental Conservation to consult with the departments of agriculture and education, and other affected public and private organizations, when listing or reclassifying species.³⁷⁷

4. *Recovery Plans*

5. *Penalties*

- It is a violation to “knowingly pick, pluck, sever, remove, [or] damage” a protected plant species; such acts are punished by a fine of twenty-five dollars.³⁷⁸

³⁷⁷ N.Y. ENVTL. CONSERV. LAW § 9-1503(2).

³⁷⁸ N.Y. ENVTL. CONSERV. LAW § 9-1503(3).

Pennsylvania

I. Land Use Planning

A. State Planning Enabling Law

- PENNSYLVANIA MUNICIPALITIES PLANNING CODE, 53 PA. STAT. ANN. §§ 10101-11202

B. State Land Use Planning Provisions

1. State Planning Agencies/Responsibilities

- The Center for Local Government Services, located within the Department of Community and Economic Development, provides professional and administrative support to the State Planning Board and is charged generally with serving as the link between the Commonwealth and local governments.³⁷⁹
- The State Planning Board is a citizen's advisory board within the governor's office responsible for developing "strategic plans and programs to promote and enhance the welfare of the Commonwealth and mak[ing] such recommendations thereon to the Governor as it may deem proper and advisable."³⁸⁰ The Board also has six ex-officio members, including the secretary of the state environmental agency.³⁸¹

2. State-Level Planning Goals/State Development Plan

- The Center for Local Government Services is required to issue a Land Use and Growth Management Report every five years.³⁸² The report is to be a "comprehensive land use and growth management report...which shall contain information, data and conclusions regarding growth and development patterns in [the] Commonwealth and which will offer recommendations to Commonwealth agencies for coordination of executive action, regulation and programs."³⁸³

3. Inter-Jurisdictional/Regional Elements

- The Regional Planning Law³⁸⁴ authorizes the governing bodies of two or more municipalities to establish or join a regional planning commission.³⁸⁵ If

³⁷⁹ 71 PA. STAT. ANN. § 1709.301.

³⁸⁰ 71 PA. STAT. ANN. § 161(c)(3).

³⁸¹ 71 PA. STAT. ANN. § 161(b).

³⁸² 53 PA. STAT. ANN. § 10307.

³⁸³ 53 PA. STAT. ANN. § 10107.

³⁸⁴ 53 PA. CONS. STAT. ANN. §§ 2341-48.

³⁸⁵ 53 PA. STAT. ANN. § 2344(a).

established, the regional planning commission must prepare a master plan for the “physical development of the region”³⁸⁶ and must encourage the cooperation of municipalities “in matters which concern the integrity of the master plan.”³⁸⁷ The commission may provide planning technical assistance and do planning work for any municipalities within the region.³⁸⁸

Pennsylvania municipalities are authorized to join a regional planning commission established in another state, and vice versa.³⁸⁹

- Intergovernmental agreements for adopting and implementing a comprehensive plan may be established among the governing bodies of multiple municipalities, as well as among counties and municipalities for areas that include municipalities in more than one county.³⁹⁰ These multimunicipal comprehensive plans must include the same elements required for county and municipal comprehensive plans (see below).³⁹¹

4. Planning to Protect Specific Areas

5. State Assistance to Localities

- Pennsylvania law directs the Center for Local Government Services to “work with municipalities to coordinate Commonwealth agency program resources with municipal planning and zoning activities” and to “assist municipalities in identifying and assessing the impact of Commonwealth agency decisions and their effect on municipal and multimunicipal planning and zoning.”³⁹²

C. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

- According to the Pennsylvania Municipalities Planning Code,³⁹³ the governing body of any municipality (cities, boroughs, incorporated towns, townships, counties, home rule municipalities)³⁹⁴ may elect to establish a planning commission and/or planning department.³⁹⁵ If a municipality establishes a planning commission or planning department, the planning agency shall be required to prepare a comprehensive plan for the municipality’s consideration.³⁹⁶

³⁸⁶ 53 PA. STAT. ANN. § 2346.

³⁸⁷ 53 PA. STAT. ANN. § 2347.

³⁸⁸ 53 PA. STAT. ANN. § 2345.

³⁸⁹ 53 PA. STAT. ANN. § 2348.

³⁹⁰ 53 PA. CONS. STAT. ANN. § 11102.

³⁹¹ 53 PA. CONS. STAT. ANN. § 11103.

³⁹² 53 PA. CONS. STAT. ANN. § 10619(2)(b).

³⁹³ 53 PA. CONS. STAT. ANN. §§ 10101 *et seq.*

³⁹⁴ 53 PA. CONS. STAT. ANN. § 10107.

³⁹⁵ 53 PA. CONS. STAT. ANN. § 10201.

³⁹⁶ 53 PA. CONS. STAT. ANN. § 10209.1(a)(1).

- Counties are required to prepare and adopt a comprehensive plan.³⁹⁷ If a municipality chooses to adopt a comprehensive plan, it must ensure that its municipal comprehensive plan is consistent with the county’s comprehensive plan.³⁹⁸ Comprehensive plans must be reviewed every ten years.³⁹⁹

2. Mandatory Local Plan Elements Related to Biodiversity

- Under the Municipal Planning Code, a municipal comprehensive plan must include “[a] plan for the protection of natural and historic resources to the extent not preempted by Federal or State law. This clause includes, but is not limited to, wetlands and aquifer recharge zones, woodlands, steep slopes, prime agricultural land, flood plains, unique natural areas and historic sites.”⁴⁰⁰ Comprehensive plans must match – and may not exceed – the environmental standards in several enumerated state laws.⁴⁰¹
- Plans must identify land uses “as they relate to important natural resources and appropriate utilization of existing minerals.”⁴⁰² Plans are required to describe the interrelationships among the various plan components, and this description may include an estimate of environmental and other consequences of the plan on the municipality.⁴⁰³ Among the stated purposes of the Municipal Planning Code is the provision that wherever the act “promotes, encourages, requires or authorizes” governing bodies to protect, preserve or conserve open land, consisting of natural resources, forests and woodlands, any actions taken to protect, preserve or conserve such land shall not be for the purposes of precluding access for forestry.⁴⁰⁴

3. Discretionary Local Plan Elements Related to Biodiversity

4. Additional Local Authorities and Responsibilities Related to Planning and Biodiversity

5. Mechanisms for Monitoring and Enforcing Local Compliance

a. Funding Restrictions on Localities

- The state gives priority in awarding grants for the development of comprehensive plans to municipalities that agree to adopt plans that are consistent with the county plan and that agree to enact a new zoning ordinance or

³⁹⁷ 53 PA. CONS. STAT. ANN. § 10301.4(a).

³⁹⁸ 53 PA. CONS. STAT. ANN. § 10301.4(a).

³⁹⁹ 53 PA. CONS. STAT. ANN. § 10301(c).

⁴⁰⁰ 53 PA. CONS. STAT. ANN. § 10301(a)(6).

⁴⁰¹ 53 PA. CONS. STAT. ANN. § 10301(a)(6).

⁴⁰² 53 PA. CONS. STAT. ANN. § 10301(a)(7)(i).

⁴⁰³ 53 PA. CONS. STAT. ANN. § 10301(a)(4.1).

⁴⁰⁴ 53 PA. CONS. STAT. ANN. § 10305.

amendment to fully implement the municipal comprehensive plan.⁴⁰⁵

b. Review of Local Plans

- A municipal or multimunicipal comprehensive plan must be sent to the Center for Local Government Services “for informational purposes.” Plans must be sent for review and comment to contiguous municipalities and to the county planning commissions or regional planning commissions.⁴⁰⁶
- In addition, counties “must solicit comment from....the Center for Local Government Services, for informational purposes...during the process of preparing or updating a county comprehensive plan in order to determine future growth needs.”⁴⁰⁷

II. Legal Mechanisms Protecting Endangered Species and Their Habitats

A. Non-Game Fish and Wildlife Laws

- The Pennsylvania Game Commission (PGC) is charged with promulgating regulations relating to wildlife as it deems necessary, including regulations for the “protection, preservation, and management of game or wildlife and game or wildlife habitat...”⁴⁰⁸ According to statute, the commission must regulate “the transportation, introduction into the wild, importation, exportation, sale, offering for sale or purchase of game or wildlife or the disturbing of game or wildlife in their natural habitat.”⁴⁰⁹

B. Threatened and Endangered Species Laws

- Pennsylvania offers protection to both wildlife and plant species. Threatened and endangered wildlife species are defined to include those that are listed federally and those that are included on the Pennsylvania Endangered Species List.⁴¹⁰ The PGC is authorized to adopt a regulation adding or removing “any wild bird or wild animal native to [the] Commonwealth to or from the Pennsylvania native list of endangered or threatened species.”⁴¹¹ It is unlawful “for any person to import, export, transport, sell, resell, exchange, take or possess....any birds or animals of any endangered or

⁴⁰⁵ 53 PA. CONS. STAT. ANN. § 10301.5.

⁴⁰⁶ 53 PA. CONS. STAT. ANN. § 10301(c). See also *id.* at § 10301.3.

⁴⁰⁷ 53 PA. CONS. STAT. ANN. § 10306.

⁴⁰⁸ 34 PA. CONS. STAT. ANN. § 2102(a).

⁴⁰⁹ 34 PA. CONS. STAT. ANN. § 2102(c).

⁴¹⁰ 34 PA. CONS. STAT. ANN. § 102.

⁴¹¹ 34 PA. CONS. STAT. ANN. § 2167(a).

threatened species....”⁴¹² The PGB may, however, issue permits for these activities.⁴¹³

- With regard to the protection of plants, the Department of Environmental Resources must investigate native species to gather information about their “population, distribution, [and] habitat needs” in order to ensure that they are successfully classified and managed.⁴¹⁴ Once a plant species has been classified as either endangered or threatened, individuals are not allowed “disturb, pick, or possess” them, unless they have an interest in the land where such species are located.⁴¹⁵ However, the department may issue permits allowing “the removal, collection, or transplanting of endangered or threatened plant species” to aid their “perpetuation as members of ecosystems” or the reestablishment of their natural range.⁴¹⁶

1. *Basis of Listing*

- Pennsylvania law does not detail the criteria for listing wildlife species. The law defines threatened species as those on the federal list and those determined to be threatened with extinction and on the state list. Endangered species are those listed on the federal list and those that are on the state list and have been determined by the Department “to be in such small numbers throughout their range that they may become endangered if their environment worsens.”⁴¹⁷
- Pennsylvania law lists nine wild plant classifications that should be used by the Department of Environmental Resources in developing its classification system: extirpated, endangered, threatened, disjunct, endemic, restricted, limit of range, vulnerable, and undetermined.⁴¹⁸ The species classifications are based mainly on the species’ population, habitat, habitat range, and distribution.⁴¹⁹

2. *Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species*

- The Department of Environmental Resources may acquire natural areas or designate areas of previously-acquired land as “public wild plant sanctuaries.”⁴²⁰ The Department is charged with developing criteria for and promoting a “cooperative statewide system of private wild plant sanctuaries.”⁴²¹

⁴¹² 34 PA. CONS. STAT. ANN. § 2924(d). See also 34 PA. CONS. STAT. § 2167(b),(c).

⁴¹³ 34 PA. CONS. STAT. ANN. § 2924(a).

⁴¹⁴ 32 PA. CONS. STAT. ANN. § 5307(a).

⁴¹⁵ 32 PA. CONS. STAT. ANN. § 5311(a).

⁴¹⁶ 32 PA. CONS. STAT. ANN. § 5308(a) & (c).

⁴¹⁷ 34 PA. CONS. STAT. ANN. § 102.

⁴¹⁸ 32 PA. CONS. STAT. ANN. § 5307(b).

⁴¹⁹ 32 PA. CONS. STAT. ANN. § 5307(b).

⁴²⁰ 32 PA. CONS. STAT. ANN. § 5310(a).

⁴²¹ 32 PA. CONS. STAT. ANN. § 5307(d).

3. *Consultation Requirements*

4. *Recovery Plans*

5. *Penalties*

- Violation of the statutory prohibitions relating to threatened and endangered species of wild birds or animals is a misdemeanor, punishable by a fine and imprisonment.⁴²²
- The unlawful taking or destruction of a listed plant is punishable by not more than two hundred dollars.⁴²³

⁴²² 34 PA. CONS. STAT. ANN. §§ 2167(b),(c), 925(b). See also 30 PA. CONS. STAT. ANN. § 2305.

⁴²³ 32 PA. CONS. STAT. ANN. § 5311(b).

Rhode Island

I. Land Use Planning

A. State Planning Enabling Law

- R.I. GEN. LAWS §§ 45-22-1 to 45-22.1-6

B. State Land Use Planning Provisions

1. State Planning Agencies/Responsibilities

- The state Department of Administration, through its Division of Planning, runs the Statewide Planning Program and is the principal staff agency for the State Planning Council.⁴²⁴ The Department is also charged with assisting and overseeing municipal planning.⁴²⁵
- The State Planning Council, comprised of state agency and non-governmental members, is charged with coordinating the planning and development activities of state agencies, and with adopting strategic plans and recommending them for adoption by the state legislature and government agencies.⁴²⁶

2. State-Level Planning Goals/State Development Plan

- Rhode Island law establishes a Statewide Planning Program. The Program is charged with conducting all strategic planning for the state, including a wide range of land use and natural resource planning activities.⁴²⁷ The central policy framework for the program is the State Guide Plan, comprised of a variety of strategic plans and elements that address numerous issues, including land use and physical and environmental development.⁴²⁸
- The Rhode Island Comprehensive Planning and Land Use Act (RICPLUA)⁴²⁹ seeks to “[e]stablish, in each municipality, a program of comprehensive planning that is implemented according to the standards and schedule contained” in the act.⁴³⁰ The goals of the act include “the protection of the natural, historic and cultural resources” and “the preservation of open space in each municipality and the state.”⁴³¹ The act aims to coordinate planning efforts across municipalities and to provide financial and technical resources

⁴²⁴ R.I. GEN. LAWS § 42-11-10(g)(1).

⁴²⁵ R.I. GEN. LAWS §§ 42-11-10(g)(4), 45-22.2-9(c).

⁴²⁶ R.I. GEN. LAWS § 42-11-10(f).

⁴²⁷ R.I. GEN. LAWS § 42-11-10(b).

⁴²⁸ R.I. GEN. LAWS § 42-11-10(d).

⁴²⁹ R.I. GEN. LAWS §§ 45-22.2-1 to 45-22.2-14.

⁴³⁰ R.I. GEN. LAWS § 45-22.2-3(b)(1).

⁴³¹ R.I. GEN. LAWS § 45-22.2-3(c)(4)(5).

to municipalities that often lack the ability to implement effective comprehensive planning.⁴³² State agencies' programs and projects must, in turn, conform to approved municipal comprehensive plans.⁴³³

3. Inter-Jurisdictional/Regional Elements

- Two or more municipalities may, by ordinance or resolution, establish a joint municipal planning commission to oversee planning efforts on an inter-jurisdictional basis.⁴³⁴ The commissions may provide technical assistance or do planning work for participating municipalities.⁴³⁵ If a commission chooses to prepare a comprehensive plan, it is advisory only and not binding on participating municipalities.⁴³⁶ Municipalities are authorized generally to conduct joint planning and regulatory activities to fulfill their responsibilities under the RICPLUA.⁴³⁷

4. Planning to Protect Specific Areas

5. State Assistance to Localities

- The RICPLUA establishes a program of technical and financial assistance to municipalities to encourage the preparation and implementation of comprehensive plans.⁴³⁸ In addition to providing technical assistance and a database for use by municipalities, the Department of Administration must develop a grant program for preparation of comprehensive plans, which awards individual grants, not exceeding \$125,000, to municipalities.⁴³⁹

C. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

- Municipalities (cities and towns) exercise planning authority over total land and inland water area within their jurisdictions.⁴⁴⁰
- All cities and towns are required to establish a planning board or commission.⁴⁴¹ The planning body is charged with preparing the municipal comprehensive plan and with making other plans and reports relating to land

⁴³² R.I. GEN. LAWS § 45-22.2-3(b).

⁴³³ R.I. GEN. LAWS § 45-22.2-10(e).

⁴³⁴ R.I. GEN. LAWS § 45-22.1-2.

⁴³⁵ R.I. GEN. LAWS § 45-22.1-3.

⁴³⁶ R.I. GEN. LAWS § 45-22.1-4.

⁴³⁷ R.I. GEN. LAWS § 45-22.2-7.

⁴³⁸ R.I. GEN. LAWS § 42-11-10(g)(4).

⁴³⁹ R.I. GEN. LAWS § 45-22.2-11.

⁴⁴⁰ R.I. GEN. LAWS § 45-22.2-7(a)

⁴⁴¹ R.I. GEN. LAWS § 45-22-1.

use, environmental protection, natural resource conservation, and other issues.⁴⁴²

- All cities and towns must adopt a comprehensive plan in conformity with the RICPLUA.⁴⁴³

2. Mandatory Local Plan Elements Related to Biodiversity

- The RICPLUA requires municipalities generally to undertake land use planning that protects natural resources and that preserves and protects open spaces.⁴⁴⁴
- The comprehensive plan for cities and towns is required to contain several elements, including a natural and cultural resources element and an open space and recreation element. The natural resources element must provide “an inventory of the significant natural resource areas [such] as water, soils, prime agricultural lands, natural vegetation systems, wildlife, watersheds, wetlands, aquifers, coastal features, flood plains, and other natural resources, and the policies for the protection and management of these areas.”⁴⁴⁵ The open space element must include an inventory of open space areas and policies for their management and protection.⁴⁴⁶ Policies and implementation techniques to protect these natural resources and open spaces must be stated in another required element of the comprehensive plan—the “implementation program” section.⁴⁴⁷
- The Department of Administration is required to prepare guidelines for the preparation of the mandatory comprehensive plan elements.⁴⁴⁸

3. Discretionary Local Plan Elements Related to Biodiversity

4. Additional Local Authorities and Responsibilities Related to Planning and Biodiversity

5. Mechanisms for Monitoring and Enforcing Local Compliance

a. Funding Restrictions on Localities

- Once a municipal comprehensive plan is approved by the Department of Administration, a municipality is “eligible for all benefits and incentives conditioned on adoption of an approved comprehensive plan...and the municipality is allowed to submit

⁴⁴² R.I. GEN. LAWS §§ 45-22-7, 45-22.2-8.

⁴⁴³ R.I. GEN. LAWS §§ 45-22.2-2, 45-22.2-5(b).

⁴⁴⁴ R.I. GEN. LAWS § 45-22.2-5(a)(1).

⁴⁴⁵ R.I. GEN. LAWS § 45-22.2-6(5).

⁴⁴⁶ R.I. GEN. LAWS § 45-22.2-6(7).

⁴⁴⁷ R.I. GEN. LAWS §§ 45-22.2-6(5),(7).

⁴⁴⁸ R.I. GEN. LAWS § 45-22.2-9(b).

the approved comprehensive plan...to any state agency which requires the submission of a plan as part of its requirements....”⁴⁴⁹

b. Review of Local Plans

- Municipal comprehensive plans or amendments must be submitted for review to the Department of Administration within thirty days of their adoption.⁴⁵⁰ The RICPLUA sets forth a schedule and process for completing the review, which is designed to ensure that the plan includes all required elements and is consistent with the State Guide Plan. The municipality must correct any deficiencies reported by the Department prior to the Department rendering a final decision on the plan. The municipality may appeal the final decision to the comprehensive plan appeals board.⁴⁵¹

II. Legal Mechanisms Protecting Endangered Species and Their Habitats

A. Non-Game Fish and Wildlife Laws

- Rhode Island has established a fund for the advancement of non-game wildlife research and management, financed through a voluntary income tax check-off option and private contributions.⁴⁵² Funds are used “to research, manage, protect, inventory, and establish a body of ecological information pertaining to nongame wildlife species.”⁴⁵³ They may also be used by the Department of Environmental Management to acquire land, to be designated as state park or management area, for the protection and propagation of “any species of wildlife, plant, or animal.”⁴⁵⁴

B. Threatened and Endangered Species Laws

- Rhode Island has not adopted detailed threatened and endangered species legislation. Under state law, no person may “buy, sell, offer for sale, store, transport, import, export, or otherwise traffic in any animal or plant....declared to be an endangered species by either the [federal government]...or the director of the Rhode Island department of environmental management.”⁴⁵⁵ Exceptions may be granted and a permit issued when species are used for scientific research or as part of an educational display.⁴⁵⁶

⁴⁴⁹ R.I. GEN. LAWS §§ 45-22.2-9(c)(8).

⁴⁵⁰ R.I. GEN. LAWS §§ 45-22.2-5(b-d), 45-22.2-9(c)(1).

⁴⁵¹ R.I. GEN. LAWS §§ 45-22.2-9(c).

⁴⁵² R.I. GEN. LAWS § 20-18.1

⁴⁵³ R.I. GEN. LAWS § 20-18.1-3.

⁴⁵⁴ R.I. GEN. LAWS § 20-18-1.

⁴⁵⁵ R.I. GEN. LAWS § 20-37-3.

⁴⁵⁶ R.I. GEN. LAWS § 20-37-3.

1. *Basis of Listing*

2. *Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species*

- Funding from the state’s coastal and estuarine habitat trust restoration fund may be used for, among other purposes, “potential improvements to fish and wildlife habitats for species which are identified as rare or endangered” by the federal or state government.⁴⁵⁷
- As noted above, the statute establishing the fund for non-game wildlife research and management authorizes the Department of Environmental Management to acquire land for species protection with proceeds from the fund or private contributions.⁴⁵⁸ State law also authorizes the Department to acquire such properties may be obtained “by gift, lease, purchase, or easement.”⁴⁵⁹

3. *Consultation Requirements*

4. *Recovery Plans*

5. *Penalties*

- Rhode Island law penalizes violations of the code governing endangered species with fines and/or imprisonment.⁴⁶⁰

⁴⁵⁷ R.I. GEN. LAWS § 46-23.1-3(b)(7).

⁴⁵⁸ R.I. GEN. LAWS § 20-18.1-3.

⁴⁵⁹ R.I. GEN. LAWS § 20-18-1.

⁴⁶⁰ R.I. GEN. LAWS § 20-37-5.

Vermont

I. Land Use Planning

A. State Planning Enabling Law

- VERMONT PLANNING AND DEVELOPMENT ACT, VT. STAT. ANN. tit. 24, §§ 4301-4498

B. State Land Use Planning Provisions

1. State Planning Agencies/Responsibilities

- State law establishes a Natural Resources Board, which consists of nine members appointed by the governor with advice and consent of the state senate. The Board, composed of a land use panel and a water resources panel, oversees implementation of “Act 250,” the state law which establishes state permit requirements for subdivisions and development.⁴⁶¹ The Board is charged with developing a Capability and Development Plan that is designed to achieve coordinated, efficient economic development in the state and that may also aim to accomplish the state planning goals noted below.⁴⁶²

2. State-Level Planning Goals/State Development Plan

- The state planning and development law sets forth specific goals, including: (a) the identification, protection, and preservation of important natural features of the state landscape including “significant natural and fragile areas [and] . . . rivers, aquifers, shorelands and wetlands;”⁴⁶³ and (b) the maintenance and improvement “of air, water, wildlife and land resources.”⁴⁶⁴ Plans prepared by regional planning commissions or by state agencies also must be consistent with these goals.⁴⁶⁵ State agencies that take actions affecting land use must ensure that those actions are consistent with the above goals and compatible with regional and approved municipal plans.⁴⁶⁶
- State law also sets forth certain environmental criteria for the issuance of required state permits for subdivision and development projects under Act 250. For example, a permit may not result in “undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas,” and may not “destroy or significantly imperil necessary wildlife habitat or any endangered species.”⁴⁶⁷

⁴⁶¹ VT. STAT. ANN. tit. 10, §§ 6021, 6027.

⁴⁶² VT. STAT. ANN. tit. 10, § 6042.

⁴⁶³ VT. STAT. ANN. tit. 24, § 4302(c)(5).

⁴⁶⁴ VT. STAT. ANN. tit. 24, § 4302(c)(6).

⁴⁶⁵ VT. STAT. ANN. tit. 24, § 4302(e).

⁴⁶⁶ VT. STAT. ANN. tit. 3, § 4020(a).

⁴⁶⁷ VT. STAT. ANN. tit. 10, § 6086(a)(8).

3. Inter-Jurisdictional/Regional Elements

- Contiguous municipalities are authorized to form a regional planning commission, upon approval of the state Department of Commerce and Community Development, which must determine whether the proposed region constitutes “a logical geographic and a coherent socio-economic planning area.”⁴⁶⁸ Once formed, the regional planning commission is required to create a regional plan that is consistent with the goals set out in the state planning and development law.⁴⁶⁹ In preparing the plan, the commission must identify – and incorporate preservation policies for – areas of regional significance, including “earth resources” and “rare and irreplaceable natural areas.”⁴⁷⁰ The plan must also include a land use element that identifies “open spaces, and areas identified by the state, regional planning commissions or municipalities, which require special consideration for aquifer protection, wetland protection, or for other conservation purposes.”⁴⁷¹ Regional planning commissions must submit their proposed regional plans to the council of regional commissions for comment, and must send their adopted plans to the council for the council’s recommendations on future amendments.⁴⁷²
- Regional councils are charged generally with overseeing, advising and assisting municipal planning activities.⁴⁷³

4. Planning to Protect Specific Areas

5. State Assistance to Localities

- State law creates a municipal and regional planning fund to assist municipal and regional planning commissions in carrying out the purposes of the state law.⁴⁷⁴ Regional commissions receive funds according to a formula, while municipalities receive funds on a competitive basis and must show that they have a plan and planning process approved by the regional council, or that they will use the funds to gain such approval.⁴⁷⁵ Municipalities may use the funds for, among other purposes, acquiring lands identified in municipal plans as requiring special consideration for “needed housing, aquifer protection, open space, farmland preservation, or other conservation purposes.”⁴⁷⁶

⁴⁶⁸ VT. STAT. ANN. tit. 24, § 4341.

⁴⁶⁹ VT. STAT. ANN. tit. 24, §§ 4345a(5), 4348a(a).

⁴⁷⁰ VT. STAT. ANN. tit. 24, §§ 4345a(5)(D), 4348a(a)(6).

⁴⁷¹ VT. STAT. ANN. tit. 24, § 4348a(a)(2)(a).

⁴⁷² VT. STAT. ANN. tit. 24, §§ 4348(c)(4), 4348(i).

⁴⁷³ VT. STAT. ANN. tit. 24, § 4350(a).

⁴⁷⁴ VT. STAT. ANN. tit. 24, § 4306(a).

⁴⁷⁵ VT. STAT. ANN. tit. 24, § 4306(b).

⁴⁷⁶ VT. STAT. ANN. tit. 24, § 4306(c)(3)

C. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

- Municipalities are authorized to create a planning commission.⁴⁷⁷ Alternatively, urban municipalities may create a planning department headed by a planning director imbued with all the powers of a planning commission.⁴⁷⁸ The planning commission or department may prepare a plan for the development of the municipality, as well as amendments to the plan, for submission to the legislative body of the municipality.⁴⁷⁹ Plans expire every five years unless readopted.⁴⁸⁰ All regulatory and nonregulatory tools adopted by the municipality to implement a plan must be consistent with the purposes set forth in the state planning and development act.⁴⁸¹
- Although a plan is not required, municipalities that have adopted a plan approved by the regional planning commission are authorized to levy impact fees on new development and are eligible to receive additional funds from the municipal and regional planning fund.⁴⁸² Moreover, state agencies are required to consider approved municipal plans in their development efforts.⁴⁸³

2. Mandatory Local Plan Elements Related to Biodiversity

- Plans for municipalities must include a “statement of policies on the preservation of rare and irreplaceable natural areas, scenic and historic features and resources.”⁴⁸⁴

3. Discretionary Local Plan Elements Related to Biodiversity

4. Additional Local Authorities and Responsibilities Related to Planning and Biodiversity

- Municipalities are authorized to create conservation commissions, which may assist local planning commissions on matters affecting natural resources and may inventory and study municipal natural resources including plant and animal life, streams, lakes, ponds, wetlands, and floodplains, and unique biologic sites.⁴⁸⁵

⁴⁷⁷ VT. STAT. ANN. tit. 24, § 4321(a).

⁴⁷⁸ VT. STAT. ANN. tit. 24, §§ 4321(b).

⁴⁷⁹ VT. STAT. ANN. tit. 24, § 4325.

⁴⁸⁰ VT. STAT. ANN. tit. 24, § 4387(a).

⁴⁸¹ VT. STAT. ANN. tit. 24, § 4401.

⁴⁸² VT. STAT. ANN. tit. 24, § 4350(e).

⁴⁸³ VT. STAT. ANN. tit. 3, § 4020(a).

⁴⁸⁴ VT. STAT. ANN. tit. 24, § 4382(a)(5).

⁴⁸⁵ VT. STAT. ANN. tit. 24, §§ 4501, 4505.

5. Mechanisms for Monitoring and Enforcing Local Compliance

a. Funding Restrictions on Localities

- In order to be eligible to receive planning grants from the Vermont Department of Housing and Community Affairs, a community's municipal plan must be approved by a regional planning council, and must include all elements required of a municipal plan by state law.⁴⁸⁶
- As noted earlier, municipalities with approved plans are eligible to receive "additional funds" from the municipal and regional planning fund.⁴⁸⁷

b. Review of Local Plans

- Regional planning commissions are required to review and approve the plans of its member municipalities "when approval is requested and warranted."⁴⁸⁸ Plans may be approved if they contain the elements required under state law and are consistent with statewide goals and with the regional plan and the plans of other member municipalities.⁴⁸⁹

II. **Legal Mechanisms Protecting Endangered Species and Their Habitats**

A. Non-Game Fish and Wildlife Laws

- The state Fish and Wildlife Department is required to adopt, by rule, a plan for nongame wildlife which includes "strategies to manage, inventory, preserve, protect, perpetuate and enhance all nongame wildlife in the state."⁴⁹⁰ More specifically, the plan should aid in the "identification of wildlife species in need of protection and information on their population distributions, habitat requirements, limiting factors, and other pertinent biological and ecological data."⁴⁹¹
- State law requires the establishment of a nongame wildlife account to carry out the wildlife plan, with funds from legislative appropriations, private and public sources, and federal aid.⁴⁹² State law also sets up a fish and wildlife trust fund to support the Department's programs, with contributions from license plate fees, gifts, grants, and

⁴⁸⁶ VT. STAT. ANN. tit. 24, § 4350(b).

⁴⁸⁷ VT. STAT. ANN. tit. 24, § 4350(e).

⁴⁸⁸ VT. STAT. ANN. tit. 24, § 4350(b).

⁴⁸⁹ VT. STAT. ANN. tit. 24, § 4350(b).

⁴⁹⁰ VT. STAT. ANN. tit. 10, § 4048(d)(1).

⁴⁹¹ VT. STAT. ANN. tit. 10, § 4048(d)(1).

⁴⁹² VT. STAT. ANN. tit. 10, § 4048(a)(1)-(3).

state funds.⁴⁹³ Subject to approval by an emergency board, up to \$300,000 may be appropriated each year for the purchase of land to further the Department's programs.⁴⁹⁴

B. Threatened and Endangered Species Laws

- Vermont's Agency of Natural Resources has the duty of adopting both an endangered species list and a threatened species list.⁴⁹⁵ The agency is authorized to promulgate rules to protect and conserve these species.⁴⁹⁶ Individuals are forbidden to "take, possess or transport" wildlife and plant species named on either the state or federal lists.⁴⁹⁷ Exceptions to this general rule may be made for scientific, zoological, or educational purposes.⁴⁹⁸

1. *Basis of Listing*

- Species are deemed endangered if they are native to the state and their "continued existence as wildlife or wild plant[s] ... is in jeopardy."⁴⁹⁹ Similarly, a species is considered threatened if "its numbers are significantly declining because of loss of habitat or human disturbance...."⁵⁰⁰
- The Agency must consider the following factors in determining whether a particular species should be listed as endangered or threatened: present and future habitat destruction, species' range, overutilization of species, disease, predation, effectiveness of existing regulations, and governmental actions affecting the species.⁵⁰¹

2. *Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species*

- The Agency of Natural Resources is required to maintain a registry of fragile areas and to develop stewardship guidelines for maintaining those areas on private and state-owned land.⁵⁰² State law sets forth the characteristics of lands that may be considered for designation as fragile areas, and these criteria include sites with endangered species present on the land or that contain habitat necessary to a listed species.⁵⁰³ State agencies are obligated to notify the Agency before altering any land on the fragile areas registry.⁵⁰⁴

⁴⁹³ VT. STAT. ANN. tit. 10, § 4049.

⁴⁹⁴ VT. STAT. ANN. tit. 10, § 4047(c).

⁴⁹⁵ VT. STAT. ANN. tit. 10, § 5402(a).

⁴⁹⁶ VT. STAT. ANN. tit. 10, § 5402(b).

⁴⁹⁷ VT. STAT. ANN. tit. 10, § 5403(a).

⁴⁹⁸ VT. STAT. ANN. tit. 10, § 5408(a).

⁴⁹⁹ VT. STAT. ANN. tit. 10, § 5402(b).

⁵⁰⁰ VT. STAT. ANN. tit. 10, § 5402(c).

⁵⁰¹ VT. STAT. ANN. tit. 10, § 5402(d).

⁵⁰² VT. STAT. ANN. tit. 10, § 6553(a).

⁵⁰³ VT. STAT. ANN. tit. 10, § 6552(a).

⁵⁰⁴ VT. STAT. ANN. tit. 10, § 6555(1).

- The Agency has the authority to develop conservation programs for threatened or endangered wildlife or plant species.⁵⁰⁵ Such efforts may include the purchase of land or execution of contracts for the management of refuge areas.⁵⁰⁶ Other state agencies must review their programs and ensure that their activities do not jeopardize conservation programs established to protect threatened and endangered species.⁵⁰⁷
- The Agency may designate as confidential information regarding the location of endangered species sites.⁵⁰⁸

3. *Consultation Requirements*

- In order determine whether a species is endangered or threatened, the Agency for Natural Resources must consult with state and federal agencies, as well as with other states that have a shared interest in the species in question.⁵⁰⁹
- The secretary must also consult with the state's committee on endangered species regarding any changes to the state lists.⁵¹⁰

4. *Recovery Plans*

5. *Penalties*

- Violations of Vermont's endangered species laws are punishable by fines, with the amount depending on the offense and whether there has been a prior conviction.⁵¹¹

⁵⁰⁵ VT. STAT. ANN. tit. 10, § 5405.

⁵⁰⁶ VT. STAT. ANN. tit. 10, § 5405.

⁵⁰⁷ VT. STAT. ANN. tit. 10, § 5405.

⁵⁰⁸ VT. STAT. ANN. tit. 10, § 5410.

⁵⁰⁹ VT. STAT. ANN. tit. 10, § 5402(e)(2).

⁵¹⁰ VT. STAT. ANN. tit. 10, § 5404(b).

⁵¹¹ VT. STAT. ANN. tit. 10, § 5403(c)-(f).

Virginia

I. Land Use Planning

A. State Planning Enabling Law

- VA. CODE ANN. §§ 15.2-2200 to 2238

B. State Land Use Planning Provisions

1. State Planning Agencies/Responsibilities

2. State-Level Planning Goals/State Development Plan

3. Inter-Jurisdictional/Regional Elements

- Localities within a regional “planning district” (a contiguous area within the boundaries established by the Virginia Department of Housing and Community Development) are authorized to create by written agreement a planning district commission, provided at least 45 percent of the district’s localities enter into the agreement.⁵¹² The purpose of the commission is to encourage cooperation among localities, as well as between localities and the state, on planning issues that affect regional interests.⁵¹³ Each planning district commission must prepare, and revise at least every five years, a “regional strategic plan” to address regional issues such as transportation, housing and environmental management.⁵¹⁴ Before adopting the plan, the commission must submit the plan for comment and recommendations to the state Department of Housing and Community Development and to localities within the district.⁵¹⁵ All actions taken by the commission must be consistent with its strategic plan.⁵¹⁶ Localities may choose to adopt the plan to guide actions of the local governing body.⁵¹⁷

4. Planning to Protect Specific Areas

- The state allows the cities of Chesapeake and Hampton to establish a “duplicate” planning commission to ensure that planning decisions are in accord with the Chesapeake Bay Preservation Act (CBPA).⁵¹⁸

⁵¹² VA. CODE ANN. §§ 15.2-4200 to 4208 (West 2008).

⁵¹³ VA. CODE ANN. § 15.2-4207(A).

⁵¹⁴ VA. CODE ANN. §§ 15.2-4209(A), 15.2-4213.

⁵¹⁵ VA. CODE ANN. § 15.2-4209(B).

⁵¹⁶ VA. CODE ANN. § 15.2-4210.

⁵¹⁷ VA. CODE ANN. § 15.2-4209(C).

⁵¹⁸ VA. CODE ANN. § 15.2-2220.

- State law also requires counties, cities and towns in the Tidewater area to include in their comprehensive plans a delineation of lands within their jurisdiction that qualify as Chesapeake Bay Preservation Areas and to develop land use planning for the protection of water quality in those areas.⁵¹⁹ The state’s Chesapeake Bay Local Assistance Board must develop regulatory criteria to be used by local governments when considering requests to develop land in these areas. Among other things, the criteria must promote water quality that “support[s] the propagation and growth of all aquatic life” in state waters.⁵²⁰ Localities outside of the Tidewater area may elect to incorporate these criteria into their comprehensive plans.⁵²¹

5. State Assistance to Localities

- The Chesapeake Bay Local Assistance Board is authorized to provide information, technical assistance and financial assistance to local and regional governing bodies in developing comprehensive plans and on other land use and water quality matters in furtherance of the CBPA.⁵²²
- Virginia law creates a Regional Cooperation Incentive Fund aimed at “encouraging inter-local strategic and functional area planning and other regional cooperative activities.”⁵²³ Funds are administered by the Department of Housing and Community Development subject to state appropriations and a 25% local match.
- Planning district commissions are entitled to receive state financial support to carry out their duties.⁵²⁴

C. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

- Every locality, whether county or municipal, must establish a local planning commission to act in an advisory capacity to the local governing body regarding development and planning.⁵²⁵ Adjacent municipalities or counties may enter into an agreement to form a joint local planning commission.⁵²⁶ In addition, a town may designate the local planning commission of the county in which it is located as its own local planning commission.⁵²⁷

⁵¹⁹ VA. CODE ANN. §§ 10.1-2109.

⁵²⁰ VA. CODE ANN. § 10.1-2107(B).

⁵²¹ VA. CODE ANN. § 10.1-2110.

⁵²² VA. CODE ANN. §§ 10.1-2102, 2103.

⁵²³ VA. CODE ANN. § 15.2-4217.

⁵²⁴ VA. CODE ANN. § 15.2-4216.

⁵²⁵ VA. CODE ANN. § 15.2-2210.

⁵²⁶ VA. CODE ANN. § 15.2-2219.

⁵²⁷ VA. CODE ANN. § 15.2-2218.

- Every local planning commission must develop a comprehensive plan and recommend its adoption to the local governing body, and every local governing body must adopt (and review at least every five years) a comprehensive plan.⁵²⁸
2. Mandatory Local Plan Elements Related to Biodiversity
 - The local planning commission must study, among other matters, “natural resources” and “environmental . . . factors” when developing its comprehensive plan.⁵²⁹
 - As noted above, counties, cities, and towns within Tidewater Virginia⁵³⁰ must have planning and land use elements in their comprehensive plans that specify water quality measures to ensure protection of the Chesapeake Bay, including its aquatic life.⁵³¹
 3. Discretionary Local Plan Elements Related to Biodiversity
 - Local comprehensive plans may include designation of areas for a variety of uses, which include “conservation; active and passive recreation . . . [and] floodplain and drainage.”⁵³² For localities with populations greater than 20,000, comprehensive plans must designate one or more urban development areas that incorporate principles of “new urbanism,” which may include “preservation of natural areas.”⁵³³
 - As noted above, local governments not within Tidewater Virginia may incorporate the criteria set out by the CBPA for water quality protection into its comprehensive plan.⁵³⁴
 4. Additional Local Authorities and Responsibilities Related to Planning and Biodiversity
 5. Mechanisms for Monitoring and Enforcing Local Compliance
 - a. Funding Restrictions on Localities
 - b. Review of Local Plans

II. Legal Mechanisms Protecting Endangered Species and Their Habitats

⁵²⁸ VA. CODE ANN. §§ 15.2-2223, 15.2-2230.

⁵²⁹ VA. CODE ANN. § 15.2-2224.

⁵³⁰ VA. CODE ANN. § 10.1-2101.

⁵³¹ VA. CODE ANN. § 10.1-2107(B).

⁵³² VA. CODE ANN. § 15.2-2223.

⁵³³ VA. CODE ANN. § 15.2-2223.1(B).

⁵³⁴ VA. CODE ANN. § 10.1-2110.

A. Non-Game Fish and Wildlife Laws

- In its laws dealing generally with hunting and trapping, the Commonwealth of Virginia has declared it unlawful “to hunt, trap, take, capture, kill, attempt to take, capture or kill, possess, deliver for transportation, transport, cause to be transported...any wild bird or wild animal...except as specifically permitted by law.”⁵³⁵
- Virginia law provides for a voluntary contributions, through a check-off on individual tax returns, to a state fund for the “conservation and management of endangered species and other nongame wildlife,” defined as “protected wildlife, endangered and threatened wildlife, aquatic wildlife, specialized habitat wildlife both terrestrial and aquatic, and mollusks, crustaceans, and other invertebrates under the jurisdiction of the Board of Game and Inland Fisheries.”⁵³⁶

B. Threatened and Endangered Species Laws

- Virginia prohibits the “taking, transportation, possession, sale, or offer for sale within the Commonwealth of any fish or wildlife” appearing on the federal list of threatened or endangered species.⁵³⁷ In addition, the state Board of Game and Inland Fisheries may issue a regulation declaring that species not appearing on the federal list are threatened or endangered in Virginia, and may also issues regulations prohibiting their taking, transportation, processing, or sale.⁵³⁸ Exceptions to the taking, possession, and transportation prohibitions may be made for “zoological, educational, or scientific purposes and for propagation of such fish or wildlife in captivity for preservation purposes.”⁵³⁹
- Virginia also has an Endangered Plant and Insect Species Act. Under this law, the state board is authorized to issue regulations listing plant or insect species as threatened or endangered and restricting actions with respect to these species.⁵⁴⁰ Individuals may not “dig, take, cut, process, or otherwise collect, remove, transport, possess, sell, offer for sale, or give away” plant or insect species listed by law or regulation as threatened or endangered, except on their own land.⁵⁴¹ The law provides an exception for permits issued by the Commissioner in limited circumstances.⁵⁴² The Commissioner may undertake programs necessary for the management of threatened or endangered plant or insect species.⁵⁴³

⁵³⁵ VA. CODE ANN. § 29.1-521(A)(10).

⁵³⁶ VA. CODE ANN. § 58.1-344.3(B)(1).

⁵³⁷ VA. CODE ANN. § 29.1-564.

⁵³⁸ VA. CODE ANN. § 29.1-566.

⁵³⁹ VA. CODE ANN. § 29.1-568.

⁵⁴⁰ VA. CODE ANN. § 3.2-1002(A).

⁵⁴¹ VA. CODE ANN. § 3.2-1003.

⁵⁴² VA. CODE ANN. § 3.2-1004.

⁵⁴³ VA. CODE ANN. § 3.2-1001.

1. *Basis of Listing*

2. *Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species*

- The state treasury has the authority to create the Virginia Land Conservation Fund.⁵⁴⁴ Monies from this fund may be used to acquire land for the protection and preservation of threatened or endangered species, as well as fish and wildlife habitat.⁵⁴⁵

3. *Consultation Requirements*

- Before amending Virginia’s list of threatened and endangered plant or insect species, the state board must consider recommendations made by the Director of the Department of Conservation and Recreation, as well as any investigations conducted by the state Board of Game and Inland Fisheries to develop information regarding “population, distribution, habitat needs, limiting factors, and other biological and ecological data...”⁵⁴⁶

4. *Recovery Plans*

5. *Penalties*

- Violations of both the state’s endangered species laws and the Endangered Plant and Insect Species Act are considered class one misdemeanors.⁵⁴⁷

⁵⁴⁴ VA. CODE ANN. § 10.1-1020(A).

⁵⁴⁵ VA. CODE ANN. § 10.1-1020(A).

⁵⁴⁶ VA. CODE ANN. § 3.2-1002(b).

⁵⁴⁷ VA. CODE ANN. §29.1-567; VA. CODE ANN. § 3.2-1011.

West Virginia

I. Land Use Planning

A. State Planning Enabling Law

- LAND USE PLANNING, W. VA. CODE ANN. §§ 8A-1-1 to 8A-3-14

B. State Land Use Planning Provisions

1. State Planning Agencies/Responsibilities

- West Virginia's governor is responsible for drafting and revising state development plans, which must be submitted to the legislature annually.⁵⁴⁸ Such plans cover natural resource use, "general land use policies," housing and urban development, transportation, recreation, and open space.⁵⁴⁹ The governor is directed by law to consult with regional planning councils and local and regional planning agencies in developing state plans.⁵⁵⁰ The governor is generally responsible for facilitating coordination of planning and development activities of all state departments, agencies and institutions, as well as local governments, regional councils, and other public and private agencies.⁵⁵¹

2. State-Level Planning Goals/State Development Plan

- The state legislature's goal in authorizing the governor to develop state development plans is to ensure "the efficient management of limited public revenues for the purpose of promoting the orderly development of the state and harmonizing the development of the state's governmental...environmental and physical resources, while maintaining acceptable levels of public services and facilities...."⁵⁵²
- The state development plans must include, among other things, appraisals of the State's natural resources; general land use policies; environmental protection and other programs; and projection of needs for public facilities, recreation and open space.⁵⁵³

3. Inter-Jurisdictional/Regional Elements

⁵⁴⁸ W. VA. CODE § 8-25-3(1).

⁵⁴⁹ W. VA. CODE § 8-25-3(1).

⁵⁵⁰ W. VA. CODE § 8-25-3(2).

⁵⁵¹ W. VA. CODE § 8-25-3(3).

⁵⁵² W. VA. CODE § 8-25-1.

⁵⁵³ W. VA. CODE § 8-25-3(1).

- The Governor is required to delineate planning regions and to convene a meeting to establish a regional council for each region.⁵⁵⁴ All municipalities and all counties within the region are to be represented on the regional council.⁵⁵⁵
- Regional councils are authorized by statute to coordinate planning activities within the region and to “cooperate with, and provide. . . planning and technical assistance to municipalities, counties and planning and development agencies within the region. . .”⁵⁵⁶ Regional councils may prepare and revise “plans for the development of the region consistent with any state comprehensive planning and development objectives and reflecting plans and programs of the participating governmental units.”⁵⁵⁷ Regional councils are eligible for state funds and technical assistance.⁵⁵⁸
- Local governing bodies are authorized under state law to “create a multicounty planning commission, a regional planning commission or a joint planning commission to promote the orderly development of land and reduce duplication of effort.”⁵⁵⁹

4. Planning to Protect Specific Areas

5. State Assistance to Localities

- The governor is responsible generally for assisting local governments, regional councils and other public bodies in obtaining federal, state or other available funds and services.⁵⁶⁰

C. Local Land Use Planning Provisions

1. Land Use Planning Agencies/Responsibilities

- Local governing bodies are authorized to establish local planning commissions “to promote the orderly development of [their] jurisdiction.”⁵⁶¹
- If a local planning commission is established, it must prepare a comprehensive plan for the jurisdiction and submit that plan to the local governing body for adoption.⁵⁶² Once a comprehensive plan has been adopted, the planning committee must review and update the plan every ten years.⁵⁶³

⁵⁵⁴ W. VA. CODE §§ 8-25-4, 8-25-5(a).

⁵⁵⁵ W. VA. CODE § 8-25-6(a).

⁵⁵⁶ W. VA. CODE § 8-25-8(g).

⁵⁵⁷ W. VA. CODE § 8-25-8(a).

⁵⁵⁸ W. VA. CODE § 8-25-5(b).

⁵⁵⁹ W. VA. CODE § 8A-2-1(b).

⁵⁶⁰ W. VA. CODE § 8-25-3(7).

⁵⁶¹ W. VA. CODE § 8-25-3(7).

⁵⁶² W. VA. CODE § 8A-3-3(a).

⁵⁶³ W. VA. CODE § 8A-3-11(a).

- Although comprehensive plans are only required if a local planning commission has been established, certain actions are contingent on having a comprehensive plan in place. For example, counties may only levy impact fees on development if the county has adopted/revised a comprehensive plan.⁵⁶⁴

2. Mandatory Local Plan Elements Related to Biodiversity

- Comprehensive plans must include a statement of goals and objectives, a timeline for meeting stated goals, implementation and financial plans, recommendations for future land use, and a program that encourages regional cooperation.⁵⁶⁵ Comprehensive plans must also contain several components listed in the state law, including sections on land use, rural landscapes, and recreation.⁵⁶⁶

3. Discretionary Local Plan Elements Related to Biodiversity

- There are a number of optional components that may be addressed in a county or municipality's comprehensive plan. The plan may recommend programs "to conserve and protect wildlife, natural habitats, sensitive natural areas, green spaces and direct access to sunlight."⁵⁶⁷ With regard to environmental matters, the plan may recommend programs to "protect areas from all types of pollution and promote a healthy environment."⁵⁶⁸

4. Additional Local Authorities and Responsibilities Related to Planning and Biodiversity

5. Mechanisms for Monitoring and Enforcing Local Compliance

a. Funding Restrictions on Localities

b. Review of Local Plans

- When recommending adoption of a comprehensive plan, local planning commissions are required generally to "request input from other affected governing bodies and units of government."⁵⁶⁹
- According to state law, all governing bodies within the lands under the jurisdiction of the planning commission, all governing

⁵⁶⁴ W. VA. CODE § 7-20-6.

⁵⁶⁵ W. VA. CODE § 8A-3-4(b)(1)-(6).

⁵⁶⁶ W. VA. CODE § 8A-3-4(c).

⁵⁶⁷ W. VA. CODE § 8A-3-5(4).

⁵⁶⁸ W. VA. CODE § 8A-3-5(2).

⁵⁶⁹ W. VA. CODE § 8A-3-6(d).

bodies affected by the comprehensive plan, and any other interested or affected governing body, unit of government or planning commission, “must cooperate, participate, share information and give input when a planning commission prepares or amends a comprehensive plan.”⁵⁷⁰

II. Legal Mechanisms Protecting Endangered Species and Their Habitats

A. Non-Game Fish and Wildlife Laws

- One purpose of the West Virginia Outdoor Heritage Conservation Fund, established by statute, is to address the “critical need to invest in the conservation of unique and important wildlife habitat.”⁵⁷¹ The Fund provides grants certain state agencies or charitable entities the authority to acquire interests in real property for conservation purposes or for stewardship, based on several enumerated conservation criteria.

⁵⁷⁰ W. VA. CODE § 8A-3-13

⁵⁷¹ W. VA. CODE §5B-2G-2,3.

B. Threatened and Endangered Species Laws

- West Virginia has not enacted legislation governing threatened and endangered species or addressing protection of non-game wildlife generally.⁵⁷²
- A limited number of state statutory provisions address threatened and endangered species and their habitat directly. Under state law, it is unlawful to “take, possess, transport, import, export [or otherwise trade in] any bald eagle . . . or any golden eagle, alive or dead, or any part, nest or egg thereof of the foregoing eagles, or to attempt to do any of these acts.”⁵⁷³ The Division of Natural Resources may exempt from disclosure under the Freedom of Information Act, any record concerning the site-specific location of an animal species protected under the federal Endangered Species Act, a plant protected under the federal Plant Variety Protection Act, and any plant or animal species native to West Virginia determined by the director to be sensitive and in need of conservation to maintain viability or existence.⁵⁷⁴ The state’s land conservation grants program awards grants on the basis of certain conservation criteria, including habitat for rare, threatened or endangered species.⁵⁷⁵

1. *Basis of Listing*

2. *Regulatory Protection of Special Habitat Areas that Mention Endangered or At-Risk Species*

⁵⁷² The West Virginia Division of Natural Resources’ (Division) is responsible for conserving and protecting those endangered and threatened species named on the federal list, as well as non-game wildlife and their habitats. This work is carried out largely through the Wildlife Diversity Program and Natural Heritage Program administered by the Division’s Wildlife Resources Section. W.V. Div. of Natural Resources, Wildlife Resources, <http://www.wvdnr.gov/Wildlife/Wildlife.shtm> (last visited Oct. 15, 2009). The Natural Heritage Program tracks federally-listed threatened and endangered species, as well as certain species that are assigned State Ranks under the program, based on “the species’ documented occurrences and distributions. *Id.*

⁵⁷³ W. VA. CODE §20-2-5C.

⁵⁷⁴ W. VA. CODE §20-2-29.

⁵⁷⁵ W. VA. CODE §5B-2G-9.

Appendix 19: Funding Sources

Model Guidelines for Conservation of Species and their Key Habitats through State Financial Mechanisms

A REPORT PREPARED FOR NATURE SERVE

NORTHEAST ASSOCIATION OF FISH AND WILDLIFE AGENCIES
REGIONAL CONSERVATION NEEDS GRANT

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Defenders of Wildlife
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I. Introduction

This report is a piece of a larger collaboration between NatureServe, Defenders of Wildlife (Defenders), Environmental Law Institute (ELI), and the Pennsylvania and Virginia Natural Heritage Programs to develop a web-based toolkit that will include a regional profile of how wildlife conservation is addressed through land use planning decisions. The project titled “Development of Model Guidelines for Assisting Local Planning Boards with Conservation of Species of Greatest Conservation Need (SGCN) and their Key Habitats through Local Land Use Planning” will include individual state profiles complete with legal and financial mechanisms, case studies on innovative programs or projects, and best management practices for SGCN. This report addresses the financial mechanisms for wildlife conservation within thirteen northeastern states (from Maine to Virginia) and compiles these mechanisms into individual state profiles.

The purpose of the state profile section is to provide local land use planners and others interested in implementing habitat conservation strategies within the context of local land use planning a list of *state* funding opportunities and incentive mechanisms. The funding opportunities and incentive mechanisms identified include programs, policies, or economic instruments that aid and motivate conservation planners to incorporate conservation, restoration, and/or protection of habitat, native species, and ecosystem function into their land conservation planning goals. Funding opportunities consist of land acquisition and grant programs, while the incentive mechanisms include tax incentives, cost-share and easement programs.

In general, there are few *state* funding sources and incentive mechanisms solely dedicated to the protection of native species and their habitats. Most of the programs focus on conserving open space for either water quality or recreational use. These programs are included as a potential source of funding because they indirectly provide co-benefits to wildlife. Federal programs were not included because they are readily available to all states and their purpose and framework does *not* change between states. In addition to providing a resource for local land use planners, the profiles can be compared across states. Comparing innovative financial mechanisms between states may encourage some states to emulate these programs, or come up with innovative programs of their own.

Each of the state profiles that follow include a brief paragraph on how funding for conservation works within the state, a list of programs, and a chart for easy reference. The programs are divided into four distinct categories: Land Conservation Programs, Grant Programs, Conservation Easement Programs, and Financial Incentives. Details are listed for each program such as the administering agency, the purpose of the program, how it works, where to obtain more information, statutory references, and deadlines for applications. A chart at the end of the profile breaks down each program for easy reference.

Gathering information for this report consisted of contacting individuals in each state to verify program details and obtain information on other programs not identified. A list of state contacts are identified in Section XV at the conclusion of this report. In addition, information collected for the summaries below were mostly abstracted from the Trust for Public Lands Conservation Almanac website and state agency websites. Each description includes a web page reference indicating where the text was obtained. The following table gives a summary of all the programs and incentives relevant to protecting open space, native species, and habitats in each state.

Table 1.1: Sources of State Conservation Funding

<i>State</i>	<i>Land Acquisition Programs</i>	<i>Grant Programs</i>	<i>Easement Programs</i>	<i>Financial Incentives</i>
Massachusetts	X	X	X	X
Vermont		X		X
Maine		X		
New Hampshire		X		
Rhode Island		X		X
Connecticut	X	X	X	X
New Jersey	X		X	X
Delaware			X	X
Maryland	X	X	X	
Pennsylvania		X		X
Virginia		X		X
New York		X		
West Virginia			X	

In general, most states offer financial assistance through grant programs and financial incentive mechanisms. Only four states Massachusetts, Connecticut, New Jersey, and Maryland have programs dedicated solely to land acquisition and these programs are mostly in the form of loans or grants. Maine, New Hampshire, and New York *only* have grant programs and West Virginia has one easement program dedicated to land conservation for the entire state. Some mechanisms used by states to fund land conservation programs include general obligation bonds, sale of state lottery tickets and conservation license plates, property taxes, and real estate transfer taxes. Figure 1.1 provides a map detailing how many programs are in each state.



Figure 1.1: Number of Conservation Funding Programs for Each State

II. Maine

Maine has two state land conservation funds, and both are grant programs. The first program, the Land for Maine's Future Program, receives its funding through general obligation bonds approved by the Maine legislature and ratified by voters. For this program, remaining funds from previous bonds total around \$1.5 million, and the Fall 2010 bond recently passed in November for \$9.7 million. The second program, the Maine Outdoor Heritage Fund, receives all of its funding from purchases of a dedicated lottery ticket. The amount the program receives varies every year, but on average lottery tickets generate around \$700,000 per year. These funds are not matched by any other agency and they go exclusively to the Maine Outdoor Heritage Fund.

Grant Programs

1. Land for Maine's Future Program

Type of Program: Grant Program; Cost-share Program

Administering Agency: Maine State Planning Office

Purpose: The concept behind the Land for Maine's Future (LMF) Program is simple. Lands that have exceptional recreational or ecological value along with working lands for farms, forests, tourism, and working waterfronts all warrant permanent protection. With spreading development and changing land uses, Maine is at risk of losing many of the landscapes that are important to Maine's natural and cultural heritage as well as to its economic vitality. The LMF Program seeks to conserve these important landscapes.

Who Can Participate: Anyone can nominate or propose land for acquisition by the LMF Program with the sponsorship of a suitable state agency as long as the threshold criteria, the criteria of the sponsoring state agency, and basic information requirements are met. This must include full knowledge and agreement of the owner of the proposed property that his/her property is being proposed to the LMF Program.

How it Works: In 1987, citizens voiced their desire to have Maine's most special places held forever in the public trust. The Maine Legislature created the LMF Program to secure "the traditional Maine heritage of public access to Maine's land and water resources or continued quality and availability of natural resources important to the interests and continued heritage of Maine people."

Four bonds supporting the LMF Program with a total of \$117 million over 20 years have passed by overwhelming margins. A new bond will be considered by the voters in November 2010. If that is approved, the LMF Board will be considering a new round of projects in the spring of 2011.

To apply for these funds a proposal is submitted to the LMF board and can include acquisition of a property through fee-simple purchases or easements. The proposal is expected to have a match greater than or equal to one third of the total eligible project costs. This means that for every \$2 of LMF funds expended, there must be at least \$1 of match funds. Proposed projects should not exceed fair market value based on independent appraisal, although it is recognized that the market will, on rare occasion, offer opportunities that require exceptions to the basic rule. All lands acquired through the LMF are open to the public. Exceptions include farms and commercial working waterfronts, where public access may not be feasible or desirable. LMF may make grants of up to 5% of the appraised value of any project to develop public access facilities, including trails, boat launching sites, parking, camping and picnicking facilities. When

development rights on a farm are purchased, up to 5% can be available for business plan development and implementation.

Contact: Tim Glidden, Director

Telephone and E-mail: 207-287-1487 and tim.glidden@maine.gov

Website: <http://www.maine.gov/spo/lmf/about.htm>

Application Deadline: April 1, and May 15 (working waterfront); Anytime for water access projects.

2. Maine Outdoor Heritage Fund

Type of Program: Grant Program

Administering Agency: Maine Department of Inland Fisheries and Wildlife

Purpose: In 1995, the state of Maine created the Maine Outdoor Heritage Fund to fund priority areas identified within the state strategic plan. The sole purpose of the fund is maintaining, improving, and expanding state and local natural resource conservation programs and associated compatible public uses that are identified within the plan.

Who Can Participate: Any entity interested in obtaining funding for a conservation or recreation project from the Maine Outdoor Heritage Fund must apply through one of 16 designated state Natural Resource Agencies.

How it Works: Each year, the Maine Outdoor Heritage Board distributes funds for a broad range of conservation initiatives. The Maine Outdoor Heritage Fund is supported by 26 percent of the total proceeds from “scratch-off” lottery tickets. Funds are allocated to habitat conservation, land acquisition, and endangered species projects. Grants are awarded twice each year by a seven -member board that is appointed by the Governor. Grants are awarded based on a point system. Local governments or municipalities receive a higher score if there is a 1/3 or higher cash or in-kind match from non-governmental sources.

Contact: Carol Gay

Telephone and E-mail: 207-458-8421 and mohf@gwi.net

Website: <http://www.maine.gov/ifw/grants/outdoorheritagefund/>

Statutory Reference: Title 12, MRSA c.714, section 7783

Application Deadline: March 1 and September 1, Annually.

TABLE 2.1: MAINE

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
GRANT PROGRAMS						
1. Land for Maine's Future Program	Grant Program, Cost-share program	Maine State Planning Office	Tom Glidden, 207-287-1487, tim.glidden@maine.gov	http://www.maine.gov/spo/lmf/about.htm		April 1, and May 15 (working waterfront); Anytime for water access projects,
2. Maine Outdoor Heritage Fund	Grant Program	Maine Department of Inland Fisheries & Wildlife	Carol Gay, 207-458-8421, mohf@gwi.net	http://www.maine.gov/ifw/grants/outdoorheritagefund/index.htm	Title 12, MRSA c.714, section 7783	March 1 and September 1, Annually.

III. Vermont

The funding structure that supports the grant programs and financial incentive mechanisms in Vermont is varied and consists of both federal funded programs implemented by the state and state funded programs. Federal sources of funding are commonly available through the U.S. Environmental Protection Association (EPA) via the Agency of Natural Resources, often also acting through the state office of the U.S. Fish & Wildlife Service. Programs that deal specifically with improvements in water resources are generally funded through these Federal EPA sources. The Vermont Water Source Protection Loan Program, for example, receives its own grant from the EPA focused on the management of the Safe Drinking Water Act; however, many natural resource-related programs receive money from the Revolving Loan Fund, a state fund which is provided by the EPA on a loan basis. One or two of the state programs are funded by the state through sales of a conservation license plate, and efforts that are farm-related receive funding through the U.S. Department of Agriculture (USDA). The main initiative taken by the state for land conservation funding is an allocation of the property transfer tax. Currently, about 1% of this tax on property transfers of greater than \$100,000 goes to a general fund for regional and local planning, the Vermont Housing Conservation Board, the Municipal Planning Grant, as well as statewide GIS coordination.

Grant Programs

1. Conservation of Land or Historic Resources of Statewide Significance

Type of Program: Loan and Grant Program

Administering Agency: Vermont Housing and Conservation Board (VHCB)

Purpose: To fund conservation projects of statewide significance as determined by VHCB using input from the Natural Heritage Program, Department of Forests, Parks and Recreation, the Division for Historic Preservation and others.

Who Can Participate: VHCB makes loans and grants to nonprofit organizations, municipalities and state agencies for the acquisition of land and for the purchase of conservation easements.

How it Works: These projects are not required to provide local matching funds, although leverage in the form of in-kind services or donations of conservation easements is common. Conservation projects eligible for VHCB funding include acquisition of natural areas that provide habitat for rare or endangered species, acquisition of lands to provide public access to trails or water, greenways, or acquisition of historic sites of statewide significance for public use.

Telephone and E-mail: 802-828-3250 and info@vhcb.org

Website: <http://www.vhcb.org/naturalareaspolicy.html>

Application Deadline: March 5, April 5, July 19, and October 4, Annually.

2. Local Conservation – Recreational or agricultural land, natural areas and historic properties

Type of Program: Loan and Grant Program

Administering Agency: Vermont Housing and Conservation Board (VHCB)

Purpose: Recreational land, working forest, farmland, and important natural areas comprise the state's rural landscape and the character of these lands has long been closely tied to the activities

of the people who live and work here. VHCB's conservation program helps maintain that relationship by conserving many of the state's most important lands and providing state residents access to those resources both now and in the future.

Who Can Participate: VHCB makes loans and grants to nonprofit organizations, municipalities and state agencies for the acquisition of land and for the purchase of conservation easements.

How it Works: Under the VHCB Local Conservation Grant Program, \$150,000 plus associated costs are available for loans and grants for the purchase of recreational lands, natural areas or historic properties. Grants of up to \$215,000 plus associated costs are available for the purchase of agricultural lands. Funding for associated project costs can be used for a portion of the expenses incurred for appraisals, options, or closing costs. Projects funded under this program might include: land acquisition to provide access to water for swimming or boating, biking and hiking trails, greenways, or conservation or expansion of town parks, forests and natural areas or acquisition of important historic sites for public use. Funding is not available for the construction or rehabilitation of buildings or the construction of recreational facilities. To demonstrate local support for the projects, applicants must raise at least 33 percent of the total project costs from other sources. This match may include cash, in-kind services, and donations of land and easements that further the conservation goals of the project. All projects must demonstrate municipal support in the form of a letter of endorsement from the select board of the town where the project is located.

Telephone and E-mail: 802-828-3250 and info@vhcb.org

Website: <http://www.vhcb.org/localconservation.html>

Application Deadline: March 5, April 5, July 19, and October 4, Annually.

3. Municipal Planning Grant (This grant is not scheduled for funding in 2011)

Type of Program: Grant Program

Administering Agency: Vermont Department of Housing and Community Affairs

Purpose: Promotes community planning, revitalization and development activities that maintain Vermont's land use goal of compact settlements separated by rural lands.

Who Can Participate:

Municipalities with a local planning process that has been approved by April 30, 2010 are eligible to apply for grants of up to \$15,000. Municipal approval includes formal plan approval by the Regional Planning Commission (RPC) as required by 24 V.S.A. §4350. Municipalities without a confirmed local planning process may apply but only to create a municipal plan intended for regional approval. Municipal organizations other than the planning commission (such as the conservation commission or the downtown revitalization organization) may apply for a grant, but only with prior approval of the planning commission and select board. Each municipality may submit only one application per year.

How it Works: The Municipal Planning Grant program supports a range of projects relating to planning and land use and promotes cooperation, collaboration and the exchange of ideas. Eligible projects must have a clear connection to planning and implementation of the municipal plan. Though this grant does not directly fund conservation it does support the inventorying and mapping of species of greatest conservation need. It also funds the purchasing of development rights, easements, and titles of properties for housing and conservation purposes identified in the municipal plan. This grant is highly competitive and uses competitive criteria and statewide priorities to score and rank applications. The statewide priorities are updated annually to comply with policy initiatives or legislation. Grants are awarded based on the application scores and the amount of grant funds available within the respective regions.

Contact: Wendy Tudor

Telephone and E-mail: 802-828-5249 and wendy.tudor@state.vt.us

Website: <http://www.dhca.state.vt.us/Planning/GMS/OnlineApplication2010.htm>

Statutory Reference: 24 V.S.A. §4306 (b).

Application Deadline: Date changes. Contact the program for availability of funds.

4. Vermont Watershed Grant Program

Type of Program: Grant Program

Administering Agency: Vermont Department of Environmental Conservation

Purpose: The goals of the Vermont Watershed Grant Program are to support watershed education and recreation efforts and projects that protect, restore, or enhance Vermont's watershed resources. A watershed is a river, stream, lake, pond, or wetland and the land and water that drains into it. The watershed approach recognizes the inter-relatedness of these resources. People across Vermont, including farmers and other landowners, town officials, anglers, boaters, loggers, biologists, regional planners, and state and federal water resource managers have been working in partnership for cleaner rivers and lakes for the use and enjoyment of future generations. In developing plans to protect, restore, and enhance lakes, rivers and wetlands, watershed health depends on land conservation. Community-oriented associations have taken up conservation work and these successful local efforts are recognized and supported through these grant funds.

Who Can Participate: Municipalities, local or regional governmental agencies, nonprofit organizations, and citizen groups are eligible to receive Watershed Grants for work on public or private lands. Individuals and state and federal agencies are not eligible to receive funds directly, but may be partners of a project.

How it Works: Funds are available for Watershed Projects that: protect or restore fish and wildlife habitats; protect or restore water quality, and shorelines; monitor fish and wildlife populations and/or water quality; reduce phosphorus loading and sedimentation consistent with Clean and Clear Action Plan objectives; enhance recreational use and enjoyment of watershed; educate people about watershed resources; and identify and protect historic and cultural resources. Awards can be made up to an amount equal to or less than \$20,000. Grants are intended for complete projects or for discreet, identifiable portions of larger projects. Grants can be used for all aspects of a project including materials, labor, printing, and equipment rental. The funding of salary or administrative costs is acceptable for time spent on a specific project, or "start-up" funds of a new project. The purchase of equipment is also acceptable, if it is more cost-effective than borrowing or renting and crucial to the completion of the project. Proposals that are directed at preventing the spread of non-native aquatic nuisance species have a higher priority for grant funding over proposals aimed at the control (e.g. harvesting) of non-native aquatic nuisance species. Proposals that are directed at continuing previously initiated water quality monitoring or water body assessment efforts cannot request more than \$3,750 in watershed grant funding.

Contact: Rod Wentworth or Rick Hopkins

Telephone and E-mail: 802-241-3709 and rod.wentworth@state.vt.us or 802-241-3769 and rick.hopkins@state.vt.us

Website: http://www.vtwaterquality.org/lakes/htm/lp_watershedgrants.htm

Application Deadline: Date changes. Contact the program for availability of funds.

Financial Incentives

1. Use Value Appraisal

Type of Program: Financial Incentive

Administering Agency: Vermont Department of Forests, Parks, and Recreation

Purpose: The Use Value Appraisal Program (UVA), established in 1980, is arguably the most successful state program for conserving Vermont's working landscape. By achieving a greater equity in property taxes on undeveloped land, the program has kept agricultural and forest land in active production. Another key to the forest land program is the commitment to manage the land to a state-defined standard. With well over 1.5 million acres enrolled to date, roughly 40% of Vermont's eligible acreage is currently in the program.

Who Can Participate: Landowners of forest, agricultural, and conservation lands

How it Works: **Vermont's Use Value Appraisal (UVA) Program**, also called "Current Use" or "Land Use", enables landowners who practice long-term forest management to have their enrolled land appraised for property taxes based on its value for forestry, rather than its potential development value. When land is enrolled, the State attaches a **permanent lien** to the deed. Productive forestland appraised under this program receives this assessment as long as it is actively managed, unless the landowner decides to withdraw the land from the program, the legislature ends the program, or the parcel is discontinued by the [Division of Property Valuation & Review](#). If enrolled forestland is developed or harvested improperly, a land use change tax is levied on the developed portion and all or a portion will be discontinued from Current Use.

To be enrolled, forestland must have an approved, forest management plan updated at ten year intervals. This document should clearly express the landowner's long-term forest management goals, describe forest stand conditions, silvicultural objectives, and include both a detailed map and schedule for silvicultural treatments. Upon expiration of a 10-year plan, the owner must file a new plan for the next succeeding 10 years to remain in the program.

Since the plan must assure that the land is being managed according to accepted forest standards, many landowners contract with private consulting foresters for developing, writing, and implementing the plan. County foresters who are employed by the State do not write use value plans. Their role is to advise landowners and consulting foresters, review and approve management plans and Forest Management Activity Reports, and to conduct on-site monitoring.

Contact: Wendy Richardson

Telephone and E-mail: 802-241-3678 and wendy.richardson@state.vt.us

Website: http://www.vtfrp.org/resource/for_forres_useapp.cfm

Statutory Reference: 32 V.S.A. § 3755. Eligibility for use value appraisals.

2. Water Source Protection Loan Program

Type of Program: Loan Program

Administering Agency: Vermont Department of Environmental Conservation

Purpose: To protect public water sources in Vermont through purchasing of land or establishing conservation easements.

Who Can Participate: Municipal Water Systems

How it Works: This loan is for purchasing land or conservation easements to protect public water sources and ensure compliance with state and federal drinking water standards. There must be an approved Source Protection Plan prior to the loan along with a hydrogeologically – delineated source protection area. This loan is a 20-year loan with a 3% interest rate and maximum loan amount of \$200,000. Payments begin one year after loan disbursement.

Contact: Rodney Pingree and Bryan Redmond

Telephone and E-mail: 802-241-3418 and Rodney.pingree@state.vt.us; 802-241-3408 and bryan.edmond@state.vt.us

Website: <http://www.anr.state.vt.us/DEC/watersup/swapp.htm>

Application Deadline: Applications accepted on a continuing basis.

TABLE 3.1: VERMONT

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
GRANT PROGRAMS						
1. Conservation of Land or Historic Resources of Statewide Significance	Loan and Grant Program	Vermont Housing and Conservation Board	802-828-3250 and info@vhcb.org	http://www.vhcb.org/naturalareaspolicy.html		March 5, April 5, July 19, and October 4, Annually
2. Local Conservation – Recreational or agricultural land, natural areas and historic properties	Loan and Grant Program	Vermont Housing and Conservation Board	802-828-3250 and info@vhcb.org	http://www.vhcb.org/localconservation.html		March 5, April 5, July 19, and October 4, Annually
3. Municipal Planning Grant (This grant is not scheduled for funding in 2011)	Grant Program	Vermont Department of Housing and Community Affairs	Wendy Tudor, 802-828-5249, wendy.tudor@state.vt.us	http://www.dhca.state.vt.us/Planning/GMS/OnlineApplication2010.htm		Date changes. Contact the program for availability of funds.
4. Vermont Watershed Grant Program	Grant Program	Vermont Department of Environmental Conservation	Rod Wentworth, 802-241-3709, rod.wentworth@state.vt.us; or Rick Hopkins, 802-241-3769, rick.hopkins@state.vt.us	http://www.vtwaterquality.org/lakes/html/watershedgrants.htm		Date changes. Contact the program for availability of funds.

TABLE 3.1: VERMONT

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
FINANCIAL INCENTIVES						
1. Use Value Appraisal	Financial Incentive	Vermont Department of Forests, Parks, and Recreation	Wendy Richardson, 802-241-3678, wendy.richardson@state.vt.us	http://www.vtfpr.org/resource/for_forests_useapp.cfm	32 V.S.A. § 3755. Eligibility for use value appraisals	
2. Water Source Protection Loans	Loan Program	Vermont Department of Environmental Conservation	Rodney Pingree, 802-241-3418, Rodney.pingree@state.vt.us or Bryan Redmond, 802-241-3408, bryan.edmond@state.vt.us	http://www.anr.state.vt.us/DEC/watersup/swapp.htm		Applications accepted on a continuing basis.

IV. New Hampshire

New Hampshire has only grant programs to further land conservation in the state. Funding for these programs comes from a variety of sources. Funding for the Land and Community Heritage Investment Program, an independent state authority, comes from a fee on real estate transactions. The Aquatic Resources Mitigation Fund, a fund within the Department of Environmental Services, uses fees from developers who wish to develop wetlands. The funds collected from the fee go to wetland restoration projects of varying kinds. Finally, the conservation license plate is a state program designed to provide funding for land conservation programs.

Grant Programs

1. New Hampshire Land and Community Heritage Investment Program

Type of Program: Grant and Loan Program; Cost-share Program

Administering Agency: New Hampshire Land and Community Heritage Investment Program

Purpose: To conserve and preserve the state's most important natural, cultural, and historic resources through the acquisition of lands, and cultural and historic resources.

Who Can Participate: A municipality or other political subdivision of the state of New Hampshire.

How it Works: In September 2000, the New Hampshire Land & Community Heritage Investment Program (LCHIP) was formed. LCHIP is an independent state authority that makes matching grants to New Hampshire communities and non-profits to conserve the state's most important natural, cultural and historic resources. LCHIP receives an appropriation from the New Hampshire legislature for grant making. All appropriated funds go directly to projects. LCHIP funds will cover, on average, 20 percent of the project cost. LCHIP also receives \$6 from each sale of each conservation license plate (Moose Plate). Sixty percent of administrative costs are paid for through license plate funds and the remaining forty percent as interest earned from the Trust Fund.

Contact: Deborah Turcott

Telephone: 603-224-4113

Website: <http://www.lchip.org/default.asp>

Statutory Reference: RSA chapter 227-M.

Application Deadline: Opens – July 1, Closes – August 30, Annually.

2. Conservation License Plate Grant Programs

Type of Program: Grant Program

Administering Agency: State Conservation Committee

Purpose: The purpose of the Conservation Grant Program is to support and promote programs and partnerships throughout the state that protect, restore, and enhance the state's valuable natural resources. These grants can be used for physical and tangible environmental projects that foster stewardship and the sustainability of New Hampshire's natural environment.

Who Can Participate: County Conservation Districts, County Cooperative Extension Natural Resource Programs, Municipalities engaged in conservation programs, schools, scout groups, and other nonprofit entities engaged in conservation programs.

How it Works: Two tiers of funding are available 1) under \$5,000 and 2) \$5,000 and higher. Different applications procedures are required based on these two tiers. For the second tier, \$5,000 and higher, a sustainability plan, including provision for assessing the project's long-term value and viability must be included. Also required are a description of how the proposal meets the project ranking criteria and a public awareness program that shows how the project will foster a conservation ethic and heighten public awareness of conservation issues. Funds for the Conservation Grant Program are derived from the sale of conservation license plates, or "moose plates." Vehicle owners may voluntarily purchase conservation license plates for \$38 the first year, and \$30 in succeeding years. The Conservation Grant Program is one way that the voluntary contributions result in improved natural resource conservation in New Hampshire.

Contact: Dea Brickner-Wood

Telephone and E-mail: 603-868-6112 and bluesky24@comcast.net

Website: <http://www.nh.gov/scc/grants/index.htm>

Statutory Reference: RSA 261:97-c, III (Chapter 20:1, III Laws of 1998).

Application Deadline: October 3, Annually.

3. Water Supply Land Protection Grants (Currently there are no funds available)

Type of Program: Grant Program

Administering Agency: New Hampshire Department of Environmental Services

Purpose: To provide grant funds for the acquisition of land or conservation easements to assist in the protection of a community drinking water supply.

Who Can Participate: NH municipalities and non-profit 501(c)(3) organizations having water supply as a principal mission are eligible to apply. The land has to be within the Source Water Protection Area (SWPA) for a proposed or existing water supply (contact DES for assistance with that determination or utilize GRANIT's drinking water supply coverage layer) and it must be from a willing seller.

How it Works: The surest way to prevent contamination of drinking water is to control the land by acquisition or obtaining restrictive easements. Restrictive easements are agreements that prevent the landowner from developing or otherwise using the land in a way that might threaten groundwater. Since the 1800s, water suppliers in New Hampshire have purchased land to protect surface water supply reservoirs. The same strategy can work for groundwater. Unfortunately, cost is a major drawback. It is expensive to buy land and keep it undeveloped.

Contact: Holly Green and Sarah Pillsbury

Telephone and E-mail: 603-271-3114 and holly.green@des.nh.gov; 603-271-1168 and sarah.pillsbury@des.nh.gov

Statutory Reference: No reference.

Application Deadline: Contact the program for application deadlines.

4. Wildlife Habitat – Small Grants Program

Type of Program: Grant Program

Administering Agency: New Hampshire Fish and Game Department

Purpose: For restoring, sustaining, or enhancing wildlife habitat on privately owned land.

Who Can Participate: Owners of private, municipal, corporate or other non-governmental lands can apply for funds to implement habitat-improving practices.

How it Works: The N.H. Fish and Game Department has a Small Grants Program to help landowners with a minimum of 25 acres restore or enhance habitat for wildlife. Funding of up to

\$2,000 per year (no more than \$6,000 over a ten-year period) is available for the creation and/or maintenance of wildlife habitat within the property. Examples of projects that may qualify for funding include: brush clearing or mowing to maintain grasslands and shrub-lands; release of old apple trees; and maintenance of woodland openings. In exchange for the grant, landowners agree that their land will remain open for non-motorized public access activities, including hunting.

Contact: Charlie Bridges

Telephone and E-mail: 603-271-2461 and cbridges@wildlife.state.nh.us

Website: <http://www.wildnh.com/Wildlife/wildlife.htm>

Application Deadline: Contact the program for application deadlines.

5. Current Use Assessment

Type of Program: Tax Incentive

Administering Agency: New Hampshire Department of Revenue Administration

Purpose: Provides a property tax incentive to all qualifying landowners who agree to maintain their land in an undeveloped condition.

Who Can Participate: Owners of >10 acres upland or wetland of any size < 10 acres (>10 acres of wetland are not eligible because of state regulations); certified tree farm of any size, or a tract of undeveloped land of any size that is actively devoted to the growing of agricultural or horticultural crops having an annual gross income from the sale of crops totaling at least \$2,500.

How it Works: Preservation of open space is encouraged through tax relief; rate is assessed based on current use of the land. In addition, a Recreational Discount is an incentive for landowners to keep their land open to others for six low-impact land uses; skiing, snowshoeing, fishing, hunting hiking and nature observation. In exchange for agreeing to allow all six of these activities, the current use assessment is reduced by 20%. No other recreational activities must be allowed, and the landowner may post against any other uses. Participation in the Recreational Discount is optional.

Contact: http://www.revenue.nh.gov/munc_prop/current_use/forms.htm for application

Telephone and E-mail: 603-230-5950 cub@rev.state.nh.us.

Website: <http://www.nhspace.org/downloads/2008CUBooklet.pdf> to download the Current Use Criteria booklet

Application Deadline: Application to be completed and returned to the Town office by APRIL 15th. At the town officials discretion applications may be accepted after that time, but no applications will be accepted after the commissioner has approved the local tax rate for that year.

TABLE 4.1: NEW HAMPSHIRE

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
GRANT PROGRAMS						
1. New Hampshire Land and Community Heritage Investment Program (LCHIP)	Grant and Loan Program; Cost-share Program	New Hampshire Land and Community Heritage Investment Program (LCHIP)	Deborah Turcott, 603-224-4113, dturcott@lchip.org	http://www.lchip.org/default.asp	RSA chapter 227-M	Opens – July 1, Closes – August 30, Annually
2. Conservation License Plate Grant Program	Grant Program	New Hampshire State Conservation Committee	Dea Brickner-Wood, 603-868-6112, bluesky24@comcast.net	http://www.nh.gov/scc/grants/index.htm	RSA 261:97-c, III (Chapter 20:1, III Laws of 1998)	October 3, Annually
3. Water Supply Land Protection Grants (Currently there are no funds available)	Grant Program	New Hampshire Department of Environmental Services	Holly Green, 603-271-3114, holly.green@des.nh.gov and Sarah Pillsbury, 603-271-1168, sarah.pillsbury@des.nh.gov	http://des.nh.gov/organization/divisions/water/dwgb/dwspp/land_acqui/index.htm	None	Contact the program for application deadlines.
4. Wildlife Habitat - Small Grants Program	Grant Program	New Hampshire Fish and Game Department	Charlie Bridges, 603-271-2461 and cbridges@wildlife.state.nh.us	http://www.wildnh.com/Wildlife/wildlife.htm	None	Contact the program for application deadlines.

TABLE 4.1: NEW HAMPSHIRE

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
5. Current Use	Tax Incentive	New Hampshire Department of Revenue Administration	Current Use Board Clerk 603-230-5950 cub@rev.state.nh.us	http://www.revenue.nh.gov/munc_prop/current_use/statutes.htm	Current Use Law (RSA 79-A)	April 15th

V. *New York*

The bulk of *state* funding for land conservation is allocated to purchasing open space for water quality protection through state agencies. All these programs are grant programs and are primarily funded by the state Environmental Protection Fund. The Environmental Protection Fund was specifically created to fund initiatives within the New York State Open Space Plan and is financed through real estate transfer taxes and revenue from New York State bluebird license plates. In 2009, approximately \$58 million was appropriated to this fund and \$17 million was dedicated to purchasing lands. Another common avenue for conservation within the state is at the local municipal level. Municipalities have adopted either a mortgage transfer tax, county-wide sales tax, or real-estate transfer tax through ballot measures that benefit local programs for land acquisition, or preservation of open space. While these measures should operate within the parameters of the New York State Open Space Plan, there is no process or incentive to ensure that they do so.

Grant Programs

1. Habitat/Access Stamp Funding Program

Type of Program: Grant Program

Administering Agency: New York State Department of Environmental Conservation (DEC)

Purpose: To provide funding through reimbursement for fish and wildlife habitat management and the improvement and development of public access for hunting, fishing, trapping and other fish and wildlife related recreation and study.

Who Can Participate: Eligible recipients include municipalities, non-profit organizations, and private landowners applying through a municipality or non-profit organization.

How it Works: Projects are eligible anywhere within the political boundaries of New York State. Projects are grouped within New York State Department of Environmental Conservation regional boundaries for review and award purposes. The Department reserves the right to equally distribute funding between each of the 9 DEC Regions, and also reserves the right to award a portion of the available funds or none of the funding if it is in the best interest of the State to do so. Grants are available in two categories:

- 1) Fish and wildlife habitat management and/or improvement
- 2) Access projects which provide access to hunting, fishing, trapping or other fish and wildlife related recreation and study.

Projects deemed eligible for Federal Sportfish and Wildlife Restoration Funding will not be considered for this grant program. Reimbursement funding will be available for three years from the date of the official notification by the Department of a grant award. Extension of the funding period will only be made with the approval of the Director of the Division of Fish, Wildlife, and Marine Resources (Director). The Director may request whatever information is necessary to make such an approval. Although the Department does not limit an applicant's total project cost, grants will be awarded for a minimum of \$1,500 and will not exceed a maximum of \$15,000. Grant funding will be distributed on a reimbursement basis only. Due to the limited amount of grant money available for this program, additional weight will be given to eligible projects requiring the least amount of grant funding. The Department anticipates a total allocation of \$100,000 to be available from State fiscal year 2006-07 funds for this grant program. Matching funds are not required. State assistance may reimburse up to 100 percent

(not to exceed the maximum grant amount of \$15,000) of the eligible, approved project costs. Project scoring will consider economic factors such as additional funding supplied by project participants.

Contact: Gerald Barnhart

Telephone and E-mail: 518-402-8845 and fwinfo@gw.dec.state.ny.us

Website: http://www.dec.ny.gov/docs/wildlife_pdf/hsappins.pdf

Application Deadline: Varies, contact the program for deadline information.

Statutory Reference: None.

2. Hudson River Estuary Grant Program

Type of Program: Grant Program

Administering Agency: New York State Department of Environmental Protection

Purpose: The Estuary Program protects and improves the natural and scenic Hudson River watershed for all its residents. The program was created in 1987 and extends from the Troy dam to upper New York harbor.

Who Can Participate: Funding for municipalities and not-for-profits to complete projects that carry out the Action Agenda goals for restoring the Hudson and the human uses it supports.

How it Works: The Estuary Grants were created to help fulfill those goals of the Hudson River Estuary Action Agenda that can be implemented most effectively by municipalities, not-for-profit organizations, and other local partners. Estuary grants are offered in five categories:

- Community Interpretive Centers and Education
- Open Space Planning and Acquisition
- Community-based Habitat Conservation and Stewardship
- Watershed Planning and Implementation
- Hudson River Access

The application changes every year, so it's best to contact the agency for additional information.

Contact: No name provided.

Telephone and E-mail: 845-256-3016 or 518-402-8996 and hrep@gw.dec.state.ny.us

Website: <http://www.dec.ny.gov/lands/5091.html>

Application Deadline: Varies, contact the program for deadline information.

Statutory Reference: None.

3. Hudson River Valley Greenway Communities Grant Program

Type of Program: Grant Program

Administering Agency: Hudson River Valley Greenway Communities Council

Purpose: To preserve, enhance, and develop the world-renowned scenic, natural, historic, cultural and recreational resources of the Hudson River Valley, that is also consistent with economic development goals and the tradition of municipal home rule.

Who Can Participate: Municipalities

How it Works: This program provides financial and technical assistance to municipalities located within the designated Greenway Area who share the Greenway goals and objectives, listed on the website. Only municipalities that have passed a local resolution to become a Greenway Community are eligible. Funding provided through these grants are approximately \$5,000 - \$10,000 and are awarded for no more than 50% of the total project cost (for example, a \$10,000 project would be awarded no more than \$5,000). Grants work on a reimbursement basis, therefore the municipality or organization must pay the cost up front and then submit vouchers to the Greenway to be reimbursed. Communities can undertake a variety of projects as a

Greenway Community under this program. The following is a general list of projects that may be funded or provided technical assistance and is intended to provide only general guidance for applicants:

- Community Planning (Comprehensive plans, zoning and subdivision ordinances, site plans.)
- Economic Development (Enhance tourism, agriculture protection plans and implementation techniques, main street and waterfront revitalization plans and implementation techniques)
- Natural Resource Protection (Natural resource inventories and management plans, critical environmental area designations, natural resource protection ordinances) - Cultural Resource Protection (Cultural resource inventories, historic preservation plans/ordinances)
- Scenic Resource Protection (Viewshed analysis, scenic impact review guidelines, scenic road protection, development of scenic easement programs)
- Open Space Protection (Open space inventories, comprehensive open space, recreation and trails plans, development of conservation easement programs, transfer of development rights ordinances)

Projects must be located in the designated Greenway Area, which includes the municipalities located within the following counties: Albany, Columbia, Dutchess, Orange, Putnam, Rensselaer, Rockland Saratoga, Ulster and Westchester; municipalities in Greene County outside of the Catskill Park; and the Hudson River waterfront in the Bronx and New York counties. A work program for each phase of funding, with projected costs and an estimated timeline for completion, must be submitted and approved by the Greenway Council Board prior to the awarding of any grant funding. If a project involves the development of a plan or similar product, final disbursement of funding will not be made until the plan is completed in final form and adopted by the governing body of the relevant municipality. Intermunicipal collaboration projects (those that involve two or more municipalities) will rate higher than single-community projects.

Contact: No contact listed.

Telephone and E-mail: 518-473-3835 and no e-mail listed.

Website: <http://www.hudsongreenway.state.ny.us/GrantFunding/GrantsOverview.aspx>

Application Deadline: Application deadlines vary from year to year.

Statutory Reference: None.

TABLE 5.1: NEW YORK

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
GRANT PROGRAMS						
1. Habitat/Access Stamp Funding Program	Grant Program	New York State Department of Environmental Conservation	Gerald Barnhard, 518-402-8845 and fwinfo@gw.dec.state.ny.us	http://www.dec.ny.gov/docs/wildlife_pdf/hsapplications.pdf	None	Varies, contact the program for deadline information.
2. Hudson River Estuary Grant Program	Grant Program	New York State Department of Environmental Protection	No name provided, 845-256-3016 or 518-402-8996 and hrep@gw.dec.state.ny.us	http://www.dec.ny.gov/lands/5091.html	None	Varies, contact the program for deadline information.
3. Hudson River Valley Greenway Communities Grant Program	Grant Program	Hudson River Valley Greenway Communities Council	No name provided, 845-256-3016 or 518-402-8996 and hrep@gw.dec.state.ny.us	http://www.hudsongreenway.state.ny.us/GrantFunding/GrantsOverview.aspx	None	Application deadlines vary from year to year.

VI. Massachusetts

The major source of state funding for Massachusetts conservation programs comes from an Environmental Bond Bill, a state legislature (general obligation) authorization bill. The 2008-2013 Environmental Bond Bill allocates \$1.675 billion to various land and natural resource development programs throughout the state. Whatever funding is allocated to a program must be paid back in 30 years. Recent legislatures have developed and formalized a cap for the bond, which is currently calculated for each individual program. Individual programs approach the state budget office with a written debt analysis and list of projects in need of funding, and the state assigns a cap to the size of the loan the program can receive for each project.

Land Acquisition Programs

1. Massachusetts Local Acquisitions for Natural Diversity (MA LAND) Program

Type of Program: Grant Program

Administering Agency: Executive Office of Energy and Environmental Affairs

Purpose: Provides funding to assist municipal conservation commissions in acquiring land or conservation restrictions suitable for conservation purposes.

Who Can Participate: Municipal conservation commissions with an approved Open Space and Recreation Plan on file with the Division of Conservation Services.

How it Works: The Self Help Grant Program is now known as the Massachusetts Local Acquisitions for Natural Diversity Program. The program was established in 1961 to assist municipal conservation commissions acquiring land for natural resource (wildlife, habitat, trails) and passive outdoor recreation purposes (hiking, fishing, hunting). Access by the general public is required. This state program pays for the acquisition of land, or a partial interest (such as a conservation restriction), and associated acquisition costs such as appraisal reports and closing costs. Funds are derived from bond expenditures.

Contact: Celia Riechel

Telephone and E-mail: 617-626-1187 and celia.riechel@state.ma.us

Website: [http://www.mass.gov/?pageID=eoeeterminal&L=4&L0=Home&L1=Grants+%26+Technical+Assistance&L2=Grant+%26+Loan+Programs&L3=Division+of+Conservation+Services+\(DCS\)&sid=Eoeea&b=terminalcontent&f=eea_dcs_dcs_grant_programs&csid=Eoeea](http://www.mass.gov/?pageID=eoeeterminal&L=4&L0=Home&L1=Grants+%26+Technical+Assistance&L2=Grant+%26+Loan+Programs&L3=Division+of+Conservation+Services+(DCS)&sid=Eoeea&b=terminalcontent&f=eea_dcs_dcs_grant_programs&csid=Eoeea)

Statutory Reference: 301 CMR 5.00

Application Deadline: Date changes. Contact the program for availability of funds.

2. Drinking Water Source Protection Program (DWSP)

Type of Program: Grant Program

Administering Agency: Massachusetts Department of Environmental Protection

Purpose: To protect drinking water quality by acquiring land, or conservation restrictions.

Who Can Participate: Eligible applicants include all municipalities, as well as public water systems established by a legislative act to provide drinking water to the public.

How it Works: This grant program enables eligible communities and public water systems to acquire land to protect public drinking water quality. Proposed land projects must be located in MassDEP approved drinking water supply protection zones. Proposed land areas may be acquired through outright purchase or through a conservation restriction. The anticipated available funding for the FY11 grant round is \$500,000. The maximum grant award for a single

application is \$100,000. The maximum reimbursement amount is 75% of the total project cost. Final grant awards are contingent upon funding.

Contact: Catherine Hamilton

Telephone and E-mail: 617-556-1070 and Catherine.sarafinas@state.ma.us

Website: <http://www.mass.gov/dep/water/dwgrant.htm>

Application Deadline: Date changes. Contact the program for availability of funds.

Grant Programs

1. Conservation Partnership Grant Program

Type of Program: Grant Program

Administering Agency: Executive Office of Energy and Environmental Affairs

Purpose: Financially assists non-public, not-for-profit corporations in acquiring or receiving a gift donation of land or conservation restriction for conservation or recreation purposes.

Who Can Participate: Non-profit organizations (IRS 501 (c)(3)) that have been formed for one of the purposes described in Section 4 of Chapter 180 of the General Laws of Massachusetts. Municipalities are not eligible for funding.

How it Works: The Conservation Partnership Grant Program is a component of the Administration's goal of biodiversity conservation. The program is part of an overall effort to protect undeveloped lands, unique ecosystems, rare species and Priority Habitats, and working lands, and to preserve the Commonwealth's rich natural heritage for the future. This program provides reimbursements to non-profit organizations for up to 50% for a single conservation project. There are two types of eligible projects: 1) land or conservation restriction purchased by an eligible applicant and 2) due diligence costs for acquisitions or gifts to an eligible applicant. Contract awards for both types of projects are not to exceed 50% of the estimated total project cost, and 100% of the reimbursable (under contract) expenses, with a maximum grant request and award of \$85,000. Applicants must submit an appraisal, the estimated total project cost, and a specific grant request as part of the application package.

Contact: Celia Riechel

Telephone and E-mail: 617-626-1187 and celia.riechel@state.ma.us

Website:[http://www.mass.gov/?pageID=eoeaterminal&L=4&L0=Home&L1=Grants+%26+Technical+Assistance&L2=Grant+%26+Loan+Programs&L3=Division+of+Conservation+Services+\(DCS\)&sid=Eoeea&b=terminalcontent&f=eea_dcs_dcs_conserv_partner_grant&csid=Eoeea](http://www.mass.gov/?pageID=eoeaterminal&L=4&L0=Home&L1=Grants+%26+Technical+Assistance&L2=Grant+%26+Loan+Programs&L3=Division+of+Conservation+Services+(DCS)&sid=Eoeea&b=terminalcontent&f=eea_dcs_dcs_conserv_partner_grant&csid=Eoeea)

Statutory Reference: 815 CMR 2.00

Application Deadline: Date changes. Contact the program for availability of funds.

2. Forest Stewardship Planning Grants for Private and Town Forestlands

Type of Program: Reimbursement Grant Program

Administering Agency: Department of Conservation and Recreation

Purpose: To provide funding for preparing new forest stewardship plans and upgrading existing plans for the purpose of enrolling in a Green Certification program.

Who Can Participate: Privately owned woodlands of 10 acres or more (7 of which must be wooded), that are not currently enrolled in Forest Stewardship or Chapter 61, 61A or 61B programs, and which do not have a permanent conservation easement recorded on the property. Eligible private landowners include individuals, land trusts, clubs (i.e. hunting and fishing clubs), limited liability companies (LLC's), associations, and corporate entities. Municipally owned

forest land parcels of 25 acres or more that are not permanently protected are also eligible. Leaseholders are eligible as well.

How it Works: This is a reimbursement program for preparing new forest stewardship plans, or upgrading existing plans. Through this initiative, woodland owners as well as consulting foresters will have the ability to access funding or information for a spectrum of needs, such as carbon sequestration credits, estate planning, and green certification.

Contact: Michael Downey, or Douglas Hutcheson

Telephone: 413-442-8928 x 135, or 413-237-9713

Website: <http://www.mass.gov/dcr/stewardship/forestry/service/steward.htm>

Application Deadline: Date changes. Contact the program for availability of funds.

3. Urban Forest Planning and Education Grants

Type of Program: Grant Program

Administering Agency: Department of Conservation and Recreation

Purpose: Work to involve the community in the management of all a municipality's or region's "green infrastructure" in order to maximize social, economic and environmental quality.

Who Can Participate: All local government and nonprofit 501(c)(3) organizations. Local tree departments and citizen tree groups are specifically encouraged to apply.

How it Works: These are 50-50 matching grants offered to municipalities and non-profit groups in Massachusetts communities for the purpose of building local capacity for urban and community forestry at the local and regional level. This grant is not new, but a combination of previous grant opportunities (Mass ReLeaf, Planning and Education, and Heritage Grants). The format has been changed in an effort to streamline the grant process for applicants and better target limited resources.

Contact: Jane Calvin, Paul Jahnige, and Eric Seaborn

Telephone and E-mail: 617-626-1456 and Urbanforestry@propseed.net; 413-577-2966 and Paul.Jahnige@state.ma.us; 617-626-1468 and Eric.Seaborn@state.ma.us

Website: <http://www.mass.gov/dcr/stewardship/forestry/urban/urbanGrants.htm>

Application Deadline: Full Proposals are due (postmarked on or before) May 1 and November 1. Intent to Apply forms are due a minimum of one month before these dates, and preferably two months.

4. Buzzards Bay Watershed Municipal Mini-grant Program

Type of Program: Grant Program

Administering Agency: Buzzards Bay National Estuary Program

Purpose: Provides technical assistance to Buzzards Bay municipalities in their efforts to protect and restore water quality and living resources in Buzzards Bay and its surrounding watershed.

Who Can Participate: Eligible municipalities include Fall River, Westport, Dartmouth, New Bedford, Acushnet, Fairhaven, Rochester, Mattapoisett, Marion, Wareham, Middleborough, Carver, Plymouth, Bourne, Falmouth, and Gosnold. Specific restoration and protection projects must lie principally within the Buzzards Bay watershed.

How it Works: This is a grant program through the Buzzards Bay National Estuary Program in the Massachusetts Office of Coastal Zone Management (CZM). Funding is available to assist eligible Buzzards Bay watershed municipalities to protect open space, rare and endangered species habitat, and freshwater and saltwater wetlands, by restoring tidally restricted salt marshes, to develop designs and remediate stormwater discharges threatening water quality, to provide support for mapping stormwater drainage networks, to construct pump-out facilities, to update town parcel data, to digitize wetland boundaries approved in permits, to assist in the monitoring

of water quality to prioritize stormwater remediation, to address problems in migratory fish passage, and to implement other recommendations contained in the watershed management plan for Buzzards Bay. This work is being conducted in accordance with a Cooperative Agreement with the US EPA.

Contact: Sarah Williams

Telephone and E-mail: 508-291-3625 x13 and sarah.williams@state.ma.us

Website: <http://www.buzzardsbay.org/funding.htm>

Application Deadline: Date changes. Contact the program for availability of funds.

5. Riverways Program Grants for River Restoration and Revitalization Priority Projects (Funding currently not available)

Type of Program: Grant Program

Administering Agency: Division of Ecological Restoration, Massachusetts Department of Fish and Game.

Purpose: To restore and protect the health and integrity of the Commonwealth's rivers, wetlands, and watersheds for the benefit of people, fish, and wildlife.

Who Can Participate: Open to public agencies and 501(c)(3) certified non-profit organizations, including, but not limited to state agencies, cities and towns, regional planning agencies, watershed organizations, and land trusts for work on selected priority projects.

How it Works: Funds are intended to further the goals of the DFG by restoring the ecological integrity of rivers and streams throughout the Commonwealth working in partnership with federal, state, and municipal governments, watershed associations and other organizations. Riverways supports sustainable river restoration projects that restore natural processes, remove ecosystem stressors, increase the resilience of the ecosystem; support riverine habitat, promote passage of fish and wildlife through dam and other barrier removal. Support is also provided for urban stream revitalization projects that improve the inter-connection between water quality, aquatic ecology, physical river structure and land use, taking into consideration the social, cultural and economic landscape.

Contact: Nick Wildman

Telephone: 617-626-1527

Website: <http://www.mass.gov/dfwele/der/index.htm>

Conservation Easement Program

1. The Agricultural Preservation Restriction Program

Type of Program: Easement Program

Administering Agency: Massachusetts Department of Agricultural Resources

Purpose: Seeks to preserve and protect agricultural land, including designated farmland soils, from urban development and any activity that would not support the land's agricultural uses and potential.

Who Can Participate: The program offers a non-development alternative to farmers and other owners of "prime" and "state important" agricultural land who are faced with a decision regarding future use.

How it Works: This program funded through legislative appropriation and implemented through the Department of Agricultural Resources is a voluntary program that offers to pay farmland owners the difference between the "fair market value" of their land and the "agricultural value" in exchange for a permanent deed restriction that ensures the owner maintain the land's agricultural viability.

Contact: Ron Hall, APR Program Coordinator

Telephone and E-mail: 617-626-1718 and Ronald.Hall@state.ma.us

Website: <http://www.mass.gov/agr/landuse/APR/index.htm>

Statutory Reference: c. 20, §§ 23 through 26, and c. 184, §§ 31 and 32, Massachusetts General Law.

Financial Incentives

1. Conservation Tax Credits

Type of Program: Tax Incentive

Administering Agency: State of Massachusetts

Purpose: This tax credit provides a financial incentive through an Environmental Bond to preserve land, rather than develop it.

Who Can Participate: Private Landowners

How it Works: In January 2009, a bill was signed establishing a law for a state income tax credit for landowners who voluntarily donate qualifying conservation land to a municipality, the state or a nonprofit conservation organization. This initiative will go into effect in 2011. Lands that qualify include those that protect drinking water supplies, wildlife habitat, scenic vistas, and those that contribute to the tourism, agricultural and forest product industries. The tax credit is valued at 50% of the appraised fair market value of the land, however there are some limitations. A tax credit is limited to \$50,000 per gift and it cannot exceed the donor's annual state income tax liability, but may be carried forward for 10 consecutive years. In addition, a cap is in place that limits the tax credits granted each year at no more than \$2 million.

Website: <http://www.mass.gov/legis/laws/seslaw08/sl080509.htm>

Statutory Reference: Chapter 509 of the Acts of 2008.

2. Community Preservation Act (CPA)

Type of Program: Financial Incentive, Cost-share program

Administering Agency: State of Massachusetts

Purpose: The Community Preservation Act is a tool to help communities preserve open space and historic sites, and create affordable housing and recreational facilities.

Who Can Participate: The Community Preservation Act is statewide enabling legislation to allow cities and towns to exercise control over local planning decisions.

How it Works: The CPA is a law that allows cities and towns in Massachusetts to raise local property taxes to acquire and protect open space, preserve historic buildings and landscapes, and create and maintain affordable housing. It also provides significant state matching funds – an estimated \$26 million annually – to participating communities. In order for a municipality to qualify for state matching funds, Town Meeting or City Council must vote place a property tax surcharge of no more than 3 percent on the ballot. Alternatively, CPA may be placed on the ballot through a petition signed by at least 5 percent of the city or town's registered voters. Once CPA is placed on the ballot, local voters must approve it. Participating cities and towns can opt out of CPA after five years and end the surcharge. The law went into effect December, 2000.

Contact: Stuart Saginor, Executive Director

Telephone: 617-367-8998

Website: <http://www.communitypreservation.org/index.cfm>

Statutory Reference: M.G.L ch.44B.

TABLE 6.1: MASSACHUSETTS

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
LAND ACQUISITION PROGRAMS						
1. MA Local Acquisitions for Natural Diversity (MA LAND) Program	Grant Program	Executive Office of Energy and Environmental Affairs	Celia Riechel 617-626-1187 celia.riechel@state.ma.us	http://www.mass.gov/?pageID=eoeceaterminal&L=4&L0=Home&L1=Grants+%26+Technical+Assistance&L2=Grant+%26+Loan+Programs&L3=Division+of+Conservation+Services+(DCS)&sid=Eoecea&b=terminalcontent&f=eea_dcs_dcs_grant_programs&csid=Eoecea	301 CMR 5.00	Date changes. Contact the program for availability of funds.
2. Drinking Water Source Protection Program (DWSPP)	Grant Program	Massachusetts Department of Environmental Protection	Catherine Hamilton 617-556-1070 Catherine.sarafinas@state.ma.us	http://www.mass.gov/dep/water/dwgrant.htm		Date changes. Contact the program for availability of funds.
GRANT PROGRAMS						
1. Conservation Partnership Grant Program	Incentive Program	Executive Office of Energy and Environmental Affairs	Celia Riechel 617-626-1187 celia.riechel@state.ma.us	http://www.mass.gov/?pageID=eoeceaterminal&L=4&L0=Home&L1=Grants+%26+Technical+Assistance&L2=Grant+%26+Loan+Programs&L3=Division+of+Conservation+Services+(DCS)&sid=Eoecea&b=terminalcontent&f=eea_dcs_dcs_conserv_partner_grant&csid=Eoecea	815 CMR 2.00	Date changes. Contact the program for availability of funds.

TABLE 6.1: MASSACHUSETTS

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
<p>2. Forest Stewardship Planning Grants for Private and Town Forestlands</p>	<p>Grant Program</p>	<p>Department of Conservation and Recreation</p>	<p>Michael Downey, or Douglas Hutcheson 413-442-8928 x 135, or 413-237-9713</p>	<p>http://www.mass.gov/dcr/stewardship/forestry/service/steward.htm</p>		<p>Date changes. Contact the program for availability of funds.</p>
<p>3. Urban Forest Planning and Education Grants</p>	<p>Grant Program</p>	<p>Department of Conservation and Recreation</p>	<p>Jane Calvin, 617-626-1456, Urbanforestry@propseed.net; Paul Jahnige, 413-577-2966, Paul.Jahnige@state.ma.us; and Eric Seaborn, 617-626-1468, Eric.Seaborn@state.ma.us</p>	<p>http://www.mass.gov/dcr/stewardship/forestry/urban/urbanGrants.htm</p>		<p>Full Proposals are due (postmarked on or before) May 1 and November 1. Intent to Apply forms are due a minimum of one month before these dates, and preferably two months.</p>
<p>4. Buzzards Bay Watershed Municipal Minigrant Program</p>	<p>Grant Program</p>	<p>Buzzards Bay National Estuary Program</p>	<p>Sarah Williams, 508-291-3625 x13, sarah.williams@state.ma.us</p>	<p>http://www.buzzardsbay.org/funding.htm</p>		<p>Date changes. Contact the program for availability of funds.</p>

TABLE 6.1: MASSACHUSETTS

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
5. Riverways Program Grants for River Restoration and Revitalization Priority Projects	Grant Program	Division of Ecological Restoration, Massachusetts Department of Fish and Game	Nick Wildman, 617-626-1527	http://www.mass.gov/dfwel/der/index.htm		
CONSERVATION EASEMENT PROGRAM						
1. The Agricultural Preservation Restriction Program	Easement Program	Department of Agricultural Resources	Ron Hall, 617-626-1718, Ronald.Hall@state.ma.us	http://www.conservationalmanac.org/secure/almanac/newengland/ma/programs.html	c. 20, §§ 23 through 26, and c. 184, §§ 31 and 32, Massachusetts General Law	
FINANCIAL INCENTIVES						
1. Conservation Tax Credits	Tax Incentive	State of Massachusetts		http://www.mass.gov/legis/laws/seslaw08/sl080509.htm	Chapter 509 of the Acts of 2008	
2. Community Preservation Act (CPA)	Financial Incentive, Cost-share program	State of Massachusetts		http://www.communitypreservation.org/index.cfm	M.G.L ch.44B	

VII. Rhode Island

The majority of the state funding available for the grant programs in Rhode Island comes from the state Department of Environmental Management through the Watershed Restoration Fund. As of 2004, a portion of this fund was devoted to the creation of an Open Space Bond. Funds for the bond are allocated to programs for open space and watershed restoration and development. The Oil Spill Prevention and Response Fund (OSPAR) finances the Coastal and Estuarine Habitat Restoration Trust Fund using a per-barrel fee on petroleum products. While the funds given to each program from this petroleum fee are small in comparison to the Open Space Bond, they are a reliable source of funding. The Rhode Island Coastal Resources Management Council (CRMC) is allocated \$250,000 annually from this petroleum fee, all of which is then re-issued through grant projects.

Grant Programs

1. Open Space and Recreational Development – Land Acquisition

Type of Program: Grant Program funded by Open Space, Recreation, Bay and Watershed Protection Bonds

Administering Agency: Department of Environmental Management (DEM), State Land Conservation and Acquisition Program

Purpose: The primary purpose of this program is the preservation of open space that possesses natural, ecological, agricultural or scenic values, by purchase of fee title or, development rights, or conservation easements.

Who Can Participate: The applicant must be either a municipality, land trust, non-profit organization or a charitable trust in Rhode Island, or a private non-profit organization in another state or the District of Columbia among whose purposes is the preservation of open space.

How it Works: Grants are made available through state referendum bonds on a matching basis for open space and recreational land preservation consistent with the state guide plan and local comprehensive plan. Grants are for 50 percent of approved project costs, with a maximum award of \$250,000. Funds are available for the acquisition of open space through the purchase of fee title lands, or conservation easements. The property must be open, with no man-made structures to be maintained, and have a scenic, natural, agricultural or ecological value. In addition, an approved "Management Plan" is required that outlines appropriate procedures and requirements to preserve the land in perpetuity.

Costs associated with the acquisition of the property or interests in land are eligible for reimbursement and include appraisal, survey, title search and title insurance expenses. All such costs must be incurred after a grant application has been approved or after the applicant has received a waiver from the DEM allowing such costs to be incurred in advance of the project approval.

Contact: Lisa Primiano

Telephone and E-mail: 401-222-2776 and lisa.primiano@dem.ri.gov

Website: <http://www.dem.ri.gov/programs/bpoladm/plandev/grants.htm>

Application Deadline: Applications for Open Space Grant awards must be filed within the prescribed period established by the Natural Heritage Preservation Commission.

Statutory Reference: Adopted Pursuant to Chapters 42-35 and 42-17.5 of the Rhode Island General Laws of 1956, as amended.

2. Rhode Island State Coastal and Estuarine Habitat Restoration Program and Trust Fund

Type of Program: Grant Program

Administering Agency: Rhode Island Coastal Resources Management Council

Purpose: To restore ecological function to a coastal area that has been degraded by human impacts.

Who Can Participate: Cities and towns, any committee, board, or commission chartered by a city or town, non-profit corporations, civic groups, educational institutions, and state agencies.

How it Works: This fund was established from the Oil Spill Prevention, Administration and Response Fund (OSPAR) and seeks projects that restore coastal and estuarine habitats including seagrass beds, salt marshes and river systems. The OSPAR Fund was created in 1996 in the aftermath of the environmentally devastating North Cape oil spill. The fund was created, and is continually supported, by the assessment of a \$.05 per barrel fee on petroleum products received at marine terminals in Rhode Island. To receive funding from this fund applicants are expected to provide information on the type of restoration initiative to take place, the historical impact to the site, the natural resources benefited and impacted (target species), any physical, ecological, biological, cultural/historical, geological and survey data collected to date, a site map, any available photography and photographs of the site, preliminary restoration drawings, maps and engineering plans, and proof of property owner permission for the restoration activity to take place.

Contact: Caitlin Chaffee

Telephone and E-mail: 401-783-3370 and cchaffee@crmc.ri.gov

Website: <http://www.crmc.ri.gov/habitatrestoration/HabRestStrategy.pdf>

Application Deadline: Contact the Rhode Island Coastal Resources Management Council for exact dates.

Statutory Reference: RIGL §46-23.1-3.

3. Narragansett Bay and Watershed Restoration Bond Fund

Type of Program: Grant Program funded by the Open Space, Recreation, Bay and Watershed Protection Bonds

Administering Agency: Department of Environmental Management

Purpose: Provides grants on a matching basis to restore and protect the water quality and enhance the economic viability and environmental sustainability of Narragansett Bay and the State's watersheds.

Who Can Participate: State and local agencies, nonprofit organizations and other nongovernmental entities.

How it Works: This program provides funding assistance for the feasibility analysis, design, construction and /or rehabilitation of nonpoint source water pollution control facilities, including stormwater pollution control projects, and riparian buffer restoration projects. In order to achieve its goal the monies from this fund are apportioned between three sub-funds: the Governmental Entities Nonpoint Sources Water Pollution Control Fund, the Non-Governmental Nonpoint Source Water Pollution Control Fund and the Riparian Buffer Restoration Fund. Applicants must be able to match at least fifty percent of eligible costs. At the

Director's discretion, a grant for up to seventy five percent of eligible costs may be awarded to those applicants whose proposed projects implements a TMDL recommendation.

Contact: Betsy Drake

Telephone and E-mail: 401-222-4700 and Betsy.Drake@dem.ri.gov

Website: www.dem.ri.gov/pubs/regs/regs/water/nbwsrbf2.pdf

Application Deadline: Contact the Department of Environmental Management.

Statutory Reference: R.I. Gen. Laws Sections 42-17.1-2(s), 46-12-24 and 46-12-24.1, and adopted pursuant to the procedures set forth in R.I. Gen. Laws Chapter 42-35, as amended.

Financial Incentives

1. Public Drinking Water Protection or "Penny per Hundred Program" (Funding currently not available)

Type of Program: Financial Incentive

Purpose: To protect the quality of the public drinking water supply through land acquisition

Administering Agency: Rhode Island Water Resources Board

Who Can Participate: Municipal water suppliers

How it Works: This program is often referred to by municipal water suppliers as the "penny per hundred" program. For every one hundred gallons of water delivered [by major water suppliers] one cent is collected and set aside for land acquisition or for water quality improvement projects. Each water supplier participating in this program must spend a minimum of 55% for land acquisition - the primary protection activity.

Contact: William Riverso

Telephone and E-mail: 401-222-1450 x2054 and will.riverso@wrb.ri.gov

Website: http://www.wrb.state.ri.us/program_pdwp.htm

Statutory Reference: TITLE 46 Waters and Navigation CHAPTER 46-15.3 Public Drinking Water Supply System Protection SECTION 46-15.3-10.

TABLE 7.1: RHODE ISLAND

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
GRANT PROGRAMS						
1. Open Space and Recreational Development - Land Acquisition	Grant Program funded by the Open Space, Recreation, Bay and Watershed Protection Bonds	Department of Environmental Management, State Land Conservation and Acquisition Program	Lisa Primiano; 401-222-2776 and lisa.primiano@dem.ri.gov	http://www.dem.ri.gov/programs/bp_oladm/plandev/grants.htm	Adopted Pursuant to Chapters 42-35 and 42-17.5 of the Rhode Island General Laws of 1956, as amended	Applications for Open Space Grant awards must be filed within the prescribed period established by the Natural Heritage Preservation Commission.
2. Rhode Island State Coastal and Estuarine Habitat Restoration Program and Trust Fund	Grant Program	Rhode Island Coastal Resources Management Council	Caitlin Chaffee; 401-783-3370 and cchaffee@crmc.ri.gov	http://www.crmc.ri.gov/habitatrestoration/HabRestStrategy.pdf	RIGL §46-23.1-3	Contact the Rhode Island Coastal Resources Management Council for exact dates.
3. Narragansett Bay and Watershed Restoration Bond Fund	Grant Program funded by the Open Space, Recreation, Bay and Watershed Protection Bonds	Rhode Island Water Resources Board	Betsy Drake; 401-222-4700 and Betsy.Drake@dem.ri.gov	www.dem.ri.gov/pubs/regs/regs/water/nbwsrbf2.pdf	R.I. Gen. Laws Sections 42-17.1-2(s), 46-12-24 and 46-12-24.1, and adopted pursuant to the procedures set forth in R.I. Gen. Laws Chapter 42-35, as amended	Contact the Department of Environmental Management.

TABLE 7.1: RHODE ISLAND

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
FINANCIAL INCENTIVES						
1. Public Drinking Water Protection or “Penny per Hundred Program” (Funding currently not available)	Financial Incentive	Department of Environmental Management	William Riverso; 401-222-1450x2054 and will.riverso@wrb.ri.gov	http://www.wrb.state.ri.us/program_pdwp.htm	TITLE 46 Waters and Navigation CHAPTER 46-15.3 Public Drinking Water Supply System Protection SECTION 46-15.3-10	

VIII. Connecticut

Many of the conservation programs in Connecticut are funded through the Community Investment Act. With the passage of the act, a \$30 recording fee is collected for all municipal land records including deeds, mortgages, condominium declarations, name change certificates and notices of variances. Four dollars of each \$30 fee collected is distributed to town clerks for administrative fees and to local governments to help fund capital improvement projects. The remaining portion (\$26) is submitted to the state for deposit into its land protection, affordable housing and historic preservation account, which is distributed equally among the Commission on Culture and Tourism (which includes historic preservation), the Housing Finance Authority, the Department of Environmental Protection and the Department of Agriculture.

Land Acquisition Programs

1. Recreation and Natural Heritage Trust Program

Type of Program: Land Acquisition Program

Administering Agency: Department of Environmental Protection (DEP)

Purpose: To expand the state's system of parks, forests, wildlife and other natural open spaces.

Who Can Participate: Any landowner or agent of a landowner.

How it Works: The DEP manages the acquisition of land of statewide significance that represents the ecological and cultural diversity of Connecticut, with a focus on unique features such as rivers, mountains, rare natural communities, scenic qualities, historic significance, connections to other protected land, and access to water.

To ensure the property is compatible with the goals of the Recreation and Natural Heritage Trust Program, each potential acquisition is evaluated using a review system. It should possess one or more of the following attributes: (1) It should provide high quality recreation opportunities, either active or passive; (2) be a resource offering conservation to a unique, natural area or protection of a species considered threatened, endangered, or of special concern; or (3) correspond to an example of a prime, natural feature of the Connecticut landscape. The DEP purchases land from willing sellers. In many cases, the property owners contact the agency. In other instances, the Department or conservation organizations initiate contact. To submit property for consideration for purchase by the DEP, a Prospective Land Acquisition Application form must be filled out. Additionally, applications will be reviewed only if one of the following conditions is met: 1) Property is for sale on the open market, or (2) Property is not currently for sale on the open market, but the property owner has expressed interest in the current or future sale or donation of the property.

Contact: Suzanne M. Barkyoumb

Telephone and E-mail: 860.424.3016 and suzanne.barkyoumb@po.state.ct.us

Website: http://www.ct.gov/dep/cwp/view.asp?a=2706&q=323840&depNav_GID=1641

Application Deadline: No deadline.

Grant Programs

1. Open Space and Watershed Land Acquisition Grant Program

Type of Program: Grant Program

Administering Agency: Connecticut Department of Environmental Protection

Purpose: Provides financial assistance to municipalities and nonprofit land conservation organizations to acquire land for open space and to water companies to acquire land to be classified as Class I or Class II water supply property.

Who Can Participate: Municipalities and nonprofit land conservation organizations.

How it Works: Grants are made for the purchase of land that is: 1) valuable for recreation, forestry, fishing, conservation of wildlife or natural resources; 2) a prime natural feature of the state's landscape; 3) habitat for native plant or animal species listed as threatened, endangered or of special concern; 4) a relatively undisturbed, outstanding example of an uncommon native ecological community; 5) important for enhancing and conserving water quality; 6) valuable for preserving local agricultural heritage; or 7) eligible to be classified as Class I or Class II watershed land. Other considerations include: 1) protection of land adjacent to and complementary to existing open space, preserved agricultural land or Class I or Class II water company land; 2) proximity to urban areas; 3) land vulnerable to development; 4) consistency with the State's Plan of Conservation and Development; and 5) lands with multiple values such as water supply protection and recreation, or forest preservation and fishing access.

Linkages between open spaces are an important consideration as are multi-town projects such as greenways. Cooperative efforts are fostered between towns, land conservation organizations and local community groups. Preference is given to open space acquisitions that comply with local and regional open space or conservation and development plans.

Land acquired will be preserved in perpetuity: 1) predominately in its natural scenic and open condition; 2) for the protection or provision of potable water; 3) or for agriculture. A permanent conservation easement will be provided to the State to ensure that the property remains in a natural and open condition for the conservation, open space, agriculture, green space or water supply purpose for which it was acquired. The easement will include a requirement that the property be made available to the general public for appropriate recreational purposes. Where development rights will be purchased and where general public access would be disruptive of agricultural activity, an exception to the provision for public recreational access may be made, at the discretion of the Commissioner. Where development rights are to be purchased, the State of Connecticut will become an equal holder of those rights as a substitute for the easement.

No grant may be made for: 1) land to be used for commercial purposes or for recreational purposes requiring intensive development, except for forest management or agricultural use; 2) land with environmental contamination; 3) land which has already been committed for public use; 4) development costs; 5) land to be acquired by eminent domain; 6) reimbursement of in-kind services or incidental expenses; 7) or for property acquired by the grant applicant prior to the grant application deadline.

Contact: David Stygar; Allyson Clarke

Telephone and E-mail: 860.424.3081 and david.stygar@ct.gov; 860.424.3774 and Allyson.clarke@ct.gov

Website: http://www.ct.gov/dep/cwp/view.asp?a=2706&q=323834&depNav_GID=1642

Application Deadline: Varies from year to year.

Statutory Reference: C.G.S. Section 7-131d to 7-131k, inclusive.

Conservation Easement Program

1. Farmland Preservation Program

Type of Program: Easement Program

Administering Agency: Connecticut Department of Agriculture

Purpose: To preserve farmland soils by acquiring the development rights on farms in farm communities.

Who Can Participate: Landowners, towns, and land trusts

How it Works: The Department of Agriculture preserves farmland by acquiring development rights to agricultural properties. The farms remain in private ownership and continue to pay local property taxes. A permanent restriction on nonagricultural uses is placed on these properties. The program is voluntary on the part of the applicant. Applications are evaluated according to state regulation criteria. Successful applicants must own active farms that contain a high percentage of prime farmland soils and are in established farm communities. Early program studies estimated a development rights program in Connecticut would average 40% acquisition of lands classified by the United States Department of Agriculture, Natural Resources Conservation Service as prime and important farmland soils. The program's efforts through its negotiations and scoring criteria recognize the benefits of clustering farms in active farm communities. It has allowed the Commissioner to work with the best applications and has enabled the program to protect and average of 65% prime and important farmland soils on its preserved farms.

Contact: J. Joseph Dippel, Director

Telephone and E-mail: 860.713.2511 and Joseph.Dippel@ct.gov

Website: <http://www.ct.gov/doag/cwp/view.asp?a=3260&q=399016>

Application Deadline: No deadline.

Financial Incentives

1. Conservation Tax Credits

Type of Program: Tax Incentive

Administering Agency: State of Connecticut

Purpose: To protect the state's unique natural and historical resources by rewarding and assisting habitat stewardship by private landowners.

Who Can Participate: Private landowners

How it Works: Connecticut provides a state corporate income tax credit for donations of conservation land or easements equal to 50% of the donation's fair market value. A 10-year carry forward period is available to donors whom do not use up the entire credit in the year of its origination. Donated land or easements must a) conserve natural or scenic resources, b) protect natural streams or water supplies, c) conserve soils, wetlands, beaches, or tidal marshes, d) enhance neighborhood parks, forests, wildlife preserves, nature reservations, or other open space, e) enhance public, recreation opportunities, or f) preserve historic sites. The Connecticut conservation easement tax credit is non-transferable.

Website: <http://www.ct.gov/drs/lib/drs/forms/2009forms/corpbusiness/ct-1120dl.pdf>

Statutory Reference: Conn. Gen. Stat. §12-217ff.

Application Deadline: No deadline.

TABLE 8.1: CONNECTICUT

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
LAND ACQUISITION PROGRAM						
1. Recreation and Natural Heritage Trust Program	Land Acquisition Program	Department of Environmental Protection (DEP)	Suzanne M. Barkyoumb; 860.424.3016 and suzanne.barkyoumb@po.state.ct.us	http://www.ct.gov/dep/cwp/vicw.asp?a=2706&q=323840&depNav_GID=1641		No deadline.
GRANT PROGRAM						
1. Open Space and Watershed Land Acquisition Grant Program	Grant Program	Connecticut Department of Environmental Protection	David Stygar and Allyson Clarke; 860.424 .3081 and david.stygar@ct.gov ; 860.424.3774 and Allyson.clarke@ct.gov	http://www.ct.gov/dep/cwp/vicw.asp?a=2706&q=323834&depNav_GID=1642	C.G.S. Section 7-131d to 7-131k, inclusive	Varies from year to year.
CONSERVATION EASEMENT PROGRAM						
1. Farmland Preservation Program	Easement Program	Connecticut Department of Agriculture	J. Joseph Dippel, Director; 860.713.2511 and Joseph.Dippel@ct.gov	http://www.ct.gov/doag/cwp/vicw.asp?a=3260&q=399016		No deadline.
FINANCIAL INCENTIVES						
1. Conservation Tax Credits	Tax Incentive	State of Connecticut		http://www.ct.gov/drs/lib/drs/forms/2009forms/corpbusiness/ct-1120dl.pdf	Conn. Gen. Stat. §12-217ff	No deadline.

IX. Pennsylvania

Pennsylvania mostly has grant programs dedicated to land conservation and one easement program. The bulk of state funding for conservation is through the state Environmental Stewardship Fund. Established under the Growing Greener legislation in 1999 and funded by a permanent municipal waste disposal fee, this fund has in the past allocated between \$30 to \$40 million to the Bureau of Recreation and Conservation for its Community Conservation Partnerships Program (C2P2) program.

Grant Programs

1. Community Conservation Partnerships Program (C2P2)

Type of Program: Grant Program

Administering Agency: Pennsylvania Department of Conservation and Natural Resources - Bureau of Recreation and Conservation

Purpose: Pennsylvania is ranked among the top ten most populated and most densely populated states in the nation. At current growth and development rates, the state is experiencing a loss of approximately 300 to 350 acres of open space every day. In order to foster and facilitate conservation and recreation-focused projects and programs in the state, the Pennsylvania Department of Conservation and Natural Resources (PDCNR) authorized the C2P2 program.

Who Can Participate: Municipalities, municipal agencies, a pre-qualified land trust and authorized organizations are all eligible applicants. Authorized organizations must be both tax-exempt under Section 501(c) (3) of the Internal Revenue Code and registered with the Pennsylvania Department of State, Bureau of Charitable Organizations.

How it Works: C2P2 grants are awarded to municipalities and authorized nonprofit organizations for recreation, park and conservation projects. These include the rehabilitation and new development of parks and recreation facilities (development projects); acquisition of land for active or passive park and conservation purposes (acquisition projects); and planning for feasibility studies, trails studies, conservation plans, site development planning, and comprehensive recreation, greenway and open space planning . Most projects require a 50% match except for some technical assistance grants and development projects eligible as small community projects whose total project cost is \$60,000 or less. The small community development projects provide a municipal applicant with a population of 5,000 or less with an alternate method of funding with a focus on playground rehabilitation to meet current safety and accessibility standards.

Website: <https://www.grants.dcnr.state.pa.us/LearnMore.aspx?GrantProgramId=18>

Contact: Grants Customer Service

Telephone and E-mail: 800-326-7734 and dcnr-grants@state.pa.us

Application Deadline: Contact the agency for deadline information.

Statutory Reference: None

2. Wild Resource Conservation Grants

Type of Program: Grant Program

Administering Agency: Pennsylvania Department of Conservation and Natural Resources

Purpose: To maintain, manage, enhance and restore Pennsylvania's native wild flora and non-game fauna and their habitats.

Who Can Participate: Counties, other municipalities, tax-exempt 501(3) (c) organizations registered with the Bureau of Charitable Organizations and educational institutions are eligible to receive grants from the Environmental Stewardship Fund (ESF) for projects intended to protect and conserve biological diversity. Conservation Districts and municipal authorities are also eligible for some types of projects funded by ESF. Individuals, state government agencies and for-profit businesses, in addition to the categories above, are eligible for Wildlife Resource Conservation Fund (WRCF) monies but not ESF monies. The great majority of the funds available through this solicitation are expected to be ESF monies. Therefore, applicants are strongly advised to seek a sponsoring organization that is eligible for ESF monies. The full legal name of the sponsoring organization must be used on the application form and, for 501(3) (c) organizations, must be the same name as is registered with the Bureau of Charitable Organizations and with the Internal Revenue Service.

How it Works: These grants fund four types of projects: 1) identification of species and natural communities most at risk from climate change; 2) species inventory and monitoring; 3) sustainable energy extraction and transport; and 4) critical conservation needs. A minimum 10% cash or in-kind match is required to demonstrate the applicant's serious commitment to the project. Matching support at that level or higher will be expected for all projects except those granted an exemption. Match amounts greater than 10% will enhance a proposal's chances of being funded. Cash match and non-cash match will count equally toward the match. Cash match must be a source of funds other than ESF or WRCF. Non-cash match is the performance, at no cost to the grantee, of a portion of the approved scope of work. The performance of this work must be documented, and must be in lieu of work otherwise charged to the grant. The two types of non-cash match are: 1) Donated service [professional service] (claimed at the firm's or individual's normal billing rate times the number of hours worked) and 2) Volunteer service [non-specialized labor] (claimed at the normal hourly labor rate for the type of work performed times the number of hours worked).

Website: <http://www.dcnr.state.pa.us/wrcp/2010grants/index.aspx>

Contact: Greg Czarnecki

Telephone and E-mail: 717-783-1337 and gczarnecki@state.pa.us

Application Deadline: Contact the agency for deadline information.

Statutory Reference: None

3. Growing Greener Watershed Grants

Type of Program: Grant Program

Administering Agency: Pennsylvania Department of Environmental Protection

Purpose: The purpose of the grant is to address nonpoint sources of pollution such as abandoned mine drainage, urban and agricultural runoff, atmospheric deposition, on-lot sewage systems, earthmoving, stream hydromodification and timber harvesting through restoration of watersheds and streams, reclaim mined lands, and remediation.

Who Can Participate: These grants are available to a variety of eligible applicants, including: counties, authorities and other municipalities; county conservation districts; watershed organizations; and other organizations involved in the restoration and protection of Pennsylvania's environment.

How it Works: The Environmental Stewardship and Watershed Protection Act authorizes the Department of Environmental Protection (DEP) to allocate nearly \$547 million in grants for acid mine drainage abatement, mine cleanup efforts, abandoned oil and gas well plugging and local watershed-based conservation projects. These projects can include watershed assessments and development of watershed restoration or protection plans; implementation of watershed

restoration or protection projects (stormwater management wetlands, riparian buffer fencing and planting, streambank restoration; construction of mine drainage remediation systems; reclamation of previously mined lands; and demonstration/education projects and outreach activities.

Website:http://www.depweb.state.pa.us/portal/server.pt/community/growing_greener/13958/watershed_grants/588895

Contact: None

Telephone and E-mail: 717-772-5642 and GrowingGreener@state.pa.us

Application Deadline: Contact the agency for deadline information.

Statutory Reference: Section 6105(b) of the Environmental Stewardship and Watershed Protection Act (27 Pa. C.S. 6101 et seq.).

Conservation Easement Program

1. Farmland Preservation Program

Type of Program: Financial Incentive

Administering Agency: Pennsylvania Department of Agriculture

Purpose: The purpose of this program is to slow the loss of prime farmland to non-agricultural uses. The program enables state, county and local governments to purchase conservation easements, or development rights from owners of quality farmland.

Who Can Participate: Counties

How it Works: Fifty-seven participating county programs receive state funds for the purchase of agricultural conservation easements. Counties participating in the program have appointed agricultural land preservation boards with a state board created to oversee this program. The state board is responsible for distribution of state funds, approval and monitoring of county programs and specific easement purchases.

Farm owners apply to the county program and farm applications are ranked and then forwarded to the state board for approval after offers have been made. To date, more than 400,000 acres have been permanently protected. Each farm is rated against other eligible parcels according to the following criteria:

- Quality of the Farmland. State regulations require that easements be purchased on farms of a minimum of 50 acres in size or at least 35 acres if a county adopts to allow farms of that size into their program. Parcels as small as 10 acres may be preserved if adjacent to existing preserved farmland or used for the production of crops unique to the area. At least half the tract must either be harvested cropland, pasture or grazing land and it must contain 50 percent soil capability, classes I-IV.
- Stewardship. Farms are rated on the use of conservation practices and best management practices of nutrient management and control of soil erosion and sedimentation.
- Likelihood of Conversion. Easements offered for sale to counties will be scored and ranked for acquisition based on a variety of factors such as:
 - Proximity of farm to sewer and water lines.
 - Extent and type of non -agricultural uses nearby.
 - Amount and type of agricultural use in the vicinity.
 - The amount of other preserved farmland in close proximity.

Farmers may choose to receive the proceeds from easement sales in a lump sum payment, installments up to five years, or on a long-term installment basis. Many farmers use the proceeds

from easement sales to reduce debt loads, expand operations and pass on farms to the next generation.

Website:http://www.agriculture.state.pa.us/portal/server.pt/gateway/PTARGS_0_2_24476_10_297_0_43/http://10.41.0.36/AgWebsite/ProgramDetail.aspx?name=Easement-Purchase-&navid=12&parentnavid=0&palid=11&

Contact: Doug Wolfgang

Telephone and E-mail: 717-787-1079x3015 and dowolfgang@state.pa.us

Application Deadline: None

Statutory Reference: 3 P.S. § 914.1.

TABLE 9.1: PENNSYLVANIA

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
GRANT PROGRAMS						
1. C2P2 Community Recreation and Conservation	Grant Program	Pennsylvania Department of Conservation and Natural Resources - Bureau of Recreation and Conservation	Grants Customer Service, 800-326-7734 and dcnr-grants@state.pa.us	https://www.grants.dcnr.state.pa.us/LearnMore.aspx?GrantProgramId=18	None	Contact the agency for deadline information.
2. Wild Resource Conservation Grants	Grant Program	Pennsylvania Department of Conservation and Natural Resources	Greg Czarnecki, 717-783-1337 and gczarnecki@state.pa.us	http://www.dcnr.state.pa.us/wrcp/2010grants/index.aspx	None	Contact the agency for deadline information.
3. Growing Greener Watershed Grants	Grant Program	Pennsylvania Department of Environmental Protection	717-772-5642 and GrowingGreener@state.pa.us	http://www.depweb.state.pa.us/portal/server.pt/community/growing_greener/13958/watershed_grants/588895	Section 6105(b) of the Environmental Stewardship and Watershed Protection Act (27 Pa. C.S. 6101 <i>et seq.</i>)	Contact the agency for deadline information.

TABLE 9.1: PENNSYLVANIA

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
CONSERVATION EASEMENT PROGRAM						
1. Farmland Preservation Program	Financial Incentive	Pennsylvania Department of Agriculture	Doug Wolfgang, 717-787-1079x3015, dowolfgang@state.pa.us	http://www.agriculture.state.pa.us/portals/server.pt/gateway/PTARGS_0_2_24476_10297_0_43/http://10.41.0.36/AgWebsite/ProgramDetail.aspx?name=Easement-Purchase-&navid=12&parentnavid=0&palid=11&	3 P.S. § 914.1	None

X. New Jersey

For the majority of the land conservation programs in New Jersey, funding comes from the state through general obligation bonds passed by the legislature. In 1997, the Garden State Preservation Trust Act was passed to provide a steady stream of revenue to several land conservation programs. The Act had a ten year life span and was fueled by a proportion of the sales tax revenues mixed with general bonds. Since 2007, however, funding for conservation programs has returned to relying on bonds passed every few years. A 2007 bond referendum allocated a total of \$200 million to state land conservation programs, and the 2009 bond referendum doubled this amount at \$400 million.

Land Acquisition Programs

1. Green Acres Program

Type of Program: Provides loans and grants for land acquisition

Administering Agency: New Jersey Department of Environmental Protection (NJDEP)

Purpose: Through partnerships develop a system of interconnected open spaces, whose protection will preserve and enhance New Jersey's natural environment and its historic, scenic, and recreational resources for public use and enjoyment.

Who Can Participate: Local Governments, municipalities, land owners, and non-profits.

How it Works: The New Jersey Department of Environmental Protection (NJDEP) Green Acres Program was created in 1961 to meet New Jersey's growing recreational and conservation needs. To date, Green Acres, working with its partners, has protected more than 497,000 acres of open space and developed hundreds of public parks, bringing the statewide system of preserved open space to more than 1.18 million acres. Green Acres protects land that preserves the State's water supply quality and other natural and historic resources, expands existing state parks, forests, and natural areas, and provides urban and neighborhood parks.

As the land acquisition agent for, the NJDEP, Green Acres acquires land directly from private landowners. The land acquired becomes part of the system of state parks, forests, natural areas and wildlife management areas.

Green Acres also provides grants and low-interest loans to local governments and nonprofit land trusts to augment local open space tax funds and to encourage open space preservation and the development of community parks. Green Acres awards funding in several categories with the highest grant ratios going to urban aid communities and communities with progressive open space policies and practices.

The Green Acres Planning Incentive provides funds to local governments who have passed a local open space tax for the acquisition of land for conservation and recreation purposes and who have a Green Acres approved Open Space and Recreation Plan (OSRP) to guide the expenditure of these funds. Participants in the program are eligible to receive a 50% grant rather than the standard 25% grant, and have the greatest flexibility in applying those funds for land acquisition projects in their communities. The Green Acres Planning Incentive provides a 50% matching grant, up to an established cap based on available funds.

Local governments who do not have an approved OSRP and have not yet passed an open space tax can be funded through Standard Acquisition funding. The award is a 25% matching grant with the balance made in a low-interest loan (payable over thirty years) up to the cap. Loan funds may be provided by Green Acres or the New Jersey Environmental Infrastructure Trust, depending on the nature of the project.

Green Acres Urban Aid acquisition funding provides grants and loans to urban municipalities for acquisition and park development. Funding takes the form of a 75% grant and 25% loan up to the funding cap. In some instances, this funding has been an important catalyst for ongoing partnerships that continue to revitalize the community and attract other facilities.

Green Acres also provides funding for park development. Funding availability for parks and recreation facilities varies with the qualifications of the local government. Urban Aid communities receive 50 percent of the project cost in grant funding with the balance in a loan up to the cap. Non-urban communities receive loan funding up to the cap. Loans for development are at 2% and are repayable over twenty years.

Green Acres awards 50% matching grants to nonprofit organizations for land acquisition and recreational development projects. To date, Green Acres has limited nonprofit recreational development funding to projects in urban aid communities.

Contact: Martha Sullivan Sapp. (State, local, and nonprofit projects are handled by regional teams. For more details on contacts within your region, visit the website).

Telephone and E-mail: 609-984-0570 and Martha.Sapp@dep.state.nj.us

Website: <http://nj.gov/dep/greenacres/staff.html>

Application Deadline: Varies from year to year.

2. State Acquisition Program

Type of Program: Land Acquisition

Administering Agency: State Agriculture Development Committee (SADC) through the Farmland Preservation Program

Purpose: The purpose of this program is to preserve farmlands in New Jersey. Farmland limits urban sprawl, protects water and soils, provides an abundance of locally grown farm products and maintains our connection to the land and the longstanding agricultural traditions that earned New Jersey the reputation as the Garden state.

Who Can Participate: Priority farms that meet or exceed the county average in size and quality score. See below.

How it Works: The State Agriculture Development Committee (SADC) purchases development rights or farmland outright for preservation purposes under its state acquisition program. Landowners can either sell the development rights to their land and continue to own and farm the land, or sell their land outright. In both cases, the land is permanently deed-restricted for agricultural use. When the SADC purchases farms outright, it resells them at public auction as permanently preserved farms.

This program seeks to preserve priority farms that are strategically located in each county. Priority farms are those that meet or exceed the county average in size and quality score. Minimum acreage requirements for qualifying as a priority farm in each county are: 50 in Atlantic; 10 in Bergen; 92 in Burlington; 35 in Camden; 38 in Cape May; 86 in Cumberland; 54 in Gloucester; 54 in Hunterdon; 61 in Mercer; 59 in Middlesex; 39 in Monmouth; 31 in Morris; 42 in Ocean; 16 in Passaic; 96 in Salem; 61 in Somerset; 54 in Sussex; and 72 in Warren.

Quality scores are determined based on a number of factors, including soil quality, proportion of tillable acres, proximity to other preserved farms and local support for agriculture.

Applications for farms not meeting these criteria still will be accepted and considered for approval on a case-by-case basis.

Contact: Heidi Winzinger

Telephone and E-mail: 609-984-2504 and Heidi.winzinger@ag.state.nj.us

Website: <http://www.nj.gov/agriculture/sadc/farmpreserve/programs/acquisition.html>

Application Deadline: Accepted year round.

3. Blue Acres Program

Type of Program: Land Acquisition

Administering Agency: New Jersey Department of Environmental Protection

Purpose: A program to acquire land in the floodways of the Delaware River, the Passaic River, and the Raritan River, and their respective tributaries, and other areas of New Jersey that are prone to flooding, and to dedicate those lands that are purchased for recreation and conservation purposes.

Who Can Participate: Landowners within the floodways of the Delaware River, Passaic River, or Raritan River, and their respective tributaries.

How it Works: Properties (including structures) that have been damaged by, or may be prone to incurring damage caused by, storms or storm-related flooding, or that may buffer or protect other lands from such damage, are eligible for acquisition. All Blue Acres acquisitions must be from willing sellers.

Contact: Courtney Wald-Wittkop

Telephone and E-mail: 609-984-0500 and Courtney.Wald-Wittkop@dep.state.nj.us

Website: http://www.nj.gov/dep/greenacres/pdf/blue_acres_app.pdf

Application Deadline: No deadline.

Conservation Easement Programs

1. Traditional County Easement Purchase

Type of Program: Easement Program, Financial Incentives

Administering Agency: State Agriculture Development Committee (SADC) through the Farmland Preservation Program

Purpose: To preserve farmlands in New Jersey.

Who Can Participate: Landowners

How it Works: Landowners sell the development rights on their farmland to their county. When landowners sell their development rights — also known as development easements — they retain ownership of their land, but agree to permanent deed restrictions that allow only agricultural use. The State Agriculture Development Committee (SADC) provides counties with grants to fund 60-80 percent of the costs of purchasing development rights on approved farms. It generally holds one funding round per year for this program.

Contact: Contact the county's agriculture development board.

Website: <http://www.nj.gov/agriculture/sadc/farmpreserve/programs/countyeasementpurchases.pdf>

Application Deadline: Contact the county's agriculture development board for application deadlines.

2. County Planning Incentive Grants

Type of Program: Easement Program, Financial Incentive

Administering Agency: State Agriculture Development Committee (SADC) through the Farmland Preservation Program

Purpose: To preserve farmlands in New Jersey.

Who Can Participate: Counties

How it Works: The County Planning Incentive Grant is a new program that encourages a comprehensive planning process for farmland preservation at the county level. It offers several other advantages over the traditional easement purchase program, including enabling counties to accept and process farmland preservation applications year-round, rather than once a year; reducing the timeframe from landowner application to closing; and rewarding counties that complete transactions in a timely manner with the potential for additional funding.

The planning incentive grant process establishes a strong framework for municipalities, counties and the State to coordinate in the strategic targeting of farmland to ensure we retain farmland and provide the support necessary to keep successful agricultural operations on that land. One of the most significant results has been increased local understanding of the complex facets of agricultural retention beyond farmland preservation.

Contact: Steve Bruder or Tim Brill

Telephone and E-mail: 609-984-2504 and sadc@ag.state.nj.us

Website: <http://www.nj.gov/agriculture/sadc/farmpreserve/programs/countyPIG.html>

Application Deadline: No deadline.

Statutory Reference: N.J.A.C. 2:76.

3. Municipal Planning Incentive Grants

Type of Program: Easement Program, Financial Incentive

Administering Agency: State Agriculture Development Committee (SADC) through the Farmland Preservation Program

Purpose: To preserve farmlands in New Jersey.

Who Can Participate: Municipalities.

How it Works: The Municipal Planning Incentive Grant enables the State Agriculture Development Committee (SADC) to provide grants to eligible counties and municipalities to purchase development easements for permanent preservation of farmland in designated project areas.

Contact: Stefanie Miller

Telephone and E-mail: 609-984-2504 and sadc@ag.state.nj.us

Website: <http://www.nj.gov/agriculture/sadc/farmpreserve/programs/municipalPIG.html>

Application Deadline: December 17, Annually.

Statutory Reference: N.J.A.C. 2:76-17.6-17.7 or 17A.6 – 17A.7.

4. Eight-Year Preservation Program

Type of Program: Easement Program, Financial Incentive

Administering Agency: State Agriculture Development Committee (SADC) through the Farmland Preservation Program

Purpose: To protect and preserve farmlands in New Jersey.

Who Can Participate: Landowners who own land within an Agricultural Development Area, eligible for a Farmland Assessment and meet local and/or county program criteria.

How it Works: Farmland owners agree to voluntarily restrict nonagricultural development for a period of eight years in exchange for certain benefits. There are two types of eight-year programs: municipally approved programs, which require a formal agreement among the landowner, county and municipality, and non-municipally approved programs, which require an agreement between only the landowner and county.

Landowners enrolled in both municipally and non-municipally approved programs receive no direct compensation for participating but are eligible to apply to the State Agriculture

Development Committee (SADC) for grants that fund up to 50 percent of the costs of approved soil and water conservation projects. Additionally, those in municipally approved programs enjoy greater protections from nuisance complaints, emergency fuel and water rationing, zoning changes and eminent domain actions.

An eight-year agreement is recorded with the county clerk in the same manner as a deed. Land may be withdrawn prior to expiration of the eight-year period only in cases of death or incapacitating illness of the owner or other serious hardship or bankruptcy. Withdrawal from the program must be approved by the county agriculture development board and, for municipally approved programs, by the municipality. An owner who wants to sell the farm while enrolled in an eight-year program must provide the SADC with an executed contract of sale for the property. The SADC then has the first right and option to match the conditions of that contract and purchase the property itself.

Contact: Landowners should contact their county agriculture development board, or the State Agriculture Development Committee.

Telephone: (609) 984-2504.

Website: <http://www.nj.gov/agriculture/sadc/farmpreserve/programs/eightyearprogram.pdf>

Application Deadline: No deadline.

Financial Incentive

1. The Pinelands Development Credit Program

Type of Program: Transferable Development Rights

Administering Agency: The Pinelands Commission and the Pinelands Development Credit Bank

Purpose: The Pinelands is a very large area, containing irreplaceable resources. Because the Pinelands' sandy soils don't filter pollutants well, water supplies are easily contaminated by septic systems, fertilizers, pesticides and run-off from heavily traveled roads. To prevent further suburbanization, the Pinelands Plan sets aside sensitive areas where the amount of development is limited and other areas where growth is encouraged.

Who Can Participate: Any landowner.

How it Works: The Pinelands Development Credit (PDC) Program is a transfer of development rights (TDR) program that helps to redirect growth in the Pinelands from the preservation and agricultural districts to infrastructure-supported regional growth areas. PDCs are development rights which are allocated to certain lands ("sending areas") that can be transferred to increase the amount of residential development permitted on other lands ("receiving areas"). Each PDC transfers the right to build four homes and can be bought and sold in 1/4 (or 1 right) increments. Sending areas include preservation and agricultural areas. PDCs may also be allocated to other properties that can't be developed because of environmental problems. Conservation or agricultural easements are placed on the sending properties when the PDCs are transferred. Allocations to sending properties range from 0.2 PDCs for each 39 acres of undevelopable wetlands, to two PDCs for each 39 acres of upland farmland or active berry agriculture. Receiving areas consist of Regional Growth Areas where zoning allows roughly 50% more homes to be built using PDCs than would otherwise be permitted (originally estimated to be 22,500 bonus units/46,200 base units). However, since the program is voluntary and not all developers use PDCs, there are roughly twice as many opportunities to use PDCs as there are PDCs available for use. As a result, the Commission estimates that only 6,600 additional housing units will be developed with PDCs. PDCs can also be used by property owners in other areas of the Pinelands to build homes on certain lots which are slightly smaller than normally required or which involve slight deviations from development standards. PDCs can be bought and sold

privately or through the publicly chartered Pinelands Development Credit Bank. While most PDCs are sold to developers, the state began instituting programs in 1999 to buy and retire PDCs, removing them from the market.

Contact: John Stokes

Telephone: 609-894-7300

Website: <http://www.state.nj.us/dobi/pinelands/pinelandsbank.htm>.

Application Deadline: No deadline.

TABLE 10.1: NEW JERSEY

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
LAND ACQUISITION PROGRAMS						
1. Green Acres Program	Provides loans and grants for land acquisition	New Jersey Department of Environmental Protection	Martha Sullivan Sapp. (State, local, and nonprofit projects are handled by regional teams. For more details on contacts within your region, visit the website. 609-984-0570 and Martha.Sapp@dep.state.nj.us	http://nj.gov/dep/greenacres/staff.html		Varies from year to year.
2. State Acquisition Program	Land Acquisition	State Agriculture Development Committee (SADC) through the Farmland Preservation Program	Heidi Winzinger, 609-984-2504 and Heidi.winzinger@ag.state.nj.us	http://www.nj.gov/agriculture/sadc/farmpreserve/programs/acquisition.html		Accepted year round.

TABLE 10.1: NEW JERSEY

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
3. Blue Acres Program	Land Acquisition	New Jersey Department of Environmental Protection	Courtney Wald-Wittkop, 609-984-0500 and Courtney.Wald-Wittkop@dep.state.nj.us	http://www.nj.gov/dep/greenacres/pdf/blueacres_app.pdf		No deadline.
CONSERVATION EASEMENT PROGRAMS						
1. Traditional County Easement Purchase	Easement Program, Financial Incentives	State Agriculture Development Committee (SADC) through the Farmland Preservation Program	Contact the county's agriculture development board	http://www.nj.gov/agriculture/sadc/farmpreserve/programs/countyeasementpurchases.pdf		Contact the county's agriculture development board for application deadlines.

TABLE 10.1: NEW JERSEY

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
<p>2. County Planning Incentive Grants</p>	<p>Easement Program, Financial Incentive</p>	<p>State Agriculture Development Committee (SADC) through the Farmland Preservation Program</p>	<p>Steve Bruder or Tim Brill, 609-984-2504 and sadc@ag.state.nj.us</p>	<p>http://www.nj.gov/agriculture/sadc/farmpreserve/programs/countyPIG.html</p>	<p>N.J.A.C. 2:76</p>	<p>No Deadline.</p>
<p>3. Municipal Planning Incentive Grants</p>	<p>Easement Program, Financial Incentive</p>	<p>State Agriculture Development Committee (SADC) through the Farmland Preservation Program</p>	<p>Stefanie Miller, 609-984-2504 and sadc@ag.state.nj.us</p>	<p>http://www.nj.gov/agriculture/sadc/farmpreserve/municipalPIG.html</p>	<p>N.J.A.C. 2:76-17.6-17.7 or 17A.6 – 17A.7</p>	<p>December 15, Annually.</p>

TABLE 10.1: NEW JERSEY

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
4. Eight-Year Preservation Program	Easement Program, Financial Incentive	State Agriculture Development Committee (SADC) through the Farmland Preservation Program	Landowners should contact their county agriculture development board, or the State Agriculture Development Committee. (609) 984-2504.	http://www.nj.gov/agriculture/sadc/farmpreserve/programs/eightyearprogram.pdf		No Deadline.
FINANCIAL INCENTIVES						
1. The Pinelands Development Credit Program	Transferable Development Rights	The Pinelands Commission and the Pinelands Development Credit Bank	John Stokes, 609-894-7300	http://www.state.nj.us/dobi/pinelands/pinelandsbank.htm		No Deadline.

XI. Delaware

Land conservation in the state of Delaware is solely focused on financial incentive mechanisms such as conservation easements and tax incentives. State funding for these programs usually comes from either the normal state budget or a \$409 million Bond Bill, which funds capital projects like highway and school construction, as well as agricultural land protection. Additionally, on occasion these financing programs will receive money from the county budgets.

Conservation Easement Programs

1. Delaware Agricultural Lands Preservation Program

Type of Program: Easement Program; Financial Incentive

Administering Agency: State of Delaware Department of Agriculture

Purpose: The Delaware Agricultural Lands Preservation Foundation preserves farms. The Foundation preserves historic structures, wildlife habitats, important environmental features, wetlands, and forests, as well as setting aside, permanently, the critical farmland for future generations.

Who Can Participate: Any landowner.

How it Works: Delaware's farmland preservation program has two major components: Agricultural Preservation Districts and Agricultural Conservation Easements. A district is a voluntary agreement to use land only for agricultural purposes for at least a ten year period. Land must yield a minimum farm income, satisfy a scoring system standard, and undergo a review and approval process. Almost any size farm anywhere in the state can qualify. There is no payment to the landowner for creating the district.

However, there are several benefits to landowners in an agricultural district. The unimproved land in the district is exempt from real estate transfer, county, and school taxes. There are significant protections against nuisance suits for land in the district. Landowners are permitted limited residential uses. Permitted agricultural uses include but are not limited to: crop production, herd animal and poultry operations, horse operations, forest production, non-commercial hunting, trapping and fishing, agricultural eco-tourism operations, as well as farm markets and roadside stands.

In order to permanently preserve farmland, the Foundation purchases development rights from landowners and imposes a permanent agricultural conservation easement on the land. Land must first be in an Agricultural Preservation District before the owner can apply to sell the development rights.

Telephone: 302-698-4530

Website: <http://dda.delaware.gov/aglands/index.shtml>

Application Deadline: No Deadline.

2. Delaware Agricultural Forestland Preservation Program

Type of Program: Easement Program; Financial Incentive

Administering Agency: State of Delaware Department of Agriculture: Forestry

Purpose: To protect and preserve forestland in Delaware

Who Can Participate: Any landowner.

How it Works: Delaware's Forestland Preservation Program protects forestlands through perpetual conservation easements. A conservation easement is a permanent deed restriction whereby the landowner still owns the property but certain development activities are prohibited. The owner can sell the property, but all future owners must also follow the same restrictions. This program is designed to protect working forests; therefore, the easements allow forest management activities, including timber harvests, to continue. Landowners can harvest timber at any time on their property as long as they follow a forest management plan prepared by a professional forester. The program also does not affect hunting activities on the property.

Telephone: 302-698-4530

Website:<http://dda.delaware.gov/forestry/Forestland%20Preservation%20Program%20Guidelines.pdf>

Application Deadline: No Deadline.

Statutory Reference: 3 Del. C., §933.

Financial Incentives

1. Open Space Program

Type of Program: Land acquisition; Easement Program; Financial Incentives

Administering Agency: State of Delaware Department of Natural Resources and Environmental Control

Purpose: To protect designated State Resource Areas (SRAs).

Who Can Participate: Any landowner.

How it Works: The [Delaware Land Protection Act](#) established an Open Space Program. This program oversees the protection of designated [State Resource Areas](#). These areas are permanently protected through the purchase of land including parks, fish and wildlife habitat, forests, nature preserves and cultural sites.

Many SRAs are not protected through acquisition – the intent has not been to purchase all SRAs. Rather, the purpose of the SRAs is to guide state acquisition of open space from willing sellers and to be incorporated by counties in their land use plans.

Website: <http://www.dnrec.delaware.gov/OpenSpaces/Pages/OpenSpaceProgram.aspx>

Application Deadline: No Deadline.

Statutory Reference: Chapter 75: 7505.

2. Conservation Tax Credits

Type of Program: Tax Incentive

Administering Agency: State of Delaware

Purpose: Delaware conservation donations aim to conserve open space, natural habitat, recreational properties, resource conservation, and historic properties.

Who Can Participate: Individuals or corporations.

How it Works: Delaware provides a tax incentives to individuals or corporations that donate land or conservation easements. The credit is equal to 40% of the fair market value of the donation with a maximum credit of \$50,000 for individuals per year. A 5-year carry forward period is available to individuals whom do not use up the entire credit in the year of its origination. The Delaware conservation easement tax credit is non-transferable.

Website: <http://delcode.delaware.gov/title30/c018/sc01/index.shtml>

Application Deadline: No Deadline.

Statutory Reference: Title 30, Chapter 18 §1801:1807.

TABLE 11.1: DELAWARE

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
CONSERVATION EASEMENT PROGRAMS						
1. Delaware Agricultural Lands Preservation Program	Easement Program; Financial Incentive	State of Delaware Department of Agriculture	No Contact Name. 302-698-4530	http://dda.delaware.gov/aglands/index.shtml		No Deadline
2. Delaware Agricultural Forestland Preservation Program	Easement Program; Financial Incentive	State of Delaware Department of Agriculture: Forestry	No Contact Name. 302-698-4530	http://dda.delaware.gov/forestry/Forestland%20Preservation%20Program%20Guidelines.pdf	3 Del. C., §933	No Deadline
FINANCIAL INCENTIVES						
1. Open Space Program	Land acquisition; Easement Program; Financial Incentives	State of Delaware Department of Natural Resources and Environmental Control	No Contact	http://www.dnrec.delaware.gov/OpenSpaces/Pages/OpenSpaceProgram.aspx	Chapter 75: 7505	No Deadline
2. Conservation Tax Credits	Tax Incentive	State of Delaware	No Contact	http://delcode.delaware.gov/title30/c018/sc01/index.shtml	Title 30, Chapter 18 §1801:1807	No Deadline

XII. Maryland

The basic funding structure that provides resources to land conservation programs in Maryland is quite simple: almost all of the funding for these programs comes from the state real estate transfer tax. The .05% transfer value fee is then split roughly in half between the state Department of Natural Resources (DNR) and local sources. The DNR allocates its portion out to a wide array of natural resource-related programs, including those for land conservation. The other half is distributed to the counties according to what proportion of the transfer tax money each county collected.

Land Acquisition Program

1. Open Space Program

Type of Program: Grant Program

Administering Agency: Maryland Department of Natural Resources (DNR)

Purpose: The program makes funds available to local government to help them buy land and build park facilities that will help meet specific land conservation and recreation goals.

Who Can Participate: County Governments, Municipalities/Towns, and Local Land Trust Organizations.

How it Works: Program Open Space (POS) is a nationally recognized program with two components: a local grant component often called Localside POS and a component that funds acquisitions by the State. The first component provides financial and technical assistance to local subdivisions for the planning, acquisition, and/or development of recreation land or open space areas, including dedicated funds for Maryland's state and local parks and conservation areas.

To qualify for POS funding, a local governing body *must* have an *Annual Program* reviewed by Maryland Department of Planning (MDP) and reviewed and approved by DNR for the current fiscal year. By July 1 of each year, the participating local governing body (defined as "The Maryland-National Capital Park and Planning Commission, and the governing body of any county, municipality, or Baltimore City") shall submit an *Annual Program* simultaneously to the DNR and the MDP.

Upon review and approval as to consistency with the *Local Land Preservation and Recreation Plan*, the *Annual Program* shall become the basis for total allocations to each of the local governing bodies within the limits imposed by the formula developed for the apportionment of the annual allocation from POS. Municipalities may submit annual programs through their governing bodies.

Website: http://www.dnr.state.md.us/land/pos/pos_how_to_apply.asp

Contact: James Price

Telephone and E-mail: 410-260-8426 and cprice@dnr.state.md.us

Application Deadline: Not Applicable.

Statutory Reference: Code Natural Resources Article, secs. 5-901 through 5-910.

Grant Programs

1. Small Creek and Estuaries Water Quality Restoration Cost-Share Program

Type of Program: Grant Program

Administering Agency: Maryland Department of Environment

Purpose: To offer financial assistance to local governments for voluntary stream and creek restoration projects that provide water quality and habitat benefits.

Who Can Participate: County Governments, Municipalities/Towns, and Regional Governments.

How it Works: This program provides cost share grant funds to local governments for water quality restoration projects in polluted creeks and estuarine tributaries in the State of Maryland, with emphasis on the Chesapeake Bay watershed. The program typically provides up to 50% of eligible project costs.

Large-scale water quality restoration efforts (i.e., sediment and erosion control, point and nonpoint nutrient reduction programs for the Chesapeake Bay, etc.) are not immediately effective in the localized areas because of the accumulated pollution, which may take years to flush from the system. In some cases, water quality problems may need to be mitigated by applying immediate intervention techniques such as mechanical aeration, channel stabilization, and restoration of aquatic habitat. Because pollution sources are rarely confined to county boundaries, local governments typically request State assistance in dealing with these water quality problems. This program provides the Department of the Environment (MDE) with a mechanism to cooperatively fund such restoration efforts with interested local governments.

Projects are ranked according to the following criteria: the severity of the problem; whether sufficient water quality and other environmental improvements can be accomplished within a reasonable budget (cost vs. benefit); local community support for the projects; the anticipated benefit to the department's pollution reduction/prevention goals; completion of phased projects with prior commitment of funding; readiness to proceed; use of innovative or alternative technologies; and public visibility and environmental educational opportunities of the completed project.

Website: <http://www.mde.state.md.us>

Contact: Elaine Dietz

Telephone and E-mail: 410-537-3908 or 800-633-6101 and edietz@mde.state.md.us

Application Deadline: Contact the agency for deadline information.

Statutory Reference: None

2. Maryland's Rural Legacy Program

Type of Program: Grant Program

Administering Agency: Maryland Department of Natural Resources

Purpose: The Rural Legacy Program provides the focus and funding necessary to protect large, contiguous tracts of land rich in natural and cultural resources from sprawl development.

Who Can Participate: County Governments, Municipalities/Towns, and Local Land Trusts. National Land Trust organizations require a cooperative agreement with Maryland Environmental Trust.

How it Works: The Rural Legacy Program, a keystone of Maryland's "Smart Growth Initiatives," was enacted by the 1997 Maryland General Assembly and signed into law of that year. The Program encourages local governments and private land trusts to identify Rural Legacy Areas and to competitively apply for funds to complement existing land conservation efforts or to develop new ones. Easements or fee estate purchases are sought from willing landowners in

order to protect areas vulnerable to sprawl development that can weaken an area's natural resources, thereby jeopardizing the economic value of farming, forestry, recreation and tourism. The Rural Legacy Advisory Committee, appointed by the Governor, and confirmed by the Senate, reviews all applications and makes recommendations to the Rural Legacy Board. The Rural Legacy Board, in turn, makes final recommendations to the Governor and the Board of Public Works. The Board of Public Works designates the Rural Legacy Areas and approves the grants for Rural Legacy funding.

Website: <http://www.dnr.state.md.us/land/rurallegacy/index.asp>

Contact: Stacy Schaefer

Telephone and E-mail: 410-260-8431 and sschaefer@dnr.state.md.us

Application Deadline: Contact the agency for deadline information.

Statutory Reference: Natural Resources Article, §§5-9A-03, Annotated Code of Maryland.

Conservation Easement Programs

1. Conservation Property Tax Credit

Type of Program: Financial Incentive

Administering Agency: Maryland Department of Natural Resources

Purpose: Program encourages donation of conservation easements and gives participating landowners a 15-year property tax credit on unimproved land under easement to the Maryland Environmental Trust.

Who Can Participate: For Profit Organizations, Individuals, and Nonprofit Organizations.

How it Works: A landowner will pay no property tax on land that is subject to a donated Trust easement for 15 years from date of donation. At the end of the 15-year period unimproved land under donated easement will be assessed at the highest agricultural rate. This rate is currently \$500 per acre. Property will qualify for this assessment rate even if the property is not actively farmed. If the property is in agricultural use it will be assessed at the appropriate agricultural level. However, the tax credit and assessment rate will not apply to any residential improvements, or to a minimum of one acre around these improvements.

Website: <http://www.dnr.state.md.us/met/taxbenefits.html>

Contact: John Hutson

Telephone and E-mail: 410-514-7910 and jhutson@dnr.state.md.us

Application Deadline: Easements must be recorded by June 30th to qualify for a current tax year.

Statutory Reference: None

2. State Income Tax Credit

Type of Program: Financial Incentive

Administering Agency: Maryland Department of Natural Resources

Purpose: Program encourages donation of conservation easements and gives landowners a state income tax credit in return for the donation of easement to the Maryland Environmental Trust or the Agricultural Land Preservation Foundation.

Who Can Participate: For Profit Organizations, Individuals, and Nonprofit Organizations.

How it Works: Maryland provides a tax incentive to for-profit organizations, individuals and nonprofit organizations that donate land as a perpetual easement to the Maryland Environmental Trust (MET) or the Maryland Agricultural Land Preservation Foundation (MALPF), and approved by the Board of Public Works.

The total credit taken cannot exceed the appraised value of the easement, reduced by any payment received for the easement. The maximum credit that an individual may take per year is the smaller of \$5,000, or the amount of State income taxes owed for that year. An individual may take the credit for the year in which he or she conveyed the conservation easement, and continue, at a maximum of \$5000 per year, for an additional 15 years, for a total of up to \$80,000. A taxpayer may not claim a State income tax deduction and a State income tax credit for the same conservation easement donation.

When multiple individuals (owners) jointly donate an easement, each one is separately entitled to the tax credit of up to \$5,000 per year. For example, a husband and wife, even if filing jointly, may take up to a \$10,000 credit per year. To calculate the total credit which an individual may take, multiply the appraised easement value by the individual's percentage ownership of the property.

Easements donated before July 1, 2001 do not qualify for this credit. However, a second easement, or amendment, that materially strengthens the conservation restrictions of the original easement may create a tax credit.

Website: <http://www.dnr.state.md.us/met/sitc.html>

Contact: John Hutson

Telephone and E-mail: 410-514-7910 and jhutson@dnr.state.md.us

Application Deadline: Easements must be recorded by December 31st to qualify for a current tax year.

Statutory Reference: None

TABLE 12.1: MARYLAND

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
LAND ACQUISITION PROGRAMS						
1. Program Open Space	Grant program	Maryland Department of Natural Resources	James W. (Chip) Price, 410-260-8426, cprice@dnr.state.md.us	http://www.dnr.state.md.us/land/pos/pos_how_to_apply.asp	Code Natural Resources Article, secs. 5-901 through 5-910	Not Applicable.
GRANT PROGRAMS						
1. Small Creek and Estuaries Water Quality Restoration Cost-Share Program	Grant program	Maryland Department of Environment	Elaine Dietz, 410-537-3908 or 800-633-6101 and edietz@mde.state.md.us	http://www.mde.state.md.us	None	Contact the agency for deadline information.
2. Maryland Rural Legacy	Grant program/1 and acquisition and easement	Maryland Department of Natural Resources	Stacy Schaefer, 410-260-8431 and sschaefer@dnr.state.md.us	http://www.dnr.state.md.us/land/rurallegacy/index.asp	Natural Resources Article, §§5-9A-03, Annotated Code of Maryland	Contact the agency for deadline information.

TABLE 12.1: MARYLAND

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
CONSERVATION EASEMENT PROGRAMS						
1. Conservation Property Tax Credit	Financial Incentive	Maryland Department of Natural Resources	John Hutson, 410-514-7910, jhutson@dnr.state.md.us	http://www.dnr.state.md.us/m-et/taxbenefits.html	None	Easements must be recorded by June 30 th to qualify for a current tax year.
2. State Income Tax Credit	Financial Incentive	Maryland Department of Natural Resources	John Hutson, 410-514-7910, jhutson@dnr.state.md.us	http://www.dnr.state.md.us/m-et/sitc.html	None	Easements must be recorded by December 31 st to qualify for a current tax year.

XIII. West Virginia

While the state of West Virginia itself does not dedicate significant funding to land conservation programs for wildlife, funding for the state's easement program is generated through the counties. According to the Voluntary Farmland Protection Act 2002 amendment (WV Code §8A-12-21), counties with Farmland Protection Programs can generate money to fund those programs through real estate transfer taxes. The act enables the program to receive as much as \$2.20 of every \$1000 of the real estate transfer value, to be used exclusively to fund farmland preservation. In addition, these programs occasionally receive federal match money, in part because of the inability of the states to provide matching funding to these programs.

Conservation Easement Program

1. West Virginia Agricultural Land Protection Authority

Type of Program: Financial Incentive

Administering Agency: West Virginia Department of Agriculture

Purpose: The Authority seeks to preserve farmland in the state of West Virginia.

Who Can Participate: Private Landowners.

How it Works: Under the Voluntary Farmland Protection Act passed by the West Virginia legislature, a West Virginia Agricultural Land Protection Authority was established beginning July, 2002. The Authority is empowered to accept conservation easements from anywhere in the state, including from landowners in those counties that also have Farmland Protection Boards. The Authority is intended to provide a state-level entity as a dual system in parallel with the county Farmland Protection Boards. The Authority also serves to assist those landowners in counties that do not have Farmland Protection Boards.

In addition to acquiring conservation easements, the Authority also has state-wide duties to disseminate information, seek funding, and assist county Farmland Protection Boards upon request by them. Specifically, the Voluntary Farmland Protection Act outlines the Authority's duties as follows:

- disseminate information regarding agricultural land protection and promote the protection of agricultural land
- assist county farmland protection boards in applying for and obtaining all available state and federal funding that is consistent with the purposes of the farmland protection programs
- upon request of a farmland protection board, provide technical and legal services necessary to procure, acquire, draft, file, and record conservation and preservation easements
- seek and apply for all available funds from federal, state, and private sources for farmland protection programs

The deed recordation revenues are currently at an \$800,000 to \$900,000 level per annum. These revenues are dedicated to the securing of conservation easements, on agricultural lands.

Contact: Bob Tabb

Telephone and Email: (304) 558-2201 (phone preferred), btabb@wvda.us

Website: <http://www.wvfarmlandprotection.org/stateAuthority.cfm>

TABLE 13.1: WEST VIRGINIA

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
CONSERVATION EASEMENT PROGRAM						
1. West Virginia Agricultural Land Protection Authority	Financial Incentive	West Virginia Department of Agriculture	Bob Tabb, 304-558-2201 and btabb@wvda.us	http://www.wvfarmlandprotection.org/stateAuthority.cfm	None	None

XIV. Virginia

In general, the largest expenditure by the state for land conservation is through the Land Preservation Tax Credit program. The tax credit program has an annual cap of \$106 million for 2010, all of which has already been used. Besides the tax credit program, there is no singularly dedicated source of funds in Virginia for land conservation. The large sums used for purchases of land are usually bond funds. The Virginia Land Conservation Organization gets its funding from the general assembly through a specific distribution that ranges between \$1 million to \$15 million annually.

Grant Programs

1. Virginia Land Conservation Fund (VLCF)

Type of Program: Grant Program

Administering Agency: The Virginia Department of Conservation and Recreation

Purpose: To provide state funding used to conserve certain categories of special land including open spaces and parks, natural areas, historic areas, and farmland and forest preservation.

Who Can Participate: Applications can be submitted by agencies, localities, public bodies, and registered (tax-exempt) nonprofit organizations in accordance with application procedures.

How it Works: There are four application categories, and each has a particular set of criteria. The four categories are 1) Open Spaces and Parks, 2) Natural Area Protection, 3) Historic Area Preservation, and 4) Farmlands and Forest Preservation. Funds from the foundation are used to establish permanent conservation easements and to purchase open spaces and parklands, lands of historic or cultural significance, farmlands and forests, and natural areas.

A portion of the fund may be used for developing properties for public use. Grants used for acquisition are generally used only for current projects; only in exceptional cases - where considerable public benefit and compelling, unusual financial need and circumstances have been shown - might grants be made for already complete purchases.

The foundation establishes, administers, and manages the Virginia Land Conservation Fund, which is special, non-reverting money in the state treasury. A major function of the foundation is to make matching grants to holders and public bodies for:

- lands for recreational purposes
- lands for threatened or endangered species, fish and wildlife habitat
- natural areas
- and agricultural and forested lands and open space.

The VLCF leverages federal and local investment, paying up to 50 percent of total project costs pursuant to specific criteria defined in each application category. The VLCF was allocated \$4 million over 2009-2010.

Contact: *Sarah Richardson*

Telephone and E-mail: (804) 225-2048 and sarah.richardson@dcr.virginia.gov

Website: www.dcr.virginia.gov/virginia_land_conservation_foundation/index.shtml

Application Deadline: Varies. Contact the agent for deadline information.

Statutory Reference: Code of Virginia, § 10.1-1020.

2. Water Quality Improvement Fund (WQIF)

Type of Program: Grant Program

Administering Agency: The Virginia Department of Environmental Quality (DEQ) is responsible for administering point source grants, and the Virginia Department of Conservation and Recreation (DCR) administers nonpoint source grants.

Purpose: To provide water quality improvement grants to local governments, soil and water conservation districts and individuals for point and nonpoint source pollution prevention, reduction and control programs.

Who Can Participate: Local governments, soil and water conservation districts and individuals who pursue water quality improvements through point and nonpoint source pollution prevention, reduction and control programs (including riparian open-space and conservation easements).

How it Works: A primary objective of WQIF is to fund grants that will reduce the flow of excess nitrogen and phosphorus into the Chesapeake Bay through the implementation of the tributary strategies. WQIF funds are provided, in accordance with the guidelines, to help stimulate nonpoint source pollution reduction through the Virginia Agricultural Best Management Practices Cost-share Program and water quality improvement projects within the Chesapeake Bay Watershed and Southern Rivers Watershed regions. A team of DCR and other agency or local government staff provide technical expertise in the review, scoring, prioritization and selection of grant applications and proposals. Final decisions for project selection are at the discretion of DCR's director.

Contact: *Virginia Department of Conservation and Recreation*

Telephone and E-mail: (804) 225-3785 and swcgrants@dcr.virginia.gov

Website: www.dcr.virginia.gov/soil_and_water/wqia.shtml

Application Deadline: Varies. Contact the agency for deadline information.

Statutory Reference: Section 10.1-2128.B. of the Code of Virginia.

Financial Incentives

1. Virginia Open-Space Lands Preservation Trust Fund (PTF)

Type of Program: Incentive Program

Administering Agency: Virginia Outdoors Foundation (VOF)

Purpose: To provide monetary assistance to landowners related to the costs associated with the conveyance of an open-space or conservation easement.

Who Can Participate: Private Landowners.

How it Works: Conservation easements preserve farmland, forestland, and natural and recreational areas by restricting intensive uses, such as development and mining, which would alter the conservation values of the land. Each easement is tailored to reflect the conservation values of the property and is recorded in the local courthouse as a permanent part of the property records. Easements do not grant public access to a landowner's property. Costs that the fund may reimburse include legal costs, appraisal and other costs, and all or part of the easement's value. Priority may be given to applicants who seek cost re-reimbursement only, demonstrate financial need, or cover a family-owned or -operated farm. The VOF's staff and Board of Trustees evaluate each potential easement for its scenic, scientific, natural, historic, recreational or open-space value using the VOF's Guidelines. VOF Guidelines recommend an overall density of principal residences of one house per 100 acres or less, and that parcels of less than 100 acres permit no subdivision.

VOF treats an easement donation that includes cash assistance to the landowner from the Fund as a “bargain sale” transaction. Accordingly, VOF will report PTF payments made to landowners. In addition, the receipt of a payment in partial exchange for an easement will reduce the value of the related gift by the amount of the payment and concomitantly the tax credit available to the landowner. Both the income from the sale of tax credits and PTF assistance funds may be subject to taxation.

VOF will report the transaction in the year that the easement donation is recorded, regardless of when the payment is made. Payment to the landowner can only be made after recording an easement and submission of eligible expenses to VOF. It may be advantageous for the landowner to coordinate the recordation of the easement with receipt of the PTF payment and payment of eligible expenses.

Contact: *Bob Lee*

Telephone: (540) 347-7727

Website: http://www.virginiaoutdoorsfoundation.org/VOF_land-ptf.php

Application Deadline: Submission of eligible bills must be complete by January 25th of the year following recordation of the easement.

Statutory Reference: Code of Virginia §10.1-1801.1.

2. Land Preservation Tax Credit

Type of Program: Tax Incentive

Administering Agency: State of Virginia

Purpose: To protect the state’s unique natural and historical resources by rewarding and assisting habitat stewardship by private landowners.

Who Can Participate: Tax-payers who donated a conservation easement after January 1, 2000. This tax credit applies to any person, corporation, partnership, organization, trust or estate subject to state or local taxation.

How it Works: Virginia allows an income tax credit for 40 percent of the value of donated land or conservation easements. For tax years 2002 through 2008, taxpayers may use up to \$100,000 per year for the year of sale and the ten subsequent tax years. For tax years 2009 through 2011, taxpayers may use up to \$50,000 per year for the year of the sale, and then 13 subsequent tax years for taxpayers affected by the credit reduction for those years. Unused credits may be sold, allowing individuals with little or no Virginia income tax burden to take advantage of this benefit. The credit is worth 40% of the easement’s fair market value, up to \$100,000 per year. If the credit is not used up in the year of the easement donation, it can be carried forward for an additional five years. Furthermore, if the easement was donated after 2001, the credit may be sold or transferred to other Virginia taxpayers. Individuals and corporations in the state of Virginia may buy or sell conservation tax credits, as long as a notification of the transfer of the credit is sent to the tax commissioner. For 2009 and 2010, the Legislature reduced the cap from \$100k to \$50k, but since the credits are transferable a donor should still be able to claim full credit.

To be eligible for tax credits, the easement must qualify as a charitable deduction under the IRS Code and meet additional requirements under the Virginia Land Conservation Incentives Act. DCR is responsible for verifying the conservation value of Land Preservation Tax Credits for all donations of land or conservation easements for which the donor claims a state tax credit of \$1 million or more. These applicants must meet the Conservation Value Review Criteria adopted by the Virginia Land Conservation Foundation Board.

Contact: Jeremy Stone

Telephone and E-mail: (804) 371-5218 and jeremy.stone@dcr.virginia.gov

Website: http://www.dcr.virginia.gov/land_conservation/lpc.shtml

TABLE 14.1: VIRGINIA

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
GRANT PROGRAMS						
1. Virginia Land Conservation Fund (VLCF)	Grant Program	The Virginia Department of Conservation and Recreation	Sarah Richardson, 804-225-2048, sarah.richardson@dcr.virginia.gov	www.dcr.virginia.gov/virginia_land_conservation_foundation/index.shtml	Code of Virginia, § 10.1-1020	Varies. Contact the agent for deadline information.
2. Water Quality Improvement Fund (WQIF)	Grant Program	The Virginia Department of Environmental Quality (DEQ) is responsible for administering point source grants, and the Virginia Department of Conservation and Recreation (DCR) administers nonpoint source grants.	No Contact Name, 804-225-3785 and swecgrants@dcr.virginia.gov	www.dcr.virginia.gov/soil_and_water/wqia.shtml	Section 10.1-2128.B. of the Code of Virginia	Varies. Contact the agency for deadline information.

TABLE 14.1: VIRGINIA

STATE CONSERVATION AND INCENTIVES PROGRAM	Type of Program	Administering Agency	Contact Information	Website	Statutory Reference	Deadline
FINANCIAL INCENTIVES						
1. Virginia Open-Space Lands Preservation Trust Fund (PTF)	Incentive Program	Virginia Outdoors Foundation (VOF)	Bob Lee, 540-347-7727 and no e-mail provided	http://www.virginiaoutdoorsfoundation.org/VOF_land_ptf.php	Code of Virginia §10.1-1801.1	Submission of eligible bills must be complete by January 25th of the year following recordation of the easement.
2. Virginia Clean Water Revolving Loan Fund (VCWRLF)	Land Conservation Loan Program	Department of Environmental Quality, Construction Assistance Program, on behalf of the State Water Control Board (SWCB)	Walter Gills, no telephone number, wagills@deq.virginia.gov	http://www.deq.state.va.us/cap/lcguide.html	Code of Virginia §62.1-229.3	Applications for VRLF Land Conservation Loans will be accepted once each year, concurrent with the program's wastewater facility improvement loan applications, which normally occurs in July.
3. Land Preservation Tax Credit	Tax Incentive	State of Virginia	Jeremy Stone, 804-371-5218 and jeremy.stone@dcr.virginia.gov	http://www.dcr.virginia.gov/land_conservation/lpc.shtml	None	None

XV. State Contacts

Maine:

Tim Glidden, Land for Maine's Future Program (Director)
Carol Gay, Maine Outdoor Heritage Fund

Vermont:

Rodney Pingree, Water Source Protection Loan Program
Faith Ingulsrud, Municipal Planning Grant
Ethan Parke, Vermont Housing and Conservation Board, (Director of Conservation Assessment and Analysis)

New Hampshire:

Charlie Bridges, New Hampshire Fish and Game

New York:

Dan Rosenblatt, New York State Department of Environmental Conservation (Regional Wildlife Manager)
Laura Heady, Hudson River Estuary Program (Biodiversity Outreach Coordinator)
Jack Cooper, New York State Department of Environmental Conservation

Massachusetts:

Michael Downey, Forest Stewardship Planning Grants for Private and Town Forestlands
Celia Riechel, Executive Office of Energy and Environmental Affairs
John O'Leary, Massachusetts Division of Fish and Wildlife
Nick Wildman, Riverways Program Grants for River Restoration and Revitalization Priority Projects

Rhode Island:

Caitlin Chaffee, Rhode Island State Coastal and Estuarine Habitat Restoration Program and Trust Fund

Connecticut:

David Stygar, Open Space and Watershed Land Acquisition Grant Program

Pennsylvania:

Greg Czarnecki, Department of Conservation and Natural Resources: Office of Wild Resource Conservation (Director)
Diane Kripas, Department of Conservation and Natural Resources
Dan Brauning, Pennsylvania Game Commission (Diversity Program Coordinator)

New Jersey:

Steve Jandoli, New Jersey Department of Environment Protection: Green Acres Program
Courtney Wald_Wittkop, New Jersey Department of Environment Protection: Green Acres Program

Delaware:

Rob Hossler, Delaware Division of Fish and Wildlife (Game Species Program Manager)

Maryland:

James Price, Open Space Program
Stacy Schaefer, Maryland's Rural Legacy Program

West Virginia:

Bob Tabb, West Virginia Agricultural Land Protection Authority

Virginia:

Sarah Richardson, **Virginia Land Conservation Fund (VLCF)**