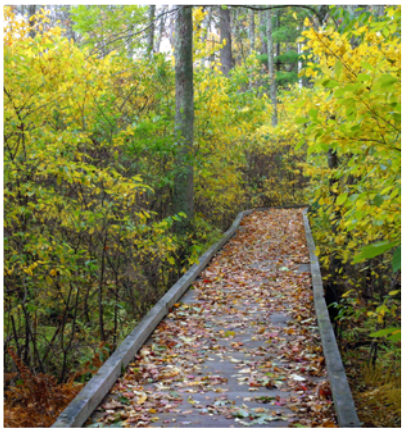
The Land Conservation Plan For New Hampshire's Coastal Watersheds



The Nature Conservancy
SAVING THE LAST GREAT PLACES ON EARTH

Strafford Regional Planning Commission

NewHampshire Estuaries Project

Society for the Protection of New Hampshire Forests

Rockingham Planning Commission

New Hampshire Coastal Program NHCP

August 2006

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Hayfield & saltmarsh at the mouth of Lubberland Creek

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Osprey

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Great Bay

Google Earth photo

Walking trail at Sandy Point Discovery Center

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Blue-eyed grass

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The Land Conservation Plan for New Hampshire's Coastal Watersheds

July 2006

Developed through a partnership of:

The Nature Conservancy
Society for the Protection of New Hampshire Forests
Rockingham Planning Commission
Strafford Regional Planning Commission

Prepared for:

New Hampshire Estuaries Project
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&

New Hampshire Coastal Program
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We gratefully acknowledge the many citizens, towns and municipalities that have taken proactive steps to conserve their important natural resources. Your knowledge, dedication, and hard work have resulted in a wonderful network of protected lands and waters, and have built the foundations for long-term conservation success.

Special thanks to the New Hampshire Charitable Foundation's Piscataqua Region, which helped to fund this plan. The Foundation recognizes the connection between strategically conserving land and maintaining wildlife habitat and water quality for the benefit of human communities.

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Executive Summary

Spanning 990 square miles and 46 towns, New Hampshire's coastal watersheds harbor exceptional and irreplaceable natural, cultural, recreational and scenic resources (Figure 1). To advance the long-term protection of these resources, the State of New Hampshire, acting through the NH Coastal Program and the NH Estuaries Project, sought to develop a comprehensive, science-based land conservation plan for our coastal watersheds. The State engaged a partnership of The Nature Conservancy, Society for the Protection of New Hampshire Forests, Rockingham Planning Commission, and Strafford Regional Planning Commission to develop the plan. The New Hampshire Charitable Foundation's Piscataqua Region supported this effort as a regional approach to setting land conservation priorities and strategies, and provided substantial matching funds.

Southeastern New Hampshire is changing before our eyes. The region's forests, wildlife habitat, clean water, and scenic vistas are increasingly threatened by sprawling development, roads, and other irreversible land use changes. Over the past 36 years, in Rockingham and Strafford Counties, an average of 2,230 acres per year has been converted from undeveloped land to a developed condition. And there is no indication that the pace of development will slow in the foreseeable future. The two Counties are projected to add more than 100,000 new residents from 2000 to 2025, and land values continue to rise steeply.

With this conversion comes the loss of important natural resource values provided by undeveloped land, especially for plant and wildlife habitat, clean water, and other "ecological services." To ensure a healthy environment into the future, it is essential that communities identify, retain, and protect the remaining undeveloped lands and waters that support the most important of these natural resource values and functions.

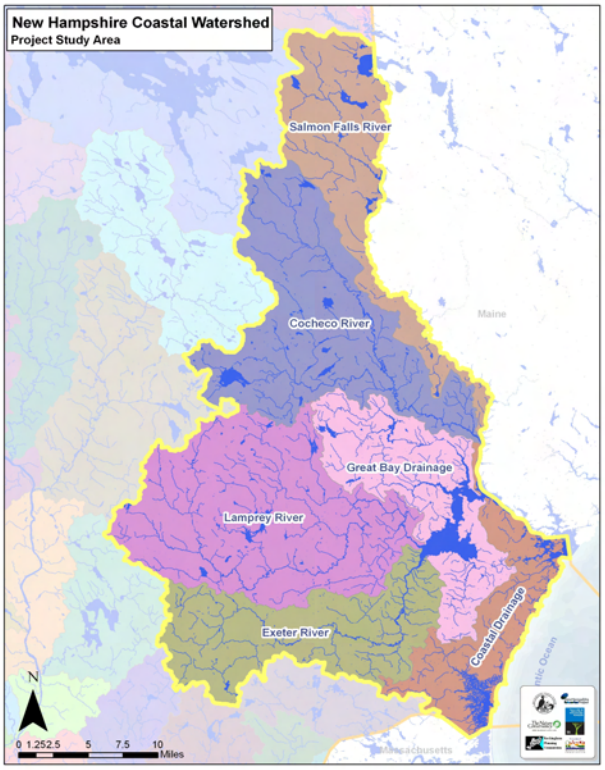

Figure1. New Hampshire's coastal watersheds.

Fortunately, it is not too late to protect the essential natural resources of Great Bay, Hampton Harbor, and the many important watersheds feeding into New Hampshire's coastline. Thanks to the foresight and dedicated efforts of communities, citizens, conservation organizations and public agencies, more than nine percent of our coastal watersheds are permanently conserved. Many municipalities and communities have embraced land conservation through open space bonds, master plans, and local ordinances. New federal funds, such as the Coastal and Estuarine Land Conservation program, are available for conservation in the coastal watersheds. These protected lands and waters form the basis of a network of conservation areas that will help to safeguard our most critical natural resources over time.

Now, more than ever, coastal New Hampshire communities need to ensure that they are making smart, enduring conservation investments in land protection and other effective local and regional strategies to have the greatest and most long-lasting beneficial impact on coastal

resource conservation. By considering natural resources information in planning and decision-making, citizens in the coastal watersheds can make a meaningful contribution toward maintaining a high quality of life for residents, and can help to preserve New Hampshire's irreplaceable natural heritage.

Goal Statement

The overarching goal of this land conservation plan is to focus conservation on those lands and waters that are most important for conserving ***living resources*** - native plants, animals, and natural communities - and ***water quality*** in the coastal watersheds**.**

The Land Conservation Plan for New Hampshire's Coastal Watersheds prioritizes coastal watershed areas and offers regional strategies for maintaining diverse wildlife habitat, abundant wetlands, clean water, productive forests, and outstanding recreational opportunities into the future. It was created with public input from a range of stakeholders including citizens, scientists, conservation organizations, and natural resource agencies. Our hope is that the plan will serve as a valuable guide, tool, and information resource for landowners, communities, land trusts, and public agencies that are interested in land conservation.

Purposes of this Plan

This plan attempts to respond to three central land conservation questions: *where*, *why*, and *how*? From a watershed perspective, *where* are the most significant areas for focusing conservation resources? *Why* are these areas so important? And, h*ow* can communities conserve these areas? Specifically, the plan is intended to achieve the following purposes:

1. Identify and describe a portfolio of areas that represent the best remaining opportunities to conserve the critical ecological, biological, and water resources of New Hampshire's coastal watersheds.
2. Identify and describe a set of voluntary and regulatory land conservation strategies available for protecting the important areas.

This conservation plan is unique. It provides a systematic, science-based approach to identify critical conservation areas and strategies *at the very large scale of New Hampshire's entire collection of coastal watersheds*. The plan enables communities, land trusts, and agencies to better understand how local and regional conservation activities can add up to a functional network of conservation land and waters – a whole that really is greater than the sum of the parts. This plan is not intended to supplant other plans that address conservation and natural resource issues in the region, but rather to augment and complement. As a practical measure, the plan includes a table summarizing all known conservation plans that exist in the coastal watershed region, and cross-references watershed-scale, regional, and local priorities.

Identifying Conservation Priorities

Given advances in conservation planning methodology, local natural resource inventories, and GIS data and mapping tools, we now have the ability to develop a comprehensive land conservation plan that operates at the *watershed scale* and leverages land protection activities of multiple entities in the service of permanently protecting important areas for plants, wildlife, ecosystems, and water quality.

To identify significant resources in the coastal watersheds, we used the following approach:

- Employ a science-based approach using existing data.

- Develop criteria to highlight the most significant natural resource features.
- Incorporate *documented* natural resource features and *predictive* GIS modeling.
- Analyze data at the spatial scale of multiple large watersheds.
- Synthesize information to identify focal areas for conservation attention.
- Solicit review by local experts and general public.
- Cross reference results with existing conservation plans.

Four principal resource analyses and maps were developed that capture key natural resource features. The resource maps reflect the best remaining opportunities to conserve: (1) **Forest Ecosystems**, (2) **Freshwater Systems**, (3) **Irreplaceable Coastal and Estuarine Resources**, and (4) **Critical Plant and Wildlife Habitat**. These resource maps, in turn, were integrated into what is known as a **Resource Co-Occurrence Model**. The goal of a resource co-occurrence mapping model is to aid in identifying areas where several resource values coincide and overlap, thus signaling locations with multiple conservation values and potentially higher priority for protection.

This collection of analyses and maps served as the foundation of our information on significant natural resources in New Hampshire's coastal watersheds. Three additional reference data sets and maps were produced to assist in planning efforts: **Landscape Connectivity**, **Agricultural Resources**, and **Important Water Supply Resources**. Although these attributes were not primary targets of this conservation plan, they do represent information that is important and useful to many stakeholders, and the data did inform the final delineation of conservation focus areas.

From this wealth of natural resources data, seventy-five (75) **Conservation Focus Areas** were systematically identified (see Figure 2). A Conservation Focus Area is an area that is considered to be of exceptional significance for the protection of living resources and water quality in the coastal watersheds. Collectively, these areas comprise approximately 190,300 acres, or 36% of the coastal watersheds. They range from landscape-scale areas that span several communities in the northern and western portion of the planning area, to a mosaic of small but extremely high-value open space remnants nearer the seacoast.

Delineation of the conservation focus areas began with the co-occurrence model and the associated resource composites noted above, but moved through a careful refinement process using aerial photos, watershed boundaries, fragmenting feature location, and expert professional judgment. Each Conservation Focus Area is comprised of a **Core Area** that contains the essential natural resources for which the focus area was identified, with the boundary fitted to the real world of roads, forest edges, rivers and wetlands. Some Conservation Focus Areas also include a **Supporting Natural Landscape**, which is comprised of natural lands that buffer and sometimes link core areas and help to maintain habitat and ecological processes.

Implementation Strategies

The sheer number of acres identified as Conservation Focus Areas points to the need to employ a variety of strategies. A total of 190,300 acres, or slightly more than one-third of the land and water in the study area, are identified as Conservation Focus Areas. Of this total, only 41,387 acres (or about 22%) are currently protected, leaving approximately 150,000 acres of area for which some form of protection is still needed. This is an immense task that will require new thinking and a willingness to do things differently than we have in the past.

This conservation plan recommends that a three part strategy be implemented to protect and minimize development impacts in the Conservation Focus Areas:

1. **Adopt *The Land Conservation Plan for New Hampshire's Coastal Watersheds*** at all appropriate levels of government (state, regional, local) and use it to establish the policy framework for land conservation in the coastal watersheds area. To ensure that the Plan becomes the "green print" for action, the Plan should be adopted and actively used by all parties that have a role in its implementation.

2. **Protect land through acquisition** of conservation easements or fee simple ownership, especially the Core Areas identified within the Conservation Focus Areas.

3. **Regulate the location, density and design of development within Conservation Focus Areas** to minimize harmful impacts while allowing for a reasonable level of development. It is safe to assume that there will never be sufficient funding for land protection strategies to acquire conservation easements or ownership for all 150,000 acres of unprotected Conservation Focus Areas. Given growth trends, it is also a reasonable assumption that unprotected areas in the coastal watersheds will face development pressure in the near future. An important component to this Plan's implementation strategy, therefore, is to provide guidance and tools to limit the impacts of development that does occur in Conservation Focus Areas, with the goal of maintaining important conservation values. To assist communities, a model ordinance called the *Coastal Watersheds Land Conservation Overlay District (COD)* has been developed as a tool intended to help guide development in these especially sensitive areas. The Conservation Overlay District brings together a number of existing planning tools intended to work in concert to achieve a central purpose: to accommodate limited development within Conservation Focus Areas in such a way that maintains, to the extent possible, the ecological functions and natural services supplied by these areas.

The three implementation strategies are further described in the body of the plan.

Public Outreach

In developing the plan, the partners sought input from a variety of people, organizations, and agencies familiar with the coastal watersheds. In addition, we conducted six public and expert outreach meetings about the plan:

Oct. 2005	1st Public Meeting at Newington Town Hall
Feb. 2006	1st Local Experts Review Meeting
May 2006	2nd Local Experts Review Meeting
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June 2006	Review of Implementation Strategies by Planners and Developers
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At each meeting, the partners requested feedback to help inform and improve the final plan.

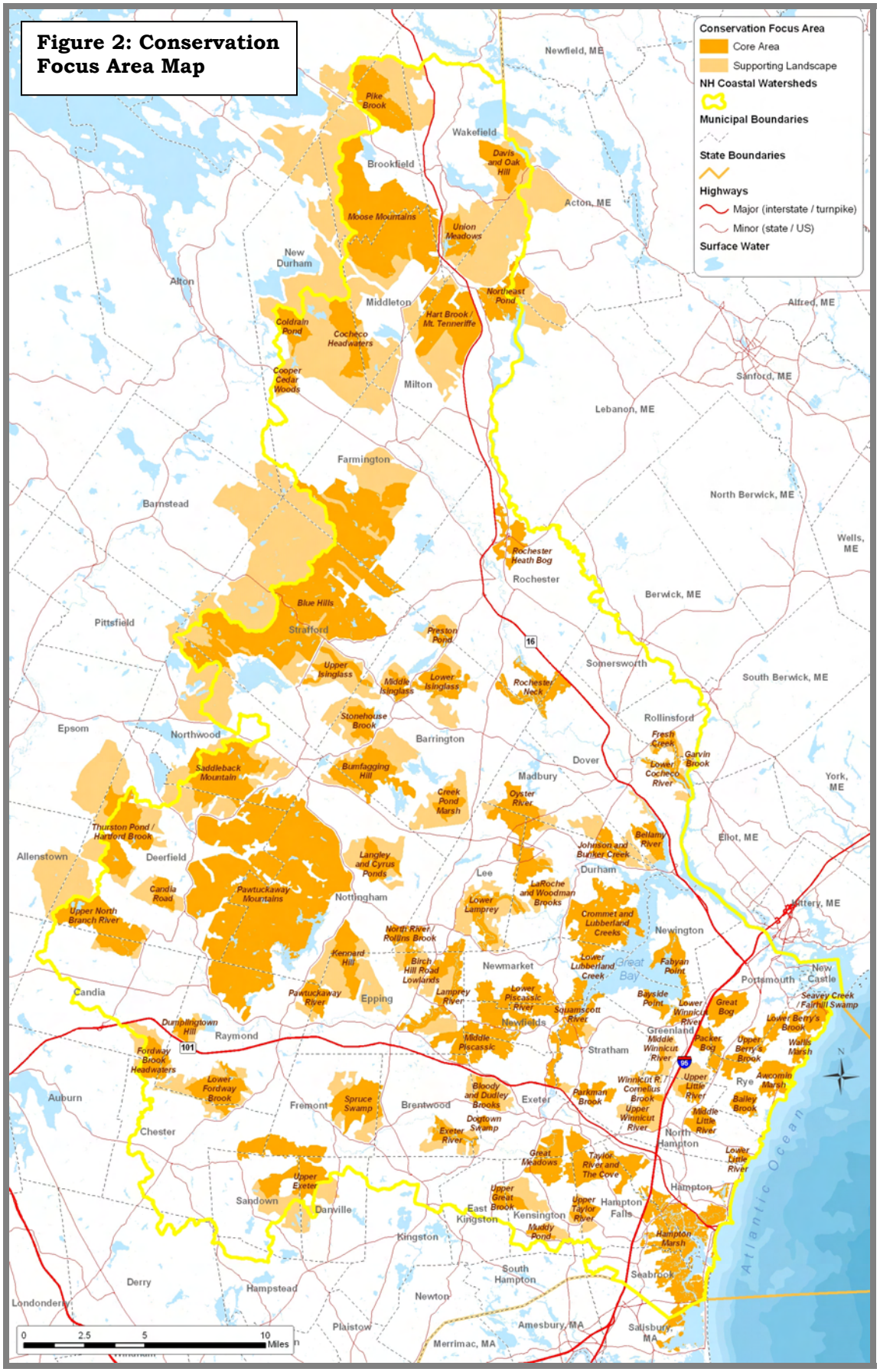
Figure 2: Conservation Focus Area Map
Conservation Focus Area
Core Area
Supporting Landscape
NH Coastal Watersheds
Municipal Boundaries
State Boundaries
Highways
Major (interstate / turnpike)
Minor (state / US)
Surface Water
Newfield, ME
Wakefield
Brookfield
Acton, ME
New Durham
Alton
Middleton
Milton
Alfred, ME
Sanford, ME
Lebanon, ME
Farmington
Barnstead
North Berwick, ME
Wells, ME
Rochester
Berwick, ME
Pittsfield
Strafford
Somersworth
South Berwick, ME
Epsom
Northwood
Barrington
Rollinsford
Dover
Madbury
York, ME
Ellot, ME
Allenstown
Deerfield
Durham
Lee
Nottingham
Newington
Candia
Epping
Newmarket
Portsmouth
New Castle
Raymond
Newfields
Stratham
Auburn
Fremont
Brentwood
Exeter
Rye
Chester
North Hampton
Hampton
Sandown
Danville
East Kingston
Kensington
Hampton Falls
Kingston
South Hampton
Seabrook
Derry
Hampstead
Newton
Londonderry
Plaistow
Amesbury, MA
Salisbury, MA
Merrimac, MA
Atlantic Ocean
Great Bay
Pike Brook
Davis and Oak Hill
Moose Mountains
Union Meadows
Northeast Pond
Coldrain Pond
Cocheco Headwaters
Hart Brook / Mt. Tenneriffe
Cooper Cedar Woods
Rochester Heath Bog
Blue Hills
Preston Pond
Upper Isinglass
Middle Isinglass
Lower Isinglass
Rochester Neck
Stonehouse Brook
Saddleback Mountain
Bumfagging Hill
Creek Pond Marsh
Oyster River
Fresh Creek
Garvin Brook
Lower Cocheco River
Thurston Pond / Harford Brook
Langley and Cyrus Ponds
Johnson and Bunker Creek
Bellamy River
Candia Road
Pawtuckaway Mountains
Upper North Branch River
LaRoche and Woodman Brooks
Lower Lamprey
Crommet and Lubberland Creeks
North River / Rollins Brook
Keppard Hill
Birch Hill Road Lowlands
Lower Lubberland Creek
Fabyan Point
Pawtuckaway River
Lamprey River
Lower Piscassic River
Squamscott River
Bayside Point
Lower Winnicut River
Great Bog
Seavey Creek / Fairhill Swamp
Lower Berry's Brook
Dumplingtown Hill
Middle Piscassic
Packer Bog
Upper Berry's Brook
Walls Marsh
Fordway Brook Headwaters
Lower Fordway Brook
Spruce Swamp
Bloody and Dudley Brooks
Parkman Brook
Winnicut R. / Cornelius Brook
Upper Winnicut River
Upper Little River
Awcomin Marsh
Bailey Brook
Middle Little River
Dogtown Swamp
Exeter River
Great Meadows
Taylor River and The Cove
Lower Little River
Upper Exeter
Upper Great Brook
Upper Taylor River
Maddy Pond
Hampton Marsh
0 2.5 5 10 Miles

Section I: Introduction

Spanning 990 square miles and 46 towns, New Hampshire's coastal watersheds harbor exceptional natural, cultural, recreational and scenic resources (Figure I-1). To advance the long-term protection of these resources, the State of New Hampshire, acting through the New Hampshire Coastal Program and the New Hampshire Estuaries Project[a], sought to develop a comprehensive, science-based land conservation plan for our coastal watersheds. The State engaged a partnership of The Nature Conservancy, Society for the Protection of New Hampshire Forests, Rockingham Planning Commission, and Strafford Regional Planning Commission to develop the plan. The New Hampshire Charitable Foundation's Piscataqua Region supported this effort as a regional approach to setting land conservation priorities and strategies, and provided substantial matching funds.

The Land Conservation Plan for New Hampshire's Coastal Watersheds prioritizes coastal watershed areas and offers regional strategies for maintaining diverse wildlife habitat, abundant wetlands, clean water, productive forests, and outstanding recreational opportunities into the future. It was created with public input from a range of stakeholders including citizens, scientists, conservation organizations, and natural resource agencies. Our hope is that the plan will serve as a valuable guide, tool, and information resource for landowners, communities, land trusts, and public agencies that are interested in land conservation.

A. Why Develop a Conservation Plan for New Hampshire's Coastal Watersheds?

Southeastern New Hampshire is changing before our eyes. The region's forests, wildlife habitat, clean water, and scenic vistas are increasingly threatened by sprawling development, roads, and other irreversible land use changes. Over the past 36 years, in Rockingham and Strafford Counties[b], an average of 2,230 acres per year has been converted from undeveloped land (forests, farmland, wetlands, etc.) to a developed condition.[1] And there is no indication that the pace of development will slow in the foreseeable future. The two Counties are projected to add more than 100,000 new residents from 2000 to 2025, and land values continue to rise steeply.[2]

With this conversion comes the loss of important natural resource values provided by undeveloped land, especially for plant and wildlife habitat, clean water, and other "ecological services." To ensure a healthy environment into the future, it is essential that communities identify, retain, and protect the remaining undeveloped lands and waters that support the most important of these natural resource values and functions.

Fortunately, it is not too late to protect the essential natural resources of Great Bay, Hampton Harbor, and the many important tributary watersheds feeding into New Hampshire's coast line. Thanks to the foresight and dedicated efforts of many communities, citizens, conservation organizations, and public agencies, more than nine percent of our coastal watersheds are permanently conserved.[3] Many municipalities and communities have embraced land conservation through open space bonds, master plans, and local ordinances. New federal

[a] At the time this project was initiated, NH Estuaries Project was housed at the state's Department of Environmental Services. Since then, the program has transitioned to the University of New Hampshire.

[b] The coastal watersheds area also includes two towns – Brookfield and Wakefield – in Carroll County, however the vast majority of the planning area lies in Rockingham and Strafford counties.

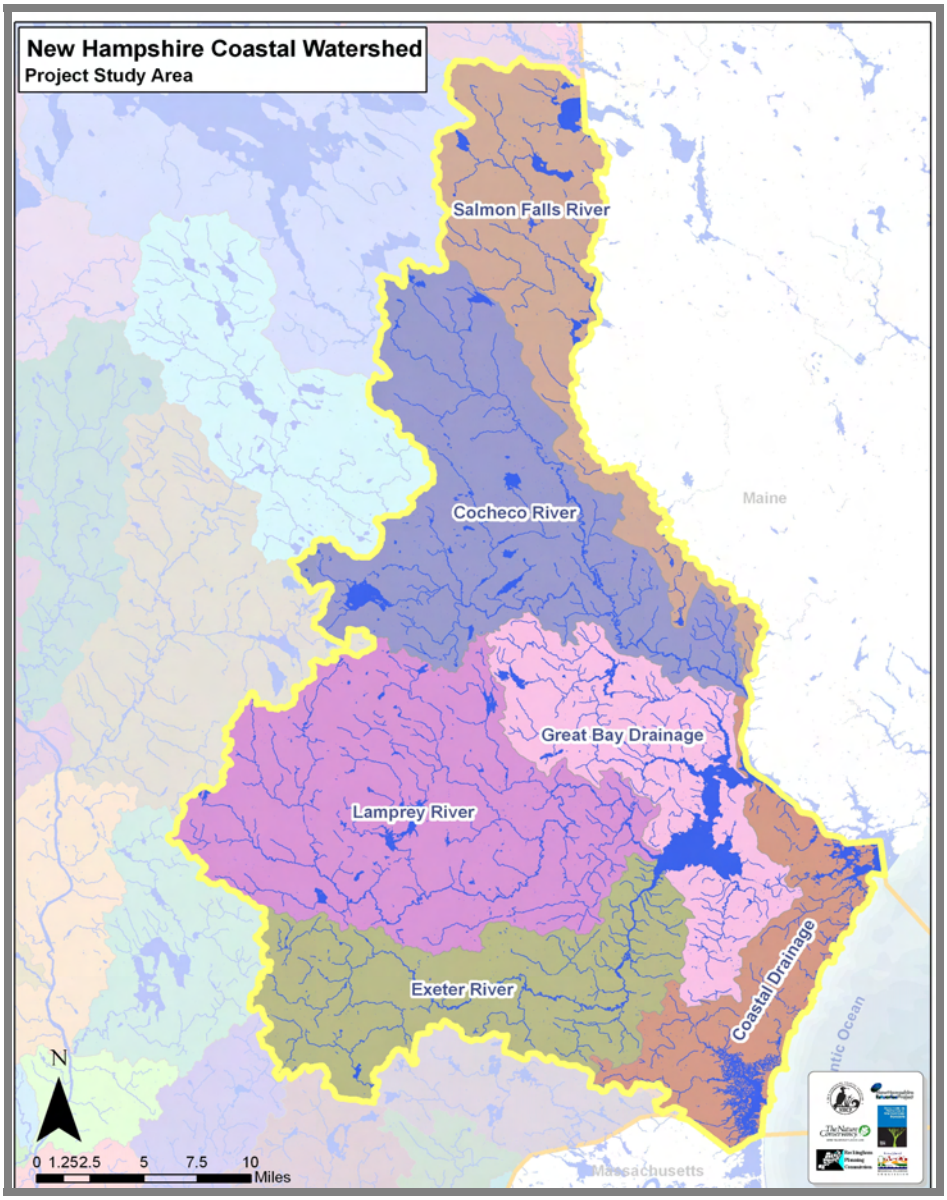

Figure I-1. New Hampshire's coastal watersheds.

funds, such as the Coastal and Estuarine Land Conservation program, are available for conservation in the coastal watersheds. These protected lands and waters form the basis of an effective network of conservation areas that will help to safeguard our most critical natural resources over time.

Now, more than ever, coastal New Hampshire communities need to ensure that they are making smart, enduring conservation investments in land protection and other effective local and regional strategies to have the greatest and most long-lasting beneficial impact on coastal resource conservation. By considering natural resources information in planning and decision-making, citizens in the coastal watersheds can make a meaningful contribution toward maintaining a high quality of life for residents, and can help to preserve New Hampshire's irreplaceable natural heritage.

B. Purposes of the Conservation Plan

The Land Conservation Plan for New Hampshire's Coastal Watersheds attempts to respond to three central land conservation questions: *where, why, and how*? From a watershed perspective, *where* are the most significant areas for focusing conservation resources? *Why* are these areas so important? And, h*ow* can communities conserve these areas?

Specifically, the plan is intended to achieve the following purposes:

1. Identify and describe a portfolio of areas that represent the best remaining opportunities to conserve the critical ecological, biological, and water resources of New Hampshire's coastal watersheds.
2. Identify and describe a set of voluntary and regulatory land conservation strategies available for protecting the important areas.

Given advances in conservation planning methodology, local natural resource inventories, and GIS data and mapping tools, we now have the ability to develop a comprehensive land conservation plan that operates at the *watershed scale* and leverages land protection activities of multiple entities in the service of permanently protecting important areas for plants, wildlife, ecosystems, and water quality.

C. What is so Special about New Hampshire's Coastal Watersheds?

New Hampshire's coastal watersheds are, quite simply, irreplaceable. Representing only 9% of the State, these 525,000 acres:

- Harbor our small coastline, sandy beaches and dunes, and rocky shores.
- Provide essential habitat for more than 130 rare species, including many species of plants and wildlife that occur nowhere else in New Hampshire.
- Contain more than 1,800 miles of rivers and streams, ranging from cold brook trout headwaters in the upper watershed to large, meandering tidal rivers near the coast.
- Include two highly productive and important estuaries, Great Bay and Hampton-Seabrook, and several sizeable salt marsh complexes.
- Still retain complex and diverse forest and wetland ecosystems that provide habitat, ecosystem services, timber supply, and other forest products.
- Still retain working farms that raise row-crops, hay, animals, and other products.
- Offer some of the State's best outdoor recreation opportunities for hiking, hunting, salt and freshwater fishing, boating, snowmobiling, bird-watching, bicycle riding, and more.
- Provide unparalleled, diverse scenery that shapes the region's character and quality of life.

Tens of thousands of people call New Hampshire's coastal watersheds "home." Better than anyone, these residents understand why the coastal watersheds are so special, and why communities must work independently and collaboratively to safeguard these natural assets for present and future generations.

D. How was this Conservation Plan Developed?

This land conservation plan was developed through a partnership of The Nature Conservancy, Society for the Protection of New Hampshire Forests, Rockingham Planning Commission, and Strafford Regional Planning Commission. The partners were contracted by the New Hampshire Coastal Program and the New Hampshire Estuaries Project to develop the plan because,

collectively, these organizations have considerable experience and expertise in conservation planning and strategy development and community engagement.

To identify the portfolio of areas that are most important for conserving living resources and water quality, the partners used a variety of existing geospatial data and information to conduct cutting-edge GIS modeling and analysis of the large coastal watersheds. Based on a series of important resource co-occurrence overlays, complex modeling, and professional judgment, a network of important areas for conservation emerged. Further methodology details are provided in Section III, and in the appendices. The highest priority areas for conservation are centered around the following resources:

- Large, unfragmented forest blocks;
- Intact floodplains and riparian zones;
- High quality stream networks and small watersheds;
- Irreplaceable coastal and estuarine features;
- Significant fish and wildlife habitats;
- Critical habitat supporting rare species and exemplary natural communities; and,
- Important connectivity zones.

In developing the plan, the partners sought input from a variety of people, organizations, and agencies familiar with the coastal watersheds. We conducted six public and expert outreach meetings about the plan:

Oct. 2005	1st Public Meeting at Newington Town Hall
Feb. 2006	1st Local Experts Review Meeting
May 2006	2nd Local Experts Review Meeting
	Land Trust Review Meeting
June 2006	Review of Implementation Strategies by Planners and Developers
	2nd Public Meeting at Newington Town Hall

At each of these meetings, the partners requested feedback to help inform and improve the final plan.

E. How does this Plan Differ from Other, Existing Conservation Plans

This Conservation Plan is unique. It provides a systematic, science-based approach to identify critical conservation areas and strategies *at the very large scale of New Hampshire's entire collection of coastal watersheds*. By offering a coastal watershed-scale vision for saving our precious natural heritage, the plan enables communities, land trusts, and agencies to better understand how local and regional conservation activities can add up to a functional network of conservation land and waters – a whole that really is greater than the sum of the parts. This plan is not intended to supplant other plans that address conservation and natural resource issues in the region, but rather to augment and complement. As a practical measure, the plan includes a table summarizing all known conservation plans that exist in the coastal watershed region, and cross-references watershed-scale, regional, and local priorities (see Appendix A).

F. Relationship to CELCP Program

The Coastal and Estuarine Land Conservation Program (CELCP) is an important, relatively new federal funding program administered by NOAA and designed to help states and communities protect important natural resources in their coastal basins. The CELCP statutory language broadly outlines categories of land that are the focus of the NOAA grant program, and calls for

the creation of a CELC plan in each state. ***The Land Conservation Plan for New Hampshire's Coastal Watersheds*** was initiated by the State of New Hampshire to help fulfill that requirement, and it will serve as the foundation of the State's CELCP plan.

The CELCP statutory language outlines categories of land that are the focus of the NOAA grant program. These include important coastal and estuarine areas that have significant conservation, recreation, ecological, historical, or aesthetic values. The *CELCP program's language gives priority to lands that have significant ecological values, and which can be effectively managed and protected.*

For the purposes of ***The Land Conservation Plan for New Hampshire's Coastal Watersheds***, the planning team has interpreted **"significant ecological values"** to include those lands and waters that are most important for conserving ***living resources*** - native plants, animals, natural communities, and ecosystems - and ***water quality***. The focus on lands that "can be effectively managed and protected" is somewhat more challenging to define, however most ecologists and conservation land managers would suggest that larger and more intact blocks of conservation land are more viable and easier to manage (per unit area) for their conservation values than are smaller and more fragmented conservation areas. This realization has been a major driver behind the national movement to establish landscape-scale conservation projects and protected areas.

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[1] "40 Years of Land Use Change in Rockingham and Strafford Counties", Complex Systems Research Center/UNH, May 2005.
[2] SPNHF. 2005. New Hampshire's Changing Landscape: 2005. Report prepared by the Society for the Protection of New Hampshire Forests, Concord, NH.
[3] NH Estuaries Project. 2003. 2003 State of the Estuaries Report. New Hampshire Estuaries Project, Portsmouth, NH. We projected forward from the 2002 data in this report to the present day.

Section II: Overview of New Hampshire's Coastal Watersheds

New Hampshire's coastal watersheds drain 990 square miles or approximately 633,000 acres (530,000 acres of which are located in NH, the balance in Maine), including all or parts of 46 New Hampshire towns (Fig. II-1) in three counties, and span a broad range of landscape settings and environmental conditions. Headwater streams emerge from large, intact forests in the highlands of Pawtuckaway, Blue Hills, and the Moose Mountains. Major rivers such as the Lamprey, Salmon Falls, and Taylor wind through forests, farmland and densely populated town centers before draining into Great Bay, Hampton/Seabrook Estuary and other estuarine waters. New Hampshire's coast includes 238 linear miles[1] of tidal shoreline along salt marshes, harbors, estuaries, tidal creek mouths, and beaches.

Figure II-1. New Hampshire towns partly or wholly within the coastal watersheds:

Alton	Barrington	Brentwood
Brookfield	Candia	Chester
Danville	Deerfield	Derry
Dover	Durham	East Kingston
Epping	Exeter	Farmington
Fremont	Greenland	Hampstead
Hampton	Hampton Falls	Kensington
Kingston	Lee	Madbury
Middleton	Milton	New Castle
New Durham	Newfields	Newington
Newmarket	North Hampton	Northwood
Nottingham	Portsmouth	Raymond
Rochester	Rollinsford	Rye
Sandown	Seabrook	Somersworth
Strafford	Stratham	Wakefield
Wolfeboro		

A. Significant Natural Resources

In this section, we present an overview of the significant natural resources that characterize the natural landscape of New Hampshire's coastal watersheds. Figure II-2 highlights the principal land cover types.[a]

More than 75% of the coastal watersheds remain in natural land cover (forest, wetlands, and water), while 15% of the land base has been developed. The 15% "Developed" land use figure is notable, because several studies and guidelines indicate significant effects on stream health and aquatic communities once a watershed's impervious surface exceeds 6-20%.[2] Similarly, a recent study of select watersheds in New Hampshire's seacoast

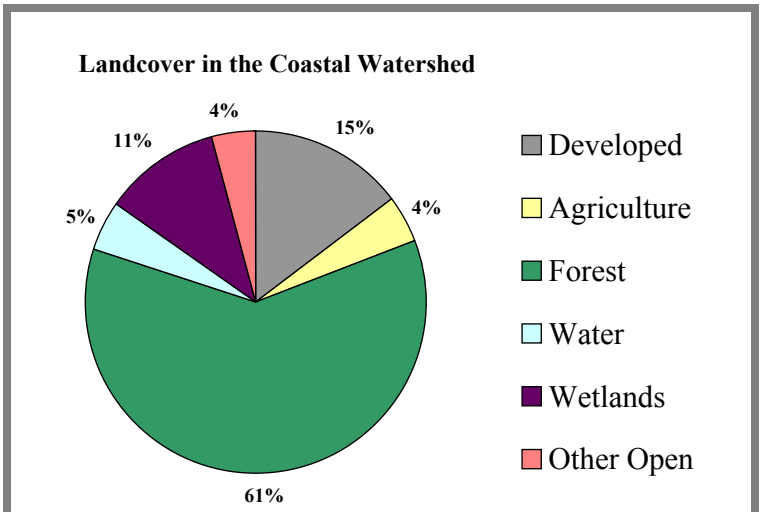


Figure II-2. Principal land cover types in New Hampshire's coastal watersheds.

[a] To provide what we believe to be the most comprehensive, accurate picture of landcover, we synthesized data from four sources: NH Landcover Assessment - 2001, Rockingham and Strafford Land Use - 1998, NH Hydrography Dataset, and US Fish & Wildlife Service National Wetlands Inventory. As such, the figures herein may not be identical to other reports listing landcover in this area.

documented significant impacts on water quality, habitat condition, and biota, at ranges of 7-14% impervious surface.[3]

Forests and Wetlands

Forests and wetlands cover more than 70% of the coastal watersheds in New Hampshire (381,000 acres). These natural habitats provide citizens and communities with a wide array of ecological services and public benefits including groundwater recharge, water supply and filtration, critical plant and wildlife habitat, forest products, clean air, recreational opportunities, rural character, and scenic vistas.

Black bear *is one of the many species of wildlife in the coastal watersheds that require large, unbroken expanses of forest.* (E. Aldrich photo)

Forests of this region are dominated by what are referred to as **Appalachian oak-pine** and **hemlock-hardwood-pine** communities. Scientists refer to these as the "matrix forest" because they represent the principal natural land cover within which many smaller "patch natural communities" occur such as wetlands or pine barrens. Appalachian oak-pine forest tends to occur closer to the coast, at lower elevations, and on south-facing slopes. The term "Appalachian oak" is used because these forests tend to support more southerly species such as white, black, and scarlet oaks, hickories, and sassafras. Hemlock-hardwood-pine is the dominant forest type in the mid and upper watershed, and is typically characterized by hemlock, beech, red oak, red maple, and white pine.

At ground level, the broader forest patterns generally hold true but actual habitat composition is far more complex. Local environmental conditions such as soils, hydrology, landscape position (e.g., cove, hilltop, gentle slope), and aspect (e.g., primary compass direction of the slope) create an intricate mosaic of forested and wetland natural communities woven together across the landscape like a patchwork quilt. Patch upland forest communities in this region include **pitch pine-Appalachian oak-heath forest**, **enriched oak-sugar maple forest**, **dry oak-hickory forests**, **hemlock forest**, and several others. Some of these, such as the pitch pine-Appalachian oak-heath forest, are quite uncommon in New Hampshire and may support rare species of plants and wildlife.

Hemlock-hardwood-pine *matrix forest located on conservation land in Durham.* (Joanne Glode photo)

Intact forests also provide timber and other forest products, and are a contributor to local economies. Soil conditions have a significant influence on the type and productivity of forests. The U.S.D.A. Natural Resources Conservation Service has developed a system to classify New Hampshire's forest soils based on their potential productivity for certain economically valuable forest types, and on their operability for timber management. The classification system is referred to as Important Forest Soil Groups.[4]

For the purposes of this plan, we examined the distribution and status of Group 1 Important Forest Soils (see Table II-1). These are considered to be the more productive soils in New

Hampshire from a forestry standpoint, with relatively few limitations on management. We do not intend to suggest that other forest soils are less important; in fact, many of these other soil groups support rare natural communities and significant wildlife habitats. Nevertheless, Group 1 Important Forest Soils are useful for conservation planning because they not only highlight productive forestry soils, but also represent ecologically significant areas, such as lower elevations, valley floors, and deep soils, which are often under-represented in conservation lands. There are more than 350,000 acres of Group 1 Important Forest Soils in the coastal watersheds.

Table II-1. Group 1 Important Forest Soils.

IFSG Group	Characteristics	Prime Forest Types	Acres in NH's Coastal Watersheds
1A	Deeper, loamy soils, moderately- to well-drained	Northern Hardwoods	101,332 acres
1B	Sandy or loamy soils, moderately- to well-drained	Oak and Beech	195,414 acres
1C	Outwash sands and gravels	White Pine	56,361 acres

The coastal watersheds support a significant network of wetland resources. According to the National Wetlands Inventory (NWI) and other data sources, the planning area contains nearly 58,000 acres of wetlands representing 10.9% of the watershed.[b] In actuality, there is very likely even more wetland acreage because many small forested wetlands are not effectively mapped through NWI. There are four predominant NWI wetlands classes occurring in the coastal watersheds:

- *Palustrine Forested* wetlands include all nontidal wetlands dominated by trees. This type includes swamp forests, floodplain forests, and vernal pools.
- *Palustrine Scrub-Shrub* wetlands include all nontidal wetlands dominated by shrubs, often interspersed with emergent grasses and sedges, and all similar wetlands that occur in tidal areas where average salinity due to ocean derived salts is below 5 parts-per-thousand (ppt). These shrub wetland types are often dominated by alder, highbush blueberry, winterberry, buttonbush and meadowsweet, but also cover a range of unusual bog and fen communities dominated by sphagnum moss and dwarf shrub species such as leatherleaf, huckleberry and sheep laurel. They often occur in a mosaic with Palustrine Emergent wetlands.

Blue-joint - goldenrod - virgin's bower riverbank/ floodplain *wetland. This temporarily flooded meadow community occurs on banks and adjacent floodplains of small rivers and major streams.* (Bill Nichols photo)

A State Endangered ***Blanding's turtle*** *swimming through a palustrine emergent marsh wetland.* (Joanne Glode photo).

- *Palustrine Emergent* wetlands include all nontidal wetlands dominated by emergent grasses and sedges, mosses or lichens, and all similar wetlands that occur in tidal areas where salinity due to ocean derived salts is below 5 ppt. This type includes what are commonly referred to as freshwater marshes and meadows, but also covers a range of unusual bog and fen communities dominated by sphagnum moss and herbaceous species including sundews and pitcher plants.
- *Estuarine* wetlands include all tidal wetlands where average salinity is >5 ppt. They include salt marsh, brackish marsh, and sparsely vegetated intertidal marsh.

Wetlands are especially important because they serve as essential habitat for common and rare species, influence water quality, and provide natural flood storage and control.

Freshwater Aquatic Habitats and Fisheries

New Hampshire's coastal watersheds are rich in water resources. More than 1,800 miles of perennial rivers and streams flow through the landscape, occurring in an interconnected pattern with more than 370 named lakes and ponds. These surface waters combine with portions of the terrestrial landscape to provide many precious public values including clean drinking water, critical habitat for fish and other aquatic organisms, warm and cold water fishing, and recreational boating.

Major freshwater systems include the Salmon Falls, Oyster, Bellamy, Cocheco, Lamprey, Exeter, Squamscott, and Taylor rivers. All of these rivers terminate in downstream estuaries, including Great Bay and the Hampton-Seabrook marsh system. Riverine habitats range from fast-flowing, narrowly incised, cold water tributaries in the upper watershed to large, meandering, slow-moving, warm water mainstem rivers closer to the coast. There is a comparable diversity across lakes and ponds relating to water depth, temperature regime, size, geology, and nutrient status.

These varied aquatic habitats provide suitable environmental conditions for multiple fish species and other aquatic organisms. Cold water fish communities include wild **Eastern brook trout**, **slimy sculpin**, **black-nosed dace** and **long-nosed dace**. Common warm-water fish include **perch**, **pickerel**, **small-mouth bass**, and **horned pout**. Several freshwater species of conservation concern are found in the coastal watersheds including **bridle shiner**, **banded sunfish**, **swamp darter**, **American pickerel**, and **brook lamprey** (J. Magee, NH Fish & Game Dept). A wide variety of invertebrates, including common and rare freshwater mussels, and millions of insects, mollusks, and worms that make up the base of the food web also call these waters home.

Dams, industrial pollution, wastewater treatment, and non-point source pollution have negatively impacted coastal watershed river systems. Water quality has improved in some rivers over time due to enhanced wastewater treatment and industrial discharge controls, however substantial increases in population and impervious surface (i.e. pavement, buildings) continue to degrade other reaches, especially those closer to the coast. With increasing impervious surface, storm-water runoff moves more quickly into streams and rivers without the benefit of natural filtration in wetlands and buffer areas along riversides. Conserving forested headwaters, riparian zones, floodplains and wetlands are all important elements for buffering streams from the impacts of human land use and maintaining the health of aquatic ecosystems.

[b] Note: we do not include open water lacustrine (lake) wetlands in this figure, but rather include them as water in the land cover types shown in Figure II-2

Some river and stream reaches are especially notable for their outstanding condition, role in supporting species of concern, or intact floodplains. For example, a significant portion of the Lamprey River is one of only two rivers in New Hampshire designated as a Federal Wild & Scenic River, reflecting its outstanding condition and aquatic resource values. Section III describes the approach utilized to identify stream reaches and systems of special significance.

Coastal and Estuarine Resources

Of course, some of the most remarkable and irreplaceable features of our coastal watersheds occur in and around the coastline. Beaches, dunes, rocky shoreline, coastal lowland forests, and the mixing of fresh and saltwater in estuaries create unique conditions for plant and animal species that occur nowhere else in New Hampshire.

Much of New Hampshire's coastal shoreline along the Gulf of Maine coastline (a.k.a. Atlantic Ocean) has been developed, however there are still remnant patches of intact beach, dunes, and rocky shoreline. These areas support State Threatened **beach grass** (*Ammophila breviligulata*), nesting occurrences of the Federally Endangered **piping plover** (*Charadrius melodus*), State Endangered **common terns** (*Sterna hirundo*) and other vulnerable shorebirds. Many other coastal organisms such as snails, crabs, barnacles, and periwinkles find habitat in tidepools and related habitats.

A young oyster in Great Bay. (Eric Aldrich photo)

New Hampshire's two major estuarine systems, Great Bay and Hampton-Seabrook, are exceptionally diverse and highly productive coastal ecosystems. Great Bay supports healthy salt and brackish marsh, remarkably intact eelgrass beds, ample mudflats, and other sub-tidal features. These habitats provide feeding, breeding, and nursery grounds for a vast community of finfish, oysters and other shellfish, waterfowl, wading birds, shorebirds, and other coastal species. Hampton-Seabrook is characterized by a vast complex of tidal marshes and small waterways. New Hampshire's largest remaining clam beds are found here, along with the rare **saltmarsh sharp-tailed sparrow** and many other species of concern. The long-term health of these estuarine species is closely tied to coastal watershed land use and associated water quality issues.

A saltmarsh sharp-tailed sparrow. (John K. Cassady photo)

Historically, coastal rivers supported several diadromous fish species including **American shad**, **Atlantic salmon**, **American eel**, and **river herring**. Natural, self-sustaining runs of these fish species have mostly been extirpated or significantly reduced due to dams and other causes, however federal and state officials and local partners are undertaking ambitious efforts to restore shad and other species through stocking, fish passage improvements, and habitat protection and restoration.

Rare Species and Exemplary Natural Communities

New Hampshire's coastal watersheds are home to a great abundance of plant and animal species of conservation concern, as well as numerous rare and high quality habitats referred to as "exemplary natural communities." Scientists, policy makers, and the conservation community recognize these rare species and natural communities as irreplaceable elements of our natural heritage. In New Hampshire, many of these features are found only in the coastal watersheds.

Small-whorled pogonia *(above), and* ***ringed boghaunter*** *(below), are two globally rare species found in NH's coastal watersheds. (TNC photo, Joanne Glode photo)*

Rare plants and exemplary natural communities are documented and tracked by the New Hampshire Natural Heritage Bureau. Rare animals are documented by the Nongame and Endangered Wildlife Program of the New Hampshire Fish and Game Department, and tracked in the Natural Heritage databases. Although only a small proportion of the coastal watersheds have been systematically surveyed by ecologists, the basin is known to support 190 unique rare species and exemplary natural communities, including:

- **88** rare plant species, with a total of **318** documented occurrences, including the federally endangered **small-whorled pogonia** (*Isotria medioloides*), and the globally rare **Long's bulrush** (*Scirpus longii*) and **many-forms sedge** (*Carex polymorpha*).
- **43** rare wildlife species, with a total of **240** documented occurrences, including **New England cottontail** (*Sylvilagus transitionalis*), **pied-billed grebe** (*Podilymbus podiceps*), and the globally rare **brook floater freshwater mussel** (*Alasmidonta varicosa*).
- **49** exemplary natural community types, with a total of **176** documented occurrences, including **Atlantic white cedar swamp**, **dry Appalachian oak - hickory forest**, and **swamp white oak floodplain forest**.
- **10** natural community systems, with a total of **17** documented occurrences.

Appendix C lists the documented plant and animal species of conservation concern and exemplary natural communities known to occur in the coastal watersheds.

There are likely many more rare species and exemplary natural communities that exist in the coastal watersheds but have yet to be documented by scientists or entered into the Natural Heritage database. Furthermore, there are additional rare plant species that were recorded in the watersheds prior to 1975, but which we did not include herein because occurrences that have not been re-documented in more than 30 years old are considered to be "historic" (i.e., known only from historical records). Thus, "white space" on the rare

Documented exemplary ***brackish tidal marsh*** *natural community on Crommet Creek.* (TNC photo).

species and natural community map does not necessarily indicate the absence of these features, but rather that there are no documented occurrences within the last 30 years.

Other Natural Resource Values

In addition to the features highlighted above, the coastal watersheds provide many other public values. While not a principal target of this conservation plan, agricultural lands comprise an important land use. Farmland provides food, jobs, wildlife habitat for some species, and is an important element of the rural heritage and character of many communities. Farmland is also a disappearing resource, in large part due to the decline in small farm economies and concurrent rapid rise of land values for development.

Drinking water supply, once thought of as nearly unlimited, has quickly emerged in the public consciousness as one of our most precious and vulnerable resources. There are 84 public water supply systems within the coastal watersheds, comprised of 307 individual wellheads or surface intakes. Clean water supply depends on having an abundance of undeveloped lands and healthy waterways to recharge aquifers. More than 172,000 persons are served by these systems, with eight systems serving populations more than 10,000 and more than 80% of the total service in the study area.

New Hampshire's coastal watersheds offer many different land and water-based opportunities for recreation. (TNC photos)

New Hampshire residents and visitors turn to the region's undeveloped lands for outdoor recreational pursuits. Within the coastal watersheds, one can find outstanding opportunities, including hunting, fresh and salt water fishing, hiking, boating, snowshoeing, cross-country skiing, snowmobiling and wildlife observation. Great Bay and the seacoast offer some of New Hampshire's best bird watching. Rail-trails provide bicyclists and others with longer-distance alternatives. Many of the best opportunities are found on public conservation land, although the wonderful New Hampshire tradition of keeping private property open for pedestrian access remains strong in most areas.

B. Development History and Trends in the Coastal Watersheds

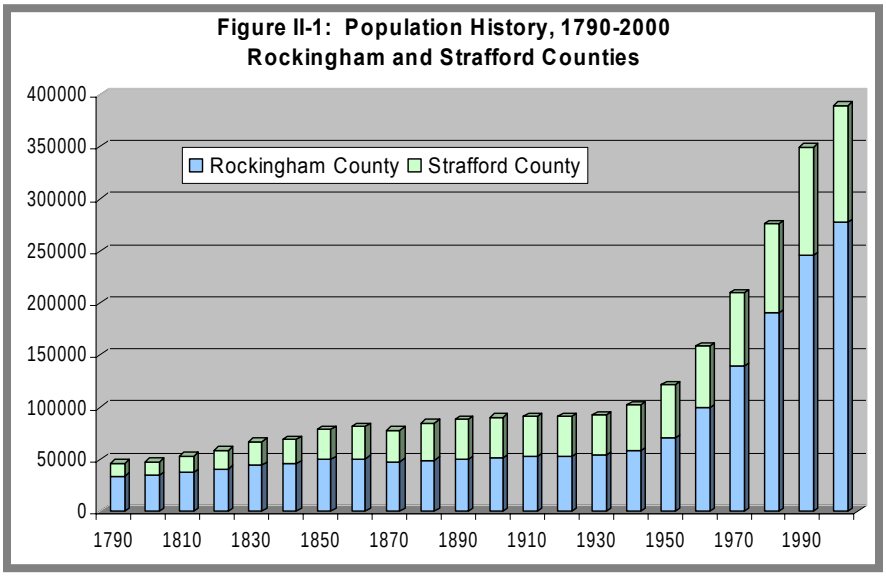
Early European settlement in the Piscataqua and coastal watershed region was characterized by thinly populated settlements, which began in the early 1600s in coastal and estuarine settings (Rye, Dover Point, and New Castle, and the original four incorporated places - Portsmouth, Dover, Hampton and Exeter). Limited settlement spread upward in the hinterlands of the watershed via the Great Bay tributaries through the next century. The earliest economy was built on resource extraction, particularly fishing, fur trading and lumber,

with the latter quickly becoming the mainstay, and later transitioned in stages to agriculture, milling, trade and transportation, and eventually manufacturing and later tourism. With improved transportation networks, and further settlement and establishment of towns the population grew and the region began to develop in a significant way.[5]

Though small in population, the landscape of the coastal watersheds was heavily impacted by the early settlements because of the high demand for timber both domestically and in Europe. Approximately 80% of the region was deforested by lumber extraction, and much of the land was converted for pasture and other agricultural purposes. Marginal pasture and tilled land was later abandoned with the nation's westward expansion and returned to forested land cover throughout the twentieth century.

As illustrated in Figure II-3, the region's (Rockingham and Strafford Counties) population was slow growing from the start of the decennial census in 1790 until approximately 1940. It stabilized at approximately 80,000 from the mid 1800s to 1930, and then began an unprecedented pace of growth, nearly quadrupling in population from 1940 to 2000, from 101,695 to 389,592. This equates to an average annual rate of growth of 2.4% -- a very high sustained rate of population growth, and nearly double that of the state overall. In each of the four decades preceding 2000, an average of about 55,000 people were added to the region.

Not surprisingly, such growth has had profound effects on the natural landscape of the coastal watersheds. With population growth comes new development for housing, commercial, industrial and service uses.



The additional population and demand for development has resulted in the conversion of thousands of acres of previously open land, including agricultural and forestlands, into developed land. This growth, combined with the well documented shift in recent decades away from traditional compact development to a more sprawling pattern, has resulted in significant losses of important habitat, fragmentation of large forest blocks, large increases in impervious surfaces, and, overall, a significant increase in the amount of land used per unit of development. Over the next 30 years, given the forecasted population projections and continuation of status quo development patterns, a significant portion of the remaining undeveloped land will face conversion to developed uses.

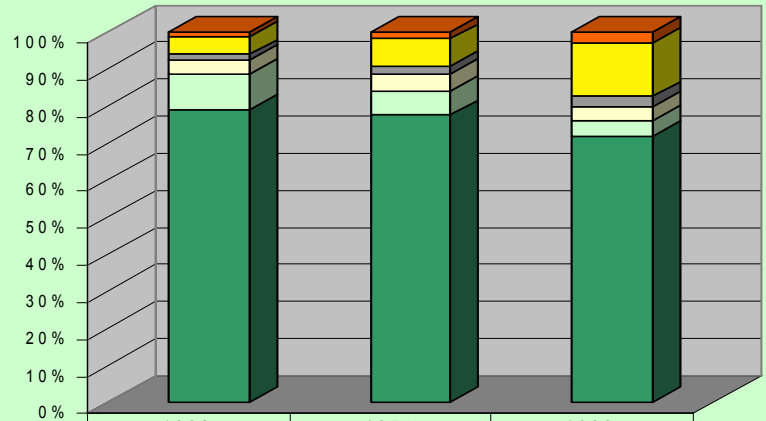
Land Use Change

The landmark 2004 study "Forty Years of Land Use Change in Rockingham and Strafford Counties,"[6] has provided, for the first time, comprehensive quantitative data on changes in land use in the coastal region over a nearly 40 year time span. This study undertook the mapping and classifying of land uses using archival aerial photography from 1962 and 1974 and compared the results with contemporary land use maps from 1998. This is the first such comparison in New Hampshire to provide controlled, consistent longitudinal land use data over

an extensive time period. It reveals trends and patterns on how land use has changed through this period of rapid growth.

As illustrated in Figure II-4, the total number of acres classified as "developed" in the two-county area increased from 51,634 in 1962 to 132,033 in 1998, an increase of nearly 260%. The vast majority of this land was converted from forest and agricultural uses, which lost 52,989 and 35,397 acres respectively. On the average, the total annual conversion from undeveloped to developed classes was 2,300 acres per year.

Figure II-4 - Land Use Change, 1962-1998



	1962	1974	1998
Indust./Comm./Mixed	9,209.8	13,098.9	19,770.4
Residential	31,772.6	48,866.1	95,032.0
Transportation	10,692.0	12,690.3	17,231.2
Idle/Other Open	23,344.8	30,423.0	25,173.0
Agriculture/Farmstds	63,425.3	43,317.4	28,028.2
Forested	523,339.8	509,668.2	470,351.2

The largest source of undeveloped land for development was forested land. Agricultural land lost fewer acres than did forested land, but the loss represented a far higher percentage of the total acreage of agricultural land. In fact, more than half of the all remaining active agricultural land in the two-county region was converted during this time period. By comparison, the loss of forested areas represents about 10% of the total.

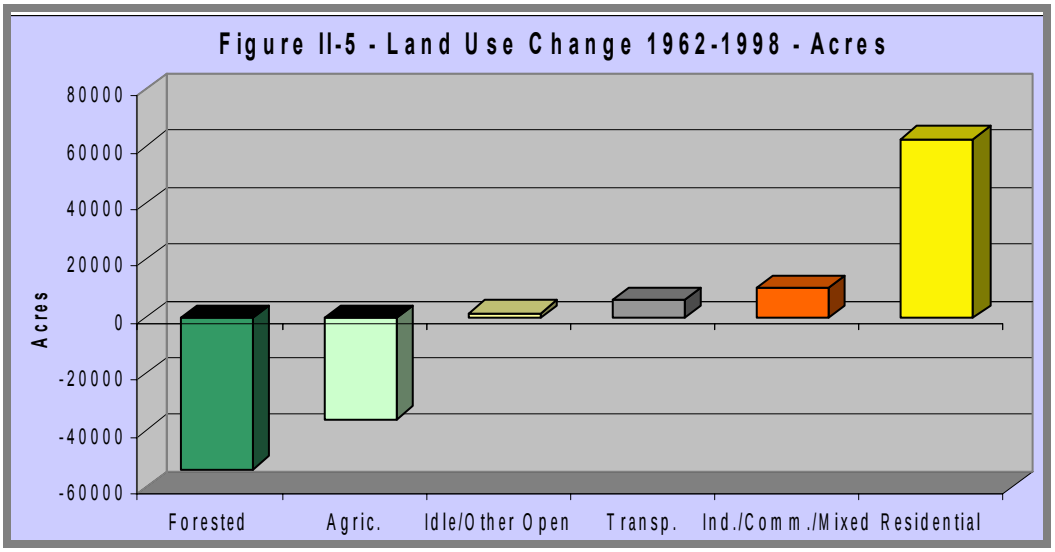
Residential development accounted for the vast majority of the newly developed land, tripling in acreage from about 31,000 in 1962 to just over 95,000 in 1998. Other development types (mixed urban, industrial, commercial uses and active recreational land) together grew by a total of 10,561, more than doubling their acreage in the same time period. Table II-2 and Figures II-5 and II-6 illustrate the total change both in acreage and percent change.

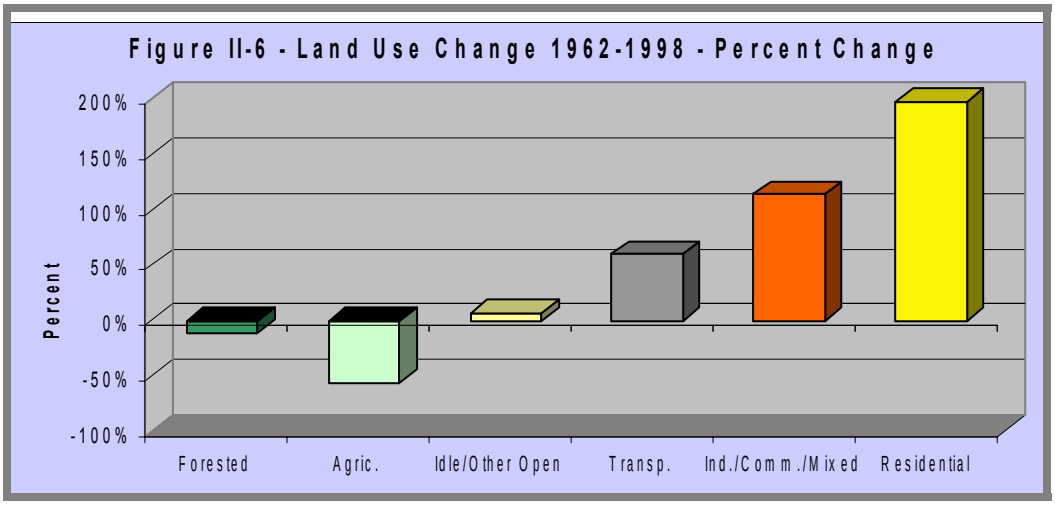
The Impact and Implications of Sprawl

As of 1998, the undeveloped portion of the two-county area remains the largest segment of land use, by far (523,552 or 79.9% of the total land mass). However, the trends documented above indicate that development conversion is occurring at an accelerated rate and in ways that spread the development and its impacts over wider areas than in the past.

Table II-2 Land Use Distribution 1962, 1974, 1998

Acreage Change	1962	1974	1998	Change 1962-1998 Acres	Change 1962-1998 %
Forested	523,340	509,668	470,351	-52,989	-10.1%
Agriculture/Farmstds	63,425	43,317	28,028	-35,397	-55.8%
Idle/Other Open	23,345	30,423	25,173	1,828	7.8%
Total Undeveloped	*610,110*	*583,409*	*523,552*	*NA*	*NA*
% Undeveloped	*92.2%*	*88.7%*	*79.9%*	*NA*	*NA*
Transportation	10,692	12,690	17,231	6,539	61.2%
Residential	31,773	48,866	95,032	63,259	199.1%
Indust./Comm./Mixed	9,210	13,099	19,770	10,561	114.7%
Total Developed	*51,674*	*74,655*	*132,034*	*NA*	*NA*
% Developed	*7.8%*	*11.3%*	*20.1%*	*NA*	*NA*





One way to measure the impact of this development sprawl is to track the amount of land used per person or per unit of development over time. Although somewhat crude, this measure of the average gross development ratio does provide an objective measure of how much land is used as we grow, and how the rate of use has changed over time. The expansion of the amount of land consumed per unit of development is perhaps the simplest and least value-laden definition of sprawl.[c]

Sprawl matters in the context of land and resource conservation. As the region grows, a sprawling development pattern magnifies conversion of undeveloped land to accommodate growth, and disperses growth in ways which fragment the remaining large contiguous areas of undeveloped land. One result is that we use up our remaining land resources more quickly. Another is that we degrade the ability of the remaining land to provide critical habitat and other ecological services vital to the health of our environment and our quality of life.

In 1962 the combined population of the two county area was approximately 168,939,[d] accounting for 51,674 acres of development, and producing a gross development ratio of 0.31 acres per person.[e] Between 1962 and 1974, the population grew by about 67,000, used 22,981 acres to accommodate that growth, and increased the development ratio to 0.35 acres per person. Between 1974 and 1998, the population grew by 145,759, consumed 57,379 acres, and further increased the development ratio to about 0.40 – roughly 30% higher than it was in 1962. See Table II-3 and Figure II-5.

Table II-3 Average Gross Development Ratio

	Population and Developed Land						Gross Development Ratio		
	1962		1974		1998		as of 1962	1962-1974	1974-1998
	Population	Acres	Population	Acres	Population	Acres	(as of 1962)	(increment)	(increment)
Rockingham	107,013	36,519	159,509	53,205	271,056	98,418	0.34	0.32	0.41
Strafford	61,925	15,155	76,422	21,450	110,633	33,616	0.24	0.43	0.36
Total	168,939	51,674	235,930	74,655	381,689	132,334	0.31	0.34	0.40

Similar increases in land conversion rates have been documented in other studies, both in New Hampshire and elsewhere in the country. There are a number of contributing factors spurring this trend:

- Change in household size: The past forty years have seen a significant decrease in the average household size nationwide. In Rockingham and Strafford Counties, average household size has decreased from 3.1 and 3.2 in 1970, to 2.6 and 2.5 in 2000, respectively. This change means that more housing units are needed to support an equivalent population, even before considering the affect of population growth.

- Increase share of single family homes: Single family homes occupy more land per person than do multifamily or mobile homes. Since 1970, the share of single family homes has remained relatively stable as a percent of all homes. In the 1990s, however, multifamily housing production was greatly diminished in both counties.

[c] In the April 1999 edition of *New Hampshire Town and City* Bernie Waugh, noted New Hampshire land use attorney and then counsel for the NHMA, provided a simple working definition of sprawl: "inflation, over time, in the amount of land area consumed per unit of human activity, and in the degree of dispersal between such land areas."

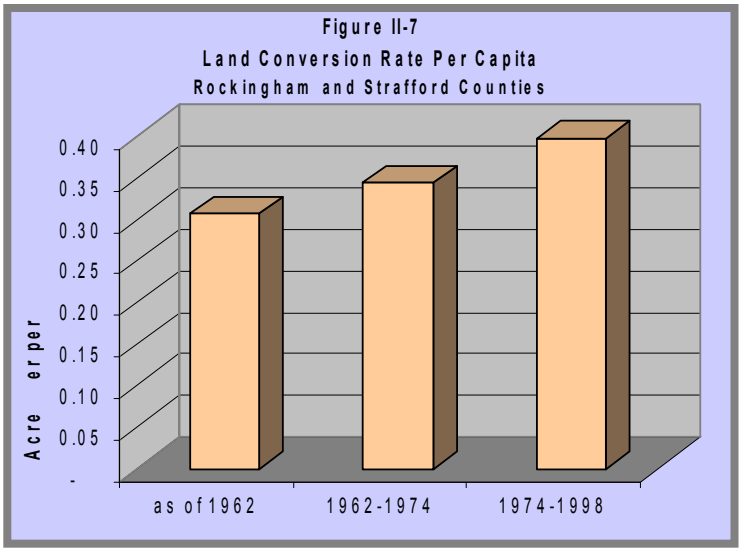
[d] Interpolated from 1960 and 1970 Census counts

[e] The land use mapping carried out in the CICEET study was based on observed land uses from aerial photography, not on parcel level uses. The vacant land area incorporating an approximate on acre block within the building area or other defined uses were included as part of those uses (0.5 acre in sewered areas). This is a relatively tightly defined area of association and resulted is lower estimates of total developed land than in previous land use studies.

- Suburban development: A larger proportion of new residential development has occurred away from existing cities, villages and neighborhoods and in communities that are (or were) rural. For example, in 1950 in Rockingham and Strafford counties, 61% of the combined population resided in the central cities and larger towns of Portsmouth, Dover, Rochester, Somersworth, Hampton, Exeter, Derry and Salem. By 2000 this percentage had fallen to 45%. More importantly, 62% of the new growth occurring in that 50 year period occurred *outside these existing urban areas*.

  An even more specific indicator is the percentage of new development that occurred outside sewer and water service areas. Mapping the growth in developed lands from the CICEET data against water and sewer coverage areas from NHDES in the RPC region reveals that in 1962, 43% of existing development fell within water or sewer services areas. By 1998, only 34% was within those areas. *Fully 73% of the new growth occurring between 1962 and 1998 occurred outside sewer and water service areas.*[f]

- Larger lots on marginal land: Average lot sizes are increasing in communities that rely on soil-based lot sizing standards. As a greater proportion of the most developable land (from septic system, home-site and road construction standpoints) is used, what remains is more marginal. Under soil-based lot sizing regulations, it requires larger lots. Whereas the best land typically supports lot sizes of 40,000 square feet (<1 acre), the poorest land may require lot sizes of 3 or more acres.



- Commercial, industrial and other development: Non-residential development (commercial, service, industrial) follows residential development. As shown in Figures II-4, 5, & 6, most of the land use change we have experienced has resulted from residential development. As the population increases, however, non-residential growth will follow as the economy becomes more self sufficient both in terms of employment and services.

Market forces are the underlying drivers of many of these trends. Throughout the period under study, residential development on unimproved land in rural areas has been both less expensive and more marketable. It has been less expensive primarily due to lower land costs, and more marketable because home buyer preferences have been strongly weighted toward large lot rural development. There is some reason to believe that at least some of these conditions are changing and may work toward reducing development sprawl in the future. Developable land has become scarce and expensive, especially in the built up southern portion of the study area. Communities have become more savvy about recouping the cost of growth, thereby increasing the cost of greenfield development. Finally, buyer preferences appear to be shifting toward more compact forms of development.

[f] Analysis applies only to Rockingham Planning Commission portion of the study area.

Projected Development

Although some of the factors responsible for sprawl may become less potent, others will not. For the purpose of estimating the effect of future growth on land consumption, it is assumed that, absent any large shifts in land use policy, the current-day development ratio of 0.40 acres per person will continue. Using this as a basis, we can roughly translate projected population growth into an estimate of the acres of land that will be converted to accommodate that growth.

The current (July 2005) NH Office of Energy and Planning population projections for Rockingham and Strafford counties indicate that the two county area will grow by approximately 114,000 persons by 2025. At 0.40 acres per person that would mean conversion of an additional 46,000 acres by 2025, representing a 35% increase in total developed acres. These estimates may best be considered low-end estimates of land conversion, given that the NHOEP population projections are based on a very modest annual growth rate assumption of 1.03% over the period. As previously noted, growth over the previous 20 years for the two counties averaged 1.7%.

Growth in coastal watersheds of New Hampshire is all but inevitable, and so too is the further conversion of undeveloped land. The extent to which future loss of undeveloped land results in significant losses to important conservation resources and degrades the ability of these areas to provide vital ecological services will depend largely on *where* and *how* this development occurs. While we might, as a conservation goal, seek to protect all important conservation land through acquisition, realistically, there is too much to protect. Instead, traditional protection methods will need to be combined with the careful management of the *where* and *how* of additional growth in order to minimize impacts to critical areas and resources. Section V of this Plan provides recommendations about how this management might be accomplished.

C. Status of Land Conservation in the Watershed

Thanks to the foresight and dedicated efforts of many communities, citizens, conservation organizations, public agencies, and elected officials, New Hampshire's coastal watersheds have a valuable base of public and private conservation lands. Public lands include venerable public lands such as Pawtuckaway and Odiorne State Parks, the Great Bay National Wildlife Refuge and National Estuarine Research Reserve, and numerous town forests. Conservation organizations have established forest reservations and nature preserves. And many private landowners have taken the step of conveying conservation easements on their properties, ensuring that these lands will remain as open space in perpetuity. Indeed, there is much to celebrate in the legacy of past land conservation activity. Yet our analysis also highlights areas of significant need, where current status falls far short of accomplishing important conservation goals for the watershed.

To evaluate the current status of land conservation, we utilized an approach known as GAP Status, which was developed by the U.S. Fish and Wildlife Service to provide a more nuanced picture of land conservation status.[7] Through the GAP status approach, we classify what are broadly referred to as "conservation and public lands" based on two factors: 1) degree of permanent legal protection, and 2) management status and a measure of intent to maintain biodiversity, natural land cover, and natural processes. Our GAP status definitions derive from the Federal GAP program, however we added additional criteria and decision-making tools to help clarify differences across GAP codes. Table II-4 provides an overview of our GAP status coding, and examples of conservation lands in each class. [For more information on the GAP status methodology, please contact The Nature Conservancy.]

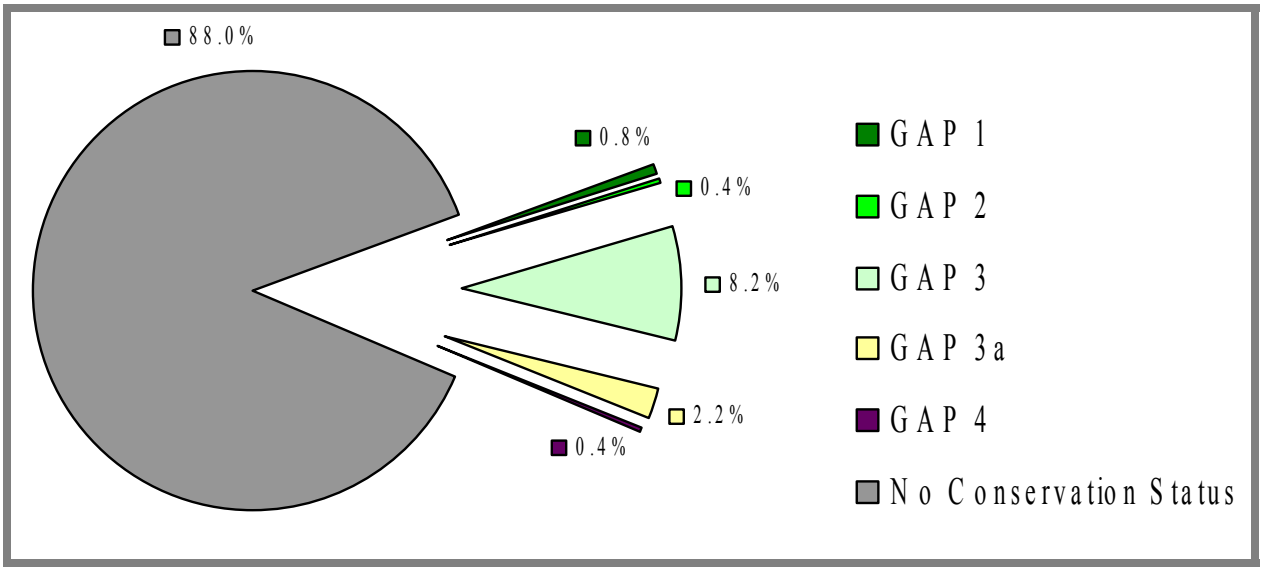
To complete the assessment, The Nature Conservancy attempted to contact the conservation owners or conservation easement holders of all tracts listed in the UNH GRANIT

Conservation/Public Lands GIS data layer. We were successful in making contact on most parcels, and in determining the appropriate GAP status. When we were unable to make an informed determination, we used a series of default decision-making tools for guidance. We also utilized data on more recently protected properties provided by the Regional Planning Commissions, The Nature Conservancy, and the Society for the Protection of New Hampshire Forests. Because of the dynamic nature of the conservation lands dataset, and the additional data we incorporated beyond what was included in GRANIT at the time of this plan, the protected acreage figures reported herein may not be identical to figures listed in other reports.

Table II-4. GAP status category descriptions.

GAP Status	Explanation	Examples
GAP 1	Permanent, legal protection. Managed to maintain a natural state, no motorized recreation, natural processes unhindered, no extractive uses	Federal wilderness areas, most Nature Conservancy Preserves, SPNHF Natural Areas, forever wild easements
GAP 2	Permanent, legal protection. Managed to maintain a primarily natural state, limited snowmobiling allowed, natural processes mostly unhindered, no widespread extractive uses	NH Audubon Sanctuary with snowmobile trail, most U.S. Fish & Wildlife Service Refuges
GAP 3	Permanent, legal protection. Managed to maintain natural land cover, allows extractive uses of renewable resources (e.g. timber harvesting), allows higher intensity or density of recreational uses	Most conservation easements in New Hampshire, majority of SPNHF Reservation lands, some town forests
GAP 3a	No legal protection, but current ownership has institutional mandates or intention to manage for natural land cover	Many town forests, water supply lands, Phillips Exeter Academy lands, many UNH lands
GAP 4	No legal protection, allows conversion of >50% of property to unnatural land cover	Small town parks and many other town or county-owned open lands

Figure II-8. Results of the GAP Status analysis for New Hampshire's coastal watersheds.



Major findings are as follows (see Figure II-8):

- **12% of the coastal watersheds (~63,500 acres) are considered as "conservation and public lands."** Conversely, 88% of the watershed has no conservation status (i.e., no legal protection or conservation mandate). These statistics lag considerably behind statewide metrics, which show that nearly 28% of New Hampshire is permanently

protected or in GAP status 3a. **A greater percentage of the coastal watersheds has been developed (15%) than conserved.**

- **9.4% (~50,000 acres) is *permanently protected* from conversion,** that is to say, permanently protected for conservation (GAP status 1, 2, or 3). An additional 2.2% (~11,600 acres) is owned by public or private institutional owners and managed to retain natural land cover, however these lands have no permanent legal protection and thus remain vulnerable to land use conversion (GAP 3a).
- **Only 1.2% of the watershed is protected and managed as natural area or ecological reserve**, representing 1/10th of the total permanently protected conservation land. These lands are managed primarily for their natural habitats and ecological processes, and timber harvesting and other extractive uses are not permitted. The remainder (9/10th) are protected and managed for multiple natural resource values that include timber harvesting and possibly other renewable resource extraction activities.
- Of the 51 mid-sized watersheds that comprise the planning area, only two have greater than 20% of the land base permanently protected, while 17 have less than 5% of the watershed protected.
- Group 1a, 1b, and 1c Important Forest Soils comprise more than 350,000 acres (2/3 of the planning area), however these soils are not well represented in the current system of conservation lands. **Only 10.4% of Group 1 soils are currently protected, while 14.7% have been lost to development.**
- Conservation lands are not evenly distributed across the coastal watersheds. In some areas, such as Great Bay and surrounding towns, or the Pawtuckaway region, significant public and private investment has resulted in a growing legacy of protected areas. Other regions have relatively little current conservation land.
- There are very few large, contiguous blocks of conservation land, especially south of Rte. 101 and east of Rte. 125.

Notably, a significantly greater proportion of the coastal watersheds has been developed (15%) than permanently conserved (<10%). Even when including the unprotected "public and conservation" lands (GAP 3a), conservation still lags behind development. The NH Estuaries Project has set a goal of protecting at least 15% of the coastal watersheds by 2010.

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Section III: Identifying Significant Natural Resources and Conservation Focus Areas

As noted in Section I, a principal goal of this plan is to identify and describe a portfolio of areas that represent the best opportunities to conserve the critical ecological, biological, and water resources of New Hampshire's coastal watersheds, based on available information. In this Section, we describe the approach taken to identify and evaluate significant natural resources and conservation focus areas, and present the results of our analysis.

A. General Approach

To identify significant resources in the coastal watersheds, we used the following approach:

- Employ a science-based approach using existing data.
- Develop criteria to highlight the most significant natural resource features.
- Incorporate *documented* natural resource features and *predictive* GIS modeling.
- Analyze data at the spatial scale of multiple large watersheds.
- Synthesize information to identify focal areas for conservation attention.
- Solicit review by local experts and general public.
- Cross reference results with existing conservation plans.

The federal Coastal and Estuarine Land Conservation (CELC) program statutory language broadly outlines categories of land that are the focus of this NOAA grant program. Because the State of New Hampshire intends to use ***The Land Conservation Plan for New Hampshire's Coastal Watersheds*** as the foundation for its CELC plan, we sought guidance in the CELC program language. Focal resources include important coastal and estuarine areas that have significant conservation, recreation, ecological, historical or aesthetic values. The CELC program gives priority to lands that have significant ecological values, and which can be effectively managed and protected.

For the purposes of this land conservation plan, the planning team has interpreted "significant ecological values" to include those lands and waters that are most important for conserving ***living resources*** - native plants, animals, and natural communities - and ***water quality***. The focus on lands that "can be effectively managed and protected" is more challenging to define, however most ecologists and conservation land managers would suggest that larger and more intact blocks of conservation land are more viable and easier to manage (per unit area) for their conservation values than are smaller and more fragmented conservation areas. This realization is a major driver behind the movement in the land conservation community to establish landscape-scale conservation projects and protected areas.

B. Identifying, Analyzing, and Mapping Significant Natural Resources

Figure III-1 provides a schematic overview of the process we undertook to design Conservation Focus Areas. We identified six categories of key natural resource features that best address living resources and water quality:

1. Unfragmented forest ecosystems.
2. High quality stream watersheds.
3. Coastal and estuarine resources.
4. Large and high quality wetland systems.
5. Riparian zones on freshwater and tidal rivers, streams, lakes and ponds.
6. Rare species, exemplary natural communities, and significant wildlife habitat.

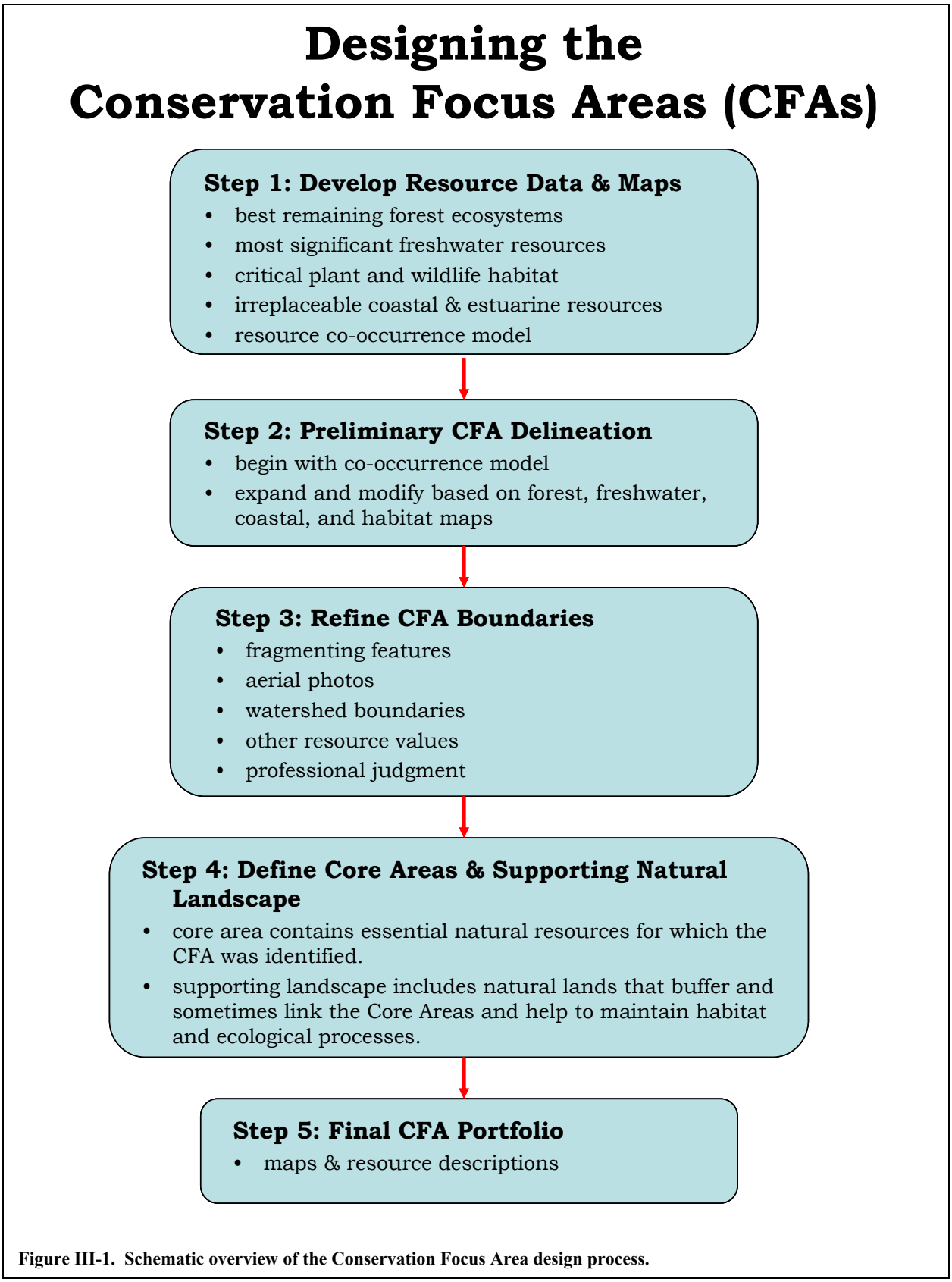


Figure III-1. Schematic overview of the Conservation Focus Area design process.

We then developed four principal resource analyses and maps that capture these key features. The resource maps reflect the best remaining opportunities to conserve: (1) **Forest Ecosystems**, (2) **Freshwater Systems**, (3) **Irreplaceable Coastal and Estuarine Resources**, and (4) **Critical Plant and Wildlife Habitat**. Upon completing these resource maps, we developed what is known as a **Resource Co-Occurrence Model**. The goal of a resource co-occurrence model is to aid in identifying areas where several resource values coincide and overlap, thus signaling locations with multiple conservation values and potentially higher priority for protection.

This collection of analyses and maps served as our foundation of information on significant natural resources in New Hampshire's coastal watersheds. We also developed three reference data sets and maps to assist in our efforts: Landscape Connectivity, Agricultural Resources, and Important Water Supply Resources. Although these attributes were not primary targets of this conservation plan, they do represent information that is important and useful to many stakeholders, and the data did inform the final delineation of conservation focus areas.

We summarize each principal resource map and the co-occurrence model below, and provide a more detailed description in Appendix D.

1. Principal Resource Maps

Best and Most Important Opportunities to Conserve Forest Ecosystems

Forests are the dominant natural land cover in New Hampshire's coastal watersheds. Identifying and conserving the best remaining examples of our forest ecosystems is an important component of this plan as unfragmented forests provide essential plant and wildlife habitat, filter and purify water, offer extensive recreational opportunities, and provide timber and other products that support local economies and human needs.

We developed a GIS-based co-occurrence model which identifies optimal areas to conserve and restore functional core forest conditions in New Hampshire's coastal watersheds. By "functional core forest" we mean forest that has sufficient ecological integrity to support interior forest habitat conditions, to be a breeding and source area for interior forest species, and to be resistant and resilient over time to expected natural disturbances. We intentionally use the term "forest ecosystem" to reflect that these unfragmented habitat blocks, while typically dominated by forest, also include a variety of wetlands and water features that comprise healthy and productive ecosystems.

The forest ecosystem model utilizes three data layers:

1) **Unfragmented forest blocks** include forestland and embedded natural habitats and naturally occurring land cover types - such as forests, wetlands, streams, and ponds – that are not bisected or otherwise significantly fragmented by publicly accessible roads, powerlines, railroads, or other development. Regionally significant blocks exceed 1,000 acres, and mostly occur west of Route 125. We attribute higher ecological significance to larger blocks because of increasing capacity to support interior forest species and greater ability to withstand and be resilient to natural disturbances. Locally significant blocks range from 250 to 1,000 acres.

2) **Aggregated forest blocks** are collections of unfragmented forest blocks in close proximity to one another, and generally bounded by highways and other large, relatively impermeable fragmenting features. While unfragmented forest blocks indicate forest systems unbroken by development, aggregated forest blocks are important because they reflect the landscape character and context. Larger aggregated blocks indicate a landscape with few major fragmenting features, while smaller blocks indicate a more dissected landscape.

3) **High quality stream watersheds** are small stream catchments with the highest landscape integrity and water quality based on population density, developed land cover, and agricultural land cover. They are described in more detail under Freshwater Systems.

We identified the highest value areas through a statistical analysis of the forest ecosystems co-occurrence model results. For each half of the coastal watershed planning area (upper and lower), we identified zones representing the top 20% of model values (by area). We then overlaid these zones on top of the raw co-occurrence model results to determine the best remaining opportunities to conserve forest ecosystems. A reduced-scale version of the Forest Ecosystems map is included as Figure III-2 at the end of this Section.

Best and Most Important Opportunities to Conserve Freshwater Systems

The integrity and health of our freshwater ecosystems are important not only to overall water quality within the coastal watersheds and the marine environment, but also because they directly relate to the critical habitat structure, function and processes necessary to maintain biodiversity unique to aquatic and marine environments. Although many conservation plans recognize freshwater resources, we sought to go a step further by identifying a subset of these resources with special significance for living resources and water quality.

We utilized three key data layers in this analysis:

1) **High Quality Stream Watersheds** are comprised of small stream catchments (or small watersheds) defined by the U.S. Geological Survey in its SPARROW water quality model.[1] Each catchment includes the land area draining into an individual stream section, and most are only a few square miles in extent, compared to the much larger river system delineations commonly used to define watersheds. The fine resolution of SPARROW catchments allows water quality profiling and the identification of pristine reaches within relatively small land areas.

We isolated those catchments with high landscape integrity and water quality. This subset, in turn, is stratified into tiers by breaks in population density and percent of developed land cover and agricultural land cover.

- *Tier 1* is the most pristine of the full range of all watersheds in the coastal watershed region, and meets the EPA definition of a "reference" catchment, that is a near-pristine, undeveloped watershed where anthropogenic nutrient inputs are minimal and against which the impacts of land use can be evaluated over time. The defining criteria for Tier 1 are: <20 persons/square mile, <1% developed land cover, and <5% agricultural land use. Collectively, Tier 1 catchments occupy only 2.3% of the coastal watersheds area.
- *Tier 2* is close to Tier 1 in quality, but allows for up to 36 people/square mile (the upper limit of rural population density) and up to 2% developed land cover. Collectively, Tier 2 catchments occupy only 3.5% of the coastal watersheds area.
- *Tiers 3 and 4* move up the population density scale to the median value of "exurban density" – up 64 and 90 persons/square mile, respectively. The percent of developed land cover also increases to 3% and 5%, respectively. Collectively, Tier 3 & 4 catchments occupy only 10.4% of the coastal watersheds area.

2) **Riparian Zones** are the natural corridors along streams and rivers that are essential for maintaining stream habitat and water quality, offering important wildlife habitat structure and connectivity, and providing storage for floodwaters. The riparian zone is delineated by placing a buffer of 500' on either side of all streams (and the ponds, lakes, and tidal estuaries through which they flow), ranging from 1st order tributary streams high in the watershed to 6th order mainstem rivers draining to the coast. **Floodplain Forests** are riparian areas where the physical landscape periodically floods during high water discharge events. They were derived

from a predictive model in the New Hampshire Fish and Game Department's recently completed ***Wildlife Action Plan***. They differ from our delineation of riparian zones in that they are based on landform and hydrologic modeling rather than simple buffering.

3) **Important Stream Reaches** are limited to stream or river segments, and their associated floodplain and riparian zones in the study area, known to have special significance for living resources, including fish species of conservation concern (as determined by NH Fish & Game biologists) and globally rare species such as the **brook floater** mussel.

A reduced-scale version of the Freshwater Systems map is included as Figure III-3 at the end of this Section.

Best and Most Important Opportunities to Conserve Irreplaceable Coastal & Estuarine Resources

New Hampshire's coastal region supports a complex system of productive estuaries, tidal rivers and streams, salt marshes, rocky and sandy shorelines, and adjacent uplands. Tidal and estuarine watersheds comprise only 126 square miles, or 15% of the total coastal watershed study area. The actual marine coastline of New Hampshire is only 18 miles long, and approximately 75% of that is developed for some form of human land use. Our remaining coastal natural resources are truly irreplaceable, providing critical habitat for many species of wildlife species, along with a range of other important public values.

We utilized four key data layers in this analysis:

1) **Undeveloped coastal shoreline** is the very limited open, undeveloped land remaining along our marine coastline for a distance of 1,000' inland. Undeveloped shoreline is found only in small, scattered localities, generally defined by permanently protected parcels or un-developable coastal wetlands.

2) **Tidal & estuarine riparian zones** are similar to freshwater riparian zones discussed previously, and utilize the same 500' buffer, but are limited to estuaries along the coast, including Great Bay and various salt marsh complexes, as well as rivers and streams with tidal influence. In some cases, barriers such as dam structures truncate natural watercourses with tidal influence; these barriers then define the upper limit of the tidal zone, as well as the associated catchments described below.

3) **Tidal wetlands** include all mapped, tidally influenced wetlands such as salt marsh and brackish marsh. [a]

4) **Forest blocks > 500 acres within tidal catchments** are scarce in the overall mosaic of landcover close to Great Bay and the coast, and are of special interest in this study due to their significance for water quality and biodiversity conservation. The watershed of each tidal watercourse is defined by the aggregate of SPARROW stream catchments flowing directly into that watercourse. The outer boundary of all contiguous catchments in turn defines the land area within which forest blocks >500 acres are included.

A reduced-scale version of the Coastal and Estuarine Resources map is included as Figure III-4 at the end of this Section.

[a] Freshwater wetlands also occur in the immediate coastal region, but are addressed in the Critical Plant & Wildlife Habitat analysis.

Best and Most Important Opportunities to Conserve Critical Plant & Wildlife Habitat

A major focus of this plan is the identification and prioritization of living resources and their habitats. To do this, we have modeled various ecosystems at a broad scale (forest, freshwater, and coastal and estuarine), as described above. To round out the picture, this complementary analysis looks at finer scale (a.k.a. "patch") habitat features of the landscape, focusing on highly localized and rare or otherwise exceptional plant, animal, natural community and wildlife habitat features.

We used two datasets representing critical plant and wildlife habitat. The New Hampshire Natural Heritage Bureau (NHB) maintains a database of known occurrences of rare plants, rare animals, exemplary natural communities, and exemplary ecological systems. For reference, *exemplary* natural communities include nearly all examples of rare types and very high quality examples of common types.

To estimate critical wildlife habitat, we utilized several habitat models recently developed by the New Hampshire Fish and Game Department and partners as part of the 2006 ***Wildlife Action Plan***. These models represent important habitat for many of the state's imperiled animals.

Rare Plants, Exemplary Natural Communities, and Supporting Natural Habitat:
NHB ecologists reviewed all known occurrences of rare plants and exemplary natural communities in the NH coastal watersheds (approximately 900 occurrences). They prioritized occurrences which are in excellent condition, are limited to the coastal region in their distribution, exhibit floristic qualities not seen in other portions of the state, or occur in high-quality clusters. These priority occurrences represent approximately 28% (257) of the total, and were used to focus attention on the most significant habitat.

To illustrate the portions of the landscape that are important to the priority natural heritage features, we mapped supporting natural habitat areas. These areas represent the immediate landscape surrounding an occurrence (or group of occurrences) and are delineated based on relevant natural habitat, stream catchment boundaries, and breaks in the forest canopy. They should be considered as the absolute minimum area necessary to maintain or enhance the viability of these features.

It is important to note that while the NHB database is thought to be a reasonably good representation of the distribution and patterns of the region's biodiversity, much of the coastal watershed area has not been surveyed for plants, animals, natural communities, and ecological systems. There are most certainly additional significant habitat areas yet to be identified.

Significant Wildlife Habitat Models:
The New Hampshire Fish and Game Department and partners developed numerous wildlife habitat models for the state's ***Wildlife Action Plan***. These models incorporate a wide variety of datasets (including wetlands, NHB database, hydrology, elevation, soils, *etc.*) to predict natural communities and wildlife habitat. Nine of these habitat models are relevant to New Hampshire's coastal watersheds.

Cliff: steep, rocky outcrops with potential for cliff nesting birds (*e.g.* peregrine falcon) as well as unusual cliff natural communities.

Coastal Island: represent important examples of the few extant maritime shrub / forest communities in New Hampshire, and provide habitat for bird species of concern such as various terns, the black guillemot, and the purple sandpiper.

Dunes: extremely limited in areal extent in New Hampshire, these sandy grass and shrublands represent important habitat for several shorebirds (notably piping plover).

Floodplain Forest: critical to flood water retention and water quality, floodplain forests incorporate numerous rare natural communities and support many species of concern including herpetiles (e.g., wood turtles), bats, and the red shouldered hawk.

Grassland: areas >25 acres that include natural grass and heathlands as well as anthropogenic grassland habitat like agricultural fields and airports. Supports numerous birds requiring open lands such as the northern harrier and vesper sparrow.

Marsh: consists of graminoid or shrub-dominated fresh water, emergent wetlands as well as salt marsh. Fresh water marshes support species of concern such as the American bittern, spotted turtle, and ringed boghaunter, while salt marsh is important to common tern, salt marsh sharp tailed sparrow, and semipalmated sandpiper.

Peatland: generally acidic wetlands with limited (or no) surface and ground water inputs and characterized by the accumulation of peat. They include numerous rare natural communities like Atlantic white cedar swamps and black spruce bogs, and support many rare species such as the palm warbler, mink frog, and ringed bog haunter.

Pitch Pine Barren: early-successional forests that require fire to maintain the dominance of pitch pine and scrub oak. They can support many rare moth species, several snakes (e.g., black racer and eastern hognose snake), and whip-poor-will.

Ridge and Talus: two distinct community types found in mountainous environments where exposed bedrock results from cliff erosion (talus) or thin soiled convex landscape settings (ridges and summits). Timber rattlesnake, peregrine falcon, or bobcat could potentially be found in these settings.

A reduced-scale version of the Critical Plant and Wildlife Habitat map is included as Figure III-5 at the end of this Section.

2. Resource Co-Occurrence Model

The preceding sections describe several datasets of natural resource and ecological factors considered critical to the development of this conservation plan. Two key questions in this planning process are:

- How do these various physical and biological features interrelate in terms of cumulative conservation values?
- Are some resource values more important than others in meeting the plan's overall goals?

The purpose of a resource co-occurrence model is to aid in identifying areas where several resource values coincide and overlap, thus signaling locations with multiple conservation values and potentially higher priority for protection.

For GIS modeling purposes, the datasets discussed above were organized into four composites of twenty-two (22) individual data factors. Some of the data factors are internal classifications within a larger context, such as forest blocks in various acreage classes, while others are groups of individual features such as rare and exemplary plant, wildlife and natural community occurrences. To review, the four composites are: Forest Ecosystems, Freshwater Systems, Irreplaceable Coastal & Estuarine Resources, and Critical Plant & Wildlife Habitat.

In order to establish relative importance values, we relied upon an expert panel of natural resource professionals and community planners familiar with the larger landscape, and GIS

scientists familiar with the data used in this study. This panel participated in a facilitated Delphi process, individually assigning numerical importance values to each data factor according to best professional judgment and agency or organizational mission-driven perspectives. The individual participant scores were then pooled to generate an *average importance value* for each of the 22 data factors, which cumulatively represents a "shared vision" of *relative importance value* developed in the consensus-oriented Delphi process.

These mean numerical scores were then linked to a master GIS datalayer comprising all the resources evaluated, and then displayed on a single map as a color-graded scheme where darker color indicated higher cumulative conservation values. While graphically quite complex and subtle in terms of the overall pattern, the co-occurrence map does reveal significant concentrations of values both large and small in size. For instance, the Pawtuckaway region, the Blue Hills of Strafford and Barnstead, and the Moose Mountains all scored highly in this model. Smaller locales such as Crommet Creek in Durham, the Hampton saltmarshes, and the extensive wetlands in Exeter and Kensington also indicate high concentrations of conservation values. The highest value areas typically included not only multiple overlapping natural resource features, but also one or more features with high *relative importance* as defined through the expert review process.

To more easily identify coherent areas of high conservation value in the co-occurrence model, we smoothed the complex mosaic of values by using a GIS focal mean analysis. For each cell in our co-occurrence grid, the GIS computed the mean value of all of the surrounding cells within a circular window of 500 acres (about one mile in diameter), and assigned that value to the focal cell. This process generated a smoothed surface from which we calculated contours of higher and lower values (much like a topographic map). The high-value contours, representing the top 20% of focal mean grid cell values across the entire study area, served as a beginning framework to delineate conservation focus area boundaries.

The process for developing the co-occurrence model is described in more detail in Appendix D.

3. Reference Data Sets

a. Landscape Connectivity

While the emphasis of this plan is to identify the extent and distribution of high-value natural resources across the study area, some concentrations of resources may also afford key land protection opportunities that serve to link large habitat systems, such as forest blocks or river corridors, or bridge gaps among existing conservation parcels. We used a GIS-based proximity analysis to assess how potential connections among forest blocks and conservation lands intersect. These represent linkage "hot spot" opportunities. This data was then overlaid with the riparian network to add a third level of potential connectivity. The composite of the three data layers serves as an overall connectivity reference dataset. It can be used when evaluating land protection project opportunities associated with the conservation focus area described elsewhere in this report. [For more information on the Landscape Connectivity analysis, please contact Dan Sundquist at the Society for the Protection of New Hampshire Forests.]

b. Agricultural Resources

Agricultural land uses and most productive agricultural soils were mapped as adjunct reference datasets to be used in conjunction with other mapping and analysis in this study, and as additional input for community planners. Active agricultural land uses were taken from 1998 land use mapping, developed and published by the UNH Complex Systems Research Center in 2000 for the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEETS) program. Brookfield and Wakefield were not mapped as part of the CICEETS project, so data from the GRANIT 2001 land cover mapping were used. The

agricultural land uses mapped total nearly 23,000 acres across the study area, and include farmsteads, hay fields, row crops and fruit orchards.

Agricultural soils were derived from NRCS digital mapping for Strafford and Rockingham counties available from GRANIT. Two classes of soils were selected as the most productive agricultural soils:

- *Prime agricultural soils*: Land defined by several physical factors -- including sufficient available water capacity within 40 inches of the surface, pH range, limited or no water table, low erosion potential, and low percent of stones and rock fragments – that allow successful production of commonly grown cultivated crops.

- *Soils of statewide importance*: Land not prime, but considered of statewide significance for the production of food, feed, fiber, forage and oilseed crops. These soils are $\leq$ 15% slope, are not stony, and are generally well-drained with good water holding capacity.

There are about 41,000 acres of prime agricultural soils and 30,000 acres of soils of statewide importance in the coastal watershed land area, or ~8% and 6% of the study area, respectively. The majority of these soils are found within 15 miles of the seacoast.

c. Important Water Supply Resources

Drinking water resources were mapped as adjunct reference datasets to be used in conjunction with other mapping and analysis in this study, and as additional input for community planners. The data factors mapped include:

- High-yield stratified drift aquifers with maximum transmissivity $\geq$ 1000 sq feet/day (minimum for municipal water yield of 75 gallons/minute).
- Potentially favorable well sites in aquifers (which exclude contamination sources and surrounding buffers).
- Public drinking water supplies (PWS) including reservoirs, river intakes and wellheads.
- Mapped drinking water protection areas surrounding PWS.

There are 71,450 acres of aquifer with potential to yield a municipal water supply, or about 13% of the coastal watershed study area. The largest aquifer formation in the study area is associated with the Cocheco and Bellamy River drainages, with additional significant acreages immediate to the seacoast. Since aquifers are often found associated with other natural resource values, conservation of these lands can yield multiple community benefits by protecting living resources and water quality/quantity.

According to data provided by NH Department of Environmental Services, there are 133 community water supply systems within the coastal watersheds, comprised of 331 individual wellheads or surface intakes. More than 177,000 people are served by these systems; eight systems serve populations greater than 10,000 and account for 81% of the total population.

C. Delineating the Conservation Focus Areas

We identified 75 Conservation Focus Areas through a systematic, state-of-the-art analysis of a wealth of natural resources data. Collectively, these areas comprise approximately 190,300 acres, or 36% of the watershed. A reduced-scale version of the Conservation Focus Area map is included as Figure III-6 at the end of this Section.

1. Definitions

*A **Conservation Focus Area** is an area that is considered to be of exceptional significance for the protection of living resources and water quality in the coastal watersheds.* In general, focus areas occur in places where multiple important natural resource features co-occur to an extent that is significant from a whole-watershed perspective. Occasionally, focus areas emerged that contained only one or two important features, because the features were considered truly irreplaceable (e.g., habitat for a globally rare species or an intact coastal saltmarsh).

Each Conservation Focus Area is comprised of a **Core Area**. Some Conservation Focus Areas also include **Supporting Natural Landscape**.

- *The **Core Area** is the contiguous geographic area that contains the primary natural features and habitat for which the Conservation Focus Area was identified.* Core Areas contain essential habitat for plant and wildlife species of concern and exemplary natural communities, highest quality small watersheds and other vital freshwater features, irreplaceable coastal resources such as estuarine shoreline, and the best remaining examples of intact forest ecosystems. These unfragmented areas, which are wholly or almost entirely undeveloped, represent the highest priority for conservation and protection.
- *The **Supporting Natural Landscape** includes the surrounding area that helps to safeguard the Core Area while also providing habitat for many common species.* Supporting Natural Landscape contains buffer around the Core Area, undeveloped watersheds, and undeveloped forest blocks, helping to maintain ecological processes upon which habitats and species depend. Conserving supporting landscapes will embed the Core Areas in a minimally fragmented and minimally disturbed matrix, thus helping to maintain the viability and quality of the Core Area natural features over time.

2. Delineation Methodology

To delineate Conservation Focus Areas, we generally followed the approach outlined in Figure III-1 (shown above). Based on our judgment and the CELCP program guidance, we used the following principles and guidelines for identifying important areas:

- Represent the full range of terrestrial, freshwater aquatic, and coastal/estuarine natural communities that characterize the coastal watersheds at sizes, configurations, and conditions sufficient for their long-term viability.
- Represent the dominant (or "matrix") forest natural communities of southeastern New Hampshire at large enough scales and configurations to support forest interior wildlife and to absorb natural disturbance processes over time.
- Represent the range of physical features found in the watershed, including bedrock types, soils, elevations, and slopes. Where possible, include a broad range of environmental gradients (e.g., elevation, soil moisture, exposures) to provide for a diversity of habitat conditions, range of natural disturbances, and opportunity for evolution and migration in response to climate changes.
- Include known occurrences of rare species and exemplary natural communities, especially those occurrences highlighted as priorities by NH Natural Heritage Bureau ecologists.
- Consider the habitat needs of a range of animal species, particularly those known to require or thrive under mature and remote ecosystem conditions.
- Identify the best opportunities for maintaining or restoring very high quality small watersheds, and also areas that significantly influence water resources such as riparian zones, large wetland complexes, and headwater stream networks.
- Consider existing development, roads, and other infrastructure in order to avoid the ecological impacts of fragmentation, and to avoid conflicts with other land uses and

management regimes. Also consider landscape condition, especially the degree of natural land cover, fragmentation, and proximity to other reserves.
- Look for overlap with other significant public values (such as drinking water protection zones, recreational resources, prime agricultural lands). These resources are important, but they were not the primary filters used in this plan because our intent was to identify the most important areas for living resources and water quality.
- Be well justified and scientifically defensible.

We started with the results of the resource co-occurrence model, using the analysis that highlighted areas of the watershed congregating around the top 20% of co-occurrence scores. We then scrolled through each principal resource map and attempted to capture the extent of the most important natural resources occurring in the area. For example, beginning with a particular "top 20%" co-occurrence polygon, we would expand and draw the boundary to include known significant habitat for rare species, a coastal salt marsh complex, a high value forest ecosystem, or a Tier 1 high quality stream watershed. This resulted in a preliminary conservation focus area.

Next, we carefully refined boundaries by looking very closely at fragmenting features (e.g., public roads, development), recent aerial photography, watershed boundaries, and other resource values (e.g., farmland). This painstaking, detail-oriented procedure often resulted in contractions of preliminary focus area boundaries to better reflect the reality of current land uses. We particularly sought to avoid including existing development (such as a house or other building) in conservation focus areas, wherever possible.[b]

Finally, we delineated the Core Area and, where appropriate, the Supporting Natural Landscape within the focus area. In delineating the core, we attempted to include unfragmented or largely intact portions of the principal natural features for which the focus area was identified. For example, if a high co-occurrence score was driven by the presence of a high value forest ecosystem and a globally imperiled plant species occurrence, we sought to capture both in the core area. If a high quality stream watershed, important stream reach, and significant wildlife habitat were the principal features, we drew the core area boundary to include the greatest unfragmented extent of these resources. Supporting natural landscape consists primarily of relatively unfragmented forest and farm lands around the core area, and also includes areas that appear to be good opportunities to maintain connectivity between conservation focus areas.

In general, conservation focus areas closer to the coast consist primarily or solely of core areas. It was more difficult to identify supporting natural landscape in the lower watersheds because the landscape is much more fragmented.

3. Limitations of the Data

This conservation plan was developed using the best data available to members of the planning team. Based on the data described above, we know that New Hampshire's coastal watersheds contain a wide range of significant ecological resources, and we have a pretty solid understanding of the location and status of certain resources. Nonetheless, our knowledge of the distribution and status of these resources is incomplete.

[b] In some cases, it was impractical to carve out existing development from a focus area, and so the development remained inside. We are not intending to suggest, however, that such development be removed from the landscape.

We acknowledge the limitations of existing data, and offer the following considerations for users of this plan:

- The plan should not be considered a definitive statement of the presence or absence of significant ecological resources at given locations. We are committed to increasing our knowledge of the distribution, abundance, and quality of conservation target occurrences in New Hampshire's coastal watersheds, and we will use that knowledge to guide and refine our goals and strategies.
- The plan should be considered a *first iteration*, rather than the "final say." We fully expect to supplement and otherwise revise the plan over time, in response to new information.
- We do expect that additional important areas could emerge as a result of new information.
- We do not expect that future information will suggest the elimination of any of the important habitat areas identified in the plan, except perhaps in the event that shifting human land uses destroy or significantly degrade an area. The conservation focus areas are well justified, though new information may enable us to adjust boundaries, connectivity zones, and other attributes.

Notwithstanding acknowledged data limitations, we believe this plan to be a credible first iteration based on sound scientific data, expert consultation, and sophisticated GIS modeling and conservation planning tools.

References and Literature Cited

[1] Moore, R.B., C.M. Johnston, K.W. Robinson, and J.R. Deacon. Estimation of total nitrogen and phosphorous in New England streams using spatially referenced regression models. Scientific Investigations Report 2004-5012. U.S. Geological Survey, New Hampshire.

Figure III-2:
Forest Ecosystems

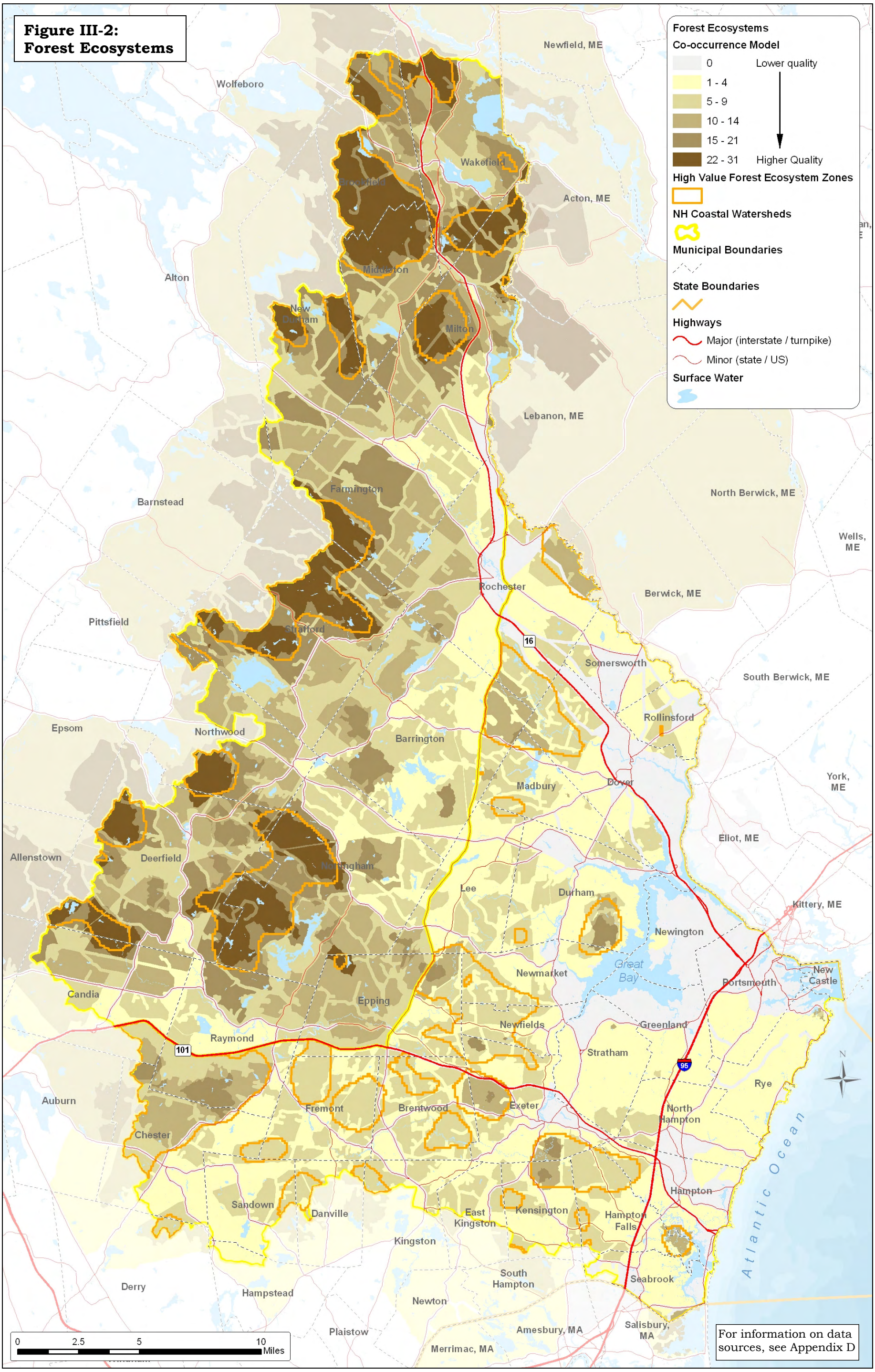


Figure III-3:
Freshwater Systems

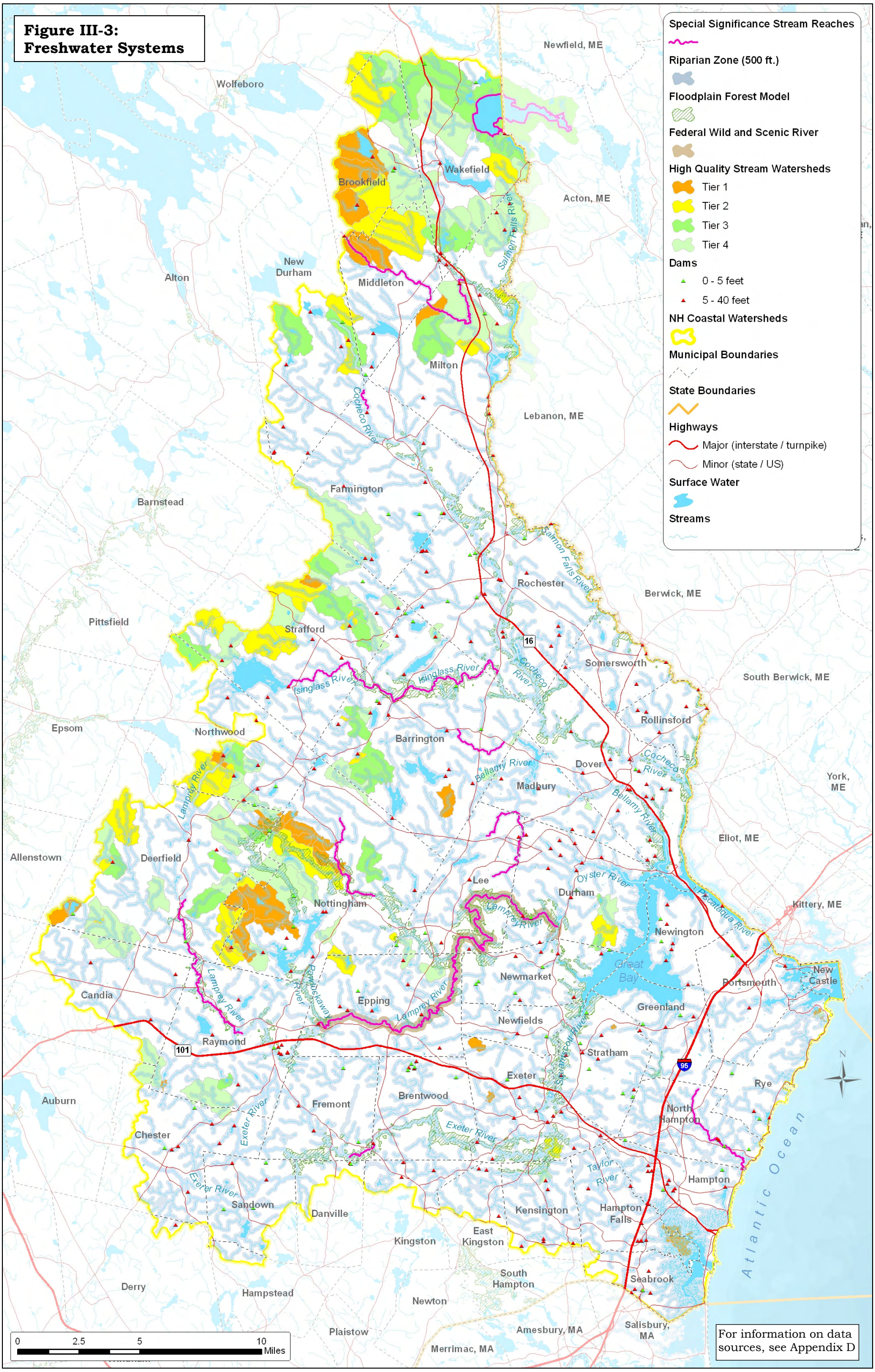


Figure III-4:
Coastal and Estuarine Resources

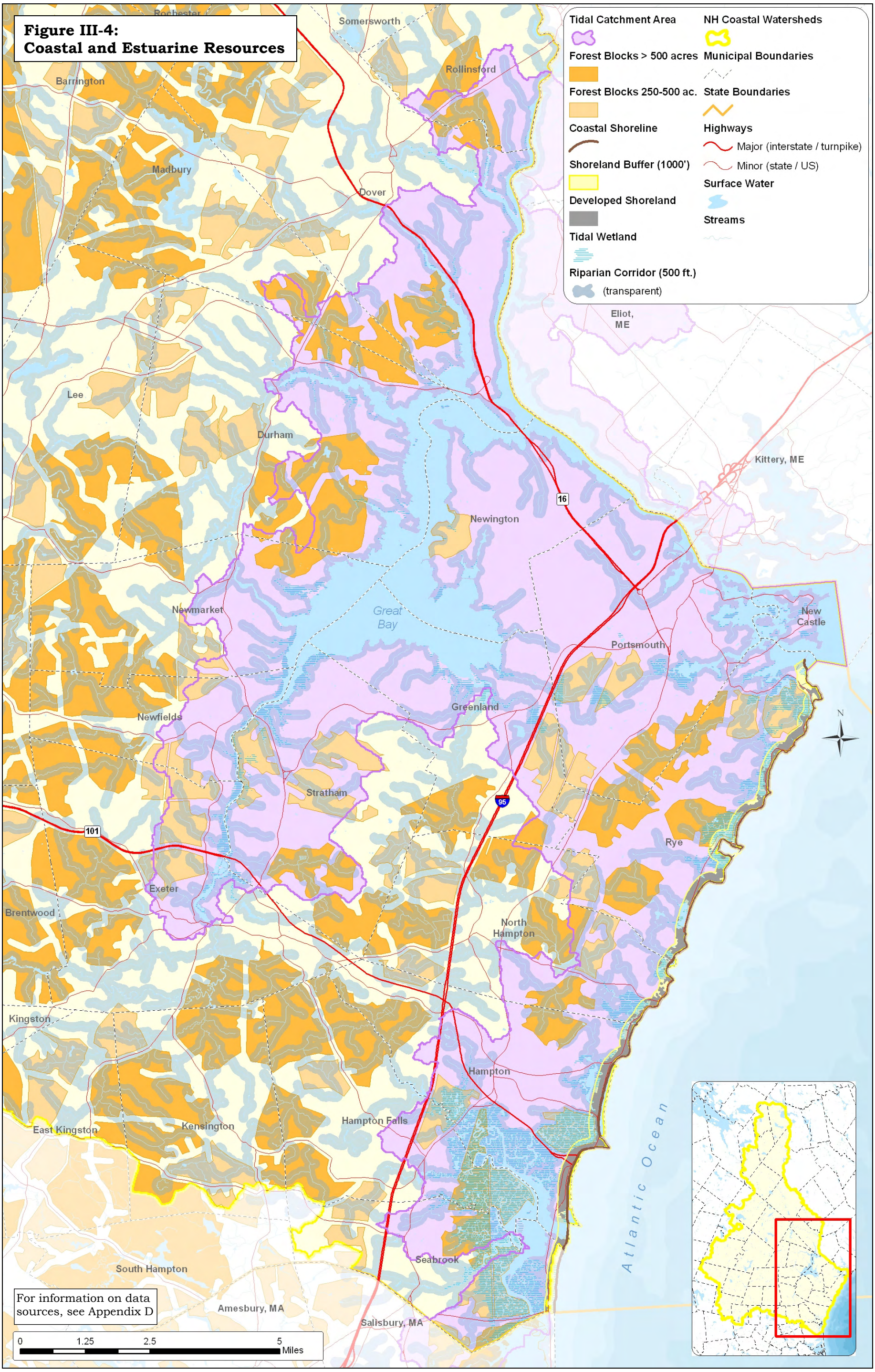


Figure III-5:
Critical Plant and Wildlife Habitat

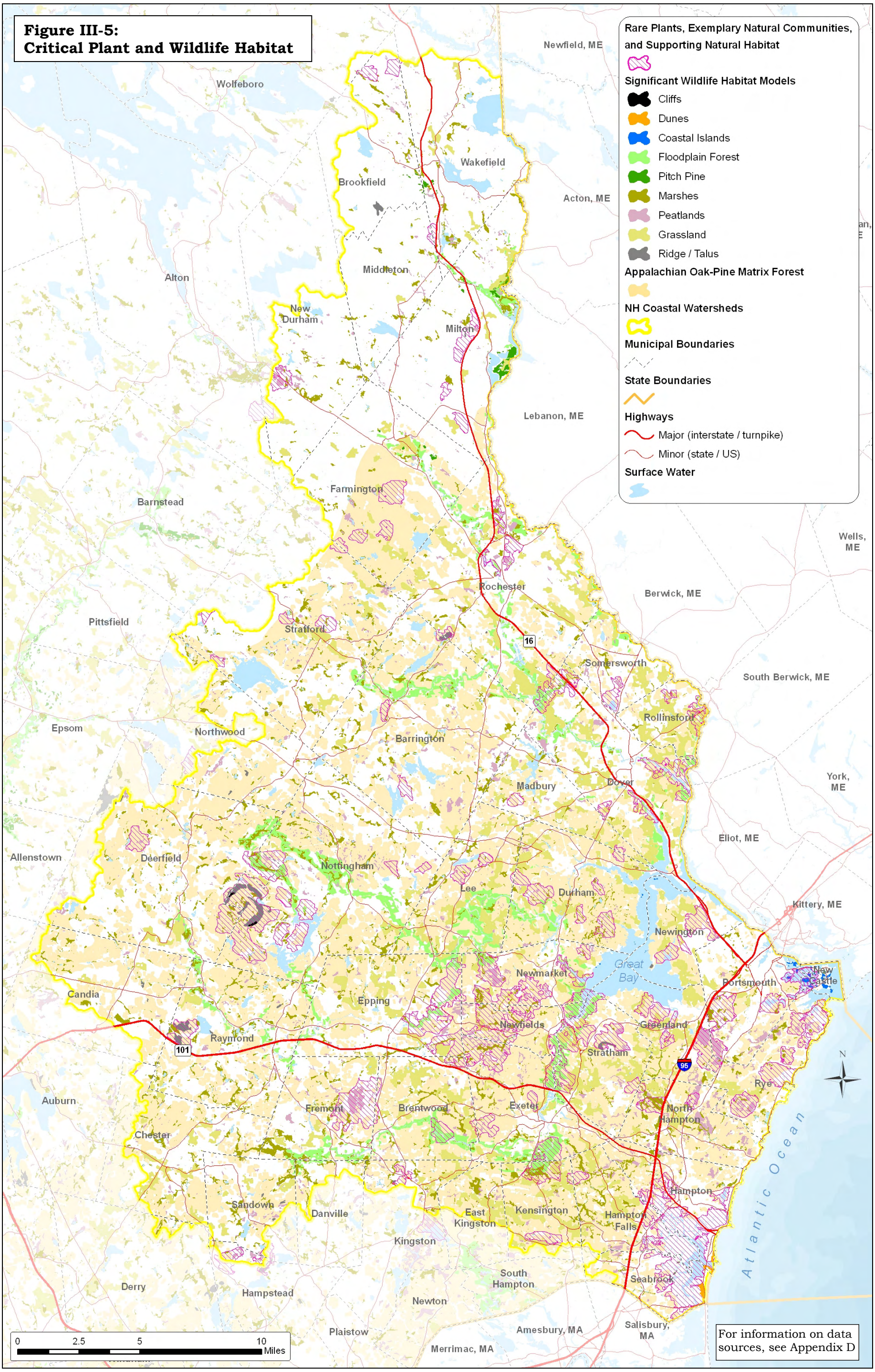
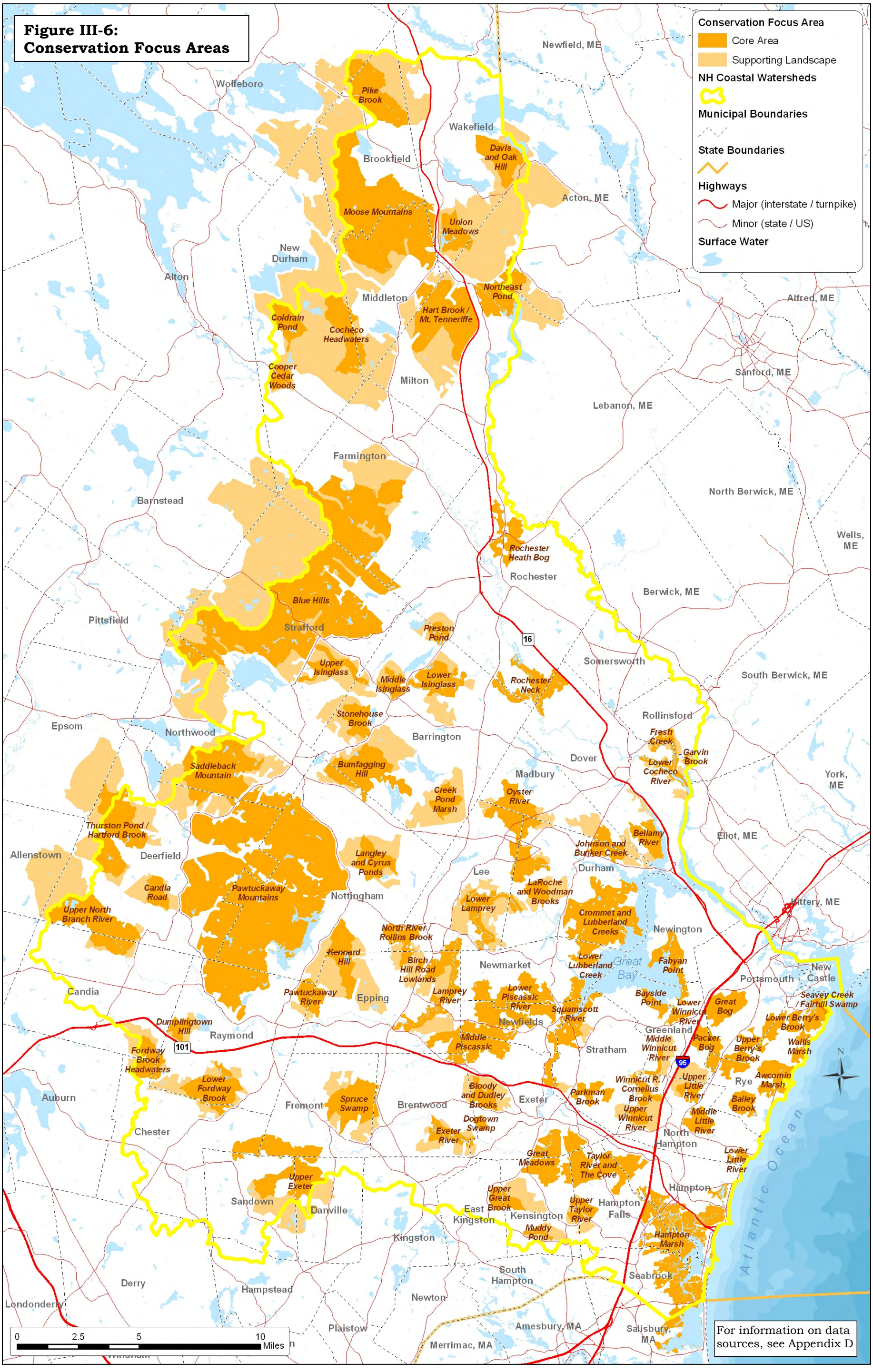


Figure III-6:
Conservation Focus Areas



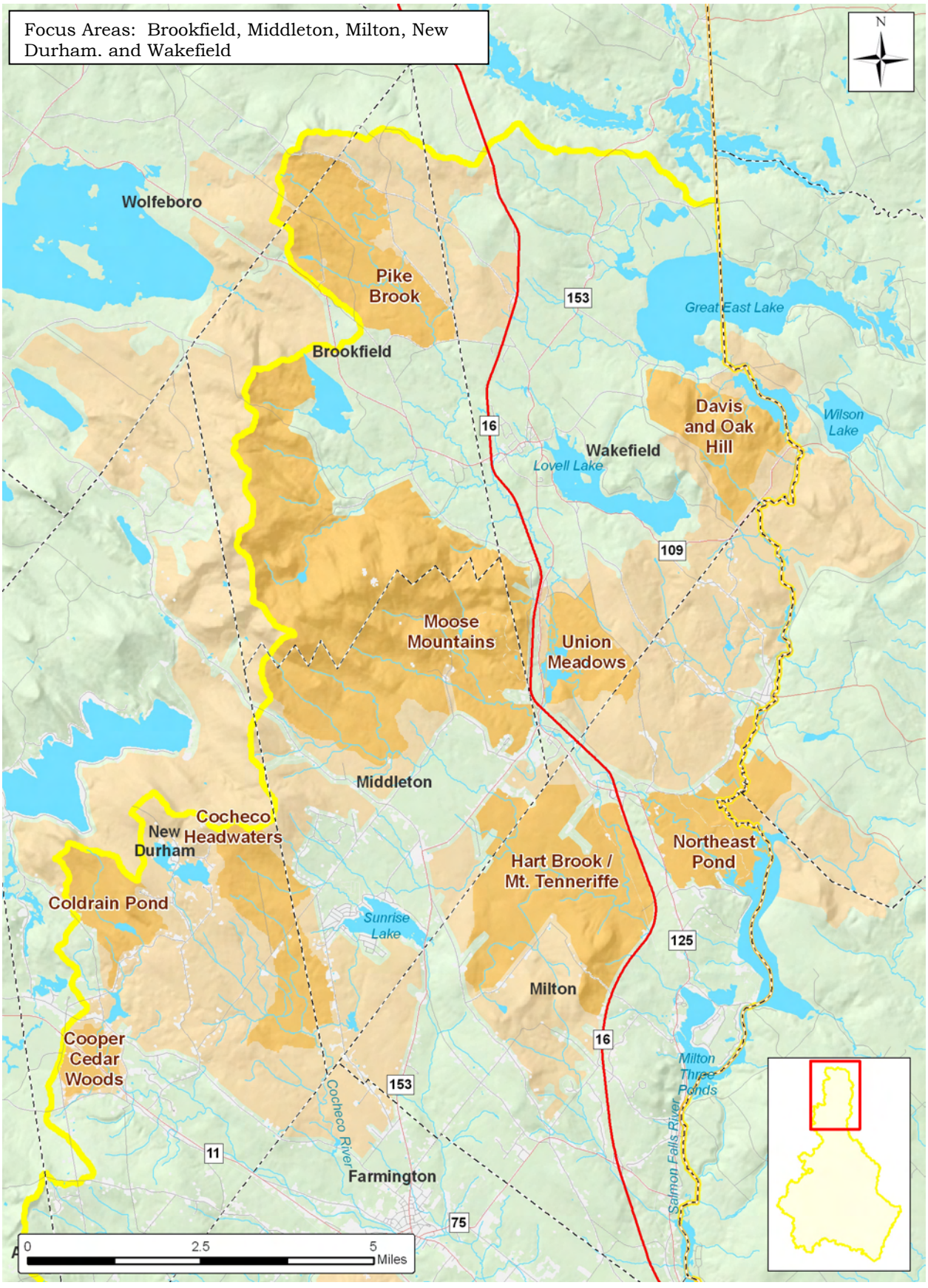
Section IV:
Conservation Focus Area Descriptions

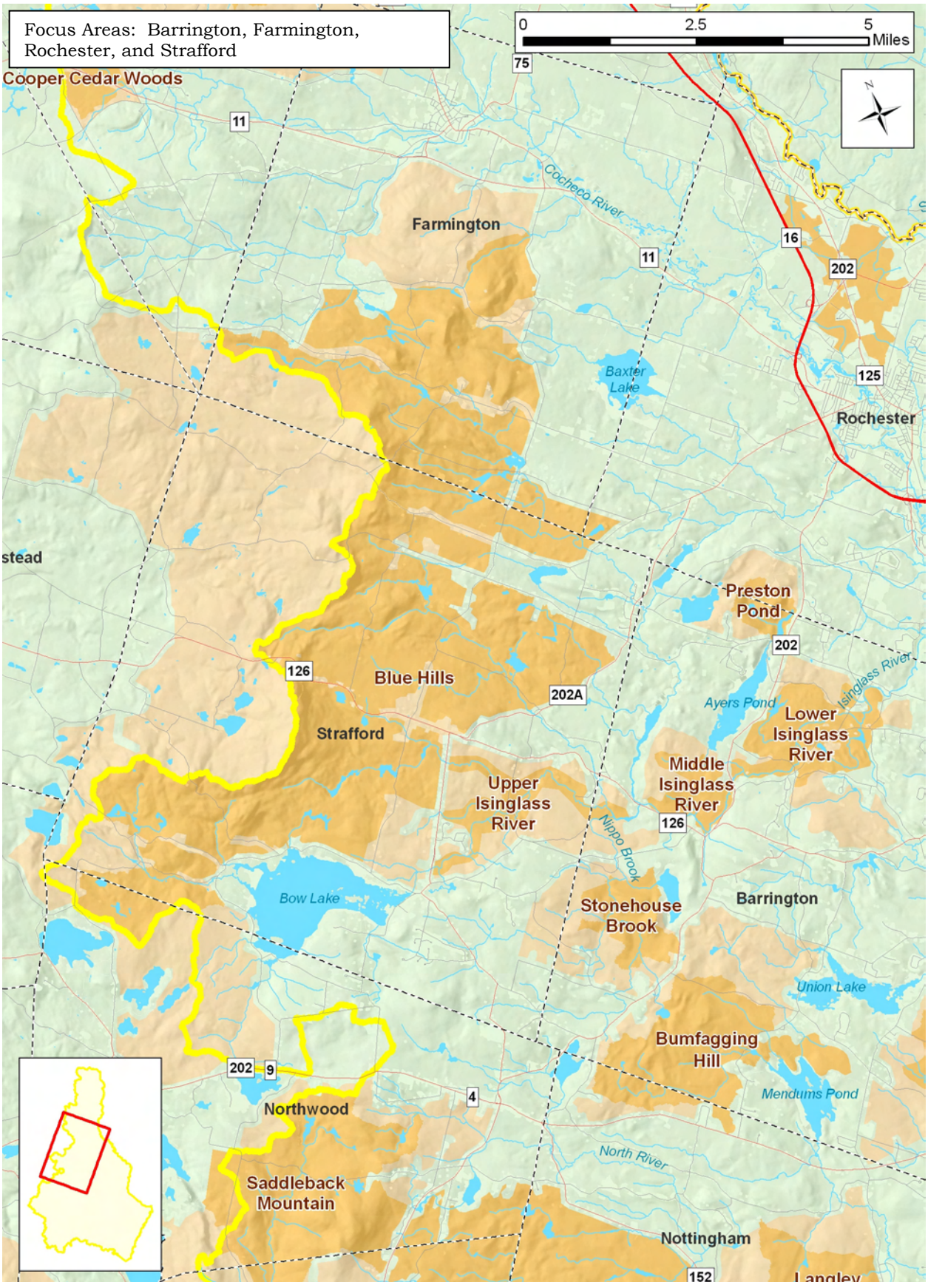
We identified 75 Conservation Focus Areas that, collectively, comprise approximately 190,300 acres, or 36% of the watershed. These areas are considered to be of exceptional significance for living resources and water quality, in the context of the entire coastal watersheds planning area. In this section, we provide a data-driven description of each Conservation Focus Area.

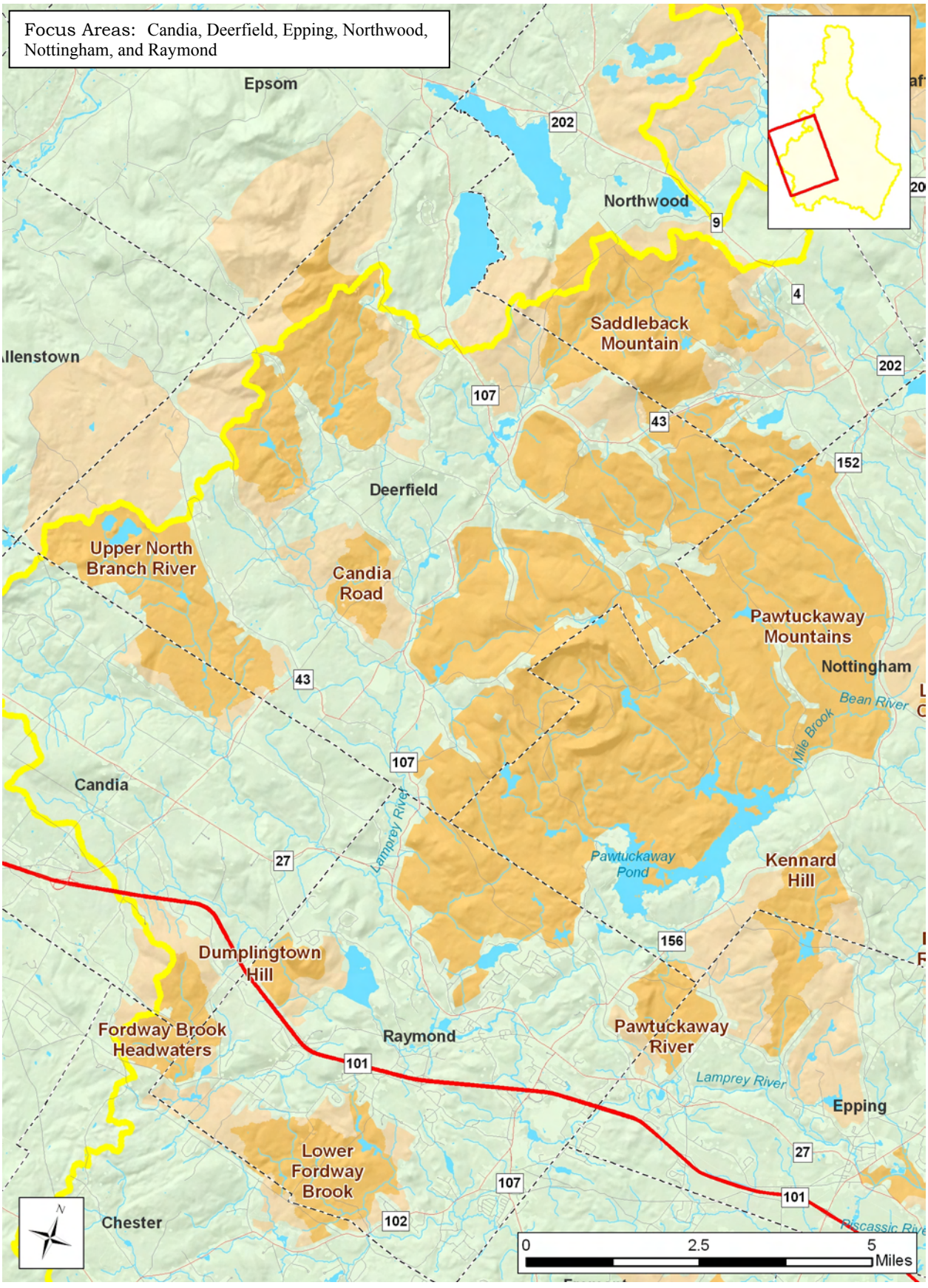
The Conservation Focus Areas (CFAs) are named as follows:

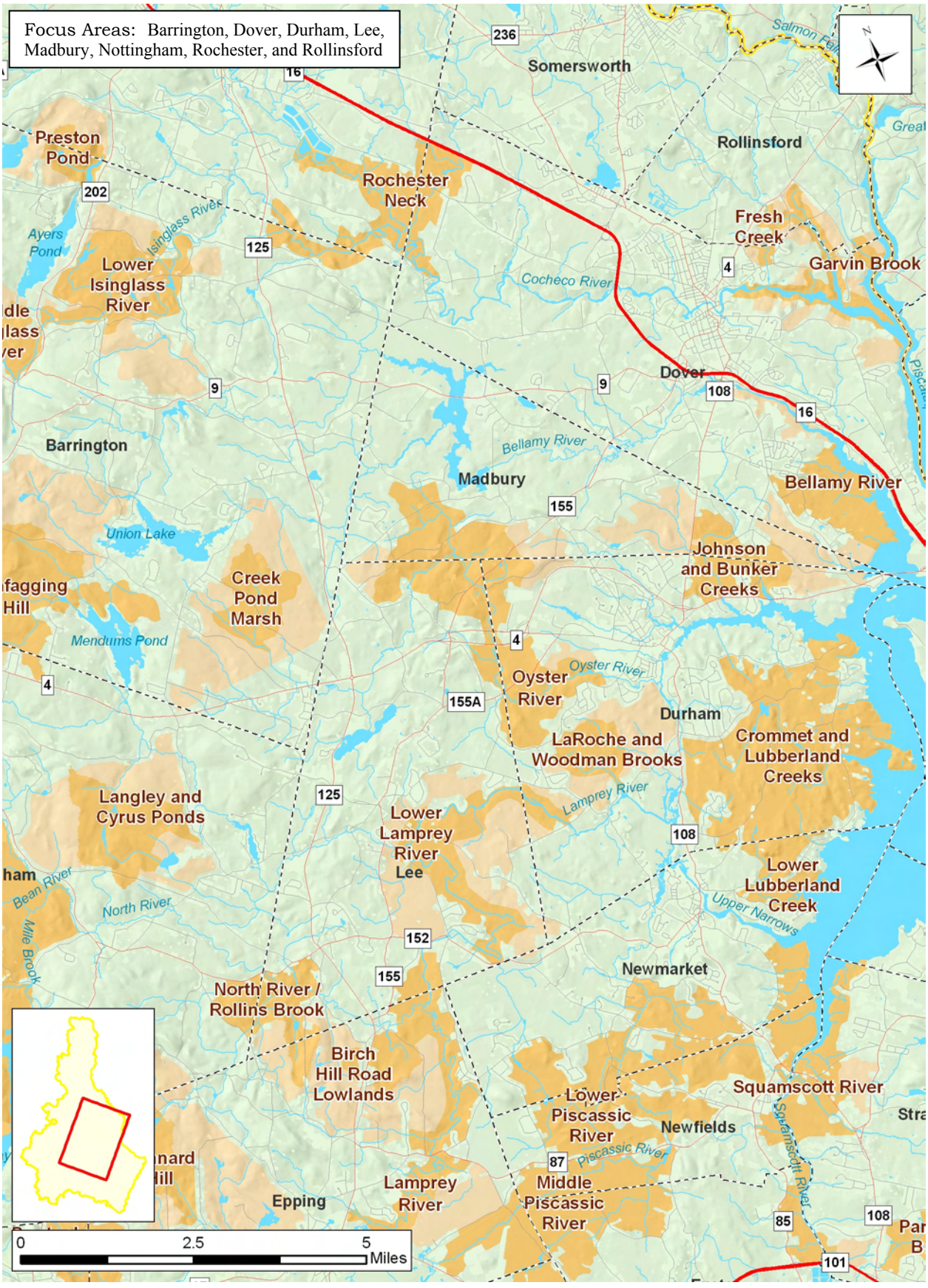
Awcomin Marsh
Bailey Brook
Bayside Point
Bellamy River
Birch Hill Road Lowlands
Bloody and Dudley Brooks
Blue Hills
Bumfagging Hill
Candia Road
Cocheco Headwaters
Coldrain Pond
Cooper Cedar Woods
Creek Pond Marsh
Crommet & Lubberland Creeks
Davis and Oak Hill
Dogtown Swamp
Dumplingtown Hill
Exeter River
Fabyan Point
Fordway Brook Headwaters
Fresh Creek
Garvin Brook
Great Bog
Great Meadows
Hampton Marsh
Hart Brook / Mt. Tenneriffe
Johnson & Bunker Creek
Kennard Hill
Lamprey River
Langley & Cyrus Ponds
LaRoche & Woodman Brooks
Lower Berry's Brook
Lower Cocheco River
Lower Fordway Brook
Lower Isinglass
Lower Lamprey
Lower Little River
Lower Lubberland Creek
Lower Piscassic River
Lower Winnicut River
Middle Isinglass
Middle Little River
Middle Piscassic
Middle Winnicut River
Moose Mountains
Muddy Pond
North River / Rollins Brook
Northeast Pond
Oyster River
Packer Bog
Parkman Brook
Pawtuckaway Mountains
Pawtuckaway River
Pike Brook
Preston Pond
Rochester Heath Bog
Rochester Neck
Saddleback Mountain
Seavey Creek / Fairhill Swamp
Spruce Swamp
Squamscott River
Stonehouse Brook
Taylor River & The Cove
Thurston Pond / Hartford Brook
Union Meadows
Upper Berry's Brook
Upper Exeter
Upper Great Brook
Upper Isinglass
Upper Little River
Upper North Branch River
Upper Taylor River
Upper Winnicut River
Wallis Marsh
Winnicut River / Cornelius Brook

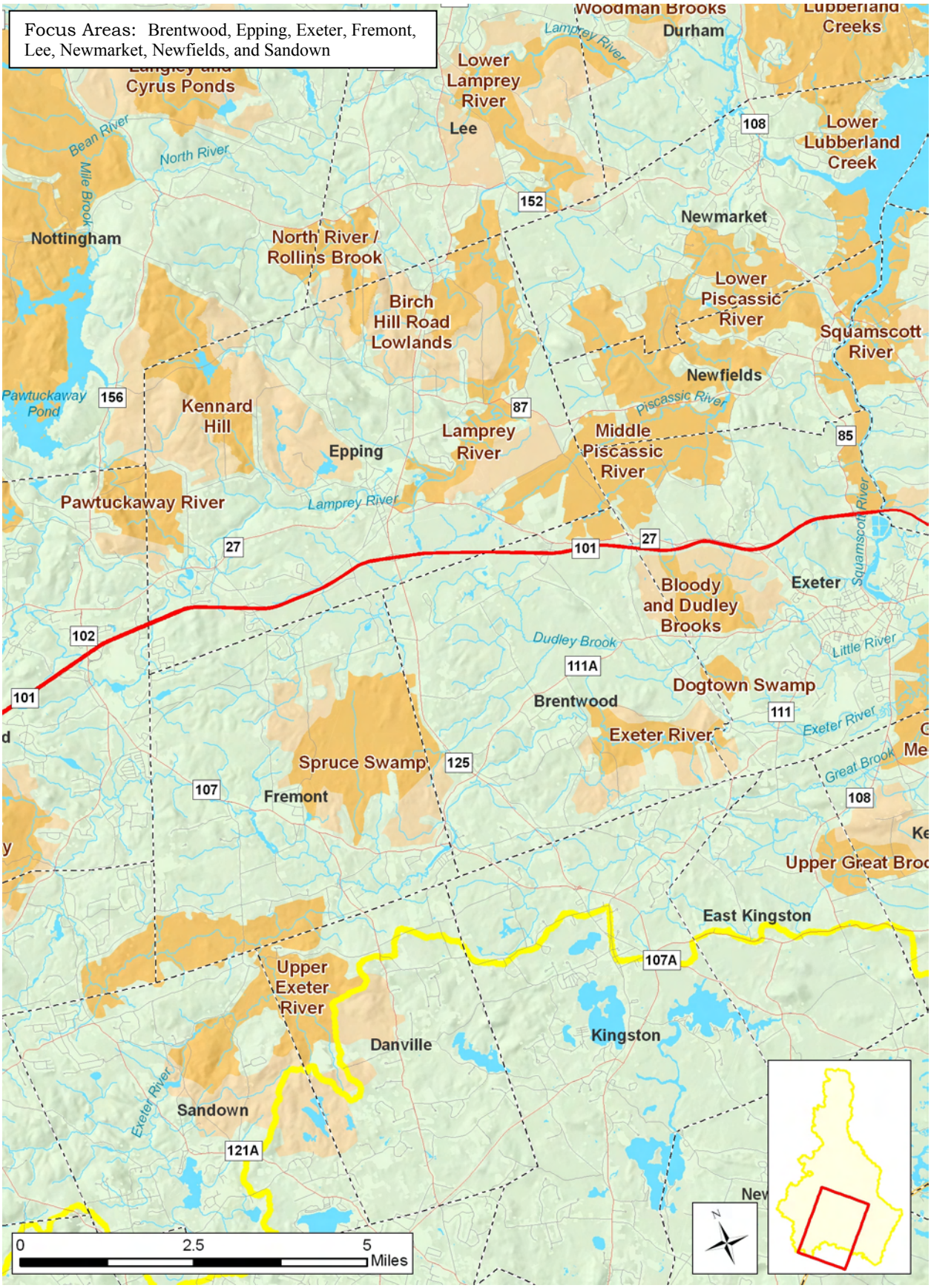
In the following pages, we provide six larger-scale CFA maps, beginning with the northern-most portion of the planning area and then moving south and east. CFA descriptions are then presented in alphabetical order.

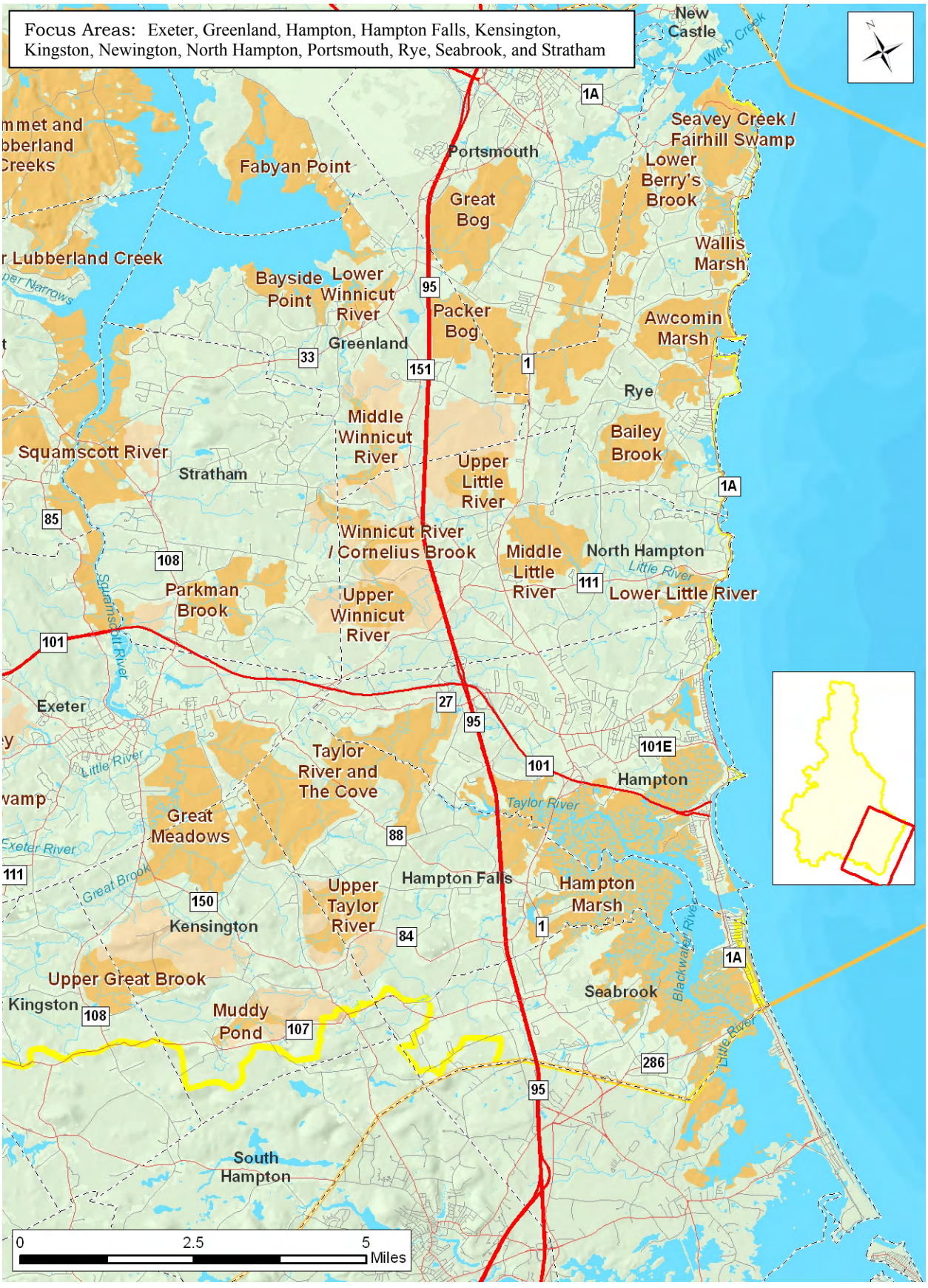

Focus Areas: Brookfield, Middleton, Milton, New Durham. and Wakefield
N
Wolfeboro
Pike Brook
Brookfield
153
Great East Lake
16
Davis and Oak Hill
Wilson Lake
Wakefield
Lovell Lake
109
Moose Mountains
Union Meadows
Middleton
Cocheco Headwaters
New Durham
Coldrain Pond
Hart Brook / Mt. Tenneriffe
Northeast Pond
Sunrise Lake
125
Milton
16
Cooper Cedar Woods
153
Cocheco River
Milton Three Ponds
Salmon Falls River
11
Farmington
75
0
2.5
5
Miles


Focus Areas: Barrington, Farmington, Rochester, and Strafford
0
2.5
5
Miles
Cooper Cedar Woods
Farmington
Cocheco River
Baxter Lake
Rochester
Preston Pond
Blue Hills
Strafford
Upper Isinglass River
Middle Isinglass River
Lower Isinglass River
Ayers Pond
Isinglass River
Nippo Brook
Bow Lake
Stonehouse Brook
Barrington
Union Lake
Bumfagging Hill
Mendums Pond
North River
Northwood
Saddleback Mountain
Nottingham
Langley
75
11
16
202
125
126
202A
9
4
152


Focus Areas: Candia, Deerfield, Epping, Northwood, Nottingham, and Raymond
Epsom
Northwood
Saddleback Mountain
Deerfield
Upper North Branch River
Candia Road
Pawtuckaway Mountains
Nottingham
Bean River
Mile Brook
Candia
Lamprey River
Pawtuckaway Pond
Kennard Hill
Dumplingtown Hill
Fordway Brook Headwaters
Raymond
Pawtuckaway River
Lamprey River
Epping
Lower Fordway Brook
Chester
Piscassic River
202
9
4
107
43
152
27
156
101
102
0
2.5
5
Miles


Focus Areas: Barrington, Dover, Durham, Lee, Madbury, Nottingham, Rochester, and Rollinsford
Somersworth
Rollinsford
Preston Pond
Rochester Neck
Fresh Creek
Garvin Brook
Lower Isinglass River
Isinglass River
Ayers Pond
Cocheco River
Dover
Barrington
Bellamy River
Madbury
Union Lake
Johnson and Bunker Creeks
Creek Pond Marsh
Mendums Pond
Oyster River
Durham
LaRoche and Woodman Brooks
Crommet and Lubberland Creeks
Langley and Cyrus Ponds
Lower Lamprey River
Lamprey River
Lee
Lower Lubberland Creek
Upper Narrows
Bean River
North River
Mile Brook
Newmarket
North River / Rollins Brook
Birch Hill Road Lowlands
Squamscott River
Lower Piscassic River
Newfields
Piscassic River
Middle Piscassic River
Lamprey River
Epping
0
2.5
5
Miles


Focus Areas: Brentwood, Epping, Exeter, Fremont, Lee, Newmarket, Newfields, and Sandown
Woodman Brooks
Durham
Lubberland Creeks
Lamprey River
Lower Lamprey River
Lee
Cyrus Ponds
Bean River
Mile Brook
North River
108
Lower Lubberland Creek
152
Newmarket
Nottingham
North River / Rollins Brook
Lower Piscassic River
Birch Hill Road Lowlands
Squamscott River
Newfields
Pawtuckaway Pond
156
Kennard Hill
87
Piscassic River
Lamprey River
Middle Piscassic River
85
Epping
Pawtuckaway River
Lamprey River
27
101
27
Squamscott River
Exeter
Bloody and Dudley Brooks
102
Dudley Brook
Little River
111A
Dogtown Swamp
101
Brentwood
111
Exeter River
Exeter River
Spruce Swamp
125
Great Brook
107
Fremont
108
Upper Great Broo
East Kingston
107A
Upper Exeter River
Danville
Kingston
Exeter River
Sandown
121A
0
2.5
5
Miles
N


Focus Areas: Exeter, Greenland, Hampton, Hampton Falls, Kensington, Kingston, Newington, North Hampton, Portsmouth, Rye, Seabrook, and Stratham
New Castle
Witch Creek
1A
Seavey Creek / Fairhill Swamp
Lower Berry's Brook
Portsmouth
Fabyan Point
Great Bog
Wallis Marsh
Lubberland Creek
Bayside Point
Lower Winnicut River
95
Packer Bog
Awcomin Marsh
Greenland
33
151
1
Rye
Middle Winnicut River
Bailey Brook
Squamscott River
Stratham
Upper Little River
1A
85
Winnicut River / Cornelius Brook
Middle Little River
North Hampton
Little River
108
111
Lower Little River
Parkman Brook
Upper Winnicut River
Squamscott River
101
Exeter
27
95
Little River
Taylor River and The Cove
101E
101
Hampton
Taylor River
Great Meadows
88
Exeter River
111
Great Brook
Hampton Falls
Hampton Marsh
Upper Taylor River
150
Kensington
84
1
1A
Upper Great Brook
Seabrook
Blackwater River
Kingston
108
Muddy Pond
107
Little River
286
95
South Hampton
0
2.5
5
Miles

Name:	**Awcomin Marsh**	
Location		
Town(s)	Rye	
Watershed (HUC 10)	Coastal Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	890 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	Includes one block of 560 acres	
Aggregated forest blocks	Located within a 10,000 acre aggregated block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	3.4 miles of 1st order, 1.4 miles of 2nd order, and 1.5 miles of 3rd order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	650 feet and 145 acres of undeveloped shoreland (1,000 foot buffer)	
Tidal rivers & streams	Includes many unnamed streams and tidal channels	
Coastal forest blocks	1 block >500 acres	
Tidal wetlands	228.8 acres of saltmarsh	
Important Plant & Wildlife Habitat		
Plants of conservation concern	Acer nigrum (Black Maple, threatened, G5, S2)	
	Eleocharis parvula (Small Spike-rush, threatened, G5, S2)	
Animals of conservation concern	none known	
Significant wildlife habitats	grassland, marsh, peatland	
Exemplary natural communities and systems	Brackish marsh (S2)	
	High salt marsh (S3)	
	Low salt marsh (S3)	
	Saline/brackish intertidal flat (S3)	
	Saline/brackish subtidal channel/bay bottom (S3)	
	Tidal creek bottom (S3)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	137.2 acres	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	Aquarion Water Co of NH (1.2 acres)	
	Rye Water District (49.7 acres)	
Favorable gravel well sites	63.4 acres	
Agricultural Lands		
Prime or statewide importance farm soils	62.7 acres of prime farmland and 95.1 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	28 acres	
Permanently Protected, Managed primarily as working forest (GAP 3)	215 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	86 acres	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	329 acres	
Relationship to other Plans		
Area identified in other planning initiatives	Area includes priorities for conservation in the Rye Master Plan because it contains salt marshes, wetlands, and other water features.	
	High priority area for Seacoast Land Trust based on SPNHF study	

Name:	**Bailey Brook**	
Location		
Town(s)	Rye	
Watershed (HUC 10)	Coastal Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	560 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	Includes one block >500 acres	
Aggregated forest blocks	Located within a 10,000 acre aggregated block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	0.9 miles of 1st order, 2 miles of 2nd order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	none	
Tidal rivers & streams	Includes portions of Bailey Brook and several unnamed streams	
Coastal forest blocks	1 block >500 acres	
Tidal wetlands	none	
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	
Animals of conservation concern	none known	
Significant wildlife habitats	grassland, marsh, peatland	
Exemplary natural communities and systems	Seasonally flooded Atlantic white cedar swamp (S2)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	56.7 acres	
Surface water intakes	none	
Wells	Rye Water District (2 community wells)	
Wellhead protection areas	Aquarion Water Co of NH (47.1 acres)	
	Rye Water District (520 acres)	
Favorable gravel well sites	20.6 acres	
Agricultural Lands		
Prime or statewide importance farm soils	37.4 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	42 acres	
Permanently Protected, Managed primarily as working forest (GAP 3)	12 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	62 acres	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)		
Total conserved	116 acres	
Relationship to other Plans		
Area identified in other planning initiatives	Area includes features that are listed as priorities in the Rye Master Plan because they affect water quality. The features are: forest block, streams, etc.	
	High priority area for Seacoast Land Trust based on SPNHF study	

Name:	**Bayside Point**	
Location		
Town(s)	Greenland	
Watershed (HUC 10)	Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	330 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	Located within a 10,000 acre aggregated block.	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	1.7 miles of 1st order, 0.6 miles of 6th order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	1.8 miles of estuarine shoreline along Great Bay	
Tidal rivers & streams	Includes portions of Foss and Shaw Brooks and one other unnamed stream	
Coastal forest blocks	none	
Tidal wetlands	90.0 acres of saltmarsh	
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	
Animals of conservation concern	*Ammodramus caudacutus* (Saltmarsh Sharp-tailed Sparrow, G4, S3)	
Significant wildlife habitats	grassland, marsh, ridge / talus	
Exemplary natural communities and systems	Brackish marsh (S2)	
	High salt marsh (S3)	
	Mesic Appalachian oak - hickory forest (S2)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	none	
Favorable gravel well sites	none	
Agricultural Lands		
Prime or statewide importance farm soils	132.4 acres of prime farmland and 45.6 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	36 acres	-
Permanently Protected, Managed primarily as working forest (GAP 3)	90 acres	-
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	125 acres	-
Relationship to other Plans		
Area identified in other planning initiatives	Identified in Greenlands Master Plan as specific protection priority. Several features within the Focus Area listed as general priorities in the Master Plan including, but not limited to, scenic veiwshed, water resources, & agricultural heritage.	
	Long-time focus area of the Great Bay Resource Protection Partnership, identifed through A Conservation Plan for the Great Bay Region and Habitat Protection Plan.	
	Very high-scoring community-scale complex based on Seacoast Land Trust and SPNHF study of Greenland.	

Name:	**Bellamy River**	
Location		
Town(s)	Dover	
Watershed (HUC 10)	Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	800 acres	360 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion of a 630 acre block (~90%)	
Aggregated forest blocks	none	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	2.4 miles of 1st order, 0.2 miles of 2nd order	0.4 miles of 1st order, 1.7 miles of 4th order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	2.8 miles of estuarine shoreline along the Bellamy River	5.1 miles of estuarine shoreline along the Bellamy River
Tidal rivers & streams	includes portions of the Bellamy River and several unnamed streams	
Coastal forest blocks	1 block >500 acres	
Tidal wetlands	51.9 acres of saltmarsh	
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	Lilaeopsis chinensis (Eastern Lilaeopsis, threatened, G5, S2
		Samolus valerandi ssp. parviflorus (False Water Pimpernel, threatened, T5, S2
		Symphyotrichum tenuifolium (Large Salt Marsh Aster, endangered, G5, S1
		Eleocharis parvula (Small Spike-rush, threatened, G5, S2
Animals of conservation concern	none known	none known
Significant wildlife habitats	floodplain forest, grassland, marsh	floodplain forest, grassland, marsh
Exemplary natural communities and systems	none known	Low brackish tidal riverbank marsh (S1)
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	706.8 acres	261.3 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	Miss Pattys Daycare (18.9 acres)	none
	Portsmouth Water Works (3 acres)	
Favorable gravel well sites	378 acres	93.6 acres
Agricultural Lands		
Prime or statewide importance farm soils	246.9 acres of prime farmland and 77.6 acres of farmland of statewide importance	73.3 acres of prime farmland and 82.3 acres of farmland of statewide importance
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	7 acres	-
Permanently Protected, Managed primarily as working forest (GAP 3)	512 acres	5 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	519 acres	5 acres
Relationship to other Plans		
Area identified in other planning initiatives	Area described in Dover's Master Plan Conservation Land Inventory as a 'land of interest'. Additionally, the area includes several features outlined in the master plan as having general conservation goals including, but not limited to, agriculture soils,	Same conservation goals as core area.
	Profiles strongly with SRC conservation criteria.	
	Long-time focus area of the Great Bay Resource Protection Partnership, identifed through A Conservation Plan for the Great Bay Region and Habitat Protection Plan.	

Name:	**Birch Hill Rd Lowlands**	
Location		
Town(s)	Epping	
Watershed (HUC 10)	Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	60 acres	840 acres (see also Supporting Natural Landscape for North River / Rollins Brook)
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a small portion (<10%) of a 1,250 acre block indentified in the 2005 Wildlife Action Plan as a Tier 2 priority	
Aggregated forest blocks	Located within a 45,000 acre block	
Freshwater Systems		
High quality stream watersheds	one Tier 4 (57.4 acres)	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	none	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	none known
Significant wildlife habitats	peatland	floodplain forest, grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	none
Favorable gravel well sites	none	none
Agricultural Lands		
Prime or statewide importance farm soils	none	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	-	38.8
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	-	38.8
Relationship to other Plans		
Area identified in other planning initiatives	Area listed in Epping Master Plan as situated near parcel of priority.	
	High scoring area in the Piscassic River Study --TNC & SPNHF	High scoring area in the Piscassic River Study --TNC & SPNHF

Name:	**Bloody and Dudley Brooks**	
Location		
Town(s)	Exeter, Brentwood	
Watershed (HUC 10)	Exeter River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	550 acres	750 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~50%) of a 1,350 acre block identified in the 2005 Wildlife Action Plan as a Tier 1 priority	1,350 (Tier 1)
Aggregated forest blocks	Located within a 5,600 acre block	
Freshwater Systems		
High quality stream watersheds	one Tier 1 (70.1 acres)	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	0.7 miles of 1st order, 1.7 miles of 2nd order, 630 feet of 3rd order, and 1.3 miles of 4th order	1.5 miles of 1st order, 0.4 miles of 2nd order, and 0.5 miles of 4th order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	Ardea herodias (Great Blue Heron (Rookery), G5, S4)	Ardea herodias (Great Blue Heron (Rookery), G5, S4B)
Significant wildlife habitats	grassland, marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	9.3 acres
Surface water intakes	none	none
Wells	none	Northern Springs (1 non-community well)
Wellhead protection areas	Louisburg Circle (88.4 acres)	Louisburg Circle (8.9 acres)
Favorable gravel well sites	none	4.5 acres
Agricultural Lands		
Prime or statewide importance farm soils	27.1 acres of prime farmland and 27.1 acres of farmland of statewide importance	100.5 acres of prime farmland and 82.2 acres of farmland of statewide importance
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	19 acres	<1 acre
Permanently Protected, Managed primarily as working forest (GAP 3)	177 acres	247 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	205 acres	73 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	401 acres	320 acres
Relationship to other Plans		
Area identified in other planning initiatives	Area listed as a specific conservation priority in Exeter master plan. Additionally the features in the core and supporting landscape contain features that are listed under the general protection priorities including, but not limited to, land that protec	Area listed as a specific conservation priority in Exeter master plan. Additionally the features in the core and supporting landscape contain features that are listed under the general protection priorities including, but not limited to, land that protec

Name:	**Blue Hills**	
Location		
Town(s)	Farmington, Northwood, Rochester, Strafford	
Watershed (HUC 10)	Cocheco and Suncook Rivers	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	16,900 acres	19,560 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	Encompasses multiple blocks (wholly or in part) identified as Tier 1 and 2 priority in the 2005 Wildlife Action Plan: 1,080 acres (Tier 2), 2,040 acres (Tier 2), 2,420 acres (Tier 2, ~30%), 5,080 acres (Tier 1, ~60%), 17,270 acres (Tier 1, ~50%)	1,080 (Tier 2), 2,040 (Tier 2), 2,420 (Tier 2), 3,460 (Tier 2), 5,080 (Tier 1), 17,270 (Tier 1)
Aggregated forest blocks	located within a 87,500 acre block	
Freshwater Systems		
High quality stream watersheds	includes 220.72 acres of Tier 1, 3233.29 acres of Tier 2, 2421.26 acres of Tier 3, and 5253.25 acres of Tier 4 HQWS	Contians 8.98 acres of Tier 2, 235.48 acres of Tier 3, and 313.43 acres of Tier 4 HQWS.
Important stream reaches	none	includes .37 Miles of stream that includes good diversity of fish including, but not limited to, American Eel, Bridle Shiner, and Banded Sunfish
Presence/absence of dams (within high quality watersheds)	3 dams within high quality stream watersheds	
River & stream miles	includes 32.1 miles of 1st order, 10.12 miles of 2nd Order, 2.02 miles of 3rd order streams.	includes 11.22 miles of 1st order, 2.07 miles of 2nd Order, .64 miles of 3rd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Isotria medeoloides (Small Whorled Pogonia, threatened, G2, S2)	none known
Animals of conservation concern	Emydoidea blandingii (Blanding's Turtle, G4, S3)	Emydoidea blandingii (Blanding's Turtle, G4, S3)
	Glyptemys insculpta (Wood Turtle, G4, S3)	Glyptemys insculpta (Wood Turtle, G4, S3)
Significant wildlife habitats	grassland, marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	48.4 acres	394.9 acres
Surface water intakes	none	none
Wells	none	Camp Foss (1 non-community well)
		Coe Brown Athletic Field (1 non-community well)
		Collins And Aikman (3 non-community wells)
		NH National Guard (3 non-community wells)
		Strafford Elementary School (1 non-community well)
Wellhead protection areas	Farmington Water Dept (732 acres)	Coe Brown Academy (38.1 acres)
	Strafford Elementary School (58.1 acres)	Coe Brown Smith Hall (45.3 acres)
		Collins And Aikman (120.5 acres)
		Farmington Water Dept (726.1 acres)
		Strafford Elementary School (58.4 acres)
Favorable gravel well sites	2.3 acres	155.2 acres

Agricultural Lands		
Prime or statewide importance farm soils	464.4 acres of prime farmland and 207.5 acres of farmland of statewide importance	739.1 acres of prime farmland and 332.8 acres of farmland of statewide importance
Landscape Connectivity	Moderate to high connectivity value between conservation lands, and forest blocks	Moderate to high connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	1,645 acres	2,514 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	267 acres	1,424 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	1,912 acres	3,938 acres
Relationship to other Plans		
Area identified in other planning initiatives	Identified in Strafford and Farminton master plans as having general conservation priorities because of landscape features located in the CFA including, but not limited to, agricultural lands, unfragmented lands, etc.	Long-time land protection focus area for the Lovejoy Foundation and the New England Forestry Foundation. High scoring in SPNHF SENH study Important linkages identified in BearPaw Regional Greenway Plan.
	Farmington master plan specifically mentions large forest blocks shared with other towns.	
	Land protection focus area for the Lovejoy Foundation and the New England Forestry Foundation. High scoring in SPNHF SENH study. Important linkages identified in Bear Paw Regional Greenway Plan.	
	Very high-scoring landscape-scale complex in the BPRG strategic conservation priorities mission mapping.	Very high-scoring landscape-scale complex in the BPRG strategic conservation priorities mission mapping.

Name:	**Bumfagging Hill**	
Location		
Town(s)	Barrington, Nottingham	
Watershed (HUC 10)	Cocheco and Lamprey Rivers, Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	2,360 acres	1,520 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~50%) of a 4,360 acres block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	4,360 (Tier 2, ~50%)
Aggregated forest blocks	located within a 14,000 acre block	
Freshwater Systems		
High quality stream watersheds	includes 104.5 acres of Tier 2, 1,256.3 acres of Tier 3, 751.0 acres of Tier 4.	includes 17.0 acres of Tier 3, and 10.0 acres of Tier 4
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	includes 4.9 miles of 1st order, 3.0 miles of 2nd order, and .05 miles of 3rd order streams	includes .4 miles of 1st order, and .25 miles of 2nd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Isotria medeoloides (Small Whorled Pogonia, threatened, G2, S2)	none known
Animals of conservation concern	Clemmys guttata (Spotted Turtle, G5, S3)	none known
Significant wildlife habitats	marsh, peatland	marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	Pepperidge Woods (3.9 acres)	none
Favorable gravel well sites	none	none
Agricultural Lands		
Prime or statewide importance farm soils	1.5 acres of prime farmland and 3.2 acres of farmland of statewide importance	17.6 acres of prime farmland and 0.8 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	150 acres	<1 acre
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	48 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	150 acres	48 acres
Relationship to other Plans		
Area identified in other planning initiatives	Area listed in Barrington Master Plan as a specific conservation focus in association with Stonehouse Pond and Mendums Lake watersheds.	Area listed in Barrington Master Plan as a specific conservation focus in association with Stonehouse Pond and Mendums Lake watersheds.
	High-scoring landscape-scale complex in the BPRG strategic conservation priorities mission mapping.	

Name:	**Candia Road**	
Location		
Town(s)	Deerfield	
Watershed (HUC 10)	Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	550 acres	700 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	located with a 55,200 acre block	
Freshwater Systems		
High quality stream watersheds	includes 586.0 acres of Tier 4	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	includes 1.5 miles of 1st order stream	includes 1.5 miles of 1st order, 0.6 miles of 2nd order, 1.2 miles of 3rd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	none known
Significant wildlife habitats	grassland, marsh, peatland	floodplain forest, grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	Inn At Deerfield (1 community well)	none
Wellhead protection areas	Inn At Deerfield (57.9 acres)	Inn At Deerfield (2.3 acres)
Favorable gravel well sites	none	none
Agricultural Lands		
Prime or statewide importance farm soils	13 acres of prime farmland and 36.8 acres of farmland of statewide importance	9.3 acres of prime farmland and 20.4 acres of farmland of statewide importance
Landscape Connectivity	Moderate to high connectivity value between conservation lands, and forest blocks	Moderate to high connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	-	10 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	-	10 acres
Relationship to other Plans		
Area identified in other planning initiatives	No specific mention in Deerfield master plan but covered under general land protection priorities.	No specific mention in Deerfield master plan but covered under general land protection priorities.
	A part of one of four focus areas in the SPNHF SENH study.	A part of one of four focus areas in the SPNHF SENH study.

Name:	**Cocheco Headwaters**	
Location		
Town(s)	Middleton, New Durham	
Watershed (HUC 10)	Cocheco River and Lake Winnepesaukee Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,690 acres	11,070 acres (see also Supporting Natural Landscape for Coldrain Pond and Cooper Cedar Woods)
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~30%) of a 2,820 acre block; a portion (~25%) of a 7,010 acre block identified as a Tier 2 priority block in the 2005 Wildlife Action Plan	2,820 acres, 7,010 acres (Tier 2)
Aggregated forest blocks	located within a 69,800 acre block	
Freshwater Systems		
High quality stream watersheds	includes 926.6 acres of Tier 2, 812.9 acres of Tier 3	includes 438.4 acres of Tier 3 and 3.5 acres of Tier 2
Important stream reaches	none	includes 1.1 miles of Important Stream Reach with High Bridle Shiner, possibly an isolated population (impass barrier)
Presence/absence of dams (within high quality watersheds)	2 dams	none
River & stream miles	includes 5.5 miles of 1st order, 6.0 miles of 2nd order, 0.7 miles of 3rd order, and 0.1 miles of 4th order	includes 14.6 miles of 1st order, 3.3 miles of 2nd order, and 2.1 miles of 4th order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	Emydoidea blandingii (Blanding's Turtle, G4, S3)
		Gavia immer (Common Loon, threatened, G5, S3B)
Significant wildlife habitats	marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	557.0 acres
Surface water intakes	none	none
Wells	none	Birch Hill Camp/Cafeteria (1 non-community well)
		Birch Hill Camp/Lodge (1 non-community well)
		Lions Camp Pride (1 non-community well)
		Sportos Family Restaurant (1 non-community well)
Wellhead protection areas	C W C /Sunrise Estates (30 acres)	C W C /Sunrise Estates (635.3 acres)
		New Durham Elementary School (35.5 acres)
Favorable gravel well sites	none	250.9 acres

Agricultural Lands		
Prime or statewide importance farm soils	9.2 acres of farmland of statewide importance	54.5 acres of prime farmland and 98.6 acres of farmland of statewide importance
Landscape Connectivity	Moderate to high connectivity value between conservation lands, and forest blocks	Moderate to high connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	174 acres	219 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	69 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	174 acres	288 acres
Relationship to other Plans		
Area identified in other planning initiatives	Identified in the Cocheco River Watershed Coalition plan as an area of conservation priority. Additionally, this area has features of general conservation concern listed in the Milton and Middleton Master Plans.	

Name:	**Coldrain Pond**	
Location		
Town(s)	New Durham	
Watershed (HUC 10)	Cocheco River and Lake Winnepesaukee Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	910 acres	11,070 acres (See also Supporting Natural Landscape for Cocheco Headwaters and Cooper Cedar Woods
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~25%) of a 7,010 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	2,820 acres, 7,010 acres (Tier 2)
Aggregated forest blocks	located within a 69,800 acre block	
Freshwater Systems		
High quality stream watersheds	includes 910.5 acres of Tier 3	includes 438.4 acres of Tier 3 and 3.5 acres of Tier 2
Important stream reaches	none	includes 1.1 miles of Important Stream Reach with High Bridle Shiner, possibly an isolated population (impass barrier)
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	includes 2.4 miles of 1st order streams	includes 14.6 miles of 1st order, 3.3 miles of 2nd order, and 2.1 miles of 4th order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	Emydoidea blandingii (Blanding's Turtle, G4, S3)
		Gavia immer (Common Loon, threatened, G5, S3B)
Significant wildlife habitats	marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	557.0 acres
Surface water intakes	none	none
Wells	none	Birch Hill Camp/Cafeteria (1 non-community well)
		Birch Hill Camp/Lodge (1 non-community well)
		Lions Camp Pride (1 non-community well)
		Sportos Family Restaurant (1 non-community well)
Wellhead protection areas	none	C W C /Sunrise Estates (635.3 acres)
		New Durham Elementary School (35.5 acres)
Favorable gravel well sites	none	250.9 acres
Agricultural Lands		
Prime or statewide importance farm soils	none	54.5 acres of prime farmland and 98.6 acres of farmland of statewide importance

Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	61 acres	219 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	69 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	61 acres	288 acres
Relationship to other Plans		
Area identified in other planning initiatives		

Name:	**Cooper Cedar Woods**	
Location		
Town(s)	New Durham	
Watershed (HUC 10)	Cocheco River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	380 acres	11,070 acres (see also Supporting Natural Landscape for Cocheco Headwaters and Coldrain Pond
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	2,820 acres, 7,010 acres (identified as a Tier 2 priority in the 2005 Wildlife Action Plan)
Aggregated forest blocks	located within a 69,800 acre block	
Freshwater Systems		
High quality stream watersheds	none	includes 438.4 acres of Tier 3 and 3.5 acres of Tier 2
Important stream reaches	none	includes 1.1 miles of Important Stream Reach with High Bridle Shiner, possibly an isolated population (impass barrier)
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	includes .6 miles of 1st order, 1.1 miles of 2nd order streams	includes 14.6 miles of 1st order, 3.3 miles of 2nd order, and 2.1 miles of 4th order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	Emydoidea blandingii (Blanding's Turtle, G4, S3)	Emydoidea blandingii (Blanding's Turtle, G4, S3)
		Gavia immer (Common Loon, threatened, G5, S3B)
Significant wildlife habitats	marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	Inland Atlantic white cedar swamp (S1)	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	326.6 acres	557.0 acres
Surface water intakes	none	none
Wells	none	Birch Hill Camp/Cafeteria (1 non-community well)
		Birch Hill Camp/Lodge (1 non-community well)
		Lions Camp Pride (1 non-community well)
		Sportos Family Restaurant (1 non-community well)
Wellhead protection areas	New Durham Elementary School (3.9 acres)	C W C /Sunrise Estates (635.3 acres)
		New Durham Elementary School (35.5 acres)
Favorable gravel well sites	27.5 acres	250.9 acres
Agricultural Lands		
Prime or statewide importance farm soils	none	54.5 acres of prime farmland and 98.6 acres of farmland of statewide importance

Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	131 acres	219 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	69 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	131 acres	288 acres
Relationship to other Plans		
Area identified in other planning initiatives		

Name:	**Creek Pond Marsh**	
Location		
Town(s)	Barrington	
Watershed (HUC 10)	Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	670 acres	1,540 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~40%) of a 2,300 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	2,300 acres (Tier 2)
Aggregated forest blocks	located within a 14,000 acre block	
Freshwater Systems		
High quality stream watersheds	includes 417.5 Acres of Tier 1	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	includes 1.9 miles of 1st order, 0.8 miles of 2nd order	includes 3.4 miles of 1st order, and 0.7 miles of second order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	Glyptemys insculpta (Wood Turtle, G4, S3)
Significant wildlife habitats	marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	Emerald Acres (70.3 acres)	Barrington Oaks (85.6 acres)
		Emerald Acres (288.6 acres)
		Pepperidge Woods (399 acres)
Favorable gravel well sites	none	none
Agricultural Lands		
Prime or statewide importance farm soils	none	11.7 acres of prime farmland and 5.9 acres of farmland of statewide importance
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	Moderate to High connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	589 acres	668 acres
Permanently Protected, Managed primarily as working forest (GAP 3)	9 acres	248 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	598 acres	916 acres
Relationship to other Plans		
Area identified in other planning initiatives	Samuel A. Tamposi Water Supply Reserve resource inventory and management plan	

Name:	**Crommet and Lubberland Creeks**	
Location		
Town(s)	Durham, Newmarket	
Watershed (HUC 10)	Great Bay Drainage and Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	3,800 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	580 acres, 650 acres, and a 1,390 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	
Aggregated forest blocks	located within a 6,500 acre block	
Freshwater Systems		
High quality stream watersheds	includes 500.7 acres of Tier 2, 217.1 acres of Tier 2, and 402.9 acres of Tier 3	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	includes 9.2 miles of 1st order, 0.2 miles of 2nd order, and 0.6 miles of 6th order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	7.1 miles of estuarine shoreline along Great Bay	
Tidal rivers & streams	includes portions of Crommet and Lubberland Creeks and Horsehide Brook as well as numerous unnamed streams	
Coastal forest blocks	2 blocks >500 acres and 1 block > 1000 acres	
Tidal wetlands	55.3 acres of saltmarsh	
Important Plant & Wildlife Habitat		
Plants of conservation concern	Acer nigrum (Black Maple, threatened, G5, S2)	
	Carex cristatella (Small-crested Sedge, threatened, G5, S2)	
	Sparganium eurycarpum (Large Bur-reed, threatened, G5, S2)	
Animals of conservation concern	Ardea herodias (Great Blue Heron (Rookery), G5, S4)	
	Clemmys guttata (Spotted Turtle, G5, S3)	
	Emydoidea blandingii (Blanding's Turtle, G4, S3)	
	Erynnis lucilius (Columbine Duskywing, G4, S1)	
	Glyptemys insculpta (Wood Turtle, G4, S3)	
	Heterodon platirhinos (Eastern Hognose Snake, threatened, G5, S3)	
	Ixobrychus exilis (Least Bittern, G5, S1)	
	Pandion haliaetus (Osprey, threatened, G5, S2)	
	Vermivora chrysoptera (Golden-winged Warbler, G4, S2)	
	Williamsonia lintneri (Ringed Bog Haunter, endangered, G3, S1)	
Significant wildlife habitats	coastal island, floodplain forest, grassland, marsh, peatland	
Exemplary natural communities and systems	Rich Appalachian oak rocky woods (S1)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	Stagecoach Farms (553.9 acres)	
	Wade Farm Condos (5.7 acres)	
Favorable gravel well sites	none	
Agricultural Lands		
Prime or statewide importance farm soils	231.1 acres of prime farmland and 49.4 acres of farmland of statewide importance	

Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	906 acres	
Permanently Protected, Managed primarily as working forest (GAP 3)	911 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	117 acres	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	1,934 acres	
Relationship to other Plans		
Area identified in other planning initiatives	Mentioned in Durham master plan for rural service area greenway priority.	
	Long-time focus area of the Great Bay Resource Protection Partnership, identifed through A Conservation Plan for the Great Bay Region and Habitat Protection Plan.	

Name:	**Davis and Oak Hill**	
Location		
Town(s)	Wakefield	
Watershed (HUC 10)	Salmon Falls River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,340 acres	8,180 acres (see also Supporting Natural Landscape for Union Meadows)
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	two blocks at 1,150 acres and 1,480 acres, both identified as Tier 1 priorities in the 2005 Wildlife Action Plan
Aggregated forest blocks	located within a 29,700 acre block	
Freshwater Systems		
High quality stream watersheds	includes 486.86 acres of Tier 2, 534.71 acres of Tier 3, and 93.12 acres of Tier 4 watershed	includes 224.2 acres of Tier 2, 766.43 acres of Tier 3, and 4173.71 acres of Tier 4 HQWS
Important stream reaches	none	An important stream reach does not exist within the boundaries, rather on the periphery over 14 miles of stream that is considered the only water body in the conservation plan area to contain lake trout (an indicator species of cold, clear, clean, and deep lake)
Presence/absence of dams (within high quality watersheds)	none	4 dams within high quality stream watersheds
River & stream miles	includes 3.39 miles of 1st order, and .97 miles of 2nd order	includes 9.7 miles of 1st order, 3.85 miles of 2nd order, 6.5 miles of 3rd order, and .86 miles of 4th order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	Gavia immer (Common Loon, threatened, G5, S3)	Emydoidea blandingii (Blanding's Turtle, G4, S3)
		Gavia immer (Common Loon, threatened, G5, S3B)
		Notropis bifrenatus (Bridled Shiner, G3, S3)
Significant wildlife habitats	marsh, peatland	floodplain forest, grassland, marsh, peatland, pitch pine barren
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	184.4 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	none
Favorable gravel well sites	none	59.9 acres
Agricultural Lands		
Prime or statewide importance farm soils	3.9 acres of farmland of statewide importance	231.1 acres of prime farmland and 205 acres of farmland of statewide importance

Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	39 acres	924 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	39 acres	924 acres
Relationship to other Plans		
Area identified in other planning initiatives	General linkage to natural resouces and features mentioned in Wakefield master plan.	General linkage to natural resouces and features mentioned in Wakefield master plan.

Name:	**Dogtown Swamp**	
Location		
Town(s)	Brentwood, Exeter	
Watershed (HUC 10)	Exeter River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	160 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~60%) of a 660 acre block	
Aggregated forest blocks	located within a 17,900 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	includes 0.9 miles of 1st order streams	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	
Animals of conservation concern	none known	
Significant wildlife habitats	grassland, marsh, peatland	
Exemplary natural communities and systems	Swamp white oak basin swamp (S1)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	27.4 acres	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	none	
Favorable gravel well sites	9.4 acres	
Agricultural Lands		
Prime or statewide importance farm soils	32.7 acres of prime farmland and 17.5 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	42 acres	-
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	42 acres	-
Relationship to other Plans		
Area identified in other planning initiatives	No specific mention in Exeter master plan, but covered under detailed land protection priority goal statements.	

Name:	**Dumplingtown Hill**	
Location		
Town(s)	Raymond	
Watershed (HUC 10)	Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	360 acres	310 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	none
Aggregated forest blocks	located within a 6,100 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	includes 0.4 miles of 1st order, 0.8 miles of 2nd order	includes 0.6 miles of 1st order, 0.5 miles of 3rd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Desmodium rotundifolium (Prostrate Tick Trefoil, threatened, G5, S2)	none known
Animals of conservation concern	Cistothorus platensis (Sedge Wren, endangered, G5, S1)	none known
	Emydoidea blandingii (Blanding's Turtle, G4, S3)	
Significant wildlife habitats	marsh, peatland, ridge / talus	marsh, peatland
Exemplary natural communities and systems	Appalachian oak - pine rocky ridge (S3)	none known
	Chestnut oak forest/woodland (S1)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	Westgate Estates (4.8 acres)	Westgate Estates (9 acres)
Favorable gravel well sites	none	none
Agricultural Lands		
Prime or statewide importance farm soils	0.2 acres of prime farmland and	none
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	5 acres	3.4 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	114 acres	161 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	119 acres	164 acres
Relationship to other Plans		
Area identified in other planning initiatives	High-scoring community-scale complex in the BPRG strategic conservation priorities mission mapping.	High-scoring community-scale complex in the BPRG strategic conservation priorities mission mapping.

Name:	**Exeter River**	
Location		
Town(s)	Brentwood, Exeter	
Watershed (HUC 10)	Exeter River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	620 acres	670 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~30%) of a 2,000 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	2,000 (Tier 2, ~60%)
Aggregated forest blocks	located within a 17,900 acre block	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	N/A	none
River & stream miles	includes 0.5 miles of 1st order, 0.9 miles of 3rd order, 2.8 miles of 5th order	includes 1.0 mile of 1st order, 0.2 miles of 2nd order, 0.7 miles of 3rd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	none known
Significant wildlife habitats	floodplain forest, grassland, marsh	floodplain forest, grassland, marsh, peatland
Exemplary natural communities and systems	Red maple floodplain forest (S2)	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	33.0 acres	45.4 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	none
Favorable gravel well sites	20.7 acres	33.3 acres
Agricultural Lands		
Prime or statewide importance farm soils	60.2 acres of prime farmland and 33.7 acres of farmland of statewide importance	97.5 acres of prime farmland and 105.5 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
	High potential connectivity along watercourse.	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	2 acres
Permanently Protected, Managed primarily as working forest (GAP 3)	289 acres	207 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	39 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	5 acres	-
Total conserved	294 acres	248 acres
Relationship to other Plans		
Area identified in other planning initiatives	Exeter River specifically cited as conservation priority in Brentwood master plan.	Exeter River specifically cited as conservation priority in Brentwood master plan.
	Focus of the Exeter River Local Advisory Committee.	
	Long-time focus area of the Great Bay Resource Protection Partnership and multiple TNC projects.	

Name:	**Fabyan Point**	
Location		
Town(s)	Newington, Greenland	
Watershed (HUC 10)	Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,070 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	located within a 10,000 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	1.4 miles of 1st order, 0.8 miles of 2nd order, 0.6 miles of 3rd order, 0.3 miles of 6th order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	5 miles of estuarine shoreline along Great Bay	
Tidal rivers & streams	includes portions of Peverly and Pickering Brooks and several small, unnamed streams	
Coastal forest blocks	none	
Tidal wetlands	104.9 acres of saltmarsh	
Important Plant & Wildlife Habitat		
Plants of conservation concern	Sparganium eurycarpum (Large Bur-reed, threatened, G5, S2)	
Animals of conservation concern	Ammodramus caudacutus (Saltmarsh Sharp-tailed Sparrow, G4, S3)	
	Pandion haliaetus (Osprey, threatened, G5, S2)	
	Progne subis (Purple Martin, endangered, G5, S1)	
Significant wildlife habitats	grassland, marsh, ridge / talus	
Exemplary natural communities and systems	Mesic Appalachian oak - hickory forest (S2)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	115.4 acres	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	Pease Trade Port (67.6 acres)	
	Portsmouth Water Works (67.6 acres)	
Favorable gravel well sites	none	
Agricultural Lands		
Prime or statewide importance farm soils	282.1 acres of prime farmland and 300.5 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	689 acres	
Permanently Protected, Managed primarily as working forest (GAP 3)	34 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	35 acres	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	30 acres	
Total conserved	788 acres	
Relationship to other Plans		
Area identified in other planning initiatives	No specific mention of Fabyan Point in Newington master plan but adjacent to Pease Tradeport/Pease Natural Area.	
	Specifically cited as a priority conservation area in SLT regional plan (as Great Bay, Newington).	

Name:	**Fordway Brook Headwaters**	
Location		
Town(s)	Candia, Chester, Raymond	
Watershed (HUC 10)	Cohas Brook, Exeter and Lamprey Rivers	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	940 acres	750 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	520 acres, a portion (~40%) of a 920 acre block	520 acres, 920 acres
Aggregated forest blocks	located within a 20,800 acre block	
Freshwater Systems		
High quality stream watersheds	includes 935.4 acres of Tier 4	includes 30.7 acres of Tier 4
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	includes 2.9 miles of 1st order, and 0.2 miles of 2nd order	includes 1.3 miles of 1st order, 0.3 miles of 2nd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	none known
Significant wildlife habitats	grassland, marsh, peatland	marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	none
Favorable gravel well sites	none	none
Agricultural Lands		
Prime or statewide importance farm soils	0.7 acres of prime farmland and	15.6 acres of prime farmland and 0.4 acres of farmland of statewide importance
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	97 acres	-
Not permanently protected, but in public or institutional ownership (GAP 3a)	20 acres	53 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	117 acres	53 acres
Relationship to other Plans		
Area identified in other planning initiatives	Although there appears to be map and lot numbering discrepancies between the master plan document and the town tax map, this area is listed as a conservation priority for the Town of Raymond	Although there appears to be map and lot numbering discrepancies between the master plan document and the town tax map, this area is listed as a conservation priority for the Town of Raymond

Name:	**Fresh Creek**	
Location		
Town(s)	Dover, Rollinsford	
Watershed (HUC 10)	Cocheco River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	330 acres	230 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~50%) of a 550 acre block	550 acres
Aggregated forest blocks	none	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	1.1 miles of 1st order, 0.3 miles of 2nd order, 1.7 miles of 3rd order	none
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	none	
Tidal rivers & streams	includes portions of Emerson Brook, Fresh Creek, and several unnamed streams	
Coastal forest blocks	1 block >500acres	1 block >500 acres
Tidal wetlands	none	
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	Sylvilagus transitionalis (New England Cottontail, G4, S3)
Significant wildlife habitats	grassland, marsh	grassland, marsh
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	201.8 acres	141.6 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	none
Favorable gravel well sites	72.9 acres	55.5 acres
Agricultural Lands		
Prime or statewide importance farm soils	39.5 acres of prime farmland and 96.4 acres of farmland of statewide importance	49 acres of prime farmland and 35.4 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	-	-
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	-	-
Relationship to other Plans		
Area identified in other planning initiatives	Profiles strongly with SRC conservation criteria.	
	Identified by The Nature Conservancy in Ecological Inventory of the Cocheco River Watershed.	

Name:	**Garvin Brook**	
Location		
Town(s)	Dover, Rollinsford	
Watershed (HUC 10)	Salmon Falls River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	80 acres	380 acres (See also Supprting Natural Landscape for Lower Cocheco River)
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	none
Aggregated forest blocks	none	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	N/A	none
River & stream miles	0.5 miles of 1st order	none
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	~2,800 feet of estuarine shoreline along the Cocheco River	2,970 feet along the Cocheco River
Tidal rivers & streams	includes a portion of Garvin Brook	includes portions of Fresh Creek and the Cocheco River
Coastal forest blocks	none	none
Tidal wetlands	9.2 acres of saltmarsh	3.0 acres of saltmarsh
Important Plant & Wildlife Habitat		
Plants of conservation concern	Eleocharis parvula (Small Spike-rush, threatened, G5, S2)	Platanthera flava var. herbiola (Pale Green Orchid, threatened, T4, S2
		Scirpus pendulus (Lined Bulrush, endangered, G5, S1
Animals of conservation concern	none known	none known
Significant wildlife habitats	floodplain forest, marsh	floodplain forest, grassland, peatland
Exemplary natural communities and systems	High brackish tidal riverbank marsh (S1)	none known
	Low brackish tidal riverbank marsh (S1)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	81.6 acres	318.7 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	none
Favorable gravel well sites	32.6 acres	202.3 acres
Agricultural Lands		
Prime or statewide importance farm soils	none	82.3 acres of prime farmland and 41.3 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	24 acres
Permanently Protected, Managed primarily as working forest (GAP 3)	-	23 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	19 acres	28 acres
Total conserved	19 acres	75 acres
Relationship to other Plans		
Area identified in other planning initiatives	No specific mention in Dover master plan but many associated resource values listed.	No specific mention in Dover master plan but many associated resource values listed.
	Profiles strongly with SRC conservation criteria.	
	Identified by The Nature Conservancy in Ecological Inventory of the Cocheco River Watershed.	

Name:	**Great Bog**	
Location		
Town(s)	Portsmouth	
Watershed (HUC 10)	Coastal and Great Bay Drainages	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	990 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	located within a 5,000 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	3.6 miles of 1st order, 1 mile of 2nd order, 0.9 miles of 3rd order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline		
Tidal rivers & streams	includes Pickering Brook, Sagamore Creek, and several unnamed streams	
Coastal forest blocks	none	
Tidal wetlands	none	
Important Plant & Wildlife Habitat		
Plants of conservation concern	Lysimachia thyrsiflora (Tufted Loosestrife, threatened, G5, S2)	
Animals of conservation concern	none known	
Significant wildlife habitats	grassland, marsh, peatland	
Exemplary natural communities and systems	Herbaceous seepage marsh (S3)	
	Red maple - sensitive fern swamp (S2)	
	Swamp white oak basin swamp (S1)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	105.8 acres	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	High Liner Foods Inc /Usa (32.1 acres)	
	Pease Trade Port (482.7 acres)	
	Portsmouth Water Works (482.7 acres)	
Favorable gravel well sites	42.1 acres	
Agricultural Lands		
Prime or statewide importance farm soils	40.5 acres of prime farmland and 147 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	
Permanently Protected, Managed primarily as working forest (GAP 3)	226.7	
Not permanently protected, but in public or institutional ownership (GAP 3a)	115.1	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	48.4	
Total conserved	390.2	
Relationship to other Plans		
Area identified in other planning initiatives	Specifically identified in the Portsmouth and Greenland master plans as a priority conservation area.	
	Specifically cited as a priority conservation area in SLT regional plan.	
	Long-time focus area of the Great Bay Resource Protection Partnership, identifed through A Conservation Plan for the Great Bay Region and Habitat Protection Plan.	

Name:	**Great Meadows**	
Location		
Town(s)	Exeter, Kensington	
Watershed (HUC 10)	Exeter River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,400 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	one 1,300 acre block identified as a Tier 1 priority in the 2005 Wildlife Action Plan	
Aggregated forest blocks	located within a 11,800 acre block	
Freshwater Systems		
High quality stream watersheds	one Tier 2 (305.3 acres), one Tier 4 (132.4 acres)	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	includes 4.72 miles of 1st order, .95 miles of 2nd order, 2.58 miles of 3rd order, .65 miles of 4th order, and 2.67 miles of 5th order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Mikania scandens (Climbing Hempweed, threatened, G5, S2)	
	Sparganium eurycarpum (Large Bur-reed, threatened, G5, S2)	
Animals of conservation concern	Ardea herodias (Great Blue Heron (Rookery), G5, S4)	
	Ixobrychus exilis (Least Bittern, G5, S1)	
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland	
Exemplary natural communities and systems	Semi-rich Appalachian oak - sugar maple forest (S2)	
	Swamp white oak floodplain forest (S1)	
	Tall graminoid emergent marsh (S4)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	407.1 acres	
Surface water intakes	none	
Wells	Exeter Elms Family Campground (1 non-community well)	
Wellhead protection areas	Exeter Water Dept (744.7 acres)	
	Lindenshire Mobile Home Park (36.7 acres)	
	Unitil Energy Systems Inc (38.4 acres)	
Favorable gravel well sites	142.9 acres	
Agricultural Lands		
Prime or statewide importance farm soils	321.2 acres of prime farmland and 40.8 acres of farmland of statewide importance	
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	<1 acre	
Permanently Protected, Managed primarily as working forest (GAP 3)	107 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	673 acres	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	34 acres	
Total conserved	814 acres	
Relationship to other Plans		
Area identified in other planning initiatives	Not specifically mentioned in Exeter master plan but would fall under detailed land protection priority goal statements.	
	High scoring focus area in SPNHF SENH study.	
	Focus of the Exeter River Local Advisory Committee.	
	Long-time focus area of the Great Bay Resource Protection Partnership, identifed through A Conservation Plan for the Great Bay Region and Habitat Protection Plan.	

Name:	**Hampton Marsh**	
Location		
Town(s)	Hampton, Hampton Falls, Seabrook, and Salisbury, MA	
Watershed (HUC 10)	Coastal Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	7,490 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	one 920 acre block and on 1,750 acre block identified in the 2005 Wildlife Action Plan as a Tier 2 priority block	
Aggregated forest blocks	located at the edge of a 4,100 acre block	
Freshwater Systems		
High quality stream watersheds	includes 586.6 acres of Tier 1	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	none	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	2.5 miles of coastal shoreline; 2.2 miles of estuarine shoreline on the Hampton Estuary; 165 acres of undeveloped shoreland (1,000 foot buffer)	
Tidal rivers & streams	portions of several major rivers including the Hampton, Hampton Falls, Taylor, Brown's, and Blackwater Rivers; portions of numerous streams and tidal channels including Cain's Brook, Dead Creek Drakes River, Farm Brook, Hunts Island Creek, Kenney Brook, Landing Brook, Little River, Mill Creek, Sheperd Brook, and Tide Mill Creek	
Coastal forest blocks	1 block >500 acres and 1 block >1000 acres	
Tidal wetlands	3,310.8 acres of saltmarsh	
Important Plant & Wildlife Habitat		
Plants of conservation concern	Agalinis maritima (Salt-marsh Gerardia, threatened, G5, S2)	
	Arabis missouriensis (Missouri Rock Cress, threatened, G5, S2)	
	Aristida tuberculosa (Sea-beach Needle Grass, endangered, G5, S1)	
	Artemisia campestris ssp. caudata (Tall Wormwood, threatened, T5, S2)	
	Cirsium horridulum (Yellow Thistle, endangered, G5, S1)	
	Cyperus grayi (Gray's Umbrella Sedge, endangered, G5, S1)	
	Eleocharis parvula (Small Spike-rush, threatened, G5, S2)	
	Eleocharis uniglumis (Salt-loving Spike-rush, threatened, G5, S2)	
	Hudsonia tomentosa var. tomentosa (Hairy Hudsonia, threatened, T5, not ranked in NH)	
	Iris prismatica (Slender Blue Flag, threatened, G4, S2)	
Animals of conservation concern	Ammodramus caudacutus (Saltmarsh Sharp-tailed Sparrow, G4, S3)	
	Ammodramus maritimus (Seaside Sparrow, G4, S1)	
	Catoptrophorus semipalmatus (Willet, G5, S3)	
	Charadrius melodus (Piping Plover, endangered, G3, S1)	
	Eremophila alpestris (Horned Lark, G5, S3)	
	Pandion haliaetus (Osprey, threatened, G5, S2)	
	Sterna hirundo (Common Tern, endangered, G5, S1)	
	Sterna paradisaea (Arctic Tern, threatened, G5, S1)	

Significant wildlife habitats	dunes, grassland, marsh, peatland, ridge / talus	
Exemplary natural communities and systems	Bayberry - beach plum maritime shrubland (S1)	
	Beach grass grassland (S1)	
	Brackish marsh (S2)	
	Coastal interdunal marsh/swale (S1)	
	Coastal shoreline strand/swale (S2)	
	Dry Appalachian oak - hickory forest (S3)	
	High salt marsh (S3)	
	Low salt marsh (S3)	
	Maritime wooded dune (S1)	
	Saline/brackish intertidal flat (S3)	
	Saline/brackish subtidal channel/bay bottom (S3)	
	Tidal creek bottom (S3)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	30.5 acres	
Surface water intakes	none	
Wells	Taylor River Estates (2 community wells)	
	Tidewater Campground/Site 35 (1 non-community well)	
Wellhead protection areas	Aquarion Water Co of NH (53 acres)	
	Hampton Falls Child Care Ctr (39.2 acres)	
	Hemlock Haven (13.3 acres)	
	Lincoln Akerman School (11.2 acres)	
	Taylor River Estates (34 acres)	
	The Mall At Granite Square (55.4 acres)	
Favorable gravel well sites	11.9 acres	
Agricultural Lands		
Prime or statewide importance farm soils	160.9 acres of prime farmland and 77.8 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	346 acres	
Permanently Protected, Managed primarily as working forest (GAP 3)	518 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	75 acres	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	10 acres	
Total conserved	948 acres	
Relationship to other Plans		
Area identified in other planning initiatives	No specific mention as a conservation priority in Hampton or Hampton Falls master plans. Some parcels cited in Hampton master plan fall in the vicinity of the marshes.	
	Long time land protection focus area of SPNHF	

Name:	**Hart Brook / Mt. Tenneriffe**	
Location		
Town(s)	Middleton, Milton	
Watershed (HUC 10)	Salmon Falls River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	3,500 acres	2,350 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~80%) of a 3,820 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	1,500 acres (Tier 2), 3,820 acres (Tier 2)
Aggregated forest blocks	located within a 69,800 acre block	
Freshwater Systems		
High quality stream watersheds	includes 417.5 acres of Tier 1, 747.1 acres of Tier 3, and 1,683.1 acres of Tier 4	includes 641.2 acres of Tier 3 and 62.7 acres of Tier 4
Important stream reaches	Jones Brook runs right though the CFA and includes bridle shiners which appears to be declining in NH and in their entire range	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	includes 3.9 miles of 1st order, 2.8 miles of 2nd order, and 4.3 miles of 3rd order	includes 4.0 miles of 1st order, 1.9 miles of 2nd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Isotria medeoloides (Small Whorled Pogonia, threatened, G2, S2)	none known
	Panax quinquefolius (Ginseng, threatened, G3, S2)	
Animals of conservation concern	Pooecetes gramineus (Vesper Sparrow, G5, S2-S3)	Pooecetes gramineus (Vesper Sparrow, G5, S2B)
Significant wildlife habitats	marsh, peatland, pitch pine barren, ridge / talus	marsh, peatland
Exemplary natural communities and systems	none known	
		none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	222.0 acres	39.9 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	Shortridge Academy (53.8 acres)	Shortridge Academy (15.2 acres)
Favorable gravel well sites	32.4 acres	14.5 acres
Agricultural Lands		
Prime or statewide importance farm soils	2.8 acres of prime farmland and 39.3 acres of farmland of statewide importance	5 acres of prime farmland and 68.1 acres of farmland of statewide importance
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	168 acres	-
Permanently Protected, Managed primarily as working forest (GAP 3)	1,217 acres	88 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	335 acres	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	1,720 acres	88 acres
Relationship to other Plans		
Area identified in other planning initiatives	Jones Brook in this core area specifically mentioned in Milton master plan; Hart Brook is a tributary.	Lyman Brook specifically mentioned in Milton master plan.
	Long-term focus area for The Nature Conservancy. Identified in Mt. Teneriffe Site Conservation Plan.	

Name:	**Johnson and Bunker Creek**	
Location		
Town(s)	Durham, Madbury	
Watershed (HUC 10)	Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	750 acres	1,010 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~70%) of a 1,130 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	5,20 acres and 1,130 acres (Tier 2)
Aggregated forest blocks	none	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	0.6 miles of 1st order, 1 mile of 2nd order, 0.9 miles of 3rd order	3.0 miles of 1st order, 0.6 miles of 2nd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	none	none
Tidal rivers & streams	includes portions of Gerrish Brook, Johnson Creek, Bunker Creek, and Black River	portions of several unnamed streams
Coastal forest blocks	1 block >1000 acres (overlaps Supporting Natural Landscape)	1 block >500 acres, 1 block >1000 acres (overlaps Core Area)
Tidal wetlands	23.7 acres of saltmarsh	none
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	none known
Significant wildlife habitats	grassland, marsh, peatland	floodplain forest, grassland, marsh, peatland
Exemplary natural communities and systems	Rich Appalachian oak rocky woods (S1)	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	5.6 acres	66.7 acres
Surface water intakes	none	none
Wells	Johnson Creek (2 community wells)	Cottage By The Bay (1 non-community well)
Wellhead protection areas	Johnson Creek (127.8 acres)	City of Dover Water Dept (113.7 acres)
	Kids N More Daycare (1.7 acres)	Kids N More Daycare (24.7 acres)
	Portsmouth Water Works (11 acres)	Miss Pattys Daycare (80.1 acres)
		Portsmouth Water Works (155.7 acres)
Favorable gravel well sites	none	62.1 acres
Agricultural Lands		
Prime or statewide importance farm soils	246.5 acres of prime farmland and 59.1 acres of farmland of statewide importance	210.4 acres of prime farmland and 64.2 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	5 acres
Permanently Protected, Managed primarily as working forest (GAP 3)	162 acres	<1 acre
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	22 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	162 acres	27 acres
Relationship to other Plans		
Area identified in other planning initiatives	Specifically mentioned for scenic and conservation priority in Durham master plan.	Specifically mentioned for scenic and conservation priority in Durham master plan.
	Profiles strongly with SRC conservation criteria.	
	Long-time focus area of the Great Bay Resource Protection Partnership, identifed through A Conservation Plan for the Great Bay Region and Habitat Protection Plan.	

Name:	**Kennard Hill**	
Location		
Town(s)	Epping, Nottingham	
Watershed (HUC 10)	Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,290 acres	2,860 acres (see also Supporting Natural Landscape for Pawtuckaway River)
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~20%) of a 4,910 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	4,910 acres (Tier 2)
Aggregated forest blocks	located within a 45,000 acre block	
Freshwater Systems		
High quality stream watersheds	includes 485.0 acres of Tier 2	includes 22.2 acres of Tier 4
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	includes 2.6 miles of 1st order streams, 1.8 miles of 2nd order streams	includes 4.0 miles of 1st order streams, 2.2 miles of 2nd order streams, and 0.2 miles of 4th order streams
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	Clemmys guttata (Spotted Turtle, G5, S3)
		Emydoidea blandingii (Blanding's Turtle, G4, S3)
Significant wildlife habitats	grassland, marsh, peatland	floodplain forest, grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	none	Epping Water And Sewer Dept (2 community wells)
Wellhead protection areas	none	Epping Water And Sewer Dept (418.8 acres)
		Pawtuckaway Farms (8.5 acres)
		Plumer Court (36.2 acres)
Favorable gravel well sites	none	none
Agricultural Lands		
Prime or statewide importance farm soils	13.8 acres of prime farmland and 4.3 acres of farmland of statewide importance	167.7 acres of prime farmland and 19.2 acres of farmland of statewide importance
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	-	195 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	65 acres
Total conserved	-	260 acres
Relationship to other Plans		
Area identified in other planning initiatives	Kennard Hill area not specifically mentioned in Epping master plan, but many nearby lands and features are cited.	Kennard Hill area not specifically mentioned in Epping master plan, but many nearby lands and features are cited.
	High-scoring landscape-scale complex in the BPRG strategic conservation priorities mission mapping.	

Name:	**Lamprey River**	
Location		
Town(s)	Epping, Lee	
Watershed (HUC 10)	Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,720 acres	1,190 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~40%) of a 650 acre block and a portion (~60%) of a 1,180 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	650 acres, 1,180 acres (Tier 2)
Aggregated forest blocks	within a 18,800 acre block	
Freshwater Systems		
High quality stream watersheds	none	one Tier 4 (360 acres, ~60%)
Important stream reaches	includes over 7 miles of good diversity of fish in the Lamprey River including the American Eel, Bridle shiners, Banded Sunfish, Redfin Pickeral, and Swamp Darter; also includes stream reaches where brook floater occur	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	includes 1.9 miles of 1st order streams, 1.7 miles of 2nd order, 8.0 miles of 5th order, and 0.9 miles of 6th order	includes 3.0 miles of 1st order, and 0.8 miles of 2nd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Isotria medeoloides (Small Whorled Pogonia, threatened, G2, S2)	none known
Animals of conservation concern	Alasmidonta varicosa (Brook Floater, endangered, G3, S1)	Glyptemys insculpta (Wood Turtle, G4, S3)
	Clemmys guttata (Spotted Turtle, G5, S3)	
	Emydoidea blandingii (Blanding's Turtle, G4, S3)	
	Glyptemys insculpta (Wood Turtle, G4, S3)	
	Notropis bifrenatus (Bridled Shiner, G3, S3)	
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	Red maple floodplain forest (S2)	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	35.5 acres	10.9 acres
Surface water intakes	none	none
Wells	Melling Glen (1 community well)	none
	Zampa (1 non-community well)	
Wellhead protection areas	Melling Glen (135 acres)	Melling Glen (26 acres)
	Pine And Pond Mobile Home Park (14.6 acres)	
	Woodlands (99.7 acres)	
Favorable gravel well sites	11.8 acres	1.4 acres

Agricultural Lands		
Prime or statewide importance farm soils	242.9 acres of prime farmland and 69.6 acres of farmland of statewide importance	62 acres of prime farmland and 85.7 acres of farmland of statewide importance
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
	High potential connectivity along watercourse.	
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	7 acres	-
Permanently Protected, Managed primarily as working forest (GAP 3)	369 acres	114 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	377 acres	114 acres
Relationship to other Plans		
Area identified in other planning initiatives	High priority conservation and scenic resource area for Town of Epping.	High priority conservation and scenic resource area for Town of Epping.
	Focus area of the Lamprey River Watershed Association and subject of multiple conservation priorities of the Lamprey River Advisory Committee.	
	Overlaps with focus areas of the Great Bay Resource Protection Partnership, identifed through A Conservation Plan for the Great Bay Region and Habitat Protection Plan.	

Name:	**Langley and Cyrus Ponds**	
Location		
Town(s)	Nottingham	
Watershed (HUC 10)	Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,030 acres	1,270 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~50%) of a 2,250 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	2,250 acres (Tier 2)
Aggregated forest blocks		
Freshwater Systems		
High quality stream watersheds	includes 743.4 acres of Tier 3	includes 13.3 acres of Tier 1
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	includes 0.8 miles of 1st order, and 1.8 miles of 3rd order	includes 1.3 miles of 1st order, and 1.2 miles of 3rd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	Clemmys guttata (Spotted Turtle, G5, S3)
Significant wildlife habitats	grassland, marsh, peatland	floodplain forest, grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	Nottingham Community School (39.8 acres)
Favorable gravel well sites	none	none
Agricultural Lands		
Prime or statewide importance farm soils	26.7 acres of farmland of statewide importance	6.9 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	-	11 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	-	11 acres
Relationship to other Plans		
Area identified in other planning initiatives	High-scoring landscape-scale complex in the BPRG strategic conservation priorities mission mapping.	

Name:	**LaRoche and Woodman Brooks**	
Location		
Town(s)	Durham	
Watershed (HUC 10)	Great Bay Drainage, Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	440 acres	660 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	within a 12,700 acre block	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	N/A	N/A
River & stream miles	includes 2.1 miles of 1st order	includes 1.1 miles of 1st order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	Cistothorus platensis (Sedge Wren, endangered, G5, S1)	Clemmys guttata (Spotted Turtle, G5, S3)
	Clemmys guttata (Spotted Turtle, G5, S3)	Lampetra appendix (American Brook Lamprey, G4, S2)
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland	floodplain forest, grassland, marsh, peatland
Exemplary natural communities and systems	Red maple - lake sedge swamp (S3)	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	The Inn At Spruce Wood (148.7 acres)	The Inn At Spruce Wood (25.4 acres)
Favorable gravel well sites	none	none
Agricultural Lands		
Prime or statewide importance farm soils	39.8 acres of prime farmland and 4.4 acres of farmland of statewide importance	78.6 acres of prime farmland and 24.4 acres of farmland of statewide importance
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	80 acres
Permanently Protected, Managed primarily as working forest (GAP 3)	59 acres	73 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	234 acres	270 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	292 acres	422 acres
Relationship to other Plans		
Area identified in other planning initiatives	No specific mention of LaRoche or Woodman Brooks in Town of Durham master plan, but LaRoche Farm is cited as a conservation priority, and smaller streams as greenways elements.	No specific mention of LaRoche or Woodman Brooks in Town of Durham master plan, but LaRoche Farm is cited as a conservation priority, and smaller streams as greenways elements.
	Long-time focus area of the Great Bay Resource Protection Partnership, identifed through A Conservation Plan for the Great Bay Region.	Long-time focus area of the Great Bay Resource Protection Partnership, identifed through A Conservation Plan for the Great Bay Region.

Name:	**Lower Berry's Brook**	
Location		
Town(s)	Rye	
Watershed (HUC 10)	Coastal Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	270 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	located within a 10,000 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	1.4 miles of 1st order, 1.1 miles of 2nd order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	none	
Tidal rivers & streams	includes portions of Berry's Brook and several unnamed streams	
Coastal forest blocks	none	
Tidal wetlands	18.7 acres of saltmarsh	
Important Plant & Wildlife Habitat		
Plants of conservation concern	Agalinis maritima (Salt-marsh Gerardia, threatened, G5, S2)	
	Eleocharis parvula (Small Spike-rush, threatened, G5, S2)	
	Eleocharis uniglumis (Salt-loving Spike-rush, threatened, G5, S2)	
	Isoetes engelmannii (Engelmann's Quillwort, endangered, G4, S1)	
Animals of conservation concern	none known	
Significant wildlife habitats	marsh, peatland	
Exemplary natural communities and systems	High brackish tidal riverbank marsh (S1)	
	Low brackish tidal riverbank marsh (S1)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	none	
Favorable gravel well sites	none	
Agricultural Lands		
Prime or statewide importance farm soils	none	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	
Permanently Protected, Managed primarily as working forest (GAP 3)	-	
Not permanently protected, but in public or institutional ownership (GAP 3a)	58 acres	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	58 acres	
Relationship to other Plans		
Area identified in other planning initiatives	Conservation priority in the Portsmouth master plan.	

Name:	**Lower Cocheco River**	
Location		
Town(s)	Dover	
Watershed (HUC 10)	Cocheco and Salmon Falls Rivers	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	490 acres	380 acres (See also Supporting Natural Landscape for Garvin Brook)
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	none
Aggregated forest blocks	none	
Freshwater Systems		
High quality stream watersheds	includes 4.5 acres of Tier 4 HQWS	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	0.3 miles of 1st order, 0.05 miles of 2nd order, 0.75 miles of 3rd order, and 2.6 miles of 5th order	none
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	7 miles of estuarine shoreline along the Cocheco and Salmon Falls Rivers	2,970 feet along the Cocheco River
Tidal rivers & streams	includes portions of Fresh Creek	includes portions of Fresh Creek and the Cocheco River
Coastal forest blocks	none	none
Tidal wetlands	63.6 acres of saltmarsh	3.0 acres of saltmarsh
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	none known
Significant wildlife habitats	floodplain forest, grassland, marsh	floodplain forest, grassland, peatland
Exemplary natural communities and systems	Low brackish tidal riverbank marsh (S1)	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	318.9 acres	none
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	none
Favorable gravel well sites	111.5 acres	202.3 acres
Agricultural Lands		
Prime or statewide importance farm soils	38.2 acres of prime farmland and 74.6 acres of farmland of statewide importance	82.3 acres of prime farmland and 41.3 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
	High potential connectivity along watercourse.	
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	18 acres	24 acres

Permanently Protected, Managed primarily as working forest (GAP 3)	34 acres	23 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	28 acres
Total conserved	52 acres	75 acres
Relationship to other Plans		
Area identified in other planning initiatives	General conservation priority listed in Dover master plan under lands of interest. Associated features and resources cited several times in master plan.	General conservation priority listed in Dover master plan under lands of interest. Associated features and resources cited several times in master plan.
	Profiles strongly with SRC conservation criteria.	
	Focus area of the Cocheco River Watershed Coaltion	
	Identified by The Nature Conservancy in Ecological Inventory of the Cocheco River Watershed.	

Name:	**Lower Fordway Brook**	
Location		
Town(s)	Raymond, Chester	
Watershed (HUC 10)	Exeter River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,680 acres	1,190 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~50%) of a 3,480 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	3,480 (Tier 2, ~50%)
Aggregated forest blocks	located within a 20,800 acre block	
Freshwater Systems		
High quality stream watersheds	includes 172.1 acres of Tier 3, and 1180.6 acres of Tier 4	
Important stream reaches		
Presence/absence of dams (within high quality watersheds)		
River & stream miles	includes 3.0 miles of 1st order streams, 1.9 miles of 2nd order, 2.5 miles of 3rd order streams	includes 1.9 miles of 1st order streams, 1.2 miles of 2nd order, and 1.5miles of 3rd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	Emydoidea blandingii (Blanding's Turtle, G4, S3)
Significant wildlife habitats	grassland, marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	Peu /Liberty Tree Acres (12.2 acres)
Favorable gravel well sites	none	none
Agricultural Lands		
Prime or statewide importance farm soils	none	24 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-

Permanently Protected, Managed primarily as working forest (GAP 3)	9 acres	261 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	20 acres	3 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	29 acres	264 acres
Relationship to other Plans		
Area identified in other planning initiatives	High-scoring landscape-scale complex in the BPRG strategic conservation priorities mission mapping.	High-scoring landscape-scale complex in the BPRG strategic conservation priorities mission mapping.
	Although there appear to be map and lot numbering discrepancies between the master plan document and the town tax map, this area appears to be listed as a conservation priority for the Town of Raymond.	Although there appear to be map and lot numbering discrepancies between the master plan document and the town tax map, this area appears to be listed as a conservation priority for the Town of Raymond.

Name:	**Lower Isinglass**	
Location		
Town(s)	Barrington	
Watershed (HUC 10)	Cocheco River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,260 acres	1,010 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	contains a portion (~80%) of a 1,230 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	1,230 acres (Tier 2)
Aggregated forest blocks	located within a 8,000 acre block	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	includes over 3.5 miles of stream with a good diversity of fish including American Eel, Banded Sunfish, and Bridle Shiner	none
Presence/absence of dams (within high quality watersheds)	N/A	N/A
River & stream miles	includes 2.9 miles of 1st order, 1.86 miles of 2nd order, 4.3 miles of 4th order	includes 1.0 mile of 1st order, 0.75 miles of 2nd Order streams
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	Ardea herodias (Great Blue Heron (Rookery), G5, S4)	Ardea herodias (Great Blue Heron (Rookery), G5, S4B)
	Clemmys guttata (Spotted Turtle, G5, S3)	Emydoidea blandingii (Blanding's Turtle, G4, S3)
	Emydoidea blandingii (Blanding's Turtle, G4, S3)	
	Glyptemys insculpta (Wood Turtle, G4, S3)	
Significant wildlife habitats	floodplain forest, marsh, peatland	floodplain forest, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	363.2 acres	204.5 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	Halcyon Hill (25.9 acres)	Good Shepard School (9.3 acres)
Favorable gravel well sites	100.3 acres	99.2 acres
Agricultural Lands		
Prime or statewide importance farm soils	9.6 acres of prime farmland and	none
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
	High potential connectivity along watercourse.	High potential connectivity along watercourse.
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	68 acres	<1 acre
Not permanently protected, but in public or institutional ownership (GAP 3a)	52 acres	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	120 acres	<1 acre
Relationship to other Plans		
Area identified in other planning initiatives	Focus area of the Isinglass River Local Advisory Committee	Bellamy headwaters is listed as a conservation priority in the Barrington master plan; the southern supporting landscape delineation falls in that watershed

Name:	**Lower Lamprey**	
Location		
Town(s)	Durham, Lee	
Watershed (HUC 10)	Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,230 acres	1,640 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~80%) of a 790 block, and a portion (~30%) of a 870 block	790 acres and 870 acres
Aggregated forest blocks	within a 12,700 acre block	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	includes over 7 miles of good diversity of fish in the Lamprey River including the American Eel, Bridle shiners, Banded Sunfish, Redfin Pickeral, and Swamp Darter; also includes stream reaches where brook floater occur	none
Presence/absence of dams (within high quality watersheds)	N/A	N/A
River & stream miles	includes 0.9 miles of 1st order, 0.1 miles of 2nd order, 0.1 miles of 3rd order, 0.4 miles of 4th order, and 7.3 miles of 6th order	includes 1.1 miles of 1st order, 0.6 miles of second order, and 0.3 miles of 4th order.
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	Emydoidea blandingii (Blanding's Turtle, G4, S3)	Chaetaglaea cerata (A Noctuid Moth, G3, S1)
	Glyptemys insculpta (Wood Turtle, G4, S3)	Clemmys guttata (Spotted Turtle, G5, S3)
	Notropis bifrenatus (Bridled Shiner, G3, S3)	Emydoidea blandingii (Blanding's Turtle, G4, S3)
		Glyptemys insculpta (Wood Turtle, G4, S3)
		Psectraglaea carnosa (Pink Sallow, G3, SH)
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland	floodplain forest, grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	17.5 acres
Surface water intakes	University of New Hampshire - Lamprey River	none
Wells	UNH /Durham Water System (1 community well)	Ferndale Acres Campground (1 non-community well)
	Wellington Camping Park (1 non-community well)	
Wellhead protection areas	Newmarket Water Works (48.7 acres)	Newmarket Water Works (165.9 acres)
Favorable gravel well sites	none	9.2 acres
Agricultural Lands		
Prime or statewide importance farm soils	243.4 acres of prime farmland and 28.2 acres of farmland of statewide importance	253 acres of prime farmland and 49.1 acres of farmland of statewide importance

Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
	High potential connectivity along watercourse.	High potential connectivity along watercourse.
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	304 acres	445 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	69 acres	48 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	103 acres	90 acres
Total conserved	475 acres	583 acres
Relationship to other Plans		
Area identified in other planning initiatives	Focus area of the Lamprey River Watershed Association and subject of multiple conservation priorities of the Lamprey River Advisory Committee.	

Name:	**Lower Little River**	
Location		
Town(s)	North Hampton	
Watershed (HUC 10)	Coastal Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	200 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	none	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	Conains over one mile, centrally located in the CFA, of a good diversity of fish including American Eel, Banded Sunfish, and Redfin Pickeral	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	1.1 miles of 1st order, 0.9 miles of 2nd order, 1.0 mile of 4th order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	none; 20 acres of undeveloped shoreland (1,000 foot buffer)	
Tidal rivers & streams	includes portions of Little River and Garland Brook as well as several unnamed streams and tidal channels	
Coastal forest blocks	none	
Tidal wetlands	109.2 acres of saltmarsh	
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	
Animals of conservation concern	none known	
Significant wildlife habitats	marsh	
Exemplary natural communities and systems	none known	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	none	
Favorable gravel well sites	none	
Agricultural Lands		
Prime or statewide importance farm soils	2.9 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		

Current Conservation Status			
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)		76 acres	
Permanently Protected, Managed primarily as working forest (GAP 3)		1 acre	
Not permanently protected, but in public or institutional ownership (GAP 3a)		-	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)		-	
Total conserved		77 acres	
Relationship to other Plans			
Area identified in other planning initiatives		No specific mention of Little River in North Hampton master plan; general natural resource goals only.	

Name:	**Lower Lubberland Creek**	
Location		
Town(s)	Newmarket	
Watershed (HUC 10)	Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	240 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	located within a 6,500 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	0.9 miles of 1st order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	1.6 miles of estuarine shorelline along Great Bay	
Tidal rivers & streams	includes portions of Lubberland Creek	
Coastal forest blocks	none	
Tidal wetlands	77.4 acres of saltmarsh of saltmarsh	
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	
Animals of conservation concern	Ammodramus caudacutus (Saltmarsh Sharp-tailed Sparrow, G4, S3)	
	Glyptemys insculpta (Wood Turtle, G4, S3)	
	Pandion haliaetus (Osprey, threatened, G5, S2)	
	Porzana carolina (Sora, G5, S3)	
Significant wildlife habitats	coastal island, floodplain forest, grassland	
Exemplary natural communities and systems	none known	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	Moody Point (105.2 acres)	
Favorable gravel well sites	none	
Agricultural Lands		
Prime or statewide importance farm soils	3 acres of prime farmland and 58.5 acres of farmland of statewide importance	
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	43 acres	
Permanently Protected, Managed primarily as working forest (GAP 3)	137 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	180 acres	
Relationship to other Plans		
Area identified in other planning initiatives	Specifically mentioned in Newmarket master plan updates; extensive estuarine wetlands and shorelands in this area are of concern.	
	Long-time focus area of the Great Bay Resource Protection Partnership, identifed through A Conservation Plan for the Great Bay Region and Habitat Protection Plan.	

Name:	**Lower Piscassic River**	
Location		
Town(s)	Newfields, Newmarket	
Watershed (HUC 10)	Exeter and Lamprey Rivers	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	3,030 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a 1,720 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	
Aggregated forest blocks	located within a 18,800 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	includes 4.58 miles of 1st order, 3.61 miles of 2nd order, and 4.02 miles of 4th order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	none	
Tidal rivers & streams	includes a portion of one unnamed stream	
Coastal forest blocks	none	
Tidal wetlands	none	
Important Plant & Wildlife Habitat		
Plants of conservation concern	Mikania scandens (Climbing Hempweed, threatened, G5, S2)	
	Sparganium eurycarpum (Large Bur-reed, threatened, G5, S2)	
Animals of conservation concern	Clemmys guttata (Spotted Turtle, G5, S3)	
	Emydoidea blandingii (Blanding's Turtle, G4, S3)	
	Glyptemys insculpta (Wood Turtle, G4, S3)	
	Porzana carolina (Sora, G5, S3)	
Significant wildlife habitats	grassland, marsh, peatland	
Exemplary natural communities and systems	Low-gradient silty-sandy riverbank system (not ranked in NH)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	41.4 acres	
Surface water intakes	none	
Wells	Brentwood Springs (1 non-community well)	
Wellhead protection areas	Great Bay Water System (247.4 acres)	
	Newfields Vil Water & Swr Dist (364.5 acres)	
Favorable gravel well sites	9.1 acres	
Agricultural Lands		
Prime or statewide importance farm soils	399.7 acres of prime farmland and 185 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
	High potential connectivity along watercourse.	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	13.5 acres	
Permanently Protected, Managed primarily as working forest (GAP 3)	660 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	674 acres	
Relationship to other Plans		
Area identified in other planning initiatives	Several parcels of interest cited in Newfields master plan within immediate Picassic drainage.	
	Not mentioned specifically in Newmarket master plan updates, but extensive wetlands in this area have been inventoried and are of concern.	
	Identified as a priority in TNC study of the Piscassic River, 2002.	

Name:	**Lower Winnicut River**	
Location		
Town(s)	Greenland	
Watershed (HUC 10)	Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	230 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	located within a 10,000 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	1.2 miles of 3rd order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	approximately 600 feet of estuarine shoreline along Great Bay	
Tidal rivers & streams	includes portions of the Winnicut River and Packer Brook	
Coastal forest blocks	none	
Tidal wetlands	75.1 acres of saltmarsh	
Important Plant & Wildlife Habitat		
Plants of conservation concern	Samolus valerandi ssp. parviflorus (False Water Pimpernel, threatened, T5, S2)	
Animals of conservation concern	Ammodramus caudacutus (Saltmarsh Sharp-tailed Sparrow, G4, S3)	
	Progne subis (Purple Martin, endangered, G5, S1)	
Significant wildlife habitats	grassland	
Exemplary natural communities and systems	none known	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	6.8 acres	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	Portsmouth Water Works (108.9 acres)	
Favorable gravel well sites	1.5 acres	
Agricultural Lands		
Prime or statewide importance farm soils	37.2 acres of prime farmland and 69.4 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
	High potential connectivity along watercourse.	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	
Permanently Protected, Managed primarily as working forest (GAP 3)	58 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	58 acres	
Relationship to other Plans		
Area identified in other planning initiatives	Specifically identified as a conservation priority in the Greenland master plan.	

Name:	**Middle Isinglass**	
Location		
Town(s)	Barrington	
Watershed (HUC 10)	Cocheco	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	500 acres	330 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~50%) of a 1,260 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	1,260 acres (Tier 2, ~50%)
Aggregated forest blocks	located within a 14,700 acre block	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	Isinglass River; supports a diversity of species of concern including American Eel, Banded Sunfish, and Bridle Shiner	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	1.6 miles of 1st order, 0.2 miles of 2nd order, and 1.8 miles of 4th order	0.1 miles of 1st order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	
Animals of conservation concern	none known	
Significant wildlife habitats	floodplain forest, marsh, peatland	floodplain forest, marsh
Exemplary natural communities and systems	none known	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	57.2 acres	none
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	none
Favorable gravel well sites	17.1 acres	none
Agricultural Lands		
Prime or statewide importance farm soils	3.1 acres of prime farmland	none
Landscape Connectivity	High potential connectivity along watercourse.	High potential connectivity along watercourse.
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	-	-
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	-	-
Relationship to other Plans		
Area identified in other planning initiatives	Isinglass River headwaters, tributraries, Long and Ayers Ponds specifically mentioned in Barrington master plan.	Isinglass River headwaters, tributraries, Long and Ayers Ponds specifically mentioned in Barrington master plan.
	Isinglass River cited as scenic resource priority in Barrington town survey.	Isinglass River cited as scenic resource priority in Barrington town survey.
	Focus area of the Isinglass River Local Advisory Committee	

Name:	**Middle Little River**	
Location		
Town(s)	North Hampton	
Watershed (HUC 10)	Coastal Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	600 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	one block of 670 acres	
Aggregated forest blocks	located within a 9,950 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	Little River; supports a diversity of species of concern including American Eel, Banded Sunfish, and Redfin Pickeral	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	1.9 miles of 1st order, 2.1 miles of 2nd order, and 0.3 miles of 3rd order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	none	
Tidal rivers & streams	none	
Coastal forest blocks	none	
Tidal wetlands	none	
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	
Animals of conservation concern	Opheodrys vernalis (Smooth Green Snake, G5, S3)	
Significant wildlife habitats	floodplain forest, marsh, peatland	
Exemplary natural communities and systems	none known	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	38.4 acres	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	Shel Al Mobile Estates (91.7 acres)	
Favorable gravel well sites	24.3 acres	
Agricultural Lands		
Prime or statewide importance farm soils	29.8 acres of prime farmland and 10.3 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	
Permanently Protected, Managed primarily as working forest (GAP 3)	52 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	75 acres	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	20 acres	
Total conserved	148 acres	
Relationship to other Plans		
Area identified in other planning initiatives	Specifically cited as a priority conservation area in SLT regional plan (as coastal headwaters in Greenland and North Hampton).	

Name:	**Middle Piscassic River**	
Location		
Town(s)	Brentwood, Epping, Exeter,	
Watershed (HUC 10)	Lamprey, Exeter Rivers	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	2,280 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~60%) of a 640 acre block, and two blocks of 670 and 770 acres	
Aggregated forest blocks	locted within a 18,800 acre block	
Freshwater Systems		
High quality stream watersheds	one Tier 1 (180 acres)	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	3.1 miles of 1st order, 1.2 miles of 2nd order, and 5.5 miles of 4th order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	
Animals of conservation concern	Clemmys guttata (Spotted Turtle, G5, S3)	
	Emydoidea blandingii (Blanding's Turtle, G4, S3)	
Significant wildlife habitats	floodplain forest, marsh, peatland	
Exemplary natural communities and systems	Low-gradient silty-sandy riverbank system (not ranked in NH)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	41.4 acres	
Surface water intakes	none	
Wells	Brentwood Springs (1 non-community well)	
Wellhead protection areas	Forest Ridge (131.9 acres)	
	The Castles At Brentwood (22.3 acres)	
Favorable gravel well sites	none	
Agricultural Lands		
Prime or statewide importance farm soils	332.4 acres of prime farmland and 40.4 acres of farmland of statewide importance	
Landscape Connectivity	High potential connectivity along watercourse.	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	534 acres	
Permanently Protected, Managed primarily as working forest (GAP 3)	701 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	1,234 acres	
Relationship to other Plans		
Area identified in other planning initiatives	Area listed as a specific conservation priority in Exeter master plan. Additionally, the core and supporting landscape include features listed under the general conservation priorities including, but not limited to, land that protects water quality.	
	Multiple citations in Newfields master plan; Piscassic drainage above the Ice Ponds a priority.	
	Cited in TNC study of Piscassic River Watershed, 2002.	
	Long-time focus area of the Great Bay Resource Protection Partnership.	

Name:	**Middle Winnicut River**	
Location		
Town(s)	Greenland	
Watershed (HUC 10)	Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	160 acres	610 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a small portion of a 760 acre block	a portion (~50%) of a 760 acre block
Aggregated forest blocks	located within a 10,100 acre block	
Freshwater Systems		
High quality stream watersheds	~50% of a 45 acre Tier 4 watershed	a small portion of a Tier 4 watershed
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	0.2 miles of 1st order, 0.3 miles of 2nd order, and 2.3 miles of 3rd order	0.8 miles of 1st order, 1.2 miles of 2nd order, 0.9 miles of 3rd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	Glyptemys insculpta (Wood Turtle, G4, S3)
Significant wildlife habitats	floodplain forest, grassland, marsh	grassland, marsh
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	< 1 acre	287.5 acres
Surface water intakes	none	none
Wells	none	Aquarion Water Co of NH (1 community well)
Wellhead protection areas	Aquarion Water Co of NH (50 acres)	Aquarion Water Co of NH (141.3 acres)
		Portsmouth Water Works (277.6 acres)
		Wiggin Farm Winterberry (3.3 acres)
Favorable gravel well sites	0.2 acres	168.8 acres
Agricultural Lands		
Prime or statewide importance farm soils	22.7 acres of prime farmland and 53.9 acres of farmland of statewide importance	276.9 acres of prime farmland and 152.3 acres of farmland of statewide importance
Landscape Connectivity	High potential connectivity along watercourse.	High potential connectivity along watercourse.
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	37 acres	224 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	37 acres	224 acres
Relationship to other Plans		
Area identified in other planning initiatives	A conservation priority area of the Greenland master plan; multiple citations.	A conservation priority area of the Greenland master plan; multiple citations.
	Specifically cited as a priority conservation area in SLT regional plan (as coastal headwaters in Greenland and North Hampton).	
	Very high-scoring community-scale complex in SLT study by SPNHF of Greenland.	Very high-scoring community-scale complex in SLT study by SPNHF of Greenland.

Name:	**Moose Mountains**	
Location		
Town(s)	Brookfield, Middleton, Wakefield	
Watershed (HUC 10)	Salmon Falls River, Lake Winnepesaukee Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	8,800 acres	7,340 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~50%) of a 15,740 acre block identified as a Tier 1 priority in the 2005 Wildlife Action Plan	a 15,740 acre block identified as a Tier 1 priority in the 2005 Wildlife Action Plan
Aggregated forest blocks	located within a 69,800 acre block	
Freshwater Systems		
High quality stream watersheds	three entire Tier 1 (600, 800, and 930 acres), ~50% of two Tier 1 (520 and 880 acres), four Tier 2 (680, 690, 940, and 1,240 acres), and portions of several Tier 3 and 4	none (in the Coastal Watershed)
Important stream reaches	Jones Brook; supports bridle shiners	Jones Brook; supports bridle shiners
Presence/absence of dams (within high quality watersheds)	2 dams within high quality stream watersheds	none
River & stream miles	15.4 miles of 1st order, 3 miles of 2nd order	2.9 miles of 1st order, 0.7 miles of 2nd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Corallorhiza odontorhiza (Autumn Coralroot, endangered, G5, S1)	none known
	Isotria medeoloides (Small Whorled Pogonia, threatened, G2, S2)	
	Triphora trianthophora (Three-birds Orchid, threatened, G3, S2)	
Animals of conservation concern	none known	Coregonus clupeaformis (Lake Whitefish, G5, S3)
Significant wildlife habitats	floodplain forest, marsh, peatland, ridge / talus	grassland, marsh, peatland, ridge / talus
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	5.6 acres	945.3 acres
Surface water intakes	none	none
Wells	none	Pierce Camp Birchmont/Cabins (1 non-community well)
Wellhead protection areas	none	Copple Crown Village District (18.6 acres)
		Wentworth Estates (7 acres)
Favorable gravel well sites	1.2 acres	637.5 acres

Agricultural Lands		
Prime or statewide importance farm soils	18.1 acres of farmland of statewide importance	65.3 acres of prime farmland and 32.8 acres of farmland of statewide importance
Landscape Connectivity	High connectivity value between conservation lands, and forest blocks	High connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	1,220 acres	945 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	2,295 acres	10 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	3,514 acres	954 acres
Relationship to other Plans		
Area identified in other planning initiatives	No information from Town of Brookfield	No information from Town of Brookfield
	Water quality linkage in Middleton NRI	Water quality linkage in Middleton NRI
	Core focus area for the Moose Mountain Greenways, and current land protection project area of SPNHF (2,000+ acres).	Core focus area for the Moose Mountain Greenways, and current land protection project area of SPNHF (2,000+ acres).

Name:	**Muddy Pond**	
Location		
Town(s)	Kensington	
Watershed (HUC 10)	Coastal Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	160 acres	410 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~30%) of a 470 acre block	a 470 acre block
Aggregated forest blocks	located within a 22,500 acre block	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	N/A	none
River & stream miles	0.8 miles of 1st order, 1.4 miles of 2nd order	1 miles of 1st order, 1 miles of 2nd order, 0.3 miles of 3rd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Cardamine bulbosa (Bulbous Bitter Cress, endangered, G5, S1)	none known
Animals of conservation concern	Clemmys guttata (Spotted Turtle, G5, S3)	Clemmys guttata (Spotted Turtle, G5, S3)
	Esox americanus americanus (Redfin Pickerel, T5, S4)	Esox americanus americanus (Redfin Pickerel, T5, S4)
Significant wildlife habitats	grassland, marsh	grassland, marsh, peatland
Exemplary natural communities and systems	Circumneutral seepage swamp (S1)	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	65.8 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	Seabrook Water Dept (156.3 acres)	Seabrook Water Dept (413.2 acres)
Favorable gravel well sites	none	8.1 acres
Agricultural Lands		
Prime or statewide importance farm soils	3.2 acres of prime farmland and 8.1 acres of farmland of statewide importance	10.8 acres of prime farmland and 139.8 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-

Permanently Protected, Managed primarily as working forest (GAP 3)	61 acres	125 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	61 acres	125 acres
Relationship to other Plans		
Area identified in other planning initiatives	Part of a high scoring focus area of the SPNHF SENH study.	Part of a high scoring focus area of the SPNHF SENH study.

Name:	**North River / Rollins Brook**	
Location		
Town(s)	Epping, Lee	
Watershed (HUC 10)	Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	810 acres	840 acres (see also Supporting Natural Landscape for Birch Hill Road Lowlands)
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~40%) of a 1,260 acre block identified as a Tier 2, priority in the 2005 Wildlife Action Plan	a 1,260 acre block identified as a Tier 2, priority in the 2005 Wildlife Action Plan
Aggregated forest blocks	located within a 45,000 acre block	
Freshwater Systems		
High quality stream watersheds	one 80 acre Tier 2, one 300 acre Tier 4	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	1 dam within high quality stream watersheds	none
River & stream miles	1.9 miles of 1st order, 0.1 miles of 2nd order, 0.9 miles of 3rd order, 1 mile of 5th order	2.5 miles of 1st order, 1.8 miles of 2nd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	Clemmys guttata (Spotted Turtle, G5, S3)	none known
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland	floodplain forest, grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	none
Favorable gravel well sites	none	none
Agricultural Lands		
Prime or statewide importance farm soils	9.1 acres of prime farmland and 6 acres of farmland of statewide importance	1.2 acres of prime farmland and 2.4 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	-	39 acres

Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	-	39 acres
Relationship to other Plans		
Area identified in other planning initiatives	Parcel specifically mentioned as conservation priority in Epping master plan.	Parcel specifically mentioned as conservation priority in Epping master plan.

Name:	**Northeast Pond**	
Location		
Town(s)	Milton	
Watershed (HUC 10)	Salmon Falls River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,800 acres	1,600 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~15%) of a 6,170 acre block	one 6,170 acre block
Aggregated forest blocks	located within a 58,300 acre block	
Freshwater Systems		
High quality stream watersheds	one 230 acre Tier 2, portions of one 2,470 acre Tier 4	~25% of one Tier 4 (2,470 acres)
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	0.7 miles of 1st order, 0.1 miles of 2nd order, 0.3 miles of 3rd order, 5.9 miles of 4th order, 0.1 miles of 5th order	2.2 miles of 1st order, 1.8 miles of 2nd order, 0.1 miles of 4th order, 1.4 miles of 5th order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	Gavia immer (Common Loon, threatened, G5, S3)	none known
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland, pitch pine barren	none modeled (outside NH)
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	842.7 acres	none
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	none
Favorable gravel well sites	240.6 acres	none
Agricultural Lands		
Prime or statewide importance farm soils	24 acres of prime farmland and 13.5 acres of farmland of statewide importance	none
Landscape Connectivity	High connectivity value between conservation lands, and forest blocks	High connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	921 acres	-
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-

Total conserved	921 acres	-
Relationship to other Plans		
Area identified in other planning initiatives	Three Ponds (aka Northeast Pond) specifically mentioned in Milton master plan.	Three Ponds (aka Northeast Pond) specifically mentioned in Milton master plan.

Name:	**Oyster River**	
Location		
Town(s)	Durham, Lee, Madbury	
Watershed (HUC 10)	Great Bay Drainage, Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	2,690 acres	540 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~80%) of a 1,260 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	1,260 acres (Tier 2)
Aggregated forest blocks	located within a 7,400 acre block	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	Oyster River; Important American Brook Lamprey rearing habitat	none
Presence/absence of dams (within high quality watersheds)	N/A	N/A
River & stream miles	2.7 miles of 1st order, 0.9 miles of 2nd order, 1.8 miles of 3rd order, 5.3 miles of 4th order	1 mile of 1st order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Platanthera flava var. herbiola (Pale Green Orchid, threatened, T4, S2)	none known
Animals of conservation concern	Bartramia longicauda (Upland Sandpiper, endangered, G5, S1)	Emydoidea blandingii (Blanding's Turtle, G4, S3)
	Callophrys lanoraieensis (Bog Elfin, G3, SH)	Pooecetes gramineus (Vesper Sparrow, G5, S2B)
	Clemmys guttata (Spotted Turtle, G5, S3)	
	Enneacanthus obesus (Banded Sunfish, G5, S3)	
	Etheostoma fusiforme (Swamp Darter, G5, S3)	
	Glyptemys insculpta (Wood Turtle, G4, S3)	
	Lampetra appendix (American Brook Lamprey, G4, S2)	
	Notropis bifrenatus (Bridled Shiner, G3, S3)	
	Pooecetes gramineus (Vesper Sparrow, G5, S2-S3)	
	Williamsonia lintneri (Ringed Bog Haunter, endangered, G3, S1)	
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	Kettle hole bog system (S2)	none known

Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	78.7 acres	7.1 acres
Surface water intakes	University of New Hampshire - Oyster River	none
Wells	The Inn At Spruce Wood (2 community wells)	Moharimet School (2 non-community wells)
	UNH /Durham Water System (1 community well)	
Wellhead protection areas	Oyster River Condos (53.2 acres)	Ambleside Mobile Home Park (34.8 acres)
	The Inn At Spruce Wood (362.4 acres)	Moharimet School (76.8 acres)
Favorable gravel well sites	32.6 acres	0.9 acres
Agricultural Lands		
Prime or statewide importance farm soils	560 acres of prime farmland and 58 acres of farmland of statewide importance	87.8 acres of prime farmland and 9.3 acres of farmland of statewide importance
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
	High potential connectivity along watercourse.	High potential connectivity along watercourse.
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	189 acres	73 acres
Permanently Protected, Managed primarily as working forest (GAP 3)	344 acres	19 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	159 acres	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	79 acres	20 acres
Total conserved	771 acres	112 acres
Relationship to other Plans		
Area identified in other planning initiatives	Listed as conservation and scenic priority area in Madbury and Durham master plans.	Listed as conservation and scenic priority area in Madbury and Durham master plans.
	Focus area of the Oyster River Watershed Association.	
	Long-time focus area of the Great Bay Resource Protection Partnership and multiple TNC projects.	

Name:	**Packer Bog**	
Location		
Town(s)	Greenland, Portsmouth, Rye	
Watershed (HUC 10)	Coastal Drainage, Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	820 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	located within a 5,000 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	3.3 miles of 1st order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	none	
Tidal rivers & streams	includes portions of Packer Brook, Berry's Brook, and one other unnamed stream	
Coastal forest blocks	none	
Tidal wetlands	none	
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	
Animals of conservation concern	none known	
Significant wildlife habitats	marsh, peatland	
Exemplary natural communities and systems	Atlantic white cedar - yellow birch - pepperbush swamp (S2)	
	Red maple - sensitive fern swamp (S2)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	292.4 acres	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	Adams Mobile Home Park (46.4 acres)	
	Portsmouth Water Works (312.5 acres)	
Favorable gravel well sites	118.7 acres	
Agricultural Lands		
Prime or statewide importance farm soils	8.1 acres of prime farmland and 58.9 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	26 acres	

Permanently Protected, Managed primarily as working forest (GAP 3)	190 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	155 acres	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	370 acres	
Relationship to other Plans		
Area identified in other planning initiatives	Packers Brook area specifically identified in Portsmouth master plan as a conservation priority site.	
	Not mentioned in Greenland master plan specifically but many other sites in vicinity listed as conservation priority.	
	Long-time focus area of the Great Bay Resource Protection Partnership, identifed through A Conservation Plan for the Great Bay Region and Habitat Protection Plan.	
	High-scoring community-scale complex in SLT study by SPNHF of Greenland.	

Name:	**Parkman Brook**	
Location		
Town(s)	Stratham	
Watershed (HUC 10)	Exeter River, Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	550 acres	none
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	one block of 600 acres	
Aggregated forest blocks	located within a 10,100 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	1.8 miles of 1st order, 1.1 miles of 2nd order, 0.7 miles of 3rd order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	none	
Tidal rivers & streams	includes portions of Parkman Brook and several unnamed streams	
Coastal forest blocks	1 block > 500 acres	
Tidal wetlands	none	
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	
Animals of conservation concern	Ixobrychus exilis (Least Bittern, G5, S1)	
Significant wildlife habitats	grassland, marsh, peatland	
Exemplary natural communities and systems	none known	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	59.8 acres	
Surface water intakes	none	
Wells	Np Stratham Llc (1 non-community well)	
Wellhead protection areas	Aquarion Water Co of NH (6.6 acres)	
	Bell And Flynn Inc (10.4 acres)	
	Exeter Water Dept (142.3 acres)	
	Kings Highway Plaza (62.2 acres)	
	Market Basket (2.5 acres)	
	Np Stratham Llc (48.6 acres)	
	Seacoast Newspapers (2.6 acres)	
	The Vineyards (3 acres)	
	Wiggin Farm Winterberry (53 acres)	
Favorable gravel well sites	37.7 acres	
Agricultural Lands		
Prime or statewide importance farm soils	88.9 acres of prime farmland and 61.1 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	
Permanently Protected, Managed primarily as working forest (GAP 3)	39 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	39 acres	
Relationship to other Plans		
Area identified in other planning initiatives	No specific mention in Stratham master plan but covered under general natural resource goal statements.	

Name:	**Pawtuckaway Mountains**	
Location		
Town(s)	Deerfield, Northwood, Nottingham, Raymond	
Watershed (HUC 10)	Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	23,140 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	three blocks of 1,300, 2,200, and 1,880 acres all identified as Tier 2 priorities in the 2005 Wildlife Action Plan and one 8,950 acre block identified as a Tier 1 priority	
Aggregated forest blocks	located within a 45,000 acre block	
Freshwater Systems		
High quality stream watersheds	twenty Tier 1 (ranging from 40 to 1,310 acres), six Tier 2 (ranging from 160 to 850 acres), and portions of numerous Tier 3 and 4	
Important stream reaches	North River; supports a diversity of species of concern including American Eel, Banded Sunfish, and Bridle Shiner; also includes a portion of the Lamprey River which supports Brook Floater	
Presence/absence of dams (within high quality watersheds)	7 dams within high quality stream watersheds	
River & stream miles	39.2 miles of 1st order, 17.3 miles of 2nd order, 9.3 miles of 3rd order, 12.4 miles of 4th order, 0.6 miles of 5th order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Arabis canadensis (Sicklepod, threatened, G5, S2)	
	Arabis missouriensis (Missouri Rock Cress, threatened, G5, S2)	
	Aureolaria pedicularia var. intercedens (Fern-leaved False Foxglove, threatened, T4, S2)	
	Bromus pubescens (Hairy Brome Grass, endangered, G5, S1)	
	Carex backii (Back's Sedge, threatened, G4, S2)	
	Carex cumulata (Piled-up Sedge, endangered, G4, S1)	
	Carex hitchcockiana (Hitchcock's Sedge, endangered, G5, S1)	
	Carex retroflexa (Reflexed Sedge, endangered, G5, S1)	
	Carex siccata (Hay Sedge, endangered, G5, S1)	
	Carex sparganioides (Bur Sedge, endangered, G5, S1)	
	Conopholis americana (American Cancerroot, threatened, G5, S2)	
	Isotria medeoloides (Small Whorled Pogonia, threatened, G2, S2)	
	Panax quinquefolius (Ginseng, threatened, G3, S2)	
	Paronychia canadensis (Smooth-forked Chickweed, threatened, G5, S2)	
	Polygonum tenue (Slender Knotweed, endangered, G5, S1)	
	Ranunculus fascicularis (Early Buttercup, endangered, G5, S1)	
	Rhododendron maximum (Giant Rhododendron, threatened, G5, S2)	
	Woodsia obtusa (Blunt-lobe Woodsia, endangered, G5, S1)	
Animals of conservation concern	Ardea herodias (Great Blue Heron (Rookery), G5, S4)	
	Clemmys guttata (Spotted Turtle, G5, S3)	
	Coluber constrictor constrictor (Northern Black Racer, T5, S3)	
	Dendroica cerulea (Cerulean Warbler, G4, S3)	
	Emydoidea blandingii (Blanding's Turtle, G4, S3)	
	Gavia immer (Common Loon, threatened, G5, S3)	
	Pandion haliaetus (Osprey, threatened, G5, S2)	

Significant wildlife habitats	cliff, floodplain forest, grassland, marsh, peatland, ridge / talus	
Exemplary natural communities and systems	Appalachian oak - pine rocky ridge (S3)	
	Appalachian oak rocky ridge system (not ranked in NH)	
	Black gum - red maple basin swamp (S1)	
	Chestnut oak forest/woodland (S1)	
	Emergent marsh - shrub swamp system (not ranked in NH)	
	Hemlock - white pine forest (S4)	
	Poor level fen/bog system (S3)	
	Red oak - black birch wooded talus (S3)	
	Red oak - ironwood - Pennsylvania sedge woodland (S2)	
	Rich Appalachian oak rocky woods (S1)	
	Rich Appalachian oak rocky woods system (not ranked in NH)	
	Rich mesic forest (S3)	
	Semi-rich Appalachian oak - sugar maple forest (S2)	
Other Resource Features & Public Values		
Water Supply	none	
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	
Surface water intakes		
Wells	George B White Bldg (1 non-community well)	
	Pawtuckaway St Pk/Admn Complex (1 non-community well)	
	Pawtuckaway St Pk/Day Use Area (1 non-community well)	
	Pawtuckaway St Pk/Horse Island (1 non-community well)	
Wellhead protection areas	Englewood Park (51.5 acres)	
	George B White Bldg (55.4 acres)	
	Leisure Village (393.4 acres)	
	Nottingham Community School (6 acres)	
	Riverview Town Houses (22.5 acres)	
	The Longview School (115.4 acres)	
Favorable gravel well sites	none	
Agricultural Lands		
Prime or statewide importance farm soils	110.1 acres of prime farmland and 206.7 acres of farmland of statewide importance	
Landscape Connectivity	High connectivity value between conservation lands, and forest blocks	
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	54 acres	
Permanently Protected, Managed primarily as working forest (GAP 3)	7,789 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	185 acres	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	8,028 acres	
Relationship to other Plans		
Area identified in other planning initiatives	No specific conservation priorities listed for Town of Nottingham.	
	No specific mention in Deerfield master plan but covered under general land protection priorities.	
	High scoring focus area in SPNHF SENH study and current land protection project area at Mulligan Forest (2000+ acres).	
	TNC Deerfield black gum swamp project focus area.	
	Major core and connecting component in the Bear Paw Regional Greenway plan, and high-scoring co-occurrence results in natural resource inventory.	

Name:	**Pawtuckaway River**	
Location		
Town(s)	Epping, Nottingham, Raymond	
Watershed (HUC 10)	Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	750 acres	2,860 acres (see also supporting natural landscape for Kennard Hill)
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~20%) of a 4,910 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	4,910 acres (Tier 2)
Aggregated forest blocks	45,000 acres	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	0.4 miles of 1str order, 0.3 miles of 2nd order, 2 miles of 4th order	4 miles of 1st order, 2.9 miles of 2nd order, 0.2 miles of 4th order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	none known
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland	floodplain forest, grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	14.1 acres	none
Surface water intakes	none	none
Wells	Pawtuckaway Farms (2 community wells)	Epping Water And Sewer Dept (2 community wells)
Wellhead protection areas	Pawtuckaway Farms (75.4 acres)	Epping Water And Sewer Dept (418.8 acres)
		Pawtuckaway Farms (8.5 acres)
		Plumer Court (36.2 acres)
Favorable gravel well sites	5.8 acres	none
Agricultural Lands		
Prime or statewide importance farm soils	12.6 acres of prime farmland and 10 acres of farmland of statewide importance	167.7 acres of prime farmland and 19.2 acres of farmland of statewide importance
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		

Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	120 acres	195 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	65 acres
Total conserved	120 acres	260 acres
Relationship to other Plans		
Area identified in other planning initiatives	Mentioned as a parcel of priority in Epping master plan, between river and Blake Road.	Pawtuckaway River not specifically mentioned in Epping master plan, but many nearby lands and features are cited.
	Does not appear to be among parcels listed by the Town of Raymond as conservation priorities, but discrepancies exist between the parcel list and the tax maps posted	Does not appear to be among parcels listed by the Town of Raymond as conservation priorities, but discrepancies exist between the parcel list and the tax maps posted
	High-scoring landscape-scale complex in the BPRG strategic conservation priorities mission mapping.	

Name:	**Pike Brook**	
Location		
Town(s)	Brookfield, Wolfeboro	
Watershed (HUC 10)	Lake Winnepesaukee Drainage, Salmon Falls River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	2,340 acres	3,290 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	located within a 21,500 acre block	
Freshwater Systems		
High quality stream watersheds	the majority of one Tier 2 (1,690 acres) and portions of several Tier 3 and 4	portions of numerous Tier 3 and 4
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	4.6 miles of 1st order, 2.3 miles of 2nd order, 1.5 miles of 3rd order	4.1 miles of 1st order, 1.2 miles of 2nd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Isotria medeoloides (Small Whorled Pogonia, threatened, G2, S2)	Platanthera flava var. herbiola (Pale Green Orchid, threatened, T4, S2
Animals of conservation concern	none known	none known
Significant wildlife habitats	marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	17.0 acres	136.5 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	Sanbornville Water Department (103.6 acres)	Sanbornville Water Department (103.7 acres)
Favorable gravel well sites	13.8 acres	91.4 acres
Agricultural Lands		
Prime or statewide importance farm soils	83.9 acres of prime farmland and 105.4 acres of farmland of statewide importance	191.5 acres of prime farmland and 112 acres of farmland of statewide importance
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	31 acres	2 acres
Permanently Protected, Managed primarily as working forest (GAP 3)	-	125 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-

Managed primarily (more than 50% by area) for extractive uses (GAP 4)	27 acres	3 acres
Total conserved	58 acres	129 acres
Relationship to other Plans		
Area identified in other planning initiatives	DRED Rail Trail runs through core area NW to SE	

Name:	**Preston Pond**	
Location		
Town(s)	Barrington, Rochester	
Watershed (HUC 10)	Cocheco River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	340 acres	470 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~25%) of a 1,800 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	a portion (~50%) of a 1,800 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan
Aggregated forest blocks	located within a 14,700 acre block	
Freshwater Systems		
High quality stream watersheds	one Tier 4 (180 acres)	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	1 dam within high quality stream watersheds	none
River & stream miles	0.8 miles of 1st order	none
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	Emydoidea blandingii (Blanding's Turtle, G4, S3)
Significant wildlife habitats	grassland, marsh, peatland, ridge / talus	grassland, marsh, ridge / talus
Exemplary natural communities and systems	Red oak - ironwood - Pennsylvania sedge woodland (S2)	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	none	Inn At Secretariat Estates (2 community wells)
Wellhead protection areas	Inn At Secretariat Estates (77.6 acres)	Inn At Secretariat Estates (163.1 acres)
Favorable gravel well sites	none	none
Agricultural Lands		
Prime or statewide importance farm soils	6.6 acres of prime farmland and 9.4 acres of farmland of statewide importance	60.9 acres of prime farmland and 11.5 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	-	-

Not permanently protected, but in public or institutional ownership (GAP 3a)	-	31 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	-	31 acres
Relationship to other Plans		
Area identified in other planning initiatives	Profiles strongly with SRC conservation criteria.	

Name:	**Rochester Heath Bog**	
Location		
Town(s)	Rochester	
Watershed (HUC 10)	Cocheco River, Salmon Falls River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,020 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	none	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	1.6 miles of 1st order, 2.9 miles of 2nd order, 0.2 miles of 3rd order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Calamagrostis cinnoides (Nuttall's Reedgrass, endangered, G5, S1)	
	Carex bullata (Inflated Sedge, endangered, G5, S1)	
	Carex polymorpha (Many Forms Sedge, endangered, G3, S1)	
	Scirpus longii (Long's Bulrush, endangered, G2, S1)	
Animals of conservation concern	none known	
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland	
Exemplary natural communities and systems	Poor level fen/bog system (S3)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	795.0 acres	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	Silver Bell Mobile Home Park (47.6 acres)	
Favorable gravel well sites	175.8 acres	
Agricultural Lands		
Prime or statewide importance farm soils	4.2 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	

Permanently Protected, Managed primarily as working forest (GAP 3)	-		
Not permanently protected, but in public or institutional ownership (GAP 3a)	49 acres		
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-		
Total conserved	49 acres		
Relationship to other Plans			
Area identified in other planning initiatives	Rochester master plan has no specific open space or natural resource protection recommendations. City does have conservation overlay district (2003) which largely addresses wetland and surface water quality.		
	Profiles strongly with SRC conservation criteria.		

Name:	**Rochester Neck**	
Location		
Town(s)	Barrington, Dover, Rochester	
Watershed (HUC 10)	Cocheco River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,610 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	one 823 acre block, a portion (~20%) of a 830 acre block, and a portion (~30%) of a 1,020 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	
Aggregated forest blocks	located within a 8,600 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	1.2 miles of 1st order, 0.6 miles of 2nd order, 3.3 miles of 3rd order, 6 miles of 4th order, 1.4 miles of 5th order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	
Animals of conservation concern	Bartramia longicauda (Upland Sandpiper, endangered, G5, S1)	
	Gallinula chloropus (Common Moorhen, G5, S2)	
	Podilymbus podiceps (Pied-billed Grebe, endangered, G5, S1)	
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland	
Exemplary natural communities and systems	Red maple floodplain forest (S2)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	1,329.8 acres	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	City of Dover Water Dept (288.5 acres)	
	Green Hills Mobile Home Park (6.5 acres)	
Favorable gravel well sites	575.6 acres	
Agricultural Lands		
Prime or statewide importance farm soils	632.3 acres of prime farmland and 61.7 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
	High potential connectivity along watercourse.	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	2 acres	
Permanently Protected, Managed primarily as working forest (GAP 3)	102 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	104 acres	
Relationship to other Plans		
Area identified in other planning initiatives	Rochester master plan has no specific open space or natural resource protection recommendations. City does have conservation overlay district (2003) which largely addresses wetland and surface water quality.	
	Dover master plan addresses many water quality and aquatic systems conservation priorities generally, and the Cocheco River is mentioned as a conservation priority area; however, the confluence with the Isinglass River is not mentioned.	
	Profiles strongly with SRC conservation criteria.	
	Focus area of the Cocheco River Watershed Coaltion	

Name:	**Saddleback Mountain**	
Location		
Town(s)	Deerfield, Northwood	
Watershed (HUC 10)	Lamprey River. Suncook River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	3,610 acres	2,910 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~50%) of a 6,230 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	a 6,230 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan
Aggregated forest blocks	located within a 9,900 acre block	
Freshwater Systems		
High quality stream watersheds	two Tier 1 (30 and 170 acres), three Tier 2 (230, 640, and 920 acres), one Tier 3 (440 acres), and several Tier 4 (whole or in part)	~25% of a Tier 4 (990 acres)
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	3 dams within high quality stream watersheds	none
River & stream miles	6.4 miles of 1st order, 1.4 miles of 2nd order, 2.3 miels of 3rd order	5.3 miles of 1st order, 1.2 miles of 2nd order, 1.2 miles of 3rd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	Emydoidea blandingii (Blanding's Turtle, G4, S3)	Ardea herodias (Great Blue Heron (Rookery), G5, S4B)
	Williamsonia fletcheri (Ebony Boghaunter, G4, SU)	Emydoidea blandingii (Blanding's Turtle, G4, S3)
Significant wildlife habitats	grassland, marsh, peatland, ridge / talus	grassland, marsh, peatland, ridge / talus
Exemplary natural communities and systems	Black gum - red maple basin swamp (S1)	none known
	Poor level fen/bog system (S3)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	35.0 acres
Surface water intakes	none	none
Wells	none	
Wellhead protection areas	Tower View Cooperative Inc (13.5 acres)	Hannaford (6.2 acres)
		Mountain View /Northwood Park (2.4 acres)
		Tower View Cooperative Inc (31.4 acres)
Favorable gravel well sites	none	8.9 acres
Agricultural Lands		
Prime or statewide importance farm soils	45.8 acres of prime farmland and 13.7 acres of farmland of statewide importance	80.2 acres of prime farmland and 85.5 acres of farmland of statewide importance
Landscape Connectivity	High connectivity value between conservation lands, and forest blocks	High connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	1,230 acres	362 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	431 acres	135 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	1,661 acres	497 acres
Relationship to other Plans		
Area identified in other planning initiatives	Saddleback Mountain specifically mentioned in Northwood resource conservation and preservation plan, with linkages to Bear Paw Regional Greenways plan.	Saddleback Mountain specifically mentioned in Northwood resource conservation and preservation plan, with linkages to BearPaw Regional Greenways plan.
	No specific mention in Deerfield master plan but covered under general land protection priorities.	No specific mention in Deerfield master plan but covered under general land protection priorities.
	High-scoring linkage landscape in the BPRG strategic conservation priorities mission mapping.	

Name:	**Seavey Creek / Fairhill Swamp**	
Location		
Town(s)	Rye	
Watershed (HUC 10)	Coastal Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	640 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	located within a 9,900 acre block	
Freshwater Systems		
High quality stream watersheds	several small Tier 1 watersheds	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	1.7 miles of 1st order, 1 mile of 2nd order, 1.6 miles of 3rd order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	3,900 feet of estuarine shoreline along Little Harbor; 1.9 miles of coastal shoreline; and 136 acres of undeveloped shoreland (1,000 foot buffer)	
Tidal rivers & streams	includes portions of Seavey Creek, Berry's Brook, and numerous unnamed streams and tidal channels	
Coastal forest blocks	none	
Tidal wetlands	192.3 acres of saltmarsh	
Important Plant & Wildlife Habitat		
Plants of conservation concern	Eleocharis parvula (Small Spike-rush, threatened, G5, S2)	
	Eleocharis uniglumis (Salt-loving Spike-rush, threatened, G5, S2)	
	Salicornia bigelovii (Dwarf Glasswort, endangered, G5, S1)	
Animals of conservation concern	Ammodramus caudacutus (Saltmarsh Sharp-tailed Sparrow, G4, S3)	
Significant wildlife habitats	dunes, marsh, peatland	
Exemplary natural communities and systems	Bayberry - beach plum maritime shrubland (S1)	
	Beach grass grassland (S1)	
	Coastal salt pond marsh (S1)	
	Low salt marsh (S3)	
	Saline/brackish intertidal flat (S3)	
	Tidal creek bottom (S3)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	none	
Favorable gravel well sites	none	
Agricultural Lands		
Prime or statewide importance farm soils	none	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	
Permanently Protected, Managed primarily as working forest (GAP 3)	364 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	79 acres	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	442 acres	
Relationship to other Plans		
Area identified in other planning initiatives	No mention in Rye master plan specifically, but resources are addressed generally.	
	Area includes priorities for conservation in the Rye Master Plan because it includes: salt marsh, wetlands, and other water features.	
	Specifically cited as a priority conservation area in SLT regional plan.	

Name:	**Spruce Swamp**	
Location		
Town(s)	Brentwood, Fremont	
Watershed (HUC 10)	Exeter River, Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,850 acres	950 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~30%) of a 670 acre block, and a 1,700 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	a 670 acre block, and a 1,700 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan
Aggregated forest blocks	8,400 acres	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	3.3 miles of 1st order	2.2 miles of 1st order, 0.7 miles of 3rd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Carex seorsa (Separated Sedge, endangered, G4, S1)	none known
Animals of conservation concern	none known	none known
Significant wildlife habitats	floodplain forest, marsh, peatland	floodplain forest, marsh, peatland
Exemplary natural communities and systems	Medium level fen system (S3)	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	none	
Wellhead protection areas	Grace Ministries International (12.1 acres)	none
Favorable gravel well sites	none	none
Agricultural Lands		
Prime or statewide importance farm soils	6.2 acres of farmland of statewide importance	1.6 acres of prime farmland and
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	29 acres	-

Not permanently protected, but in public or institutional ownership (GAP 3a)	132 acres	77 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	162 acres	77 acres
Relationship to other Plans		
Area identified in other planning initiatives	Not specifically mentioned in Fremont master plan, but covered under general conservation goals.	Not specifically mentioned in Fremont master plan, but covered under general conservation goals.
	Project focus area of SPNHF	Project focus area of SPNHF

Name:	**Squamscott River**	
Location		
Town(s)	Exeter, Greenland, Newfields, New Market, Stratham	
Watershed (HUC 10)	Exeter River, Great Bay Drainage, Lamprey River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	2,020 acres	260 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	none
Aggregated forest blocks	straddles two blocks of 10,000 and 18,800 acres	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	5.4 miles of 1st order, 5.4 miles of 2nd order, 4.6 miles of 5th order	0.3 miles of 1st order, 0.7 miles of 2nd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	12.9 mlies or estuarine shoreline along the Squamscott River and Great Bay	none
Tidal rivers & streams	includes portions of the Squamscott River, Parting Brook, Jewell Hill Brook, Mill Brook, Rocky Hill Brook, and numerous unnamed streams	includes a portion of Jewell Hill Brook and two other small, unnamed streams
Coastal forest blocks	none	none
Tidal wetlands	409.6 acres of saltmarsh	none
Important Plant & Wildlife Habitat		
Plants of conservation concern	Eleocharis parvula (Small Spike-rush, threatened, G5, S2)	none known
	Puccinellia tenella ssp. langeana (Tundra Alkali Grass, endangered, T4, S1)	
Animals of conservation concern	Ammodramus caudacutus (Saltmarsh Sharp-tailed Sparrow, G4, S3)	Ixobrychus exilis (Least Bittern, G5, S1)
	Ammodramus nelsoni (Nelson's Sharp-tailed Sparrow, G5, S3)	Porzana carolina (Sora, G5, S3B)
	Ixobrychus exilis (Least Bittern, G5, S1)	
	Pandion haliaetus (Osprey, threatened, G5, S2)	
	Porzana carolina (Sora, G5, S3)	
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland	floodplain forest, grassland, marsh, peatland
Exemplary natural communities and systems	Brackish marsh (S2)	none known
	High brackish tidal riverbank marsh (S1)	
	Low brackish tidal riverbank marsh (S1)	
	Mesic Appalachian oak - hickory forest (S2)	
	Saline/brackish subtidal channel/bay bottom (S3)	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	none
Surface water intakes	none	none
Wells	Great Bay Camping Llc (2 non-community wells)	Chisholm Farm (2 community wells)
	Turnberry (1 community well)	
Wellhead protection areas	Chisholm Farm (445.4 acres)	Chisholm Farm (160.7 acres)
	Millbrook office Park (1.1 acres)	Jewett Hill (50.6 acres)
	Newfields Vil Water & Swr Dist (474.9 acres)	Kings Highway Plaza (1.9 acres)
	Stratham Green Condos (135 acres)	Market Basket (32.8 acres)
	Stratham Woods (1.1 acres)	Seacoast Newspapers (8.1 acres)
	The Peninsula At Winding Brook (4 acres)	Stratham Central Condominiums (17.9 acres)
	Turnberry (117.5 acres)	Stratham Green Condos (42.6 acres)
		Turnberry (61.4 acres)
		Barrington Mobile Home Estates (4.7 acres)
Favorable gravel well sites	none	none

Agricultural Lands		
Prime or statewide importance farm soils	576.8 acres of prime farmland and 134.4 acres of farmland of statewide importance	14.4 acres of prime farmland and
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
	High potential connectivity along watercourse.	
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	14 acres	-
Permanently Protected, Managed primarily as working forest (GAP 3)	318 acres	69 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	296 acres	-
Total conserved	628 acres	69 acres
Relationship to other Plans		
Area identified in other planning initiatives	Newfields master plan cites riverfront property along Squamscott River as high conservtion priority.	No supporting landscape in Newfields.
	Town of Stratham places high priority on Squamscott River; see Squamscott project for details.	No specific mention in Stratham master plan of the small supporting landscapes.
	High priority conservation area with Exeter master plan.	
	Specifically mentioned in Newmarket master plan updates; extensive estuarine wetlands and shorelands in this area are of concern.	
	Long-time focus area of the Great Bay Resource Protection Partnership, identifed through A Conservation Plan for the Great Bay Region and Habitat Protection Plan.	

Name:	**Stonehouse Brook**	
Location		
Town(s)	Barrington	
Watershed (HUC 10)	Cocheco River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	726 acres	1,110 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~40%) of a 1,810 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	a 1,810 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan
Aggregated forest blocks	located within a 14,700 acre block	
Freshwater Systems		
High quality stream watersheds	one Tier 2 (40 acres), three Tier 3 (30, 150, and 350 acres), and one Tier 4 (160 acres)	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	1 dam within high quality stream watersheds	N/A
River & stream miles	0.6 miles of 1st order, 0.4 miles of 2nd order, 1 mile of 3rd order, 0.9 miles of 4th order	2 miles of 1st order, 1.1 miles of 2nd order, 1.7 miles of 3rd order, 0.3 miles of 4th order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	none known
Significant wildlife habitats	marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	21.4 acres	71.9 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	none
Favorable gravel well sites	none	19.9 acres
Agricultural Lands		
Prime or statewide importance farm soils	4 acres of prime farmland and 8.4 acres of farmland of statewide importance	39 acres of prime farmland and 81 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	-	-

Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	-	-
Relationship to other Plans		
Area identified in other planning initiatives	Stonehouse Pond and vicinity specifically mentioned as a conservation priority area in Barrington master plan.	Stonehouse Pond and vicinity specifically mentioned as a conservation priority area in Barrington master plan.
	High-scoring landscape-scale complex in the BPRG strategic conservation priorities mission mapping.	

Name:	**Taylor River & The Cove**	
Location		
Town(s)	Exeter, Hampton, Hampton Falls, Kensington	
Watershed (HUC 10)	Coastal Drainage, Exeter River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	2,420 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~70%) of a 1,460 acre block and a portion (~80%) of a 1,550 acre block both of which were identified as Tier 2 priorities in the 2005 Wildlife Action Plan	
Aggregated forest blocks	located within a 11,800 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	N/A	
River & stream miles	6.4 miles of 1st order, 6.5 miles of 2nd order, 2.2 miles of 3rd order, 0.9 miles of 4th order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Carex cristatella (Small-crested Sedge, threatened, G5, S2)	
Animals of conservation concern	Ardea herodias (Great Blue Heron (Rookery), G5, S4)	
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland	
Exemplary natural communities and systems	none known	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	31.5 acres	
Surface water intakes	none	
Wells	Wakeda Campground (3 non-community wells)	
Wellhead protection areas	Four Seasons Mobile Home Park (59.8 acres)	
	Seabrook Water Dept (1.7 acres)	
	Unitil Energy Systems Inc (22.4 acres)	
Favorable gravel well sites	12.5 acres	
Agricultural Lands		
Prime or statewide importance farm soils	323.2 acres of prime farmland and 193.3 acres of farmland of statewide importance	
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	
Other Documented		
Current Conservation Status		

Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-		
Permanently Protected, Managed primarily as working forest (GAP 3)	305 acres		
Not permanently protected, but in public or institutional ownership (GAP 3a)	111 acres		
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-		
Total conserved	416 acres		
Relationship to other Plans			
Area identified in other planning initiatives	Northwest corner of town specifically mentioned in Hampton Falls master plan as a conservation priority area.		
	Taylor River east and west of I-95 specifically mentioned in Hampton master plan.		

Name:	**Thurston Pond / Hartford Brook**	
Location		
Town(s)	Deerfield, Epsom	
Watershed (HUC 10)	Lamprey River, Suncook River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	6,870 acres	4,290 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~30%) of a 5,500 acre block identified as a Tier 1 priority in the 2005 Wildlife Action Plan	a portion (~30%) of a 5,500 acre block identified as a Tier 1 priority in the 2005 Wildlife Action Plan
Aggregated forest blocks	located within a 55,200 acre block	
Freshwater Systems		
High quality stream watersheds	three Tier 2 (140, 290, and 920 acres), one Tier 3 (440 acres), and one Tier 4 (550 acres)	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	1 dams within high quality stream watersheds	none
River & stream miles	6.9 miles of 1st order, 1.9 miles of 2nd order	2.3 miles of 1st order, 0.1 miles of 2nd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	Ardea herodias (Great Blue Heron (Rookery), G5, S4B)
		Emydoidea blandingii (Blanding's Turtle, G4, S3)
Significant wildlife habitats	marsh, peatland, ridge / talus	grassland, marsh, peatland, ridge / talus
Exemplary natural communities and systems	Black gum - red maple basin swamp (S1)	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	33.5 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	none
Favorable gravel well sites	none	21.4 acres
Agricultural Lands		
Prime or statewide importance farm soils	98.6 acres of prime farmland and 11.5 acres of farmland of statewide importance	91.6 acres of prime farmland and 19.7 acres of farmland of statewide importance
Landscape Connectivity	High connectivity value between conservation lands, and forest blocks	High connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	263 acres	731 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	123 acres	95 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	385 acres	826 acres
Relationship to other Plans		
Area identified in other planning initiatives	No specific mention in Deerfield master plan but covered under general land protection priorities.	No specific mention in Deerfield master plan but covered under general land protection priorities.
	High-scoring linkage landscape in the BPRG strategic conservation priorities mission mapping.	High-scoring linkage landscape in the BPRG strategic conservation priorities mission mapping.
		No information on Epsom conservation priorities

Name:	**Union Meadows**	
Location		
Town(s)	Milton, Wakefield	
Watershed (HUC 10)	Salmon Falls River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	990 acres	8,180 acres (see also Supporting Natural Landscape for Davis and Oak Hill)
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~50%) of a 1,300 acre block	a 2,300 acre block and two blocks at 1,150 and 1,480 acres identified as Tier 1 priorities in the 2005 Wildlife Action Plan
Aggregated forest blocks	located within a 58,300 acre block	
Freshwater Systems		
High quality stream watersheds	portions of a Tier 3 and a Tier 4	portions of numerous Tier 3 and 4
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	4 dams within high quality stream watersheds
River & stream miles	0.6 miles of 1st order, 2.8 miles of 3rd order	12.2 miles of 1st order, 4 miles of 2nd order, 7.4 miles of 3rd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	Notropis bifrenatus (Bridled Shiner, G3, S3)	Emydoidea blandingii (Blanding's Turtle, G4, S3)
		Gavia immer (Common Loon, threatened, G5, S3B)
		Notropis bifrenatus (Bridled Shiner, G3, S3)
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland	floodplain forest, grassland, marsh, peatland, pitch pine barren
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	259.2 acres	184.4 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	none	none
Favorable gravel well sites	122.6 acres	59.9 acres
Agricultural Lands		
Prime or statewide importance farm soils	63 acres of prime farmland and 32.6 acres of farmland of statewide importance	231.1 acres of prime farmland and 205 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Moderate to high connectivity value between conservation lands, and forest blocks
Other Documented		

Current Conservation Status			
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)		-	-
Permanently Protected, Managed primarily as working forest (GAP 3)		-	924 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)		-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)		-	-
Total conserved		-	924 acres
Relationship to other Plans			
Area identified in other planning initiatives		General linkage to Wakefield master plan.	General linkage to Wakefield master plan.
			Specific mention Salmon Falls in Milton master plan

Name:	**Upper Berry's Brook**	
Location		
Town(s)	Portsmouth, Rye	
Watershed (HUC 10)	Coastal Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	1,460 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	910 acres and 785 acres	
Aggregated forest blocks	located within a 10,000 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	3.8 miles of 1st order, 2.8 miles of 2nd order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline		
Tidal rivers & streams	includes portions of Berry's Brook, Witch Creek, and several unnamed streams	
Coastal forest blocks	2 blocks > 500 acres	
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	
Animals of conservation concern	none known	
Significant wildlife habitats	grassland, marsh, peatland	
Exemplary natural communities and systems	none known	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	311.8 acres	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	Adams Mobile Home Park (28.9 acres)	
	Rye Water District (6.6 acres)	
Favorable gravel well sites	153.5 acres	
Agricultural Lands		
Prime or statewide importance farm soils	35.5 acres of prime farmland and 35.4 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	48 acres	
Permanently Protected, Managed primarily as working forest (GAP 3)	108 acres	

Not permanently protected, but in public or institutional ownership (GAP 3a)	158 acres	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	314 acres	
Relationship to other Plans		
Area identified in other planning initiatives	Specifically identified in Portmouth master plan as a conservation priority area.	
	Specifically cited as a priority conservation area in SLT regional plan.	

Name:	**Upper Exeter River**	
Location		
Town(s)	Chester, Danville, Fremont, Sandown	
Watershed (HUC 10)	Exeter River, Merrimack River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	3,010 acres	2,110 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a 740 acre block, a portion (~50%) of an 800 acre block; a portion (~25%) of a 2,110 acre block and a 1,300 acre block (in its entirety) identified as Tier 2 priorities in the 2005 Wildlife Action Plan	a 740 acre block, an 800 acre block; a 2,110 acre block and a 1,300 acre block identified as Tier 2 priorities in the 2005 Wildlife Action Plan
Aggregated forest blocks	located within a 24,700 acre block	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	6.5 miles of 1st order, 1.9 miles of 2nd order, 7.1 miles of 4th order	3.6 miles of 1st order, 0.5 miles of 4th order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	Ardea herodias (Great Blue Heron (Rookery), G5, S4B)	Accipiter cooperii (Cooper's Hawk, threatened, G5, S2B)
	Pooecetes gramineus (Vesper Sparrow, G5, S2-S3)	Ardea herodias (Great Blue Heron (Rookery), G5, S4B)
		Enneacanthus obesus (Banded Sunfish, G5, S3)
		Pooecetes gramineus (Vesper Sparrow, G5, S2B)
Significant wildlife habitats	floodplain forest, grassland, marsh, peatland, ridge / talus	grassland, marsh, peatland, ridge / talus
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	299.8 acres	220.0 acres
Surface water intakes	none	none
Wells	Colby Pond (1 community well)	none
	Mill Pine Village (2 community wells)	
Wellhead protection areas	Barnyard Buddies (18.3 acres)	Colby Pond (519.1 acres)
	Colby Pond (420.9 acres)	Danville Four Seasons (61.5 acres)
	Cornerstone Estates (433.3 acres)	Sandown Central School (1.2 acres)
	Mill Pine Village (228.7 acres)	Stoneford (43.5 acres)
	Playmates Learning Center (3.5 acres)	
Favorable gravel well sites	162.7 acres	101.9 acres
Agricultural Lands		
Prime or statewide importance farm soils	71.2 acres of prime farmland and 72.3 acres of farmland of statewide importance	21.4 acres of prime farmland and 8.2 acres of farmland of statewide importance

Landscape Connectivity	Low to moderate connectivity value between conservation lands, and forest blocks	Low to moderate connectivity value between conservation lands, and forest blocks
	High potential connectivity along watercourse.	High potential connectivity along watercourse.
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	4 acres	-
Permanently Protected, Managed primarily as working forest (GAP 3)	207 acres	411 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	30 acre	46 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	241 acres	457 acres
Relationship to other Plans		
Area identified in other planning initiatives	Upper Exeter River tributaries specifically mentioned in Fremont and Sandown master plans. Specific mention of Sargent Road vicinity in Sandown plan. No specific mention in Danville master plan.	Upper Exeter River tributaries specifically mentioned in Fremont and Sandown master plans. Specific mention of Sargent Road vicinity in Sandown plan. No specific mention in Danville master plan.
	Focus of the Exeter River Local Advisory Committee.	

Name:	**Upper Great Brook**	
Location		
Town(s)	East Kensington, Kensington	
Watershed (HUC 10)	Exeter River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	540 acres	810 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~50%) of a 1,300 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	a 1,300 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan
Aggregated forest blocks	located within a 22,500 acre block	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	2.2 miles of 1st order, 0.8 miles of 2nd order, 0.7 miles of 3rd order	2.2 miles of 1st order, 1 miles of 2nd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	Clemmys guttata (Spotted Turtle, G5, S3)
Significant wildlife habitats	grassland, marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	60.2 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	Country Hills of East Kingston (46.7 acres)	Kensington Elementary School (19.6 acres)
Favorable gravel well sites	none	5.7 acres
Agricultural Lands		
Prime or statewide importance farm soils	145.5 acres of prime farmland and 65.4 acres of farmland of statewide importance	99.4 acres of prime farmland and 205.3 acres of farmland of statewide importance
Landscape Connectivity	Moderate connectivity value between conservation lands, and forest blocks	Moderate connectivity value between conservation lands, and forest blocks
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	6 acres	5 acres
Permanently Protected, Managed primarily as working forest (GAP 3)	39 acres	274 acres

Not permanently protected, but in public or institutional ownership (GAP 3a)	9 acres	34 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	21 acres
Total conserved	54 acres	334 acres
Relationship to other Plans		
Area identified in other planning initiatives	Moulton Ridge and Dearborn Road area cited as conservation priority area in Kensington master plan. Also Stumpfield Road parcels.	
	General vicinity east of 108 and north of 107 cited as priority focus area in East Kingston master plan.	
	Part of a high scoring focus area of the SPNHF SENH study.	Part of a high scoring focus area of the SPNHF SENH study.

Name:	**Upper Isinglass**	
Location		
Town(s)	Barrington, Stafford	
Watershed (HUC 10)	Cocheco River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	850 acres	1,310 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~50%) of a 1,420 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	a 1,420 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan
Aggregated forest blocks	located within a 14,700 acre block	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	Upper Isinglass; supports a diversity of species of concern including American Eel, Banded Sunfish, and Bridle Shiner
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	1.2 miles of 1st order, 1.7 miles of 2nd order, 5 miles of 3rd order, 0.4 miles of 4th order	0.7 miles of 1st order, 0.1 miles of 2nd order, 0.2 miles of 3rd order, 1 miles of 4th order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	Clemmys guttata (Spotted Turtle, G5, S3)
Significant wildlife habitats	floodplain forest, marsh, peatland	floodplain forest, grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	121. 6 acres	81.3 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	Strafford Elementary School (10.8 acres)	none
Favorable gravel well sites	20.5 acres	19.3 acres
Agricultural Lands		
Prime or statewide importance farm soils	1.7 acres of farmland of statewide importance	40.6 acres of prime farmland and 38.1 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
	High potential connectivity along watercourse.	High potential connectivity along watercourse.
Other Documented		
Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-

Permanently Protected, Managed primarily as working forest (GAP 3)	19 acres	-
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	19 acres	-
Relationship to other Plans		
Area identified in other planning initiatives	General conservation priorities mentioned in Strafford master plan, including water quality.	General conservation priorities mentioned in Strafford master plan, including water quality.
	Headwaters specifically mentioned in Barrington master plan.	Headwaters specifically mentioned in Barrington master plan.
	Focus area of the Isinglass River Local Advisory Committee	
	Very high-scoring community-scale complex in the BPRG strategic conservation priorities mission mapping.	

The Land Conservation Plan for New Hampshire's Coastal Watersheds:
Conservation Focus Area Description

Name:	**Upper Little River**	
Location		
Town(s)	North Hampton	
Watershed	Coastal Drainage, Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	330 acres	760 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~60%) of a 730 acre block	a 730 acre block
Aggregated forest blocks	located within a 5,000 acre block	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	Little River; supports a diversity of species of concern including American Eel, Banded Sunfish, and Redfin Pickerel	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	1.1 miles of 1st order, 0.4 miles of 2nd order	1.1 miles of 1st order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	none	none
Tidal rivers & streams	none	a portion of Berry's Brook
Coastal forest blocks	none	none
Tidal wetlands	none	none
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	Clemmys guttata (Spotted Turtle, G5, S3)
		Emydoidea blandingii (Blanding's Turtle, G4, S3)
Significant wildlife habitats	marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	9.0 acres	185.9 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	Aquarion Water Co of NH (9.3 acres)	Aquarion Water Co of NH (104.4 acres)
		Portsmouth Water Works (140.2 acres)
Favorable gravel well sites	none	69.2 acres
Agricultural Lands		
Prime or statewide importance farm soils	2.7 acres of prime farmland and 5.7 acres of farmland of statewide importance	55.9 acres of prime farmland and 99.8 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
	Moderate potential connectivity along watercourse.	Moderate potential connectivity along watercourse.
Other Documented		

The Land Conservation Plan for New Hampshire's Coastal Watersheds:
Conservation Focus Area Description

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	85 acres	-
Not permanently protected, but in public or institutional ownership (GAP 3a)	-	-
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	85 acres	-
Relationship to other Plans		
Area identified in other planning initiatives	No specific mention in North Hampton master plan.	No specific mention in North Hampton or Greenland master plans.
	Specifically cited as a priority conservation area in SLT regional plan (as coastal headwaters in Greenland and North Hampton).	
	High-scoring community-scale complex in SLT study by SPNHF of Greenland.	High-scoring community-scale complex in SLT study by SPNHF of Greenland.

The Land Conservation Plan for New Hampshire's Coastal Watersheds:
Conservation Focus Area Description

Name:	**Upper North Branch River**	
Location		
Town(s)	Candia, Deerfield	
Watershed	Lamprey River, Suncook River	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	2,890 acres	3,290 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a 1,890 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan and a portion (~15%) of a 15,440 acre block identified as a Tier 1 priority	two blocks as 1,030 and 1,890 acres identified as Tier 2 priorities in the 2005 Wildlife Action Plan, and a portion (~25%) of a 15,440 acre block identified as a Tier 1 priority
Aggregated forest blocks	located within a 55,200 acre block	
Freshwater Systems		
High quality stream watersheds	four Tier 1 (10, 70, 160, and 320 acres), one Tier 2 (40 acres), and three Tier 4 (340, 630, and 1,040 acres)	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	1 dam within high quality stream watersheds	none
River & stream miles	6.6 miles of 1st order, 3.9 miles of 2nd order	0.6 miles of 1st order, 0.5 miles of 2nd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	Ardea herodias (Great Blue Heron (Rookery), G5, S4)	Ardea herodias (Great Blue Heron (Rookery), G5, S4B)
	Coluber constrictor constrictor (Northern Black Racer, T5, S3)	Crotalus horridus (Timber Rattlesnake, endangered, G4, S1)
	Crotalus horridus (Timber Rattlesnake, endangered, G4, S1)	Emydoidea blandingii (Blanding's Turtle, G4, S3)
Significant wildlife habitats	grassland, marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	14.1 acres	1,262.9 acres
Surface water intakes	none	none
Wells	Bear Brook St Pk/Beaver Cpgd (1 non-community well)	none
Wellhead protection areas	none	none
Favorable gravel well sites	1.3 acres	594.5 acres
Agricultural Lands		
Prime or statewide importance farm soils	54.8 acres of prime farmland and 2.3 acres of farmland of statewide importance	51.3 acres of prime farmland and 62 acres of farmland of statewide importance
Landscape Connectivity	High connectivity value between conservation lands, and forest blocks	High connectivity value between conservation lands, and forest blocks
	High potential connectivity along watercourse.	
Other Documented		

The Land Conservation Plan for New Hampshire's Coastal Watersheds:
Conservation Focus Area Description

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	743 acres	2,872 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	18 acres	2 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	761 acres	2,874 acres
Relationship to other Plans		
Area identified in other planning initiatives	No specific mention in Deerfield master plan but covered under general land protection priorities.	No specific mention in Deerfield master plan but covered under general land protection priorities.
	Cited as a conservation priority in the Candia master plan.	Cited as a conservation priority in the Candia master plan.
	High-scoring linkage landscape in the BPRG strategic conservation priorities mission mapping.	Much of supporting landscape to west is Bear Brook State Park land.

The Land Conservation Plan for New Hampshire's Coastal Watersheds:
Conservation Focus Area Description

Name:	**Upper Taylor River**	
Location		
Town(s)	Hampton Falls, Kensington	
Watershed	Coastal Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	440 acres	370 acres
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~70%) of a 630 acre block	a 630 acre block and a portion (~30%) of a 680 acre block
Aggregated forest blocks	located within an 11,800 acre block	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	2.1 miles of 1st order, 1.2 miles of 2nd order, 0.7 miles of 3rd order	1.1 miles of 1st order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	none known
Significant wildlife habitats	grassland, marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	<1 acre	56.2 acres
Surface water intakes	none	none
Wells	none	none
Wellhead protection areas	Seabrook Water Dept (439 acres)	Seabrook Water Dept (371.9 acres)
Favorable gravel well sites	0.1 acres	33.4 acres
Agricultural Lands		
Prime or statewide importance farm soils	85.9 acres of prime farmland and 101.2 acres of farmland of statewide importance	129.4 acres of prime farmland and 63.5 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
Other Documented		

The Land Conservation Plan for New Hampshire's Coastal Watersheds:
Conservation Focus Area Description

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	-
Permanently Protected, Managed primarily as working forest (GAP 3)	-	-
Not permanently protected, but in public or institutional ownership (GAP 3a)	93 acres	3 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	11 acres	20 acres
Total conserved	105 acres	23 acres
Relationship to other Plans		
Area identified in other planning initiatives	Possible mention in Hampton Falls master plan near Rt. 84 and Nason Road along Kensington boundary.	Possible mention in Hampton Falls master plan near Rt. 84 and Nason Road along Kensington boundary.
	Part of a high scoring focus area of the SPNHF SENH study.	Part of a high scoring focus area of the SPNHF SENH study.

The Land Conservation Plan for New Hampshire's Coastal Watersheds:
Conservation Focus Area Description

Name:	**Upper Winnicut River**	
Location		
Town(s)	North Hampton	
Watershed	Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	290 acres	920 acres (see also Supporting Natural Landscape for Winnicut River / Cornelius Brook)
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	a portion (~20%) of a 1,330 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan	a portion (~60%) of a 1,330 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan
Aggregated forest blocks	located within a 10,100 acre block	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	1 mile of 1st order, 1 mile of 2nd order, 0.6 miles of 3rd order	2.4 miles of 1st order, 1.6 miles of 2nd order, 0.6 miles of 3rd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	none known	none known
Animals of conservation concern	none known	none known
Significant wildlife habitats	marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	46.4 acres
Surface water intakes	none	none
Wells	none	Aquarion Water Co of NH (1 community well)
Wellhead protection areas	Aquarion Water Co of NH (289.6 acres)	Aquarion Water Co of NH (920.1 acres)
		Wiggin Farm Winterberry (121 acres)
Favorable gravel well sites	none	2.8 acres
Agricultural Lands		
Prime or statewide importance farm soils	17.1 acres of prime farmland and 6.8 acres of farmland of statewide importance	129.5 acres of prime farmland and 82 acres of farmland of statewide importance
Landscape Connectivity	Low to moderate connectivity value between conservation lands, and forest blocks	Low to moderate connectivity value between conservation lands, and forest blocks
Other Documented		

The Land Conservation Plan for New Hampshire's Coastal Watersheds:
Conservation Focus Area Description

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	2 acres	2 acres
Permanently Protected, Managed primarily as working forest (GAP 3)	45 acres	87 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	1 acre	65 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	48 acres	155 acres
Relationship to other Plans		
Area identified in other planning initiatives	Specifically cited as a priority conservation area in SLT regional plan (as coastal headwaters in Greenland and North Hampton).	Specifically cited as a priority conservation area in SLT regional plan (as coastal headwaters in Greenland and North Hampton).

The Land Conservation Plan for New Hampshire's Coastal Watersheds:
Conservation Focus Area Description

Name:	**Wallis Marsh**	
Location		
Town(s)	Rye	
Watershed	Coastal Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	310 acres	N/A
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	
Aggregated forest blocks	located within a 10,000 acre block	
Freshwater Systems		
High quality stream watersheds	none	
Important stream reaches	none	
Presence/absence of dams (within high quality watersheds)	none	
River & stream miles	2.1 miles of 1st order, 2.3 miles of 2nd order, 0.1 miles of 3rd order	
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	none; and 73 acres of undeveloped shoreland (1,000 foot buffer)	
Tidal rivers & streams	includes numerous unnamed streams and tidal channels	
Coastal forest blocks	none	
Tidal wetlands	128.0 acres of saltmarsh	
Important Plant & Wildlife Habitat		
Plants of conservation concern	Eleocharis parvula (Small Spike-rush, threatened, G5, S2)	
	Eleocharis uniglumis (Salt-loving Spike-rush, threatened, G5, S2)	
Animals of conservation concern	Rallus limicola (Virginia Rail, G5, S4)	
Significant wildlife habitats	marsh	
Exemplary natural communities and systems	none known	
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	none	
Surface water intakes	none	
Wells	none	
Wellhead protection areas	none	
Favorable gravel well sites	none	
Agricultural Lands		
Prime or statewide importance farm soils	13.2 acres of prime farmland and 8.5 acres of farmland of statewide importance	
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	
Other Documented		

The Land Conservation Plan for New Hampshire's Coastal Watersheds:
Conservation Focus Area Description

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	-	
Permanently Protected, Managed primarily as working forest (GAP 3)	64 acres	
Not permanently protected, but in public or institutional ownership (GAP 3a)	39 acres	
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	
Total conserved	104 acres	
Relationship to other Plans		
Area identified in other planning initiatives	No mention in Rye master plan specifically, but resources are addressed generally.	
	Area includes priorities for conservation in the Rye Master Plan because it includes: Salt Marshes, wetlands, and other water features.	

The Land Conservation Plan for New Hampshire's Coastal Watersheds:
Conservation Focus Area Description

Name:	**Winnicut River / Cornelius Brook**	
Location		
Town(s)	North Hampton, Stratham	
Watershed	Great Bay Drainage	
	CORE AREA	**SUPPORTING NATURAL LANDSCAPE**
Size	330 acres	920 acres (see also Supporting Natural Landscape for Upper Winnicut River)
Significant Ecological Resources		
Forest Ecosystem		
Unfragmented forest block	none	a portion (~60%) of a 1,330 acre block identified as a Tier 2 priority in the 2005 Wildlife Action Plan
Aggregated forest blocks	10,100 acres	
Freshwater Systems		
High quality stream watersheds	none	none
Important stream reaches	none	none
Presence/absence of dams (within high quality watersheds)	none	none
River & stream miles	0.5 miles of 1st order, 1.1 miles of 2nd order, 1.9 miles of 3rd order	2.4 miles of 1st order, 1.6 miles of 2nd order, 0.6 miles of 3rd order
Coastal & Estuarine Resources		
Coastal and estuarine shoreline	not a coastal / estuarine area	not a coastal / estuarine landscape
Tidal rivers & streams		
Coastal forest blocks		
Tidal wetlands		
Important Plant & Wildlife Habitat		
Plants of conservation concern	Sparganium eurycarpum (Large Bur-reed, threatened, G5, S2)	none known
Animals of conservation concern	none known	none known
Significant wildlife habitats	grassland, marsh, peatland	grassland, marsh, peatland
Exemplary natural communities and systems	none known	none known
Other Resource Features & Public Values		
Water Supply		
High yield aquifer (maximum transmissivity >1,000 ft2 / day)	39.4 acres	46.4 acres
Surface water intakes	none	none
Wells	Aquarion Water Co of NH (2 community wells)	Aquarion Water Co of NH (1 community well)
Wellhead protection areas	Aquarion Water Co of NH (329.4 acres)	Aquarion Water Co of NH (920.1 acres)
	Wiggin Farm Winterberry (106.5 acres)	Wiggin Farm Winterberry (121 acres)
Favorable gravel well sites	19 acres	2.8 acres
Agricultural Lands		
Prime or statewide importance farm soils	55.1 acres of prime farmland and 33.6 acres of farmland of statewide importance	129.5 acres of prime farmland and 82 acres of farmland of statewide importance
Landscape Connectivity	Low connectivity value between conservation lands, and forest blocks	Low connectivity value between conservation lands, and forest blocks
	High potential connectivity along watercourse.	High potential connectivity along watercourse.
Other Documented		

The Land Conservation Plan for New Hampshire's Coastal Watersheds:
Conservation Focus Area Description

Current Conservation Status		
Permanently Protected, Managed as natural area or ecological reserve (GAP 1 & 2)	25 acres	2 acres
Permanently Protected, Managed primarily as working forest (GAP 3)	24 acres	87 acres
Not permanently protected, but in public or institutional ownership (GAP 3a)	5 acres	65 acres
Managed primarily (more than 50% by area) for extractive uses (GAP 4)	-	-
Total conserved	55 acres	155 acres
Relationship to other Plans		
Area identified in other planning initiatives	No specific mention of Winnicut River in North Hampton master plan; general natural resource goals only.	No specific mention of Winnicut River in North Hampton master plan; general natural resource goals only.
	Specifically cited as a priority conservation area in SLT regional plan (as coastal headwaters in Greenland and North Hampton).	

V. Implementation Strategies

A. Introduction

The preceding section identifies 75 Conservation Focus Areas within the coastal watersheds as the most important lands to retain for conservation and resource protection purposes. The Focus Areas suggest a network of lands that, if conserved intact, would retain a core of unfragmented, undeveloped areas supporting healthy ecosystems and continuing to provide the natural services and habitats on which people and other living beings depend.

The Conservation Focus Areas have been defined through a highly selective, science-based analysis which identified lands with critical features that make then uniquely important from an ecosystems standpoint. The process used to identify the Focus Areas was substantially more precise and thorough than previous analyses. In general, the results are highly consistent with previously identified high value conservation areas. Many of the Focus Areas appear in conservation plans and studies carried out by conservation organizations and towns and reflect long-established priorities.

Having identified them, the important question becomes how best to ensure the Focus Areas will remain intact as the region continues to grow and develop. The purpose of this section is to identify and explain strategies that will help to ensure this outcome.

1. One Size Doesn't Fit All

As explained in Section III, the 75 individual Conservation Focus Areas are not uniform in their functions and values. *Core Areas* represent lands and habitats with the highest importance. This level of importance may be attributed to rare habitat, large unfragmented forest blocks, pristine stream reaches, special coastal resources or a combination ("co-occurrence") of important features. *Supporting Natural Landscapes* are also important as they are considered essential to the long-term integrity of their associated Core Areas.

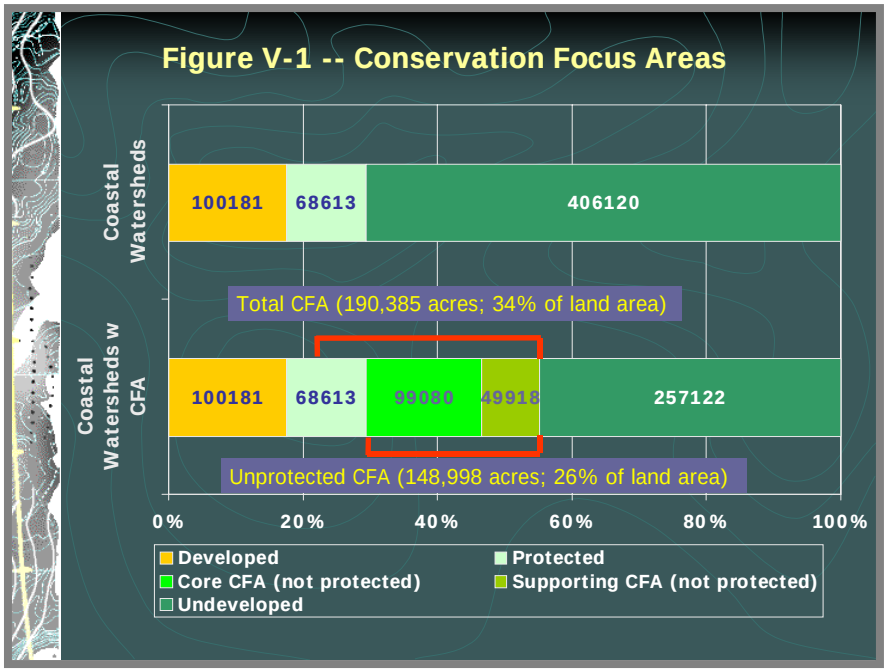
Conservation Focus Areas tend to be larger in the western and northern portions of the coastal watersheds, reflecting the less fragmented nature of the landscape in these areas. In the immediate coastal area, where more urbanization has occurred and occurrences of pristine natural areas are fewer and smaller, consideration was made for identifying Conservation Focus Areas of smaller size.

These variations are important to recognize in determining the best strategies and degree of protection to apply in specific circumstances.

2. By The Numbers

The sheer number of acres identified as Conservation Focus Areas also points to the need to employ a variety of strategies. A total of 190,300 acres, or slightly more than one-third of the land and water in the study area, are identified as Conservation Focus Areas. Of this total, 41,387 acres (or about 22%) are currently protected, leaving approximately 150,000 acres for which some form of protection is still needed (see Figure V-1). This immense task will require creative thinking and a willingness to reinterpret and reinvent our conservation approaches to achieve success.

Based on a conservative estimate of population growth and existing patterns of development, the region can expect nearly 2000 acres per year of undeveloped land to be converted to developed uses between now and 2025. (See Section II-B). It is reasonable to predict that many of the future converted acres would be located within Focus Areas, unless a range of proactive conservation strategies are implemented that direct development to less critical areas.



3. A Three Part Strategy

This conservation plan recommends that a three part strategy be implemented to protect and minimize development impacts in the Focus Areas:

1. **Adopt *The Land Conservation Plan for New Hampshire's Coastal Watersheds*** at all appropriate levels of government (state, regional, local) and use it to establish a consistent framework for land conservation in the coastal watersheds area.

2. **Protect land through acquisition** of conservation easements or fee simple ownership, especially the Core Areas identified within the Conservation Focus Areas.

3. **Regulate the location, density and design of development within Conservation Focus Areas** to minimize harmful impacts while allowing for a reasonable level of development.

The remainder of this section will describe these strategies in more detail.

B. Implementation Strategy: <u>Adopt and Use the Plan and its Policies</u>

A major purpose of this Plan is to serve as a framework for land conservation in New Hampshire's coastal watersheds. The framework pertains both to the physical landscape to be conserved as well as the policies that should be adopted to implement the plan. State and local governments should consider both aspects as they develop and pursue conservation objectives.

The Conservation Focus Areas identified in this Plan establish the physical framework of land and natural resource areas that are the most critical to protect in order to sustain the ecological, biological, and water resources in the coastal watersheds.

The following goals may serve as the basic policy framework that should be considered by all levels of government in adopting and implementing the plan:

- Protect land areas with key natural resource features that provide the ecological functions necessary to sustain a healthy environment, including the following which form the basis of the Conservation Focus Areas: unfragmented forest ecosystems, high quality stream watersheds, irreplaceable coastal and estuarine resources, large and

high quality wetland systems, riparian zones on freshwater and tidal rivers, streams, lakes and ponds, exemplary natural communities, and significant wildlife habitat.

- Protect the quality and quantity of surface and groundwater, including aquifers, rivers, lakes and reservoirs used for private and public water supplies.

- Maintain land and resources that provide protection from natural hazards, such as flooding and drought.

- Protect lands that sustain other critical ecosystem and natural services functions including: freshwater regulation and supply, nutrient cycling and uptake, waste assimilation, erosion and sediment control, and habitat protection.

- Prioritize the Conservation Focus Area Core Areas for protection though conservation easements and fee simple acquisition.

- Explicitly include the Conservation Focus Areas in state, regional and local conservation planning efforts, and in the development of future land use plans.

- Use the natural capacity of the land and natural resources as a controlling factor in determining the intensity, location and design of development permitted in Conservation Focus Areas.

- Encourage compact development and other regulatory and voluntary means to minimize impacts from direct development in Conservation Focus Area.

Implementing such policies will require action by all levels of government, as well as the private sector. To ensure that the Plan becomes the "green print" for action, the Plan should be adopted and actively used by all parties that have a role in its implementation.

State agencies and related entities: New Hampshire's Department of Environmental Services (including the Coastal Program), Office of Energy and Planning, New Hampshire Estuaries Project, Fish & Game Department and Department of Resources & Economic Development should use the Plan to guide and prioritize grant funding, including CELCP prioritization, for land conservation and to help formulate policy with respect to future development that could impact the integrity of the Conservation Focus Areas. In addition, the NH Department of Transportation should use the Plan to identify potential environmental mitigation sites associated with major transportation projects planned in the coastal watersheds region.

Regional agencies: The Rockingham and Strafford Regional Planning Commissions should adopt and use the Plan as a component of their respective regional comprehensive plans, and as a source of policy guidance on the inclusion of Conservation Focus Areas in the future land use elements of those plans.

County Conservation Districts: The Rockingham and Strafford County Conservation Districts should use the Plan and the identified Conservation Focus Areas as input to their conservation priorities with respect to land protection and working with landowners on land management plans.

Towns: Planning Boards should consider adopting the Plan as an element of their local Master Plans to establish the basis for any zoning or regulatory standards they may enact that apply specifically to development within Conservation Focus Areas. Conservation Commissions and Open Space / Land Conservation Committees should utilize the Plan to inform local conservation priorities and to develop or amend local conservation plans.

Non-Governmental Conservation Organizations: Private non-profit conservation organizations, watershed protection groups, land trusts, regional greenway organizations and others can use the Plan to direct and prioritize their programs to protect and manage land for conservation. See Appendix E for a listing of land trusts and related organizations that operate within the coastal watersheds.

C. Implementation Strategy: Pursue Land Protection

1. Introduction

Communities and landowners in New Hampshire's coastal watersheds have many options and resources available to them when planning for land protection. A variety of techniques can be tailored to fit a wide range of circumstances. Selecting one or several of these options depends on the natural characteristics of the land, landowner objectives, availability of financial resources, and community priorities. The booklet ***Conserving Your Land: Options for New Hampshire Landowners*** provides a helpful overview of land protection tools, illustrative case studies, and related information.[1]

The maps and recommendations contained in ***The Land Conservation Plan for New Hampshire's Coastal Watersheds*** provide communities with important information about the type and location of highly significant natural resources, adjacent land uses which may impact these features, and the types of ecosystems services these areas provide. This information should be considered when updating local open space and land conservation plans, selecting the best land protection option, and identifying potential sources of funding for a project.

2. Mechanisms for Protecting Land

a. Conservation Easements

A conservation easement is a voluntary, legal agreement between a landowner and a qualified conservation organization or government agency that permanently limits a property's uses in order to protect its natural resource values. The easement becomes a permanent part of the title, and is recorded with the registry of deeds. Land under easement may be public or privately owned.

Future landowners must comply with the terms of the easement. Land protected by conservation easement is typically inspected annually by the easement holder to ensure compliance with easement terms (see *Stewardship of Conservation Lands* below).

An easement restricts development and other land uses to the extent necessary to protect the significant conservation values of a particular property. Some easements completely prohibit all residential and commercial development and construction, while other easements may allow limited development. Landowners can work with communities, land conservation organizations, and public agencies to write conservation easements that reflect both the landowner's desires and the need to protect important conservation values. Easements typically permit landowners to continue traditional and sustainable uses of the land such as farming and forest management, though in some cases easements may further restrict extractive activities.

b. Fee Simple Acquisition

A community, land trust, or public agency may choose to purchase land outright for conservation purposes. Fee simple acquisition means the conservation buyer has absolute ownership of the property, including the full suite of responsibilities that ownership entails.

If a community is considering acquisition of fee ownership in a parcel of land, the municipality should at the outset of the project:

- Determine the permitted and prohibited uses on the property;
- Determine the appropriate management authority (e.g., conservation commission, parks and recreation, Department of Public Works, etc);
- Establish a formal means to ensure the property has permanent legal conservation restrictions (e.g., an easement to a third party); and,
- Develop recommendations as to management needs or desires (e.g., the installation of access gates or the desire to manage the property as a town forest).

When a municipality acquires fee simple ownership of a parcel for conservation purposes, *land conservation experts strongly recommend there be a second layer of protection to ensure that the conservation purposes for which the land was acquired are protected in perpetuity*. This second layer of protection could be a conservation easement to a third party (such as a qualified conservation organization or the state), or possibly a deed restriction.

3. Approaches to Structuring Land Protection Transactions

a. Gift or Donation

A landowner may choose to donate land or a conservation easement. An outright donation of land has many benefits. For the landowner, the donation may reduce estate, income, and property taxes. For the receiving community, land trust, or public agency, the donation advances conservation goals while conserving limited financial resources. Additionally, it may be possible for the landowner's donation to be credited as match for other conservation projects and funding, thus increasing the magnitude of the donation.

An outright donation is not the only way for a landowner to establish conservation land. In some cases, landowners can continue to live on the land by donating a remainder interest and retaining a reserved life estate. In this arrangement, the owner donates the property during his or her lifetime, but continues to live on and use the property. When the owner dies (or at any time during the owner's life, if they so choose), the receiving entity (or donee) gains full title and control over the property.

By donating a remainder interest, a landowner can continue to enjoy their land and may be eligible for a tax deduction at the time the gift is made. The deduction is determined through actuarial tables, and is based on the fair market value of the donated property less the estimated value of the reserved life estate.

If a landowner would prefer to own and control their land during his or her lifetime, but assure its protection after their death, they can donate through their will. The receiving entity must be aware of and willing to accept this donation, and all the necessary legal agreements, including the protection and use of the property, should be agreed upon ahead of time.

b. Bargain Sale

A bargain sale occurs when land or a conservation easement is sold for less than its fair market value. A bargain sale may provide the landowner with tax advantages because the

difference between the land's appraised fair market value and its sale price is considered a charitable donation and may be claimed as an income tax deduction. The value of this deduction must be determined by a qualified real estate appraiser and is subject to IRS review.

c. Fair Market Value Purchase

When the landowner is unable or unwilling to donate or sell at a bargain price, communities, land trusts and public agencies may choose to pay full price, known as the fair market value, for a parcel of land or a conservation easement. The fair market value is determined by a qualified real estate appraiser.

d. Options to Purchase and Rights of First Refusal

If a community, land trust, or agency has identified a parcel of land for protection but does not have all the necessary funds in place to purchase the land or the easement, the landowner may be willing to give or sell the community an option to buy the property or easement. Under an option, the landowner and conservation buyer contractually agree on a sale price, and the buyer is given a specified amount of time to exercise the option. The buyer is not obligated to purchase the land or easement. During the option period, the land cannot be sold to any other buyer, giving the conservation buyer time to raise the necessary funds.

If a landowner is not ready to commit to selling land or a conservation easement, he or she may be willing to grant a *right of first refusal*. This right does not obligate the holder to purchase the land or an easement, but does give the holder the opportunity to match any bona fide offer the landowner may receive.

4. Stewardship of Conservation Lands

a. Stewardship and Monitoring of Lands Subject to Conservation Easements

Restrictions on the type of land use activities must be enforced in perpetuity on conservation easement lands. To fulfill this responsibility, the easement holder annually inspects the property to ensure no violations of the conservation easement have occurred. If a violation is found, the easement holder must work to bring the easement back into compliance through a process outlined in the conservation easement document.

Easements require a substantial, on-going commitment of knowledgeable and consistent staff or volunteers. An easement baseline report must be prepared (preferably before the easement is acquired). The baseline report documents the condition of the property and improvements thereon, at the time the easement was granted. Then the easement must be regularly monitored with reports prepared that document the observations made during the monitoring process. All of these reports must be stored in an organized and safe filing system. In addition, it is recommended that easement holders establish and maintain a good working relationship with the landowner

It takes time and skill to monitor the property to make sure the provisions of the easement are being honored by the landowner. If there are easement violations, the easement holder will likely need to invest significant time in working with the landowner to correct the situation. If a violation cannot be resolved by the easement holder and the landowner, court action is the last alternative for the easement holder.

Effective conservation easement stewardship requires time and consistent policies and procedures, which may be difficult for communities due to the regular turnover of volunteers and committee/commission members. Communities may want to consider contracting with a

land trust or similar organization to provide stewardship services, including conducting a baseline report and annual monitoring. These services are typically done for a fee, so towns should consider this cost when developing the budget for a land conservation project.

b. Stewardship of Fee-Owned Conservation Lands

Public agencies, municipalities, and conservation organizations own hundreds of thousands of acres of conservation land across New Hampshire. Responsible management of fee-owned conservation land is essential to maintain over time the natural resource values for which the land was protected, and to ensure continued public support for land conservation.

To effectively manage conservation lands, owners should undertake the following actions:

- Document and map the property's natural resource values and features. Many conservation owners conduct ecological inventories to determine the presence, location, and status of rare species, significant natural communities and wildlife habitats, and other sensitive ecological resources. Similarly, inventories can be used to document cultural and historic resources. Additionally, there is a vast array of existing data available through the UNH GRANIT system and other sources.
- Determine management goals and objectives that reflect each property or conservation area's important natural resources and public values.
- Develop a management plan that clearly defines allowed and restricted uses, management zones, sensitive resources, restoration needs, and intended management activities. Consider whether a property, or some portions thereof, should be designated for special management regimes (such as restrictions on recreation or timber harvest) to maintain or enhance significant natural features.
- Secure and allocate sufficient resources to implement the management plan. Necessary resources may include staff, volunteers, technical experts, equipment, and funds.
- Monitor the property to determine if management strategies are achieving goals, and to adapt management approaches as necessary over time.

5. Information Resources for Communities in the Coastal Watershed

For a list of funding sources and organizations that can assist coastal watershed communities with land protection, as well as a list of reference documents, please see Appendix E.

Funding for local land protection projects can come from a variety of government and non-government sources. The availability of funds for land protection is highly variable, and often subject to shifting federal, state, and local government priorities. It is important for entities engaging in land protection to stay in contact with potential funding sources to determine available funds, grant deadlines, and criteria. It is also important to be persistent; it often requires more than one attempt to obtain approval from a funding source

D. Implementation Strategy: Regulate Development in Conservation Focus Areas

It is safe to assume that there will never be sufficient funding for land protection strategies to acquire conservation easements or ownership for all 150,000 acres of unprotected Conservation Focus Areas. A doubling of the number of currently protected acres, while feasible, would still leave the majority (about 110,000 acres) unprotected. Given growth trends, it is also a reasonable assumption that unprotected areas in the coastal watersheds will face development pressure in the near future.

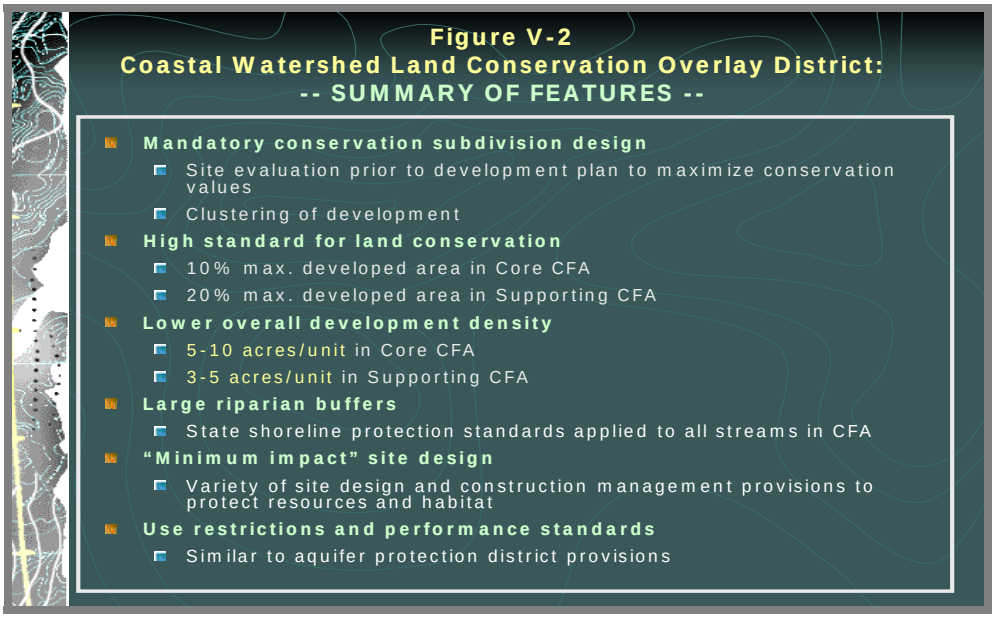
An important component to this Plan's implementation strategy, therefore, is to provide guidance and tools to limit the impacts of development that does occur in Conservation Focus Areas, with the goal of maintaining important conservation values. This can be accomplished by influencing the *location, density,* and *site design* of the development that occurs. It requires the careful balancing of private landowner rights with the public necessity to protect the critical natural resources on which we depend.

1. Conservation Overlay District

To assist communities in achieving this balance, a model ordinance called the *Coastal Watersheds Land Conservation Overlay District (COD)* has been developed as a tool intended to help guide development in these especially sensitive areas. The Conservation Overlay District brings together a number of existing tools intended to work in concert to achieve a central purpose: to accommodate limited, reasonable development within Conservation Focus Areas in such a way that maintains, to the extent possible, the ecological functions and natural services supplied by these areas.

The overlay district is presented as a *model*, however it is expected that it will be modified and improved over time by its authors and local communities as they work toward its adoption. Nevertheless, a recommendation of this Plan is that *all communities within the study area of this Plan consider and adopt the Conservation Overlay District, or the equivalent individual components, in order to minimize the impact of development in Conservation Focus Areas.* The model ordinance is explained in the following sections, and a copy is provided in Appendix B.

The Conservation Overlay District relies on six key features or standards to achieve its objectives, as shown in Figure V-2 and explained below. The district is designed to apply to residential subdivisions. Although similar principles can be applied to non-residential development, residential development will make up the large majority of development likely to affect Conservation Focus Areas.



1) Mandatory Conservation Subdivision

The model Conservation Overlay District requires that all residential subdivisions that are over three units in size be implemented as a *conservation subdivision*. Conservation subdivisions are a variation of cluster development (also commonly called 'open space development'). They require the grouping or clustering of building sites in a small portion of the parcel, and in locations that minimize development impacts on important resources. Although density bonuses are sometimes given to create an incentive for the use of cluster development, in its purest form there is no significant difference in the overall density of conventional versus cluster subdivisions on a given parcel. Rather it is simply a matter of how the building lots are arranged on the parcel. Because only a small portion of the land area is used for buildings, the remainder is established as permanently protected open space – which may or may not be managed for conservation purposes.

As defined herein, conservation subdivisions differ from conventional cluster developments in two important ways. First, conservation subdivisions typically establish a higher standard for open space, both in amount and quality. And second, they are subject to a multi-step design review process focusing on conservation of the parcel's natural resource values **prior** to any design layout of the subdivision.

The design review process requires that primary and secondary conservation areas be identified and evaluated first. This step is followed by the siting of houses, utilities, roads and, finally, lot lines. Areas and features that must be protected are identified and building sites, roads and utilities are designed around them. Typically, the applicant must complete an environmental assessment which is then reviewed by a qualified natural resource professional.

2) High Standard of Development Clustering and Open Space

Cluster and open space development *may* result in a higher level of land conservation and significantly reduce the amount of land utilized for each housing unit. This type of development, especially the earliest attempts, often failed to achieve these objectives because the required proportion of open space was set too low, or allowed to consist of "leftover" land of little value for conservation purposes and lacking connectivity to other conservation land. The model Conservation Overlay District addresses these shortcomings, in part through the design process described above, but also by establishing a high standard for concentrating the built area into a small portion of the overall site.

Within the Supporting Landscape portion of the Conservation Focus Areas, we recommend that the standard be set at 20% -- meaning that the built area can comprise no more than 20% of the total parcel area with 80% remaining open for conservation purposes. This standard has precedent in the Village Plan Alternative included in the Innovative Land Use Controls statute (RSA 674:21 VI). Within the Core Area, we recommend an even higher standard - that the built area comprise no more than 10% of the parcel area with 90% remaining open for conservation purposes. This is based on the need to minimize disturbance in these areas to preserve their conservation values. The higher standard will also reinforce the incentive to avoid locating building sites in these areas altogether, where that is an option.

In addition to specifying the proportion of developed land to conservation land, the model also establishes a requirement that 50% of the buildable upland area be designated as conservation land. Given the high standard of clustering already required, the upland standard will be relatively easy to meet for most parcels. It is

included to prevent the use of the Conservation Overlay District to achieve more development potential on a parcel than would be permitted by conventional zoning. This could arise where the parcel in question had a very high percentage of non-buildable land.

The model specifies that all land within the Conservation Focus Area, excluding the 10% to 20% built areas, be designated as conservation land, and secured through a permanent conservation easement placed on the deed for the parcel.

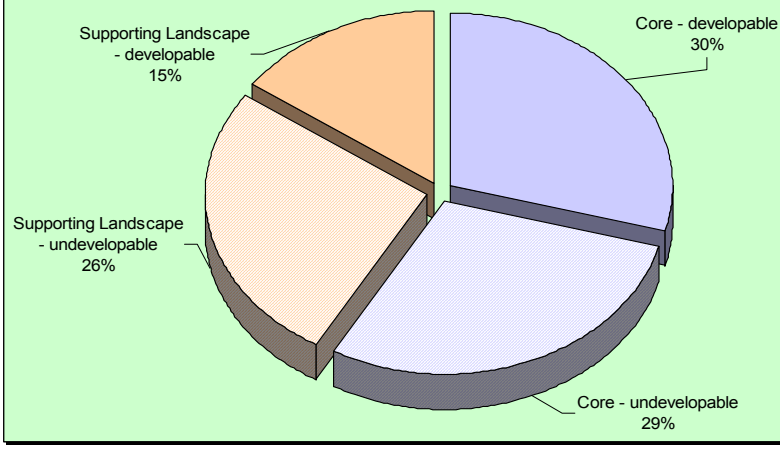
3) Reduced Overall Development Density

The third key attribute of the Conservation Overlay District is the stipulation that development proposed within the Conservation Focus Areas have a lower *overall density* than the underlying conventional zone. As with the clustering standard, we recommend that different standards apply to the Core Area and Supporting Natural Landscape areas. Specifically we suggest a range of 5 to 10 acres per residential unit for Core Areas and 3 to 5 acres per unit for the Supporting Natural Landscape areas. We recommend that the municipality determine an overall density within these ranges based on the resource attributes in the areas where development is proposed. (This can be evaluated as part of the conservation subdivision design review process.) Note that by *overall density* we mean the total number of units divided by the acreage of the entire parcel. The density within the 10% to 20% development site areas will, of course, be much higher.

The lower density is justified in two ways. First, it is consistent with the purpose of the ordinance in that it reduces the mass and magnitude of development and associated impacts within the Conservation Focus Areas. Second, much of the land included within the Focus Areas has low development potential, and would not yield significantly higher lot densities under conventional soil-based lot sizing standards.

The latter assertion is borne out in a sample analysis conducted for the southern third of the study area in which the Core Area and Supporting Natural Landscape areas were reviewed for development potential (see Figure V-3). Based on soil conditions indicating wetlands (very poorly drained soils) or steep slope (greater than 15%), a total of 55% of the Conservation Focus Areas is undevelopable. These figures may vary somewhat in other parts of the study area.

Figure V-3
Developable vs. Undevelopable land within the Conservation Focus Areas (for southern third of Study Area)



4) Riparian and Wetlands Buffers

The model Conservation Overlay District establishes development buffers from open water, wetlands, and streams for both water quality and habitat protection purposes. The specific size of the buffer should depend on the need. From the standpoint of water quality protection, vegetated buffers serve important roles in nutrient uptake, silt capture and waste assimilation, but typically need not exceed 100 feet to achieve these functions (except on steep slopes or highly erodible soils). Protection of terrestrial and aquatic habitat features requires larger buffers.

The model requires that where riparian habitats are identified in the site assessment process, then a large riparian buffer of 200 to 300 feet should be established and designated as a no-cut/no-disturb area. The specific buffer should be determined based on the specific buffer, corridor, and life history needs of wildlife identified in the site assessment. Where the site assessment does not indicate specific riparian wildlife habitat, a 100-foot buffer is required for water quality protection.

5) Minimum Impact Site Design and Construction Standards

The ordinance requires the Planning Board to consider the impacts of development on natural resources in evaluating the proposed layout and construction plan of the development. These factors are designed to ensure that developers will utilize *best practices* for protection of natural resources at the site level before, during, and after construction. Best practices include such measures as protecting floodplains, wetlands and steep slopes from the impacts of grading, filling or construction by utilizing appropriate erosion and sedimentation control techniques, preservation of buffers between different types of land uses, utilizing narrower roads (if approved by town fire and public safety officials) to reduce the amount of impervious surface, and utilizing low impact development practices for stormwater management (such as on-site infiltration).

In addition to these factors, the ordinance also requires the applicant to complete the wildlife habitat conservation checklist (see Appendix B) and take other steps to minimize direct impacts on wildlife, such as providing wildlife crossings and sizing culverts to allow for crossings. The ordinance recommends that municipalities also consider adopting subdivision design regulations such as lighting controls to minimize the impacts of development.

6) Use Restrictions and Performance Standards

The Conservation Overlay District allows those uses which meet a set of criteria and performance standards designed to maintain the ability of the natural resources found within Core and Supporting Natural Landscape areas to provide ecosystem services and maintain ecosystem function. Activities which require use, storage, production of disposal of toxic or hazardous materials are expressly prohibited.

All other uses must meet a set of performance standards in order to be permitted. These standards require that the use must utilize best management practices for stormwater management and low-impact development, must not fragment forest blocks and other important wildlife habitat resources found within a Focus Area, and must have a building footprint of less than 14,000 square feet to minimize large areas of impervious surface. If the developed project will generate animal waste, the use must utilize EPA and DES best practices for management of animal waste to minimize the potential for water source contamination. The standards also require that all development must meet the International Dark Sky Association's standards for full-

cutoff lighting to reduce the effects of lighting on nocturnal species and minimize negative effects of light pollution.

2. Master Plan Support

In general, new zoning ordinances should never be adopted without first establishing their supporting rationale basis in the local master plan. This is especially true for the Conservation Overlay District because it mandates the use of conservation subdivisions, an Innovative Land Use Control. Innovative Land Use Controls can only be made mandatory when specifically "supported in the master plan" (RSA 674:21 III). The Master Plan should therefore be amended to address the rationale for the conservation overlay district. This can be done by modifying sections of the Plan and by incorporating (by sections or by reference) appropriate supporting documents, as described below.

Master Plan Sections:

- Vision / Goals Section: The master plan should address the broad goals and desires of the community regarding conservation and resource protection, and might (as appropriate) reference the need to maintain a healthy environment, to protect critical natural resources and ecosystem services, and to maintain open space and sizeable blocks of interconnected natural areas.

- Land Use/Future Land Use: This section is critical, in that it establishes the basis for the establishment of zones and overlay districts within the community. It is appropriate in this section to include a map of the Conservation Focus Areas as developed in this Plan, indicating the Town's intention to limit development in these areas and the reasons therefore. (Hardcopy and electronic map files at the watershed scale are available in 2006 at the Rockingham and Strafford Regional Planning Commissions; in 2007, maps at the community scale will also be available.

- Conservation/Preservation/Natural Resources: Most communities include in their Master Plan a section that specifically addresses conservation and natural resource protection issues. This would be an appropriate place to specifically reference ***The Land Conservation Plan for New Hampshire***'s ***Coastal Watersheds***, including key findings with respect to the importance of the focus areas and their need for protection.

Referenced or Incorporated Documents:

- Natural Resource Inventory and Master Plan Section: Many communities have a natural resources inventory completed by the conservation commission or the planning board, and incorporated within their master plans. This is a key supporting document to establish important natural resources assets within the community.

- Local Open Space/Conservation Plans: A growing number of communities in the region have prepared conservation or open space plans, which often include prioritized areas for conservation and protection.

- ***The Land Conservation Plan for New Hampshire's Coastal Watersheds***: The Plan should be specifically referenced.

The following documents are included in the Appendix to this Conservation Plan:

- *Coastal Watersheds Land Conservation Overlay District (COD)*: model ordinance as described above. **Appendix B-1.**
- *Wildlife Habitat Checklist:* a model checklist and regulation governing site design for wildlife habitat protection. **Appendix B-2.**

References and Literature Cited

[1] Lind, B. 2004. Conserving Your Land: Options for New Hampshire Landowners. Center for Land Conservation Assistance, Society for the Protection of NH Forests, Concord, NH.

Appendix A:

Matrix of Existing Conservation Plans

The Land Conservation Plan for New Hampshire's Coastal Watersheds is intended to augment, but not to replace, the many existing conservation plans that have been developed for portions of New Hampshire's coastal watersheds. As part of our planning process, we attempted to catalog existing plans so that we could better understand the relationships between this watershed-scale analysis and more localized plans.

There are more than 40 municipalities in the coastal watersheds study area, most with master plans or open space plans stating general or specific conservation goals. These documents are community-specific and do not tend to address biodiversity or water quality issues beyond the municipal boundaries. Several local, regional and statewide land trusts operate in the coastal watersheds, each with its own mission-driven strategic conservation plans. In some cases, there are partnerships such as the Great Bay Resource Protection Partnership that have special geographic or resource-based focus and a long history of land protection. And finally, there are various state and federal agencies with conservation interests and priorities in the coastal watersheds region.

We developed a reference database of existing conservation plans throughout the study area that links the various plans to the conservation focus areas identified in this conservation plan. Not every community or land trust surveyed responded, and in some cases the information received is of a general nature, but this database is the first comprehensive, up-to-date reference guide for the coastal region. Each conservation focus area profile has a brief citation that links to any statement of conservation priority that we were able to identify in community master plans or other strategic conservation plans. There are many instances where one or more conservation focus areas are also specifically identified in town master plans or have been long-time priority areas for land trusts or entities such as the Great Bay Resource Protection Partnership.

Various master plan topics are listed below in Table A-1, with checks for each community where those topics are mentioned generally or specifically, and thus may have bearing on future conservation projects in the plan focus areas. Known conservation plans developed by various organizations are listed in Table A-2.

A more extensive document – too long to be included in this appendix -- is available in soft copy from the regional planning agencies or the project partners and provides a more detailed summation on each municipal master plan and land trust plan. However, it should be mentioned that these data only provide summary information on the plans, such as author, date, focal geography, and conservation priorities.

Table A-1. Town Master Plans.

REGION	ROCKINGHAM PLANNING COMMISSION																						
ORGANIZATION	Brentwood	Candia	Chester	Danville	Deerfield	E Kingston	Epping	Exeter	Freemont	Greenland	Hampton	Hampton Falls	Kensington	Kingston	New Castle	Newfields	Newington	North Hampton	Portsmouth	Rye	Sandown	Seabrook	Stratham
Recreation	X	X		X	X			X		X	X	X	X	X		X		X	X		X		X
Wildlife Habitat/Rare Species		X			X			X					X	X		X		X	X				X
Water Quality/Resources				X	X		X	X	X	X		X	X	X			X	X	X	X			X
Historic		X		X		X		X		X		X		X			X			X	X		
Scenic		X						X		X		X								X			X
Soils					X															X			
Farmland/Agriculture				X	X	X	X	X	X	X	X	X	X	X			X	X					
Open Space	X	X		X	X	X			X	X	X	X	X			X	X	X	X	X	X		X
Natural Resources		X							X		X			X		X							
Topography																							
Education																							
Land Acquis./Additions/Connect	X	X						X															
Forest				X		X	X	X	X		X	X		X			X						
Archeological		X																					
Shoreland					X				X														
Cons/Preservation	X	X				X			X		X		X					X	X		X		X
Rural Character					X				X			X		X			X						

REGION	STRAFFORD REGIONAL PLANNING COMMISSION																	
ORGANIZATION	Barrington	Brookfield	Dover	Durham	Farmington	Lee	Madbury	Middleton	Milton	New Durham	Newmarket	Northwood	Nottingham	Rochester	Rollinsford	Somersworth	Strafford	Wakefield
Recreation	X			X			X						X					
Wildlife Habitat/Rare Species	X		X	X	X		X	X	X				X				X	
Water Quality/Resources	X		X	X	X		X	X	X				X				X	X
Historic	X																	
Scenic	X			X					X								X	
Soils			X				X	X					X				X	X
Farmland/Agriculture			X	X	X		X	X	X				X				X	X
Open Space	X																	X
Natural Resources			X	X	X													
Topography			X		X													X
Education				X														
Land Acquis./Additions/Connect							X		X								X	
Forest			X					X	X				X				X	X
Archeological																		
Shoreland																		
Cons/Preservation								X									X	
Rural Character	X								X									

Table A-2. Conservation Plans Developed by Land Trusts and Other Organizations.

Organization	Plan Name	Date
Bear Paw Regional Greenways	*Bear-Paw Greenways Conservation Plan*	2004
Cocheco River Watershed Coalition	*Action Plan being finalized.*	2006
Great Bay Resource Protection Partnership	*Habitat Conservation Plan*	2000
Lamprey River Advisory Committee	*Strategic Conservation Plan*	1991
Moose Mountains Regional Greenways	*Strategic Conservation Plan*	2005
Oyster River Watershed Association	*Advisory Management Plan*	NA
Rockingham Land Trust	*Regional Natural Resource Inventory*	2005
	Comprehensive Conservation Priorities Plan	In prep
Rockingham Planning Commission	*Regional Open Space Plan*	2000
Seacoast Land Trust	*Strategic Conservation Plan*	2005
	Berry's Brook Conservation Plan	2004
Strafford Regional Planning Commission	*Open Space Plan*	2005
Strafford Rivers Conservancy	*Comprehensive NRI and conservation plan*	In prep
The Nature Conservancy	*Conservation Plan for the Great Bay Region*	1997
	An Assessment of Natural Communities and Significant Wildlife Habitat in the Piscassic River Watershed	2002
	Ecological Inventory of the Cocheco River Watershed and Folletts Brook Watershed	2004
	Deerfield Blackgum Swamp Conservation Plan	2003
	North Atlantic Coast and Lower New England Ecoregional Conservation Plans	2000
The Society for the Protection of New Hampshire Forests	*Localized conservation lands linkage plan for Newfields, Newmarket, Exeter*	1998
	Strategic Conservation Plan for Southeastern New Hampshire.	2002
	Parcel-based conservation focus plan for Kensington, East Kingston	2003
	Parcel-based conservation focus plan for Deerfield, Nottingham.	2003
	Detailed project assessment plans at Moose Mountains (Brookfield, Middleton) and Mulligan Forest (Nottingham).	2005/6

Appendix B1:

Coastal Land Conservation Overlay District

DRAFT: July 2006

I. Statutory Authorization/Authority

A. The Conservation Overlay District (COD) is authorized by the following provisions of New Hampshire law:

1) 674:21 Innovative Land Use Controls, including the following:
- 674:21(j) Environmental Characteristics Zoning
- 674:21(f) Cluster Development
- 674:21(d) Transfer of Development Rights
- 674:21 (h) Performance Standards
- 674:21 (n) Village Plan Alternative Subdivision

2) 674:36 (m) Master Plan Supporting Language
RSA 674:36 (m) states that the Planning Board is authorized to promulgate regulations to "require innovative land use controls on lands when supported by the master plan." The following language is an example of what might be included in the master plan, along with specific references to the Coastal Watersheds Land Conservation Plan:

Sample language: To protect natural resources, minimize the impact of development on the natural environment, and preserve areas which provide natural resource services and sustain ecosystem functions, such as those identified as Conservation Focus Areas in the Coastal Watershed Land Conservation Plan, it is the policy of the Town of [_____] to regulate development in such areas so as to minimize detrimental impacts. Specifically, it is recommended that conservation subdivision be mandatory, overall development density be limited appropriate to the development capacity of the land and special site development standards be employed that minimize impact.

3) 674:17 (h) Purposes of Zoning Ordinances:
"To assure proper use of natural resources and other public requirements"

II. Purposes

The purposes of this ordinance are:

A. Protect regional and municipal water quality of aquifers, private and public water supply wells, and surface water

B. Maintain ecological functions and natural ecosystem services necessary to sustain a healthy environment at the global, regional, and local levels such as:

1. **Climate regulation:** carbon sequestration, or the capture and storage of carbon dioxide by forest and other plant cover, reducing global warming

2. **Freshwater regulation and supply:** the storage, control, filtration, and recharge of water supplies by forests and wetlands which assist in maintaining the quality and integrity of drinking water supplies

3. **Nutrient cycling:** the passage of nutrients, such as nitrogen, through the ecosystem for usage by plants, reducing the need to apply fertilizers

4. **Nutrient uptake and waste assimilation:** the filtering of pathogens and nutrients from runoff by forests, vegetated buffers and wetlands, reducing the need for water treatment systems

5. **Flood retention:** the temporary storage of water from storms in areas provided by wetlands and marshes, reducing damage to real property and municipal infrastructure such as roads and bridges

6. **Habitat protection:** contiguous patches of forest and wetland and other habitat types support a diversity of plant and animal life that contribute to versatility and long-term health of food supply and ecosystem as a whole

7. **Soil Retention and formation**: creation of new soils and prevention of erosion, reducing the need for dredging and mitigation of damage due to siltation of rivers and streams

8. **Recreation and Aesthetics:** recreational activities and aesthetic value provided by the management and conservation of natural resources such as hunting, fishing, bird-watching, hiking, camping, canoeing, kayaking, and wildlife photography which contribute to the prosperity, rural character and welfare of the region and support the tourism and natural resource sectors of the economy

C. Protect wildlife species consistent with State Wildlife Action Plan;

D. Preserve open space per RSA 674:21; and

E. Permit the efficient layout of less costly to maintain roads, utilities, and other public and private infrastructures per RSA 674:21.

III. Findings

A. The Town of [_____] finds the following:

1. The Coastal Land Conservation Plan has identified priority Core Areas and Supporting Landscape Areas for land protection, based on the value of the natural resources found in those areas;

2. The land within those Core Areas and Supporting Landscape Areas contains natural resources which provide one or more of the ecosystem services identified in the preceding section.

IV. Applicability

A. **Area of applicability.** The Area of the Conservation Overlay District for the Town of [_____] is identified by the map for the Town of [_____] entitled "Conservation

Overlay District" and subsequent amendments. The District includes the following elements:

1. Focus Areas as defined in the Coastal Land Conservation Plan

2. Focus areas contain Core Areas and Supporting Landscape Areas as defined in the Coastal Land Conservation Plan

3. Other Locally Defined Priority Protection Areas [*these would include areas that have been identified by a preexisting local, watershed, or regional level plan that meet the purposes defined in this ordinance.*]

(NOTE: *Zones that a town may wish to exclude based upon the Master Plan may include Commercial, Industrial, or Town Center Zones. Towns adopting this ordinance may wish to add to and/or exclude areas from the Conservation Overlay Zone based on existing zoning or future land use intentions as expressed in the Town's Master Plan. However, a town may also choose to amend its master plan and zoning configuration based upon the finding that a particular zone may contain one or more focus areas as designated by the Coastal Land Conservation Plan maps. Areas added might include priority conservation areas identified by the town, provided they are consistent with the purposes of this ordinance.)*

B. **Residential Subdivisions**. The following regulations apply to all applications for subdivision on three or more lots or three or more new residential units within the Conservation Overlay District.

NOTE: the phrase three or more units is included to address cases where individual residents do not own individual lots, but instead utilize a condominium plan or other common ownership of a single large lot.

NOTE: The following section should be included only if the Town has or expects to implement a transfer of development credits ordinance.

C. **Voluntary Transfer of Development Credits.** Participation in the voluntary transfer of development credits program shall be available to all landowners proposing development of three or more lots.

V. Dimensional Standards

A. **Overall density.** Density shall be calculated by determining the number of acres containing Core Areas and Supporting Landscape Areas and the number of acreage outside of these areas in proportion to the total area of the parcel as follows:

1. **For acreage containing Core Areas**, the recommended overall density shall be one unit per _____ acres. (We recommend five to ten acres).

2. **For acreage containing Supporting Landscape Areas**, the overall density shall be one unit per three to five acres.

(NOTE: it is recommended that the Town determine an overall density within the above ranges based on consideration of both the particular Core Areas and supporting landscape areas as depicted on the Coastal Land Conservation Plan

map set as well as a site-level assessment of the natural resources. A licensed natural resource professional should be retained to evaluate the site and recommend a range of density appropriate for the carrying capacity of the particular resources on site necessary to sustain the ecological function of the particular resources identified.)

3. **Maximum density.** In no case shall the overall density for a particular parcel be greater than the lowest allowable density for the parcel were it not identified as containing a Focus Area or Supporting Landscape Area.

B. **Site Development Area.** No more than 20 percent of the overall site acreage configured in a contiguous area may be developed unless the proposed development avoids all acreage containing Core Area and Supporting Landscape area. The following density proportions shall apply based on the natural resource characteristics of the parcel:

1. **For parcels in which all of the land area is within a Focus Area,** no more than 10 percent of the site may be developed

2. **For parcels in which all of the land area is within a Supporting Landscape Area**, no more than 20 percent of the overall site may be developed

3. **For parcels in which some of the land is within a Core Area, some of the land is within a supporting Landscape Area**, and some of the land is in neither area, if the development does not include any Core Area or Supporting Landscape Area acreage within the developed portion of the site, up to 70 percent of the site may be developed.

4. **For portions of the development that are within Core Areas**, no more than 10 percent may be developed. For portions of the development that are within Supporting Landscape Areas, no more than 20 percent may be developed.

C. **Variable lot sizes permitted.** Variable lot sizes shall be permitted, but all lots must be designated by lot lines. No single lot shall be less than that required to reasonably accommodate the dwelling unit and any necessary utilities, including wells and septic except where community wells or septic systems. Community septic systems shall be located outside of the Conservation Focus Areas.

D. **Riparian Buffer and Setback Requirements for Wildlife Habitat Areas and Water Quality.** Any lot that includes riparian wildlife habitat area must buffer that riparian habitat area by delineating a 200-300 foot buffer. Any lot that contains or borders a river or stream but does not include riparian wildlife habitat area must delineate a 100-foot buffer for water quality protection. Buffers shall be designated as no cut no disturb by permanent markers or signage.

VI. Conservation Area Calculation

A. **Area of Development**: All development density to include roads, dwelling units, and other structures, but not to include septic systems and wells, must be located within **20 percent of the entire parcel**. The remainder of the parcel shall be

considered as conservation area and must comply with the following provisions for area, buildable area calculation, and ownership and management. Septic systems and wells may be located within the remaining 80 percent of the parcel but not within Core Areas.

B. **Conservation Area:** All developments shall have at least 50% (fifty percent) of the buildable upland area of the entire parcel designated as conservation land and documented through a permanent conservation easement within the deed for the parcel. Where significant wildlife habitat is identified through the four-step process above, the applicant shall also submit a **wildlife management plan** for the conservation land prepared by a natural resources professional and reviewed, at the applicant's expense, by the town's consultant.

C. **Buildable Area Calculation:** The buildable upland area of a parcel is determined by subtracting from the acreage of the entire parcel the following: the area of the parcel that will be used for locations of housing, related structures and roads, steep slopes in excess of 15 percent, and poorly and very poorly drained soils.

D. **Ownership and Management of Conservation Area:** Deed and related documents must clearly state the conveyance of the conservation land to an appropriate ownership and/or management entity through the use of a conservation easement.

VII. Phasing and Regional Impact Provisions for Residential Subdivisions

A. **Mandatory Phasing.** Mandatory phasing will be required on all subdivisions consistent with federal stormwater guidelines for soil disturbance requirements.

B. **Performance Agreement.** A Performance Agreement for the sequencing of the installation of roads and a schedule of completion of each phase may be required at the discretion of the Planning Board.

VIII. Uses allowed within the Conservation Overlay District

A. **Performance Standards.** Uses allowed within the Conservation Overlay District include those uses which meet the following criterion and the performance standards designed to maintain the ability of the natural resources found within the Core Areas and Supporting Landscape to provide the ecosystem services described in preceding sections.

B. Uses which require the use, storage, production or disposal of toxic or hazardous materials, including but not limited to volatile organic compounds, petroleum products, heavy metals, and radioactive materials as defined by the State Department of Environmental Services are expressly prohibited. All other uses must meet the following criteria in order to be permitted within the District:

1. **Best Management Practices for Stormwater Management and Low Impact Development /On-Site Infiltration.** The site utilizes best management practices for stormwater management and low impact development as defined by New Hampshire Department of Environmental Services, including on-site infiltration.

2. **Fragmentation.** The use does not fragment forest blocks and other important wildlife habitat resources found within a Focus Area as identified on the District Map.

3. **Best Management Practices for management of animal waste**. The use must utilize EPA and DES defined best management practices for management of animal waste to minimize the potential for water source contamination.

4. **Building Footprint.** Building footprint size must be less than 14,000 square feet to minimize the amount of large areas of impervious surface and fragmentation of the landscape by large buildings and supporting municipal infrastructure.

5. **Dark Sky Standards.** All development must meet the standards of the International Dark Sky Association for full-cutoff lighting fixtures to reduce off-site impacts of lighting on nocturnal wildlife species and minimize the negative effects of light pollution.

IX. Preliminary Layout

A. **Four-step Design Process.** Any subdivision in the COD shall be designed according to the following four-step process. Applicants shall submit four separate sketch maps indicating the findings of each step of the design process.

1. Step 1: Identify All Potential Primary and Secondary Conservation Areas:

a) **Primary Conservation Areas.** The following elements must be identified in Step 1 as primary conservation areas. The developer should attempt to limit development in these areas to the extent feasible:

1. Areas Delineated as **Core Areas** by the District Map

2. Wetlands, Floodplains, and Steep Slopes
(NOTE: Towns may wish to include a provision identifying their existing Wetlands, Shoreline Protection and Floodplains Ordinances applicability to these resources)

3. Existing conservation lands or other lands permanently protected by conservation easements or under the management of a local or state Conservation Organization

b) **Secondary Conservation Areas.** The following areas must be identified as secondary conservation areas:

1. Areas Delineated as **Supporting Landscape** by the District Map

2. Areas identified for protection in the Municipality's Master Plan, Natural Resource Inventory, and in the State of New Hampshire Wildlife Action Plan Co-occurrence habitat maps

3. Surface water areas including lakes, ponds, rivers, or streams and groundwater sources including aquifers and wells

(The applicant may reference local, regional, and state maps in identifying these areas.)

The developer should limit development in secondary conservation areas by locating buildings, roads, and infrastructure so as not to fragment existing forest or other habitat blocks.

c) **Evaluation Criteria.** The subdivision shall be designed around both the Primary and Secondary Conservation areas. The Conservation Commission shall review and provide comments on the sketch and documentation produced by the developer in Step 1.

The Board shall consider the following criteria, if applicable, in evaluating the proposed layout of lots and open space: (*The Board may wish to develop a checklist to use in this section to evaluate the applicant's compliance, or may wish to set up the following criteria as performance standards*.)

• **Impacts of grading, filling, or construction**: The extent to which the design protect all floodplains, wetlands, and steep slopes greater than 15 percent from the impacts of grading, filling or construction.

• **Preservation of existing resources and buffers between residential and agricultural uses:** The extent to which the design preserve and maintain mature woodlands, existing fields, pastures, meadows, and orchards, and create sufficient buffer areas to minimize conflicts between residential and agricultural uses.

• **Location of houses:** If the development must be located on open fields or pastures due to development constraints on other parts of the site, the extent to which houses are sited on the least prime agricultural soils, or in locations at the far edge of a field.

• **Buffers for water quality and wildlife habitat:** The extent to which the layout maintains or creates an undisturbed upland buffer or natural native species vegetation of at least 100 feet in depth adjacent to wetlands and surface waters, including creeks, streams, springs, lakes, vernal pools and ponds, or 200-300 feet if the riparian area constitutes riparian wildlife habitat area.

• **Maintain existing treelines and large woodlands:** The extent to which the design considers existing treelines, and minimizes impacts in large woodlands, especially those containing significant wildlife habitat.

2. **Step 2: Locate the House Sites. The Board in evaluating the proposed application shall consider the following recommendations.**

• Potential building sites shall be located taking into consideration the proposed common open space identified in Step 1 as well as other relevant data from the Site Inventory Plan and Site Analysis Map, such as topography and soils.

• Building sites must be located outside of Primary Conservation Areas and should be located outside of Secondary Conservation Areas to the extent feasible, taking into consideration the potential negative impacts of development on such areas as well as the potential positive benefits of such locations to provide attractive views and visual settings for residences and other uses.

3. **<u>Step 3: Designing Street Alignments and Trails</u>. The Board shall consider the following criteria in evaluating the applicant's proposed design.**

   • Does the design minimize the amount of impervious surface by utilizing narrower roads if approved by the town's fire and safety officials and road agent?

   • Does the design utilize low-impact development practices for stormwater management?

   • Does the design incorporate wildlife crossings in areas of identified wildlife habitat and allow culvert sizing suitable for wildlife passage?

4. **<u>Step 4: Drawing the Lot Lines</u>**

   • Lot lines shall be drawn as required to delineate the boundaries of individual lots.

B. **Environmental Assessment.** Applicant must complete an environmental assessment of the area and/or reference the Town's natural resource inventory. The assessment must be reviewed by a qualified natural resources professional such as a licensed forester, professional wildlife biologist or certified wetlands scientist retained by the town at the applicant's expense.

C. The following studies may also be required at the discretion of the Planning Board:

1. Aquifers/ hydrogeological study
2. High Intensity Soil Survey
3. Wetlands Inventory
4. Delineation of slopes greater than 15 percent

D. **Minimize or Mitigate Negative Impacts.** Applicant must demonstrate that the development will minimize or mitigate negative impacts of development during the construction phase through an erosion and sediment control plan.

E. **Reclamation Plan.** Applicant must provide reclamation plan and revegetation plan for any areas disturbed.

F. **Wildlife Habitat Checklist.** Applicant must complete the wildlife habitat conservation checklist (see Appendix B2)

X. <u>Buffers for Riparian Area Specifications</u>

A. Buffers for riparian wildlife habitat areas shall be 200-300 feet deep, vegetated, and designated as no cut no disturb by permanent markers or signage. Buffers for water quality shall be 100 feet deep, vegetated, and designated as no cut no disturb markers.

XI. **<u>Wetlands Setbacks and Buffers Designation</u>.** Setbacks and buffers may not be cut or disturbed except as specified in an approved Conservation Area Management Plan referenced in the provisions of the Conservation Easement. The Building inspector will certify by on-site inspection that the boundary of the buffer area has been marked with permanent markers or discs as described above.

XII. <u>Subdivision Design Regulations</u>. The following provisions are recommended for the Subdivision Regulations for the Town of [_____].

A. Trails and Public Access
B. Minimizing Impacts to Wildlife and Discouraging Nuisance Animals
C. Lighting
D. Stormwater Management
E. Erosion and Sediment Control

Appendix B2:

Habitat Protection Checklist

Background and Purpose

Wildlife and wildlife habitat provide many benefits and serve important ecological functions. Wildlife and habitat provide economic benefits by encouraging tourism and recreation such as hiking, wildlife viewing, hunting and fishing. Important ecological services are often provided by particular wildlife habitats, which may serve as buffers to streams, flood retention areas, areas of carbon sequestration, and filters of environmental contaminants. Protecting wildlife and habitat also contributes to the rural character of New Hampshire, as hunting, fishing, and wildlife watching are long-standing features of living in a rural area. Diversity of plant and animal life contribute to the versatility and long-term health of the food supply and the ecosystem as a whole.

Habitat protection can occur at three levels: regional level, town level master-planning, and site design regulatory level, and as regulatory, market-based or voluntary measures. This model regulation deals with regulatory and voluntary measures.

Appropriate Circumstances and Context for Use

Ideally, protection of wildlife and habitat begins at the largest scale appropriate. This scale is determined through study of the range of the particular animal and the extent of its habitat across a multi-state and multi-regional area. Due to difficulties in coordinating political boundaries and biological boundaries, most government entities must settle for either a coordinated approach with neighboring regions, or a regional level approach that acknowledges that the range may extend beyond political boundaries.

At the State level, New Hampshire is guided by the recently submitted Wildlife Action Plan. This project, as well as prior regional land protection studies and watershed level studies such as the Coastal Land Conservation Plan will serve as the foundation for state and regional-level efforts to protect wildlife and habitat through regulatory, market-based, and voluntary measures.

At the Town level, protection occurs in reference to these larger-level projects, but is also refined by local level wildlife habitat mapping and inventories. This tool can be used in three ways: as a guideline for developers, as a set of principles to be adopted by a town or Board, and finally, as a set of standards that could be incorporated into a Conservation Subdivision Ordinance as performance standards or stand alone as a checklist.

Legal Basis and Considerations

Protection of wildlife is referenced and or supported in the following RSA sections:

- Environmental Characteristics Zoning. RSA 674:21
- Village Plan Alternative Subdivision. RSA 674:21
- Subdivision Regulations. RSA 674:36
- Comprehensive Shoreland Protection Act. RSA 483-B
- Rivers Management and Protection Program. RSA 483

Model Subdivision and Site Plan Review Checklist/ Regulation

The following checklist is developed for protecting natural vegetation, mast stands, deer wintering areas, vernal pools, and for providing recreational activities and protecting cultural resources.

I. **Purpose.** The purposes of this section are:
   a) To protect and maintain the natural environment
   b) To provide for green spaces of adequate proportions
   c) To provide a habitat for wildlife
   d) To minimize soil erosion, lessen air pollution, conserve energy, and protect the quality of groundwater
   e) To provide for the harmonious and aesthetically pleasing development of the municipality and its environs
   f) To protect the public good benefits of habitat protection, including flood control, water recharge, carbon sequestration, food web integrity, and nutrient cycling

II. **Applicability.** This regulation applies to all applications for new development requiring site plan review and applications for the subdivision of land.

III. **Authority**.
   a) **RSA 674:16 II.** The power to adopt a zoning ordinance under this subdivision expressly includes the power to adopt innovative land use controls which may include, but which are not limited to, the methods contained in RSA 674:21.

   b) **RSA 674: 21 (j)**. **Innovative Land Use Controls/ Environmental Characteristics.** An innovative land use control adopted under RSA 674:21 may be required when supported by the master plan and shall contain within it the standards which shall guide the person or board which administers the ordinance.

   c) **RSA 674**: **21(h) Innovative Land Use Controls/ Performance Standards**.

   d) **RSA 674**: **17 (h) and (i)** To assure proper use of natural resources and other public requirements and to encourage the preservation of agricultural lands and buildings.

IV. **Findings and Principles.** It is the finding of this Board that, in order to achieve the purposes above, the following principles will significantly enhance the protection of wildlife habitat at the site level and contribute to the protection of habitat at the watershed and regional level by:

- Maintaining the ability of ecological systems to provide ecosystem functions necessary to maintain wildlife habitat and the multiple benefits to wildlife and ecological services to humans provided by such habitat,
- Maintaining unfragmented habitat blocks,
- Connecting habitat patches, facilitating wildlife movement through the area; and,
- Protecting wildlife from the negative impacts of development, including not only negative impacts to the habitat itself, but also to animal behavior and life cycle activities.

The following principles shall guide the review of all site plan and subdivision applications. The Board shall determine, on a case-by-case basis, whether the applicant's proposed development is consistent with these principles:

a) Does the applicant identify and conserve wildlife corridors through the property to facilitate wildlife movement across developed areas?
YES_____ NO_____

Suggested action: Applicant must conduct a site-specific wildlife assessment to identify appropriate corridors through a property or reference the town's Natural Resource Inventory. Applicant must construct appropriate tunnels at known reptile and amphibian crossing sites.

b) Does the applicant maintain significant buffers of undeveloped land between important habitat areas and developed area?
YES_____ NO_____

Suggested actions: Applicant must maintain appropriate buffers for the protection of habitat areas on the parcel as follows:
- The applicant must maintain vegetated buffers for wetlands and surface waters including riparian buffer areas.
- The applicant must provide at least 200 feet of buffer from the perimeter of core areas of identified deer wintering areas.
- The applicant must maintain a buffer of 400 feet around existing vernal pools. Applicant must maintain a mostly closed canopy of trees within 100 feet of any vernal pool.
- The applicant must also avoid fragmentation of connecting areas between habitat areas and buffer areas.
- The applicant must mark areas of vegetated buffers and soft (graduated) edges of conservation areas with permanent monuments or signage indicating that the area is A NO CUT/ NO DISTURB VEGETATED BUFFER.

c) Does the applicant maintain the structure and function of aquatic systems?
YES_____ NO_____

Suggested actions: Culverts must have the following attributes:
- Large enough openings to maintain natural water flow,
- Natural stream bottoms,
- Sized for bank-full stream width (i.e., the width of the stream during the 1 and one-half year flow event) to reduce potential future erosion near culvert openings.
- To ensure that fish can access the upper reaches of their habitat, culverts should have a trough or narrow channel in the bottom running the full length of the culvert to maintain sufficient water depth during low-flow periods to support fish passage.

d) Does the applicant minimize the clearing, grading, and compaction of soil during construction activities?
YES_____ NO_____

Suggested actions: Applicant must:
- Mark areas of important mast stands and other vegetation to be protected during construction and mark trees at the dripline to be protected during construction.

• Not allow construction materials to be stored over the root zone of trees. • Mark areas of vegetated buffers and soft edges of conservation areas with permanent monuments or signage indicating that the area is a no cut/ no disturb vegetated buffer.
• Submit a tree clearing plan, indicating areas of trees to be cleared, and areas to be protected, and retain, at the applicant's expense, a qualified natural resources professional to review the applicant's plan.

e) Does the applicant attempt to mimic features of the local natural landscape in developed areas?
YES_____ NO_____

Suggested actions: The applicant shall:
• Maintain existing foliage height diversity, to provide a range of habitat through layers of vegetation, such as ground covers, shrubs, and trees.
•Minimize edge effects by creating soft edges between developed areas and conservation areas using a graduation of smaller shrubs to larger shrubs to small trees to larger trees.
• Avoid locating roads within important habitat or forage areas such as mast stands, deer wintering areas, or vernal pools.

f) **Does the applicant show a progression of plan development that begins with identification of natural resources to be protected, followed by location of major development elements and description of mitigation and protection techniques to be employed?**
YES_____ NO_____

Suggested actions: The applicant must follow a natural resources-based design approach, such as Randall Arendt's 4-step design process to ensure that areas of natural resources are identified and that methods for protection of resources and minimization of impact to those resources are specified before the development is laid out.

g) Does the applicant minimize the negative effects of development on wildlife and discourage human-wildlife conflicts by using such methods including but not limited to: directing light away from stands of trees, fencing gardens, pet food areas, and covering and fencing trash disposal areas?
YES_____ NO_____

Suggested actions: The applicant must state in homeowner's association documents the specific measures that will be used to ensure that the development will minimize potential negative effects on wildlife and habitat, and that human-wildlife conflicts such as predation or nuisance animal incidents will be discouraged by ensuring that garbage, pet food areas, and small pets do not serve as a food source to area wildlife. Some areas of the development near homes may require fencing or other measures to deter wildlife from gardens and yards, and lighting must be fully shielded and directed away from stands of trees or other habitat areas so as not to disrupt animal behavior.

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Appendix C:

Documented Rare Species and Exemplary Natural Communities in New Hampshire's Coastal Watersheds

Taxonomic Name	Common Name	# Occur-rences	Global Rarity Rank	State Rarity Rank	State Listing
ANIMALS:					
Acipenser oxyrinchus	Atlantic Sturgeon	1	G3	S1	--
Alasmidonta varicosa	Brook Floater	2	G3	S1	E
Ammodramus caudacutus	Saltmarsh Sharp-tailed Sparrow	8	G4	S3	--
Ammodramus henslowii	Henslow's Sparrow	1	G4	SH	--
Ammodramus maritimus	Seaside Sparrow	1	G4	S1	--
Ammodramus nelsoni	Nelson's Sharp-tailed Sparrow	2	G5	S3	--
Ammodramus savannarum	Grasshopper Sparrow	2	G5	S1	T
Ardea herodias	Great Blue Heron (Rookery)	8	G5	S4	--
Bartramia longicauda	Upland Sandpiper	4	G5	S1	E
Catoptrophorus semipalmatus	Willet	5	G5	S3	--
Charadrius melodus	Piping Plover	2	G3	S1	E
Cistothorus platensis	Sedge Wren	3	G5	S1	E
Clemmys guttata	Spotted Turtle	27	G5	S3	--
Coluber constrictor constrictor	Northern Black Racer	11	T5	S3	--
Corvus ossifragus	Fish Crow	1	G5	S3	--
Dendroica cerulea	Cerulean Warbler	1	G4	S3	--
Emydoidea blandingii	Blanding's Turtle	45	G4	S3	--
Enneacanthus obesus	Banded Sunfish	5	G5	S3	--
Eremophila alpestris	Horned Lark	2	G5	S3	--
Erynnis lucilius	Columbine Duskywing	1	G4	S1	--
Esox americanus americanus	Redfin Pickerel	1	T5	S4	--
Etheostoma fusiforme	Swamp Darter	5	G5	S3	--
Gallinula chloropus	Common Moorhen	3	G5	S2	--
Gavia immer	Common Loon	20	G5	S3	T
Glyptemys insculpta	Wood Turtle	18	G4	S3	--
Haliaeetus leucocephalus	Bald Eagle	1	G5	S1	E
Ixobrychus exilis	Least Bittern	3	G5	S1	--
Lampetra appendix	American Brook Lamprey	1	G4	S2	--
Lasius minutis	Fen Ant	1	--	S1	--
Notropis bifrenatus	Bridled Shiner	9	G3	S3	--
Nycticorax nycticorax	Black-crowned Night-heron	1	G5	SH	--
Opheodrys vernalis	Smooth Green Snake	1	G5	S3	--
Pandion haliaetus	Osprey	13	G5	S2	T
Podilymbus podiceps	Pied-billed Grebe	4	G5	S1	E
Pooecetes gramineus	Vesper Sparrow	4	G5	S2	--
Porzana carolina	Sora	2	G5	S3	--

Taxonomic Name	Common Name	# Occur-rences	Global Rarity Rank	State Rarity Rank	State Listing
Progne subis	Purple Martin	3	G5	S1	E
Rallus limicola	Virginia Rail	1	G5	S4	--
Sterna hirundo	Common Tern	8	G5	S1	E
Sterna paradisaea	Arctic Tern	1	G5	S1	T
Sylvilagus transitionalis	New England Cottontail	4	G4	S3	--
Vermivora chrysoptera	Golden-winged Warbler	2	G4	S2	--
Williamsonia lintneri	Ringed Bog Haunter	2	G3	S1	E
PLANTS:					
Acalypha virginica	Three-seeded Mercury	1	G5	S1	E
Acer nigrum	Black Maple	6	G5	S2	T
Adlumia fungosa	Climbing Fumitory	3	G4	S1	E
Agalinis maritima	Salt-marsh Gerardia	15	G5	S2	T
Ammophila breviligulata	Beach Grass	15	G5	S2	T
Arabis canadensis	Sicklepod	2	G5	S2	T
Arabis missouriensis	Missouri Rock Cress	2	G5	S2	T
Arethusa bulbosa	Arethusa	2	G4	S2	T
Aristida tuberculosa	Sea-beach Needle Grass	3	G5	S1	E
Artemisia campestris ssp. caudata	Tall Wormwood	7	T5	S2	T
Aureolaria pedicularia var. intercedens	Fern-leaved False Foxglove	1	T4	S2	T
Betula nigra	River Birch	2	G5	S2	T
Bromus pubescens	Hairy Brome Grass	3	G5	S1	E
Calamagrostis cinnoides	Nuttall's Reedgrass	1	G5	S1	E
Cardamine bulbosa	Bulbous Bitter Cress	2	G5	S1	E
Carex backii	Back's Sedge	1	G4	S2	T
Carex bullata	Inflated Sedge	2	G5	S1	E
Carex cristatella	Small-crested Sedge	4	G5	S2	T
Carex cumulata	Piled-up Sedge	2	G4	S1	E
Carex hitchcockiana	Hitchcock's Sedge	1	G5	S1	E
Carex polymorpha	Many Forms Sedge	1	G3	S1	E
Carex retroflexa	Reflexed Sedge	2	G5	S1	E
Carex seorsa	Separated Sedge	2	G4	S1	E
Carex siccata	Hay Sedge	1	G5	S1	E
Carex sparganioides	Bur Sedge	1	G5	S1	E
Carex trichocarpa	Hairy-fruited Sedge	1	G4	S1	E
Celtis occidentalis	Hackberry	1	G5	S2	T
Chenopodium rubrum	Coast-blite Goosefoot	2	G5	S1	E
Cirsium horridulum	Yellow Thistle	2	G5	S1	E
Conopholis americana	American Cancerroot	3	G5	S2	T
Corallorhiza odontorhiza	Autumn Coralroot	2	G5	S1	E
Crassula aquatica	Pygmy Weed	1	G5	S1	E
Cyperus grayi	Gray's Umbrella Sedge	2	G5	S1	E
Cypripedium parviflorum var. pubescens	Large Yellow Lady's Slipper	1	T5	S2	T
Desmodium rotundifolium	Prostrate Tick Trefoil	1	G5	S2	T

Taxonomic Name	Common Name	# Occur-rences	Global Rarity Rank	State Rarity Rank	State Listing
Eleocharis parvula	Small Spike-rush	16	G5	S2	T
Eleocharis uniglumis	Salt-loving Spike-rush	11	G5	S2	T
Gaylussacia dumosa	Dwarf Huckleberry	3	G5	S2	T
Gentianopsis crinita	Fringed Gentian	6	G5	S2	T
Glyceria acutiflora	Sharp-flowered Mannagrass	1	G5	S1	E
Hibiscus moscheutos	Seaside Mallow	2	G5	S1	E
Honckenya peploides ssp. robusta	Sea-chickweed	1	T4	SX	--
Hottonia inflata	Featherfoil	2	G4	SNR	E
Hudsonia tomentosa var. tomentosa	Hairy Hudsonia	5	T5	SNR	T
Iris prismatica	Slender Blue Flag	5	G4	S2	T
Isoetes engelmannii	Engelmann's Quillwort	1	G4	S1	E
Isoetes lacustris	Large-spored Quillwort	1	G5	SNR	E
Isotria medeoloides	Small Whorled Pogonia	30	G2	S2	T
Iva frutescens ssp. oraria	Marsh Elder	9	T5	S2	T
Lemna trisulca	Star Duckweed	3	G5	S1	E
Liatris scariosa var. novae-angliae	Northern Blazing Star	3	T3	S1	E
Lilaeopsis chinensis	Eastern Lilaeopsis	6	G5	S2	T
Lilium superbum	Turk's Cap Lily	1	G5	S1	E
Limosella australis	Mudwort	2	G4	S1	E
Lindernia dubia var. anagallidea	False Pimpernel	1	T4	S1	E
Liparis loeselii	Loesel's Twayblade	2	G5	S2	T
Lysimachia thyrsiflora	Tufted Loosestrife	5	G5	S2	T
Malaxis monophyllos ssp. brachypoda	White Adder's Mouth	1	G4	S1	E
Malaxis unifolia	Green Adder's Mouth	2	G5	S2	T
Megalodonta beckii	Water Marigold	2	G4	S1	E
Mikania scandens	Climbing Hempweed	6	G5	S2	T
Panax quinquefolius	Ginseng	3	G3	S2	T
Paronychia canadensis	Smooth-forked Chickweed	1	G5	S2	T
Persicaria robustior	Robust Knotweed	3	G4	S1	E
Platanthera flava var. herbiola	Pale Green Orchid	8	T4	S2	T
Pluchea odorata var. succulenta	Salt Marsh Fleabane	1	T4	SNR	E
Polygonum prolificum	Prolific Knotweed	4	T4	S1	E
Polygonum tenue	Slender Knotweed	1	G5	S1	E
Potamogeton nodosus	Knotty Pondweed	5	G5	S1	E
Prunus americana	American Plum	1	G5	S1	E
Puccinellia tenella ssp. langeana	Tundra Alkali Grass	3	T4	S1	E
Ranunculus ambigens	Water-plantain Spearwort	1	G4	S1	E
Ranunculus fascicularis	Early Buttercup	2	G5	S1	E
Rhododendron maximum	Giant Rhododendron	1	G5	S2	T
Salicornia bigelovii	Dwarf Glasswort	11	G5	S1	E
Samolus valerandi ssp. parviflorus	False Water Pimpernel	6	T5	S2	T
Sarcocornia perennis	Woody Glasswort	3	G5	SNR	E
Scirpus longii	Long's Bulrush	1	G2	S1	E

Taxonomic Name	Common Name	# Occur-rences	Global Rarity Rank	State Rarity Rank	State Listing
Scirpus pendulus	Lined Bulrush	1	G5	S1	E
Sparganium eurycarpum	Large Bur-reed	16	G5	S2	T
Sphagnum contortum	Peat Moss	2	G5	S2	T
Sphagnum flavicomans	Peat Moss	1	G3	S1	E
Sporobolus cryptandrus	Sand Dropseed	8	G5	S2	T
Symphyotrichum tenuifolium	Large Salt Marsh Aster	4	G5	S1	E
Triosteum aurantiacum	Orange Horse-gentian	2	G5	S1	E
Triphora trianthophora	Three-birds Orchid	1	G3	S2	T
Waldsteinia fragarioides	Barren Strawberry	1	G5	S1	E
Woodsia obtusa	Blunt-lobe Woodsia	2	G5	S1	E
NATURAL COMMUNITIES:					
Alder - dogwood - arrowwood alluvial thicket		1		S4	
Appalachian oak - pine rocky ridge		4		S3	
Atlantic white cedar - yellow birch - pepperbush swamp		11		S2	
Bayberry - beach plum maritime shrubland		2		S1	
Beach grass grassland		4		S1	
Black gum - red maple basin swamp		9		S1	
Brackish marsh		13		S2	
Buttonbush basin swamp		1		S4	
Chestnut oak forest/woodland		2		S1	
Circumneutral seepage swamp		2		S1	
Coastal interdunal marsh/swale		1		S1	
Coastal rocky headland		1		S1	
Coastal salt pond marsh		2		S1	
Coastal shoreline strand/swale		1		S2	
Dry Appalachian oak - hickory forest		5		S3	
Hemlock - beech - oak - pine forest		3		S5	
Hemlock - cinnamon fern forest		2		S4	
Hemlock - white pine forest		1		S4	
Herbaceous low riverbank		1		S3	
Herbaceous seepage marsh		3		S3	
High brackish tidal riverbank marsh		3		S1	
High salt marsh		14		S3	
Inland Atlantic white cedar swamp		1		S1	
Low brackish tidal riverbank marsh		7		S1	
Low salt marsh		6		S3	
Lowland acidic cliff		1		S4	
Maritime wooded dune		1		S1	
Mesic Appalachian oak - hickory forest		4		S2	
Northern hardwood - black ash - conifer swamp		1		S2	
Red maple - black ash - swamp saxifrage swamp		7		S2	
Red maple - lake sedge swamp		1		S3	
Red maple - sensitive fern swamp		7		S2	
Red maple - Sphagnum basin swamp		2		S4	
Red maple floodplain forest		5		S2	

Taxonomic Name	Common Name	# Occur-rences	Global Rarity Rank	State Rarity Rank	State Listing
Red oak - black birch wooded talus		1		S3	
Red oak - ironwood - Pennsylvania sedge woodland		4		S2	
Red oak - pine rocky ridge		1		S3	
Rich Appalachian oak rocky woods		5		S1	
Rich mesic forest		3		S3	
Rich red oak rocky woods		1		S2	
Saline/brackish intertidal flat		6		S3	
Saline/brackish subtidal channel/bay bottom		6		S3	
Seasonally flooded Atlantic white cedar swamp		2		S2	
Semi-rich Appalachian oak - sugar maple forest		3		S2	
Semi-rich mesic sugar maple forest		1		S3	
Swamp white oak basin swamp		3		S1	
Swamp white oak floodplain forest		2		S1	
Tall graminoid emergent marsh		3		S4	
Tidal creek bottom		6		S3	
NATURAL COMMUNITY SYSTEMS					
Appalachian oak rocky ridge system		2		--	
Emergent marsh - shrub swamp system		1		--	
Kettle hole bog system		1		S2	
Low-gradient silty-sandy riverbank system		1		--	
Medium level fen system		3		S3	
Poor level fen/bog system		4		S3	
Rich Appalachian oak rocky woods system		2		--	
Rich sloping fen system		1		--	
Sand plain basin marsh system		1		S2	
Sandy pond shore system		1		S2	

Appendix D1:

Description of GIS Approach to Identifying the Best and Most Important Opportunities to Conserve Forest Ecosystems

A. Background

Forests are the dominant natural land cover in New Hampshire's coastal watersheds, occupying about 70% of the land area. Identifying and conserving the best remaining examples of our forest ecosystems is an important component of this plan because unfragmented forests provide essential plant and wildlife habitat, filter and purify water, offer extensive recreational opportunities, and provide timber and other products that support local economies and human needs.

In this region, forests are dominated by Appalachian oak-pine (white oak, black oak, hickories, white pine) and hemlock-beech-oak-pine communities. These dominant forest types, which scientists refer to as the "matrix forest," occur in a complex mosaic interspersed with smaller "patch" natural communities, a pattern driven by topography, landscape position, elevation, aspect, soils, hydrology, and other environmental factors.

We developed a GIS-based model and analysis for identifying optimal areas to conserve and restore functional core forest conditions in New Hampshire's coastal watersheds. By "functional core forest" we mean forest that has sufficient ecological integrity – as measured by size (in areal extent), condition (species composition, structure), and landscape context (buffer, connectivity) - to support interior forest habitat conditions, to be a source area for interior forest species, and to be resistant and resilient over time to expected natural disturbances. We emphasize unfragmented forest blocks, and especially those with significant area of "interior" forest. We intentionally use the term "forest ecosystem" to reflect that these unfragmented habitat blocks, while typically dominated by forest, also include wetlands and water features that comprise a healthy and productive ecosystem.

The model utilizes three data layers:
1) Unfragmented forest blocks
2) Aggregated forest blocks
3) High quality stream watersheds

We describe each of these data layers below, and explain the model weighting system.

B. Contributing Data Sets

1. Unfragmented Forest Blocks

We use the term "forest blocks" to include the range of natural habitats and naturally occurring land cover types such as forests, wetlands, streams, and ponds. **Unfragmented forest blocks** are defined as *forestland and embedded natural habitats and naturally occurring land cover types - such as forests, wetlands, streams, and ponds – that are not bisected or otherwise significantly fragmented by publicly accessible roads, powerlines, railroads, or other development.* The best and most important examples of these blocks are large enough to:

a) absorb and be resilient to infrequent, devastating natural disturbances such as fire, hurricane, or ice storm; and,
b) encompass and support a suite of characteristic forest interior species at abundance levels that ensure viable populations over time.

Model Weighting Considerations:
We highlight larger unfragmented forest blocks that are regionally significant, as well as smaller blocks with more localized significance.

Regionally significant forest block size classes:

>10,000 acres
- reasonable confidence in the ability to absorb and be resilient to large-scale fires in Oak-Pine forests and downbursts
- provides effective breeding habitat for most neotropical forest interior birds, and for 25 barred owl female territories

5,000 - 9,999 acres
- reasonable confidence in the ability to absorb and be resilient to hurricanes and medium-scale fires
- provides effective breeding habitat for some neotropical forest interior birds, and for 25 pileated woodpecker or broad-winged hawk female territories

1,000- 4,999 acres
- reasonable confidence in the ability to absorb and be resilient to smaller-scale natural disturbances such as wind-throw, blowdowns, and natural gap dynamics
- provides some core, interior forest with no edge effects

Locally significant forest block size classes:

500-999 acres
- may provide habitat for some interior forest species with smaller area requirements

250-499 acres
- provides minimal habitat for interior forest species, however blocks of this size are often locally important for recreational opportunities, neighborhood greenspace, or localized ground-water protection

2. Aggregated Blocks

Although all fragmenting features have *some* ecological impacts, not all fragmenting features have insurmountable fragmenting impacts. Therefore, we aggregate contiguous truly unfragmented forest blocks into *relatively unfragmented* blocks. TNC has used similar thinking as the basis for delineating matrix forest blocks in ecoregional planning efforts. Our aggregation process is intended to highlight relatively unfragmented groups of forest blocks that retain sufficient ecological cohesiveness and functionality for forest ecosystem viability (e.g., wildlife movement, seed dispersal, key ecological processes can occur). Many species of wildlife (especially birds and mammals) are able to move, without excessive mortality, across small roads and other fragmenting features if the feature width, adjoining development and traffic use patterns are not excessive. Similarly, many small fragmenting features do not serve as significant barriers to seed dispersal.

Our aggregate blocks were delineated by major highways and roads, including interstates, state highways and turnpikes, and other large and high-traffic roads. Once we had identified an

Aggregated Block boundary, we determined the *functional core forest acreage* of the aggregated block by summing the total acres of each Unfragmented Forest Block ≥ 500 acres within the Aggregated Block. For example, the total acreage within an Aggregated Block polygon could equal 60,000 acres, but the acreage within the Aggregated Block comprised of internal blocks ≥500 acres might only total 45,000 acres. We used the latter figure, which we consider to be the functional core forest acreage of the Aggregated Block.

Model Weighting Considerations:
Aggregated Blocks were grouped and weighted according to the following six size classes:
2,500 - 5,000 acres
5,000 – 9,999 acres
10,000 – 19,999 acres
20,000 – 39,999 acres
>40,000 acres

3. High Quality Stream Watersheds

These small stream catchment watersheds were generated as part of the U.S. Geological Survey SPARROW water quality model. We identified four top Tiers representing small watersheds with the highest landscape integrity and water quality. Tiers were stratified by breaks in population density, developed land cover, and agricultural land cover that span what might be understood as a "rural" landscape. For additional information, refer to write-up under "Best Opportunities to Conserve Freshwater Systems."

Model Weighting Considerations:
We adapted the SPARROW model to identify four tiers of high quality watersheds, with Tier 1 being the highest quality and meeting EPA standards as a "reference" catchment.

Tier 1- Reference Catchments
- Population density <20 persons/sq. mile
- % developed landcover <1%,
- % agricultural landcover <5%

Tier 2
- Population density <36 persons/sq. mile
- % developed landcover <2%,
- % agricultural landcover <5%

Tier 3
- Population density <64 persons/sq. mile
- % developed landcover <3%,
- % agricultural landcover <5%

Tier 4
- Population density <90 persons/sq. mile
- % developed landcover <5%,
- % agricultural landcover <5%

C. Co-Occurrence Model Weighting

The three data layers (or key variables) described above were overlaid to create a co-occurrence model. We gave primacy to the Unfragmented Forest Block Size data layer because this feature is linked tightly with potential core forest values. We derived a composite model score by summing the score assigned to each polygon for each of the five key model variables (see Table D1-1 below).

Table D1-1. Forest Ecosystem Co-Occurrence Model Scoring System.

Model Data Layer (Key Variable)	Scoring Class	Score
Unfragmented Forest Blocks	*Area in Acres*	
	250-499	5
	500-999	8
	1,000 – 4,999	14
	5,000 – 9,999	18
	>10,000	20
Aggregated Blocks	*Area in Acres*	
	2,500 – 4,999	4
	5,000-9,999	6
	10,000-19,999	8
	20,000-39,999	9
	≥ 40,000	10
High Quality Small Watersheds	*Aggregate of land cover and population density metrics*	
	Tier 4	5
	Tier 3	7
	Tier 2	9
	Tier 1	10

D. Identification of Best Remaining Opportunities to Conserve Forest Ecosystems

We identified the highest value areas through a statistical analysis of the forest ecosystem model results. The forest blocks remaining in the coastal and southern portion of the watershed, located east of Route 125 and south of Route 101, are substantially smaller and more disjunct as compared to those in the upper watershed located west of Route 125 and north of Route 101. Because of this disparity, we were concerned that from a watershed scale analysis, very few coastal forest areas would emerge as important for conservation. It is very important to identify and conserve remnant forest blocks in close proximity to the coast for the benefit of wildlife, native plant communities, and coastal water quality. Therefore, we decided to do parallel but independent statistical analyses of the upper and lower watershed forest ecosystems.

Co-occurrence model values ranged from 0-31. The model values were averaged over a 3,723 foot radius (encompassing a 1,000 acre area). For each half of the coastal watershed planning area (upper and lower), we then identified zones representing the top 20% of model values (by area). We then overlaid these zones, represented by contour lines, on top of the raw co-occurrence model results to determine the best remaining opportunities to conserve forest ecosystems. The vast majority of these "best opportunities" are reflected in the Conservation Focus Areas.

Appendix D2:

Description of GIS Approach to Identifying the Best and Most Important Opportunities to Conserve Freshwater Resources

A. Background

Freshwater resources in conservation planning studies typically embrace a wide range of natural resource features, including not only surface water features such as lakes, ponds, rivers and streams, but also wetlands and groundwater resources such as stratified drift aquifers. The water quality and habitat goals of this plan emphasize surface water resources over groundwater; however, aquifers and public water supplies are mapped as part of this study and are included in the published materials for use as reference datasets. Rivers and streams are given emphasis over lakes and ponds in this study because they have a greater overall impact on coastal water quality and living resources, provide important habitat for many species of conservation concern, and serve as important regional connectivity zones.

Aside from floodplain forests, freshwater wetlands are not included in this data composite. Note that coastal and estuarine water resources are also addressed in a separate section.

The integrity and health of our freshwater ecosystems are important not only to overall water quality within the coastal watersheds and the marine environment, but also because they directly relate to the critical habitat structure, function and processes necessary to maintain biodiversity unique to aquatic and marine environments. Although many conservation plans recognize freshwater resources, we sought to go a step further by identifying a subset of these resources with special significance for living resources and water quality.

We utilized three key datalayers for the freshwater systems analysis:
1) High quality stream watersheds
2) Riparian zones on streams and rivers
3) Important stream reaches with special ecological value

These datalayers are described below, including brief conceptual information and assumptions made in processing each datalayer.

B. Contributing Datasets

1. High Quality Stream Watersheds

These watersheds are comprised of small stream catchment areas defined by USGS in the SPARROW water quality model.[1] This research was originally designed to identify nitrogen and phosphorus load and yield for management and mitigation, but by reverse engineering the datasets, watersheds with high water quality can also be identified. Rather than the large, regional-scale river system delineations typically used in conservation planning, the SPARROW catchments each relate to individual stream reaches, and are generally only a few square miles in extent (the mean catchment size in the coastal study area is 590 acres). This relatively fine

[1] Moore, R.B., C.M. Johnston, K.W. Robinson, and J.R. Deacon. Estimation of total nitrogen and phosphorous in New England streams using spatially referenced regression models. Scientific Investigations Report 2004-5012. U.S. Geological Survey, New Hampshire.

spatial resolution allows water quality profiling within relatively small land areas and serves as a valuable index of environmental integrity in the natural landscape.

For the purposes of this study, there are three parameters related to water quality for each SPARROW catchment: population density, percent land cover developed, and percent land cover in agricultural use. More information is available in the SPARROW publication cited above. To improve accuracy, the original 1990s SPARROW datasets were updated using the 1998 Land Use (for Rockingham and Strafford counties), 2001 NH Land Cover Assessment Dataset, and U.S. Census 2000 population density data.

For this analysis, 193 SPARROW catchments were selected from a total of 888 catchments across the study area, representing those watersheds with highest water quality and landscape integrity. The selected catchments total about 86,000 acres in area, or about 16% of the study area. This subset, in turn, is stratified into three tiers using breaks in population density that span typical geographic definitions of "rural" landscape, and by slight increases in percent developed land cover. Note that agricultural land cover percentages remain the same throughout the tiers; 5% is the threshold value in the SPARROW model criteria for the highest ambient water quality.

- Tier 1 is the most pristine of the full range of all watersheds in the coastal watershed region, and meets the EPA definition of a "reference" catchment, that is a near-pristine, undeveloped watershed where anthropogenic nutrient inputs are minimal and against which the impacts of land use can be evaluated over time. The defining criteria are for Tier 1 are: <20 persons per square mile, <1% developed land cover, and <5% agricultural land use.
- Tier 2 is close to Tier 1 in quality, but allows for up to 36 people per square mile (the upper limit of rural population density according to conservation geographers) and up to 2% developed land cover.
- Tiers 3 and 4 move up the population density scale to the median value definition of "exurban density" – up 64 and 90 persons per square mile, respectively. The percent of developed land cover also increases to 3% and 5%, respectively.

The catchment statistics of the four tiers are as follows:

Tier	Number Catchments	Total Acreage	% of Total Coastal Watersheds Area	Mean size	Maximum Size
1	58	11,760	2.3%	213 Ac	1,316 Ac
2	44	18,190	3.5%	421 Ac	1,684 Ac
3	37	19,010	3.8%	648 Ac	6,156 Ac
4	54	34,160	6.7%	693 Ac	2,519 Ac

We also considered the effects of active dams on high quality stream watersheds. Dams have significant effects on freshwater habitats and biotic communities by acting as barriers to fish passage and other aquatic organisms, disrupting stream flow and sediment transport regimes, and destroying stream and floodplain habitat. On our maps, we display dams by their height and impoundment size; generally speaking, taller dams are more likely to be a barrier, and loss of stream habitat is proportional to impoundment size.

2. Riparian Zones: Streams & Rivers

Riparian zones comprise the natural spatial corridor along streams and rivers, formed by hydrological processes over time and defined largely by topography, but also characterized by

special plant and animal communities adapted to life on floodplains or in close proximity to watercourses. Riparian zones are frequently highlighted in conservation planning because of their singular importance for biodiversity and water quality.

These corridors may be wide or narrow depending upon the physical characteristics of the terrain and the size of the watercourse. They filter upland runoff, absorbing nutrients and helping to prevent siltation and pollutants from affecting waterbodies. Unique natural communities, such as silver maple floodplain forests, exist only in the alluvial soils along some riparian corridors. Riparian forests regulate water temperature by providing needed shade, provide organic inputs that drive the food web in small streams, and contribute coarse woody debris for aquatic habitat structure. They provide important connectivity zones and habitat areas for many species of wildlife. And, riparian zones are important for regulating and storing flood waters.

To delineate a broadly meaningful riparian corridor, we applied a buffer zone of 500' on either side of a watercourse. This distance is sufficient to maintain water quality and aquatic habitat function close to the water's edge and within a distance of 100' where most stormwater drainage is cleaned and filtered naturally; it also allows space and cover for other wildlife corridor/habitat functions of species ranging throughout the corridor, such as river otter and many turtles. This buffer zone has been placed uniformly along all streams in the study area, ranging from 1st order tributary streams high in the watershed to 6th order mainstem rivers draining to the coast.

We further highlight **Floodplain Forests,** riparian areas where the physical landscape periodically floods during high water discharge events. Floodplain forests were derived from a predictive model in the New Hampshire Fish and Game Department's Wildlife Action Plan. They differ from our delineation of riparian zones in that they are based on landform and hydrologic modeling as opposed to simple buffering.

3. Important Stream Reaches

A limited number of stream or river reaches (and one lake) and their associated floodplain and riparian zones in the study area are known to have special significance for living resources, including fish species of conservation concern and globally rare species such as the brook floater mussel. The 500' buffer zone along those segments has been given special recognition.

These watercourse segments were identified by aquatic ecologists with the New Hampshire Fish & Game Department, and from records of the NH Natural Heritage Bureau. Freshwater fish species of conservation concern that occur in the coastal watersheds include: American eel, bridle shiner, banded sunfish, swamp darter, redfin pickerel, Eastern brook trout, lake trout, and brook lamprey. The table below provides information on the Important Stream Reaches and associated species of concern.

Water Body	Species of Concern	Additional Comments
Cocheco River	bridle shiner	High bridle shiner abundance, possibly an isolated population (impassable barrier)
Exeter River	brook floater mussel	-
Great East Lake	lake trout	Only water body located within this conservation plan containing lake trout (an indicator species of a cold, clear, clean, and deep lake)
Isinglass River	American eel, banded sunfish, bridle shiner	-

Jones Brook	bridle shiner	Jones Brook contains bridle shiners, which appear to be declining in NH and their entire range
Lamprey River	American eel, banded sunfish, bridle shiner, brook floater mussel, redfin pickerel, and swamp darter	-
Little River	American eel, banded sunfish, redfin pickerel	-
Mallego Brook	Eastern brook trout	-
North River	American eel, banded sunfish, bridle shiner	-
Oyster River/Chelsey Brook	American brook lamprey	Important American Brook Lamprey rearing habitat

Appendix D3:
Description of GIS Approach to Identifying the Best & Most Important Opportunities to Conserve Irreplaceable Coastal & Estuarine Resources

A. Background

New Hampshire's coastal region supports a complex system of productive estuaries, tidal rivers and streams, salt marshes, rocky and sandy shorelines, and adjacent uplands. Tidal and estuarine watersheds comprise only 126 square miles, or 15% of the total coastal watershed study area. The actual marine coastline of New Hampshire is only 18 miles long, and approximately 75% of that is developed for some form of human land use. Our remaining coastal natural resources are truly irreplaceable, providing critical habitat for many species of wildlife species, along with a range of other important public values.

As with freshwater resources, the coastal and estuarine systems composite map focuses primarily on the watercourse systems themselves as dynamic water quality and habitat features, as well as the major supporting landscape feature of shoreline and large, intact forest blocks. Due to it scarcity, undeveloped land in the immediate coastal marine zone is also mapped and included as a key data factor in the overall analysis.

We utilized four key data layers in this analysis:

1. Undeveloped coastal shoreline
2. Tidal and estuarine riparian zones
3. Tidal wetlands
4. Forest blocks greater than 500 acres within tidal stream catchments

B. Contributing Datasets

A. Undeveloped coastal shoreline

Very limited open, undeveloped land remains along New Hampshire's marine coastline for a distance of 1,000 feet inland. We utilized 1998 land use mapping developed and published by the UNH Complex Systems Research Center in 2000 for the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET) program; this analysis documented various types of land uses and natural features in Rockingham and Strafford counties for a time series of 1962, 1974 and 1998. More information on this project can be found at http://www.granit.sr.unh.edu/cgi-bin/nhsearch?dset=lu98/lu98015.

Undeveloped shoreline is found only in small, scattered localities, generally defined by permanently protected parcels (per the GRANIT Conservation and Public Lands datalayer) or as un-buildable coastal wetlands. Land use statistics within the 1,000 foot coast buffer zone are presented in Table D3-1 below:

Of the three "natural" land use classes in the uplands –forested, wetlands, and shoreline/other open – only 340 acres, or about 11% of combined area, is permanently protected. Only 7% of the coastal wetlands within the 1,000' buffer are protected.

Table D3-1. Land use within 1,000 feet of New Hampshire's marine coastline.

Land Use Type	Total Acreage	Percent of 1,000' Zone
Forested	897	6.9%
Non-tidal shoreline/Other open	404	3.1%
Open Wetlands	1,764	13.6%
Water within the 1000' zone	196	1.5%
Industrial/commercial	64	0.5%
Mixed Urban	155	1.2%
Residential	1,053	8.1%
Transportation/roads	8,422	65.0%
	12,956	**100%**

2. Tidal & estuarine riparian zones

Riparian zones are discussed in detail under the appendix for freshwater resources. In this systems composite, we utilized the same 500' buffer, but limited the analysis to estuaries along the coast, including Great Bay and the salt marsh complexes, as well as rivers and streams with tidal influence. We used the NHDES Water Resources Bureau statewide dams dataset to identify barriers to fish passage in the coastal region, selecting for active dams only, then verifying by inspecting 2003 digital aerial photography and in some cases digital USGS 7.5 minute quadrangles.

The watershed of each tidal watercourse was then defined by the aggregate of immediately adjoining SPARROW stream catchments flowing into that watercourse. These catchments are described in further detail in the Freshwater Systems appendix. In some cases, dam structures truncate tidal watercourses; these barriers then define the upper limit of the riparian buffer zone, and caused some catchment delineations to be subdivided into new catchment polygons above and below the dam sites.

There are 142 catchments in the coastal and estuarine zone with tidal influence, totaling approximately 66,000 acres of land (75,000 acres including portions in Maine and Massachusetts). Only about 17% of the total coastal catchment area is currently protected in New Hampshire.

3. Tidal wetlands

We included in the composite all mapped, tidally influenced wetlands such as salt marsh and brackish marsh. Tidal wetlands are well documented to provide a range of important ecosystem services including buffering uplands from storm surges, influencing water quality in tidal waters, serving as a source of primary productivity in marine food chains, and providing critical habitat for fish, waterfowl, and shorebirds. Tidal wetland data were derived from the coastal wetlands dataset provided by the NH Coastal Program.

4. Forest blocks > 500 acres within tidal stream catchments

Forest blocks 500 acres or larger are of special interest in this study due to their significance for water quality and biodiversity conservation. Forest blocks of this size serve as key core habitat "anchor points" for community open space plans, especially when connected to other protected forest blocks and riparian corridors. They are relatively scarce near Great Bay and the coast, and represent the only remaining examples of intact coastal lowland forest in the state – most represent the Appalachian oak-pine type, the most uncommon and most threatened matrix forest.

The delineation of forest blocks within tidal catchments draws from the same forest block dataset used in the forest ecosystem model discussed elsewhere. The outer boundary of all contiguous stream catchments with tidal influence, as described above, defines the land area within which forest blocks >500 acres are included as a component of the composite.

There are currently 15 forest blocks greater than 500 acres in extent within tidal stream catchments, totaling nearly 12,000 acres, or about 25% of the tidal catchments land area. Only about 32% of the acreage of all blocks > 500 acres in this zone are currently protected.

Appendix D4:
Description of GIS Approach to Delineating Best and Most Important Opportunities to Conserve Critical Plant and Wildlife Habitat

A. Introduction

A major focus of this plan is the identification and prioritization of living resources. To do this, we have modeled various systems at a broad scale (forest, freshwater, and estuarine ecosystems) – what we consider the landscape-scale or coarse perspective. To identify finer scale, "patch" features we carried out a parallel effort that focused on highly localized and generally rare plant, natural community, and wildlife habitat. Our aim was to identify and incorporate into conservation focus areas the most significant (1) known occurrences of rare plants and exemplary natural communities, and (2) viable wildlife habitats.

We used two datasets representing critical plant and wildlife habitat. The New Hampshire Natural Heritage Bureau (NHB) maintains a database of known occurrences of rare plants, rare animals, exemplary natural community, and exemplary ecological systems. To look at critical wildlife habitat, we used habitat models developed by the New Hampshire Fish and Game Department (NHFG) as part of the 2005 ***Wildlife Action Plan***. These models represent important habitat for many of New Hampshire's imperiled animal species. Each data source is further described below.

B. Rare Plants, Exemplary Natural Communities, and Supporting Habitat

1. NHB Watershed Analysis

There are approximately 900 occurrences of rare plant populations and exemplary natural communities documented in New Hampshire's coastal watersheds. For reference, *exemplary* natural communities include nearly all examples of rare types and very high quality examples of common types.

NHB ecologists reviewed each occurrence and made several analyses of each:

- *Habitat / community group* – This categorization of habitat type (including rich woods/talus, bog and fen, emergent marsh, dry woods/sandplain, mesic forest, aquatic, estuarine, and coastal sand dune) offered a way to look at distribution broadly and to estimate how well (or poorly) each group is represented in the watershed.
- *Ecoregional distribution* – To estimate each occurrence's geographic role in the region, distribution patterns were reviewed to gauge how well the occurrence type is represented outside of the ecoregion (and thus, the importance of occurrences within this ecoregion).
- *Coastal watershed importance* - Higher priorities were assigned to occurrences whose extent was limited to the coastal watersheds and which exhibited unique floristic (in the case of plants) or compositional (in the case of natural communities) qualities within the watershed.
- *High-quality clusters* – Higher priorities were assigned to situations where many occurrences are found in close proximity to each other and exist in a higher-quality landscape setting (relatively unfragmented by development).

To prioritize occurrences, NHB ecologists assigned each rare species and exemplary natural community occurrence to 1st, 2nd, or 3rd priority categories, based on the factors described above. We decided to focus on 1st and 2nd priority occurrences, which represent approximately 28% (257) of the total.

2. Generating Supporting Natural Habitat

To illustrate the portions of the landscape which are important to the long term viability of priority rare plants and exemplary natural communities, we mapped what are referred to as **Supporting Natural Habitat** areas. These areas represent the immediate landscape surrounding an occurrence (or group of occurrences) and are delineated based on relevant natural habitat (*i.e.* habitat specific to the occurrence type).

An important question arose with respect to the size of the Supporting Natural Habitat: how large should it be? The answer balanced several competing considerations. First, the Supporting Natural Habitat (assuming that eventually it would be protected in its entirety) must be large enough to enhance the long term viability of the occurrence. However, we didn't want to make the area so large that a user would have a low probability of protecting the actual occurrence of the rare feature. Also, the Supporting Natural Habitat should not be so small that it would reveal the location of the actual occurrence (and thus violate NHB's data display restrictions).

In our final approach, we reviewed each of the 257 occurrences and determined an appropriate area and habitat size individually (using 100 acres as a minimum size). We delineated habitat based on the specific requirements of the plant / community by reviewing numerous natural features in a GIS, including:

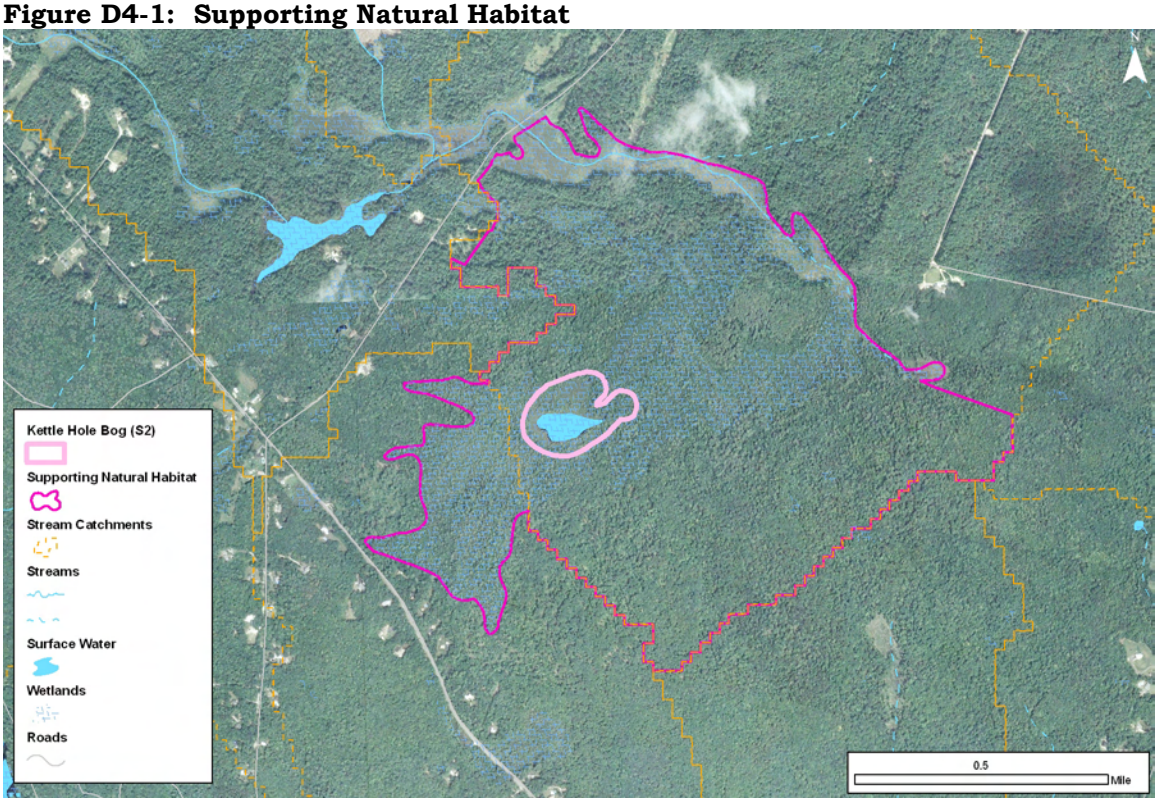
- Landcover (including NH Landcover, 2001, Land Use for Rockingham and Strafford counties, 1998)
- Hydrography (NH Hydrography Dataset)
- Stream Catchments (from the USGS SPARROW model)
- Wetlands (National Wetlands Inventory)
- Roads (NH DOT)
- Aerial photos (USDA National Aerial Imagery Program, 2003)

Generally speaking, habitat areas were delineated to incorporate surrounding unfragmented landscape and to include appropriate hydrologic and watershed features. They were drawn to incorporate enough natural landscape to reduce edge effects (*e.g.* penetrating sunlight, increased probability of invasive plants or nest predation), enhance biological viability (by including landscapes with potential seed sources and dispersers and pollinators), and reflect key contributing hydrologic processes (i.e., ground water and surface runoff).

We typically drew boundaries along clear ecological breaks appropriate to the natural community, including catchment boundaries, "stand" boundaries (clearly visible hardwood / softwood boundaries), or forest edge (*e.g.* fields, roads/development, or open water). Figure D4-1 illustrates a typical Supporting Natural Habitat delineation. Note that the supporting landscape polygons should be considered as the absolute minimum area necessary to maintain or enhance (but not to guarantee) the viability of the exceptional natural heritage features.

In many cases, multiple plant and community occurrences exist in close proximity and their supporting natural habitat overlapped; in these situations, we combined supporting natural habitat.

Figure D4-1: Supporting Natural Habitat



This map illustrates the typical features used to delineate a Supporting Natural Habitat. The supporting habitat for this kettle hole bog (375 acres) incorporates the forested wetland in which the bog sits, the riparian emergent wetland to the north, as well as forested buffer within the surrounding catchment.
NOTE: this natural community occurrence is not located in the coastal watershed and is used here without geographical reference as an example only.

We prioritized polygons including rare plants, exemplary natural communities, and their supporting natural habitat similarly to NHB's approach, based on both the priority and the density of the occurrences within the polygon:

1st priority: the area supports five or more 1st priority occurrences
2nd priority: the area supports at least one 1st priority occurrence and four or more 2nd priority occurrences
3rd priority: the area supports one to three 2nd priority occurrences

It is important to note that, while the NHB database is thought to be a reasonably good representation of the distribution and patterns of the region's biodiversity, much of the coastal watershed area has not been surveyed for plants, animals, natural communities, and ecological systems. There are most certainly additional significant habitat areas yet to be identified.

C. Significant Wildlife Habitat

The New Hampshire Fish and Game Department and partners developed numerous wildlife habitat models for the state's ***Wildlife Action Plan***. These models incorporate a wide variety of datasets (including wetlands, NHB database, hydrology, elevation, soils, *etc.*) to predict natural communities and habitat.

For this analysis, we focused on the models of "small and large patch" habitats; that is, those wildlife habitat features that are restricted on the landscape to areas where there are specialized combinations of topography, hydrology, soils, and landform. Occurrences of these patch habitat features typically range from ten to hundreds of acres. The ***Wildlife Action Plan*** also mapped matrix scale forest habitats, which occur over thousands and tens of thousands of acres, however we have addressed these coarse-scale features through the Forest Ecosystem analysis and map.

Nine of the patch habitat models are relevant to New Hampshire's coastal watersheds and are displayed on the habitat map. These include: **cliff, coastal island, dunes, floodplain forest, grassland, marsh, peatland, pitch pine barren, and ridge and talus**. Brief descriptions of these nine models can be found in Section III of the main body of this plan.

The New Hampshire ***Wildlife Action Plan*** may be referenced online at: www.wildlife.state.nh.us/Wildlife/wildlife_plan.htm

Wildlife Action Plan data may be accessed along with supporting metadata at the NH GRANIT website: www.granit.sr.unh.edu

D. A Final Word

There is an important distinction between the Natural Heritage Bureau plant & community data and the NH Fish and Game Department's significant wildlife habitat data. The plant and community data is restricted to actual, documented occurrences of rare plants and exemplary natural communities, augmented by the delineation of supporting natural habitat. The wildlife habitat dataset is comprised of GIS models which, although derived in part from field surveys, are best thought of as strong predictors of significant habitat rather than actual documented occurrences.

Both of these datasets represent first-of-their-kind efforts for publicly accessible conservation plans in New Hampshire. NHB element occurrences are typically restricted from public release. Our effort to embed the most important natural heritage features within meaningful supporting natural habitat, while still limited in that it does not reveal information about the occurrence itself, is an innovative approach to showing the areal extent of essential habitat.

The ***Wildlife Action Plan*** habitat models also reflect a major step forward in terms of creating a statewide, comprehensive estimation of significant habitat in a spatially explicit manner. The habitat models allowed us a higher degree of confidence with respect to the probability that specific areas support wildlife of conservation concern.

Appendix D5:

Description of GIS Processing and Consensus-Building Methods Used in Developing a Resource Co-Occurrence Map

A. Background

The use of co-occurrence models in GIS-based conservation planning projects has been a standard tool for at least a decade, but the concept and credibility of the model dates back forty years to regional and environmental planning techniques developed by Ian McHarg at the University of Pennsylvania, among other notables. In those days, planners used transparent acetate overlays and colored felt-tip pens to record the intersection of various data factors.

GIS technology not only allows almost limitless electronic overlay of spatial data, but also facilitates the assignment of relative importance values to the data overlays. This functionality is critical because not all resources can or should have equal value in a conservation plan, and each reviewer or user of a conservation plan will place differing values on the data factors being considered. To this end, a co-occurrence model must be accompanied by a weighted scoring scheme, one hopefully reflecting consensus among natural resources experts, community planners, and the public.

B. Data Factor Composites

The data factors and systems composites have been discussed in detail elsewhere in this report. However, to recap the four primary groups, or composites, of data are as follows:

- Forest Ecosystems
- Freshwater Systems
- Irreplaceable Coastal & Estuarine Systems
- Critical Plant & Wildlife Habitat Features

In order to organize the data for scoring using a Delphi process described below, each system composite was organized as shown in Table D5-1. This checklist was used as the voting scorecard in the Delphi process.

C. Delphi Process

The Delphi process is a group-oriented, consensus-building methodology originally developed decades ago to help federal agencies address and solve complex problems. It is currently being used for environmental planning purposes, including the design of scoring schemes in GIS co-occurrence models that use relative importance values. The beauty of the process is that it allows both full and robust group discussion of issues, while at the same time fostering a democratic process of individual and anonymous voting that helps to guarantee that every participant's vote counts.

The process starts with a detailed review of all factors to which relative importance values will be assigned (i.e., scored). Once everyone is clear on the data factors, each participant votes anonymously via an electronic spreadsheet voting form. A non-voter assembles all the voting

into a master tally spreadsheet, and calculates the mean, maximum, and minimum values for each data factor. The mean value is used with the GIS data layers described above to actually generate the co-occurrence map, thus displaying the "average" or "shared vision" of the group cartographically. The maximums and minimums are used to demonstrate the range of voted scores across the group.

Table D5-1. Data factors used in the co-occurrence model

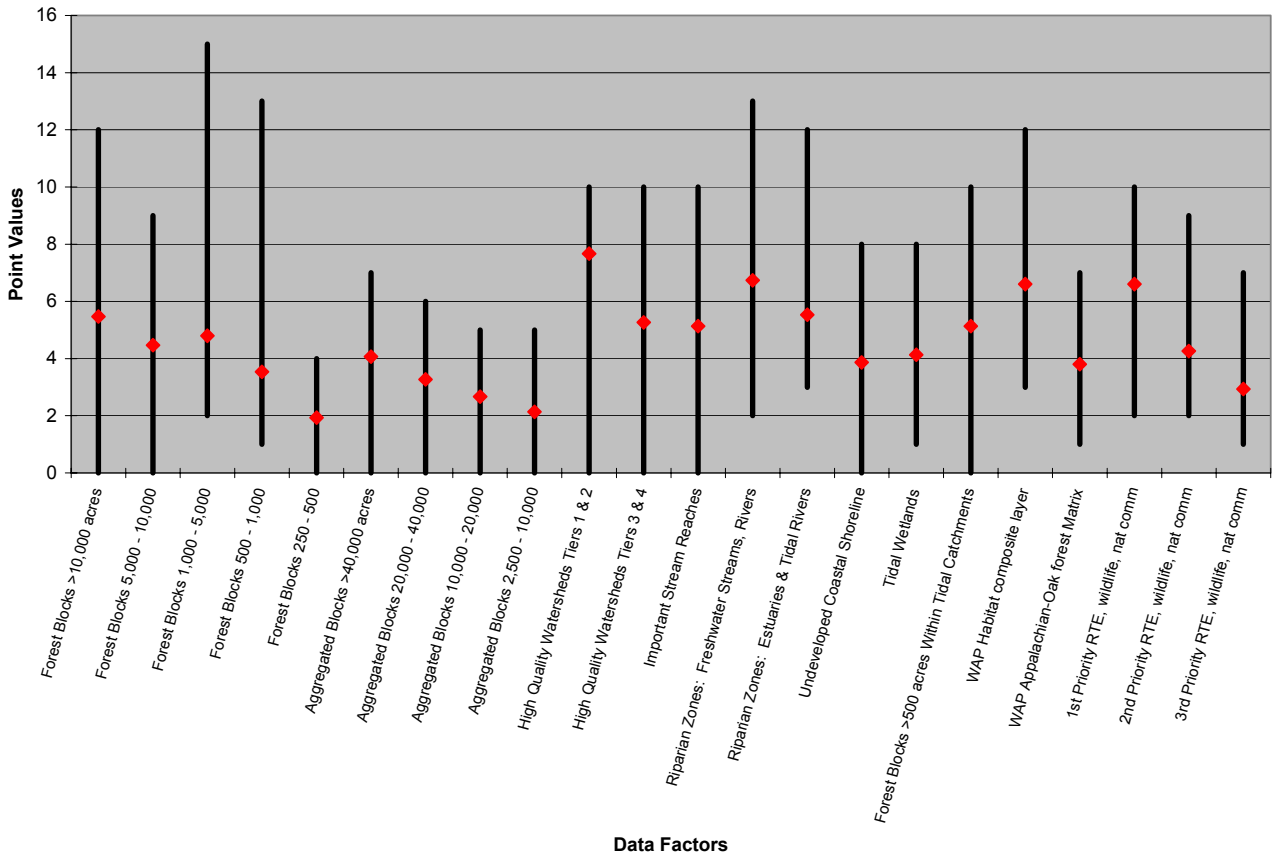
Forest Systems Composite	**Classification or Grouping**
Intact Forest Blocks	>10,000 acres
	5,000 to 10,000
	1,000 to 5,000
	500 to 1,000
	250 - 500
Aggregated Forest Blocks	>40,000 acres
	20,000 to 40,000
	10,000 to 20,000
	2,500 to 10,000
Freshwater Systems Composite	
High Quality Stream Watersheds	Tiers 1 & 2: Most pristine & rural low density
	Tiers 3 $ 4: Rural medium & rural high density
Important Stream Reaches	Containing aquatic species of concern
Riparian Zones	Freshwater streams & rivers
Coastal & Estuarine Systems Composite	
Undeveloped coastline	Within 1,000' buffer of marine coast
Riparian zones	Estuaries & tidal rivers
Tidal wetlands	
Forest blocks	>500 acres within tidal catchments
Critical Plant & Wildlife Habitat Composite	
NH Wildlife Action Plan habitat composite layer	
NH Wildlife Action Plan Appalachian-Oak Hickory matrix forest	
1st priority rare & exemplary plant, wildlife and natural community occurrences	
2nd priority rare & exemplary plant, wildlife and natural community occurrences	
3rd priority rare & exemplary plant, wildlife and natural community occurrences	

These data are displayed graphically and numerically, and are returned to each voter for review. Each voter is aware of their contribution to the master tally, and can see how they relate to other individual voters. A second round of discussion ensues, for clarification and to better understand how one's voting adheres to or deviates from the norm. Finally, each participant is given the opportunity to recast their votes, and a final tally is made for the mean value scores. Consensus stability is usually reached in two cycles of voting, which makes the process efficient, especially when conducted electronically.

For the purposes of this plan, we assembled an expert group of fifteen natural resource professionals, community planners, and GIS scientists familiar with the coastal watersheds to review the mapping work and become familiar with the various data factors used in the study. Each participant was instructed to assign point values to the twenty-two (22) data factors according to the mission drivers of the agency or organization they represented, and/or the professional expertise and knowledge of the data that they brought to the table. Each voter had a budget of 100 points to "spend" in any way they chose, including not voting for some of the data factors if they wanted to increase values elsewhere in the scheme.

After two meetings, the mean value and range of voted scores were finalized as shown in Figure D5-1 below. The dots are the mean values and the vertical black lines represent the range of values across fifteen voters.

Figure D5-1. Coastal Plan Experts Delphi Evaluation



D. Co-Occurrence Model

The same data factor scoring scheme displayed in the graph above is listed below in Table D5-2, by rank order and with actual mean values.

The GIS co-occurrence model itself is quite simple; the spatial data representing the extent and distribution of various data factors are linked to the statistical scoring data. In this study, the

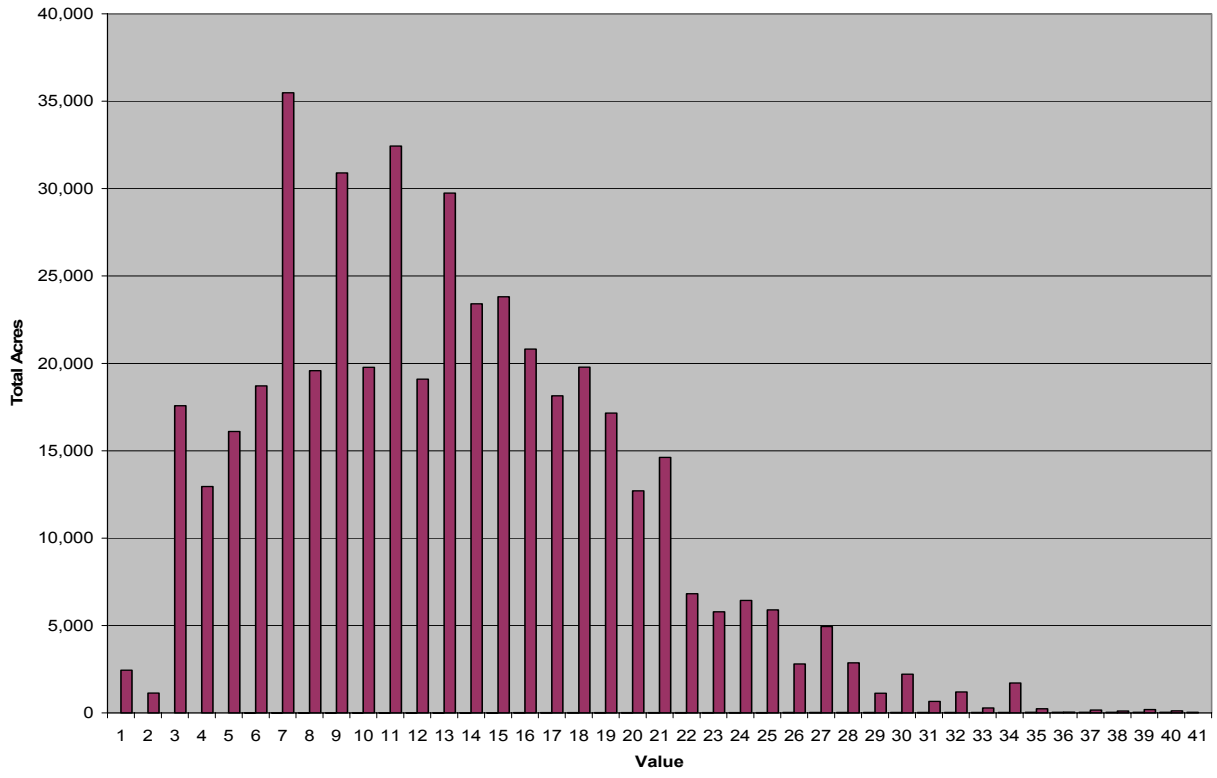
Rank	Mean Value	Data Factor
1	7.7	High Quality Watersheds Tiers 1 & 2
2	6.7	Riparian Zones: Freshwater Streams, Rivers
3	6.6	WAP Habitat composite layer
3	6.6	1st Priority RTE, wildlife, nat comm
4	5.5	Riparian Zones: Estuaries & Tidal Rivers
4	5.5	Forest Blocks >10,000 acres
5	5.3	High Quality Watersheds Tiers 3 & 4
6	5.1	Important Stream Reaches
6	5.1	Forest Blocks >500 acres Within Tidal Catchments
7	4.8	Forest Blocks 1,000 - 5,000
8	4.5	Forest Blocks 5,000 - 10,000
9	4.3	2nd Priority RTE, wildlife, nat comm
10	4.1	Tidal Wetlands
10	4.1	Aggregated Blocks >40,000 acres
11	3.9	Undeveloped Coastal Shoreline
12	3.8	WAP Appalachian-Oak forest Matrix
13	3.5	Forest Blocks 500 - 1,000
14	3.3	Aggregated Blocks 20,000 - 40,000
15	2.9	3rd Priority RTE, wildlife, nat comm
16	2.7	Aggregated Blocks 10,000 - 20,000
17	2.1	Aggregated Blocks 2,500 - 10,000
18	1.9	Forest Blocks 250 - 500

Table D5-2. Co-occurrence data factors, by rank order.

22 data factors are integrated into a master union of all the individual polygon features brought into the study. Each data factor is coded with the appropriate mean value score as the union is built, with the sum of scores across the union attribute table providing the numerical value used in the co-occurrence display. The grid cell size, an expression of resolution, is based on 10 meters (or about 32.8 feet on the maps).

The histogram in Figure D5-2 shows the range of total co-occurrence values across the coastal watersheds, from zero (0) to slightly more than forty (40), arrayed against the acreage for each score value. Note that the calculation of study area land base acreage does not include developed lands or road corridors. As can be seen, a skewed bell-shaped curve results with the mean value hovering around 12, and steeply declining acreage totals of the higher score values to the right of the mean.

Figure D5-2. Histogram of Regional Co-Occurrence Values



Interpreting the map display of the co-occurrence model takes study (see Figure D5-3). These data factors and the scoring scheme produce a complex and subtle mosaic of numerical values and color patterns across the entire study area. Large areas of darker color (i.e., areas with higher overall conservation values) are quickly noticeable in the Pawtuckaway region, along the watershed divide of the Blue Hills in Stafford and Barnstead, and the Moose Mountains region shared by Brookfield and Middleton. Smaller high-value areas are evident in the Crommet Creek area of Durham near Great Bay, the salt marshes at Hampton and Hampton Falls, and the extensive floodplain wetlands and adjoining forests along the Exeter River in Exeter and Kensington. More subtle patterns occur in the riparian corridor net across the study area, but are darker along the Isinglass and Lamprey Rivers, just to name two major coastal river systems.

The highest value areas typically included not only multiple overlapping natural resource features, but also one or more features with high *relative importance* as defined through the expert review process. Inspecting each of the four systems composites maps separately also serves as a reference base to help identify the "specialist" resources at work for any locality within the larger context of the total co-occurrence model.

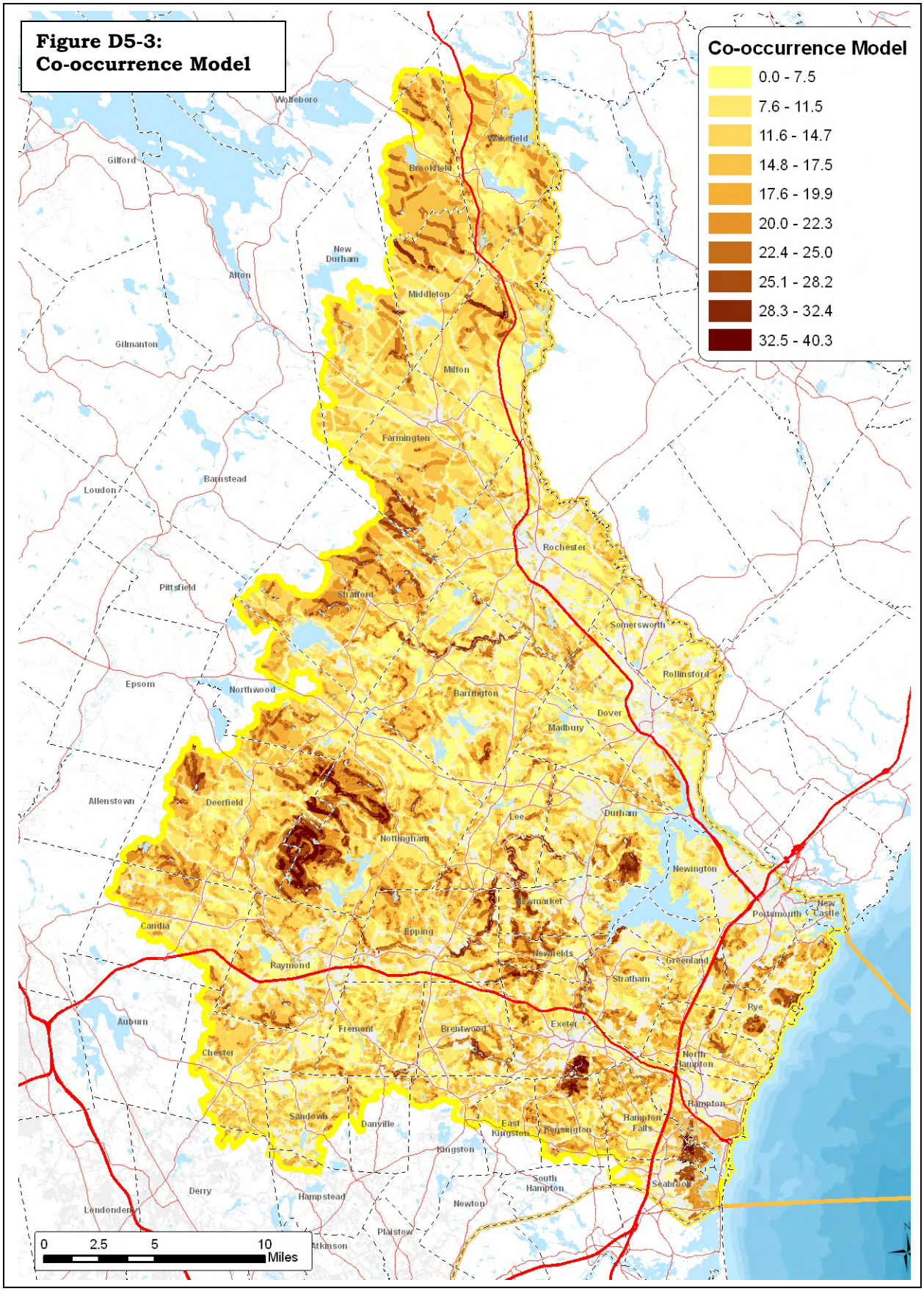


Figure D5-3:
Co-occurrence Model
Co-occurrence Model
0.0 - 7.5
7.6 - 11.5
11.6 - 14.7
14.8 - 17.5
17.6 - 19.9
20.0 - 22.3
22.4 - 25.0
25.1 - 28.2
28.3 - 32.4
32.5 - 40.3
Wolfeboro
Wakefield
Gilford
Brookfield
New Durham
Alton
Middleton
Gilmanton
Milton
Farmington
Barnstead
Loudon
Rochester
Pittsfield
Strafford
Somersworth
Rollinsford
Epsom
Northwood
Barrington
Dover
Madbury
Allenstown
Deerfield
Lee
Durham
Nottingham
Newington
Newmarket
New Castle
Portsmouth
Candia
Epping
Newfields
Greenland
Raymond
Stratham
Rye
Auburn
Fremont
Brentwood
Exeter
Chester
North Hampton
Hampton
Sandown
Danville
East Kingston
Kensington
Hampton Falls
Kingston
South Hampton
Seabrook
Derry
Hampstead
Londonderry
Newton
Plaistow
Atkinson
0 2.5 5 10
Miles
N

APPENDIX E:

Land Conservation Resources:

Land Trusts, Other Organizations, Tools, and Funding

A. Organizational Assistance

1. Land Trusts and Related Organizations that Protect Land

- **Bear-Paw Regional Greenways**
  PO Box 19, 63 Nottingham Road, Deerfield NH 03037
  (603) 463-9400
  Bear-Paw Regional Greenways is a land trust established by community volunteers concerned with protecting open space lands. Bear-Paw has proposed a greenway that connects private or public lands with large areas of conservation land in a seven-town region including: Candia, Deerfield, Epsom, Northwood, Nottingham, Raymond, and Strafford.
  www.bear-paw.org

- **Moose Mountains Regional Greenways**
  P.O. Box 191, Union, NH 03887
  (603) 817-8260
  The purpose of MMRG is to identify and protect important natural resource areas, including water resources, farm and forestlands, wildlife habitat, recreational areas, cultural and scenic areas; to educate others about these efforts, and to join protected lands to form greenways. MMRG covers the towns of Farmington, Milton, Middleton, Brookfield, Wakefield and New Durham.
  www.mmrg.info

- **New Hampshire Audubon**
  3 Silk Farm Road, Concord, New Hampshire 03301
  (603) 224-9909
  New Hampshire Audubon is dedicated to the conservation of wildlife and habitat throughout the state. Audubon owns and manages wildlife sanctuaries throughout the state.
  www.nhaudubon.org

- **Rockingham County Conservation District**
  110 North Road, Brentwood, NH 03833
  (603) 679-2790
  The District works with individuals and towns that want to protect property for future generations. The district currently holds conservation easements on over 2,000 acres around the county.

- **Rockingham Land Trust**
  8 Center Street, Exeter, NH 03833
  (603) 778-6088
  The Rockingham Land Trust is a non-profit organization dedicated to permanently protecting the region's open spaces, including farmland, forestland, water resources, and wildlife habitat. The Trust serves the 39 communities of greater Rockingham County,

New Hampshire. Established in 1980, the Trust has helped protect more than 3,300 acres of land. *Note: Rockingham Land Trust and Seacoast Land Trust are currently in the process of merging to form the Southeast Land Trust of New Hampshire.*
www.rockinghamlandtrust.org

- **Seacoast Land Trust**
  P.O. Box 4183, Portsmouth, NH 03802
  (603) 433-0963
  The Seacoast Land Trust was founded by a group of citizens concerned about the loss of open spaces and natural resources to development in Seacoast New Hampshire communities. As a non-profit organization, the Trust works in partnership with local landowners, as well as community and other land protection organizations, to protect important local land resources for the public benefit. *Note: Rockingham Land Trust and Seacoast Land Trust are currently in the process of merging to form the Southeast Land Trust of New Hampshire.*
  www.seacoastlandtrust.org

- **Society for Protection of New Hampshire Forests**
  54 Portsmouth Street, Concord, NH 03301
  (603) 224-9945
  Founded by a handful of concerned citizens in 1901, the Society for the Protection of New Hampshire Forests is dedicated to protecting the state's most important landscapes while promoting the wise use of its renewable natural resources. The Forest Society is New Hampshire's largest holder of conservation easements, and also owns more than 40,000 acres of land.
  www.forestsociety.org

- **Strafford County Conservation District**
  259 County Farm Rd Unit#3, Dover, NH 03820-6015
  (603) 749-3037
  The District works with individuals and towns that want to protect property for future generations.

- **Strafford Rivers Conservancy**
  P.O. Box 623, Dover, NH 03821-0623
  The Strafford Rivers Conservancy is a non-profit organization dedicated to protecting and conserving the natural beauty, resources, and character of Strafford County. The SRC achieves its mission through the promotion of conservation easements, education, and the acquisition and stewardship of land.
  www.straffordriversconservancy.org

- **The Nature Conservancy**
  22 Bridge Street, 4th Floor, Concord, NH 03301
  (603) 224-5853
  Founded in 1951, The Nature Conservancy is the country's largest conservation organization. The mission of The Nature Conservancy is to preserve the plants, animals and natural communities that represent the diversity of life on earth by protecting the lands and waters they need to survive. The Conservancy has helped to protect more than 260,000 acres of land in New Hampshire.
  www.nature.org

- **Trust for Public Land**
  212 French Wing, 54 Portsmouth Street, Concord, NH 03301
  (603) 224-0103

The Trust for Public Land (TPL) is a national, nonprofit, land conservation organization that conserves land for people to enjoy as parks, community gardens, historic sites, rural lands, and other natural places, ensuring livable communities for generations to come.
www.tpl.org

2. Other Related Organizations that can Assist with Land Conservation

- **Center for Land Conservation Assistance**
  54 Portsmouth Street, Concord, NH 03301
  (603) 717-7045
  Hosted by the Society for the Protection of New Hampshire Forests, the Center for Land Conservation Assistance (CLCA) is a non-profit organization that seeks to raise the level of professionalism in land conservation transactions and stewardship among all land conservation groups in the state. The CLCA provides information and services in three basic areas: education and information, transaction assistance and land and easement stewardship**.**
  www.forestsociety.org

- **Ducks Unlimited (DU)**
  Contact DU at 1-800-45DUCKS, or the NH Fish & Game Dept at 603-371-2462.
  Focused on conserving habitat for waterfowl.
  www.ducks.org

- **Rockingham Planning Commission**
  156 Water Street, Exeter, NH 03833
  (603) 778-0885
  The Rockingham Planning Commission is one of nine regional planning commissions in New Hampshire. The Commission's region consists of twenty-seven communities within Rockingham County. The RPC is not affiliated with Rockingham County. Operating as a non-profit local government organization, the Commission serves in an advisory role to local governments in order to promote coordinated planning, orderly growth, efficient land use, transportation access, and environmental protection. The Commission's professional planning staff provides an array of planning assistance to its active member communities.
  www.rpc-nh.org

- **Strafford Regional Planning Commission**
  2 Ridge Street, Suite 4, Dover, NH 03820
  (603) 742-2523
  SRPC has been active in regional planning for over 30 years as one of New Hampshire's nine Regional Planning Commissions. SRPC is composed of eighteen communities including all thirteen municipalities in Strafford County, three communities in Rockingham County, and two communities in Carroll County. Operating as a political subdivision of the State, SRPC serves an advisory role to local governments and organizations. SRPC works to improve the region by coordinating local planning, promoting orderly growth and efficient land use and transportation systems, and addressing issues of regional concern.
  www.strafford.org

- **UNH Cooperative Extension**
  Community Conservation Assistance Coordinator
  UNH Cooperative Extension, 36 County Drive, Laconia, NH 03246
  (603) 364-5324

UNH Cooperative Extension provides assistance to New Hampshire communities and conservation groups with land and water conservation planning projects through its Community Conservation Assistance (CCA) program. The Natural Resources Outreach Coalition (NROC), involving staff from 10 organizations, falls under the CCA program area. NROC assistance is limited to the 42 towns in New Hampshire's Coastal Watershed. A limited number of communities are assisted each year. A team of Extension Educators and others provides direct assistance to selected projects at no cost to the communities. www.ceinfo.unh.edu

3. Publications and Tools

- ***Saving Special Places: Community Funding for Land Conservation***, by Brian Hart and Dorothy Tripp Taylor, December 2002. Published by the Society for Protection of New Hampshire Forests and the Center for Land Conservation Assistance. Includes information on the Land Use Change Tax, conservation funds, general fund appropriations, capital reserve funds, bonding, and other municipal sources. Contact Society for the Protection of New Hampshire Forests to purchase or download a copy.

- ***Conservation Easement Handbook***, by Michelle Breyers and Karin Ponte, 2005. One of many useful publications by the Land Trust Alliance, a national organization. Includes information on IRS criteria for tax-deductible gifts, negotiation and acquisition, baseline data, monitoring and enforcement, back-up grantees, and model conservation and historic easements. Includes CD-ROM with a wide selection of sample easements, policies, checklists and other documents. Available through the Land Trust Alliance website, www.LTA.org.

- ***Conserving the Family Farm***, by Annette Lorraine, 2002. A very useful publication for farmland owners. The book discusses the legal, financial, and farm management aspects of conservation easements. Downloadable through the UNH Cooperative Extension website: http://extension.unh.edu/Pubs/AgPubs/Consff.pdf

- *UNH GRANIT.* The New Hampshire Geographically Referenced Analysis and Information Transfer System (NH GRANIT) is a cooperative project to create, maintain and make available a statewide geographic database serving the information needs of state, regional and local decision-makers. A collaborative effort between the University of New Hampshire and the Office of State Planning, the core GRANIT System is housed at the UNH Institute for the Study of Earth, Oceans and Space in Durham. www.granit.sr.unh.edu

B. Funding Sources for Land Conservation in the Coastal Watershed

This list includes the federal, state, local and private sources of funds that are most commonly used in New Hampshire to purchase interests in real estate for conservation. Review the funding source's web link for up-to-date information about available funds, eligibility requirements, match requirements, and deadlines.

1. Federal Sources for Land Conservation

- Coastal and Estuarine Land Conservation Program. National Oceanic and Atmospheric Administration (NOAA). For protecting important lands in the coastal watersheds.

Contact: NH Coastal Program, 603-559-1500. www.des.state.nh.us/Coastal/

- Farm and Ranch Lands Protection Program. U.S. Department of Agriculture. Focused on protecting important farm soils and lands. Contact: U.S.D.A. Natural Resources Conservation Service, 603-868-7581. www.nh.nrcs.usda.gov/programs/FRPP.html

- Forest Legacy Program. U.S. Forest Service. Focused on protecting large, intact forests for timber production, wildlife habitat, clean water and recreation. Contact: NH Dept. of Resources and Economic Development, Division of Forests and Lands, 603-271-3456. www.na.fs.fed.us/legacy/index.shtm

- Land and Water Conservation Fund. U.S. Fish & Wildlife Service. Federal side limited to funding expansion of national wildlife refuge system. State side available for state and local conservation and recreation development projects. Contact: NH Dept. of Resources and Economic Development, Division of Parks and Recreation, 603-271-3556. www.nhparks.state.nh.us

- Landowner Incentive Program. U.S. Dept. of the Interior, Fish & Wildlife Service. Funding to acquire conservation easements protecting at-risk species and habitats. Contact: NH Dept. of Fish and Game www.wildlife.state.nh.us/Wildlife/Landowner_LIP_program.htm

- National Fish and Wildlife Foundation. Quasi-federal entity with a variety of funding programs for land conservation. Contact: Northeastern Regional Office, 202-857-0166. www.nfwf.org

- National Scenic Byways Program. U.S. Federal Highways Administration. Contact: NH Office of Energy and Planning, 603-271-2155. www.nh.gov/oep/programs/SCBP/faq.htm/

- New Hampshire Coastal Program Competitive Grants. NOAA. Contact: NH Coastal Program, 603-559-1500. www.des.state.nh.us/Coastal/

- New Hampshire Estuaries Project. U.S. Environmental Protection Agency. Contact NHEP, 603-862-3948. www.nhep.unh.edu

- North American Wetlands Conservation Act (NAWCA). U.S. Fish and Wildlife Service. Focused on protecting important wetland ecosystems for migratory birds and other species. Contact Atlantic Coast Joint Venture. www.fws.gov/birdhabitat/Grants/NAWCA/Standard/US/index.shtm

- Recovery Land Grant Program. U.S. Fish and Wildlife Service. Focused on protecting land for federally endangered or threatened species, in accordance with an approved recovery plan. Contact USFWS, 703-358-2061. www.fws.gov

- Wild and Scenic River. National Park Service. Focused on protecting land for the benefit of the Wild and Scenic portion of the Lamprey River. Contact Lamprey River Advisory Committee. www.lampreyriver.org

2. State Sources of Funding for Land Conservation

- New Hampshire Conservation License Plate Program. State of NH. Funds a wide range of projects supported by NH historic preservation and natural resource agencies.

Contact: 603-679-2790. www.mooseplate.com

- New Hampshire Fish and Game Small Grants Program. State of NH. Contact: NH Fish and Game Department, 603-271-2461. www.wildlife.state.nh.us/

- New Hampshire Land and Community Heritage Program (LCHIP). State of NH. Contact LCHIP, 603-224-4113. www.lchip.org

- New Hampshire Recreational Trails Program. State of NH. Focused on the acquisition of easements or property for trails. Contact: NH Dept. of Resources and Economic Development, Division of Parks and Recreation, Bureau of Trails, 603-271-3254. www.nhtrails.org

- New Hampshire Water Supply Land Conservation Program. State of NH. Provides funding to protect known drinking water supply areas. Contact: NH Dept. of Environmental Services, Drinking Water Source Protection Program, 603-271-7017. www.des.state.nh.us/DWSPP/

3. Private Sources of Funding for Land Conservation

- New England Grassroots Environment Fund. Contact: 802-223-4622 www.grassrootsfund.org

- New Hampshire Charitable Foundation. Contact: 603-225-6641. www.nhcf.org

- The Foundation Center. A free online search directory for foundations. You can search by grantmaker name or geographic region. If you want more detailed information on environmental foundations, you have to pay for their online foundation directory which costs $295/year. http://lnp.foundationcenter.org/finder.html

- The New Hampshire Directory of Foundations. Contact: 802-447-0256. Published by CPG Enterprises, Inc., P.O. Box 199, Shaftsbury, Vermont 05262.

- State of New Hampshire, Dept of Justice, Annual Directory of Charitable Funds in NH. www.nh.gov/nhdoj/publications/pdf/diralphabetical.pdf

- The Grantsmanship Center. Top 40 NH Foundations that Give Grants. www.tgci.com/grants/NewHampshire/foundations.asp