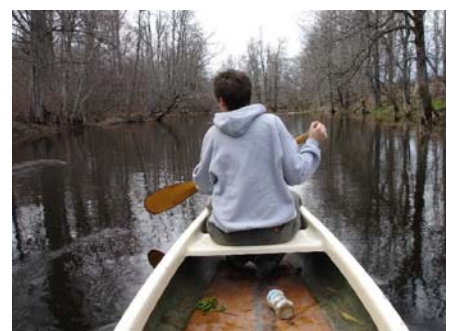


Unity Wetlands Conservation Plan:

Sustaining Our Wild and Working Landscape



Prepared by the Friends of Unity Wetlands with
technical and financial support from
The Nature Conservancy and the Natural Resources
Conservation Service

DRAFT

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Executive Summary
Unity Wetlands Conservation Plan:
Sustaining our Wild and Working Landscape

The 42,000-acre Unity Wetlands Focus Area is a unique and significant resource, a combination of wild and working lands that is rich in biodiversity, scenic beauty and economic value. This large tract of relatively undeveloped land stretches from the west side of Unity through all of Unity Plantation and into portions of Albion, Benton, Burnham, Clinton and Freedom. It is home to many threatened and rare plants, animals and natural communities, as well as to more wide-ranging creatures like black bear, moose and bobcat. It is home, too, to a rich agricultural heritage that is critical to the regional economy. The farms and infrastructure within and adjacent to the Unity Wetlands are a vital component in Maine's Dairy Belt. They also provide habitat in their own right for fish and wildlife, contribute to several blocks of contiguous undeveloped habitat, and are a buffer between the interior undeveloped blocks and encroaching development.

More than two years ago, a group of individuals began discussing how to best protect this remarkable area. The State of Maine and The Nature Conservancy have both designated it as a priority area for protection, and the Friends of Unity Wetlands incorporated in 2004 to help focus local attention on this previously overlooked treasure. The Unity Wetlands Conservation Plan maps out a strategy to conserve the current ecological and social values contributed by the outstanding natural resources found within the Unity Wetlands complex. The plan was informed by extensive public input from citizens and stakeholders, including landowners, the agricultural community, resource professionals, selectmen, planning board and comprehensive planning committee members, and more.

Developed using The Nature Conservancy's Site Conservation Planning framework, the plan identifies the most important **strategic actions** needed to protect selected conservation targets and defines the **land area** where the strategic actions are implemented. Conservation goals are set for these targets, major threats identified and strategies to reduce threats and achieve conservation goals are crafted. These strategies will require participation of many stakeholders in a sustained and coordinated effort.

A Steering Committee of stakeholders selected the following conservation plan targets: hardwood floodplain forests, rare/threatened/endangered aquatic and riparian species, contiguous upland forest, grassland habitat for birds, wetland systems, agricultural lands, and public open space. The plan calls for eight broad categories of strategic actions:

1. Promote and support well-managed farm and forest land
2. Support efforts to arrest the loss of working lands
3. Acquire legal interests in land
4. Increase public awareness of and appreciation for the Unity Wetlands
5. Improve management of conserved lands
6. Work for public policy change in support of conservation plan goals
7. Continue information gathering and research
8. Increase local conservation capacity

I. Overview and Background

Central Maine has the least amount of conservation land compared to any other region in Maine. In recent years, through field inventories and ecological focus area identification methods by the Maine Natural Areas Program and Maine Department of Inland Fisheries and Wildlife, a previously overlooked gem has been discovered. Unity Wetlands, amid the heart of Maine's dairy belt, is a remarkable complex of streams, floodplain forests, bogs and unfragmented woodlands that is unique in this part of Maine.

A. Purpose of this Plan

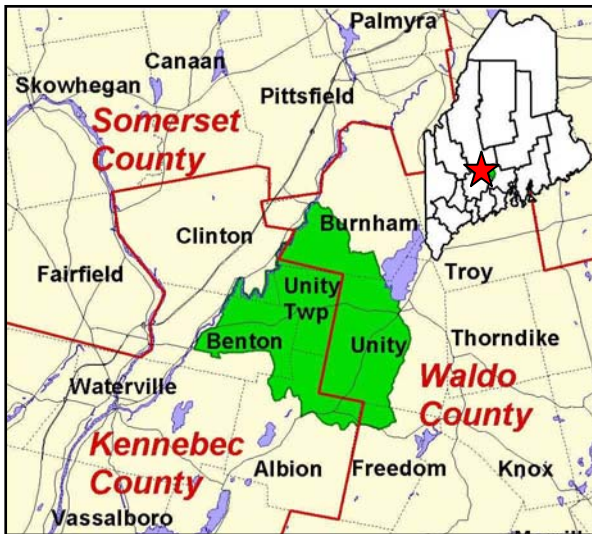


Figure 1. Geographic location of site.

DeLorme Gazetteer: Map 21
 Counties: Kennebec and Waldo
 Towns: portions of Albion, Benton, Burnham, Clinton, Freedom, Unity and all of Unity Township

The Unity Wetlands complex includes a large expanse of wetlands and uplands centered on Unity Township, extending east to Unity Pond and west to the Sebasticook River, covering about 65 square miles (Figure 1). The complex hosts an array of unique natural features that collectively contribute to an area identified as one of statewide conservation significance. Notably, several rare wetland and riparian species and habitats, from wood turtles to wild garlic, find their home in the Unity Wetlands complex. Furthermore, the area provides one of the largest remaining unfragmented (by roads and development) blocks of land in central Maine providing a promising opportunity not only for conservation of the area's rarest ecological gems, but also for maintaining wide-ranging common species, from black bear to bobcat, that are becoming increasingly rare in more developed landscapes to the south.

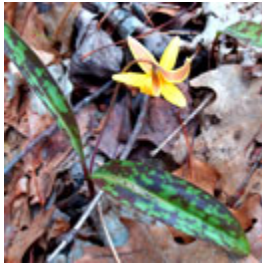
Finally, the outstanding rural condition of the complex offers numerous social and cultural benefits to local and surrounding populations by providing a mainly working farm and forest landscape that is largely open to traditional recreational activities such as hunting, trapping, fishing, boating and hiking. It is the intent of this document to try to map out a strategy to conserve the current ecological and social values contributed by the outstanding natural resources found within the Unity Wetlands complex.

The Unity Wetlands Conservation Plan is the culmination of a community process that began in 2002, when The Nature Conservancy and the eventual founders of the Friends of Unity Wetlands hosted the first in a long series of community meetings to craft a conservation strategy for the region. Planning efforts resumed in earnest in 2005 with a

Conservation Partnership Initiative award from the Natural Resources Conservation Service aimed at promoting agricultural practices that simultaneously improve farm viability and enhance the Unity Wetlands' sensitive environment.

B. What is Special about the Unity Wetlands?

A Wild Landscape: The Unity Wetlands complex hosts an array of unique natural features that collectively contributed to its designation by the Maine Department of Inland Fisheries and Wildlife and the Maine Natural Areas Program in 1998 as a Beginning with Habitat Focus Area identified for its statewide ecological significance. Recognizing these significant ecological characteristics, the Maine Chapter of the Nature Conservancy also designated the Unity Wetlands as one of its statewide "portfolio sites," an area deserving of further conservation action.



The Sebasticook River from its mouth upstream several miles is among the best habitats in the state for at least two state endangered mussels, the **yellow lamp mussel** and **tidewater mucket**. These occurrences are extensive along the Sebasticook and some of its tributaries (e.g. Sandy Stream). The Sebasticook also provides habitat for **riverweed** and the **broad-tailed shadowdragon**, a rare aquatic plant and dragonfly restricted to clean, fast-flowing waters. Twenty-five Mile Stream and Fifteen mile Stream, tributaries of the Sebasticook, host high-quality stretches of **Silver Maple Floodplain Forest**, a type that is rare statewide. Of particular note in the floodplains is the presence of **bur oak**, an unusual species in Maine whose distribution is centered in this portion of the state. These floodplain forests are among only a very few in the state with bur oak as an important component, which again heightens their conservation priority. Beneath the bur oak and silver maple canopy of these forests are several unusual wildflowers restricted to rich floodplain soils, including large populations of spring ephemerals such as trout lilies and bloodroot, as well as **wild garlic** and **wild leek**, both rare statewide. The area's floodplain forests also provide habitat for **wood turtles** and **yellow-throated vireos** – both state rare, streamside forest specialists.



Away from the immediate Sebasticook area are peatlands that have formed in shallow basins over the past several thousand years. **Fowler Bog** is a 700+ -acre peatland that has formed in a stream valley, where most of the vegetation is still in contact with surface waters (fen as opposed to bog). Red maple wooded fen

vegetation covers much of the area, with some portions more coniferous. Shrubby fens and wet meadows are numerous along streamsides. Fowler Bog is a good example of this common type of Maine peatland.

Nearby, **Kanokolus Bog** is a true raised level bog whose unique vegetation community is a product of growing in nutrient-stressed conditions well above the surrounding surface water level. This 300-acre bog is more nutrient-poor than Fowler Bog, with expanses of sheep laurel dwarf shrub bog, some partially wooded areas with stunted black spruce and larch, and some areas with northern white cedar around the edges. Raised bogs are not uncommon in northern and eastern Maine, but become scarcer in central and southern areas of the state, and Kanokolus Bog is considered a good example of this community type. Prior to the 1998 Ice Storm, the flooded southern end of the bog was home to one of central Maine's largest **great blue heron** rookeries.

Finally, the islands of Unity Pond provide habitat to a pair of **bald eagles** that have bred successfully in the area since 1997. The eagles appear to be relatively tolerant of human disturbance as the southern shore of Unity Pond is fairly developed, but continued forest conversion in the area could push the pair beyond their tolerance threshold for breeding.

(See Appendix A for a complete listing of documented occurrences of rare/threatened/endangered species and natural communities.)

A Working Landscape: The Unity Wetlands landscape is characterized by working farms and forests. Five thousand, six hundred (5,600) acres of farmland encircles the Unity Wetlands complex. This area and its neighboring towns are of



agricultural significance because it comprises such a large

segment of Maine's Dairy Belt. In particular, Kennebec County has the largest number of livestock farms and the largest number of certified organic dairy farms in the state. There are 15 dairy farms shipping milk in the Town of Albion alone (the largest single concentration of dairy farms in any one town in the State). Dairy farms and other extensive commodity operations are still the dominant farming type.



Within the entire focus area there are 1,975 Prime Farmland acres and 6,360 acres of Farmland of Statewide Importance. These soils are the best suited to produce food, feed, forage and fiber. These Prime Farmland

soils produce the highest yields and require the least amount of inputs, resulting in the least damage to the environment. Both types of farmland soils are a limited strategic resource. No more of it is being created.

Farm Operation	Number
Dairy	40
Beef	4
Fruit	2
Hay	7
Hog	1
Horse	1
Poultry	1
Seed Breeder	1

From Gilbert 2003

hay lands in and adjacent to the Unity Wetlands Focus Area are a critical resource to approximately 40 dairy farmers. This large land base is needed to grow livestock feed and for the land application of livestock waste. These farms are also the lifeblood of Central Maine's dairy infrastructure of more than 30 feed, seed, fertilizer and equipment suppliers.

Nearly 60 percent of the Unity Wetlands Focus Area is forestland, according to Maine GAP Analysis data (1991-1993). This forestland comprises much of the interior, and the majority is owned by just a few large landowners. These lands are important economically but also culturally, as most larger landowners participate in Project LandShare, allowing public access for hunting, fishing and other forms of recreation.

C. POPULATION

The Unity Wetlands Focus Area is located in an area of Central Maine with low population density and low incomes. Population growth was moderate in the 1900s until 1960, when growth increased dramatically. Most dramatically, the town of Unity experienced an 85 percent population increase between 1960 and 1990. Similarly, Benton experienced a 26.5% rate of growth between 1970 and 1980. Growth rates have since slowed. Unity Township, the only unorganized territory in Central Maine, is experiencing a declining trend in population.

Farm products produced on Focus Area farms include milk and milk products, mixed livestock, forages, grains, hay, vegetables, soil amendments, fiber, and specialty foods and crafts from farm products. Some of these products are sold as locally as the Unity Farmers Market while others leave the state for processing.



Dairy farming is a land-intensive operation, and the crop, pasture and

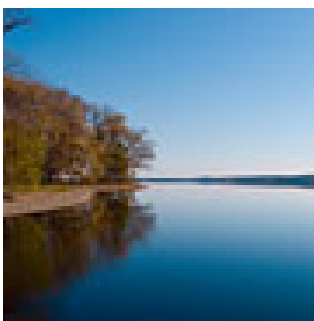
Table 1. Unity Wetlands Demographic Data (U.S. Census Bureau data)

County	Town	Land Area (sq.mi.)	Population		Num. Chg.	Rate of Change (%)	Persons per sq mi	Per Capita Income (1999)	% Below Poverty (1999)
			1990	2000					
Kennebec	Albion	38.85	1,736	1,946	210	12.1	50	\$15,285	12
Kennebec	Benton	28.42	2,312	2,557	245	10.6	90	\$18,464	10.2
Waldo	Burnham	38.91	961	1,142	181	18.8	29	\$14,030	16
Kennebec	Clinton	43.88	3,332	3,340	8	0.2	76	\$15,052	13
Waldo	Freedom		593	701	108	18.2		\$15,492	15.4
Waldo	Unity	39.52	1,817	1,889	72	4.0	48	\$15,086	21.8
Kennebec	Unity Twp	10.35	36	31	-5	-13.9	3	\$9,186	
MAINE		30,862	1,227,928	1,274,923	46,995	3.8	41	\$19,533	10.9

D. LAND USE & OWNERSHIP

According to Maine GAP Analysis data (1991-93), less than 1 percent (0.06 percent) of the Unity Wetlands Focus Area is developed, nearly 10 percent is agricultural land, almost 60 percent is forestland, and 30 percent is wetland. In contrast, at least 2 percent of the immediately surrounding area (5-mi radius) is developed, more than 22 percent is in agriculture, a similar proportion is forested, and only 16 percent is wet. Much of the regional development is concentrated to the west of Unity Wetlands, in the corridor along the Sebasticook River and the interstate (I-95), and further to the west, along the Kennebec River. Five built-up town centers encircle the site, those of Burnham, Clinton, Benton, Albion, and Unity.

As evidenced by their comprehensive plans, natural resource protection is a common priority for all the towns within the Focus Area. Appendix B presents a summary of key points and policies from the towns' comprehensive plans.



The shoreline of Unity Pond, the southern end of which lies within the Focus Area, is covered with numerous year-round homes and seasonal camps that are accessed by 18 fire roads. The Pond has been plagued by poor water quality, specifically high phosphorus levels resulting in nearly annual algal blooms. In recent years the Pond and its watershed have been the focus of significant research by state and federal agencies and Unity College in an effort to resolve its chronically impaired water quality.

The Unity Utilities District first obtained a waste discharge permit to discharge domestic sewage from its retention ponds system into Twenty-five Mile Stream in 1972.

Environmental impact assessment performed by Kleinschmidt & Dunning in support of the permit application predicted the discharge (up to 250,000 gallons annually) would have a “very very small effect” on stream BOD. This point source remains active, with infrequent discharge at times of high flow.

Since 1990, New England Organics has operated a waste composting facility off Route 139 in Unity Township, near the center of the Focus Area. The facility is licensed to accept a variety of waste products, including wood ash, paper fiber, fish waste, and municipal wastewater biosolids, which it uses to produce a variety of consumer products.

A recent analysis (Orndorff 2002) of the extent to which Maine’s public and private conservation lands adequately represent the state’s regional and ecological diversity highlighted a conservation gap in the central-interior areas of the state, including the Unity Wetlands. The US Fish & Wildlife Service in 1991 acquired 392 acres in Unity and Benton that are now divisions of Sunkhaze Meadows National Wildlife Refuge. As of September 2006, there is one conservation easement in the Focus Area, a 45-acre agricultural parcel in Albion held by Maine Farmland Trust.

II. Conservation Plan

A. Planning Area Definition

The planning area can also be thought of as the “playing field” within which we define conservation zones or target areas for focusing and implementing different strategies. It is acknowledged to include roads, homes, and businesses as well as ecological and cultural elements.

For planning purposes the Unity Wetlands has been defined as a 42,000-acre (~65 sq mi) area that encompasses key components identified by the Friends of Unity Wetlands and its partners, including:

- Two regionally significant undeveloped habitat blocks;
- Fowler Bog, Kanokolus Bog, a portion of the Sebasticook River, Fifteen mile Stream, Twenty-five Mile Stream, Sandy Stream, and Bacon Brook;
- Two divisions of the Sunkhaze Meadows National Wildlife Refuge (Sandy Stream and Benton units);
- The Route 202 agricultural corridor; and
- Thousands of acres of sustainably harvested forestland.



More specifically, the planning boundary (see Map 1) is defined (counter-clockwise from the north) by the Sebasticook River, from Burnham Junction downstream to Benton Falls, the East Benton Road, the Fifteen mile Stream drainage, Quaker Hill (also the drainage divide for Bacon Brook), the shore of Unity Pond, Horseback Road and the Twenty-five Mile Stream drainage.

B. Methodology: Site Conservation Planning

Site Conservation Planning (The Nature Conservancy 2003) is a framework that identifies the most important **strategic actions** needed to protect selected conservation targets and refines the **land area** where the strategic actions are implemented. It is a planning process developed by The Nature Conservancy and adopted by the Friends of Unity Wetlands to guide protection and stewardship activities. The goal of Site Conservation Planning is to identify the most effective, timely and cost-efficient actions needed for conservation.

Site Conservation Planning is based on five concepts.

1. **Conservation Targets or Values focus planning.** We use the term conservation target to represent working landscapes, historic structures, view sheds, as well as rare species, and terrestrial and aquatic communities. Planning for a small selected group of targets makes the process more focused and efficient.
2. **Functional Conservation Areas are needed to conserve the conservation targets.** A functional conservation area is the land and/or water area needed to maintain the conservation target and its supporting ecological and human processes. This includes, for example, the areal extent of a terrestrial community and the area needed to maintain essential ecological processes such as hydrology or the entire extent of a viewshed.
3. **Strategic Actions are those that do the most to abate the critical threats and/or restore the conservation target.** A major component of the Site Conservation Planning process is the hierarchical assessment of the most significant stresses, sources of stress, and critical threats, providing the basis to develop the most strategic actions.
4. **Strategic Actions are evaluated to assess success.** The planning framework includes identification of methods to assess the strategic actions to determine if they are successfully and effectively conserving the conservation targets.
5. **Collaboration is necessary for success.** With larger areas needed for conservation and the influence of the surrounding human community on conservation sites, success can only be accomplished in conjunction with others.

Site Planning has been successful for organizations because it:

- **Focuses conservation work** and sets priorities by selecting a limited number of targets and identifying goals, critical threats, and the most significant strategies.
- **Balances conservation with other land uses and the human context.**
- **Maximizes success** by integrating sound ecological and human context information, providing a systematic and comprehensive methodology, and involving planning teams that includes experts, partners, and stakeholders.
- **Provides an explicit process** for recording information for a more complete current assessment and archiving information for future iteration.
- **Initiates action and learning** through the identification of strategies and an approach that looks at conservation as a learning process.
- **Obtains resources** by demonstrating to funding sources that the best strategies are being chosen for conservation.

C. Community Support & Participation

The Unity Wetlands Conservation Plan is the product of a multi-year community process designed to engage a broad group of stakeholders. The plan used a Steering Committee to carry out most of the work, with technical support from The Nature Conservancy and Friends of Unity Wetlands staff. The Steering Committee's work was guided as well by a great deal of community activity in support of productive agriculture, farmland protection and land conservation.



Three public meetings in 2002 in Kennebec County were attended by landowners, farm owners and operators, municipal and government officials, federal agency representatives and conservation group representatives. Participants were interested in protecting farmland not as a preserve but as part of a working landscape that was important to local economies.

In February 2003, the Bessey Building in Albion was filled with 45 agricultural advocates, including 30 local farmers, to learn more about farmland protection and business support opportunities. Those attending expressed interest in pursuing conservation easements and business development assistance, as well as community-wide planning to secure the region's farms' hold on the land.

A Kennebec County Planning Team of agricultural interests was assembled in 2003, resulting in *An Areawide Plan to Keep Agriculture Working and Growing in Kennebec County* (Working Draft, December 2003).

Sixty-five agricultural advocates including 40 farmers again came together on August 11, 2003 in Unity to discuss the need to develop a unified community-based plan to keep agriculture healthy in the region. In response, Unity Barn Raisers worked with area farmers to organize the development and deployment of more than 100 signs (“Choices Matter – Support Our Local Farms”) on farm fields along main roads to the annual Common Ground Fair in Unity. These signs have begun an annual tradition on fair weekend.

Building on the momentum of the 2003 organizing events, agricultural partners including Unity Barn Raisers, Maine Farmland Trust, Maine Department of Agriculture, USDA Natural Resources Conservation Service, Kennebec and Waldo County SWCDs, Friends of Unity Wetlands and others began crafting a comprehensive approach to strengthening agriculture in the region. One result is the Fields & Forests Forever Campaign, which aims to protect a critical mass of farmland within the Focus Area while simultaneously protecting key ecological values. The Campaign has received more than \$1.2 million in funding from the Land for Maine’s Future Program, USDA Farm & Ranchland Protection Program and the Landowner Incentive Program. As of September 2006, negotiations are under way with five landowners to purchase development rights on nearly 1,000 acres of farmland and woodlots, with anticipated closings in early 2007.

Looking for additional ways to keep farming viable in and adjacent to the Unity Wetlands, the Unity Barn Raisers and many partners received a Conservation Partnership Initiative planning grant in 2005 to look at alternative farming practices that have the potential to increase farm viability while decreasing impacts on the Unity Wetlands ecosystem. The project has brought together a diverse assembly of community and organizational representatives to help guide development of demonstration projects and the conservation planning process.

D. Conservation Targets

The Steering Committee developed a list of values of the Unity Wetlands Focus Area that may be worthy of conservation action. These values were ultimately narrowed to a list of seven conservation targets to be addressed by the conservation plan; each target encompasses a number of values. These values also often overlap spatially. Table 2 lists these conservation planning targets, a justification for each, and other elements nested within them.

Table 2. Focal Conservation Targets and Nested Elements

Conservation Target	Justification for Target Selection	Nested Values, Species, Communities, or Ecological Systems
Hardwood Floodplain Forests	Two of the best examples in the central interior part of the state occur here, particularly of the Silver Maple type which is rare statewide (Gawler & Cutko, in press).	Silver Maple Floodplain Forest community, bur oak, diverse wildflower community, wild garlic, wild leek, yellow throated vireo, blue-gray gnatcatcher and other floodplain-associated bird species and wood turtle.
Rare/Threatened/Endangered Aquatic & Riparian Species	One of the best opportunities for rare freshwater mussel conservation in the state (MDIFW, pers. comm., 2001).	Yellow lampmussel, tidewater mucket, creeper, brook floater, host species for these freshwater mussels, anadromous fish species, riverweed, broad-tailed shadowdragon, wood turtle, bald eagle, leopard frog and high water quality.
Contiguous Upland Forest, including Working Forest	One of only two areas in the central interior large and intact enough to protect ‘matrix’ scale and quality forestlands (TNC, 2001). These forests serve to both buffer and link rare wetland and streamside habitats throughout the complex as well as provide habitat to common area-sensitive wildlife. Sustainably managed forests provide a renewable resource that supports a locally vibrant land-based economy that is less vulnerable to development conversion.	Mixed northern hardwoods, white pine-red oak, songbirds, cavity-nesters, furbearers, moose and deer, other large area-requiring wildlife (e.g. bobcat, fisher, black bear, woodland hawks), quality upland buffer function for stream and wetland systems. Also forest products, jobs, recreation and a continued way of life.
Wetland Systems	Wetlands constitute at least 30% of the conservation area (ME GAP Data, 1994), provide key ecosystem services, and support numerous common and rare species.	Unpatterned fen ecosystem, level bog ecosystem, ribbon snake, heron rookeries (historically), and abundant wading bird/waterfowl habitat. Flood control.
Grassland Habitat for Birds	Large grasslands are declining across the Northeast. Two divisions of the Sunkhaze Meadows National Wildlife Refuge (Benton and Sandy Stream) are located here,	Sedge wren, American woodcock, bobolink, upland sandpiper, meadowlark, northern harrier and other grassland nesting birds, as well as species like the ribbon snake that

Conservation Target	Justification for Target Selection	Nested Values, Species, Communities, or Ecological Systems
	providing 121 acres of habitat that is managed for the state endangered Sedge Wren and other grassland-dependent species	utilize this open habitat or the edge habitat between the grassland and forest systems.
Agricultural Land	Active agricultural lands are a key component of the local rural landscape and economy.	Soil and water conservation. Local produce, jobs, growing number of community supported agriculture programs and a continued way of life. Unfragmented habitat. Critical to Dairy Belt infrastructure.
Public Open Space, including Outdoor Classroom	A large block of natural open space enhances the rural character of local towns by providing aesthetic and recreational opportunity, and offers educational opportunity for local schools including Unity College, an institution noted for its focus on environmental programs.	Public access for hunting, fishing, trapping, hiking, boating (mainly canoeing and kayaking), and bird watching. An intact mosaic of relatively natural upland and wetland ecosystems providing opportunities for outdoor teaching and research.

E. Key Ecological Factors Identification

Key Ecological Factors are those components that most clearly define or characterize the conservation target, limit its distribution, or determine its variation over space and time and are vulnerable to change that would threaten the viability of the target. A significant disruption in the function of any key ecological attributes will degrade the integrity of that conservation target. The goal of conservation efforts should therefore be to ensure that all key attributes for the focal targets are in as natural, or, in the case of cultural values, supportive, a state as possible.



Below, we present some ideas about key ecological factors defining some of our conservation targets. This is not meant to be a thorough nor comprehensive assessment, but an introduction to a useful concept for better understanding the health status of our targets and measuring our success at maintaining or improving that health. See Appendix C for the Steering Committee's draft Biodiversity Health Assessment.

Hardwood Floodplain Forests

Natural flooding events and their frequency, duration, degree of damage/intensity, and timing are key to the maintenance of floodplain forest communities. The events create

the necessary conditions for seed germination and survival of young tree seedlings, and keep some areas wet and scoured enough to reduce competition from shrub growth, allowing grasses, sedges, and other herbaceous plants to thrive. Conversely, the value of floodplain forests is enhanced when canopy is maintained and some trees are allowed to grow large and contribute coarse woody debris to the in-stream system.

Rare Aquatic and Riparian Species

Freshwater mussels: Flow rate, water depth, water chemistry and temperature, availability of fish hosts, and substrate type are some of the factors determining where each mussel species can survive (Nedeau et al. 2000). **Yellow lampmussel** (*Lampsilis cariosa*) and **Tidewater mucket** (*Leptodea ochracea*) often co-occur in medium to large rivers, impoundments, and lakes, but *Leptodea* tends to have a greater preference for slower waters. Key to their presence seems to be watershed integrity: good water quality, riparian buffers, and presence of host fish species. A University of Maine graduate student, Chip Wick, has recently identified two potential host species for *Lampsilis* (yellow and white perch, *Perca flavescens* and *Morone americana*, respectively), and work on identifying potential hosts for the tidewater mucket is currently underway; it seems likely that at least one of its hosts is an anadromous species because of its coastal distribution (MDIFW Research Report, 2002). The **brook floater** requires clean, moderately flowing water and has only been found to occur in very low numbers. Several potential hosts have been reported under laboratory conditions including longnose dace, blacknose dace, golden shiners, pumpkinseed sunfish, slimy sculpins, yellow perch, and margined madtom (Nedeau et al. 2000). Another key to the persistence of native mussel species is the lack of exotic invasive species (zebra and quagga mussels) to compete for resources with.



The **brook floater** requires clean, moderately flowing water and has only been found to occur in very low numbers. Several potential hosts have been reported under laboratory conditions including longnose dace, blacknose dace, golden shiners, pumpkinseed sunfish, slimy sculpins, yellow perch, and margined madtom (Nedeau et al. 2000). Another key to the persistence of native mussel species is the lack of exotic invasive species (zebra and quagga mussels) to compete for resources with.

Anadromous fish species require unobstructed access to their habitat and ample prey availability and need large numbers of individuals present in spawning grounds to successfully breed.

Contiguous Upland Forest

The diversity in plant species composition in mixed forest explains, in part, the great diversity of bird species of concern that occur in this habitat type. A majority of high priority species in this habitat, including the **black-throated-blue warbler** and **Canada warblers** (*Wilsonia canadensis*), are dependent on a relatively dense forest understory for foraging and nesting.

The Canada warbler breeds in a range of habitat types including deciduous forested swamps, cool, moist, mature forest or streams and swamps with dense undergrowth, and cedar bogs. In central Maine, Collins (1983) found the Canada warbler in forests with a high percent shrub cover (70%), moderate canopy cover (64%), and minor component of

conifers in the canopy. Forests with dense understory particularly along streams, swamps, bogs, or other moist areas are important to Canada warblers (DeGraaf and Yamasaki 2003).

Habitat for grassland birds

Large grasslands and early successional habitat are declining across the Northeast as a result of forest succession and development. Many remaining fields are mowed for hay many times per summer and hence are less suitable for nesting birds. Large grasslands can benefit nesting **bobolink**, **meadowlark**, **vesper sparrow** and **sedge wren**, as well as roosting **woodcock**, **northern harrier** and migrating and wintering landbirds such as larks and sparrows, and edge-dependent species such as **ribbon snake**.

F. Agricultural Factors

Protection of the Unity Wetlands' fragile ecosystem cannot be realized unless local farms change certain farm practices, transitioning to new crops and new techniques that will minimize adverse environmental impacts. Nor can this goal be realized if local farms do not remain economically viable, as the new development that could replace farms would result in even greater adverse impacts.

Nutrient Import

The majority of the organic grain needed by the Focus Area's dairy farmers is imported from the Midwest or Canada, resulting in significant nutrient import. An average 50 cow farm in the project area trucking in grain from outside the local bioregion will import about 30 percent of the dry matter of a lactating cow's diet, adding up to 16,000 lbs of nitrogen, 5,500 lbs of phosphorus, and 6,600 lbs of potassium. Because the cows effectively utilize only about 20-30 percent of the nutrients in their feed for milk or meat, these nutrients are building up in farm soils as producers spread nutrient-rich manure over their fields. Eventually, through run-off and movement of ground water, nutrients find their way to local wetlands and surface waters where nutrient overload may degrade water quality.

Soil Erosion

Of the feed grown locally, the major crop is corn. Crop rotation is not widely practiced in the area. Fields planted with corn, because of the tilling methods used and wide spacing between corn rows, experience higher levels of erosion than fields planted in grains and legumes, which are planted more closely together and with tilling methods that disturb the soil less. Very few farms currently plant cover crops after corn silage harvest.

Biodiversity & Wildlife Habitat

Well-managed farmland can enhance the Unity Wetlands' natural community by providing habitat for fish and wildlife and contributing to a block of contiguous habitat for wide-ranging species. Delayed mow operations can allow for productive grassland nesting bird habitat. Natural, vegetated farm edges (riparian buffers, wetlands, hedgerows, woodlots, etc.) can provide key habitat, and a growing body of work by the

Wild Farm Alliance and others indicates that “farming with the wild” can have beneficial impacts on farming operations.

Local Work Group Priorities & Practices

The Kennebec County and Waldo County Local Work Groups of the Natural Resources Conservation Service have prioritized the following concerns for their respective regions, which include the Unity Wetlands: comprehensive nutrient management, erosion and sediment control, surface water quality, grazing practices and wildlife habitat.

Comprehensive nutrient management is intimately connected to soil erosion, soil quality and water quality. Practices that support comprehensive nutrient management plans will have a positive impact on the water quality and health of the Unity Wetlands ecosystem.

G. Working Forest Factors

The contiguous upland forests in the Focus Area serve to both buffer and link rare wetland and streamside habitats throughout the complex as well as provide habitat to more common area-sensitive wildlife. If well-managed, working forests provide a renewable resource that supports a locally vibrant land-based economy that is less vulnerable to development conversion.

Timber harvests have the potential to impact wildlife habitat and food supply as well as stream health. Riparian forests influence the aquatic community through their effects on food availability, habitat diversity, stream flow, light intensity, and water temperature and chemistry. These factors influence the variety of plants, microorganisms, invertebrates and fish found in a stream (Klapproth & Johnson, 2000a).

As recommended by the Beginning with Habitat Program (Maine Natural Areas Program 2001), on lands where timber harvest occurs buffers should be maintained around all wetlands and ponds. While different species can have different buffering requirements, wider buffers provide better protection for riparian and wetland-dependent species. The state minimum shoreland zoning standards specify a minimum 75’ buffer in which very little harvest or clearing is allowed, with less stringent restrictions within 250’ of the wetland/upland border. Better protection will be afforded if as little alteration as possible occurs within 250’ of this border. Any timber harvesting within and adjacent to wetlands or adjacent to ponds should be implemented with strict adherence to state Shoreland Zoning guidelines and Maine Forest Service Best Management Practices.

Timber operations in the vicinity of rare plant populations and in floodplain forests in general should be carefully planned to avoid adverse impacts. Machinery should be used on the site only when the ground is frozen to prevent soil compaction and destruction of existing plants. (From Maine Natural Areas Program 2001)

H. Conservation Goals for Targets

For each conservation target, the Steering Committee developed goals that set minimum standards that must be achieved if conservation efforts are to be successful.

Table 3. Conservation Targets and Associated Conservation Goals

Conservation Target	Conservation Goals (2006-2016)
Hardwood Floodplain Forest	<ul style="list-style-type: none"> • Map accurately the extent of hardwood floodplain forest along 15, 25 and Sandy Streams • Protect and buffer (see Upland Forest target below) <u>all</u> high quality examples (currently known to be 4) of existing Hardwood Floodplain Forest throughout focus area by fee acquisition or conservation easement. • Better understand the distribution, condition, and functioning of floodplain forests in the area.
Rare/ Threatened/ Endangered Aquatic and Riparian Species	<ul style="list-style-type: none"> • Ensure “enhanced” riparian protection (beyond State shore-land zoning minimum standards) is implemented along all priority stream segments, through fee acquisition and landowner education • 25 Mile and 15 Mile and Sandy Streams maintain their A rating from DEP and continue to attain that water quality status
Contiguous Upland Forest, including Working Forests	<ul style="list-style-type: none"> • Ensure forestlands across the site include a natural range of age classes and types, including xx acres of unmanaged forest allowed to succeed to old age. • Maintain or enhance forest connectivity across Rt. 139. • Maintain intactness of regionally significant habitat blocks. • Ensure protection of priority upland forest patches (fee or working forest easement).
Grassland Habitat for Birds	<ul style="list-style-type: none"> • Protect and actively manage adequate habitat for grassland nesting birds
Wetland Systems	<ul style="list-style-type: none"> • Ensure riparian protection to at least State shore-land zoning minimum standards is implemented along all priority wetland systems. • Protect Kanokolus and Fowler Bogs watersheds
Agricultural Lands	<ul style="list-style-type: none"> • Help to maintain viability of working farms especially along Rt. 202 corridor and help to protect their natural resource base, aiming for no net loss of farmland • Maintain intactness of regionally significant parcels of farmland and woodlots
Public Open Space and opportunities for outdoor education	<p>Establish two or more public access canoe-trails, hiking trails and/or combination canoe-hiking circuits throughout the focus area, and promulgate via brochures, signage and press releases as to encourage compatible local recreation interests.</p>

I. Threat Assessment

A threat assessment is the identification, evaluation and ranking of the threats to the focal conservation targets. This step in the planning process assesses the influence of various conditions on the viability and long-term protection of the conservation targets. Appendix D presents a table of stresses and sources of stress from which the following critical threats were determined.

For each focal planning target stresses and sources of stress were identified and discussed. The following factors were identified as likely to cause the most significant (i.e., longest lasting, greatest contribution, or most widespread) damage or harm to the planning targets:

- **Hardwood Floodplain Forest:** Timber cutting, conversion to agriculture and residential use, inappropriate harvesting, recreation
- **Rare/Threatened/Endangered Aquatic & Riparian Species:** Home and road development, inadequate buffers, invasive species
- **Contiguous Upland Forest, including Working Forest:** Home development and subdivisions, roads, incompatible timber cutting operations
- **Grassland Habitat for Birds:** Lack of active and/or appropriate management, conversion to residential development (homes and roads)
- **Wetland Systems:** Invasive species, road development, poorly implemented road maintenance, home development
- **Agricultural Lands:** Loss of farm viability, home development, increasing property values
- **Public Open Space & Outdoor Classroom:** Land posting, home development, lack of public support for education, inconsistent support and resources

After these critical threats were identified for each individual conservation target they were also assessed across all targets. Table 4 presents this synthesis, and thus the most critical threats to the Unity Wetlands overall. In addition to these critical threats it may be helpful to think about some of the underlying causes or situations that could give rise to the abovementioned threats such as: unplanned growth; lack of regional planning or coordination with regard to roads or growth areas, for example, insufficient municipal capacity; inadequate incentives to sustainably manage working forests or continue farming; increasing parcelization (reduction in the size of ownership parcels) and conflicting values.

Conversion of lands for road and residential development is a recurring theme in the Unity Wetlands Threats Analysis. USDA Agricultural Census data show farmland decreased 5 percent and 8 percent from 1992 to 1997 in Waldo and Kennebec counties, respectively. As fuel costs and land values rise and dairy prices fall, farmers are under increasing pressure to supplement income by selling wood lots or house lots. Development pressure is creeping out along the transportation corridors, westward from Belfast and eastward from Waterville and Augusta. Furthermore, Natural Resources Inventory Data (1997) show that a large proportion of the land in Kennebec and Waldo counties that has been converted to urban use was previously working pasture and hayland.



Table 4. Critical Threats

Threats	Hardwood Floodplain Forest	R/T/E Aquatic & Riparian Species	Contiguous Upland Forest	Wetland Systems	Grassland Habitat	Working Forests for Birds	Agricultural Land	Public Open Space & Outdoor Classroom	Overall Threat Rank
Home development and road development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	High
Incompatible timber harvesting practices	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						High
Inadequate of buffers	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>					High
Other land conversion (not homes and roads)			<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Medium
Incompatible agricultural practices				<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>				Medium
Abusive recreation (misuse/abuse)	<input type="checkbox"/>			<input type="checkbox"/>				<input type="checkbox"/>	Medium
Land posting								<input type="checkbox"/> <input type="checkbox"/>	Medium
Denied access								<input type="checkbox"/> <input type="checkbox"/>	Medium
Lack of public support								<input type="checkbox"/>	Medium
Invasive species		<input type="checkbox"/>		<input type="checkbox"/>					Medium

J. No Action Alternative

Without a concerted conservation effort, much of the Unity Wetland Focus Area's ecological and cultural values will be lost as a result of land conversion and water quality degradation. Table 5 summarizes the anticipated results on each conservation target if a No Action Alternative is adopted.

Table 5. Impacts by Target of a No Action Alternative

Conservation Target	Anticipated Result of No Action Alternative
Hardwood Floodplain Forests	Loss of high-quality Silver Maple Floodplain Forest communities and associated species, decreased water quality
Rare/Threatened/Endangered Aquatic & Riparian Species	Loss of species occurrences due to decreased water quality and introduction of invasive species
Contiguous Upland Forest, including Working Forest	Continued development and fragmentation of upland forest blocks, with negative impacts on nested ecological values (species diversity, riparian and wetland systems) and cultural values (jobs, recreation, forest products). Potential for negative impacts on water quality, habitat resulting from inappropriate timber harvesting operations.
Wetland Systems	Degradation and loss of wetlands and associated ecological values
Grassland Habitat for Birds	Continued loss of grassland habitat due to conversion to cropland, return to forestland. Continued decline in grassland-associated species.
Agricultural Land	Continued loss of farmland to residential development, with negative impacts on regional Dairy Belt infrastructure. Fragmentation of large block habitat.
Public Open Space, including Outdoor Classroom	Continued loss of traditional public access for hunting, fishing, recreation, educational opportunities.

K. Proposed Conservation Strategies & Actions

Recognizing that a No Action Alternative will not yield acceptable conservation results, the Steering Committee considered a range of conservation strategies – broad action paths that mitigate the stresses threatening conservation targets at a particular site. Identifying and acting on the high priority strategies is perhaps the single most important factor determining conservation success. The Steering Committee recommends that we adopt and pursue the following conservation strategies and actions.

1. Acquire legal interests in land

- o Develop a parcel prioritization process to identify key parcels and the appropriate conservation tool for each parcel (fee simple, easement, management agreement, etc.)
- o Friends of Unity Wetlands and other land trusts working in the region should continue to secure easements and, where appropriate, acquire land in fee
- o Purchase development rights on working farms and forests to enhance their economic viability and ensure their continued availability as working lands
- o Direct Landowner Incentive Program resources to Unity Wetlands lands suitable for easements
- o Encourage acquisition by state agencies and local partners for conservation and recreation lands
- o Direct Wetlands Reserve Program funds to appropriate parcels



- 2. Promote and support privately owned, well-managed farm and forest lands**
- o Work with partners to develop and implement conservation plans, including nutrient management plans where appropriate, for all farms within the Focus Area
 - o Increase awareness of and participation in Farm Bill programs in support of Unity Wetlands conservation goals (See Appendix E for summary of Farm Bill programs)
 - o Increase awareness of and participation in forest management programs such as Focus Species Forestry (Maine Audubon) and WoodsWise
 - o Increase awareness of and enrollment in current-use tax programs, e.g. Tree Growth
 - o Support efforts to increase local grain production, thereby reducing nutrient import
 - o Promote agricultural practices that support Unity Wetlands conservation goals (and improve soil condition)
 - o Use of winter cover throughout the Focus Area
 - o Establish and/or enhance riparian buffers
 - o Biodiversity Conservation additions to the USDA National Organic Program
 - o Implementation of rotational grazing regimes
 - o Rotate highly erodible corn fields with small grain and cover crops
 - o Discourage expansion of agricultural & timber activities into inappropriate/sensitive areas
 - o Establish public demonstration sites of conservation practices
 - o Establish a Wetlands Reserve Program restoration & easement project within the Focus Area within two years
 - o Utilize voluntary management agreements on appropriate parcels
 - o Support and coordinate with agricultural outreach that is already taking place
- 3. Support efforts to arrest the loss of working lands**
- o Work with partners to conduct at least three public workshops annually to promote tools available to landowners and citizens to help protect open space
 - o Develop fact sheets about Maine's Homestead Exemption, Farmland and Open Space tax law, Tree Growth Tax Law and the Forest Management Planning Tax Credit.
 - o Purchase development rights on working lands to enhance their economic viability and ensure their continued availability for farming and forestry
- 4. Increase public awareness of and appreciation for the Unity Wetlands**
- o Establish monthly Focus Area seminars and field trips
 - o Continue Friends of Unity Wetlands outreach and membership drive
 - o Develop conservation brochures and distribute to landowners throughout the Focus Area. Brochures to include a



summary of Focus Area values, threats, conservation options, best management practices, etc.

- o Develop a nature center strategically located in the Focus Area
- o Host community meetings with public and local officials about the Focus Area
- o Design and post “Unity Wetlands” signs along key transportation corridors
- o Develop a network of land and water trails for public recreation

5. Improve management of conserved lands

- o Establish a permanent stewardship fund for all Friends of Unity Wetlands conservation lands
- o Coordinate a volunteer stewardship program to assist with monitoring efforts, trail work and signage, restoration activities, etc.
- o Work with USFWS and Unity College on management/restoration of existing fee holdings in the Focus Area (e.g. Sandy Stream hardwood floodplain forest buffer enhancement), and facilitate increased fee holdings



6. Public Policy

- o Encourage rural and resource protection zoning by local municipalities
- o Shoreland zoning enhancement throughout the Focus Area
- o Enhanced environmental review of projects under LURC jurisdiction (Unity Township)
- o Better enforcement of existing land use ordinances such as shoreland zoning
- o Open space planning and implementation
- o Promote tree growth, farmland and open space through local tax structure
- o Encourage plans to get old roads officially discontinued and to keep dirt roads unimproved and prevent extension of dead ends such that they become through-roads
- o Work with municipal, state and federal government to support Maine working lands, including tax policies that encourage retention of land as working forest and farm

7. Information Gathering & Research

- o Augment existing resource inventory and assessment with additional or updated information (including but not limited to hardwood floodplain forest, rare/threatened/ endangered species, heron rookery, significant vernal



pools, waterfowl and wading bird habitat, riparian birds, anadromous fish habitat, invasive plants)

- o Host community mapping workshop to help identify areas of importance and priority areas for conservation action
- o Increase knowledge of forest stand types, distribution, ecological processes and condition, and populations of animal species dependent on large forested areas
- o Conduct a road status inventory for each town
- o Periodically review Focus Area boundaries and adjust as appropriate given new information and priorities

8. Increase Conservation Capacity

- o Build capacity of Friends of Unity Wetlands as long-term steward of the Focus Area
- o Seek funding from federal and state agencies and programs for the Unity Wetlands Focus Area, e.g., US Fish & Wildlife Service, Conservation Security Program, Landowner Incentive Program, Land for Maine's Future Program and Maine Outdoor Heritage Fund
- o Diversify funding sources and develop a major donors program for Unity Wetlands conservation efforts
- o Continue existing partnerships and seek new/innovative partnerships, e.g. funding for Unity Wetlands Education Center

III. Measuring our Success

The Unity Wetlands Conservation Plan sets an ambitious course. But how will we know if we are making progress, or even proceeding in the right direction? It is important that during the planning process we set benchmarks that will help to signal progress, encourage additional work and, on occasion, alert us to the need for course correction. The use of these benchmarks is critical, but correctly defining them is a challenge. In Table 6, we present a set of measures of success for each conservation target. Recognizing that we cannot reach our targets without increasing our ability to facilitate plan implementation, we also pose some draft benchmarks to evaluate our own organizational capacity. We expect to further refine the evaluation process as this plan and its implementation progress, and we welcome your ideas.

Table 6 Conservation Goals

Draft Conservation goals for each planning target, over a ten-year time frame.

Conservation Target	Draft Conservation Goals (2006-2016)	Conservation Strategies
Hardwood Floodplain Forest	<ul style="list-style-type: none"> • Protect and buffer (see Upland Forest target below) <u>all</u> high quality examples (currently known to be 4) of existing Hardwood Floodplain Forest throughout focus area by fee acquisition or conservation easement. • Better understand the distribution, condition, and functioning of floodplain forests in the area. 	<ul style="list-style-type: none"> • Accurately assess and map extent of hardwood flood plain forest along Sandy, 15 Mile and 25 Mile Streams and assess current condition (A, B, C rank as per MNAP standards of size, condition and landscape context) • Encourage re-establishment of Silver Maple and Bur Oak in forested buffer at Sandy Stream Division of Sunkhaze Meadows National Wildlife Refuge
Rare/ Threatened/ Endangered Aquatic and Riparian Species	<ul style="list-style-type: none"> • Ensure “enhanced” riparian protection (beyond State shore-land zoning minimum standards) is implemented along all priority stream segments, through fee acquisition and landowner education • 25 Mile and 15 Mile and Sandy Streams maintain their A rating from DEP and continue to attain that water quality status 	<ul style="list-style-type: none"> • Adjust distribution maps to reflect probably up and downstream extents of populations in riparian zones • Determine which riparian zones are most important and vulnerable from a habitat view point. Inventory, map, and rank the ecological significance of all streams (or stream segments) in the focus area based on presence and size of rare/threatened/endangered species populations (mussels, mayflies, dragonflies, turtles, birds, plants, heron rookeries). • Contact landowners of all key parcels and provide information on special qualities and vulnerabilities of riparian zone • Acquire fee and easement where possible • Talk with town planning boards and code enforcement officers about the importance of enforcement of shoreland zoning in these areas • Assess level of nutrient input to wetlands and streams from agricultural fields and work with NRCS and other partners to implement best management practices reducing nutrient runoff. • Support ongoing data collection and remediation efforts on Unity Pond • Assess all road/stream crossings and determine if improvements and/or restoration are needed. Make a plan for carrying out improvements and/or restoration where necessary. • Encourage implementation of Sunkhaze Meadows NWR Habitat Management Plan, specifically the plan’s goals to increase forest buffer to 100 feet along Sandy Stream to protect water quality and freshwater mussels, and to increase upland buffer to 75 feet along Fowler Brook at Benton Division to protect water quality

Contiguous Upland Forest, including Working Forests	<ul style="list-style-type: none"> • Ensure forestlands across the site include a natural range of age classes and types, including xx acres of unmanaged forest allowed to succeed to old age. • Maintain or enhance forest connectivity across Rt. 139. • Maintain intactness of regionally significant habitat blocks. • Ensure protection of priority upland forest patches (fee or working forest easement). 	<ul style="list-style-type: none"> • Identify, map, and rank (by priority) areas of upland matrix forest immediately abutting floodplain forests, priority stream segments, and high value wetland systems (includes IFW's waterfowl and wading bird habitats, MNAP significant wetlands, and Significant Vernal Pools) throughout focus area. • Contact owners of priority forest tracts • Work with MAS Focus Species Forestry program and MFS WoodsWise to educate forest landowner re forest practices • Identify town roads that are currently unimproved and work for their official discontinuations and abandonment • Acquire strategic parcels along unimproved roads to discourage further development of roads that could fragment blocks • Promote incentives to keep forest land in working forest, e.g, town support of use of tree growth program
Grassland Habitat for Birds	<ul style="list-style-type: none"> • Protect and actively manage adequate habitat for grassland nesting birds 	<ul style="list-style-type: none"> • Assess Sedge Wren habitat and work with landowners to develop management plan for habitat if appropriate • Identify, map, and rank priority grasslands providing rare/threatened/endangered species habitat throughout focus area.
Wetland Systems	<ul style="list-style-type: none"> • Ensure riparian protection to at least State shoreland zoning minimum standards is implemented along all priority wetland systems. • Protect Kanokolus and Fowler Bogs watersheds 	<ul style="list-style-type: none"> • Assess all road/stream crossings and determine if improvements and/or restoration are needed. Make a plan for carrying out improvements and/or restoration where necessary. • Inventory, map, and rank the wildlife values of major wetland systems (mainly IFW's waterfowl and wading bird habitats, and Significant Vernal Pools) throughout focus area
Agricultural Lands	<ul style="list-style-type: none"> • Help to maintain viability of working farms especially along Rt. 202 corridor and help to protect their natural resource base, aiming for no net loss of farmland • Maintain intactness of regionally significant parcels of farmland and woodlots 	<ul style="list-style-type: none"> • Endorse timber management as an appropriate land use • Identify coincidence of working lands with key natural attributes • Encourage land stewardship through enrollment in voluntary USDA natural resource conservation programs
Public Open Space and opportunities for outdoor education	<ul style="list-style-type: none"> • Establish two or more public access canoe-trails, hiking trails and/or combination canoe-hiking circuits throughout the focus area, and promulgate via brochures, signage and press releases as to encourage compatible local recreation interests. 	<ul style="list-style-type: none"> • Acquire land or easement or at minimum landowner agreement at key sites where canoe put ins and parking would be appropriate • Seek landowner agreements for trail crossings • Establish an ecological inventory and monitoring program that is integrated with Unity College coursework. • Work with College Board of Directors to investigate expanding the College's ownership beyond its current holdings in the focus area.

Appendix A: Element Occurrences for the Unity Wetlands

Eocode	Et_sprot	Lastobs	Scomname	Sname	Surveysite	Town	Grank	Srank
ARAAE02040*015*ME	SC	10/10/1988	STINKPOT	<i>STERNOTHERUS ODORATUS</i>	UNITY POND	UNITY	G5	S3
IMBIV42030*036*ME	SC	8/5/1995	YELLOW CREEPER	<i>STROPHITUS UNDULATUS</i>	25 MILE STREAM	UNITY	G5	S?
IMBIV21050*052*ME	T	8/6/1994	YELLOW LAMPMUSSEL	<i>LAMPSILIS CARIOSA</i>	25 MILE STREAM	UNITY	G3G4	S2S3
IMBIV21050*007*ME	T	8/28/1995	YELLOW LAMPMUSSEL	<i>LAMPSILIS CARIOSA</i>	SANDY STREAM	UNITY	G3G4	S2S3
ABNKC10010*670*ME	T	1997	BALD EAGLE	<i>HALIAEETUS LEUCOCEPHALUS</i>	UNITY POND	UNITY	G4	S4B
ARADB36120*037*ME	SC	7/9/1991	RIBBON SNAKE	<i>THAMNOPHIS SAURITUS</i>	15 MILE STREAM	BENTON	G5	S3
IMBIV21050*022*ME	T	8/3/1995	YELLOW LAMPMUSSEL	<i>LAMPSILIS CARIOSA</i>	SEBASTICOOK RIVER	CLINTON	G3G4	S2S3
IMBIV21050*059*ME	T	8/30/1998	YELLOW LAMPMUSSEL	<i>LAMPSILIS CARIOSA</i>	15 MILE STREAM	BENTON	G3G4	S2S3
IMBIV24030*007*ME	T	8/28/1995	TIDEWATER MUCKET	<i>LEPTODEA OCHRACEA</i>	SANDY STREAM	UNITY	G4	S2
ARAAD02020*134*ME	SC	4/18/1999	WOOD TURTLE	<i>CLEMMYS INSCULPTA</i>	SANDY STREAM	UNITY	G4	S4
ABNKC10010*746*ME	T	6/8/2000	BALD EAGLE	<i>HALIAEETUS LEUCOCEPHALUS</i>	SANDY STREAM-UNITY POND	UNITY	G4	S4B
CFDF100000*010*ME			HARDWOOD FLOODPLAIN FOREST	<i>HARDWOOD FLOODPLAIN FOREST</i>	15 MILE STREAM			S3
CFDF100000*011*ME			HARDWOOD FLOODPLAIN FOREST	<i>HARDWOOD FLOODPLAIN FOREST</i>	15 MILE STREAM AT SEBASTICOOK RIVER			S3

Eocode	Et_sprot	Lastobs	Scomname	Sname	Surveysite	Town	Grank	Srank
CFDF100000*012*ME			HARDWOOD FLOODPLAIN FOREST	<i>HARDWOOD FLOODPLAIN FOREST</i>	25 MILE STREAM			S3
CX09PE0000*014*ME			UNPATTERNED FEN ECOSYSTEM	<i>UNPATTERNED FEN ECOSYSTEM</i>	FOWLER BOG	Albion/Unity		S4
CX13PE0000*019*ME			LEVEL BOG ECOSYSTEM	<i>LEVEL BOG ECOSYSTEM</i>	KANOKOLUS BOG	Unity		S4
PDPOD01010*002*ME			THREADFOOT	<i>PODOSTEMUM CERATOPHYLLUM</i>	SEBASTICOOK RIVER	Clinton	G5	S2
PMLIL020F0*002*ME			WILD GARLIC	<i>ALLIUM CANADENSE</i>	FIFTEENMILE STREAM	EAST BENTON		G5
PMLIL022E0*009*ME			WILD LEEK	<i>ALLIUM TRICOCCUM</i>	FIFTEENMILE STREAM	Benton, Albion	G5	S3
PMPON03010*002*ME			WATER STARGRASS	<i>ZOSTERELLA DUBIA</i>	UNITY POND	Unity		G5
PMPOT03150*005*ME			VASEY'S PONDWEED	<i>POTAMOGETON VASEYI</i>	SEBASTICOOK RIVER	Clinton	G4	S1
PPOPH020F0*010*ME			ADDER'S TONGUE FERN	<i>OPHIOGLOSSUM PUSILLUM</i>	UNITY POND	Unity	G5	S1

State Rarity Ranks (determined by Maine Natural Areas Program and Maine Inland Fisheries & Wildlife):

- S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine
- S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline
- S3 Rare in Maine (on the order of 20-100 occurrences)
- S4 Apparently secure in Maine

Global Rarity Rank (determined by NatureServe):

- G1 critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine
- G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline
- G3 Globally rare (on the order of 20-100 occurrences)
- G4 Apparently secure globally
- G5 Demonstrably secure globally

Appendix B: Community Support: Town Comprehensive Plans			
Town	Plan Date	Relevant Policies & Strategies for Working Lands (Farm & Forest)	Relevant Policies & Strategies for Conservation
Albion	1991	<p>In order to preserve agricultural land and maintain the full value of developable land for the owners, the town will promote voluntary opportunities for landowners to sell or transfer the development rights to their land. (p.III-6)</p> <p>It is the policy of the town to encourage responsible commercial agriculture and forestry through increased community awareness and affirmative action in land use policies. (p. III-4)</p>	<p>...the best way to protect habitat is by preserving large areas of open space throughout Albion. The town will encourage this through requiring that open space be set aside as new development occurs, instituting streamside protection areas, and encouraging the designation of land as farm and open space. (p. III-12)</p> <p>The roadside single-lot development was found to be the biggest threat to Albion's landscape, which will continue to erode the town's rural character unless guided in another direction. (p. 91)</p> <p>Growth will be encouraged to develop along new side roads accessed from major collector roads that are state maintained.</p>
Benton	1991	<p>Evaluate the potential for the acquisition of development rights on farm, forest or open space properties for the future preservation of those resources. (p. 61)</p> <p>Preserve and protect prime agricultural lands in Benton. (p. 62)</p> <p>The Selectmen should develop informational materials on the use and benefits of State tax reduction programs on the farm and forest lands for distribution to potential users of the program. (p. 74)</p> <p>The Selectmen should establish a program for the development of clustered housing concepts in Benton to protect agricultural and open space lands. (p. 74)</p>	<p>Encourage communication & coordination with the State & private organizations in the preservation & enhancement of fish & wildlife resources in Benton. (p. 61)</p> <p>Evaluate the potential for the acquisition of property for the preservation of significant local natural resources. (p. 61)</p> <p>Encourage the use of tax incentives and land trusts to protect large tracts of open space. (p. 62)</p> <p>Through utilization of the resource maps & information created for this plan, the Land Use Committee...should create preservation districts which prohibit development in areas such as critical deer yards, waterfowl nesting areas & wetlands. (p. 74)</p>

Appendix B: Community Support: Town Comprehensive Plans			
Town	Plan Date	Relevant Policies & Strategies for Working Lands (Farm & Forest)	Relevant Policies & Strategies for Conservation
			The Land Use Committee should create districts for the preservation of identified endangered plants & animals. (p. 74)
Burnham	1992 Revised 1993	<p>Prohibit clearcutting to protect water quality and wildlife habitat, and to ensure proper forestry management. (p. 87)</p> <p>Encourage preservation and sound management of agriculture and forest resources</p> <p>Protect and maintain commercial forestry and agricultural operations</p> <p>In a public opinion survey (1990): 50% supported cluster development as way to preserve open space 78% considered preserving commercial agriculture and forestry important 77% considered public access to recreational land & water important</p>	<p>Establish a resource protection zone, which would protect specified wetlands from any alteration & maintain them in their natural state. This would include non wooded wetlands which have been rated as high for waterfowl, and which are also characterized by one of the following attributes: within the direct drainage of Unity Pond, or adjacent to or overlying the Horseback Ridge aquifer, or includes multiple heron nesting sites within or immediately adjacent to the wetlands. (pp. 86-87)</p> <p>The Town should require new development in the Unity Pond watershed to include phosphorus runoff controls to protect water quality. (p. 86)</p> <p>Establish a deer wintering area protection zone. (p. 87)</p> <p>Townpeople voiced a desire for more public land for outdoor recreation but were unwilling to pay a tax increase to make that happen</p> <p>Discrete wildlife habitat areas are more meaningfully viewed as part of a larger network of interrelated habitats linked by travel corridors following streams and including an extensive system of wooded wetlands. Measures to protect wildlife habitat should therefore encompass not only wetlands & deer yards, but stream corridors as well. (p. 63)</p>

Appendix B: Community Support: Town Comprehensive Plans			
Town	Plan Date	Relevant Policies & Strategies for Working Lands (Farm & Forest)	Relevant Policies & Strategies for Conservation
Clinton	1991	<p>Encourage wise use of the Town's agricultural & forestry resources, including strategies to encourage enrollment in Farm & Open Space and Tree Growth Tax Programs, publicizing the availability of low-cost woodlot management assistance, & monitoring forest harvesting practices to assure protection of scenic beauty, sustainable wildlife habitat and water quality. (p.II-12)</p> <p>Protect existing agricultural areas from conflicts that may arise from new, adjacent land use activities, including provision requiring 100-foot buffer strip between new residential developments & active farmland. (p. II-12)</p> <p>Encourage land use development practices, such as cluster housing, that preserve agricultural & forestry resources. (p. II-13)</p>	<p>Ensure that open space is set aside in new developments, including set-asides along logical open space corridors such as Clinton's rivers and streams. (p. II-13)</p>
Freedom	1991	<p>Encourage landowners to keep land in agriculture, forestry & open space. (p. 134)</p> <p>The Town should encourage development of responsible woodlot & forest harvesting practices & management plans. (p. 134)</p> <p>In order to preserve agricultural land & maintain the full value of developable land for the owners, the town should promote opportunities for landowners to sell or transfer the development rights of their land. (p. 134)</p> <p>Protect existing agricultural areas from conflicts that may arise from new, adjacent land use activities. (p. 142)</p>	<p>Town should recognize and protect through local and state regulations wetlands, aquifers, critical natural areas, moderate to high-value habitat, scenic vistas</p>

Appendix B: Community Support: Town Comprehensive Plans			
Town	Plan Date	Relevant Policies & Strategies for Working Lands (Farm & Forest)	Relevant Policies & Strategies for Conservation
Unity	1993	<p>It is the policy of the Town to encourage the maintenance of tillable land for current & future food production. (p. III-11)</p> <p>It is the policy of the Town to support commercial agriculture & accepted farming practices, with strategies to include publicizing official support in Town promotional materials, requiring setbacks for new adjacent structures & wells, including density bonuses & design flexibility in development proposals. (p. III-11)</p> <p>To minimize loss of productive farmland, the Town will require that a subdivider or other relevant developer demonstrate that the design of any development will have a minimal adverse impact on farming. In addition, the Town will insist that the continued farming of productive fields left within a development be considered before planning board approval is granted. (p. I-4)</p>	<p>It is the policy of the Town to protect & enhance the water quality of Unity Pond. (p. III-13)</p> <p>It is the policy of the Town to regulate shoreland development according to the State of Maine's Shoreland Zoning Guidelines in order to protect water quality, shoreline aesthetics and wildlife habitat. (p. III-13)</p> <p>It is the policy of the Town to support the State's role in regulating activity on freshwater wetlands and water bodies. (p. III-13)</p>

Appendix C: Biodiversity Health Assessment

An assessment of the health or integrity of each conservation target, in terms of its size, condition, and landscape context.

Focal Conservation Target	Size Justification	Rank	Condition Justification	Rank	Landscape Context Justification	Rank
<p>Hardwood Floodplain Forests: Two focus areas, at the outlet of Fifteen Mile Stream, and Twenty-five Mile Stream from Unity Pond to Burnham Road and extending partway up Sandy Stream. A third, but small and marginal example also occurs just south of the Unity town line.</p>	<p>91 & 196 acres respectively. Both considered of average size relative to other occurrences.</p>	<p>Good</p>	<p>Fifteen Mile (1992): Unnatural flow regime; impoundments kept water levels high through first half of growing season. Forest less than 100 yrs, herb layer less diverse than other areas visited. (Ranked AB) Twenty-five Mile (1992): May have been cut in last 50 years; relatively young forest. Species distribution is low compared to other sites surveyed, but characteristic with silver maple canopy, sparse shrub layer, and dense herb layer. (Ranked B)</p>	<p>Fair to Good</p>	<p>Fifteen Mile: Grades into upland forest - forestry, agriculture, and gravel mining are occurring on adjacent land; although not intensively. Site appears adequately buffered. Twenty-five Mile: Some agricultural fields abut area, and these may have altered high floodplain. Site does not appear adequately buffered from aerial photo observations.</p>	<p>Fair to Good</p>

Focal Conservation Target	Size Justification	Rank	Condition Justification	Rank	Landscape Context Justification	Rank
<p>Rare/Threatened/Endangered Aquatic & Riparian Species: Focus on Twenty-five Mile and Sandy Streams (especially near Unity Pond), all portions of Fifteen Mile Stream and the Sebasticook River within the site design, and their local drainages.</p>	<p>Habitat plentiful for some, limited for others. Much habitat unavailable to anadromous fish species due to man-made obstructions. Population sizes largely unknown, but none of these species occurs in large numbers.</p>	<p>Fair</p>	<p>River and streams appear to be in decent condition. The Sebasticook is designated Class C, yet modeling of 1997 samples resulted in Class B aquatic life attainment (MDEP, 1999). All other streams are legally Class B waters. Most streams appear well buffered, but two significant point sources have been mapped in the area by MDEP and non-point source pollution is a concern. Blocked access has reduced habitat quality due to altered flows, sediment transport, eutrophication, and altered prey availability. However, dams may also be preventing the introduction of invasive non-native species to the system.</p>	<p>Good</p>	<p>According to Maine GAP Analysis data, the area surrounding the site (5-mile radius) is 2% developed and 22% agriculture, but still 60% forested and 16% wetland.</p>	<p>Good</p>

Focal Conservation Target	Size Justification	Rank	Condition Justification	Rank	Landscape Context Justification	Rank
Contiguous upland forest, including Working Forest	The focus is on ~19,200 to 25,200 acres estimated from Maine Gap Analysis data (1991-93). There are several large parcel owners, including Bingham Land Company, Plum Creek and E.D. Bessey. Approximately 8,000 contiguous acres are owned by one of these forestry companies and actively managed and harvested.	Good	Condition largely unknown but inferred to be good because a majority of timberlands in the area are managed sustainably by a local NWF/ SmartWood certified forestry company. Productivity unknown. Obtain most recent aerial photography and do a visual assessment (note that a statewide orthophotography project is under way). Wood lots in agricultural ownership under development pressure, as farmers forced to sell assets to supplement incomes.	Good	The forests are embedded in a rural landscape, often bounded by agricultural lands and wetlands. Several town centers encircle the site, but the landscape is largely undeveloped.	Very Good
Wetland systems	The two largest wetland systems, Fowler Bog and Kanokolus Bog, are about 700 acres and 300 acres in size, respectively. Wetlands here are constrained more by natural topography than by human alteration. They constitute about 30% of the site and provide about 4,900 acres of inland wading bird and waterfowl habitat.	Very Good	There exists the potential for pollutants to enter wetland systems from nearby roads and their associated development (primarily Routes 139 and 202), but none appear to be degraded. Of the wading bird/waterfowl habitat occurring here and ranked by MDIFW, more than 50% was determined to be of high quality.	Good	Most wetland systems are well buffered by vegetation.	Good

Focal Conservation Target	Size Justification	Rank	Condition Justification	Rank	Landscape Context Justification	Rank
Grassland Habitat for Birds	Two best known parcels are 113-acre grassland at Benton Division of Sunhaze Meadows NWR and 100-acre parcel on Prairie Road in Unity.		Insufficient data		Insufficient data	
Agricultural Lands	5,660 acres of managed farmland within & adjacent to Focus Area, supporting dairy farms and commodity operations.	Good	USDA Agricultural Census data shows land in farms decreased 5% and 8% from 1992 to 1997 in Waldo and Kennebec counties, respectively. Farmers are under pressure to supplement income by selling wood lots or house lots.	Fair	Farms in and adjacent to Focus Area are critical to the greater Dairy Belt infrastructure	

Focal Conservation Target	Size Justification	Rank	Condition Justification	Rank	Landscape Context Justification	Rank
Public open space, including Outdoor Classroom	117 acres are publicly owned (town, state, federal), water and utility districts own 215 acres, and academic institutions own 468 acres (see below). Significant private acreage is enrolled in Project LandShare, allowing public use. A community nonprofit maintains a small network of walking trails in Unity. Boat access to streams limited, Unity Pond adequate. Hofstra University owns a 284-acre parcel and Unity College owns 7 parcels totaling 184 acres.	Good	Insufficient data		Insufficient data	

Appendix D: Detailed Threats Analysis			
Focal Conservation Target	Stress/Obstacle	Source of Stress/Obstacle	Comments
Hardwood Floodplain Forest	Altered natural community composition and structure	Timber harvesting within floodplain forest and/or poor harvesting practices	
		Adjacent land management	
		Weak/poorly enforced shoreland zoning	
		Recreational use	
		Exotic invasive species (Lonicera morrowii, L. tartarica, Japanese barberry, Japanese knotweed, multiflora rose, buckthorn)	
	Inadequate buffer	Conversion to agriculture	
		Residential/camp development	
	Habitat destruction and fragmentation	Weak shoreland zoning	
	Habitat disturbance	Timber harvesting	
		Recreational use (ranging from ATVs to hikers and birders to fiddlehead collectors)	
Rare/Threatened/Endangered Aquatic & Riparian Species	Nutrient loading and sedimentation	Crop and livestock production practices in watershed	Twentyfive Mile Stream is an outlet for Unity Pond, one of the most eutrophic lakes in Maine. Town of Unity discharges treated wastewater into the Stream. Sludge composting in Unity Township may impact wetlands, as may herbicide/pesticide use.
		Existing homes and home development (septic and runoff)	
		Industrial discharge	
		Wastewater treatment (potential for impact from discharge of Unity wastewater ponds)	
	Habitat destruction & fragmentation	Roads, trails	Specifically bald eagle nest on Unity Pond threatened by disturbance
		Home development	
	Habitat disturbance	Inappropriate timber harvesting	

Appendix D: Detailed Threats Analysis			
Focal Conservation Target	Stress/Obstacle	Source of Stress/Obstacle	Comments
		Recreation	
	Direct taking of species	Poaching, commercial harvesting, hobbyists/collectors	Mostly threatens wildflowers and wood turtles
	Altered natural community composition & structure	Exotic/invasive species	From residential landscaping, gardens, road maintenance, and illegally stocked fish species like black crappie & northern pike
		Poor timber harvesting practices	
		Change in hydrology	Dam development or incompatible operation, beaver, ditching, fill, culverts
Contiguous Upland Forest, including Working Forests	Habitat destruction & fragmentation	Home development	Specifically piecemeal fragmentation along current road frontage; liquidation logging and poorly planned subdivisions
		Roads and driveways	
		Trails for motorized recreation	
	Habitat disturbance or alteration	Motorized recreational use	
		Incompatible timber harvesting practices	
		Upland exotic/invasive species	Oriental bittersweet, nonnative honeysuckles, Japanese barberry, multiflora rose
	Inadequate protection, enforcement, planning	Insufficient buffers	
		Poor/non-existent shoreland zoning and code enforcement	
	Land taken out of forestry	Road development and improvement which is usually a precursor to housing development and increased property values	

Appendix D: Detailed Threats Analysis			
Focal Conservation Target	Stress/Obstacle	Source of Stress/Obstacle	Comments
		Residential and seasonal development, particularly liquidation harvesting	
		Increasing property values and land sale prices	
		Decreasing wood product prices	
		Inadequate incentives to sustainably manage working forests	
		Land ownership change	
		Residential and seasonal development, particularly liquidation harvesting	
		Increasing property values and land sale prices	
		Decreasing wood product prices	
		Inadequate incentives to sustainably manage working forests	
	Overharvesting	Land ownership change	
Grassland Habitat for Birds	Habitat disturbance or alteration	Insufficient management of hay, grain harvest operations	Delay mowing until after nesting season on hayfields. Possibility of timing grain harvest to enhance value as nesting habitat. Include no-cut strips in croplands.
		Conversion to cropland or other uses	
Wetland Systems	Nutrient loading and sedimentation	Agricultural practices; crops and livestock	Extensive acidic fen system south of Rt.139 vulnerable to development and run-off from N Albion and SW Unity.
		Home septic & runoff	
		Industrial discharge	
		Wastewater treatment	
	Habitat disturbance and or destruction	Development, residential and roads, without adequate buffers	
Incompatible motorized recreation (ATVs, mudruns)			

Appendix D: Detailed Threats Analysis			
Focal Conservation Target	Stress/Obstacle	Source of Stress/Obstacle	Comments
		Incompatible logging practices (cedar particularly vulnerable)	Threats need to be evaluated on the ground
		Illegal dumping	Persistent, growing problem particularly on Bog Road
	Inadequate protection & planning	Weak land use ordinances and enforcement	Need to ensure that rules for adequate buffers are applied and enforced
	Altered hydrologic regime	Road building, ditching, culverts; also dams	Historically, 25 Mile Stream had dams. Recurring campaign for dam at outlet of Unity Pond and stream channel alterations
	Exotic invasive species	Residential landscaping, gardens, road maintenance/fill, sludge composting	
Agricultural Lands	Loss of farmland	Low dairy prices and comparatively high value of land for development	Work with partners to develop natural and working landscape protection effort
	Loss of farmers	Age of farming community	Build community awareness and “advertise” to new farmers that this is a “great place to farm”
	Altered riparian communities	Nonpoint source pollution	
Public Open Space, including Outdoor Classroom	Habitat destruction/fragmentation	Road development or improvement and widening	
		Home development	
	Land posting	Often inevitable consequence of increased private property development	
		Uncontrolled ATV use	

Appendix D: Detailed Threats Analysis			
Focal Conservation Target	Stress/Obstacle	Source of Stress/Obstacle	Comments
		Attempt to prevent illegal dumping or other misbehavior	
		Land sales for private sporting activities	
	Lack of local recognition	Lack of awareness of values (social & economic) of open space	
		Lack of trail access and organized maintenance/attention	
	Lack of college support and involvement at administrative level	Lack of awareness of importance of resource	
		Lack of funds to acquire property or build field lab on site	
	Denied access	Landowners wary of increased scrutiny that research brings and potential for reporting environmental violations	
	Inadequate representation of “control” communities, habitats or populations to serve as research benchmarks	Human activities and development	
		Altered natural communities and ecological processes	

Appendix E: Some Farm Bill Programs and Opportunities Applicable to the Unity Wetlands Focus Area

Environmental Quality Incentives Program (EQIP)-- this is the lead Farm Bill conservation program. Although the primary objectives of this program are to address livestock waste and soil erosion just about any resource issue relating to water quality may be addressed with EQIP. Examples include livestock stream exclusion, animal travel lanes, nutrient management systems, pest management systems, manure storage, crop rotation systems, development of grazing systems, cover crops, fencing, agroforestry practices, riparian buffers, grass filter strips, forestland erosion control, timber stand improvement, clean water diversions, bunker silage and milk room waste treatment systems etc. Maine received more than \$7.3 million in FY05 for financial assistance through the EQIP program.

Grasslands Reserve Program (GRP) the primary objectives of this program are to slow the conversion of hayland/pastureland to more erosive row crops or to non-agricultural use altogether. Although all sites are considered sites offered up in fast growing communities, with prime farmland soils, larger than 20 acres in size and with important wildlife habitat will fare better in the ranking process. Rental agreements can vary in length from 10-30 years, permanent easements are offered based on appraised value. In FY05 this program received \$804,149 in financial assistance to producers.

Farm and Ranchland Protection Program (FRPP) purchases permanent easements on agricultural lands providing up to 50% of appraised value so it works best when there is state money or other funds available to leverage FRPP funds. The primary focus of FRPP is open agricultural land on prime farmland soils however up to 50% of the land offered may be forested. Applications for this program are managed out of the State Office rather than the local field office.

Wildlife Habitat Incentives Program (WHIP) is utilized to create high quality wildlife habitat or to restore degraded wildlife habitat particularly where T&E species are involved unlike many other farm bill programs WHIP enables us to work with a different customer, one not necessarily engaged in food or fiber production. With WHIP land trusts, colleges, experiment stations, municipalities, state agencies, residential property owners etc. are all eligible applicants Technical assistance and cost share assistance are provided. Typical practices include delayed grassland mowings, fish ladder construction, forestry related practices, riparian buffers, invasive species control etc nearly anything beneficial to wildlife habitat. In FY05 Maine received approximately \$1.2 million in WHIP funds.

Wetlands Reserve Program (WRP) the WRP program pays to restore wetland functions and values where they have been degraded by human activity (filling, draining, clearing, road related etc). Although open or forested lands may be eligible the land must have an agricultural history which is usually not limiting as most lands in Maine have been engaged in food or fiber production at some point in recent times. The program offers 10 year restoration agreements or long term easements based on appraised values. Up to a third of the lands enrolled may be adjacent uplands. There is also a component of this programs that allows for enrollment of riparian lands that have not been degraded where they serve to connect publicly held wetland parcels owned by towns, state, land trusts etc.

Continuous Conservation Reserve Program (CCRP) addresses resource issues on pasture and annually planted cropland particularly on lands that are adjacent to streams or wetlands. Unlike many other farm Bill programs this program always has funding throughout the year. It focuses specifically on the most environmentally sensitive lands. In addition to a rental payment on enrolled lands eligible conservation practices include stream fencing for livestock exclusion, grass filter strips, riparian buffers etc.

Conservation Security Program (CSP) this program takes a new direction in conservation programs in that it provides financial assistance to producers who have maintained conservation practices in place on their own. The program requirements are fairly rigorous but basically farmers that are doing a good job will qualify for payments that will pay for the maintenance and eventual replacement of the practices that they are maintaining. The program rotates around the nation on an 8 year cycle. Several watersheds are selected in each state in any given year.

Contribution Agreements are an opportunity made available by the 2002 Farm Bill that pays partners 50% of their incurred salary and benefit costs for time spent working on the above related Farm Bill conservation programs.

Debt for Nature This is a USDA-FSA administered program that enables farmers that are FSA borrowers to write off part of their debt by enrolling wetlands and some adjacent uplands into a 50 year easement. Lands enrolled are typically forested.

Appendix F: References and Resource List

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Programs and Organizational Resources

Beginning with Habitat

93 State House Station
Augusta, ME 04333
(207) 287-8044

Friends of Unity Wetlands

PO Box 184
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FUW@uninets.net

Kennebec County Soil & Water Conservation District

9 Green St., Third Floor
Augusta, ME 04330
(207) 622-7847
kcswcd.org

Land for Maine's Future Program

Maine State Planning Office
38 State House Station
Augusta, ME 04330
(207) 287-1487
www.state.me.us/spo/lmf

Landowner Incentive Program

93 State House Station
Augusta, ME 04333
(207) 287-8044

Maine Department of Inland Fisheries & Wildlife

41 State House Station
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Maine Farmland Trust

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Maine Natural Areas Program

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www.mainenaturalareas.org

Maine Organic Farmers & Gardeners Association

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www.mofga.org

The Nature Conservancy

14 Maine St., Suite 401
Brunswick, ME 04011
(207) 729-5181

www.nature.org

Sebasticook River Watershed Association

PO Box 486
Unity, ME 04988

sebasticookriver.org

USFWS Sunhaze Meadows National Wildlife Refuge

1168 Main St.
Old Town, ME 04468
(207) 827-6138 x.17

USDA Natural Resources

Conservation Service – Waldo County

266 Waterville Road
Belfast, ME 04915
(207) 338-1964

www.me.nrcs.usda.gov

USDA Natural Resources

Conservation Service – Kennebec Cty.

9 Green St., Room 307
Augusta, ME 04330
(207) 626-8196

Unity Barn Raisers

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www.unitymaine.org

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992 Waterville Road
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(207) 342-5971
www.umext.maine.edu

**Waldo County Soil & Water
Conservation District**

266 Waterville Road
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WoodsWise

Maine Dept. of Conservation
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www.maine.gov/doc/mfs/woodswise