Headwaters

A Collaborative Conservation Plan for the Town of Sanford

July 2009

Prepared for the Sanford Planning Board

By the Wells National Estuarine Research Reserve
In collaboration with Southern Maine Regional Planning Commission

Funding support by the
Cooperative Institute of Coastal and Estuarine Environmental Technology

CICEET

wellsreserve
Wells National Estuarine Research Reserve

SOUTHERN MAINE REGIONAL PLANNING COMMISSION

SANFORD STAKEHOLDERS

Sanford residents who attended at least one of the Sanford Conservation Plan Workshops held on April 5th, May 29th, and September 9th 2008. These individuals identified conservation values and provided guidance to the planning process.

Bud Johnston – Sanford-Springvale Mousam Way Land Trust
Gerard Rivard – Blueberry Farmer
Hazen Carpenter – Sanford Trails Committee
Maura A. Herlihy – Vice Chairperson, Sanford Town Council
Glenn Wildes – Sanford-Springvale Mousam Way Land Trust
Patti Gulnac – Maine Healthy Partnerships, Goodall Hospital
Dennis Knowles – Sanford Water District
Lee Burnett – Sanford Trails Committee
Lionel Sevigney – 7-E Properties
Jean Noon – Three Rivers Land Trust
Bill Noon – Three Rivers Land Trust
Marcel Blouin – Director of Parks, Recreation, and Public Property, Town of Sanford
Norm Butler – Sanford Water District
Gary Lamb – Sanford Resident and Director of Planning, Old Orchard Beach,
John Garvin – Code Enforcement Officer, Town of Sanford

REGIONAL PARTNERS

Members of neighboring communities and conservation organizations who attended at least one Sanford Conservation Plan Workshop

RJ Mere – Kennebunk Resident, River Guide
John Burrows – Atlantic Salmon Federation
Don Kale – Maine Department of Environmental Protection
Owen Grumbling – University of New England, Wells Conservation Commission
Joe Anderson – York County Soil and Water Conservation District
Marcel Polak – Maine Association of Conservation Commissions
Tom Cashin – Three Rivers Land Trust
Mike Cannon – Great Works River Watershed Coalition
Don Gobeil – Kennebunk, Kennebunkport, Wells Water District

STEERING COMMITTEE

Members of the committee were responsible for designing the conservation plan, and facilitating the stakeholder workshops.

Tin Smith – Stewardship Coordinator, Wells National Estuarine Research Reserve (NERR)
Chris Feurt – Coastal Training Program Coordinator, Wells NERR
Sue Bickford – GIS Specialist, Wells NERR
Zack Steele – Coastal Training Program Associate, Wells NERR
Jacob Aman – MCC/Americorps Environmental Educator, Wells NERR
Judy Colby-George – GIS Consultant, Spatial Alternatives
Jim Gulnac – Director of Planning, Sanford
Mike Casserly – Assistant Engineer, Sanford
Bill Botting – Director of GIS/IT, Sanford
Jamie Oman-Saltmarsh – Senior Planner, Southern Maine Regional Planning Commission

Sanford Collaborative Conservation Plan

1. People Behind the Plan …….. ……. 2

2. Connecting Conservation Values and Economic Development …….. …… 4

3. Purpose: To Implement Conservation Goals of the Comprehensive Plan ……. 5

4. What People Care About: Sanford's Conservation Values ……. 6

5. Sanford's Green Infrastructure: Stewardship of Conservation Values 8

5.1 Conserving the Value of Sanford's Water Resources …… 9
5.2 Conserving the Value of Sanford's Productive Lands ..……..13
5.3 Conserving the Value of Sanford's Wildlife Habitat and Biodiversity ……..... 18
5.4 Conserving the Value of Natural Places for Scenic Views and Recreation….. .20
5.5 Conserving the Value of Natural Areas for Public Health and Safety ……...23

6. Strategies for Achieving Conservation Goals …….……24

6.1 What are Conservation Focus Areas? …….24
6.2 Conservation Status of Green Infrastructure. ……. 28
6.3 Prioritization Criteria for Protection ……29
6.4 Recommended Methods of Land Protection ……...30
6.5 Who Will Implement Sanford's Conservation Plan? ……..32
6.6 Finding the *Green* to Protect Green Infrastructure ……..35
6.7 Setting Goals and Measuring Success ……39

7. Resources and Information ……..41

8. Conservation Values in the Landscape –
Maps of Sanford's Green Infrastructure ……. ……... …44

Sanford Headwaters
Sanford Watersheds
Existing conservation lands
Conservation Focus Areas
Water
Productive Lands
Wildlife Habitat and Biodiversity
Scenic and Recreational
Public Health and Safety

2. Connecting Conservation Values and Economic Development

Sanford's mills stand as reminders of the industry and development that made Sanford the economic center it is today. They are a reflection of land use decisions made decades ago that still shape the community. As Sanford continues to develop into a modern service center what will the land use decisions made today tell your great grand children about their community?

Maine is dotted with mill towns like Sanford that share a historic resource-based economy. These same communities are now struggling to find prosperity in the global economy. In 2005 the Brookings Institution was commissioned to recommend actions toward sustainable prosperity in Maine. *Quality of Place* was identified as a key component of Maine's economic future.

According to the Brookings Report, "Maine possesses a globally known 'brand' built on images of livable communities, stunning scenery, and great recreational opportunities." This brand has increased in economic value as "the search for quality places grows in importance"[1]. The Governors Council on Quality of Place reinforced the findings of the Brookings Report, "Maine's quality of place serves as a competitive advantage in the emerging technology-driven business market. Businesses are seeking locations where employees will want to live over more traditional factors such as proximity to resources."[2]

Sanford has the opportunity to capitalize on the value that Quality of Place brings to Maine's emerging economy. In order to do this Sanford must plan for and invest in its infrastructure. Infrastructure is commonly thought of as the built environment of roads, airports, schools, or hospitals. Sanford's natural assets of rivers, lakes, streams, farms and forests represent an equally important form of infrastructure. This *Green Infrastructure* is an interconnected network of natural lands and water that sustains clean water, filters the air, supports wildlife and contributes to the health and quality of life for people in the community. Careful stewardship and investment in Green Infrastructure can protect Sanford's quality of place as a vital part of economic growth.

This Conservation Plan developed with community involvement and based upon current scientific thinking about conservation, recommends strategies that the Town of Sanford can consider to balance economic growth and conservation of Green Infrastructure. The plan is called "Headwaters" in recognition of Sanford's vital location as headwaters for and part of five critically important southern Maine and New Hampshire watersheds.

Conservation makes economic sense. The Trust for Public Land documented some of the economic benefits of conservation[3]. Two of the findings from that study identified tax benefits to conservation. A comparison of the "Cost of Services" for undeveloped land and residential development consistently shows that undeveloped land provides more in tax revenue than it requires in municipal services. Residential development actually *costs more* in services than is provides in revenue. The same study found that conservation land can also decrease a town's tax rate because of a phenomenon known as the Proximate Principal. The Proximate Principal

---

[1] The Brookings Institution. 2006. Charting Maine's Future: An Action Plan for Promoting Sustainable Prosperity and Quality Places.
[2] Maine State Planning Office. 2007. Place and Prosperity.
[3] Trust for Public Lands. 1999. Economic Benefits of Parks and Open Space.

recognizes that properties near conservation land have a higher value than comparable property that is away from preserved land. A net increase in tax revenue is realized because the increased property values of land adjacent to conservation land create more net tax revenue than if the land was built out.

Drawing from a Maine example, the report highlights the town of Bowdoinham, Maine for choosing to purchase the development rights on a dairy farm after analysis showed that the increased property tax revenue would not cover the cost of the additional cost of services.

"Undeveloped land is the best tax break a town has"
Bowdoinham Selectman George Christopher[4]

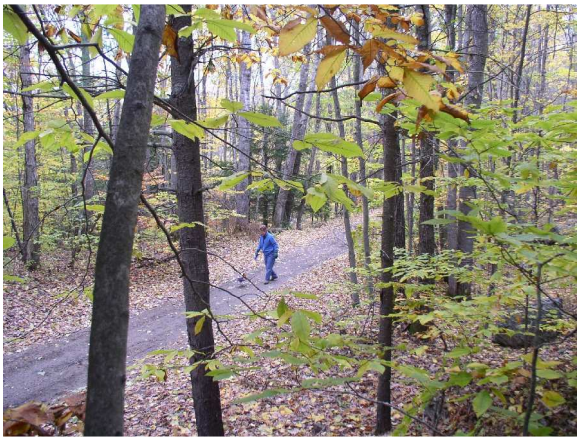
3. Purpose: To Implement Conservation Goals of the Comprehensive Plan

The Conservation Plan Provides Recommendations for Achieving Comprehensive Plan Goals based upon Community Input and Science-based Conservation Principles

The Sanford Conservation Plan is the result of a two year collaborative process involving community members and municipal staff from Sanford and regional conservation partners. The plan contains recommendations based upon this collaboration. These recommendations are linked to the goals of the Sanford Comprehensive Plan, especially Section I-7 to "develop a program for the acquisition and preservation of open space and scenic areas."

The Conservation Plan recommends diverse strategies for Sanford to meet the conservation goals cited in the Comprehensive Plan. These goals include facilitating the protection of significant natural resources, open space and the character of the community. The conservation values identified in the Sanford Comprehensive Plan were confirmed as priorities for the Conservation Plan: clean water, wildlife habitat, productive farms and forests, lands for recreation, scenic views, and public health.

The Sanford Conservation Plan and supporting Geographic Information Systems (GIS) map resources provide the Planning Board and citizens of Sanford with science based tools to identify the places in Sanford where overlapping conservation priorities create opportunities for the town to work with willing and interested land owners, developers and land trusts to accomplish the conservation goals of the Comprehensive Plan.



The Mousam Way Trail is an example of successful conservation that meets multiple goals of the Comprehensive Plan by conserving overlapping conservation values of wildlife habitat, scenic beauty and recreation.

[4] Trust for Public Lands. 1999. Economic Benefits of Parks and Open Space.

4. What People Care About: Sanford's Conservation Values

Community members identify conservation values.

During 2008 Sanford residents, municipal staff and regional conservation partners participated in three workshops devoted to developing a Conservation Plan for Sanford. The stakeholder workshops used innovative Geographic Information System (GIS) technology and key pad poling to identify and map key conservation values to guide the development of the Conservation Plan.

During the first workshop stakeholders created a 50-year conservation vision for the future of Sanford. That vision included five core conservation values that participants identified as important aspects of Sanford's character and quality of place.

Sanford's Core Conservation Values

1. Water quality protection
2. Conserving productive land for agriculture
3. Conserving significant wildlife habitat and biodiversity
4. Protecting human health and safety through conservation of floodplains, water supply buffers and wetlands
5. Conserving scenic, cultural and recreational resources

Conservation values are located on resource maps.

The conservation values identified by community members during the first workshop were translated into maps. GIS layers mapped the places in the town where land use choices could have an impact on the values that stakeholders identified as important to conserve. For example, watershed science provides evidence that water quality is protected by conserving wetlands, vegetated buffers along waterways and drinking water aquifers. GIS map layers showing the locations of these features were combined to produce one map of Sanford's significant water resources. This process was repeated to create maps of each of the conservation values.

During the second workshop, community members reviewed the GIS maps. The local knowledge and experience of the group provided valuable changes and additions to the maps. Revisions to the maps incorporated the new knowledge provided at the second workshop. Conservation maps begin on page 44 of this plan.

Community members vote with 'Sanford Conservation Dollars" to rank priorities.

Community members used specially minted "Sanford Conservation Dollars" to rank the importance of each of the five conservation values. With an individual budget of $100,000, each person allocated funds according to what they considered to be conservation priorities.

Category	**% of Sanford $ Received**
Water Quality	29
Land Productivity	22
Scenic and Recreation	20
Wildlife Habitat	19
Health & Safety	10

Community members reported the reasons for investment decisions on comment sheets and through an evaluation conducted with key pad poling. Community member comments, key pad poling results and value voting percentages were combined and weighted using a computer program called Community Viz. This process produced the final Sanford Conservation Resource maps adjusted to reflect community members' conservation priorities.

Community members discussed conservation strategies for implementing the Conservation Plan

During the final workshop, community members reviewed the Sanford Conservation Resource maps and discussed conservation strategies that would work in the town to protect areas of conservation value identified on the maps. Community feedback about the most effective conservation strategies was incorporated into the implementation recommendations for the Conservation Plan. Recent projects including conservation of McDougal Orchards and portions of the Noon farm using the Land for Maine's Future program, Project Canopy, and using Americorps to support trail and watershed projects are examples of conservation success stories in Sanford. The Mousam Way Land Trust and Three Rivers Land Trust are actively engaged in local conservation and provided input for the recommendations in the Conservation Plan.

5. Sanford's Green Infrastructure: Stewardship of Conservation Values

The five conservation values identified during the stakeholder workshops – water, productive land, wildlife habitat, scenic/recreation and public health/safety can be connected with places in the landscape that provide services to the community. Wetlands collect, store and filter precipitation that becomes drinking water. Vegetated areas adjacent to waterways filter pollution, absorb flood waters and provide wildlife habitat. The conservation value of these places can be thought of as Sanford's *green infrastructure*[5] – a life support system supplying clean water, healthy local food, and places for families to relax, play and connect with the natural world. The economic value of built infrastructure such as highways, bridges, libraries and schools is developed and maintained through careful planning and strategic action. Green infrastructure such as wetlands, aquifers, streams, forests and productive soils can be identified and maintained to provide economically valuable services to the community through careful stewardship.

The Conservation Plan describes and maps Sanford's green infrastructure. The plan includes a description of the services provided to the community by each category of green infrastructure. Science-based recommendations for conserving the ability of green infrastructure to provide community services related to water quality, wildlife habitat, productive farms and forests, recreation and health and safety are included in the plan. Land development can include planning for green infrastructure conservation in the same way that planning occurs for roads and sidewalks. In many cases the recommendations for best practices that support stewardship of green infrastructure are actions already in place in Sanford. Examples of best practices for conserving green infrastructure during development include Sanford's stormwater management activities, erosion control practices, well head protection by the water district and trail development and maintenance. Section 5 of the plan recommends strategies for land conservation within focus areas where Sanford's conservation values are concentrated.

> **Green infrastructure is strategically planned and managed networks of natural lands, working landscapes and other natural areas that conserve ecosystem values and functions and provide associated benefits to human populations.**
>
> The Conservation Fund

Sanford conservation values occur throughout the town and are mapped to assist the Planning Board and other municipal groups with land use decision-making. Electronic copies of all maps are available through the Sanford Planning Department. Five areas of special significance for Sanford contain multiple conservation values. These Focus Areas are described in Section 6 of the plan with recommendations for implementing land conservation strategies to protect these significant areas. Conservation maps begin on page 44 of the plan.

[5] The Conservation Fund developed the concept of green infrastructure to support land use planning:http://www.greeninfrastructure.net/content/definition-green-infrastructure

Community Vision for Sanford's Water Resources

Sanford continues to act to protect watersheds taking a leadership role in the region. Clean water remains unpolluted. Degraded waters are restored. Healthy drinking water flows from town and private wells. New development does not pollute or degrade watershed green infrastructure. The quality of life for Sanford families and businesses is enriched by free local access to beautiful waterways and healthy recreational experiences.

> "We will encounter wildlife, enjoy fishing, boating and swimming with our grandchildren in the places our grandparents shared with us."

(Vision developed from Stakeholder comments at the April 5, 2008 Workshop)

5.1 Conserving the Value of Sanford's Water Resources

What is Sanford's Green Infrastructure for providing clean water?

Five watersheds
Headwaters streams connecting Sanford to the sea
Rivers, streams, ponds, lakes
Wetlands- forested wetlands, marshes, bogs and vernal pools
Underground aquifers
Groundwater
Springs
Public drinking water sources
Private wells

What is included in the map of Sanford's Water Resources?

Maps and information including aquifers, buffers along waterways, public drinking water sources, highly erodable land and wetlands were combined to create the Sanford Water Resources map. Conservation maps begin on page 44.

What community services are provided by Sanford's Green Infrastructure of watersheds, aquifers and wetlands?

Service #1: Removal and filtration of pollutants by buffers, wetlands and the water cycle

- Maintain drinking water quality in public water sources and private wells
- Process sewage
- Cycle nutrients and transport organic mater
- Retain sediment
- Filter runoff and stormwater

Service #2: Flood reduction

- Storage capacity to reduce downstream flood volume
- Slow flow to reduce peak discharges and
- Slow flow to encourage sediment to settle out
- Protect downstream property
- Protect public safety

Service #3: Groundwater and aquifer recharge

- Maintain base flow conditions in streams
- Recharge public water supplies
- Recharge private wells
- Maintain water levels in lakes and ponds

Service #4: Shoreline protection

- Fringe wetlands provide vegetative bank protection
- Absorb energy of floodwaters

Service #5: Wildlife habitat

- Water is essential for all life
- Habitat for breeding, feeding and migrating
- Provide corridors connecting different habitats

Service #6: Recreation, education and aesthetics

- Fishing/hunting
- Wildlife watching
- Hiking and walking
- Boating
- Science curriculum/research opportunities

Service #7: Business, industry, and commercial

- Provides clean, abundant water to support economic prosperity
- Increases property values
- Attracts business

Recommendations for conserving Sanford's Green Infrastructure for providing clean water

Recommendation #1: Consider using the “Eight Tools of Watershed Protection” (page 12) to protect the economic value of green infrastructure for clean water. Many of these tools are already used successfully in Sanford as part of public works, engineering, water district, code enforcement and planning operations.

Recommendation #2: Continue to practice the current level of municipal watershed stewardship through existing land use planning and zoning strategies, public works *Best Management Practices* and initiatives for stormwater management and erosion control, and code enforcement relating to water quality protection (including on-site waste water systems, shoreland zoning).

Recommendation #3: Consider treating the green infrastructure for clean water as an integral part of economic development. Clean water is good business and Sanford is "asset rich" with water. Responsibility for maintaining Sanford's watershed green infrastructure is shared by municipal government, private landowners, businesses, and citizens. Conservation-focused organizations like those who participated in the development of this plan can play a partnership role implementing the eight tools of watershed protection as they relate to their individual missions.

Recommendation #4: Recognize that current efforts in Sanford can serve as a regional model for actions that protect water in southern Maine. Enlist partners[6] and grant writing resources to support and expand Sanford's successful efforts with Project Canopy, Goodall Brook, Brownfields Restoration, Sanford Regional Airport, and Land for Maine's Future.

Recommendation #5: Consider developing simple indicators of success to evaluate water stewardship efforts that protect green infrastructure in Sanford.

Sanford can use “The Eight Tools of Watershed Protection” to protect green infrastructure

The eight tools of watershed protection are a science-based proactive strategy to protect green infrastructure. The tools are designed to link conservation and economic development. The rights of property owners and businesses to develop land are connected to strategies for development that reduce pollution and the loss of irreplaceable water resources. These strategies are designed

[6] Potential external partners include the Wells National Estuarine Research Reserve, York County Soil and Water District, Maine Association of Conservation Commissions, Trust for Public Land, and the Piscataqua Regional Estuary Partnership. Internal partners include local land trusts, businesses, schools and watershed associations.

to protect the values associated with clean water and reduce the costs to municipalities and citizens of pollution clean up and replacement of green infrastructure services. The complete guide to using the eight tools of watershed protection is referenced in the box below.

THE EIGHT TOOLS OF WATERSHED PROTECTION

1. **Land Use Planning**, is perhaps the most important because it involves making decisions about the amount and location of development (and new impervious cover) that occurs in a watershed. Land use planning techniques, such as watershed planning, watershed-based zoning, overlay zoning, and urban growth boundaries, are used to redirect development, preserve sensitive areas, or reduce impervious cover in a given portion of the watershed.

2. **Land Conservation,** involves choosing the most critical areas in a watershed to conserve in order to sustain the integrity of aquatic and terrestrial ecosystems. Critical habitats for endangered species, aquatic corridors, hydrologic reserve areas, contiguous forests and wetlands may be important conservation areas, and can be protected via land acquisition and conservation easements, to provide permanent protection from development.

3. **Aquatic Buffers** are the third tool, and involves making choices on how to maintain the integrity of streams, shorelines, and wetlands, and protect them from encroachment. Buffers are recommended along aquatic corridors to physically protect and separate water resources from disturbance and pollution from adjacent land.

4. **Better Site Design**, which seeks to design development sites to create less impervious cover, conserve more natural areas, and use pervious areas to more effectively treat stormwater runoff. Better Site Design affords greater protection to water resources by reducing both storm water runoff volume and pollutant loads to downstream waters.

5. **Erosion and Sediment Control** deals with the clearing and grading stage in the development cycle, when storm water runoff can deliver high sediment loads to downstream waters. This tool reduces the impact of sediment by requiring specific temporary practices to be installed at construction sites that reduce erosion and prevent sediment from entering downstream waters.

6. **Storm Water Management**, identifies how, when, and where to provide storm water management within a watershed, and which combination of storm water treatment practices will best meet watershed objectives. Storm water treatment practices compensate for the hydrological changes caused by new and existing development by reducing runoff volume and improving water quality.

7. **Non-Storm Water Discharges**, involves making decisions on how to control discharges from waste water disposal systems, illicit connections to storm water systems, pollution from household and industrial products, and other point sources of water pollution.

8. **Watershed Stewardship**, involves creating programs to promote private and public stewardship to sustain watershed quality. The goal of watershed stewardship is to increase public understanding and awareness about watersheds, promote better stewardship on private lands, and develop funding to sustain watershed management efforts.

Schueler,T. and H. Holland eds. *2000. The Practice of Watershed Protection- The Tools of Watershed Protection, Chapter 2 from The Rapid Watershed Planning Handbook Article 27.*
Center for Watershed Protection. Ellicott City, MD. Available from:
http://www.cwp.org/Resource_Library/Center_Docs/PWP/ELC_PWP27.pdf

Community Vision for Sanford's Productive Lands

Sanford's rural working landscapes continue to balance a vibrant town center. Productive land supports families committed to a life devoted to farms, orchards and woodlots. Development concentrates within identified growth areas. Productive farms and woodlots thrive in an economy that places a premium on locally grown food and fiber and sustainably harvested forest products. The potential for renewable energy development and carbon trading on forested lands has been maintained. Local jobs connected to working landscapes expand as food, fiber, wood products and renewable energy are harvested, processed and distributed by local businesses.

(Vision developed from Stakeholder comments at the April 5, 2008 Workshop)

5.2 Conserving the Value of Sanford's Productive Lands

What is Sanford's Green Infrastructure for productive land?

Productive agricultural soils
Sustainable harvested woodlots and forest products
Ability to diversify food and forest products
Future wind, biofuels and carbon trading potential
Local food and farm products
Knowledge and expertise of the current generation of farmers and woodlot owners

What is included in the map of Sanford's productive lands?

The Sanford Productive Lands Map combines individual map layers for current use tree growth and agriculture, prime agricultural soils and soils of state significance. Conservation maps begin on page 44 of the plan.

What community services are provided by Sanford's Green Infrastructure of Working Landscapes?

> "The Maine family farm is one of the most recognizable icons of America's cultural heritage. As much as Maine farms may vary in personality and purpose, they all share something essential because they embody values derived from working the land, values that touch all sorts of different people. For travelers and visitors to rural Maine, farms are picturesque reminders of the rustic qualities of country living. For neighbors, farms embody the character of home. For local service providers and merchants, farms play important roles in yet another community of partnerships. Protecting Maine's farms and farmland means sustaining a complex web of relationships that connects farmers to people in every aspect of life in Maine."
>
> Saving Maine's Farmland - A Collaborative Action Plan

A source of food, fiber, timber, energy, and jobs

Service #1: Production of economically valuable goods and services

- Fiscal Benefits - The average Maine farm size is 200 acres. Agricultural land contributes more in local property taxes than it requires in municipal services. National data shows that for every dollar of tax revenue collected, farmland produces an average surplus of $.64. Residential uses consistently cost more than the revenue they produce, requiring an average of $1.15 in municipal services for every dollar paid in taxes**.**

- Goods and Services - Maine farms produce fresh vegetables, fruits and berries, potatoes, grains, milk, eggs, meat, herbs, fiber, maple syrup, Christmas trees, bedding and nursery stock, compost and fuels. Farms purchase local supplies and services, supporting mechanics, merchants, feed and equipment dealers, and fuel suppliers. Farms also hire local labor.

- Tourism - Maine farms are integral to the state's tourism industry, providing year round opportunities for family outings like autumn apple picking, winter cross-country skiing and snowmobiling, spring sugaring and bird watching, and summertime farm stands, berry picking and farmers' markets. Maine farmers manage thousands of acres of hay and cropland that they own and lease creating much of the open, scenic countryside and rural character that draws tourists to Maine.

Service #2: Contributes to environmental quality.

- Clean Water and Air - Well-managed agricultural lands can protect soil, air and water resources – preventing flooding, absorbing carbon, providing groundwater recharge and producing oxygen.

- Fish and Wildlife Habitat - Field hedgerows, ponds, wetlands and woodlands on Sanford farms provide habitat for a diverse array of wildlife. Farm ponds and streams serve as breeding waters for a variety of fish and wildfowl.

Service #3: Provides recreational opportunities and contributes aesthetically to the quality of life.

- Pastoral landscapes - The rural landscape provides a sense of peace and tranquility in contrast to crowded, hectic urban and suburban areas. Maine's back roads offer travelers some of New England's finest scenery.

- Recreation -Where Maine farmers permit public access, Maine's cropland, forestland, streams and ponds provide excellent hunting and fishing. Farmers also open their property seasonally to hikers, cross-country skiers, snowmobilers, horseback riders, nature lovers and photographers. Each year in March and July more than two hundred farmers welcome neighbors and tourists onto their farms for *Maine Maple Sunday* and *Open Farm Day*. Visitors experience Maine's agricultural heritage first-hand, learning how maple sugaring is done, how farm animals are raised and how crops are grown.

Service #4: Preservation of local history and heritage

- Local History and Legacy - Many of Maine's very first settlers were farmers. Historic farmhouses, barns and the mosaic of farm fields provide a window into our agricultural history. Farmers today have both a historical understanding of the science and art of farming – the flow of the seasons and the science of soils and climate – as well as the advantage of modernized methods and technologies. Farms give our Maine communities continuity and extra stability because farm families "put down roots" to allow successive generations to steward the land and grow the family business.

Service #5: Potential for renewable energy and carbon sequestration

- Energy - The next 50 years will be a time of transformation in the way we use energy. Renewable energy like wind and biofuels require land with specific characteristics. Rural areas have the potential to respond to these needs with creative land use initiatives.

Recommendations for conserving Sanford's Green Infrastructure of productive land

Recommendation #1: Consider using and adapting appropriate sections of the core principles and action plan presented in Maine's Department of Agriculture's "Saving Maine's Farmland - A Collaborative Action Plan" (see page 17). The action plan is based upon sound agricultural science and the shared knowledge of some people actively engaged in the business of farming. The plan contains many ideas appropriate to the special conditions in Sanford to protect currently active and potentially productive farmland and woodlots to conserve economically viable agriculture.

Recommendation #2: Consider an appropriate role for municipal government in partnership with land trusts, and regional, state and national agricultural partners to support and assist local landowners desiring to maintain farms and forests, to strengthen the "web of relationships between agricultural families and the communities they serve."[7]

Recommendation #3: Consider highly productive agricultural lands as irreplaceable green infrastructure during the review process for land development in areas mapped as productive lands. Consider the impacts of land use policies on families and businesses engaged in Sanford's agricultural sector.

Recommendation #4: Consider municipal support of Sanford's agricultural economy through continued community recognition of products and events such as activities at McDougal Orchards, the Three Rivers Land Trust Annual Auction, berry picking and Christmas tree harvesting. Create a link from the Sanford town website to existing websites for these groups.

Recommendation #5: Consider preserving Sanford's potential to engage in the new renewable energy economy unfolding in the next 50 years. Wind energy, biofuels and carbon trading can be part of Sanford's energy and economic future if lands with the potential to provide these services are conserved.

Recommendation #6: Consider developing simple indicators of success to evaluate productive lands stewardship efforts that protect green infrastructure in Sanford.

[7] Spear, Robert. 2003. W. Maine Commissioner of Agriculture in the forward to Saving Maine's Farmland a Collaborative Action Plan.

Sanford can use the "Core Principles for Conserving Productive Lands" to protect green infrastructure

CORE PRINCIPLES FOR CONSERVING PRODUCTIVE LANDS

1. Farmers and woodlot owners are stewards of Sanford's rural working landscape.

2. Agriculture provides broad benefits to Sanford – economic, social and environmental.

3. Agriculture benefits from active support by long-term strategies and public policies.

4. Prime, significant and unique farmland soils are a non-renewable resource that is irreplaceable when converted to non-agricultural uses.

5. Agriculture can be considered the highest and best use of high quality farmland.

6. A healthy and sustainable agricultural industry requires a steady influx of new generations of farmers.

7. Active stakeholder relationships connecting Sanford with regional and state farmland protection efforts can help to accomplish farmland preservation.

Adapted from: *Saving Maine's Farmland- A Collaborative Action Plan*
Maine Department of Agriculture, Food & Rural Resources
June 2003

Community Vision for Sanford's Habitat and Biodiversity Resources

Sanford's significant wildlife habitat and biodiversity resources are conserved and permanently protected. Habitats are connected by aquatic and terrestrial corridors within the town and regionally across town boundaries to the four Beginning with Habitat focus areas adjacent to Sanford. Local stewardship efforts use Beginning with Habitat resources and tools to maintain a "Noah's Ark of habitats" to carry species forward as growth areas are developed, road systems are expanded and climate change alters composition of forests, fields and waterways. People and wildlife are connected through trails and recreation areas where families can learn about Sanford's wildlife heritage and their role in stewardship of habitats and biodiversity.

(Vision developed from Stakeholder comments at the April 5, 2008 Workshop)

5.3 Conserving the Value of Sanford's Wildlife Habitat and Biodiversity

What is Sanford's Green Infrastructure for wildlife habitat and biodiversity?

Sanford Ponds Maine Beginning with Habitat Focus Area
Three Rivers Land Trust Conservation Priorities
Mousam Way Land Trust Conservation Priorities
Beginning with Habitat Resource areas
Wastewater treatment plan lagoons
Sanford's proximity to four regional Maine Natural Area Focus Areas

What is included in Sanford's map of wildlife habitat and biodiversity resources?

The Beginning with Habitat map layers are the basis for identifying significant wildlife habitat and biodiversity hot spots in Sanford. Priority areas identified by the Three Rivers Land Trust, and Maine Natural Areas Program have been added to the Beginning with Habitat layers. Conservation maps begin on page 44 of the plan.

Recommendations for conserving Sanford's Green Infrastructure of wildlife habitat and biodiversity resources

Recommendation #1: Use appropriate Beginning with Habitat resources as a framework for protection of habitat and biodiversity green infrastructure. These materials are designed for municipal use and are based upon conservation science and wildlife habitat priorities for the state of Maine.

Recommendation #2: Consider Sanford's habitats as part of the regional mosaic that supports Southern Maine biodiversity. The conservation Focus Areas described in Section 6 are integrated with existing regional conservation efforts.

Recommendation #3: Strengthen municipal engagement with local land trusts and conservation groups. Determine the best way for Sanford to take advantage of the expertise of people working on conservation with different groups in the town to take advantage of synergies that result from collaboration. Community members involved with the Conservation Planning process may be a natural starting point for a Conservation Plan Implementation Committee.

Recommendation #4: Conservation priorities are developed in collaboration with local and regional land trusts, and interested citizen groups to take advantage of state and federal financial resources and support.

Recommendation #5: Support efforts of interested landowners, land trusts and regional conservation groups to identify opportunities to conserve large blocks of unfragmented habitat, rare species and state significant focus areas.

Recommendation #6: Use Beginning with Habitat tools for balancing development and conservation to maintain habitat connectivity in terrestrial and aquatic habitats within Sanford and at town boundaries. These tools can support planning for transportation corridors and climate change that affects wildlife. Consider collaboration with the Wells Reserve to engage Beginning with Habitat partners in regional connectivity efforts.

Recommendation #7: Concentrate the most rigorous land conservation strategies within the four Sanford Conservation Focus Areas. These are the locations where multiple conservation priorities overlap.

Recommendation #8: Consider working with land trusts, schools, the Goodall Community Health Network and other groups to foster a sense of connection between the health of the human community and wildlife and biodiversity through a system of trails, recreational opportunities, and educational programs. These areas demonstrate and reinforce Sanford's strong stewardship ethic.

Recommendation #9: Consider creating a presence on the Sanford town website that orients viewers to Sanford's diverse wildlife habitat and biodiversity resources and community stewardship of those resources.

Recommendation #6: Consider developing simple indicators of success to evaluate efforts that protect wildlife habitat and biodiversity green infrastructure in Sanford.

Community Conservation Vision for Scenic Views and Recreation

Sanford's mosaic of significant natural areas is connected by a trail system that includes neighborhoods and connects to downtown, Eastern Trail and other communities. Residents and visitors can hike, bike, fish, picnic and swim in areas that are clean, safe and freely available to the public. Public transportation and the trail system enable people to live work and play in Sanford without owning a private car. After 50 years of collaborative effort The Mousam Way Heritage Trail provides access for hikers, bikers, kayakers and canoes from the headwaters to the sea. Scenic views from Sanford ridges and waterways are conserved.

(Vision developed from Stakeholder comments at the April 5, 2008 Workshop)

5.4 Conserving the Value of Natural Places for Scenic Views and Recreation

What is Sanford's Green Infrastructure for scenic views and recreation?

Sanford Trail Committee
Director of Parks and Recreation
Mousam Way Land Trust
Three Rivers Land Trust
Rail Trail
Mousam Way
Urban Walks
Natural areas with native species of wildlife and plants
View sheds identified in the Comprehensive Plan
Special Places: Holdsworth Park, Gowan Park, Cemetery, Mt Hope, Hanson's Ridge, Deering Ridge, Shaw's Ridge, Mill Pond, Springvale Recreation Center, Estes Lake (near La Valley), Beaver Hill, Number 1 Pond, South Sanford 3 sisters, Bauneg Beg, Littlefield Pond

What is included in Sanford's map of scenic views and recreation?

The Sanford Recreation and Trail Resources Map combines map layers for public water access, trails, ridge tops, and historic sites. Conservation maps begin on page 44 of the plan.

What are the community services provided by Sanford's Green Infrastructure of scenic views and special places for recreation?

Trails provide residents and visitors opportunities to connect to natural, historical, and scenic places of Sanford. Trails and recreation areas can foster an enduring attitude of stewardship toward the natural world made visible in places preserved and protected by community effort. Opportunities for nature-based recreation support healthy life styles, family connections and a commitment to continue local practices that conserve natural and cultural features of Sanford.

The Sanford Trail committee is a volunteer committee within the town government working on developing recreational trails in town. Authorized originally by the Board of Selectmen and working under the Planning and Recreation Departments, the committee has attracted over $50,000 in state and federal grant money to the town since its inception. Three major trail systems serve residents and visitors to Sanford - The Rail Trail, Mousam Way and the Urban Walk. The character of each of the three trails is unique. For additional information contact Sanford Trails – see Section 7. Information and Resources.

Urban Walks is a pedestrian trail along streets of Sanford and Springvale highlighting historical points of interest.

The **Rail Trail** is a multi-use trail built on an old rail bed through Sanford and Springvale. Hikers, bikers, joggers, horseback riders, cross country skiers and snow mobiles are allowed on the trail.

Mousam Way is a walking path through the heart of Sanford and Springvale. The Mousam Way trail is a pathway that goes from woodlands to streets to parkland and back again through the heart of Sanford and Springvale. It follows the general course of the Mousam River through town. The trail is a long-range project that has been sponsored and maintained by the Sanford Kiwanis Club with the cooperation of many other community clubs, individuals, town officials and state agencies. The Mousam Way is designed to open up a four-season trail to walkers, joggers, cyclists and cross country skiers through the yet-tranquil and beautiful areas near and along the Mousam River. Every year, on the fourth Sunday in September, the Sanford Kiwanis Club hosts the annual Mousam Way Walk to raise funds for the maintenance, upkeep and improvement of the Mousam Way.

Trails and nature-based recreation provide people with opportunities to learn, play and connect with friends and family. Enthusiasm for Sanford trails was strong among the community members participating in the Conservation Plan workshops. Trails connect the human habitats of Sanford with nature the way water connects the natural habitats and wildlife that moves through the landscape. All of the conservation values included in this plan are connected in people's mind with trails and opportunities for recreation and education.

Recommendations for conserving Sanford's Green Infrastructure of scenic views and recreation

Recommendation #1: Encourage the Sanford Trails Committee continued work to expand and integrate the trail system to serve the needs of current and future residents and visitors. Continue successful funding efforts to expand and maintain trails as an important part of the Conservation Plan.

Recommendation #2: Continue to coordinate municipal trail and recreation activities with local land trusts, schools and community health organizations.

Recommendation #3: Consider connecting Sanford's trail and recreation system with regional initiatives to foster activities such as wildlife observation, nature photography, community agriculture, fishing derby's and nature camps for kids.

Recommendation #4: Assess community needs for public water access and prioritize locations for acquisition or easements funded by outside grants or in cooperation with local businesses, interested developers and willing land owners.

Recommendation #5: Where possible develop interpretive materials in collaboration with local schools and universities to highlight natural and cultural resources accessible by trails.

Recommendation #6: Consider developing simple indicators of success to evaluate efforts that protect green infrastructure for scenic views and recreation in Sanford.

Community Conservation Vision for Protecting Public Health and Safety

Development is restricted within flood prone areas, source water protection zones, and steep slopes. Green Infrastructure is managed to maximize the natural abilities of forested watersheds, wetlands, and aquatic buffers to reduce flooding. Development is restricted in source water protection zones. Ground water resources in areas with private wells are protected with Low Impact Development techniques, alternative on-site wastewater treatment systems and best management practices for stormwater mitigation and groundwater protection.

(Vision developed from Stakeholder comments at the April 5, 2008 Workshop)

5.5 Conserving the Value of Natural Areas for Public Health and Safety

What is Sanford's Green Infrastructure for public health and safety?

Surface water recharge areas for drinking water sources
Undeveloped floodplains and flood prone wetlands
Undeveloped steep slopes

What is included in Sanford's map of public health and safety?

Sanford's map of Public Health and Safety values includes steep slopes, public drinking water sources, floodplains, and wetlands. Conservation maps begin on page 44 of the plan.

What are the community services provided by Sanford's Green Infrastructure protecting public health and safety?

Green Infrastructure provides benefits for public health for all of the conservation values. Fresh local food, access to trails and recreation opportunities, and clean water contribute to a safe and healthy human environment. This conservation value of public health and safety relates to areas prone to flooding, steep slopes and public water sources. In each of these cases, locating residences or businesses in these areas poses risks to human health, safety and property values.

Recommendations for conserving Sanford's Green Infrastructure protecting public health and safety

Recommendation #1: Use existing land use safeguards to conserve green infrastructure with benefits for human health and safely. Conservation of these areas to protect public health and minimize risk is guided by floodplain mapping and building restrictions, aquifer protection zones, wellhead protection zones, shoreline zoning restrictions and building codes for steep slopes. These strategies minimize land use in these areas with potential risk to human health, safety and property[8].

[8] Two areas of human health mentioned by stakeholders are not addressed in this plan - dam safety and wastewater pollution from on-site and public wastewater treatment systems. These activities are regulated by codes and must comply with industry standards. Dams and wastewater treatment are part of traditional infrastructure.

6. Strategies and Recommendations for Achieving Conservation Goals

6.1 What are Conservation Focus Areas?

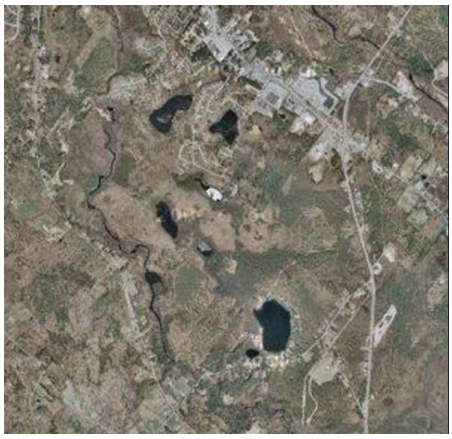
Focus Areas are specific geographically defined areas in the town that contain high concentrations of the five Conservation Values. The purpose of defining and mapping Focus Areas for Sanford is to recommend high priority conservation areas worthy of proactive efforts. Working with and supporting landowners in these areas will result in the greatest benefits for the community.

Conservation Values were selected through a public process described in Section 5 that included visioning, group discussion, review of maps, voting and the use of Community Vis, a computer planning program. Interactive activities during three workshops allowed community members to identify the important conservation values for Sanford, geographically locate those values in town and assign different weights to each of the five conservation values. Community Vis was then used to combine the five conservation values into a conservation value summary map. The Steering Committee then identified the recommended Conservation Focus Areas by visual analysis of the conservation value summary map. Focus Area boundaries were established by taking into account fragmenting features such as roads, watershed boundaries, and development. Focus Areas boundaries are approximate and meant to serve as guidelines for land use planning. Sanford's five Conservation Focus Areas are described below.

---

1. Sanford Ponds Focus Area

This 1,417 acre Focus Area contains one of Maine's largest Atlantic white cedar swamps – a habitat only existing in a handful of other places in the state. The area consists of a series of ponds -Old Fishing, Curtis, Sand, Picture, and Round- floating bogs, vernal pools, and swamps located on a glacial melt water formation in the southwest corner of town bordering the main stem of the Great Works River. Three rare plants at the northern extent of their range have been documented. The Sanford Water District owns several parcels (68 acres) including a water supply well.



Aerial view of the Sanford Ponds area.

Threats: Residential development that fragments the habitat or impacts water quality. Timber harvesting if done poorly will expose the soil to erosion and allow sedimentation and nutrients to enter ponds and the Great Works River. Off road vehicles degrade the thin soils, shallow bogs, and wetlands. The harvesting of the cedar will diminish this rare plant community.[9]

---

[9] *An Ecological Assessment of the South Coastal and Southwestern Interior Regions of Maine* - see Resource Information section.

Conservation: There is currently only one 27 acre protected parcel (Sanford-Springvale Mousam Way Land Trust) within this Focus Area.

---

2. Hansons and Deering Ridge Focus Area

Located in the northwest corner of the town along Hansons Ridge and Deering Ridge Roads this area retains a mix of agricultural and wood lands along with the headwaters of both the Little and the Great Works Rivers. Active agriculture, soils of prime and state importance, scenic views, and productive forests make this area noteworthy.

Threats: Residential development of the sprawling type that fragments both the agricultural and forest resources present. Conversion of fields and forests into lawns will impact the water quality of headwater streams.

Conservation: There are only 117 acres of protected land owned in one parcel by the New England Wildflower Society. This represents less than 5% of the Focus Area acres.

---

3. South Sanford Barrens Focus Area

Northern Blazing Star, Margaret Pizer/ TNC photo

A portion of the Kennebunk and Wells Barrens Area is one of the top priority conservation areas in the state of Maine. This outwash plain from the last retreating glacier is shaped by fire and drought. The vegetation consists of sand plain grasslands, pitch pine-oak shrub barrens, pitch pine-heath barrens, and red maple swamp forests. This area contains 14 rare plants and animal species and contains the state's only viable population of northern blazing star. [10]

Threats: Fire suppression allows for successional habitats to over take the rare pine barren communities currently present. Residential development fragments and intrudes with roads and landscaping (land conversion). ATV use on fragile soils cause erosion, sedimentation, and poor water quality. Water withdrawals can lower water tables and directly effect wetlands and ponds.

Conservation: Currently there are no permanently protected acres in the Sanford portion of the Barrens out of 2,937 acres within the focus Area. The Kennebunk, Kennebunkport and Wells Water District owns 797 acres but these are not permanently protected. In adjacent Wells and Kennebunk there are an additional 2,230 protected acres and 701 acres of Water District land within the Kennebunk Plains and Wells Barrens Area.

---

[10] *An Ecological Assessment of the South Coastal and Southwestern Interior Regions of Maine* - see Resource Information section.

4. Mousam and Great Works Rivers Focus Area

The Mousam traverses the middle of the town and the Great Works forms part of the boundary with North Berwick. The power from both these rivers shaped the histories of their communities and the larger region. Although no longer used to power mills both these rivers can still play a major role in defining the landscape and the community if wisely managed and protected. In addition to clean water and wildlife habitat, these corridors can provide for recreation and in the case of the Mousam a focal point for connecting the different neighborhoods with downtown via pedestrian walking trails.

Threats: Poor water quality due to nonpoint source pollution, storm water runoff, loss of vegetated buffers, impervious surfaces, and low dissolved oxygen.

Conservation: Sanford-Springvale Mousam Way Land Trust in conjunction with Sanford Trails have created protected areas and walking paths between Sanford and Springvale. In addition the Sanford Improvement Association owns a parcel. Within 250 feet of each side of the Mousam Way and Great Works Rivers only 103 acres or 7% is permanently protected.

---

5. Littlefield Pond Focus Area

In the northeast corner of the town this 892 acre area of forest, wetlands, and agricultural fields is still largely undeveloped. It includes Littlefield Pond and small headwater streams of the Mousam River. There are several large working landscape parcels enrolled in the Tree Growth and Farm Current Use Tax programs that include soils of Prime and Statewide Importance. The area is home to a Rare Animals identified by the Beginning with Habitat Program and is adjacent to the Walnut Hill region of Shapleigh and Alfred one of the largest unfragmented (without roads) areas in Southern Maine.

Threats: Loss of productive farm and forest soils and fragmentation of habitat by development and roads. Poor timber management practices will impact water quality and could cause severe soil erosion.

Conservation: There are currently no permanently protected lands within this Focus Area.

Recommendation: Consider the five Focus Areas high priority and worthy of proactive efforts

Table 1. The Size of the Five Proposed Sanford Focus Areas with Current Permanent Protection

Focus Area	Total Acres	# Acres Protected	% Acres Protected
1. South Sanford Barrens	2,937	0	0
2. Sand Pond Complex	1,417	27	2%
3. Hansons and Deering Ridge	2,502	117	5%
4. Mousam & Great Works Rivers	1,566	103	7%
5. Littlefield Pond	892	0	0
Totals for Focus Areas	9,313	247	3%
Totals for whole town	**31,194**	**996**	**3%**

Table 2. Current (2006) Land Cover of Proposed Focus Areas

Land Cover Type	# of acres	% of Focus Areas
Developed	412	4.4%
Forested	4,565	49%
Agriculture	788	8.5%
Bare	21	.2%
Shrub	977	10.5%
Water	414	4.4%
Wetlands	2020	21.7%
Totals	**9,313**	**100%**

Tables 1 and 2 show that while the total amount of permanently protected land in the proposed Focus Areas is rather small (3%) more than 95% remains in essentially a natural condition. Clearly, current landowners have been maintaining their properties in a way that protects the conservation values of the land. Individual stewardship of this green infrastructure provides benefits to the entire community. This land management should not be taken for granted nor should it be assumed it will continue without support.

6.2 Conservation Status of Green Infrastructure.

Outside the Focus Areas there are locations that contain one or more of the five Conservation Values. This Green Infrastructure located outside of the proposed Focus Areas is described in Section 5 with recommendations for conserving the community services provided by these areas. These places contribute to Sanford's economy and can be considered for protection using the same conservation strategies applied to Focus Areas. For example, all wetlands are important for flood control, water quality, drinking water sources and wildlife habitat – not just the ones located in the Focus Areas. Table 3 below summarizes the quantity and protection status of some of the green infrastructure outside Sanford's Conservation Focus Areas.

Table 3. Amount of Green Infrastructure Existing and Protected

Conservation Value	# acres in town	% of town	# acres protected	% of existing that is protected
1. Water / wetlands	5075	16.3%	176	**3.5%**
2. Buffer areas *	5084	16.3%	251	**4.9%**
3. Farmland	2401	7.7%	87	**3.6%**
4. Forest Lands	16,813	54%	569	**3.4%**
5. Available for public recreation**			996	
6. Focus Areas	9,313	30%	247	**3%**

* using Beginning with Habitat Buffers (ponds, wetlands, & rivers – 250 feet, streams – 75 feet) some of this land is developed such as through downtown.
** all the permanently protected land in Sanford are currently open to the public in some manner

A relatively small amount (3-5%) of land containing Conservation Values (Green Infrastructure) is permanently protected. As in the Conservation Focus Areas opportunities for protection remain. More than 75% of the town is either forested, wetlands, or in agriculture due to landowner management.

MacDougal Orchard

Conservation of Green Infrastructure needs to occur throughout the community and will require a number of strategies. Permanent protection will not always be an option and the development of parcels containing these conservation values will occur. It is important to support landowners who maintain green infrastructure on their lands and to protect the functions of that infrastructure when a parcel is developed. Any individual parcel being considered for protection can be measured by the Selection Criteria present in the next section.

6.3 Prioritization criteria for protection

Many models exist for evaluating land for protection. This section recommends a method for evaluating and prioritizing a potential conservation project. The five conservation values can be used to achieve a minimum threshold or to compare one project to another. This scoring system awards 5 points for a property where the conservation value is exemplary, 3 points for a property where the conservation value is present but not exemplary and 0 points when the conservation value is absent. This proposed ranking system also allows for points to be given for properties in a Focus area and in cases where a willing land owner is interested selling the property or an easement. This scoring system could be used to qualify but not necessarily to eliminate or accept projects. Land conservation is an art. Every project is different and a parcel might contain a highly valued unique characteristic that is more important than a high total score.

The use of these prioritization criteria is illustrated in Table 4. In the hypothetical examples in the table, the "Sand Pond Wetland" rises to the top and if an agreement can be reached with the landowner would be an outstanding project. The "Mousam River Water Access" parcel, despite scoring only 10 points, could also be a high priority due to a willing landowner and the property value as a good location for a needed canoe launch site.

This method could be used with groups of organizations working collaboratively to acquire an important property or to prepare a grant application for outside funding. Properties that fall within the goals of the Conservation Plan and are identified using agreed upon criteria can attract the attention of funding organizations interested in supporting priority projects.

Table 4. Hypothetical Examples to Demonstrate a Method for Prioritizing Parcels

5– value is present and exemplary 3- value is present but not exemplary 0- value not present

Resource values	Farm/ woodlot	Wildlife Habitat	Water resources	Recreation	Geographic Focus Area	Public Health & Safety	Scenic/ Cultural	Willing Land Owner	Total
Project:									
Sand Pond wetland	**0**	**5**	**5**	**3**	**5**	**3**	**0**	**3**	**24**
Hanscom Ridge Farm	**5**	**3**	**3**	**0**	**5**	**0**	**3**	**0**	**19**
Oak St woodlot	**5**	**3**	**3**	**0**	**0**	**0**	**0**	**5**	**13**
Mousam River water access	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**5**	**10**

Recommendation: Use a priority ranking system as part of the decision making process for land conservation.

6.4 Recommended Methods of Land Protection

All the options below provide permanent protection of land, except for the Current Use Tax Programs and Zoning. Acquiring a property, or interests in property "forever" for conservation purposes requires both diligent current reflection and the capacity for long term stewardship. Any of the groups identified in section 6.5 could use these methods to achieve the goals of Sanford's Conservation Plan. The list below is a brief introduction to the most commonly used protection methods. Please refer to the Information in Section 7 of this Plan for additional resources.

Fee ownership. Acquiring a property is the simplest and most effective method of protecting the conservation values that are present. Property can either be donated or purchased. Purchasing can be done at fair market value or an agreed upon reduced price, a "bargain sale". By owning the property full control is obtained. This also requires an ability to steward the land and, depending on the conservation owner, pay property taxes.

Conservation easements. A conservation easement is a flexible legal document that guides future uses on the parcel as ownership changes, protecting key natural features by limiting the type and scope of development that can take place. Easement lands remain in private ownership and on local tax rolls while helping to protect important aspects of communities and can complement local zoning by ensuring appropriate growth and protection of sensitive areas. Easements can either be purchased or donated**.** Easements need to be "monitored", that is, checked regularly (annually) to see that the terms of the agreement are understood and continue to guide land use.

Subdivision set asides and Conservation Subdivisions. These are closely related**.** Not all the land within a parcel proposed for development is suitable, or if cluster zoning is available the development can be concentrated on fewer acres. In a subdivision set aside, a portion of the property – often the unbuildable portions (wetlands, steep slopes, difficult or expensive access) is "set aside" from development for conservation purposes. This process is relatively simple but can have the drawbacks of usually not protecting many, if any, of the Conservation Values present. Depending upon their design, these strategies may not provide many public benefits.

In a Conservation Subdivisions, the Conservation Values are identified and mapped first on a property. Then development areas are selected to minimize negative impacts. Often times landowners do not realize all the development potential of a property in exchange for other benefits (shorter roads, smaller lot requirements, etc.)

For either of these strategies to be effective there needs to be an advocate for the Conservation Values both from the beginning of the planning process and after completion to manage and steward the protected portion. The advocate could be a land trust, the Conservation Plan Implementation Committee, or other group with a direct interest in the Conservation Values. The most successful protection of the conservation land in a subdivision set asides or conservation subdivisions occurs when the protected land is legally separated from the developed lot(s) and conveyed to a conservation entity charged with its stewardship. Post development stewardship should not be left to a home owner's association or to the code enforcement officer.

Current Use Tax Program. This program was established in the 1970's to prevent property taxes from forcing productive woodlands, farms and significant open spaces into tax delinquency or conversion to development. It consists of the Farm, Open Space, and Tree Growth Current Use

Tax Programs. Under the tree growth and farmland programs, land is assessed depending on its productive value, without regard to its development potential. In almost all cases, land that qualifies receives a reduction in property taxes.

While the Current Use Tax Program is not a permanent conservation program it can be a stepping stone for landowners considering permanent easements. The program restricts the use of the property to farming, growing of timber, or open space but allows the landowner to change his/her mind in the future. The withdrawing of a property or a portion from the program does result in a penalty.

Sanford could consider encouraging large landowners, particularly in the Conservation Focus Areas, to enroll in the Current Use Tax Program. While there will be a loss of tax property revenue it will be less than the net increase in service and school costs should the land be developed into residential housing.

Land Use Ordinances. As with most towns in southern Maine, Sanford relies on its land use ordinances as the primary regulatory mechanism for reviewing development proposals and to provide guidance on how these proposals should balance economic benefits to property owners with community values such as clean water, natural resource conservation, and town character that are identified in the Comprehensive Plan. The ordinance sets the legal and enforceable standard for the planning board and the code enforcement officer. It is difficult to negotiate additional public benefits with project applicants. It is important to identify, understand, and evaluate the role of Sanford's Land Use Ordinances in the protection of green infrastructure. Developing and executing ordinances that follow legal guidelines are one way to achieve a balance between landowner rights and legally mandated community responsibilities such as protection of drinking water aquifers, and prevention of water pollution from land use activities.

Community Education and Outreach. Community members participating in the Conservation Planning process discussed the importance of education and outreach for community support of the Conservation Plan. This strategy can promote the idea of land conservation throughout the community. The key conservation education themes identified by community members are included in Section 5 of the Conservation Plan. A goal of this method is to raise community awareness about conservation values, the benefits of Green Infrastructure and the location and importance of Sanford's Conservation Focus Areas. The Conservation Plan and projects associated with the goals of the plan can be posted on the town website. Additional outreach efforts may include brochures, newspaper and newsletter articles, and public presentations and programs. The benefits of conservation can be promoted by conservation entities identified in Section 6.5 (municipal boards and committees, land trusts, lake associations, etc.) All efforts can include contact information that gives interested landowners information they can use to initiate protection on their property.

Pro-active Outreach to Key Land Owners. This strategy complements and includes all the ideas in the strategy above with the added component that, for a specific value or focus area, a selected group of landowners is either called by phone or contacted in person to discuss the values on their property and the options for protection.

6.5 Who Will Implement Sanford's Conservation Plan?

Successfully implementation of this plan depends upon long term support and commitment by a dedicated segment within the Sanford community under the leadership of municipal government. Each of the following groups has a unique role to play in the implementation of this Plan. Success will rest on the ability of these groups to embrace and actively promote conservation efforts recommended in the Plan. Implementation of the Conservation Plan will benefit from the awareness, understanding and participation by representatives from the organizations identified below. Representatives from these groups have demonstrated a commitment to conservation in Sanford and played an active role in the development of the Conservation Plan. They can be expected to continue the work of implementation.

1. Town of Sanford. The town needs to take a lead role in the implementation of this plan. If conservation is not perceived by the residents and businesses as important, achievements will be limited. A successful program will take many years of consistent effort in the areas outlined in the Plan.

Recommendation: An important first step is Conservation Plan review and acceptance by the Sanford Planning Board and Town Council and addition of the Plan as an appendix to the Sanford Comprehensive Plan.

2. Implementation Committee. A Plan, without designated responsibility for implementation, is just paper. Sanford can benefit from a committee dedicated to implementing the Conservation Plan. Currently there is no board or committee whose main mission is working to ensure that the green infrastructure in the community continues to provide benefits as growth occurs. An Implementation Committee could;

- Serve in an advisory capacity to the Planning Board regarding Conservation Plan recommendations
- Steward and maintain town conservation lands by engaging community volunteers
- Carry out many of the Recommendations in this plan.
- Work with the land trusts, water districts, sewer board, and trails committee to increase the amount of protected lands and to enhance the values of existing ones.
- Conduct outreach to the town's residents on environmental issues.
- Establish and oversee a Land Acquisition Fund.

Recommendation: Create a Conservation Plan Implementation Committee to oversee the implementation of the plan. Consider representation from the groups who developed this Plan in the make up of the Committee. Consider including a student and teacher representative from the high school on the Committee.

3. Land Trusts. Both the Three Rivers Land Trust and the Mousam Way Land Trust need to integrate the goals of this plan into their conservation and outreach efforts. Land trusts serving neighboring towns should also be made aware (by receiving a copy and hearing a presentation) of the goals of this plan in particular where the identified resources cross municipal boundaries. Efforts to form partnerships in these areas (Kennebunk Plains, Fenderson Commons (Wells), Sand Pond, Bauneg Beg Mountain (North Berwick, Hanscoms and Deering Ridge (Lebanon)) should be actively pursued and supported. Statewide organizations such as Maine Farmland Trust, The Nature Conservancy, Maine

Association of Conservation Commissions, and the State Planning Office should also received copies.
Primary responsibility for this outreach: Sanford Planning Department and eventually the Implementation Committee.

Recommendation: Sanford Planning Department and eventually the Implementation Committee work in collaboration with the two Sanford Land Trusts and neighboring land trusts to achieve the goals of the Conservation Plan and shared regional conservation goals.

4. Large Landowners. This very diverse group will play a key role in determining what the future landscape of Sanford will be. The fact is that all land in private ownership will be transferred at some point in time. Many current large landowners in Sanford are older, making ownership changes of significant parcels in the next 10-15 years likely. The next generation of owners might not have the same stewardship attitudes that Sanford has depended upon until now to maintain farms, fields, forests, and clean water. These landowners need to understand the role they play in the future landscape of the community and conservation options that are available to them.
Primary Responsibility: Three Rivers and Mousam Way Land Trusts, community leaders.
Secondary Responsibility: Sanford Planning Department and eventually the Implementation Committee.

Recommendation: Use community education and outreach as described in section 6.4 to reach land owners interested in conservation options for their land.

5. Watershed Coalitions / Lake Associations. The Great Works River Watershed Coalition, Estes Lake Association, and Mousam Way Land Trust understand the value of both clean water and water access to both shore front home owners and the general public. These groups need to aggressively advocate among their members and the public for conserving the green infrastructure that ensures clean water throughout the watersheds. Broadening the scope of their activities and partnering with the town and other organizations is a must to make effective use of their limited resources.
Primary Responsibility: The Great Works River Watershed Coalition, Estes Lake Association, and Mousam Way Land Trust
Secondary: Implementation Committee

Recommendation: Engage watershed groups and lake associations as conservation partners to achieve the goals of the Conservation Plan.

6. Service Organizations. The service organizations in Sanford include the leaders of the community. While not necessarily orientated toward environmental issues their understanding and support will be needed to implement this Plan through the building public support. They have connections to (and sometimes are) key landowners and decision makers. Their understanding of the goals and objectives is an important early step. Involving them with regular (yearly) updates and requesting their assistance (fundraising, landowner contacts, etc.) in carrying out action items will be important.
Primary Responsibility: Sanford Planning Department, Town Council, and eventually the Implementation Committee.
Secondary Responsibility: Three Rivers and Mousam Way Land Trusts.

Recommendation: Engage community service organizations as conservation partners to achieve the goals of the Conservation Plan.

7. Business Community. Similar to the Service Organizations and with overlap in members, the business community needs to understand the benefits of both environmentally and economically of implementing this plan. They already know the importance of fostering a thriving community but might not all fully grasp the role that green infrastructure plays. Like the Service Organizations, they should understand the Plan and be offered a variety of ways for meaningful participation.
Primary responsibility for this outreach**:** Sanford Planning Department, Town Council, and eventually the Implementation Committee.
Secondary Responsibility: Three Rivers and Mousam Way Land Trusts.

Recommendation: Engage the business community as conservation partners to achieve the goals of the Conservation Plan.

Photos: McDougal Orchards
http://www.mcdougalorchards.com/pictures.htm

6.6 Finding the *Green* to Protect Green Infrastructure

Ensuring that green infrastructure continues to provide benefits to the town and that Conservation Focus Areas can be protected requires financial resources. Funding will enable Sanford and conservation partners working with the town to:

- acquire property or easements
- develop trails and improvements for public access
- support landowners in conservation practices
- restored damaged and polluted areas

Strategies for funding conservation of green infrastructure are described below.

1. Municipal Funding

Although tax payer dollars are always in short supply, Sanford can assume a leadership role in funding the protection of important natural resources in the community. A lead role does not necessarily mean providing the most money. Despite having two active land trusts the town should not rely solely on them to fulfill the community's need to protect natural resources. When tax dollars are dedicated to land protection it sends a clear message to partners, landowners, citizens, foundations, state, and federal funders that conservation is a recognized and supported community goal and worthy of broader support. Examples of municipal strategies for funding conservation appear below.

a. Land Acquisition Fund. Sanford could establish a Land Acquisition Fund to hold funds dedicated for conservation. Money in a dedicated Land Acquisition Fund sends a strong message to partners, landowners, and residents that the town is serious about conservation.

Example: Wells. The Wells Land Bank is a reserve account established by the Conservation Commission to purchase ecologically significant undeveloped property in order to conserve wildlife habitat and traditional outdoor recreation, and provide sites for environmental education. The Land Bank was established in 1983 after a gift of fifty-two acres by a local landowner for "natural habitat for wild birds and animals". After receiving the gift, the Commission proposed to create the Land Bank as a Reserve Account to support management of and additions to the "Fenderson Commons" and other protected areas in Wells.

In 1985 the Wells Conservation Commission and Selectmen agreed to place a fundraising item on the Warrant for the Town Meeting, which was approved. In subsequent years the Commission continued to add small amounts through annual warrant articles. The sum gradually rose from $500 to $1000 to $50,000 and to $70,000, the current annual allocation.

Since the inception of the Land Bank, the Commission has received numerous donations of land, raised funds from grants for management and acquisition, and raised $81,000 to match a challenge grant – all from private donors. To date the Land Bank funds have enabled the Town to purchase several parcels. Currently, along with numerous smaller

holdings, the Town owns two large unfragmented areas of numerous parcels, each approximately 700 acres. Currently the Land Bank holds a significant balance and is able to negotiate confidently with landowners for key parcels and leverage matching funds from foundations, land trusts, and the Land for Maine's Future Program.

b. Bonds and Appropriations. Based partly on the success of the Land for Maine's Future Program, several Maine communities are using bonds and appropriations to raise money for either specific projects or for their land acquisition accounts. These towns raised over $9 million between 1996 and 2004. Bonding is suitable for land acquisition because the asset remains long after the bonds are paid off and continues to provide value for future residents.

Example: York. Since 2004, York has successfully passed appropriations twice ($700k) to support the acquisition of specific properties in partnership with the York Land Trust. Having a specific parcel as the target of a bond or appropriation is a significant advantage when conveying the message to voters. A recent New Hampshire study showed that voters voting "no" on municipal conservation funding did so not because they oppose the idea but because they did not understand what it was for. This Conservation Plan is an important first step in raising community awareness of Sanford's conservation priorities.

c. Impact Fees. Impact fees are a means for a municipality to pay for additional infrastructure, services, and green infrastructure needs required as the local population expands. Private residential developments creating the need for the increased municipal services pay a set fee that helps to cover the costs for that specific service expansion. The fees collected are used to address the need created by the new residents. Although traditionally used to fund new sewer systems or road projects, many communities are also using impact fees to address the protection of green infrastructure.

Example: North Berwick. Impact fees dedicated to open space needs allowed the town to partner with the Great Works Regional Land Trust in 2006 when the opportunity came up to purchase a five acre parcel on the Great Works River including the historic remnants of portions of the Card Mill dam. The Trust took ownership and management responsibilities for the parcel.

d. Transfer of Development Fees: These are fees that a developer can pay to increase the building density of a project if it falls within a community's growth zone. The community then uses those collected fees to purchase identified properties for conservation.

Example: Gorham. The town encourages residential building in areas designated for growth (water, sewer, close to services) by offering a density bonus to developers and funds a conservation program at the same time. Under set circumstances a developer can increase the number of allowable units by paying a development transfer fee – based on the per unit land costs for recent subdivisions in town. This fee is set a side in a dedicated account for the acquisition of conservation land and easements.

e. Dedicated penalties and fees. Sanford could dedicate monies collected from wetland violations, shoreland zoning infractions, or the collection of withdrawal penalties from the Current Use Tax Programs (Open Space, Tree Growth, and Farmland) to fund its Land Acquisition Fund.

Example: Lovell. Lovell passed the following ordinance: "To see if the town will vote to allocate one hundred percent of funds received from penalties assessed on properties removed from Tree Growth or Open Space status to a town conservation account for use only in the purchase of conservation easements or conservation lands by the town independently or in partnership with conservation organizations." Following the approval of this ordinance, and when it became apparent that there were significant funds at stake, the amount dedicated to conservation was amended to 55 percent.

f. Grants. Sanford is also eligible to apply to state (Land for Maine's Future Program) and federal (North American Wetland Conservation Act) grants as well as many private foundations to accomplish its conservation goals. This approach is most likely to be successful when working closely with other partners (land trusts, etc.) to share the work load of negotiating a land deal, developing the application, and completing the grant requirements.

g. Gifts. Sanford could set up a program and an entity (Implementation Committee) to encourage, accept, and manage donations of property to the town for conservation purposes. Donors will need some assurance that their donated properties will indeed be used for the intended purpose. This can be accomplished by creating an ordinance establishing a conservation lands designation. Lands accepted for this designation by a vote of the Town Council could only be used for conservation purposes unless withdrawn from that classification by a two-thirds town vote. (Wells has this in place.)

h. Re-allocation of Revenues. Funds derived from sustainable wood harvesting on town owned lands, or from the sale of tax acquired or currently owned (non-strategic) property could be dedicated to a Land Acquisition Fund.

2. Landowner Funding

Landowners in Sanford are responsible for the more than 75% of the town still containing the Conservation Values identified in the Stakeholder meetings. Landowner management has maintained the forests, fields, and wetlands that the community currently enjoys. Also in Sanford, as in other communities, landowners are the largest contributors and supporters of permanent conservation efforts. They accomplish this through donations and bargain sales of property and easements, contributions to stewardship funds, and long term land management. Their participation does not occur automatically but must be cultivated and supported. Landowners are most likely to keep their lands in a natural condition or step forward for permanent protection when they perceive conservation as a community goal that is community supported and when conserved lands are well managed for community benefits.

3. Land Trust Funding

The two local land trusts (Three Rivers and Mousam Way) will be key partners in successful conservation efforts. They are supported by both citizen donated dollars and volunteer time. Their membership efforts create community support. They have the skills and experience to

connect with landowners and funders. This can leverage available municipal conservation funds with other sources making larger projects possible.

4. Land for Maine's Future Program Funding.

LMF was established in 1987 by the Legislature following a citizen vote. The purpose was to conserve Maine's special places in the public trust for all to enjoy. Since it initiation, four bonds have supported the program with $117 million that has assisted in the acquisition of 490,000 acres through fee purchase and easements. The program supports acquisition in five areas; conservation, outdoor recreation, wildlife and fish habitat, water access, and farmland. Funding is currently dependant on voter approval to sell bonds. The funds must be matched at least one to one.

5. Federal Funding

There are numerous federal programs that provide both funds for conservation acquisitions and conservation practices such as: North American Wetland Conservation Act, Farm and Wetland Protection Program, Coastal Estuarine Land Conservation Program, Wetland Mitigation Banking, and many programs through the Natural Resources Conservation Service.

6. Foundation Funding

There are hundreds of private foundations that support land conservation, livable communities, clean water, health, and ecosystem restoration.

Recommendation: Sanford can evaluate and adopt a variety of funding mechanisms to achieve the objectives of the Conservation Plan.

6.7 Setting Goals and Measuring Success

Time is a concern. Since 1630, Maine has changed from forests to farms and then back to forests. However, since 1970 the change has been from forests, fields, and farms to lawns, roads, parking lots, and roofs. More land in Maine was developed between 1970 and 1990 than in the previous *350 years of European settlement total*. The amount of developed space is expected to double again between 1990 and 2010. As green infrastructure is converted to impervious surfaces, water quality declines, opportunities for recreation disappear, farms and wildlife habitat is lost.

In looking at the current trends in Seacoast New Hampshire and Northern Massachusetts it is likely that 90% of all the land that will ever be conserved in southern Maine will be protected by 2025. In other words, in less than two decades Sanford's landscape will be defined for the next century or more.

The window of opportunity for conservation is now.
In the 15 year period from 2010 – 2025 land use and conservation decisions will define Sanford's landscape for the next century.

If the Town of Sanford expects to continue to benefit from the services provided by natural areas the time to act is now and for the next 15-20 years. The cost of not doing so is likely to be many times greater due to the loss of: clean water and air, local food production, rural character, outdoor recreation, and wildlife. All of these relate directly to quality of life and quality of place which people consistently rank high among reasons for choosing where to live, work, and raise their children. Protection of green infrastructure can proceed hand in hand with economic development.

There currently exists a window of opportunity for the following reasons;

- Large blocks of land remain undeveloped often owned by landowners with whom stewardship is a strong ethic.
- While not inexpensive, land prices are lower than they will likely be in the future.
- Partners, such as land trusts, are available for collaboration and have much of the expertise, landowner contacts, and knowledge of funding sources necessary to complete projects.
- There is growing recognition and support of the values that green infrastructure play in community development.

How will citizens know about Sanford's progress on the Conservation Plan?

Sanford currently has 996 acres of permanently protected lands and over 23,000 acres of forests, fields, or wetlands. Currently (2006) 4,322 acres (14 %) of the town has been developed. Only 3% of the land in the Conservation Focus Areas is protected.

To realistically maintain the services of Sanford's green infrastructure and to conserve the high priority conservation values of the Focus Areas, Sanford needs to increase the amount of permanently protected land during the critical years from 2010 to 2025. Setting conservation targets are one way to achieve goals. Only the residents of Sanford can set realistic goals and

take the actions needed to meet those goals. The Conservation Plan Implementation Committee can work with the Planning Board and land trusts to set these targets. After this critical period between 2010 and 2025 the amount of land that remains to be conserved will be significantly reduced and the cost of conserving these remaining parcels will be significantly higher. The conservation strategies, funding options and partnerships described in this section of the Conservation Plan are designed to help the Town of Sanford make progress during this critical period.

Plans are not effective without periodic review, assessment, and revision. Section 5 of this plan recommends setting simple indicators of success. The plan and GIS maps are designed to be a resource that can be used as part of land use planning activities throughout the year. The Conservation Plan Implementation Committee, under the leadership of the Planning Board could meet at least annually to document progress and evaluate the "State of Sanford's Green Infrastructure." The Wells Reserve Coastal Training Program is available to facilitate these annual meetings and work with the Conservation Plan Implementation Committee during the first year of plan implementation. As part of the education and outreach aspects of the Conservation Plan, progress on objectives and successful projects could be shared with the community through updates to Town Council, presentations to community service organizations, the business community, and lake and watershed groups.

Recommendation: The Conservation Plan Implementation Committee can consider ways to set conservation targets in collaboration with conservation partners. The Wells Reserve is available to facilitate this process.

Recommendation: Develop a way to evaluate progress and accomplishments on the Conservation Plan at least annually. The Wells Reserve is available to facilitate this process.

7. Resources: Organizations

Great Works Regional Land Trust
PO Box 151
South Berwick ME 03908
646-3604
www.gwrlt.org
info@gwrlt.org
Services the three Berwicks, Wells, Eliot and Ogunquit with conservation options for landowners.

Kennebunk Land Trust
11 York Street
Kennebunk, ME 04043
985-8734
www.kennebunklandtrust.org
info@kennebunklandtrust.org
Services Kennebunk and Arundel with conservation options for landowners.

Maine Association of Conservation Commissions
45 Blackstrap Road
Falmouth ME 04105
878-8933
www.meacc.net
meacc@meacc.net
MEACC builds the capacity of Maine communities to protect and preserve their natural resources and quality places through supporting active, effective conservation commissions.

Sanford-Springvale Mousam Way Land Trust
14 Park Street
Sanford, ME 04073
324-5609
drbud1@metrocast.net
Conserves natural resources, unique historical and scenic sites, dams, roads, trails and areas of agricultural, economic or educational significance in Sanford and Springvale.

Sanford Trails
http://www.freewebs.com/sanfordtrailcommittee/
The Sanford Trail committee is a volunteer committee within the town government working on developing recreational trails in town. Above, the trail sign for the multi-use trail now under development on an abandoned railroad bed in town.

Sanford Planning Department
Jim Gulnac
919 Main St
Sanford, ME 04073
324-9150
http://www.sanfordmaine.org

Southern Maine Regional Planning Commission
9 Bradeen St. Suite 400
Springvale, ME 04083
324-2952
www.smrpc.org

Three Rivers Land Trust
PO Box 906
Acton, ME 04001
www.3rlt.org
info@3rlt.org
Works with landowners to conserve natural resources as lakes, rivers, streams, wetlands, agricultural lands, woodlands, historic sites, scenic places and wildlife habitat, in Acton, Alfred, Lebanon, Sanford/Springvale, and Shapleigh.

Wells Conservation Commission
Wells Town Hall
PO Box 398
Wells, ME 04090
www.wellsconservation.org
The Wells CC created the 600+ acre Fenderson Commons on the town boarder with Sanford and a Land Bank Fund through the town's capital improvement budget process.

Wells National Estuarine Research Reserve
342 Laudholm Farm Road
Wells ME 04090
646-1555
www.wellsreserve.org
tsmith@wellsreserve.org

York County Soil and Water Conservation District
Anderson Learning Center
21 Bradeen St, Suite 104
Springvale, ME 04083
324-0888 x 214
www.yorkswcd.org
info@yorkswcd.org
Provides technical, educational, and financial resources to land users in York County to promote a quality of life, stewardship and wise use of our natural resources and ensure the viability of the agricultural sector.

7. Resources: Information

An Ecological Assessment of the South Coastal and Southwestern Interior Regions of Maine, Don Cameron, Maine Natural Areas Program, Department of Conservation, March 2002.

The Practice of Watershed Protection- The Tools of Watershed Protection, Chapter 2 from The Rapid Watershed Planning Handbook Article 27. Center for Watershed Protection. Ellicott City, MD. Available from: http://www.cwp.org/Resource_Library/Center_Docs/PWP/ELC_PWP27.pdf

Conservation Options: A Guide for Maine Landowners, Maine Coast Heritage Trust. 40 pp
http://mcht.org/mchtnews/pdf/mchtconsoptions.pdf

Developing a Conservation Commission, Beginning with Habitat Program Tool Box,
http://www.beginningwithhabitat.org/toolbox/conserv_commission.html

Financing Infrastructure Improvements through Impact Fees, Southern Maine Regional Planning Commission, 2003, 40 pp. http://www.smrpc.org/landuse/documents/impactfeebook.pdf

Impact Fee Ordinance for Saco, Beginning with Habitat program Tool Box, 8 pp
http://www.beginningwithhabitat.org/pdf/saco_impactfee.pdf

Maine's Climate Future: An Initial Assessment.
Jacobson, G.L., I.J. Fernandez, P.A. Mayewski, and C.V. Schmitt (editors). 2009. Orono, ME: University of Maine. *http://www.climatechange.umaine.edu/mainesclimatefuture/*

Saving Maine's Farmland- A Collaborative Action Plan. Maine Department of Agriculture, Food & Rural Resources. June 2003.
http://www.maine.gov/agriculture/mpd/farmland/collaborativeplan6x8.pdf

Town of Gorham Transfer Development Fee Program, Beginning with Habitat Program Tool Box, 8 pp
http://www.beginningwithhabitat.org/pdf/Gorham%20Development%20Transfer%20Fee%20Program.pdf

Tree, Farm, and Open Space Current Use Tax Programs. Maine Department of Revenue
http://www.maine.gov/revenue/propertytax/propertytaxbenefits/CurrentUseLandPrograms.htm

"A town is saved, not more by the righteous men in it than by the woods and swamps that surround it."
-Henry David Thoreau

8. Conservation Values in the Landscape - Maps of Sanford's Green Infrastructure

The conservation values identified by community members are provided as services by Sanford's Green Infrastructure. These maps represent science based GIS layers that locate the places in the landscape where natural areas provide services to the town. Aquifers provide drinking water, prime soils support farming, forests filter the air and wetlands collect and purify water. Knowing the location of green infrastructure is the first step toward conservation.

Sanford Headwaters: Small streams and tributaries in Sanford are the starting point for water that joins larger rivers and flows to estuaries and the ocean.

Sanford Watersheds: Rain that falls in Sanford affects the water quality in seven Maine towns. The Mousam River, Great Works River, Merriland River, Branch Brook and Salmon Falls River are all affected by land use practices in Sanford.

Existing Conservation Lands: Conservation lands with permanent protection.

Conservation Focus Areas: Five priority areas with multiple conservation values

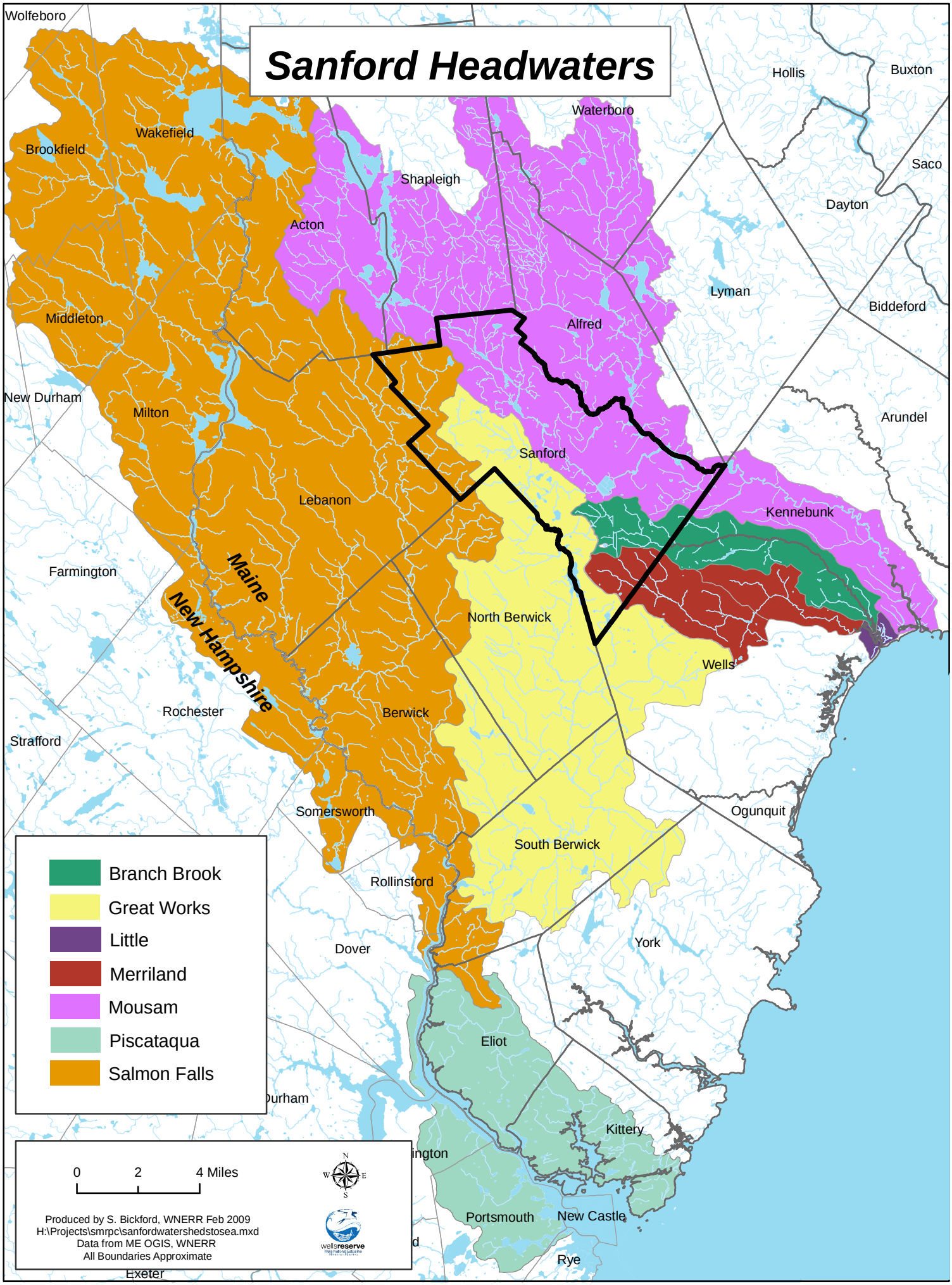
Water: Locations for the green infrastructure that provides clean water.

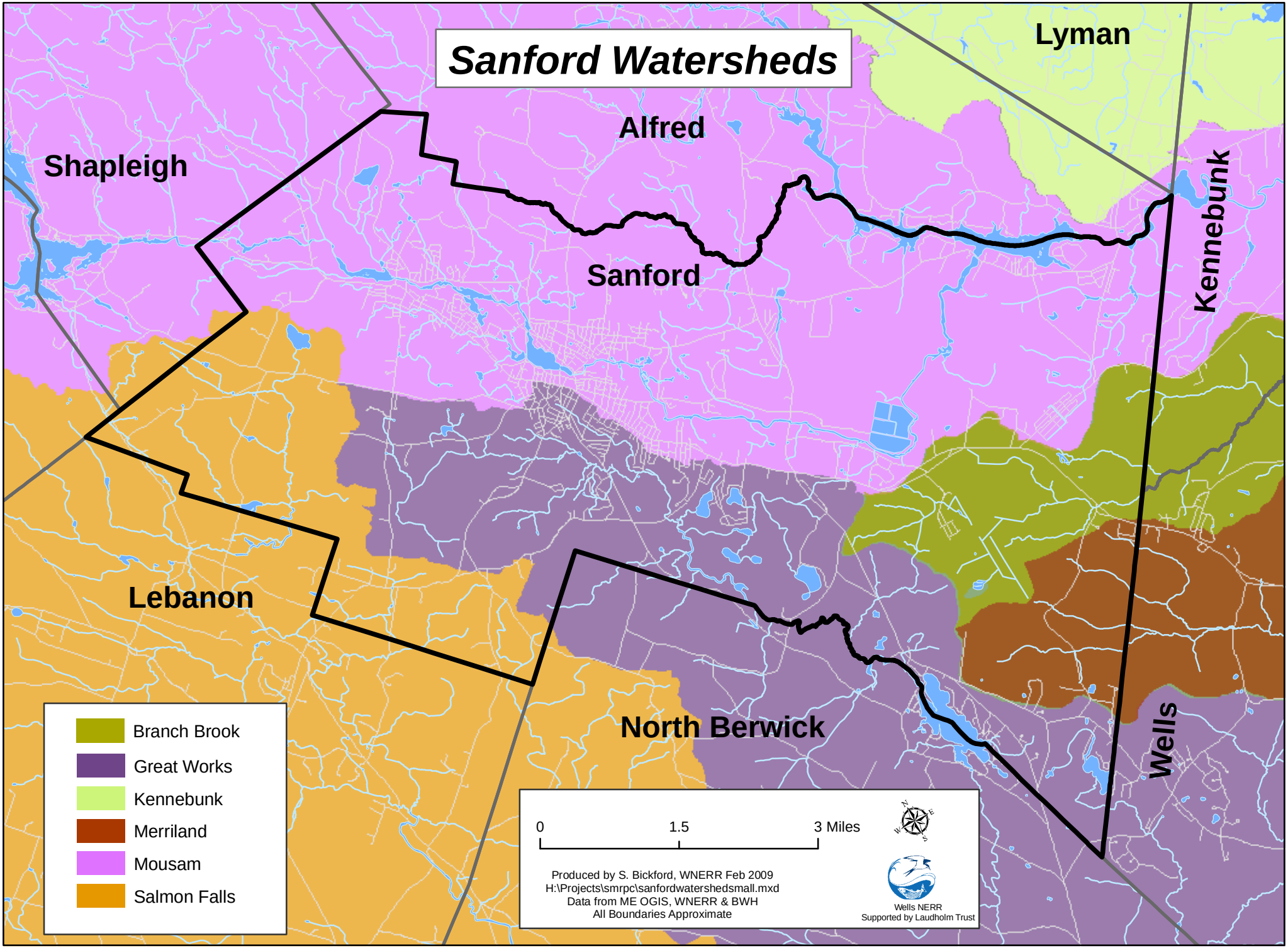
Productive Lands: Locations for the green infrastructure that supports farming and forestry.

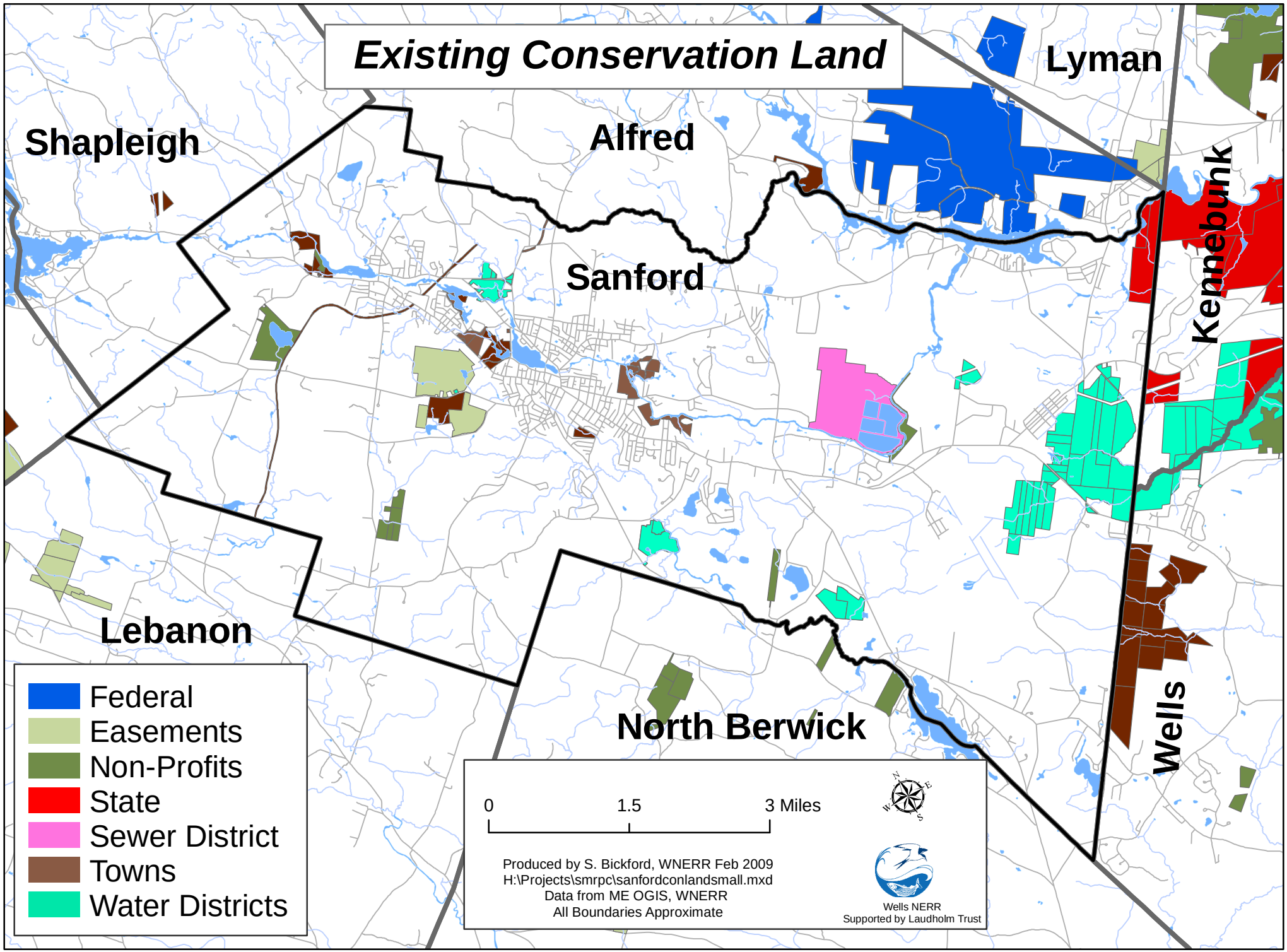
Wildlife Habitat and Biodiversity: Locations identified by the Maine Beginning with Habitat program and local land trusts as holding significant wildlife value.

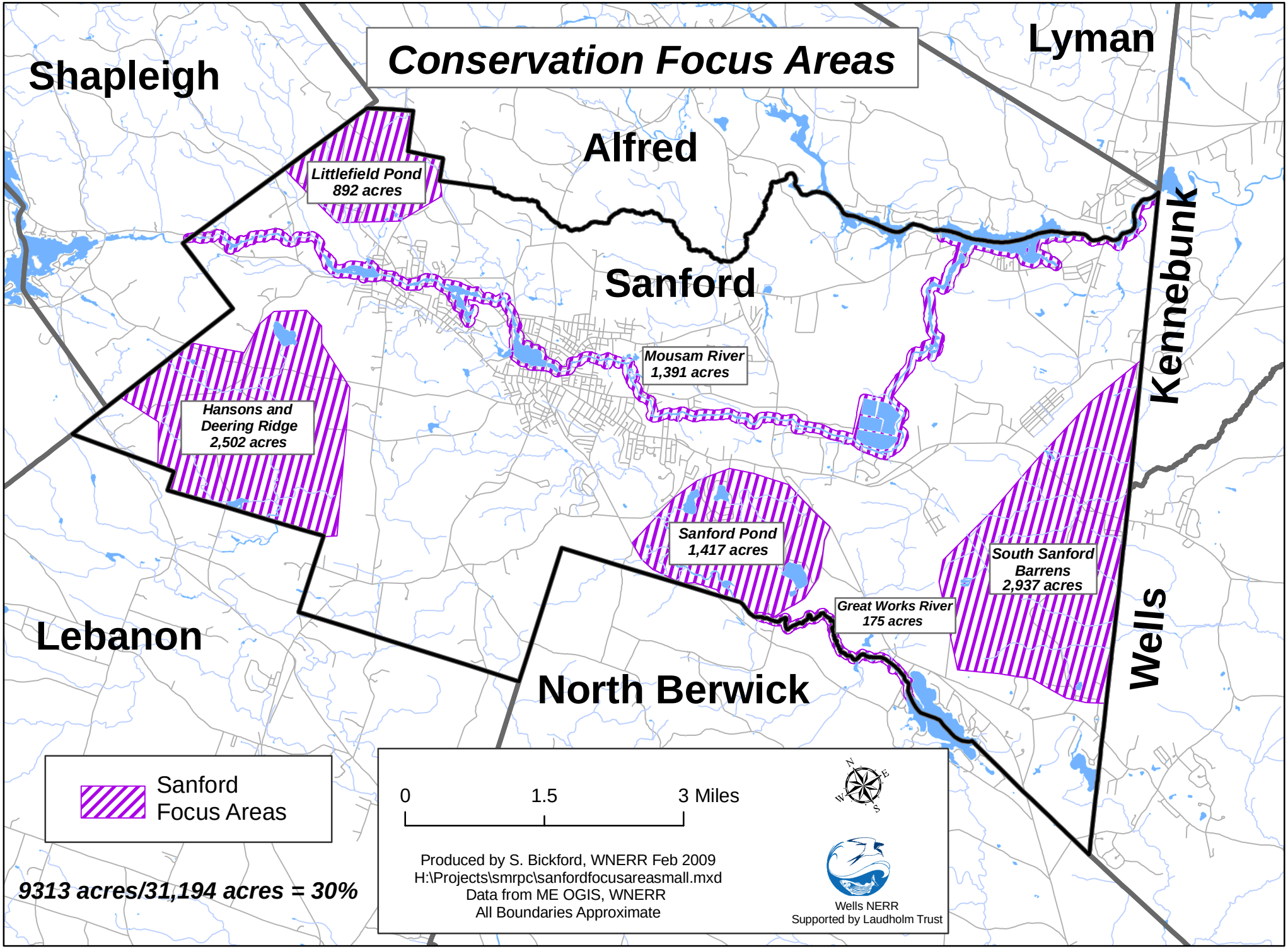
Scenic and Recreational: Trails, scenic and culturally important views and natural areas for recreation.

Public Health and Safety: Natural areas where land conservation can protect human health and safety from floods, landslides and unsafe drinking water.

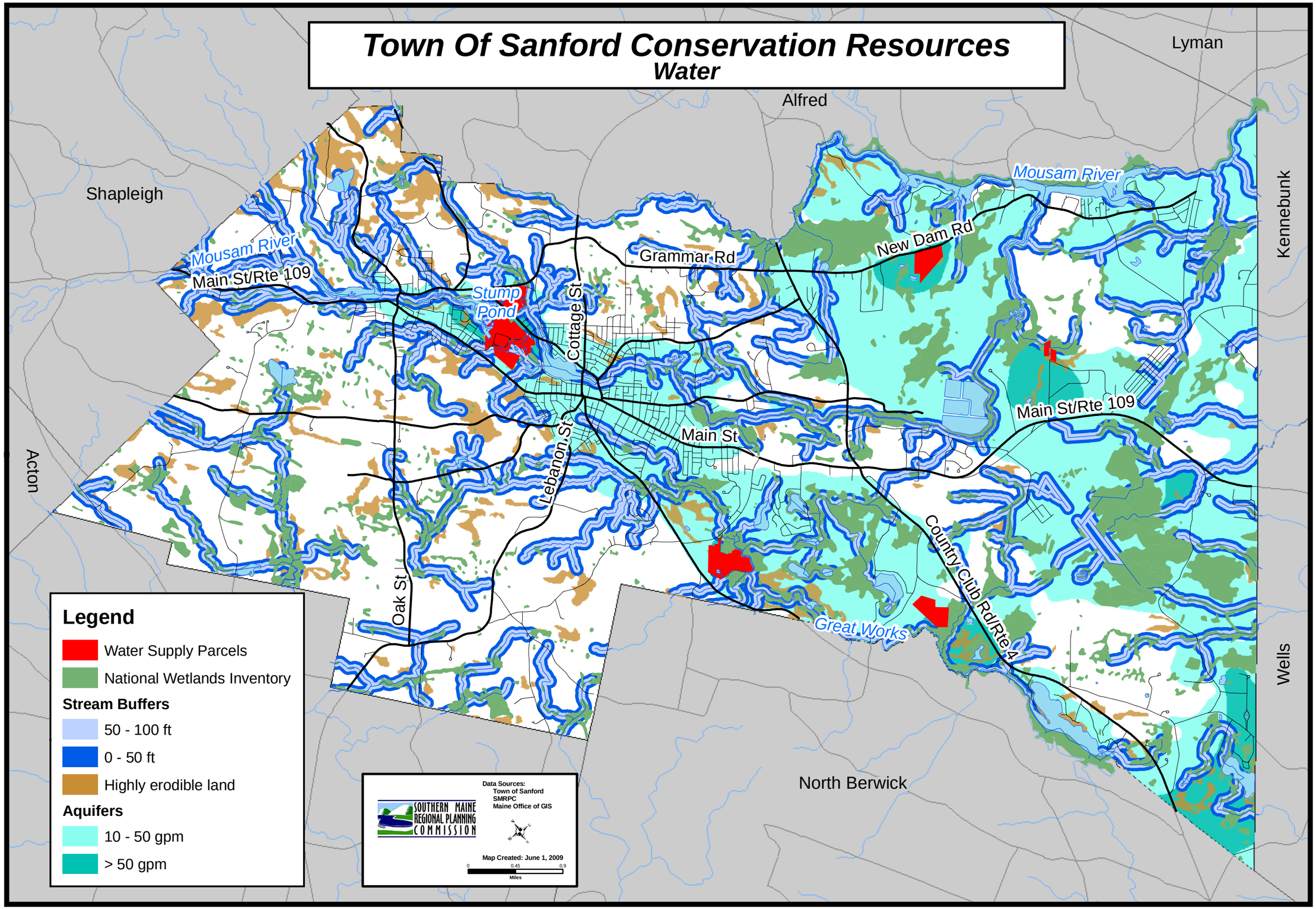

Sanford Headwaters
Wolfeboro
Brookfield
Wakefield
Waterboro
Shapleigh
Acton
Hollis
Buxton
Saco
Dayton
Lyman
Biddeford
Middleton
Alfred
New Durham
Milton
Arundel
Sanford
Lebanon
Kennebunk
Farmington
Maine
New Hampshire
North Berwick
Wells
Rochester
Berwick
Strafford
Somersworth
Ogunquit
South Berwick
Rollinsford
Dover
York
Eliot
Kittery
Portsmouth
New Castle
Rye
Exeter
Branch Brook
Great Works
Little
Merriland
Mousam
Piscataqua
Salmon Falls
0
2
4 Miles
N
W
E
S
Produced by S. Bickford, WNERR Feb 2009
H:\Projects\smrpc\sanfordwatershedstosea.mxd
Data from ME OGIS, WNERR
All Boundaries Approximate
wellsreserve


Sanford Watersheds
Lyman
Alfred
Shapleigh
Sanford
Kennebunk
Lebanon
North Berwick
Wells
Branch Brook
Great Works
Kennebunk
Merriland
Mousam
Salmon Falls
0
1.5
3 Miles
Produced by S. Bickford, WNERR Feb 2009
H:\Projects\smrpc\sanfordwatershedsmall.mxd
Data from ME OGIS, WNERR & BWH
All Boundaries Approximate
Wells NERR
Supported by Laudholm Trust

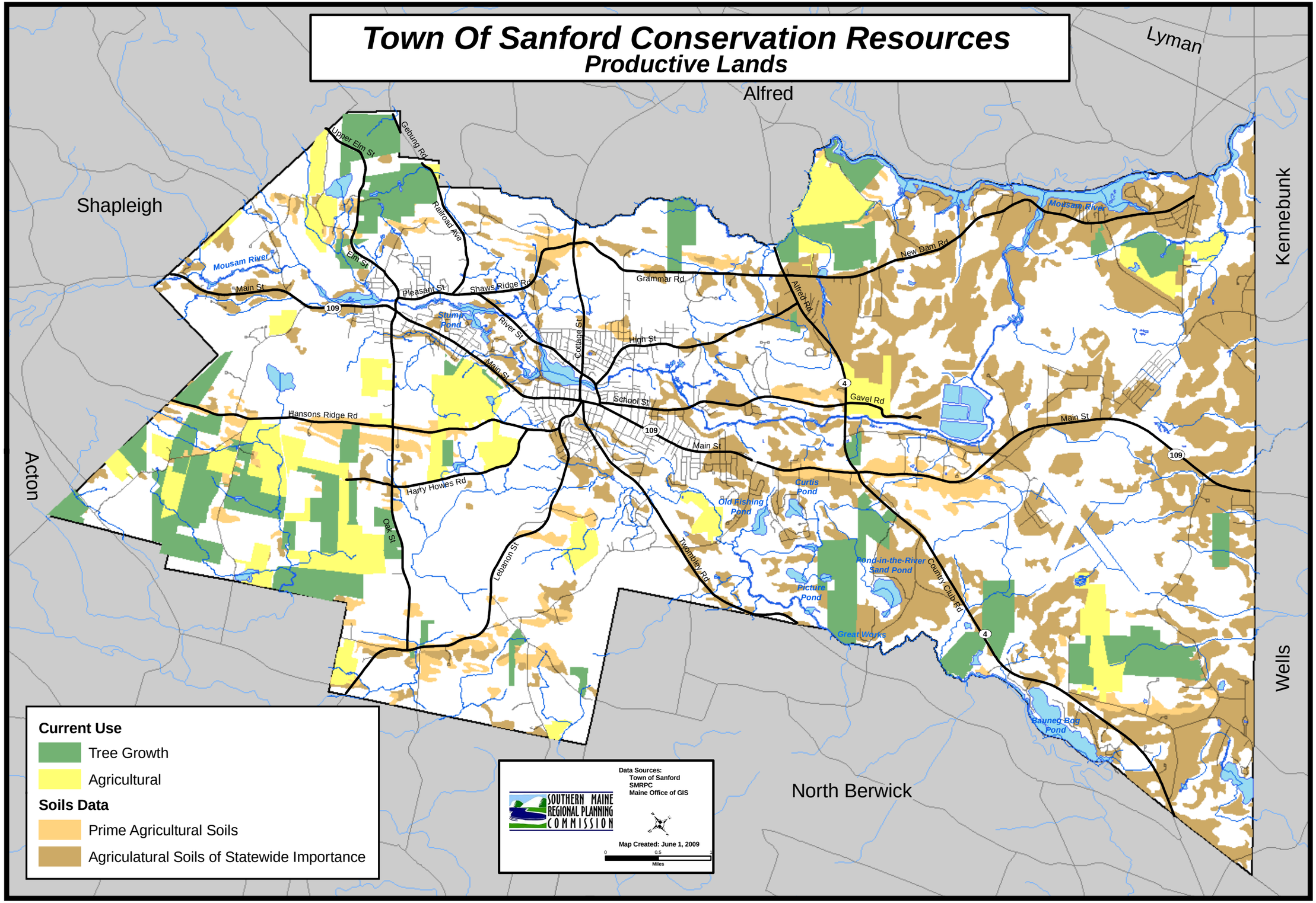

Existing Conservation Land
Shapleigh
Alfred
Lyman
Sanford
Kennebunk
Lebanon
North Berwick
Wells
Federal
Easements
Non-Profits
State
Sewer District
Towns
Water Districts
0
1.5
3 Miles
Produced by S. Bickford, WNERR Feb 2009
H:\Projects\smrpc\sanfordconlandsmall.mxd
Data from ME OGIS, WNERR
All Boundaries Approximate
Wells NERR
Supported by Laudholm Trust


Conservation Focus Areas
Shapleigh
Lyman
Alfred
Sanford
Kennebunk
Wells
Lebanon
North Berwick
Littlefield Pond
892 acres
Mousam River
1,391 acres
Hansons and
Deering Ridge
2,502 acres
Sanford Pond
1,417 acres
South Sanford
Barrens
2,937 acres
Great Works River
175 acres
Sanford
Focus Areas
0
1.5
3 Miles
N
E
S
W
Produced by S. Bickford, WNERR Feb 2009
H:\Projects\smrpc\sanfordfocusareasmall.mxd
Data from ME OGIS, WNERR
All Boundaries Approximate
Wells NERR
Supported by Laudholm Trust
9313 acres/31,194 acres = 30%

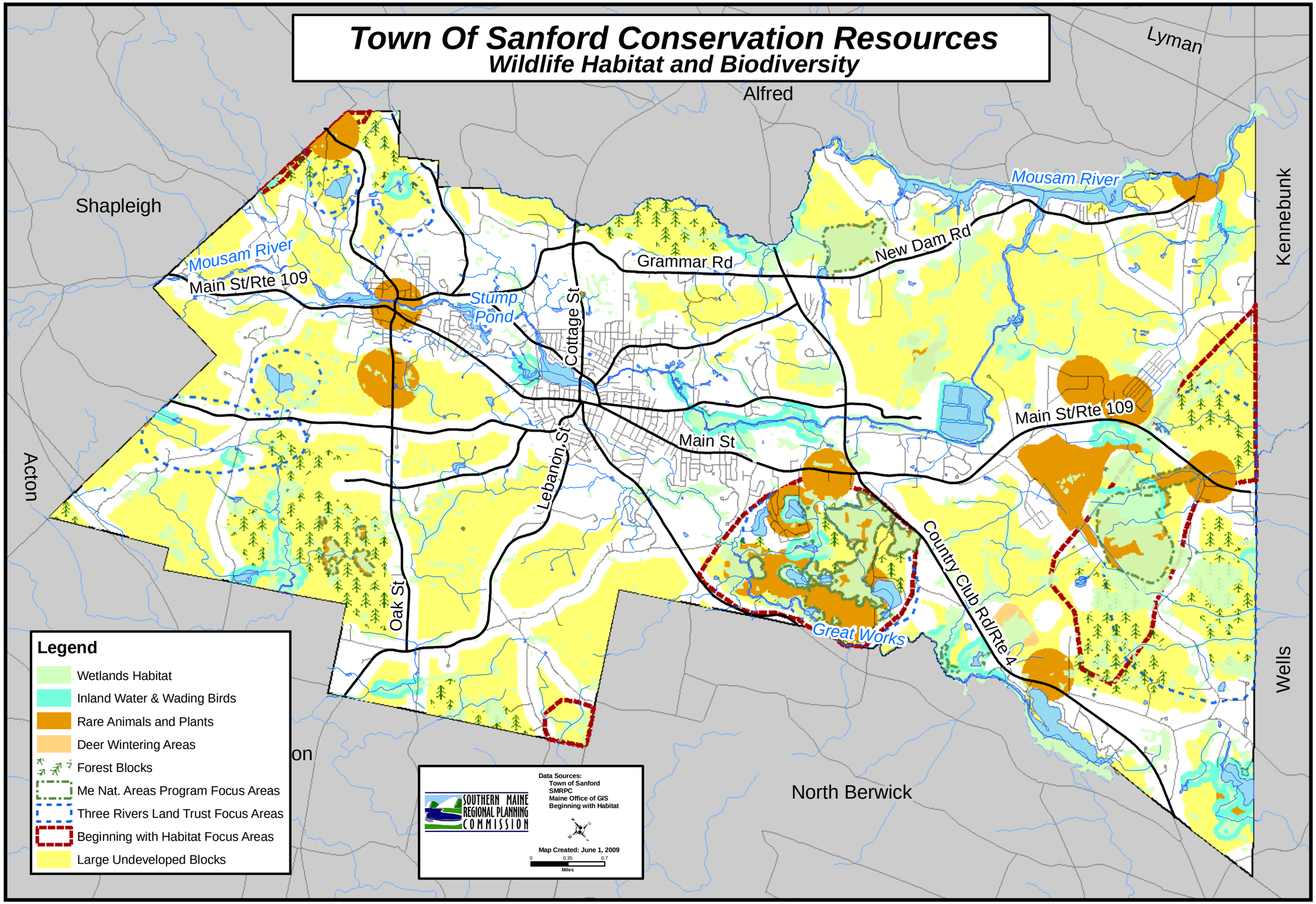
Town Of Sanford Conservation Resources
Water



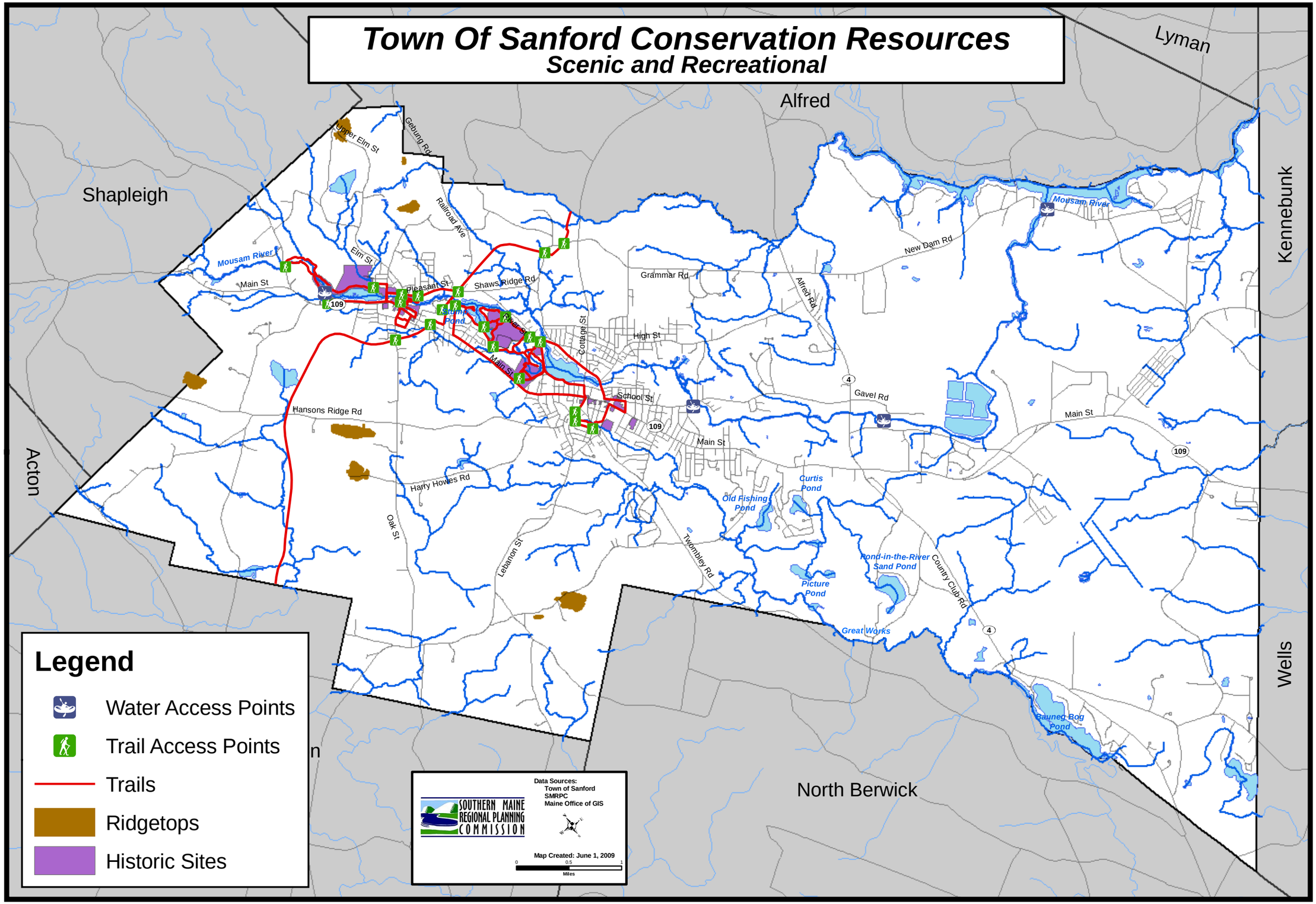
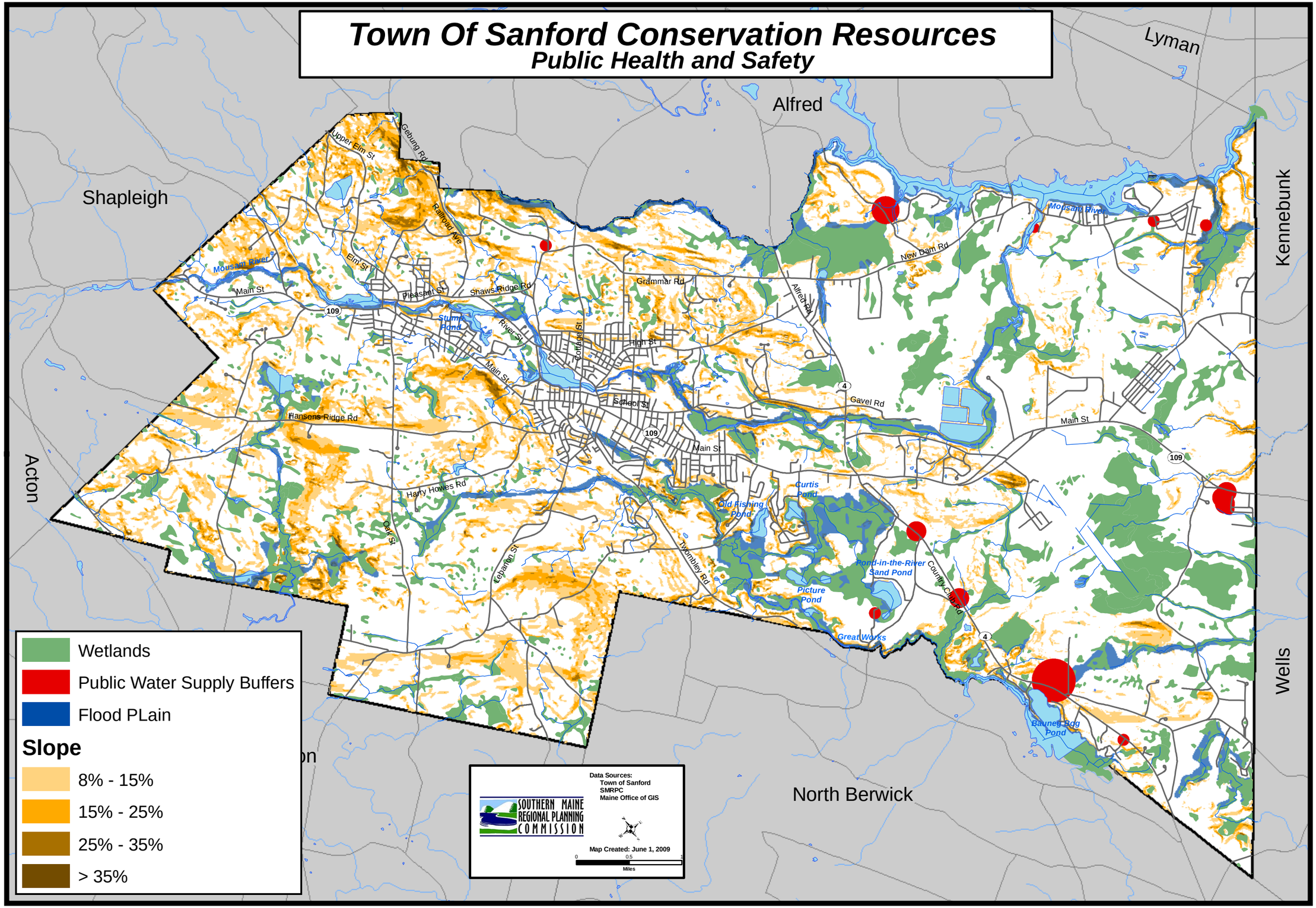
Town Of Sanford Conservation Resources
Productive Lands



Town Of Sanford Conservation Resources
Wildlife Habitat and Biodiversity



Town Of Sanford Conservation Resources
Scenic and Recreational



Town Of Sanford Conservation Resources
Public Health and Safety