



Washington County
Land Trust Coalition

Land Conservation Priorities for South County

A Regional Plan
April 2005

Introduction

Since its inception in 2000, the Washington County Land Trust Coalition has worked to bring a regional perspective to land conservation in southern Rhode Island. This report is the culmination of an effort to identify and map priority natural resource areas in the eight mainland towns of South County¹. The natural resources selected are elements of the “green infrastructure” that residents consider most essential to sustaining the environmental health of the county.

Nine local land trusts participated. Four – the Hopkinton Land Trust, Narragansett Land Conservancy Trust, Richmond Rural Preservation Land Trust, and Westerly Municipal Land Trust – are public, municipal organizations. The other five – Narrow River Land Trust, Land Conservancy of North Kingstown, South County Conservancy (of Charlestown), South Kingstown Land Trust, and The Westerly Land Trust – are private groups. Although Exeter does not have a land trust and is not a member of the Coalition, The Nature Conservancy commented on resources in Exeter throughout the project.

The Coalition expects this plan to provide clear guidance to the land trusts in their near-term protection actions. The plan is also directed to the Washington County Regional Planning Council and the individual towns as essential information in shaping the future land use of the region.

Background

From 1980 to 2000 the population of Washington County grew three times as fast as the state as a whole, adding 30,000 people in that period. In 2000 Washington County had 123,546 residents, and the Statewide Planning Office predicts that by 2030 almost 30,000 more people will live there. This growth in population has brought dramatic changes to the southern part of the state and those changes have spawned response. In 1993 the towns banded together to form the Washington County Regional Planning Council (WCRPC), dedicated to addressing issues in southern Rhode Island that transcend town boundaries and which could be more effectively addressed at a regional scale. In 2000 the WCRPC published *A Shared Future: Washington County in 2020*, its collective vision for the South County twenty years hence.

The vision addressed land use and housing, the economy and transportation, but among the most important elements of that vision were those related to the county's natural resources:

- ▲ “clean and plentiful waters” for swimming, drinking and fishing
- ▲ safeguarding both access to and the natural integrity of river banks and coastal shorelines
- ▲ “landscape of village centers and open spaces” with villages “nested in rural landscapes amidst active economically viable farms”
- ▲ protection of natural wildlife habitats as “treasured assets”

These natural features are an essential part of the physical environment and quality of life that South County residents cherish.

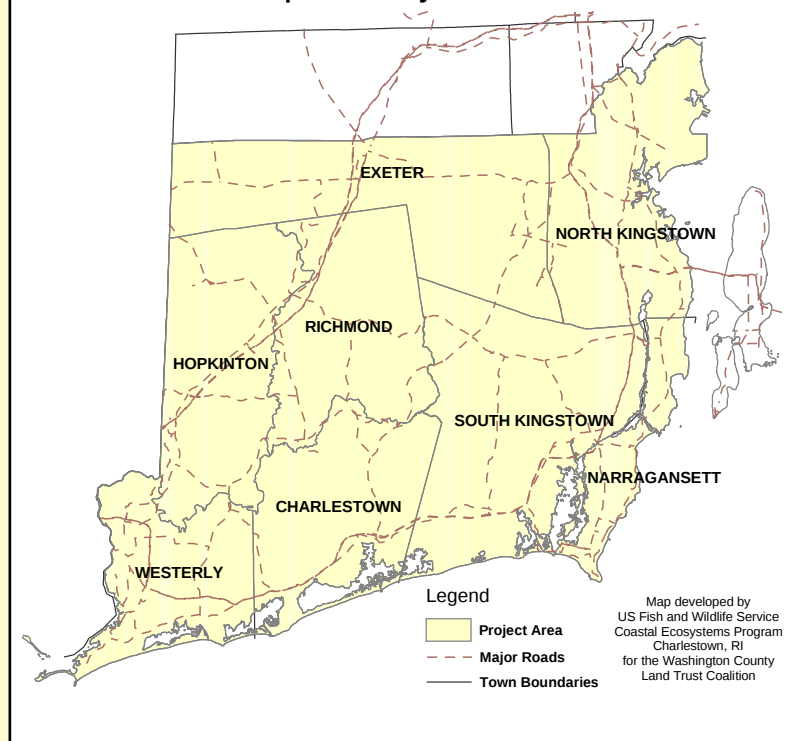
To make the vision a reality, two major initiatives commenced. The South County Greenspace Protection Project, led by the Rhode Island Department of Environmental Management (RIDEM), worked with local committees and used Rhode Island Geographic Information System (RIGIS) data to identify and map the county's most important natural, recreational, and cultural resources.

¹Washington County is the official name for the county encompassing nine municipalities, including New Shoreham, in the southern portion of Rhode Island west of Narragansett Bay. South County is the traditional name that Rhode Islanders often use for the same geographic area. In this report, the names are used interchangeably to collectively denote the eight mainland towns of the county. New Shoreham, or Block Island, was not included in this study.

The final report, entitled *South County Greenspace Protection Strategy*, identified eleven Landscape Preservation Focus Areas that are special because they exhibit a combination of “high concentrations of natural, cultural, and recreational resources.” They are also vulnerable to change.

The second initiative, the *South County Sustainable Economy Project*, undertaken by WCRPC and Grow Smart RI, identified those areas best suited for more economic development based on factors such as the location of existing population and service centers, water and sewer, good transportation access, etc. The two reports together began to create an on-the-ground blueprint for WCRPC’s vision.

Map 1: Project Area



A Regional Plan for Natural Resources

The Washington County Land Trust Coalition (WCLTC) recognized that it would play a major role in implementing the South County vision. Since its inception in 2000, the coalition has provided outreach and training for the member land trusts as well as created a forum for sharing information through its newsletters and workshops. When the *South County Greenspace Protection Strategy* was published in 2003, the Coalition saw the opportunity to move from sharing information and expertise to developing and collectively implementing a set of regional priorities.

The Coalition applied for and received a grant from the Rhode Island Foundation to take the next step, building on the *South County Greenspace Protection Strategy*, to compile information in a way that would enable the land trusts to develop action plans for protecting areas with regionally significant natural resources. In addition to the grant from the Rhode Island Foundation, the project was supported by the U.S. Fish and Wildlife Service Coastal Program in Charlestown, Rhode Island, which analyzed RIGIS data and produced the maps.

It was understood that each land trust had its own set of priorities based on community goals, but everyone acknowledged that if the land trusts were to assist in implementing the overall South County vision, each land trust also needed to understand where natural resources of regional significance were located and commit itself to working, often with partners, to protecting those resources. In the fall of 2003 a steering committee composed of representatives from nine South County land trusts was formed to undertake the work. The steering committee participants are listed in the back of the report.

The steering committee made two initial decisions. First, building on the findings of the South County Greenspace Protection Strategy, which identified large landscape preservation focus areas, the committee decided that it wanted to establish challenging yet realistic goals in terms of the amount of land to be protected. Second, the land trusts consider themselves to be the community advocates and guardians of natural rather than cultural or recreational resources. Therefore, in contrast to the earlier project, which developed its plan based on natural, cultural, and recreational resources, the steering committee decided to focus solely on natural resource protection.

Selecting Natural Resources of Regional Importance

The first step was to select the natural features deemed to be of greatest concern to citizens of mainland Washington County. Based on WCRPC's work, other earlier studies, and the steering committee members' understanding of their communities, the committee chose resources that they felt were both:

- ▲ crucial to maintaining the physical character, environmental health and community well-being of the region, and
- ▲ vulnerable to near-term development.

The committee chose to focus on the following resources and selected RIGIS data layers that most closely reflected those resources.

▲ Farmland

Citizens continuously mention farms as an essential element in maintaining rural character. Farms provide jobs, local foodstuffs, and open space vistas. The RIGIS data layer used is from land cover data, not prime soils.

▲ Biodiversity

South County has a higher number of rare species habitats than any other part of the state. Rare species habitat areas from the RIDEM Natural Heritage Program were used to reflect biodiversity.

▲ Groundwater

Much of South County is underlain by a sole source aquifer that provides virtually all of the county's drinking water. Aquifers and wellhead protection areas, including all community wells, and non-transient non-community wells (which include wells serving facilities such as schools and factories) were mapped. Wells for seasonal residences were not included, nor were aquifer recharge areas because they encompass a very large proportion of the county.

▲ Surface waters

Rivers, streams, lakes and ponds provide aquatic habitat, water supply, and connectivity between natural areas. All surface waters, along with a 300 foot buffer on either side of the water course, were mapped. This area is larger than the area of regulatory oversight by RIDEM Wetlands program.

▲ Coastal habitat

With over 200 miles of saltwater shoreline, the areas where land and sea intersect support valuable spawning grounds and some of the state's most familiar and cherished scenery. Data on estuarine and marine wetlands, including eelgrass beds, developed by the RIDEM Narragansett Bay Estuary Program, were used in the mapping.

Other resources such as wetlands, scenic landscapes, and large forested areas were also considered but ultimately not used for a variety of reasons. In the case of wetlands, current state law already provides a measure of protection. The scenic landscape data are over ten years old and considered to be unreliable. Large forest areas covered too much of the county and the data provided no ability to discriminate by quality of the woodland. Regarding forestland, it is important to note that both RIDEM and The Nature Conservancy have identified large forested areas in South County that are priorities for protection by their organizations. RIDEM seeks to expand existing state management areas and The Nature Conservancy is working hard to protect a large area north of Interstate 95 that stretches into Connecticut, known as the Pawcatuck Borderlands.

Map 2: Natural Resources of Regional Importance

Background Legend

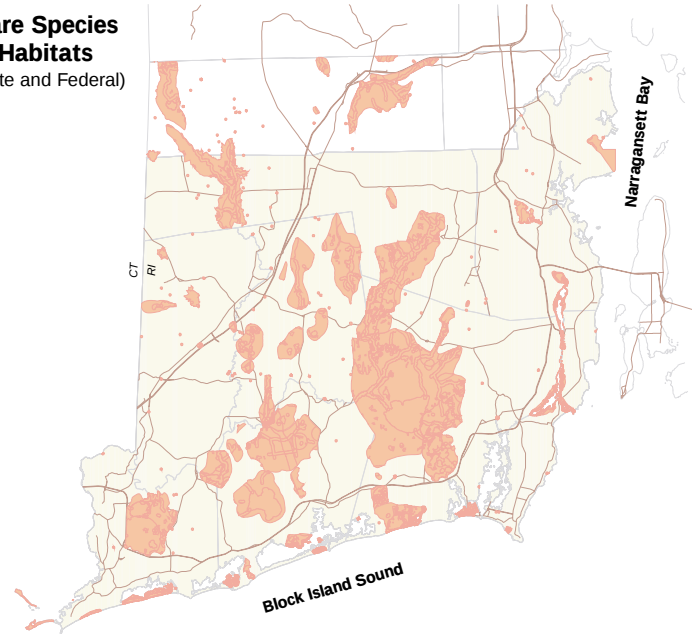


Towns in Project Area

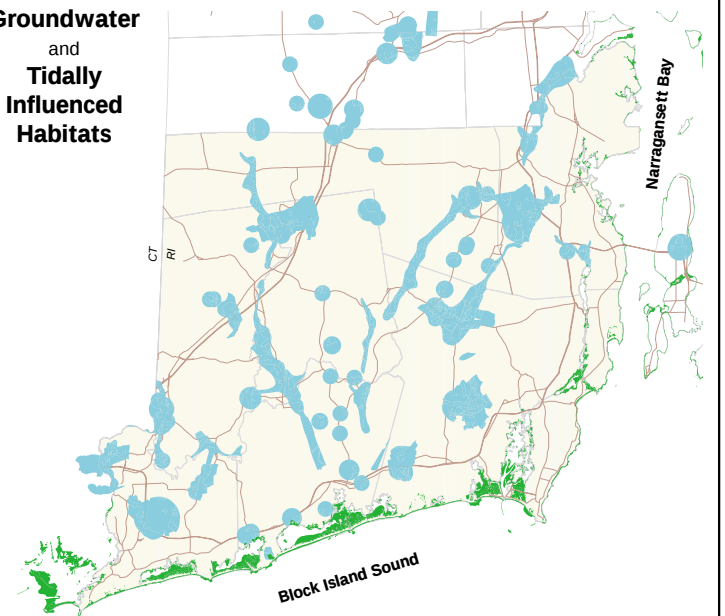


Major Roads

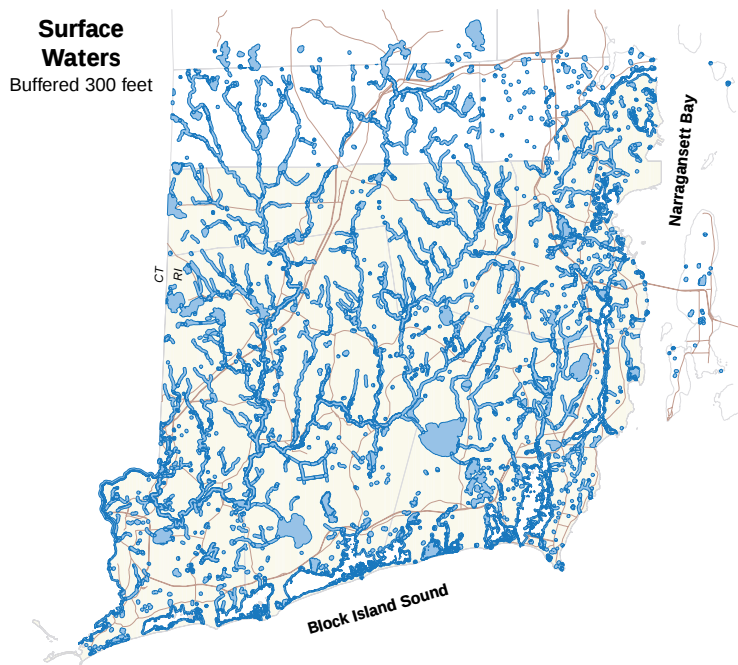
Rare Species Habitats (State and Federal)



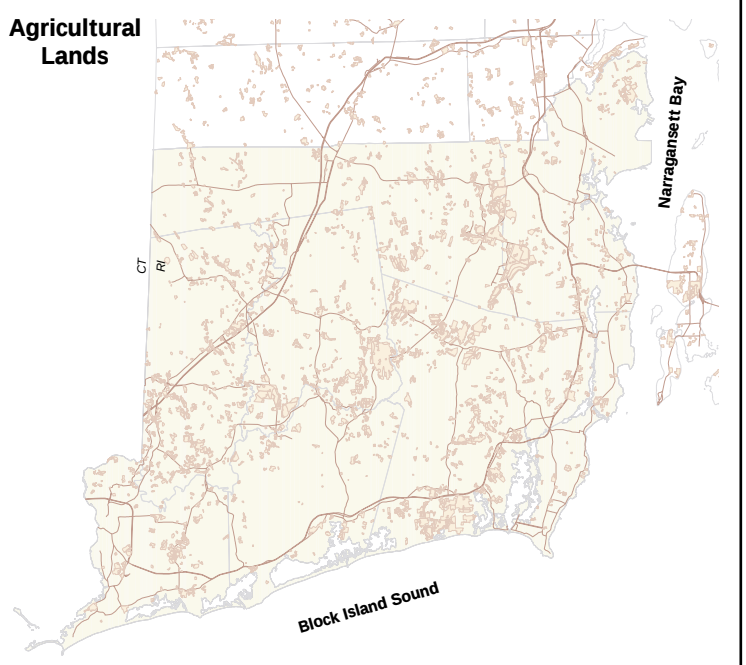
Groundwater and Tidally Influenced Habitats



Surface Waters Buffered 300 feet



Agricultural Lands

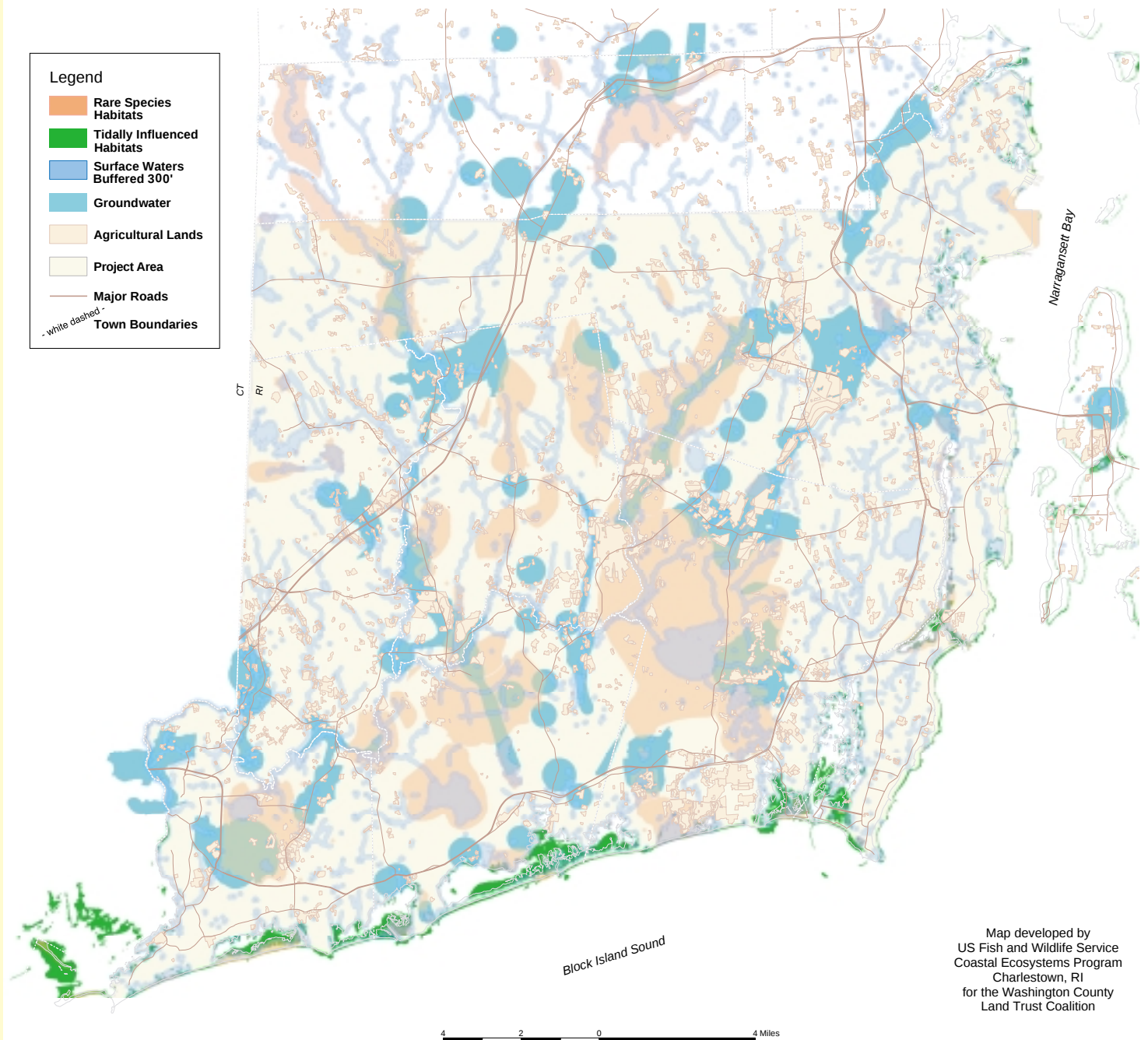


5 2.5 0 5 Miles

Map developed by
US Fish and Wildlife Service
Coastal Ecosystems Program
Charlestown, RI
for the Washington County
Land Trust Coalition

Once the data layers were selected, they were mapped together (see Map 3), revealing areas where several resources occurred together. The next step (see Map 4) was to show the relationship between already protected open space and the project's chosen resources. On Map 4, all resources are mapped in green, with darker shades of green indicating the presence of more co-occurring resources. Protected open space is indicated by black and white hatched lines. Map 4 provided the committee with an image of South County that illuminated where the natural resources of concern were located, where resources co-occurred, and whether they were already protected. The map demonstrated clearly that while some of the priority resources have been protected, large portions of them have not.

Map 3: Priority Natural Resources



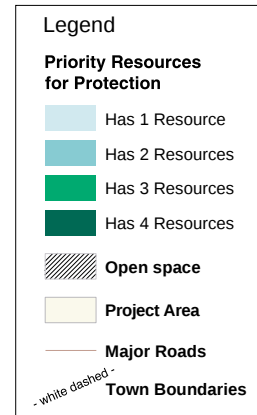
Preliminary Delineation of Focus Areas

Map 4: Co-occurrence of Priority Natural Resources

Using Map 4, as well as aerial photography that indicated where development was located², the committee made a preliminary identification of fifteen focus areas. Among the factors used in selecting these areas were:

- ▲ number of natural resources present
- ▲ size of the area
- ▲ contiguity to existing protected areas
- ▲ extent and location of existing development

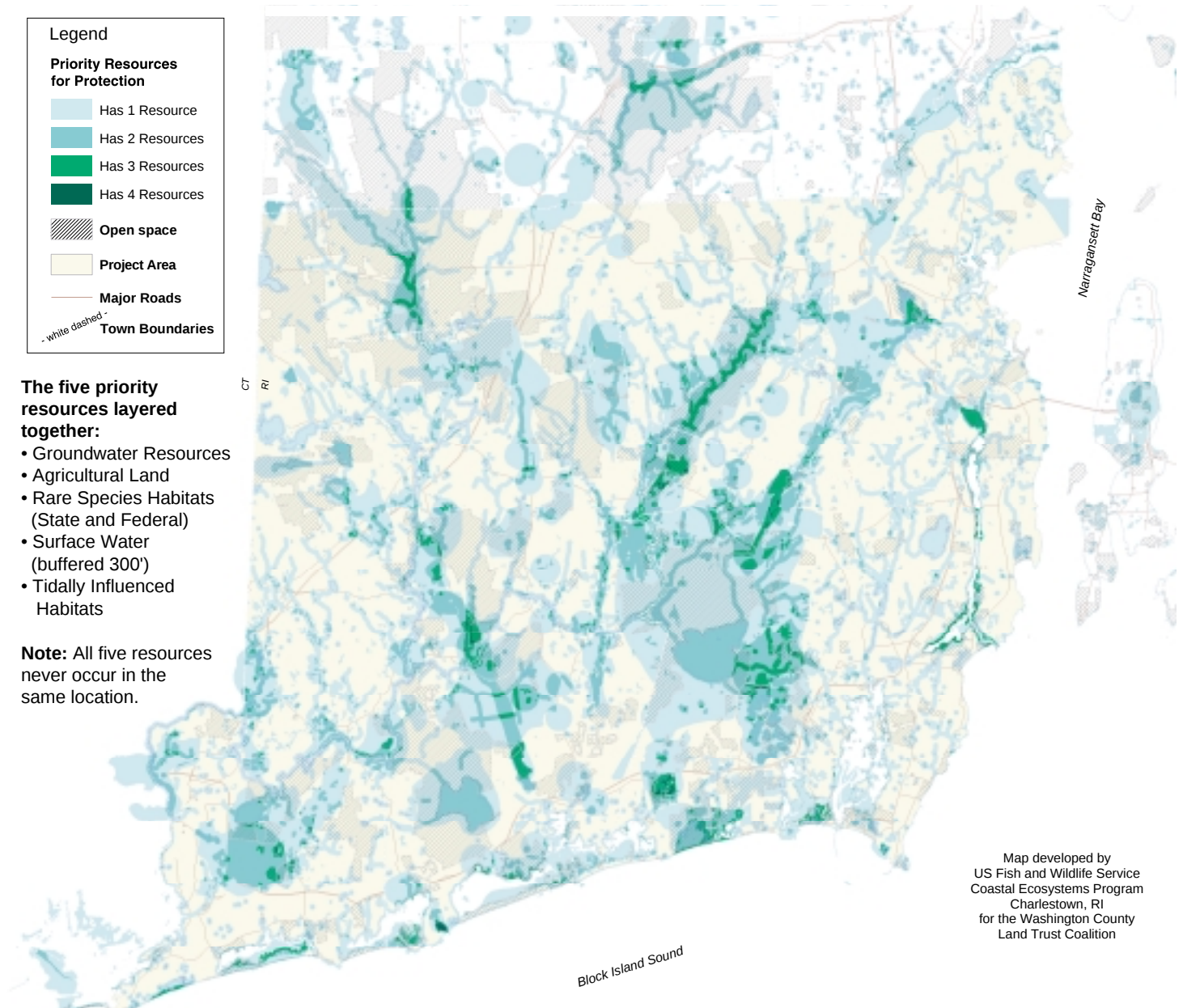
²Aerial photography used to understand the pattern of existing development is from 1997, the most recent available information.



The five priority resources layered together:

- Groundwater Resources
- Agricultural Land
- Rare Species Habitats (State and Federal)
- Surface Water (buffered 300')
- Tidally Influenced Habitats

Note: All five resources never occur in the same location.



Map developed by
US Fish and Wildlife Service
Coastal Ecosystems Program
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Local Land Trust Review

With a draft map of fifteen focus areas, a series of local meetings was held to give each land trust an opportunity to review the provisional focus areas located in its community and to suggest modifications based on local knowledge and concerns. New focus areas were added, some were eliminated, and boundaries were changed. Map 5 provides an example of the mapping resources used by the local committees to review the focus areas.

It is important to note that often land trusts are working in areas that reflect local priorities but are not identified in this effort as areas of regional concern. It is understood and agreed by the land trusts that the regional focus areas are not meant to supplant, but to augment, their current and ongoing work. In many cases, local land trusts as well as other organizations such as The Nature Conservancy or RIDEM are already engaged in protecting land in the focus areas.

Map 5: Example of Working Maps for Refining Focus Areas

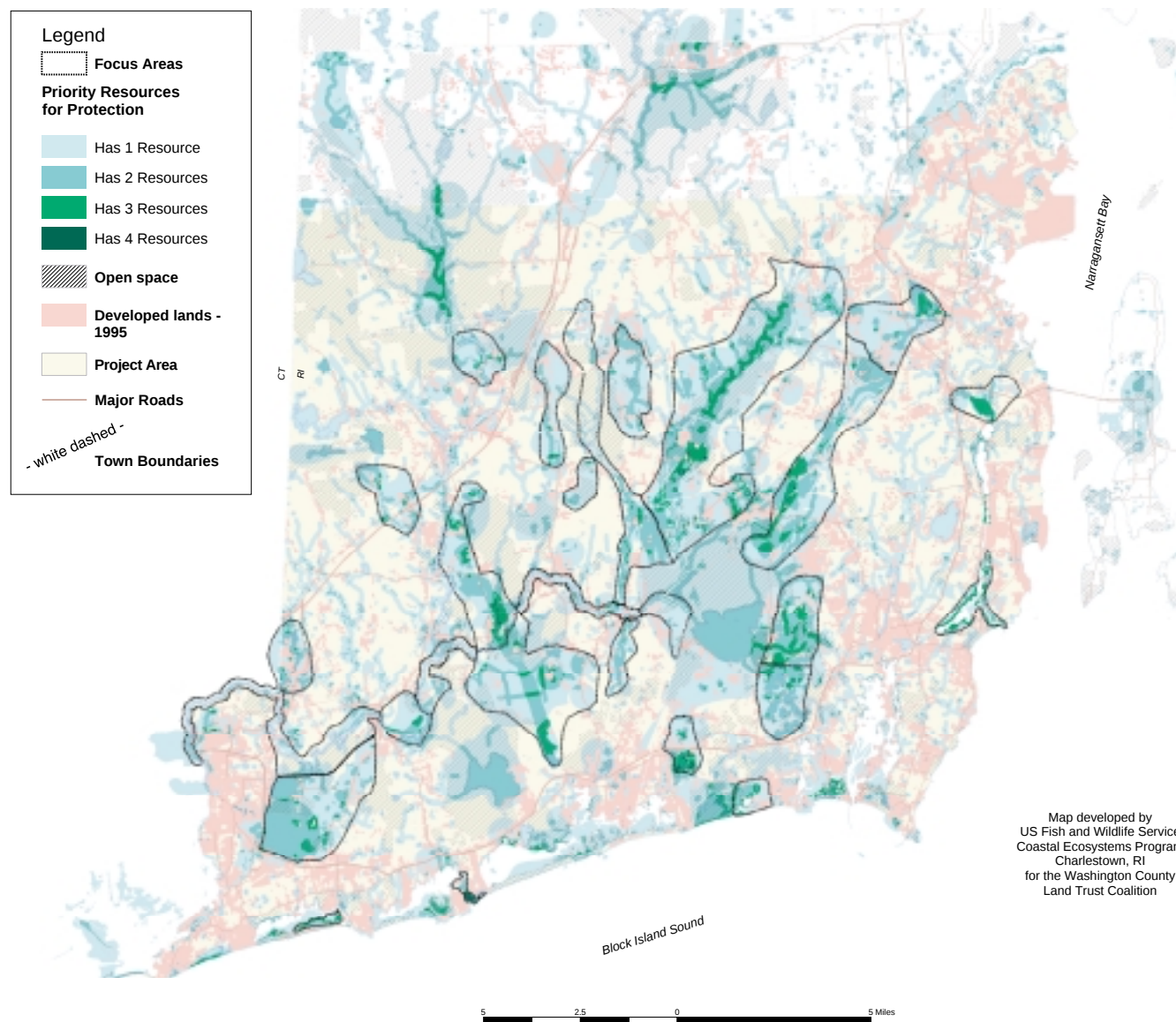


Project Results: 27 Focus Areas for Regionally Important Natural Resources

With input from the local meetings, the steering committee agreed on 27 focus areas of regional significance, based on the natural resource criteria selected and consistently applied. The focus areas are very diverse in physical character. They are located in all eight towns of mainland Washington County and range in size from Winnapaug Marsh with 159 acres, to the Queens River with over 10,000 acres. Map 6 contains the 27 focus areas, along with already developed land and protected open space. Although the land use data are now almost a decade old, the intent is to show the land use patterns among the focus areas, protected open space, and urbanized areas. These existing patterns will help shape the discussion on desired future patterns of growth.

The focus area boundaries were drawn based on the committee's best understanding of location and relationship of the resources themselves, existing protected open space, and already developed land. These boundaries are meant as guides rather than definitive lines for the land trusts as they explore how to maintain the natural resource qualities of these focus areas.

Map 6: Focus Areas with Protected Open Space and Developed Land

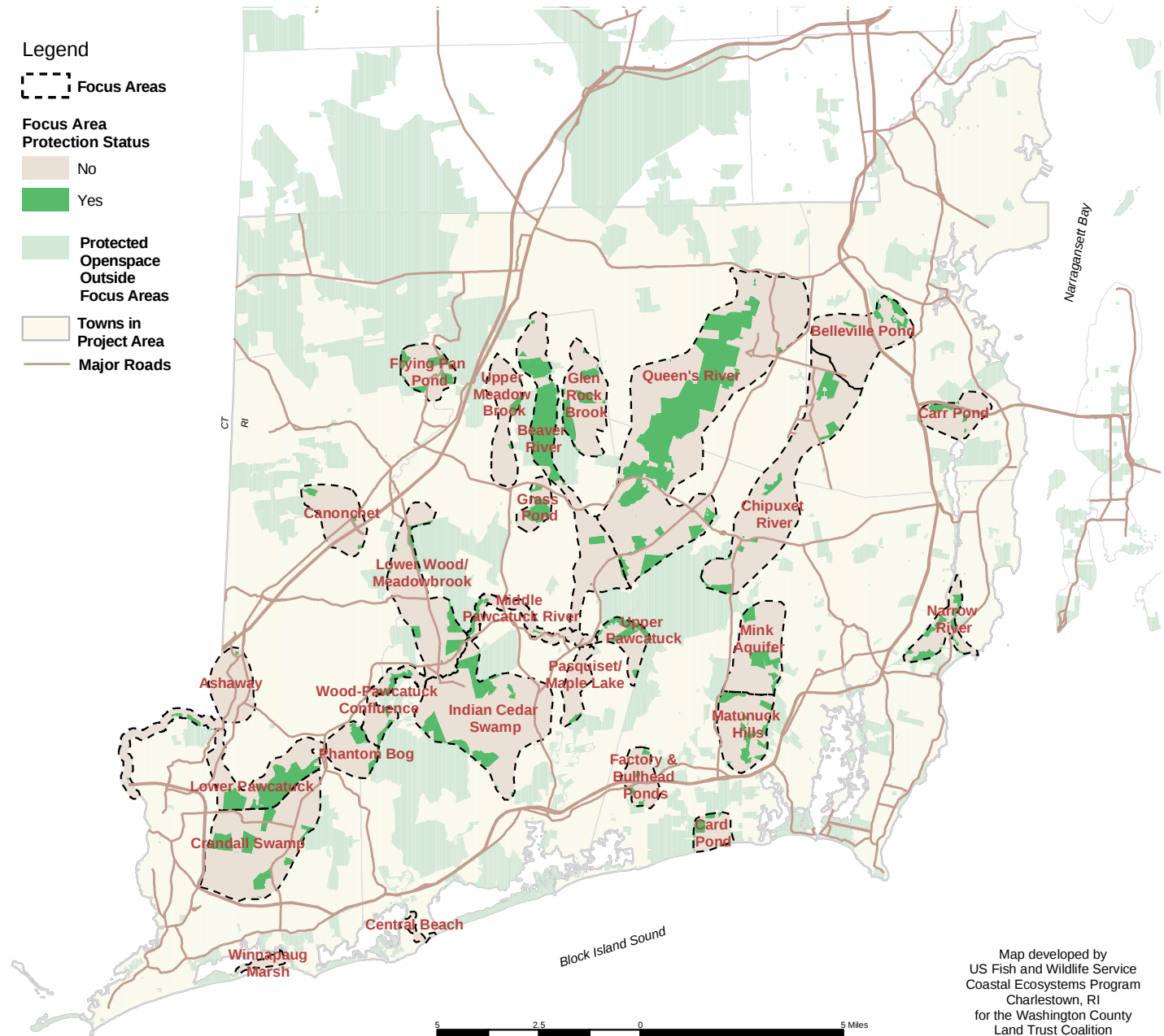


The Task Ahead

Map 7 and its accompanying table provide a sense of the scope of the work ahead. Washington County contains 211,761 acres. The 27 focus areas collectively contain approximately 47,000 acres. Of those 47,000, almost 38,000 acres are currently unprotected land, or about 18 percent of the county. In some focus areas, there is already ongoing conservation work; in others, very little attention has yet been paid.

According to RIDEM, there are roughly 30,000 acres of protected land in mainland South County outside the focus areas. If all the land in the focus areas were to be protected, a total of approximately 68,000 acres, or 32 percent of the land mass, would be preserved. This is a high proportion of the land set aside as open space, but not an unachievable goal for an area with so much at stake if its natural features are lost. Currently Exeter has more than one-third of its land protected and on Block Island, 42 percent has been set aside as open space. The South County target is also in line with the 1994 State Greenspace Plan, which set as a goal for the year 2020 that one-third of the land area of the state should be preserved.

Map 7: Focus Areas for Natural Resource Protection



Regional Focus Areas for Protection

Focus Area	Location	Resources	Total Acreage	Acreage Protected	Acreage Unprotected
Ashaway River	Hopkinton	SW, GW, AG	1,032	8	1,024
Beaver River	Richmond	SW, NH, GW, AG	2,907	1,021	1,886
Belleville Pond	N. Kingstown	SW, NH, GW, AG	1,988	161	1,827
Canonchet	Hopkinton	SW, GW, AG	1,162	48	1,114
Card Pond	S. Kingstown	SW, NH, AG	496	97	399
Carr Pond	N. Kingstown	SW, GW	823	87	736
Central Beach	Charlestown	CH, SW, GW, NH	134	0	134
Chipuxet River	N. Kingstown, S. Kingstown	GW, SW, AG	4,058	403	3,655
Crandall Swamp	Westerly	SW, NH, GW, AG	3,487	470	3,017
Factory and Bullhead Ponds	S. Kingstown	SW, NH, GW, AG	635	59	576
Frying Pan Pond	Hopkinton, Richmond	SW, GW, AG	884	229	655
Glen Rock Brook	Richmond	SW, NH, GW, AG	1,492	296	1,196
Grass Pond	Richmond	SW, NH, AG	468	186	282
Indian Cedar Swamp	Charlestown	SW, NH, GW, AG	4,246	598	3,648
Lower Pawcatuck	Hopkinton, Westerly	SW, GW, AG	2,315	746	1,569
Lower Wood/Meadowbrook	Richmond	SW, NH, GW, AG	2,401	298	2,103
Matunuck Hills	S. Kingstown	SW, NH	1,404	292	1,112
Middle Pawcatuck	Charlestown, Richmond	SW, GW, AG	701	93	608
Mink Aquifer	S. Kingstown	SW, NH, GW, AG	1,626	259	1,367
Narrow River	N. and S. Kingstown, Narragansett	CH, SW, NH	776	241	535
Pasquisset Pond & Maple Lake	Charlestown	SW, GW, AG	568	24	544
Phantom Bog	Hopkinton, Westerly, Charlestown	SW, NH, GW, AG	794	130	664
Queens River	Exeter, S. Kingstown, Richmond	SW, NH, GW, AG	10,144	3,183	6,961
Upper Meadowbrook	Richmond	SW, NH, GW, AG	1,121	56	1,065
Upper Pawcatuck	Charlestown	NH, SW	640	212	428
Winnapaug Marsh	Westerly	CH, SW, NH	159	1	158
Wood/Pawcatuck Confluence	Hopkinton, Richmond, Charlestown	SW, NH, GW, AG	719	177	542

All Focus Areas

47,180

9,375

37,805

Key: AG - Farmland; SW - Surface Water; GW - Groundwater; NH - Rare Species Habitat; CH - Coastal Habitat

In any effort to protect resources, working with the property owner is essential, whether the land is to be purchased, development rights acquired, or other types of agreements achieved. Map 8, which includes local tax maps that show land ownership patterns in the focus areas, identifies the parcels and therefore the land owners with which the land trusts must work. Using all the information gathered for this project, the land trusts will now develop protection strategies that take into account:

- ▲ Interests of landowners in the focus area
- ▲ Existing patterns of open space and development
- ▲ Capacity and interest of other conservation groups in focus area
- ▲ Use of a broad range of techniques as appropriate
 1. Transfer of legal interests, including land purchase, purchase of development rights, gifts of land or easements, etc.
 2. Regulatory approaches such as conservation development, which many towns in South County are considering or have already adopted.

In Conclusion

The goal of this project has been to develop a regional perspective and common framework for protecting the biodiversity, groundwater and surface water, and working farms of Washington County. Regional conservation priorities have been defined by this plan. The next steps are up to the Coalition and the land trusts, which will take the lead or work with partners to develop protection strategies for each focus area.

More broadly, these efforts will play an essential role in achieving the vision defined in the Washington County Regional Planning Council's *Shared Future* report:

“communities creating desirable places to live with vibrant village centers, permanently preserved natural areas, peaceful farmlands and forests, and sparkling rivers, streams, and beaches.”

Participants

The Steering Committee included:

Carol Baker, *Hopkinton Land Trust*
Harriet Powell, *Land Conservancy of North Kingstown*
Bonnie Pashkow, *Land Conservancy of North Kingstown*
Clarkson Collins, *Narragansett Land Conservancy Trust*
Linda Steere and Julie Sharpe, *Narrow River Land Trust*
Sandra Poirier, *Richmond Rural Preservation Land Trust*
Suzanne Vetromile, *Richmond Rural Preservation Land Trust*
Fredericka Bettinger, *South County Conservancy (Charlestown)*
Peter Arnold, *South County Conservancy (Charlestown)*
Joanne Riccitelli, *South Kingstown Land Trust*
Les Crandall, *Westerly Municipal Land Trust*
David Francis, *The Westerly Land Trust*

Other participants:

Lee Alexander, *The Nature Conservancy*
Rupert Friday, *Rhode Island Land Trust Council*
Denise Poyer, *Wood-Pawcatuck Watershed Association*

Project Facilitation and Report:

Judith S. Benedict

GIS Analysis and Mapping:

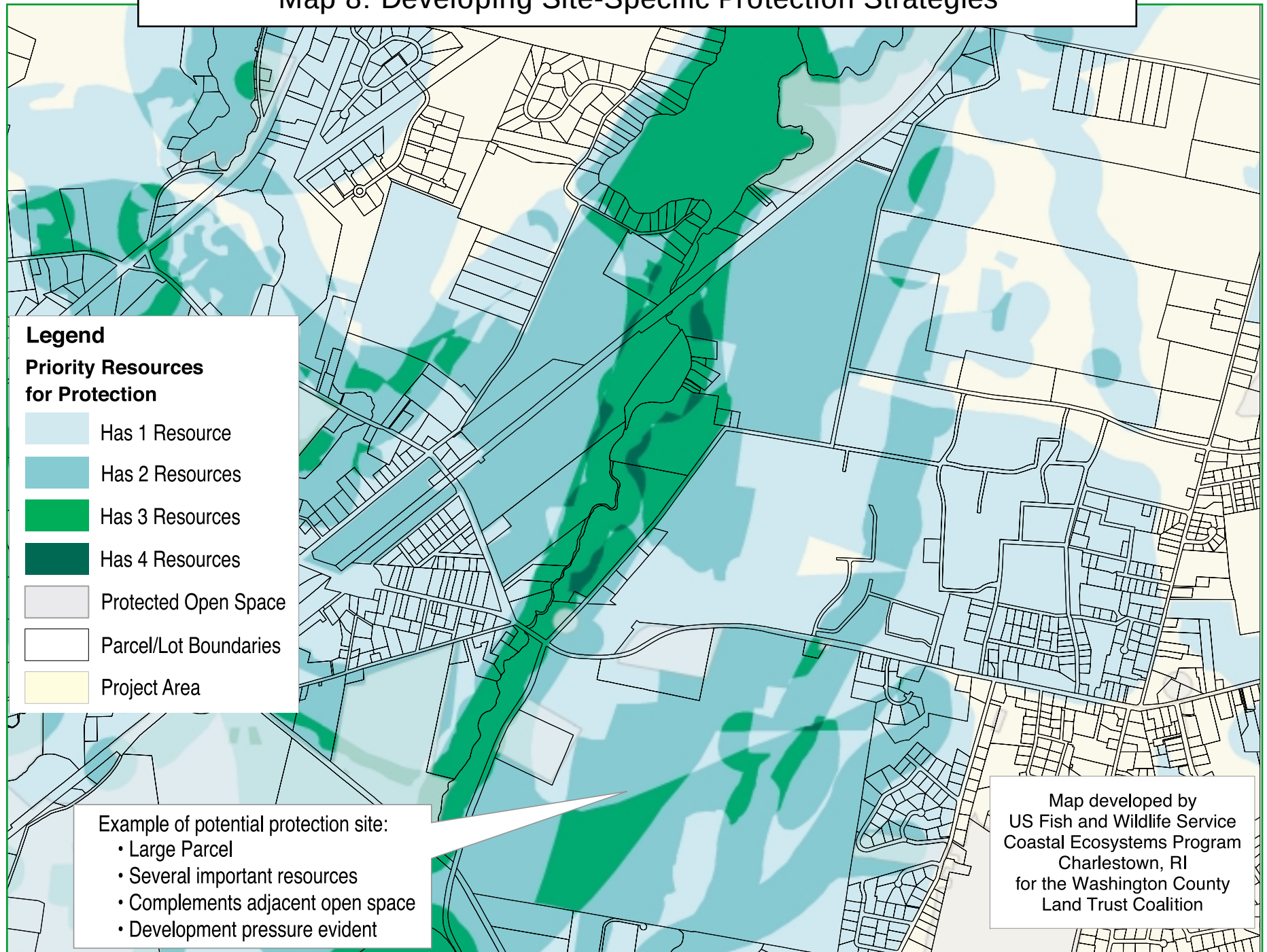
Andrew MacLachlan, U.S. Fish and Wildlife Service,
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Information

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Map 8: Developing Site-Specific Protection Strategies



GIS Data Documentation for WCLTC Regional Plan

All raw data used in analysis for this project were provided by the Rhode Island Geographic Information System (RIGIS).

Farmland - These data are a subset of the 1995 landuse/landcover data, with one acre minimum polygon size.

The following categories were extracted for the farmland theme:

- ▲ Pasture (not suited for tillage)
- ▲ Orchards, groves, nurseries
- ▲ Idle agriculture (abandoned fields and orchards)
- ▲ Cropland (tillable)

These are the same data used in the South County Greenspace Protection Project and were obtained from the report CD produced by Dodson Associates.

Rare Species Habitat - These data were generated by the RIDEM, Natural Heritage Program in 1997. The areas depict estimated habitat and range of rare federal and state species and noteworthy natural communities. Minimum polygon size is three acres.

Groundwater Drinking Resources - This theme is composed of three data sets: aquifers, wellhead protection areas for community wells, and wellhead protection areas for non-transient/non-community wells. These data come from technical measurements and calculations by the RIDEM, Division of Groundwater Resources.

Surface Water Habitat - River, stream, lake and pond features came from RIGIS, originally 1:24,000 map sources. The banks of these features were buffered outward by 300 feet. Narrow streams represented by single center lines were also buffered by 300 feet. These are the same data used in the South County Greenspace Protection Project and were obtained from the report CD produced by Dodson Associates.

Coastal Habitat - This theme came from south coastal eelgrass, wetlands and critical habitats data generated through the RIDEM Narragansett Bay Estuary Program. Source photography was from 1999. The target minimum mapping size was 0.5 acres. All dataset features were used for this WCLTC project except for marine and estuarine open water, and uplands.

WCLT Regional Plan Focus Areas - These Focus Area data were delineated on paper maps showing the five priority natural resource themes and 1997 aerial photography, displayed at approximately 1:24,000 scale. The Focus Area lines were then digitized on the computer screen with the same themes, at as good or better scale, and saved as a GIS shapefile. Editorial changes to the line work were always reviewed by the steering committee members.

The Focus Areas were identified using common local names or landscape features. These Focus Area names are included in the shapefile attribute table. The shapefile is stored using the R.I. State Plane projection, units in feet, datum NAD83.