

Chapter Topic Review

Topic: **Protection and Management of Natural Resources**

Summary of What Chapter Topic Needs to Cover:

- What resources do we have?
- What resources are important to us and why (what do they relate to?)
- What resources are already protected and how to ensure they stay protected
- What resources need protecting and/or managing?
- Discussion on the existing and future threats/issues facing our natural resources
- Discussion on priorities for land conservation / measures.
- Discussion on what is in place for minimizing negative effects of development on significant natural resources. What else needs to be done?
- Do we want to have one overarching goal, or do we want to have goals pertaining to specific natural resources?
- Policies and implementation actions specific to the stated goal(s).
- Implementation actions that address the protection and management of the significant natural resources

Details about what Chapter Topic Needs to Cover: (get from standards manual)

- Surface Water: Ponds, rivers, streams, and their watersheds
- Aquifers
- Wetlands and ~~Salt Water Marshes~~
- Floodplains
- Forested Areas
- Critical, Uncommon, or Fragile Wildlife Habitat Areas
- Permanently Protected Conservation Land
- ~~Effect of Sea Level Rise~~ (provide documentation this is not projected to affect us in the next 50 years)
- Identify and Discuss prominent issues facing our significant natural resources
- Relationship of Natural Resources to the other Topic Areas, such as: Land Use, Recreation, Economic Development, Water Supply, (food supply, etc.)

Basic State Goals for Natural Resources:

1. Permanent protection of the State's significant natural resources.
2. Minimize negative impacts of development on significant natural resources

(see Guidance Manual for the most applicable goals; page 76, attached.)

Are WG's Existing Goals consistent with State Goals?

WG's Current Goals: see attached

Evaluation: ??? not completely

Suggestions:

- articulate specific (critical) resources to be protected (and why?)
- acknowledge private individual wells, not just public water supply
- include prevention and mitigation of adverse impacts to natural resources due to human activities
- acknowledge what destroys or degrades (threatens) the resources

Are existing Goals complete?

We should think about and evaluate goals and policies together.

Analysis of Amount and Quality of Inventory/ Baseline Information (existing Plan):

Plan covers the following natural resources:

- **Topography**- steep slopes, including a map of steep slopes. Evaluation: this is not a resource. The plan discusses steep slopes in terms of their difficulty to develop and susceptibility to environmental damage through erosion and stormwater runoff. Plan recommends steep slopes (over 15%) be preserved from development. Policies 5, 11, 15, 16, 17, and 18 support this. Conclusion: need to rectify with new state law that no longer allows town to subtract steep slopes from suitable land—have a discussion on this in the plan. (consider moving this discussion to open space chapter?)
- **Groundwater Resources**- aquifers/ groundwater reservoirs; wellhead protection. Evaluation: significant resources mapped. Refers to RI Groundwater Protection Act RIGL 46-13.1, and to RIDEM's Groundwater Quality Regulations, including the Groundwater Classifications (also mapped). Conclusion: see if there are any regulations that are more recent from the State for groundwater aquifers, recharge areas, and wellhead protection areas. Need to update the maps. Goal #4, and Policy 2.
- **Soils**- constraints to development and agricultural. Soil Constraints map. Evaluation: could go into more discussion on agricultural soils considering agriculture discussion needed in economic development section. Soils constraints discussions should be updated with current thinking. Applicable: G#5, P.1, P.4, P.5, P.11.
- **Surface Water Resources**- watershed areas. Evaluation: this section only explains what a watershed is, but does not say what is so important about it. No specific bodies of water are discussed. Only one of our three main watersheds are mentioned (Pawtuxet, Wood-Pawcatuck, and Quinebaug). Applicable: Goal #3, and P.3. Conclusion: This section needs to be overhauled and the important bodies of water need to be discussed. There should be a discussion about stormwater runoff and our Stormwater Management Plan and the impaired water bodies need to be mentioned. Why are which water bodies important (recreation, economy, beauty, fish habitat, water supply, etc.)? Should also talk about the EPA move towards a watershed approach and Watershed Plans. The map is terrible—nothing is labeled!! We can get a lot of information from the Stormwater Plan.
- **Floodplains**. States we have no Zone V coastal 100 year zones, and that we do have isolated Zone A 100 year storm flood zones. Evaluation: not much of a discussion and needs to be updated with current information (current effective map dates). We should also reference our new Floodplain Ordinance number 91, "Special Flood Hazard Areas."
- **Wetlands**. Evaluation: Good discussion on what wetlands are, why they are important, and what threats they face. Outdated, though. Applicable: G#3, P3, P6, P16. Conclusion: Section needs to be updated with current definitions and perhaps findings from the recent legislative task force.
- **Rare & Endangered Species**- RI Natural Heritage Program. List of Rare Species, Exemplary Natural Communities in WG, and Protection Status. Includes a map of Open Space and Sensitive Areas, including veiled Rare Species Habitats. References a topography map showing approximate boundaries of rare species habitat (but I don't know where this map is.) Evaluation: Talks about using this information for determining which areas to preserve or avoid with development, but offers no specific strategies for protection, especially if on land proposed for development. Goes into depth on ecological

uniqueness of 7 already protected properties. Applicable: Goal #2 (weak), Goal #5, Policy 1, P9, P10, P12, P16, P17, P18, P19. Conclusion: section needs to be verified and/or updated to current situation and available information. Should include some strategies for protection of private land in the event a significant habitat is proposed for development. Should talk about why these habitats are important to the Town and if they have a role in our economy or any of the other comprehensive topics, and what else threatens these areas (climate change, fragmentation, etc.). Refer to RIDEM's already mapped out Conservation Opportunity Areas and the Wildlife Action Plan.

- **Forest Land-** wood products and local sawmills; recreation and environmental benefits. Evaluation: short section does not get into details, but notes the benefits and importance to the "rural landscape." Applicable: Goal #2 (weak). Conclusion: section needs updating (I don't think the two sawmills are in operation today, but there could be a discussion on small and large forest lot land owners who have forest management plans and are on a harvesting schedule (see the Farm Forest and Open Space enrollment records). Find out from RIDEM Div. of Forestry how much economic activity we have in Town. Also, talk about the role of forests for carbon sinks, etc..
- **Composite Constraints-** Evaluation: This section proposed a map of constraints for the Town to use during plan review. Conclusion: we need to talk about how effective/practical this is to use (proactively, and reactively). Also, I think we need to spin this positive, rather than in the negative—say these are valuable resources and we want to protect them so here is what we are going to do. (The way it sounds now is like, 'here are all the areas in town where you can't develop.')
- **Lake Mishnock-Special District** (this section is discussed at the end of all the Implementation items). Evaluation: this section identifies this water body as an important resource and lists why. Includes a specific threat (failing septic) and lists implementation actions to address this. Conclusion: this discussion should be moved to the Surface Water section, and could go into more depth.

Resources Missing:

- Specific water bodies
- Permanently protected conservation land

Existing Plan Discusses:

- Identified Threats: residential subdivisions and sprawl
- Purpose stated for preserving: recreation, conservation, agriculture

Plan Needs:

- Missing Threats: Stormwater runoff; pollution (dumping, litter, illegal drains, atmospheric deposition); encroachment; fragmentation; climate change; drought; forest fire; invasive species;
- Explicit discussions on issues threatening the significant natural resources, specific to each resource
- Discussion on how these issues will play out/ are likely to change over the next 20 years.
- Discussion on priorities for land conservation
- Discuss what techniques we already have in place for minimizing the negative effects of development on the natural resources. (development practices, zoning /subdiv regs., regulations and laws, etc.)

Implementation Section:

Needs a complete overhaul.

Amount/Type of Information required to bring Topic up to date and Meet Current data requirements:

No new ground-level inventories needed. Sufficient available existing resources to fulfill this chapter.

Evaluation of access to information and ability to perform required/ thorough analysis:

We can do this chapter in-house.

Consideration if a consultant is needed to perform update of this topic: not needed.

Other available resources:

- RI Natural History Survey
- RIDEM

Relevant Documents to be Reviewed:

- West Greenwich Open Land Conservation Inventory, 2006
- West Greenwich Phase II Stormwater Management Plan, 2003
- South County Greenspace Protection Strategy, 2003
- RI State Wildlife Action Plan,
- RI Wildlife Action Plan Companion Guide, 2015
- The Forests of Rhode Island, 2002
- A Greener Path- RI Greenspace State Guide Plan and maps
- RI Forest Resource Management Plan, 2005
- RI Water 2030
- Final Report, Wetlands Legislative Task Force, December 31, 2014
- See Guidance Manual for Additional list of documents

Stakeholders/Who should be involved for this Chapter Topic:

- Conservation Commission
- Land Trust
- RI DEM (Forestry-Tom Abbott; Fish&Wildlife-; Parks&Rec-;)
- Wood-Pawcatuck Watershed Association
- Pawtuxet River Watershed Authority
- Lake Mishnock Preservation Association
- Water Resources Board
- RI Audubon
- The Nature Conservancy
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Effort Needed for Issues under this topic that the community needs to learn more about:

People are fairly receptive to resource protection.

Use the Guiding Questions from the Guidance Manual for the Stakeholders to answer in order to develop the discussions needed to be had in the plan:

- Identify the most significant natural resources within WG by answering the following:
 - Which natural resources contribute to the economic vitality of the municipality (i.e. for tourism, agriculture, fisheries, increased land values, etc.)?
 - Which resources are used recreationally? In what ways are resources used recreationally?
 - Which resources are important to preserve so that drinking water quality is maintained?
 - Are there scenic landscapes and vistas that are important contributors to the character of the community?
 - Which of the community's natural resources help to protect against or mitigate the impacts of natural hazards, including flooding and high wind?
 - Which resources are likely to contain or known to contain important plant and animal habitats?
- Assess the current and forecasted future issues that each resource is facing. Discuss the issues, and discuss how the issues are likely to change over the next 20 years.
 - What types of pollution are currently affecting significant natural resources? Is pollution, including pollution from land use activities such as stormwater runoff, on-site wastewater systems and other discharges, projected to worsen, get better or stay the same over the 20- year planning time frame?
 - How does stormwater runoff effect significant natural resources?
 - What issues will new development present for significant natural resources? What actions are planned to avoid or reduce impacts to protect or restore these resources?
 - How is the quality of the natural resources expected to change over time given current and projected conditions?
 - How are natural hazards and climate change anticipated to affect coastal areas, surface water, wetlands, habitat areas and other types of natural resources?
 - What specific issues are facing coastal areas and features?
 - What specific issues are facing wetland areas?
- Discuss/Determine the Town's priorities for land conservation measures:
 - In which areas should the municipality focus its land conservation efforts?
 - What types of lands are the most significant for preservation?
 - Are there areas of the municipality in which multiple significant resources exist?
 - How can land conservation assist in protecting the community's saltwater marshes given the anticipated effects of sea level rise?
 - Are there areas of the municipality in which the issues facing natural resources are particular significant?
 - Is it important for the municipality to permanently protect lands that are currently only temporarily protected?
 - Are there any specific natural resources or natural resource areas whose development would be particularly detrimental to the natural resource system, the community, the region or the State?

- Are there any specific natural resources or natural resource areas whose preservation would serve multiple purposes and/or values?
- Discuss existing regulations, programs, or techniques in place for minimizing the negative impacts of development on significant natural resources and provide a general overview of their effectiveness. For each, also discuss the general purpose and scope of the technique and whether implementation of the technique is causing the intended results.
- Optional: Assess the implications of existing soil hydrologic conditions on stormwater infrastructure needs (see guidance manual)
- Include one or more goals that further the State's goals for Natural resource conservation. Use these Guiding Questions to help determine goals:
 - How do the natural resources that exist within the municipality contribute to quality of life? Economic activity? Recreation? Other important community values?
 - Which natural resource areas are most in need of protection?
 - How do municipal decisions affect the natural resources that exist both within and outside of the municipality?
- Include policies and implementation actions that would help to achieve each of the plan's stated goals.
- Include policies and implementation actions that address conserving significant natural resources in perpetuity
 - What programs are currently in place to conserve significant natural resources? How can these programs be better utilized? How can these programs be adjusted to ensure permanent protection?
 - Are there organizations within the municipality that could become partners in conservation efforts?
 - How can the municipality support the efforts of the local land trust?
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- Include policies and implementation actions that address minimizing the negative impacts of development on significant natural resources
 - How can existing techniques for minimizing the negative impacts of development on significant natural resources be improved?
 - Are any of the issues facing significant natural resources either directly or indirectly related to development practices?
 - Could amendments be made to the zoning ordinance or subdivision and land development regulations to minimize developmental impacts?
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Attachments:

1. Table 3.1 from Guidance Manual (page 84), Examples of Significant Natural Resources
2. State Goals and Policies as given in GM (pages 76-77)
3. Excerpt from WG Comp Plan, Natural Resources Goals and Policies
4. Information on the RI Wildlife Action Plan and the Conservation Opportunity Areas (pages 2 and 3)

Table 3.1 Examples of Significant Natural Resources

NATURAL RESOURCE OR RESOURCE AREA	CHARACTERISTICS OF A “SIGNIFICANT” RESOURCE
Surface water and watersheds	Serving public water supplies both within and outside of municipal boundaries
Groundwater areas including aquifers, reservoirs, recharge areas, and wellhead protection zones	Classified as “GAA” by the RI Department of Environmental Management and therefore suitable for drinking water without treatment
Wetlands	All wetland types and particularly those with flood storage capacity
Floodplains	Areas that would be inundated during storms with an annual chance of occurrence of 1% and .2% (100-year and 500-year storm events)
Forested areas	Large, contiguous forested tracts; forests known to be habitats or movement corridors for wildlife
Agricultural soils	Those classified as “Prime Agricultural” or “Soils of Statewide Significance” by the U.S. Soil Conservation service
Habitat areas	Habitats of species listed as endangered, threatened or of special concern; habitats supporting economic functions, such as coastal fisheries or shellfish beds
Scenic landscapes	Areas identified locally as having important scenic qualities or as critical to maintaining community character
Coastal beaches and other coastal features, including salt ponds and marshes, as defined by the CRMC	Those with recreational, economic, habitat, flood protection or other value



For more information on the issues facing agricultural lands, see [Chapter 3.7 beginning on page 165](#). For information about the issues facing water supply, see [Chapter 3.10 beginning on page 215](#). For information about natural hazards and climate change impacts, see [Chapter 3.12 beginning on page 249](#).

For each significant resource and/or resource area, the comprehensive plan must:

- Discuss the issues facing the resource or natural resource area; and
- Discuss how the identified issues are likely to change over the course of the 20-year planning horizon.

When assessing the issues that the community’s significant natural resources and resource areas face, consider the following guiding questions:

- What types of pollution are currently affecting significant natural resources? Is pollution, including pollution from land use activities





See the Rhode Island Comprehensive Planning and Land Use Regulation Act, RIGL subsections 45-22.2-6(b)(1) and 45-22.2-9(d)(3).



State Guide Plan goals and policies related to water can be found in Chapter 3.10 starting on page 215.

RELATIONSHIP TO WATER SUPPLY

Water is a natural resource, so it is no surprise that planning for water availability and planning for natural resources are integrally connected. Any steps that are made to preserve the community's natural resources are also steps that increase potable water quality, since the natural systems within a municipality are all related and connected. When planning for natural resource preservation, communities should consider conserving areas that will also support water quality and water supply goals.

EMBODYING STATE GOALS AND POLICIES

Every comprehensive plan must be consistent with and embody the State's goals and policies for natural resource protection as found in the State Guide Plan and the laws of the State. Though not exhaustive, the goals and policies listed below represent the State's main themes for natural resources and are intended to provide focus as to which aspects are most important for local comprehensive planning.

FROM THE STATE GUIDE PLAN

A statewide network of greenspaces and greenways that protects and preserves the environment, wildlife habitats, natural resources, scenic landscapes, provides recreation, and shapes urban growth.

Land Use 2025: Rhode Island's State Land Use Policies and Plan, Goal 2, page 5-8

Permanently protect critical natural resources.

Land Use 2025: Rhode Island's State Land Use Policies and Plan, Objective 2A, page 5-8

Protect and enhance those values of the coastal region, including scenic values, which contribute to the State's quality of life. Examine proposals for changes in the coastal region in terms of their importance to the State as a whole.

Land Use 2025: Rhode Island's State Land Use Policies and Plan, LUP 15, page 2-10

Preserve and enhance wildlife, fish, and plant species diversity and stability through habitat protection, restoration, enhancement, and prevention or mitigation of adverse impacts due to human activities.

Land Use 2025: Rhode Island's State Land Use Policies and Plan, LUP 17, page 2-10

Protect wetlands and floodplains to maintain their natural functions and to minimize damage from floods.

Ocean State Outdoors: Rhode Island's Comprehensive Outdoor Recreation Plan, Policy RCOS-5, page 4.11

Conserve and enhance urban and community forests for multiple uses - water supply and water quality, recreation, forest products, wildlife habitat - as fundamental to high quality woodland and urban environments.

Ocean State Outdoors: Rhode Island's Comprehensive Outdoor Recreation Plan, Policy RCOS-7, page 4.14

Direct new growth and development to areas and locations that minimize the



potential for negative impacts upon the greenspace system.

A Greener Path: Greenspace and Greenways for Rhode Island's Future, Policy G-8, page 7.2

Utilize infrastructure to avoid or mitigate significant negative environmental impacts from development.

Land Use 2025: Rhode Island's State Land Use Policies and Plan, Objective 4C, page 5-15

FROM THE RHODE ISLAND GENERAL LAWS

To promote the protection of the natural, historic and cultural resources of each municipality and the state.

Rhode Island Comprehensive Planning and Land Use Regulation Act, RIGL subsection 45-22.2-3(c)(4))

In recognition of the ever increasing environmental problems resulting from demands on the land and renewable resources of the state and of the need to preserve, protect and develop these resources of the state at a rate and level of quality to meet the needs of the people of the state, and the need for environmental balance, it is hereby declared to be the policy of the state to provide for the conservation of the land and renewable natural resources using those measures that best meet these objectives, including, but not limited to, the control and prevention of erosion, control of floods, the conservation and development of water resources and the improvement of water quality; assistance in the conservation of coastal land and water resources, the prevention of impairment of dams and reservoirs by sediment, the protection of wildlife, and preservation of natural beauty, and to protect and promote the health, safety and general welfare of the people of this state.[..]

Soil Conservation, RIGL section 2-4-1

SIGNIFICANCE FOR COMPREHENSIVE PLANS

The State's goals for natural resources focus on protection of significant natural resources through conservation and conscientious development practices. The State Guide Plan calls for the protection of many different types of natural resources, including wetlands, floodplains, forests, wildlife, fish and plant species, and the coastal region. The Rhode Island General Laws affirm the need to preserve, protect and develop the State's significant natural resources, calling for the conservation of land and resources using a variety of methods. In several places throughout the law, natural resources are cited as critical to the State's character, economy and vitality.

To be consistent with the State's many goals for natural resources and to receive State approval, comprehensive plans must include **goals, policies and implementation actions** that address the following aspects of natural resource protection:

- Conserving significant natural resources in perpetuity; and
- Minimizing the negative impacts of development on significant natural resources.

The section of this chapter entitled "Develop Policies and Implementation Actions," beginning on [page 88](#), provides additional detail on addressing these two topics.



See the Natural Heritage Preservation Program, RIGL chapter [42-17.5](#);

Taxation of Farm, Forest and Open Space Land, RIGL section [44-27-1](#); Coastal Resources Management Council RIGL subsection [46-23-1\(a\)](#); and the Comprehensive Planning and Land Use Regulation Act, subsections [45-22.2-3\(a\)\(3\)](#), [45-22.2-3\(c\)\(1\)](#), and [45-22.2-3\(c\)\(4\)](#).

SECTION II GOALS & POLICIES

A. NATURAL RESOURCES

GOALS:

- G#1** Identify, inventory, preserve and protect the Town's natural resources and rural traditions that reinforce community identity
- G#2** Protect the Town's natural resources to preserve the rural character unique to this community
- G#3** Develop water resource management strategies designed to preserve lakes, ponds, rivers, wetlands and associated buffer strips
- G#4** Protect ground water resources and recharge areas used for existing and potential public water supply from contamination from point and non-point pollution sources
- G#5** Promote conservation of prime farmland, open space land, and other natural resources utilizing various growth management methodologies/techniques
- G#6** Protect natural resources through the promotion of environmental education to all age groups

POLICIES:

- P.1** Amend development regulations to encourage growth in areas of limited land constraints and discourage development in environmentally-sensitive or scenic areas
- P.2** Identify and protect the Town's potential public ground water resource areas can be achieved through the adoption of flexible zoning methodologies/techniques
- P.3** Prohibit direct storm water discharges from all development into lakes, ponds, streams or wetlands
- P.4** Promote continued operation of farming activities and the preservation of prime agricultural soils

- P.5 Prohibit development in those environmentally-sensitive areas where slopes greater than or equal to 15% are present
- P.6 Ensure protection of wetland systems recognized as valuable natural resources that provide functions of flood storage, water quality protection, wildlife habitat, recreation, and pollution control by requiring compliance with provisions of state law and local ordinances
- P.7 Promote awareness and a sense of community through environmental education
- P.8 Promote the Town of West Greenwich as a regionally significant GREENWAY as the Town is located amidst adjacent communities that have formed a large greenbelt separating urban areas
where else do we talk of this?
- P.9 Identify and promote preservation of the Town's scenic vistas and visual diversity which are recognized as important to the rural character of West Greenwich
- P.10 Encourage and ensure preservation of wildlife habitat and rare species of flora and fauna as identified in the Natural Resource inventory
- P.11 Establish a local Zoning Map based on existing and proposed land use patterns, available infrastructure, and those environmental constraints to development as determined by the COMPOSITE constraint map(s) on-file in the Planning Office. Said maps shall be instrumental in allowing both the Conservation Commission and the Planning Board the opportunity to jointly recommend potential increases in minimum lot sizes based on the COMPOSITE map classification of "severe" constraints to development
- P.12 Identify and protect natural and cultural resources through subdivision and development plan review, design guidelines, and flexible development location
- P.13 Require 100-foot wide conservation easements for land in new subdivisions bordering water bodies--to enhance greenway corridors
- P.14 Strengthen the Earth Removal Ordinance to require land reclamation/restoration plans and to modify bonding requirements

- P.15 Place emphasis on the management of growth and development to enhance the traditional rural landscape and natural environment of the Town through flexible land use regulations and techniques (designed to guide growth and development in a direction that preserves the inherent natural landscape of the Town)
- P.16 Adopt changes to zoning/subdivision regulations to require all development applications to identify the on-site presence of natural resources and constraints to development (use of Development Impact Statement (DIS) ordinance would be beneficial in select applications. DIS's require applicants for development to submit a written report (DIS) that analyzes and maps potential adverse impacts on cultural and natural resources or other on-site constraints to development; it also requires the submission of a quantitative-qualitative cost-revenue Fiscal Impact Analysis (FIA) describing the cumulative impact the proposed development would have on the Town's service/infrastructure demands and financial resources)
- P.17 Preserve environmentally-sensitive areas to the greatest extent possible through flexible development options and alternatives in relation to the COMPOSITE constraint map(s)
- P.18 Consideration shall be given to utilizing flexible zoning/subdivision techniques such as cluster development, building setback variations, DIS, and unbuildable/expanded buffers as a means of preserving environmentally-sensitive areas
- P.19 Investigate the establishment of a public land trust as an entity which can acquire or receive donations of land to be preserved for the public good (those significant areas determined to protect rural character and/or provide wildlife habitat or public recreation)

RI Wildlife Action Plan and the Conservation Opportunity Areas

Safeguarding Habitat

There is a new source of information on wildlife and their habitats available to planners. While the Natural Heritage Areas depict estimated habitats of rare species and are an important piece of the planning and project-review puzzle, this information alone is insufficient to safeguard Rhode Island's full suite of species and habitats. As part of the 2015 RI WAP, RIDEM and The Nature Conservancy joined with other project partners, such as URI, ASRI, and RINHS to develop COAs.

The following information on COAs and incorporating habitat into Comprehensive Plans is summarized from the RI WAP Companion Guide.

Conservation Opportunity Areas (COAs)

COAs provide an inclusive, landscape-scale approach to wildlife conservation that is particularly relevant to the long-range planning efforts represented by municipal Comprehensive Plans. COAs help identify areas critical to preserving Rhode Island's rich fish and wildlife heritage. They are composed of three elements (**Core Natural Areas**, **Corridors**, and **Sites**) and are an important addition to a suite of mapping tools that continues to evolve with new and more specific information.

Core Natural Areas are large undeveloped habitat patches that do not contain roads and are targeted for land preservation and creative land use techniques to minimize fragmentation. Decision makers are urged to conserve the largest blocks of undeveloped land within their communities and to consult with neighboring communities when identifying COAs and seeking assistance to conserve pieces they couldn't on their own.

Corridors are pieces of land that connect Core Natural Areas. They often follow rivers, particularly in more urban areas, but may also be wetlands or other undeveloped lands. Wildlife must be able to move freely between undeveloped lands and across political boundaries. This "room to move" is particularly important given the uncertainties of climate change on future habitat conditions. Fish and wildlife rely on habitat connectivity to find scarce resources, preserve gene flow, and locate alternatives to lost habitat. Connectivity is vital to maintaining plant and animal diversity, so identifying corridors is critical.

Sites are smaller areas that have unique values deserving protection. Sites contain specialized habitats, rare species, wetlands, sensitive surface waters, or other features that communities should protect. Sites also contain high variety Ecological Land Units (ELUs). ELUs assess the physical diversity of the landscape as a surrogate for biological diversity. This is important because sufficient biological information is often lacking. ELUs also consider climate change because diverse areas are typically more resilient than the surrounding landscape. We can't know what species will occupy these areas in the future, but we can assume they'll continue to support a diversity of species even as the climate changes.

Municipalities and Local Comprehensive Plans

Comprehensive Plans are one of the most powerful tools municipalities have to protect land and ensure its appropriate management. If a municipality wishes to protect wildlife habitat

effectively, including the enactment of ordinances or regulations, it must address this topic in its comprehensive plan.

Section 6 of the Rhode Island General Laws' *Rhode Island Comprehensive Planning and Land Use Act* (§45-22.2-6) lists the required content of a comprehensive plan. The **most important sections for addressing wildlife conservation are within the goals and policies, maps, natural resources, and implementation sections.** The goals and policies section should include a long-term vision for natural resource conservation, including fish and wildlife Species of Greatest Conservation Need (SGCN) and habitat protection. The maps and natural resource sections should include *all* natural resources and be guided by the COAs and other mapping in RI WAP. **The natural resources section should not only provide an inventory of wildlife habitats and other resources, but should also address the local value of these wildlife habitats, as well as "goals, policies, and implementation techniques for the protection and management of these areas."** The implementation program should refer back to the wildlife conservation objectives and describe a plan to meet them, including any municipal actions required to adopt or amend any codes or ordinances to conform to the comprehensive plan. The zoning ordinance and map may need to be amended and the land use section should also address the process and schedule by which these amendments will be made to accommodate wildlife. For example, plans can be written or amended to include policies on protecting undeveloped habitat blocks.

Getting Started

Municipal planners should start by reviewing their existing comprehensive plan. What is said regarding goals for the community? Is habitat included? If not, goals and policies for protecting habitat should be added. Municipalities can use the COA mapping to identify areas where development or redevelopment may be directed in order to avoid sensitive habitat and preserve community character. A simple start could be to add language indicating that development should be directed away from COAs and that COAs should be protected to the extent possible. Town planners can also note if there are any future road or utility plans for undeveloped blocks of land, as town infrastructure policies can contribute significantly to habitat fragmentation, and it is more economically and environmentally sound to avoid areas that do not have existing infrastructure.

Incorporating Habitat into Comprehensive and Open Space Plans

RI municipalities are required to prepare an open space inventory for their comprehensive plans. Using the mapping resources above, municipalities can work with local land trusts and other conservation organizations to identify parcels adjacent to already-conserved properties or public lands that, taken together, would protect new core natural areas or expand existing ones. The goal is to protect a range of resources, including habitat, unique or rare geologic or landscape features, water quality, historical sites, scenic views, important landscapes, farms, and trail systems, and these resources often overlap. Include the RI WAP COA or go a step further and prioritize your town's individual needs based on specific habitat and other natural resource information.

For further detail see *Appendix: Wildlife Habitat Protection Checklist* in the RI WAP Companion Guide.