

NATURAL RESOURCES

Introduction

Bristol's natural resources contribute significantly to the community's environmental health, scenic character, quality of life, and economic vitality. As a peninsula extending into Narragansett Bay, Bristol's identity is closely tied to its coastal setting, water resources, natural landscapes, and open spaces. The protection and stewardship of these resources have long been priorities for the Town and are reflected in ongoing open space preservation initiatives, watershed planning efforts, stormwater improvements, urban forestry programs, and partnerships with conservation organizations.

Bristol's significant natural resources include:

- Narragansett Bay, Mount Hope Bay, Bristol Harbor, and associated coastal waters;
- Wetlands, coastal marshes, and shoreline habitats;
- The Silver Creek, Tanyard Brook, Sowams, Upper East Passage, Mount Hope Bay, and Barrington-Warren River watershed systems;
- Natural Heritage Areas, significant habitat areas, and approximately 90 acres of mapped salt marsh habitat;
- Approximately 1,326 acres (21% of the Town's land area) of permanently protected open space and conservation lands;
- Approximately 2,578 acres of Prime Farmland soils and 615 acres of soils of statewide importance; and
- Bristol's urban forest and tree canopy.

These resources contribute to biodiversity, water quality, recreation, tourism, agriculture, and community character while supporting the long-term sustainability of the Town.

This element provides an overview of Bristol's natural resources and establishes a framework for their continued protection and stewardship. Issues related to flooding, sea level rise, climate adaptation, and natural hazard mitigation are addressed in greater detail in the Natural Hazards and Climate Change Element.

Implementation Progress Since 2016

Since adoption of the 2016 Comprehensive Plan, Bristol has made significant progress toward protecting natural resources, improving water quality, and advancing environmental stewardship initiatives. Notable accomplishments include:

- Continued implementation of Low Impact Development (LID) requirements through the Subdivision and Development Review Regulations to reduce stormwater runoff and improve water quality.

- Completion of stormwater and drainage improvement projects within the Silver Creek and Tanyard Brook watersheds to address flooding and water quality concerns.
- Ongoing implementation of the Municipal Separate Storm Sewer System (MS4) program, including public education and outreach regarding stormwater management and pollution prevention.
- Preservation of agricultural land through the acquisition of development rights on the Fales and Pagnano Farms.
- Continued participation in the National Flood Insurance Program Community Rating System (CRS), resulting in reduced flood insurance premiums for eligible property owners.
- Continued implementation of municipal tree planting, tree inventory, and urban forestry programs through the Conservation Commission and Tree Commission.
- Ongoing acquisition and protection of open space and environmentally sensitive lands consistent with the Town's Open Space Plan.
- Participation in regional watershed planning and water quality initiatives affecting the Bristol-Kickemuit River, Barrington-Palmer-Warren River, Silver Creek, and Tanyard Brook watersheds.
- Continued protection and enhancement of public access to coastal resources, conservation lands, and waterfront areas.

Natural Resource Maps

Map NR1: Wetlands displays the location, extent, and classification of wetlands within Bristol. Wetlands include freshwater and coastal systems that provide important ecological functions such as flood storage, water quality improvement, groundwater recharge, and wildlife habitat. Data is sourced from the U.S. Fish and Wildlife Service National Wetlands Inventory.

Map NR2: Agricultural Soils identifies the location of approximately 2,578 acres of Prime Farmland soils and 615 acres of soils of statewide importance within Bristol. These soils represent lands with agricultural potential and help inform farmland preservation efforts and land use planning decisions.

Map NR3: Habitats illustrates significant habitat areas and ecological communities within Bristol. Approximately 2,603 acres of designated Natural Heritage Areas and approximately 90 acres of mapped salt marsh habitat are shown, along with deciduous forests, woodlands, plantation forests, and ruderal forests.

Map NR4: Water Resources displays Bristol's water resources, including streams, ponds, wetlands, watersheds, Bristol Harbor, Mount Hope Bay, Narragansett Bay, and other coastal waters. As a peninsula community, Bristol's natural systems and community character are closely tied to these resources.

Map NR5: Protected Open Space identifies approximately 1,326 acres of permanently protected open space and conservation lands within Bristol, representing approximately 21 percent of the Town's land area.

Water Resources

Water resources are among Bristol's most significant natural assets. The Town is bordered by Narragansett Bay, Mount Hope Bay, and Bristol Harbor, while numerous streams, wetlands, and coastal resources contribute to the ecological health of the community.

Bristol contains portions of several watershed systems, including the Silver Creek, Tanyard Brook, Sowams, Upper East Passage, Mount Hope Bay, and Barrington-Warren River watersheds. These watershed systems influence local water quality, drainage patterns, habitat resources, and coastal conditions throughout the community.

The Town has participated in watershed planning initiatives and implemented stormwater management projects designed to reduce polluted runoff, improve water quality, and address localized drainage concerns. Continued implementation of stormwater management practices and low impact development techniques will support the long-term protection of Bristol's water resources and Narragansett Bay.

Management of Bristol Harbor is guided by the Town's Harbor Management Plan, which supports water quality protection, resource stewardship, navigation, and public access.

Wetlands and Coastal Resources

Wetlands provide valuable environmental functions, including flood storage, groundwater recharge, water quality improvement, erosion control, and wildlife habitat. Bristol contains a variety of freshwater and coastal wetlands, including estuarine and marine wetlands, freshwater emergent wetlands, freshwater forested and shrub wetlands, freshwater ponds, and riverine systems.

Coastal wetlands and shoreline habitats support fisheries, migratory birds, shellfish resources, and other wildlife species. These areas also contribute to the scenic character of the community and provide opportunities for passive recreation and environmental education.

The preservation and responsible management of wetlands and coastal resources remain important priorities for maintaining ecological functions, protecting habitat, and sustaining environmental quality.

Open Space and Conservation Lands

Protected open space provides environmental, recreational, scenic, and educational benefits throughout Bristol. Conservation lands help protect natural habitats, water resources, scenic landscapes, and community character while providing opportunities for passive recreation and environmental education.

Bristol contains approximately 1,326 acres of permanently protected open space, representing approximately 21 percent of the Town's land area. Protected lands include Colt State Park, Blithewold Mansion and Gardens, Mt. Hope Farm, Audubon Society properties, Waypoiset Preserve Trust lands, Town-owned conservation lands, recreation lands, and privately protected open space parcels.

The Town has a long history of supporting open space preservation through local bond initiatives, conservation partnerships, and land protection efforts. The Town's Open Space Plan serves as the primary guide for conservation priorities and future land acquisition efforts.

Agricultural Resources

Agricultural lands contribute to Bristol's rural character, cultural heritage, local food production, and open space network. Although agriculture occupies a relatively small portion of the community today, remaining farmland represents an important natural resource.

Bristol contains approximately 2,578 acres of Prime Farmland soils and 615 acres of soils of statewide importance. While much of the Town has developed, significant agricultural soil resources remain, particularly in the northern and southern portions of the community.

The Town has supported farmland preservation through the acquisition of agricultural development rights and participation in state and federal farmland protection programs. The preservation of remaining agricultural lands helps maintain open space, scenic landscapes, and opportunities for local agriculture.

Tree Canopy and Urban Forestry

Trees and forested areas provide numerous environmental benefits, including improved air quality, stormwater management, shade, wildlife habitat, carbon sequestration, and aesthetic value. Street trees and landscaped public spaces contribute significantly to Bristol's character and visual appeal.

Bristol has maintained an active urban forestry program for many years and has been recognized as a Tree City USA community. The Town's Conservation Commission and Tree Commission oversee tree planting, maintenance, and stewardship activities designed to enhance Bristol's urban forest and tree canopy.

Bristol completed a Strategic Tree Canopy Plan in 2024. The assessment found that approximately 44 percent of the Town's land area is covered by tree canopy, representing approximately 2,718 acres of canopy cover. The Plan identified opportunities to expand canopy coverage, improve stormwater management, reduce urban heat island effects, improve air quality, and enhance community resilience. The Plan established a goal of maintaining at least 44 percent canopy coverage while increasing overall canopy coverage to 45 percent over the next ten years.

Key recommendations of the Plan include:

- Plant trees in rights-of-way where canopy coverage is less than 10 percent.
- Recognize trees as community infrastructure.
- Inventory heritage trees and champion trees.
- Develop a 5- to 10-year street tree planting plan.
- Retrofit properties with trees and green infrastructure to reduce impervious cover.

Continued investment in urban forestry initiatives will help improve environmental quality, community character, and resilience.

Wildlife Habitat and Biodiversity

Natural habitats throughout Bristol support a variety of plant and animal species. Bristol contains approximately 2,603 acres of designated Natural Heritage Areas, representing approximately 41.4 percent of the Town's land area, and approximately 90 acres of mapped salt marsh habitat.

Significant habitat areas include salt marshes, coastal habitats, forested areas, and designated Natural Heritage Areas identified by the Rhode Island Natural Heritage Program. These habitats provide important ecological functions and contribute to regional biodiversity.

The protection of habitat areas and ecological communities helps maintain healthy ecosystems, supports wildlife populations, and preserves the environmental resources that contribute to Bristol's quality of life.

Natural Resource Issues and Opportunities

Bristol's natural resources face a variety of challenges associated with historic development patterns, development pressures, stormwater runoff, invasive species, habitat fragmentation,

and the effects of climate change. Continued development and redevelopment have the potential to affect water quality, wetlands, habitat areas, and coastal resources if not properly managed.

Stormwater runoff remains a significant concern for local watersheds and coastal waters because it can transport pollutants, sediments, and nutrients into surface waters. The Town has made substantial investments in stormwater infrastructure and watershed restoration projects; however, continued efforts will be necessary to protect water quality and ecological functions.

Habitat fragmentation and the loss of undeveloped land can reduce ecological connectivity and biodiversity. Conservation of significant habitat areas, open spaces, and wildlife corridors will remain important priorities. Climate change, sea level rise, and increased coastal flooding may also affect wetlands, salt marshes, and coastal habitats over time. These issues are discussed in greater detail in the Natural Hazards and Climate Change Element.

Bristol participated in the Rhode Island Municipal Resilience Program (MRP), which identified local resilience priorities related to flooding, coastal resources, stormwater management, and natural systems. Many of the recommendations developed through the MRP process support the protection and enhancement of natural resources while also improving community resilience.

Conservation Priorities

The Town's conservation priorities include:

- Protection of significant habitat areas and Natural Heritage Areas;
- Preservation of prime farmland and soils of statewide importance;
- Protection of wetlands, coastal marshes, and riparian corridors;
- Conservation of remaining undeveloped shoreline areas;
- Expansion of ecological connections between protected open spaces;
- Acquisition of environmentally sensitive and flood-prone properties where conservation supports multiple public benefits; and
- Preservation of lands identified as priorities in the Town's Open Space Plan.

These priorities help guide conservation initiatives, land acquisition efforts, grant applications, and partnerships with conservation organizations and state agencies.

Environmental Stewardship and Education

Environmental stewardship is strengthened through public awareness, education, and community involvement. Bristol has partnered with schools, nonprofit organizations,

environmental groups, and volunteers to promote conservation, recycling, water quality protection, and environmental education.

Programs that encourage residents to understand and care for local natural resources help foster long-term stewardship and support community conservation goals. Continued partnerships and educational initiatives will remain important components of Bristol's natural resource protection efforts.

Partnerships among municipal boards, schools, nonprofit organizations, and volunteers help foster long-term conservation of natural resources and encourage residents to understand and care for the land and water resources that contribute to community character and quality of life.

Natural Resource Protection Tools

Natural resources in Bristol are protected through a combination of federal, state, and local regulations, land conservation initiatives, and stewardship programs. Key regulatory tools include RIDEM freshwater wetlands regulations, CRMC coastal regulations, municipal zoning requirements, the Town's Subdivision and Development Review Regulations, Low Impact Development (LID) standards, stormwater management requirements, and floodplain regulations. Non-regulatory approaches include conservation land acquisition, open space preservation initiatives, urban forestry programs, watershed planning efforts, and public education and outreach programs.

The Town will continue to evaluate the effectiveness of these tools and pursue updates to regulations, programs, and practices as necessary to support the long-term protection of natural resources and environmental quality.

Consistency with State Plans

This Element is consistent with the Rhode Island State Guide Plan, including *Land Use 2025: Rhode Island's State Land Use Policies and Plan*, the *Rhode Island Greenspace and Greenways Plan*, and *Rhode Island's Wildlife Action Plan*. The goals, policies, and implementation actions support the protection of water resources, habitat areas, wetlands, agricultural soils, open space, and other significant natural resources while advancing statewide conservation and environmental stewardship objectives.

Goals and Policies

Goal NR-1

Protect and enhance Bristol's natural resources, ecological systems, and environmental quality for present and future generations.

Policies

- A. Protect wetlands, floodplains, riparian corridors, wildlife habitat, and other environmentally sensitive resources through land use regulations, conservation efforts, and development review procedures.
- B. Protect water resources, wetlands, wildlife habitat, and other environmentally sensitive areas from adverse impacts associated with development and redevelopment.
- C. Protect and enhance biodiversity and ecological functions through the conservation and stewardship of natural resources.
- D. Encourage land use and development patterns that minimize impacts to natural resources and environmental quality.
- E. Continue to support local, state, and regional efforts to identify, protect, and restore significant natural resources and habitats.

Goal NR-2

Protect and improve the quality of Bristol's water resources, coastal resources, and watershed systems.

Policies

- A. Support watershed-based planning and management efforts that protect and improve water quality.
- B. Continue to implement stormwater management practices and low impact development techniques that reduce runoff and improve water quality.
- C. Protect wetlands, coastal resources, and riparian areas that contribute to water quality, habitat protection, and ecological health.
- D. Promote public awareness and stewardship of Bristol's water resources and coastal environment.

E. Incorporate water quality improvements, green infrastructure, low impact development practices, and nature-based solutions into municipal infrastructure, capital improvement, and redevelopment projects where feasible.

Goal NR-3

Preserve and expand Bristol's network of open spaces, conservation lands, agricultural resources, and natural landscapes.

Policies

A. Implement the Bristol Open Space Plan and periodically update conservation priorities as needed.

B. Continue to support the protection of significant open space, agricultural land, and environmentally sensitive properties through acquisition, conservation easements, development rights programs, and other land conservation tools.

C. Protect and maintain public access to coastal and natural resources where appropriate.

D. Support partnerships with land trusts, conservation organizations, state agencies, and private property owners to advance conservation objectives.

E. Protect and enhance ecological connectivity between conservation lands, wetlands, waterways, and habitat areas where feasible.

Goal NR-4

Promote environmental stewardship, education, and sustainable management of Bristol's natural resources.

Policies

A. Support environmental education programs that increase public awareness of natural resource protection, water quality, recycling, and conservation practices.

B. Continue municipal efforts to maintain and expand Bristol's urban forest and tree canopy through planting, maintenance, and stewardship programs.

C. Encourage volunteer participation and partnerships that support environmental conservation and stewardship initiatives.

D. Promote environmental stewardship through partnerships with schools, nonprofit organizations, conservation groups, and community volunteers.

E. Incorporate natural resource protection considerations into municipal planning, capital improvements, and development review processes.

F. Support implementation of the recommendations of the Town's Tree Canopy Assessment and pursue opportunities to expand and sustain Bristol's tree canopy, particularly in areas with limited existing canopy coverage.

Supporting Plans

[1.13 Bristol RI Tree-Canopy webspreads.pdf](#)