

## EXECUTIVE SUMMARY

This Natural Resource Inventory (NRI) report was prepared by FB Environmental (FBE) for the Town of Rye and the Rye Conservation Commission to provide a detailed description and analysis of the town's natural resources. This NRI was developed to be useful to all municipal departments – not just the Conservation Commission. Results presented herein demonstrate that the Town of Rye contains abundant, diverse, and valuable natural resources that significantly contribute not only to the ecological richness and biodiversity of the town, but also the quality of life for the community. The Natural Resource Inventory will serve as a tool to help guide future municipal planning and conservation efforts throughout the town.

This NRI is not and should not be viewed as a conservation plan of action. Rather, it is an encyclopedia of information based on the best currently available data, with a measure of interpretation and preliminary recommendations about what is important to conserve from an ecological perspective. The NRI is a baseline characterization, and thus comprises a beginning of what should be an ongoing process of updates and refinements.

As part of the NRI process, FBE compiled and created relevant Geographic Information Systems (GIS) shapefiles which provide a means to visualize and further analyze Rye's natural resources information.

Fifteen maps were created to illustrate Rye's natural resources and character. These maps depict the town's watersheds and surface water resources, geology and groundwater resources with their potential pollutant sources, floodplains and sea level rise inundation areas, flood mitigation areas, salt marsh migration projections, water quality impairments and use restrictions, forest resources, prime wildlife habitat and priority areas for conservation, forest soils, soil limitations, prime farmlands, scenic resources, conservation lands, and areas of unfragmented land.

The Town of Rye has experienced steady population growth and development since the 1960s. There are currently over 1,930 acres of conserved land within the town and this number is continuously growing. Much of this conserved land consists of Appalachian Oak-Pine, salt marsh, temperate swamp, and wet meadow/shrub wetland land habitats. Conserving these habitats helps preserve important ecosystems and ecosystem functions such as stormwater and flood control and the filtering of pollutants and increases recreation areas and scenic vistas.

Rye has four named streams (Bailey Brook, Berry's Brook, Seavey Creek, and Witch Creek) totaling 11.5 miles of waterways, and almost 26 miles of unnamed streams (including the two branches of what is locally known as Parsons Creek). Many of these begin as freshwater headwater or tributaries that become brackish as they approach harbors or the Atlantic Ocean. There are also 114 acres of ponds in Rye. The largest, Eel Pond, spans 39 acres near the southeastern corner of Rye. Marsh Pond is located near the intersection of Brackett Road and Parsons Road. Other major ponds are found along Bailey's Brook, including Burke Pond, Brown's Pond, and Locke Pond. The major wetland systems in Rye surround Rye's streams. There are an estimated 1,654 acres of freshwater wetlands and 909 acres of saltwater wetlands in Rye. The salt marshes serve as an interface between the beaches and marshes and the uplands. Rye's wetlands and floodplains provide flood storage and offer pollutant attenuation. Approximately a quarter of Rye is within the 100- or 500-year floodplain. 2,113 acres (including some wetlands and floodplains) provide flood

risk mitigation and pollutant attenuation (3,741 acres). These areas will help lessen the impacts of sea level rise and increasing storm intensity.

Most of Rye is served by public water suppliers including the Rye Water District and Aquarion Water Company. Water is drawn from the stratified drift aquifer in Rye and bedrock wells. The stratified drift aquifer covers an area of 1,696 acres in the southwest area of town.

Using numerous spatial datasets from the New Hampshire Geographically Referenced Analysis and Information Transfer System (NH GRANIT), United States Geological Survey (USGS), and FBE, FBE identified areas within the town having the highest natural resource values. In 2020, the New Hampshire Fish and Game Department (NHFGD) conducted a habitat condition analysis to identify areas of highest habitat and ecologically intact areas, which are identified in this NRI as “Prioritized Habitat Blocks.” The six contiguous prioritized habitat blocks, or prioritized conservation areas, identified are: Seavey Creek/Fairhill Swamp/Wallis Marsh, Lower Berry’s Brook, Upper Berry’s Brook North, Awcomin Marsh, Packer Bog/Upper Berry’s Brook South, and Bailey Brook.

These priority conservation areas encompass much of the town’s mapped wetlands and streams and areas mapped as part of NHFGD’s 2020 Wildlife Action Plan which identified them as valuable habitat, in addition to larger areas of unfragmented land, some of which are already protected. In total, these six priority conservation areas cover approximately 3,484 acres, or 41% of Rye’s total area.

The greatest threat to the natural resources and ecology of the town of Rye is habitat loss and alteration resulting from development and from climate change altering the landscape. It’s important to note, however, that preservation of entire conservation priority areas is not feasible, nor does FBE recommend it. Much of the mapped areas are privately-owned lands that contribute, through taxes, to the economic stability of the town. Rather, a balanced approach to conservation and development which incorporates a suite of land use planning and conservation tools is recommended, as careful attention to growth in Rye will help to ensure sound stewardship of the town’s natural resources.



Rye Harbor  
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