

are a key determinant in the overall condition of the river system (Ohio EPA, 2015). Maintaining good water quality in headwater streams is also critical to overall watershed health.

2.2.2 FRESHWATER AND TIDAL WETLANDS

Wetlands are an integral part of Rye’s natural resources. They remove excess nutrients and sediment from water, slow the flow of and store floodwaters, promote groundwater infiltration, and provide habitat for a vast array of vegetation and wildlife. Wetlands also provide recreational, educational, and research opportunities while adding to the visual resources of the town (US Fish & Wildlife Service, 2021).

The National Wetlands Inventory (NWI) administered by the US Fish and Wildlife Service is the most important national-scale data source for wetland maps and classifications. The principal types of wetlands with standing water in the spring have been mapped from aerial photos and can be easily viewed, downloaded, and shared online as GIS files. The resulting NWI maps contain errors of omission (and less frequently, errors of commission) and therefore do not depict all wetlands in a given area, as some are not easily detected by examining aerial imagery, especially small wetlands and vernal pools. Vernal pools are seasonal depressional wetlands that typically fill during the spring or fall. They are often small and under forest canopy which makes them difficult to detect on aerial imagery. Therefore, it is likely that NWI maps underestimate the number of wetlands in Rye. While these inaccuracies are known to exist in NWI data, the NWI maps nevertheless are very useful in serving as a baseline reference to locate wetlands.

There is a diversity of wetland types in Rye, including palustrine, lacustrine, estuarine, and marine wetlands (see inset to the right). Rye contains approximately 2,563 acres of mapped wetlands, representing approximately 30% of the town’s total area (Table 2; Appendix A, [Map 6](#)). See Section 4.1.2 for a description of hydric soils in Rye.

Wetland Types Defined

Palustrine: Non-tidal, freshwater, wetlands dominated by emergent and woody vegetation (trees, shrubs, ferns, forbes, mosses, or lichens). Or, wetlands that contain the following: (1) < 20 acres, (2) lacking active wave-formed or bedrock shoreline features, (3) water depth is < 8.2 ft, and (4) salinity from ocean-derived salt water is < 0.5 ppt.

Lacustrine: Wetlands that are located in a topographic low point, contain ≤ 30% of emergent vegetation, are ≥ 20 acres. If active wave-formed or bedrock shoreline features are present or the maximum water depth is > 8.2 ft, a wetland < 20 acres can be classified as Lacustrine. These wetlands can be either tidal or non-tidal as long as salinity concentrations from ocean waters are < 0.5 ppt.

Estuarine: Deepwater tidal habitats semi enclosed by land with unobstructed or sporadic access to an open ocean. Estuarine waters consist of mixing freshwater and marine waters.

Marine: Areas of open ocean exposed to wave action and tidal fluctuations. Salinity concentrations are > 30 ppt. Examples include shallow bays and coasts with exposed rocky islands.

(US Fish & Wildlife Service, 2021)

Wetlands in the United States are typically classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, Carter, Golet, & LaRoe, 1979). This water resource classification system was developed by the United States Fish and Wildlife Service (USFWS) and is commonly referred to as “Cowardin Classification” ([Appendix B](#)). The Cowardin