

State of Narragansett Bay and Its Watershed
2017 Technical Report

● *Watershed Ecosystem Condition Indicators*

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INTRODUCTION

The Narragansett Bay Watershed comprises four River Basins: the Blackstone River Basin, the Pawtuxet River Basin, the Coastal Narragansett Bay Basin, and the Taunton River Basin. These four basins differ in topography, hydrology, and land use histories, leading to differences in ecosystem composition and quality. The Blackstone River Basin has the highest elevation, with many streams and rivers fragmented by dams from the industrial era. The Pawtuxet River Basin has moderate elevations and is highly forested in its upper reaches to protect critical water supplies. The Coastal Narragansett Bay Basin is highly developed and represents those small rivers and streams that discharge directly to the Bay. Finally, the Taunton River Basin has low-lying lands and few dams, which enables salt and fresh water to mix in a 20-mile-long unobstructed estuary.

Natural lands serve as buffers that protect habitat for stream invertebrates and freshwater fish, as well as water quality. However, the Narragansett Bay Watershed is ubiquitously stressed by urbanization,

which increases impervious cover, changes land use, increases nutrient loadings, degrades habitats, and alters hydrology, as discussed in other chapters of this report. Climate change is exacerbating these issues through changing species community structure, increasing water temperatures, and increased stormwater runoff.

This section focuses on four indicators of the condition of the Narragansett Bay Watershed ecosystem: stream invertebrates, water quality conditions for aquatic life, freshwater fish communities, and open space. These indicators represent key habitats, culturally and economically important animal groups, and physical characteristics of the Watershed. The indicators provide information on the quality of the Watershed's ecosystem and point to areas that require restoration or further protection. The data show that ecosystem condition varies greatly from place to place in the Watershed and that opportunities exist to better protect natural lands around the Bay.



Photo: Upper Wood River, Exeter, RI (Ayla Fox)