OYSTER-BELLAMY RIVERS SUBWATERSHED

PISCATAQUA REGION ENVIRONMENTAL PLANNING ASSESSMENT 2015

Oyster-Bellamy Rivers Subwatershed, including: Durham, Madbury, Lee



www.prepestuaries.org

Oyster-Bellamy Rivers Subwatershed

INTRODUCTION

The Bellamy River watershed encompasses 33.9 sq. mi and is a regional water resource, supplying significant portions of the water used by the cities of Dover and Portsmouth outside the watershed as well supporting ecosystems inside the watershed in Madbury (Fargo 2002). The Bellamy watershed starts in Barrington.

The Oyster River watershed is approximately 31 sq. mi. The headwaters originate in Barrington, the main stem flows east and southeast through Madbury, Lee and then Durham before emptying into the Great Bay near the entrance to Little Bay. Its overall length is approximately 17 miles with 14.1 miles above the head of tide dam (Mill Pond Dam) and 2.9 miles that consists of tidal estuary from Durham to the Great Bay. The Oyster River and all its tributaries are used as a water supply for UNH and the Town of Durham (VHB 2014).

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Balance is key. PREP recommends no more than 10% impervious cover and no less than 20% conservation land in a watershed.



Impervious Cover

There is an increasing trend of impervious cover for each of the three towns in the Oyster River/Bellamy River Watershed. This trend is consistent with the Great Bay Watershed as a whole. Durham—as of 2010—is just below the recommended percentage of impervious cover of 10% as maximum by NH DES with a total of 9.9% impervious cover.

Nitrogen Loading

PRIMARY CONTRIBUTOR: ATMOSPHERIC DEPOSITION

contributes 51,016 pounds of nitrogen per year to the Oyster River/Bellamy River Watershed, and nearly 50 percent—or 25,036.9 pounds per year—is deposited on natural vegetation within the watershed. The remaining 50 percent is split between estuarine waters, disconnected impervious areas, lakes and rivers, connected impervious areas, agriculture, residential lawns, and golf courses, parks, and sports fields in descending order. SECOND CONTRIBUTOR: ANIMAL WASTE contributes 32,316.3 pounds of nitrogen per year to the Oyster River/Bellamy River Watershed, and roughly 78 percent—or 25,326.1 pounds per year—comes from agriculture. The remaining 22 percent is split between agriculture, disconnected impervious area, connected impervious area, residential lawns, septic greater than 200 meters from a waterway, and septic within 200 meters from a waterway.

For more info please visit www.PREPestuaries.org/PREPA



Report Cards

Freshwater Wetland Protection

- 1. Designated "prime" wetlands (NH) or "significant" wetlands (ME), and adopted local regulations to protect these wetlands?
- 2. Regulations that offer explicit protection of vernal pools?
- 3. No soil disturbance or No Vegetation Disturbance buffer requirement that is >= 100 feet?
- 4. Septic Setback requirement that is >= 100 feet?
- 5. Building Setback requirement that is >= 100 feet?
- 6. Fertilizer Application Setback requirement that is >= 100 feet?



Stormwater Management

- 1. Stormwater management regulations?
- 2. Less than or equal to 9% Impervious Cover?
- 3. Minimum area of soil disturbance that "triggers" application of the municipality's stormwater management regulations less than or equal to 20,000 sq. ft.?
- 4. Cap of 10% effective impervious cover (EIC) for new development in residentially zoned lots of 1 acre or more?
- 5. Existing regulations require the use of Low Impact Development (LID) techniques to the maximum extent practicable for new/re-development?
- 6. Stormwater management regulations reflect the minimum design criteria for water quality volume/ flow (WQV/WQF), groundwater recharge volume (GRV), and peak flow control defined in the NH Stormwater Management Volume 2?



Shoreland Buffers and Setbacks

2nd – 4th Order Streams and Lakes/Ponds

- 1. No Vegetation Disturbance or Managed buffer requirement that is >= 100 feet?
- 2. Septic Setback requirement that is >= 100 feet?
- 3. Building Setback requirement that is >= 100 feet?
- 4. Fertilizer Application Setback requirement that is >= 100 feet?

1st Order Streams

- 5. No Vegetation Disturbance or Managed buffer requirement that is >= 75 feet?
- 6 Septic Setback requirement that is >= 100 feet?
- 7. Building Setback requirement that is >= 100 feet?
- 8. Fertilizer Application Setback requirement that is >= 100 feet?



Climate Change

- 1. Has the municipality completed some form of climate change vulnerability assessment?
- 2. Has the municipality completed some form of climate change adaptation planning effort?
- 3. Has the municipality adopted regulatory changes intended to reduce the municipality's vulnerability to potential climate change impacts?



To explore specific data, please visit www.PREPestuaries.org/PREPA

Actions by Community

The 2015 PREPA provides a comprehensive review of the current state of municipal regulations in the 52 communities in the Piscataqua Region watershed. Although most communities haven taken some steps to protect their natural resources, more work is needed by **every community** in the Oyster and Bellamy watersheds. Community Summary Buffers should be the first priority for the communities in the Oyster-Bellamy Rivers Subwatershed. Lee has met or exceeded the suggested protective standards for buffers on 1st-4th order streams, lakes and ponds. Durham and Madbury have an obligation to increase buffer requirements for waterbodies in their communities.



Resources for implementing these actions can be found on the website www.PREPestuaries.org or contacting PREP at prep.assistance@unh.edu

RECOMMENDED ACTIONS

The actions table is not meant to be exhaustive but does reflect a menu of prioritized recommendations for communities. Actions are directly related to the questions found on the PREPA assessment forms and reflects both regulatory and non-regulatory actions. Top Priority Action
Second Priority Action
Third Priority Action
Fourth Priority Action



Bellamy River with a winter sunset



The full PREPA report features deeper explorations of the data region-wide and gives greater context to the issues.

TAKE ACTION

Resources for implementing these actions can be found on the website www.PREPestuaries.org or contacting PREP at prep.assistance@unh.edu



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