



# PREP

Piscataqua Region Estuaries Partnership

## **“PREPAring” for Climate Change**

**Piscataqua Region Environmental Planning Assessment  
(PREPA)**

**Abigail Gronberg, Project Assistant**

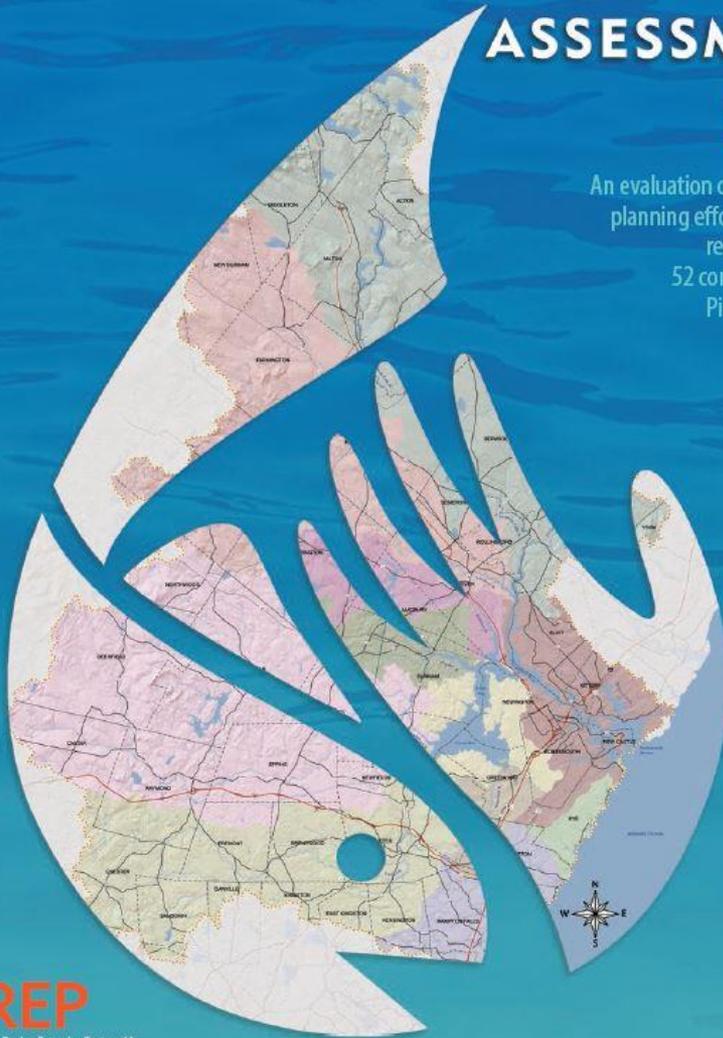
**Coastal Climate Summit  
June 19, 2015**



# PISCATAQUA REGION ENVIRONMENTAL PLANNING ASSESSMENT

**2015**

An evaluation of environmental  
planning efforts and land use  
regulations for the  
52 communities in the  
Piscataqua Region.



University of New Hampshire  
Wesmith Hall, 131 Main Street  
Durham, NH 03824  
[www.prepestuaries.org](http://www.prepestuaries.org)

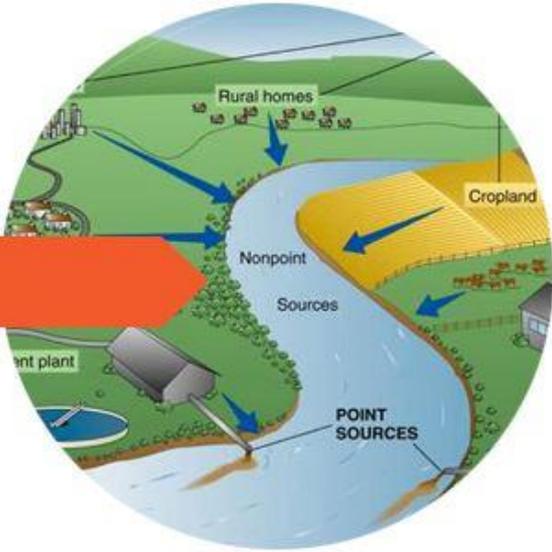
- **First PREPA in 2010**
- **Update initiated in early 2014**
- **Assessment forms developed with partners**
- **Sent out to 52 towns with RPC help**
- **Interview town officials & data input**

Piscataqua Region Environmental Planning Assessment (PREPA) Form

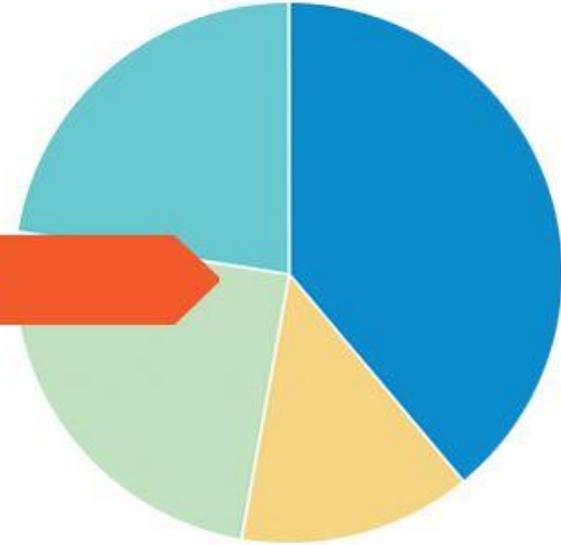
Municipality Name: Berwick, ME		Regional Planning Commission for municipality: SMPDC		
Name of person completing form: Dave Carpenter				
Ordinances, regulations, reports reviewed as part of assessment (provide a reference number for each document, and write this number in the "Doc. Ref #" column to cite the source of information used to answer each applicable question): Land Use Ordinance 01-001 Comprehensive Plan 01-002 Subdivision Regulations 01-003				
Name(s) of municipal contacts (i.e. code enforcement officer, Cons. Com. Chair, Planning Board Chair, etc.) interviewed: Planner: John Stoll				
Name(s) of municipal staff (if any) that help the municipality with environmental planning issues. Please note the percent (%) of time that their position allows them to work specifically on environmental planning. Planner: John Stoll @ 20%				
<b>Directions:</b> Fill out one data form per municipality. Fill out the form electronically - no handwritten forms please. For yes or no questions, please check one answer. For blanks without a yes or no, write in the appropriate date, distance, checkmark, or narrative description as prompted by the question. Most questions apply to municipalities in both Maine (ME) and New Hampshire (NH). Questions that only apply to one state are flagged with a (ME) or (NH). Each grey box corresponds to an area that can be checked or can have a narrative answer typed into it.				
<b>Conservation Fundamentals</b>				
	Check One (yes or no)		Doc.Ref. #	Document URL or Additional Comments:
Does the municipality have a Conservation Commission?	yes <input type="checkbox"/>	no <input checked="" type="checkbox"/>		
Does the municipality have a Code Enforcement Officer?	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	01-001	www.berwickmaine.org
Does the municipality have a completed Natural Resource Inventory (NRI) as part of its Comprehensive or Master Plan?	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	01-002	
Year Adopted:				
Natural Resource Chapter in Master Plan (NH)?	yes <input type="checkbox"/>	no <input type="checkbox"/>		
Year Adopted:				
Comprehensive Plan locally approved (ME)?	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	01-002	
Year Approved:	1999			
Comprehensive Plan has state consistency approval (ME)?	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>		
Year Approved:	1999			

# Three Sections

Threats



Findings



Actions

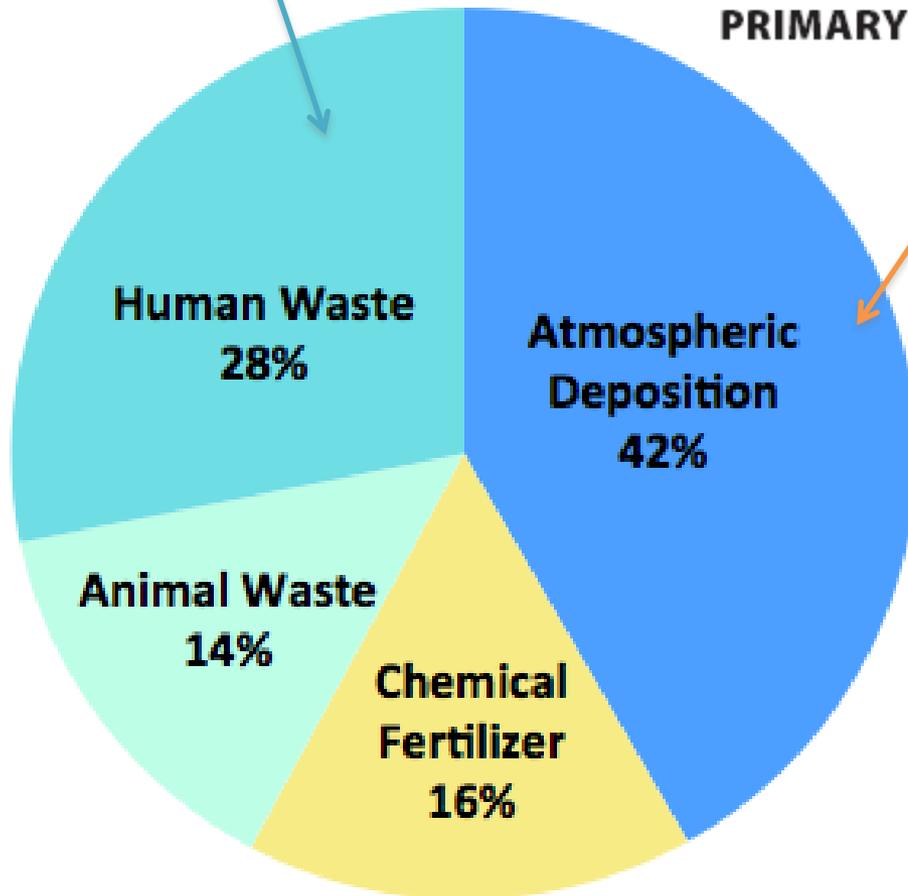


# THREATS: NITROGEN LOADING

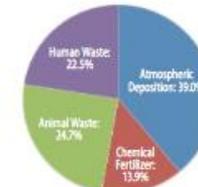
## Non-Point Sources

SECOND CONTRIBUTOR: **HUMAN WASTE**

PRIMARY CONTRIBUTOR: **ATMOSPHERIC DEPOSITION**

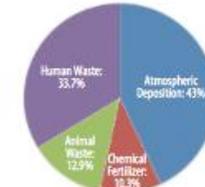


### THREATS: NITROGEN LOADING



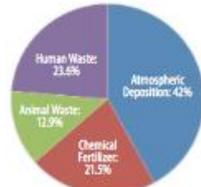
OYSTER & BELLAMY RIVERS WATERSHEDS

Figure 11 Breakdown of nitrogen inputs to the Oyster/Bellamy River Watersheds.



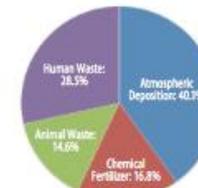
LAMPREY RIVER WATERSHED

Figure 13 Breakdown of nitrogen inputs to the Lamprey River Watershed.



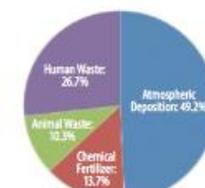
WINNICUT & COASTAL WATERSHED

Figure 17 Breakdown of nitrogen inputs to the Winnicut/Coastal Watershed.



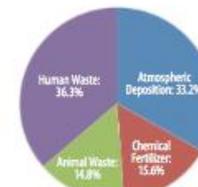
COCHECO RIVER WATERSHED

Figure 12 Breakdown of nitrogen inputs to the Cocheco River Watershed.



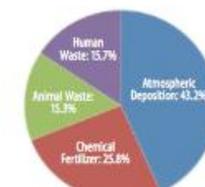
SALMON FALLS RIVER WATERSHED

Figure 15 Breakdown of nitrogen inputs to the Salmon Falls River Watershed.



EXETER & SQUAMSCOTT RIVERS WATERSHED

Figure 14 Breakdown of nitrogen inputs to the Exeter/Squamscott River Watershed.



HAMPTON-SEABROOK WATERSHED

Figure 16 Breakdown of nitrogen inputs to the Hampton-Seabrook Watershed.

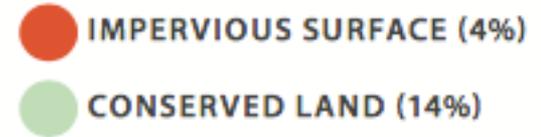
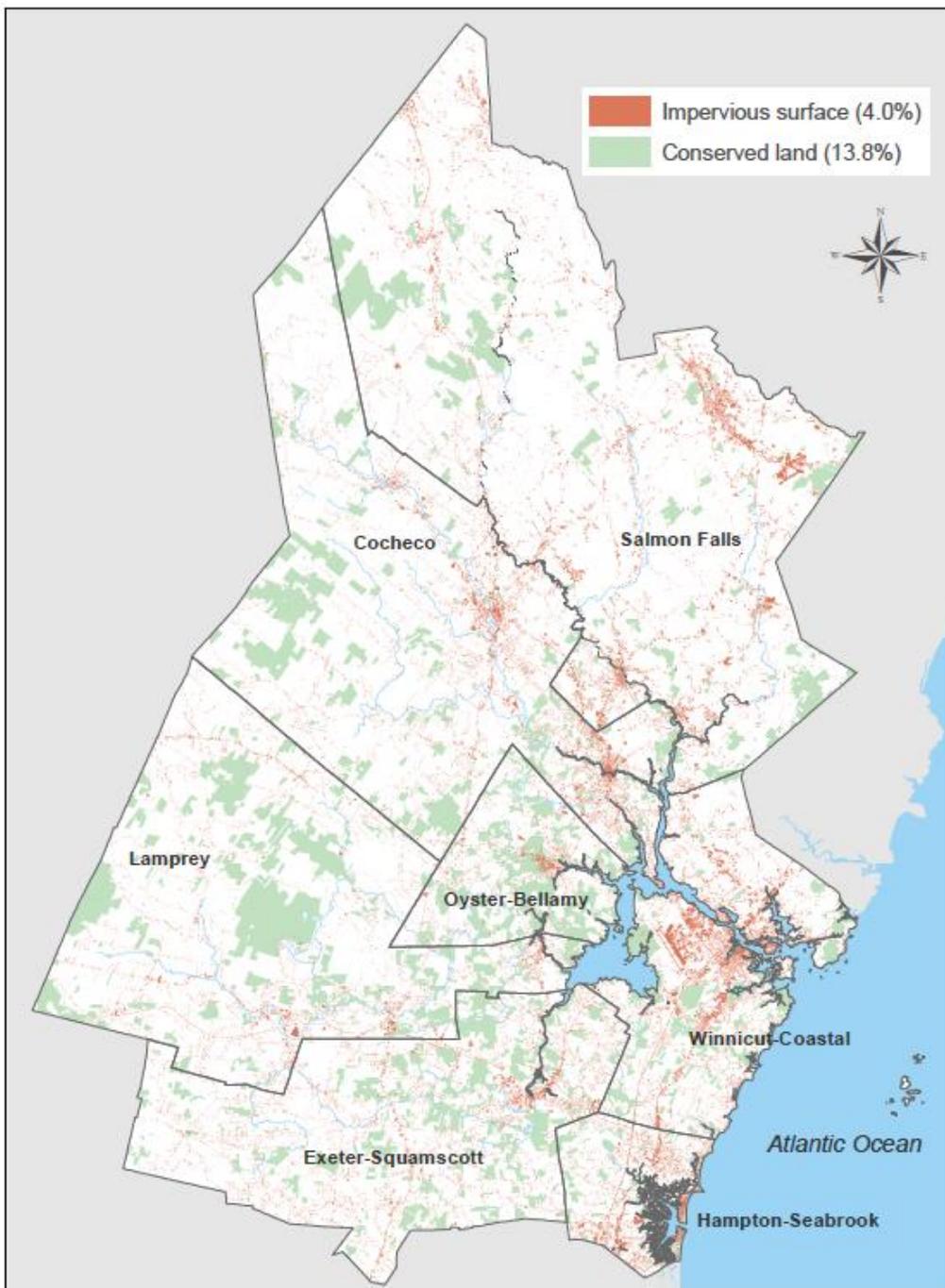
“The purpose of the study was to “open up the box” and estimate both from where and from what activities does the 70% non-point source nitrogen originate. The intended use of this study is for planning purposes. The results of the model may be useful for towns or watershed groups for prioritizing nitrogen reduction efforts or as a starting point for more detailed studies of non-point sources. So far, I am quite pleased by how the report has been received and used. It is generating the conversation that we hoped it would.”

The Office, Watershed Management Services  
NH Department of Environmental Services



[www.preestuaries.org/prepa](http://www.preestuaries.org/prepa)

## THREATS: IMPERVIOUS COVER



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

Note: High resolution impervious surface mapping was not available for Brookfield and Wakefield, New Hampshire and communities in Maine. Lower resolution impervious surface mapping was used for these communities.

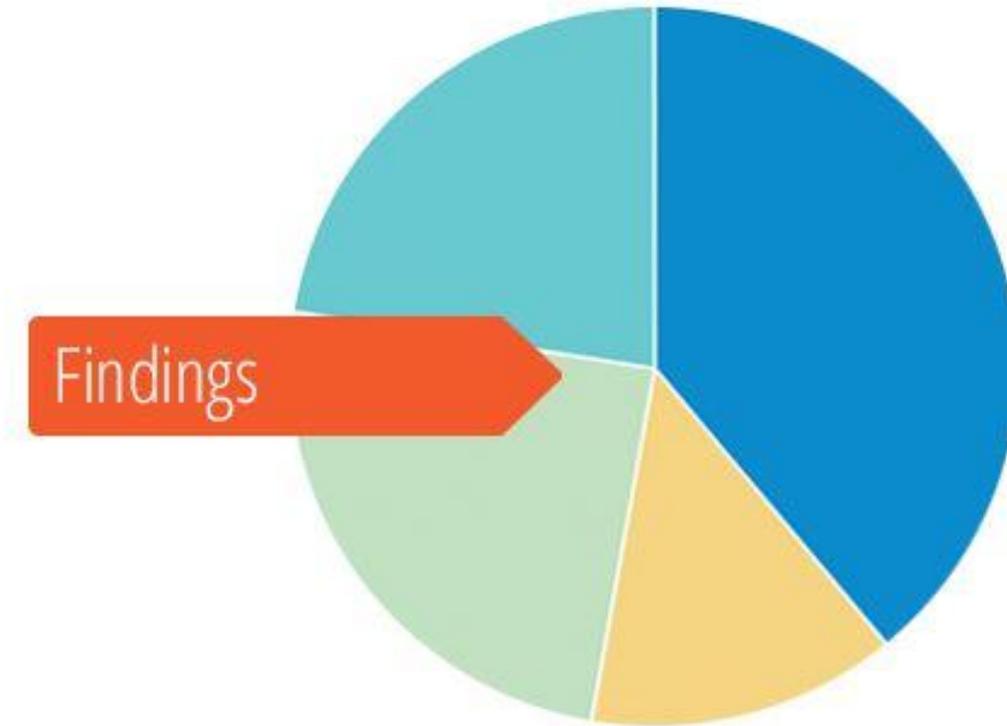
# THREATS: CLIMATE CHANGE

Climate change impacts are likely to contribute additional stress to coastal habitats that we are working to conserve and restore.



## PREDICTED IMPACTS

Precipitation (Frequency and Intensity)	↑
Snowmelt	↑
Snow accumulation	↓
Coastal flooding (frequency and intensity)	↑
Sea Level Rise	↑



**Report cards** calculated based on the responses to the assessment questions regarding the **4 topics** and what percentage attain the **minimum protective standards** suggested by NHDES or PREP.

# WATERSHED FINDINGS

Freshwater Wetlands

Shoreland Protection

Stormwater Management

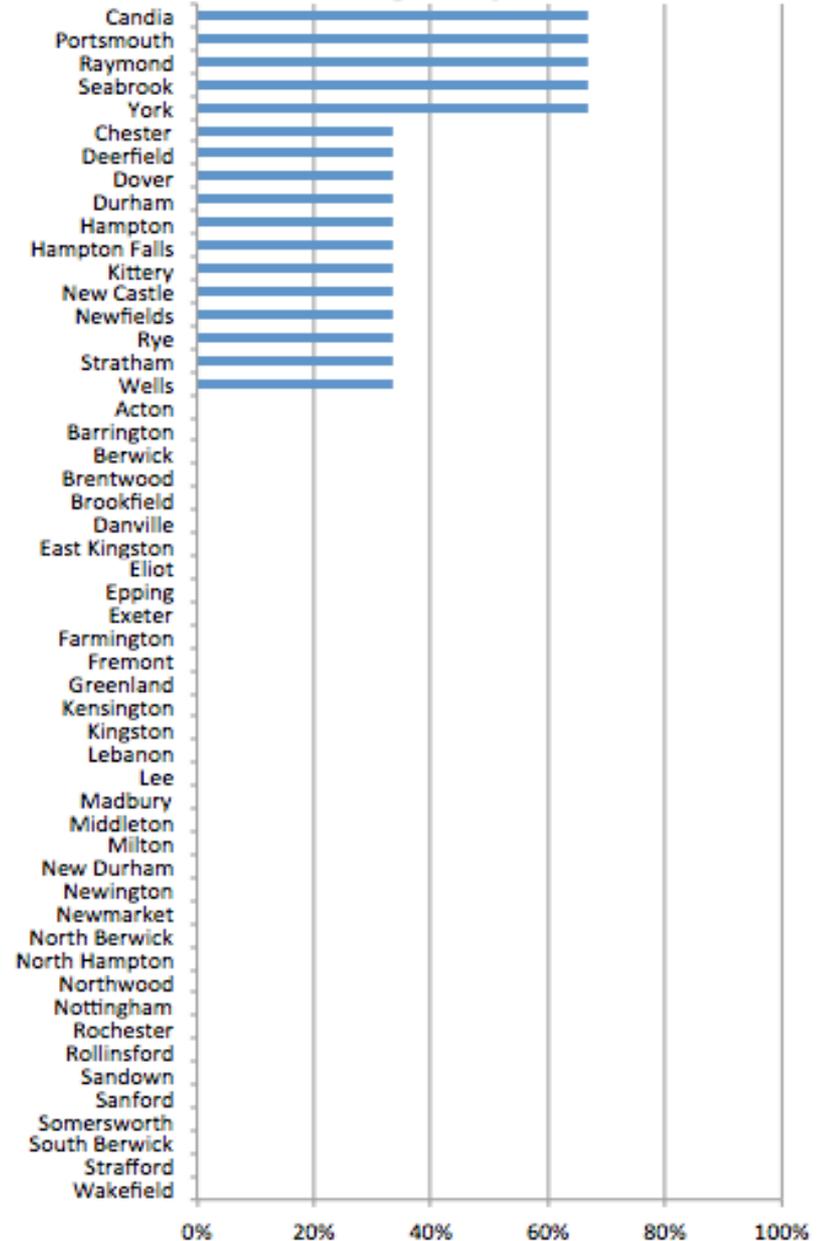
Climate Change

# Climate Change

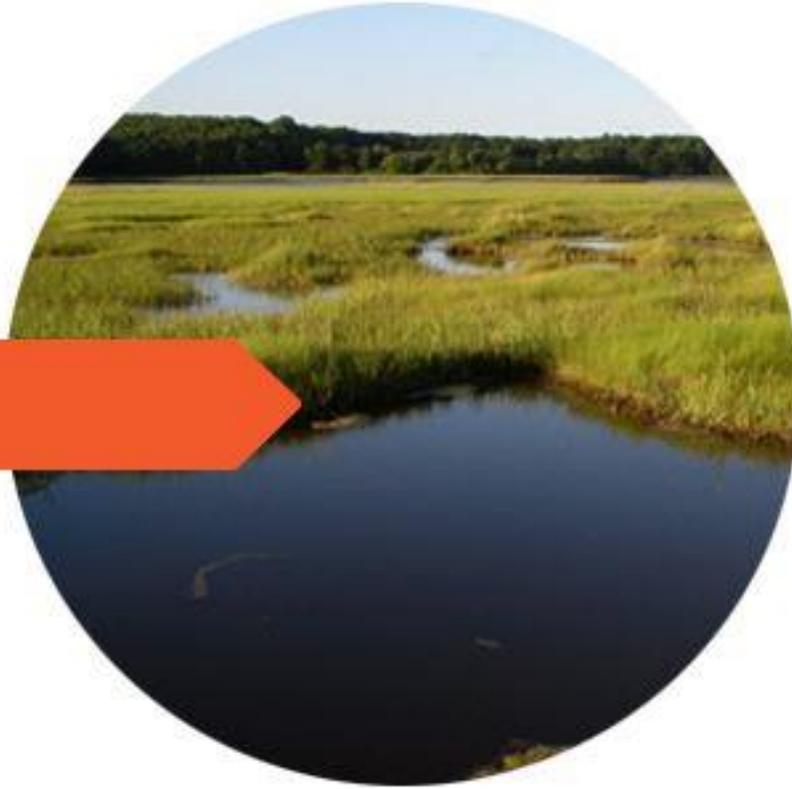
1. Has the municipality completed some form of climate change vulnerability assessment?
1. Has the municipality completed some form of climate change adaptation planning effort?
1. Has the municipality adopted regulatory changes intended to reduce the municipality's vulnerability to potential climate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

## RESULTS BY TOWN

### Climate Change Report Card

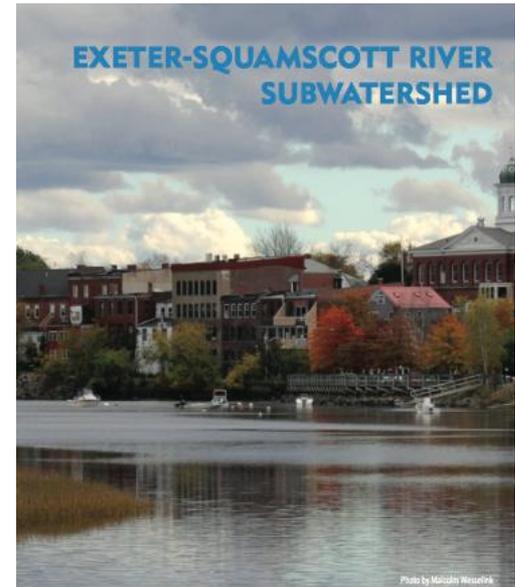


Actions



# WATERSHED ACTIONS

- Increase naturally vegetated buffers
- Increase setback requirements
- Adopt regulations for fertilizer application
- Adopt model stormwater regulations
- Conduct a climate vulnerability assessment
- Increase land conservation efforts



PISCATAQUA REGION  
ENVIRONMENTAL PLANNING  
ASSESSMENT 2015

Exeter-Squamscott River Subwatershed, including:  
Brentwood, Chester, Danville, East Kingston, Exeter, Fremont,  
Kensington, Kingston, Newfields, Sandown, Stratham



## STRATHAM

1

Increase buffers to 100' for  
tidal wetlands

2

Increase septic and  
structure setbacks to 100'  
for freshwater wetlands

3

Adopt fertilizer application  
setbacks for all water  
bodies

4

Adopt model stormwater  
management regulations

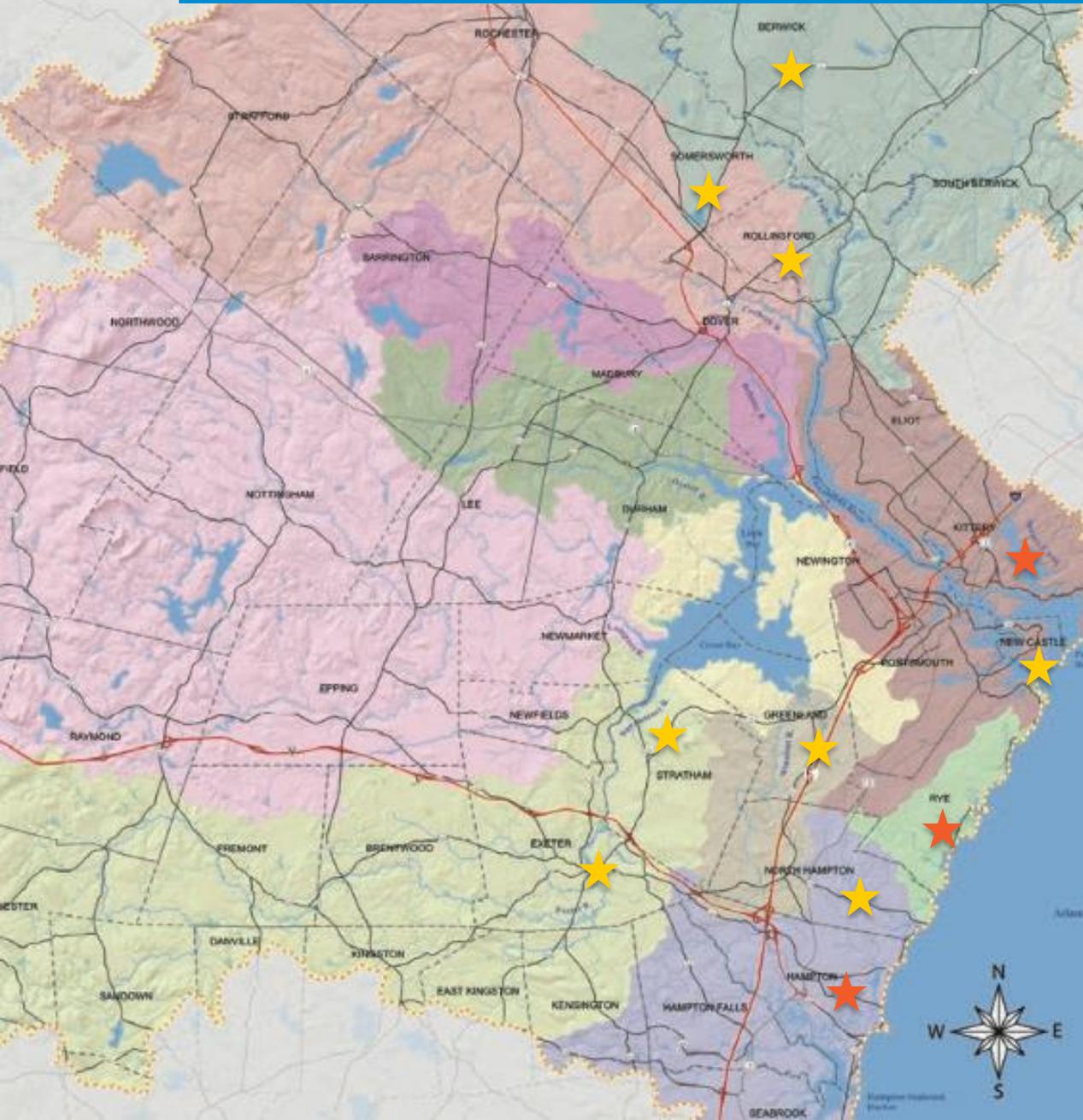
# KEY RESOURCES FOR ACTION

**Southeast Watershed Alliance's Model  
Stormwater Ordinance**

**Land Conservation Plans for  
New Hampshire and Maine**

**New Hampshire Climate  
Adaptation Workgroup Resources**

# 2015 PREPA LOCAL GRANTS PROGRAM



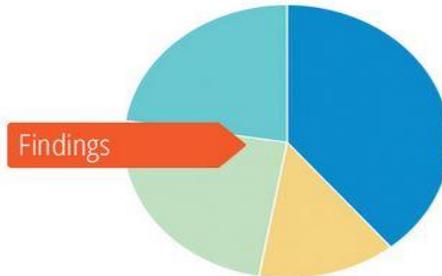
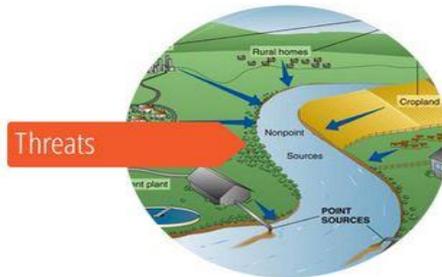
- Berwick, ME
- Exeter, NH
- Greenland, NH
- Hampton, NH
- Kittery, ME
- New Castle, NH
- North Hampton, NH
- Rollinsford, NH
- Rye, NH
- Somersworth, NH
- Stratham, NH



Home → PREPA

## PREPA

Click to learn more about each subject:



### Threats

- OVERVIEW
- Nitrogen Loading
- Impervious Cover
- Climate Change

### Findings

- OVERVIEW
- Freshwater Wetlands
- Shoreland Protection
- Stormwater Management
- Climate Change
- Additional Assessment Data

### Actions

- OVERVIEW



**PREP**

Piscataqua Region  
Estuaries Partnership

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Join the Community for Clean Water



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