

FROM STATE OF THE BAY TO CBEP'S HABITAT PROTECTION FUND

Land Conservation and the Future of Casco Bay

Curtis C. Bohlen, Director
Casco Bay Estuary Partnership



Outline

Ecosystem Services

Insight from State of the Bay

Approaches to protecting ecosystem services

Habitat Protection Fund

Other CBEP programs

Ecosystem Services

- Natural systems provide essential services to human societies
 - ▣ Material goods
 - Timber, food, fiber, medicines...
 - ▣ Sustaining processes
 - Climate regulation, nutrient cycling, hydrologic regulation, maintenance of habitat structure, pollination...
 - ▣ Nonmaterial goods
 - Recreation, aesthetics, education, inspiration...



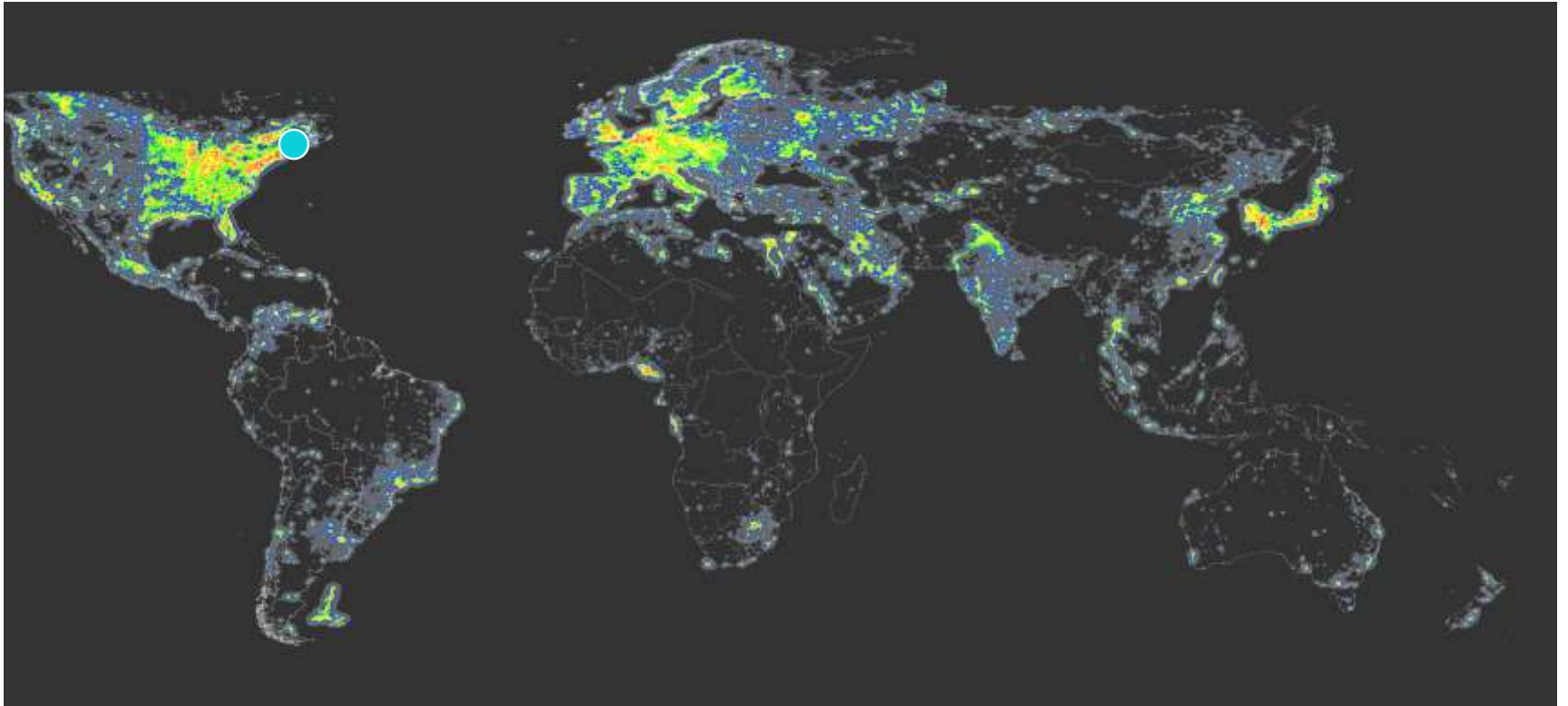
Value of ecosystem services...

- Is generated at the intersection between human and natural systems
- Provide natural infrastructure that sustains local economic activity
- Are often undervalued by markets



Where Do We Live Now?

Brightness of the Night Sky



Source:

Istituto di Scienza e Tecnologia dell'Inquinamento Luminoso.

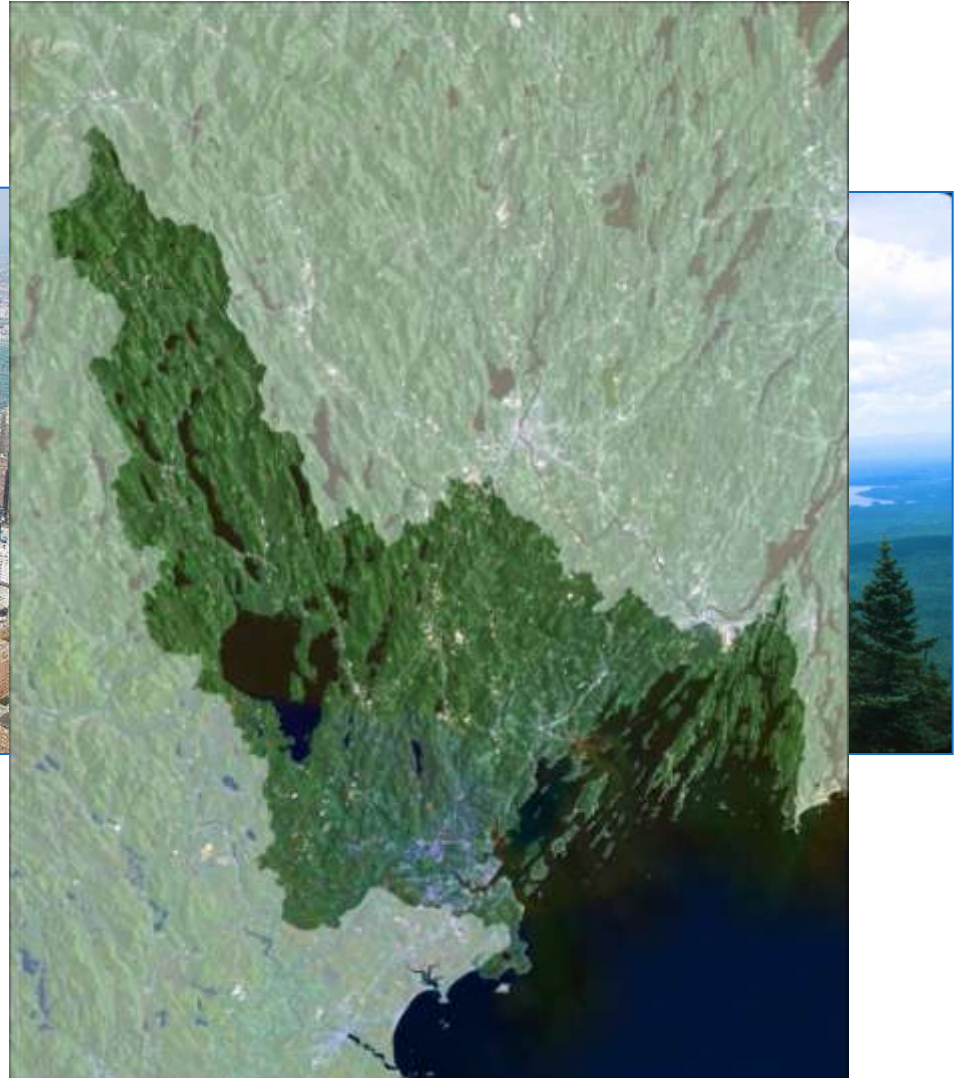
<http://www.lightpollution.it/worldatlas/pages/fig1.htm>

Two Landscape Extremes

Human Dominated Systems



Manhattan

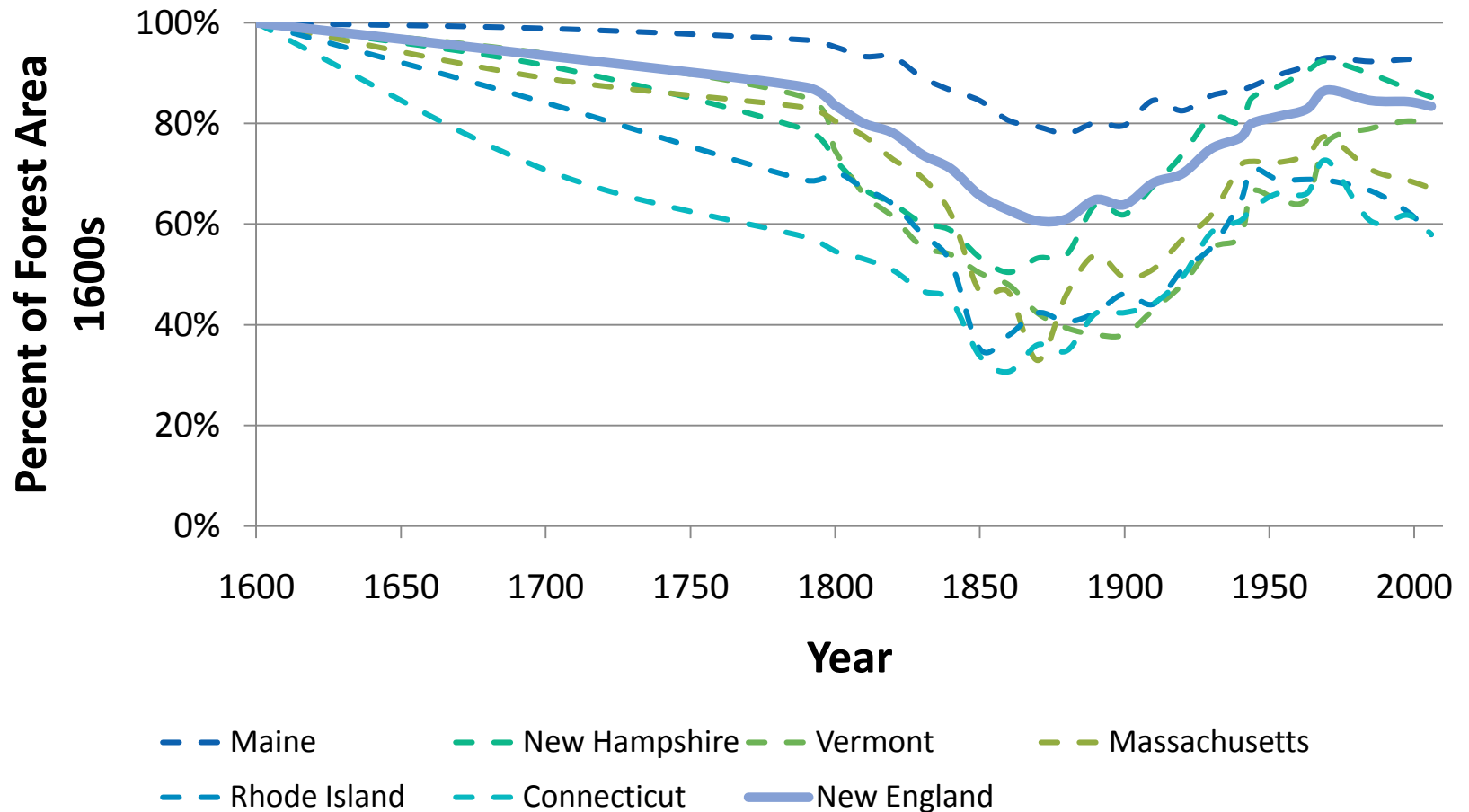


Place in A Mobile Economy

- People and businesses are increasingly free to locate almost anywhere
- Sense of place – quality of the landscape
 - ▣ a key asset for the community
- Not only because it attracts tourists
 - ▣ because it attracts entrepreneurs....

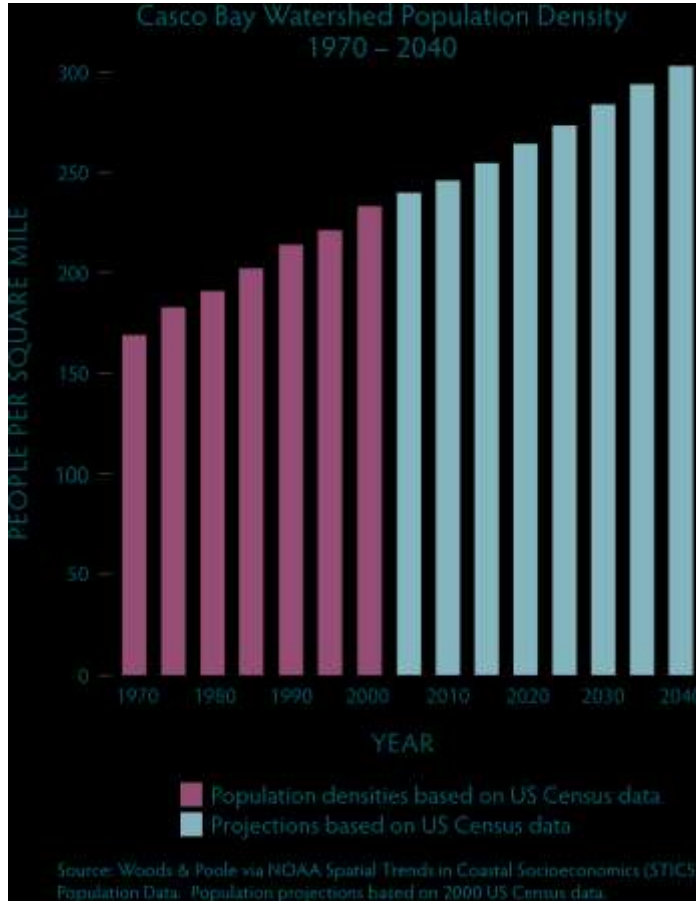


Historical Context



Data From: Foster D. 2003. Forest Change and Human Populations in New England. Harvard Forest Data Archive: HF013.

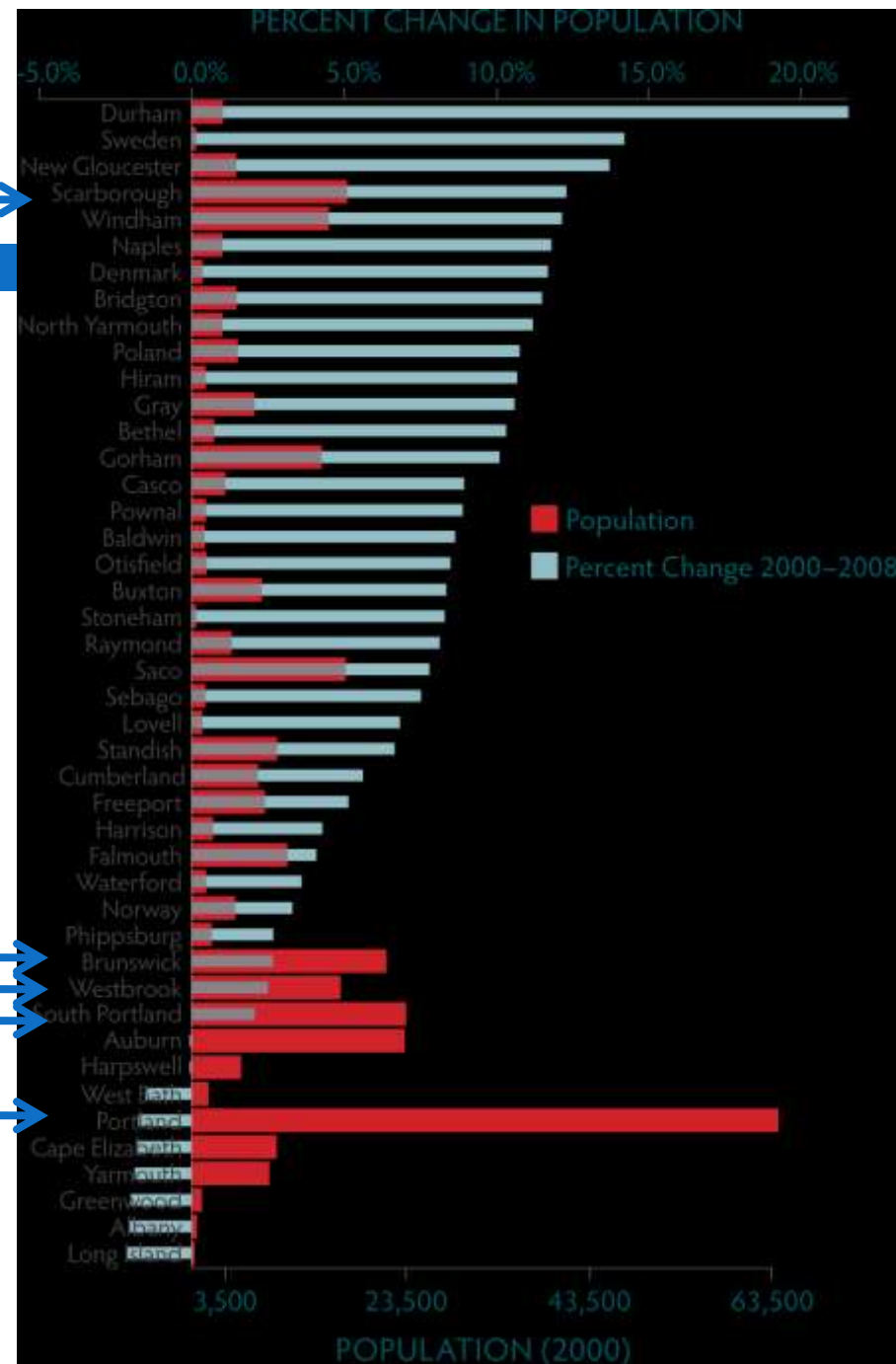
Population Growing



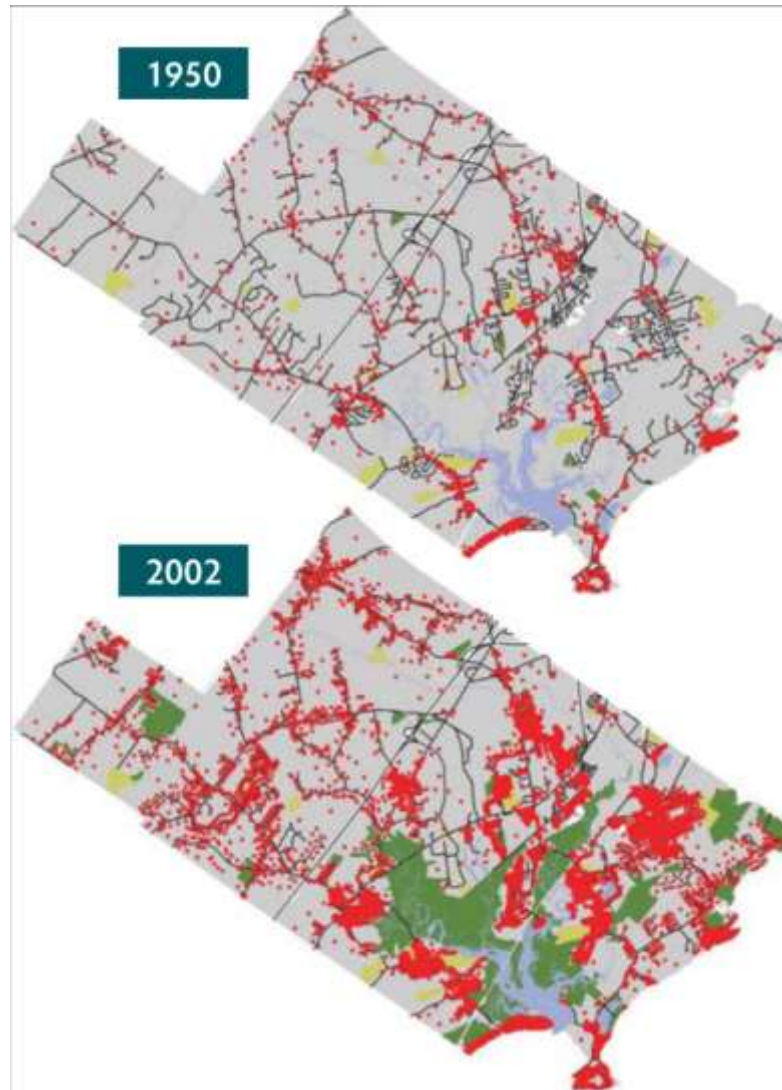
- Population in the Casco Bay Watershed has been growing $\sim 1\%$ per year
- Projections suggest continued moderate population increases
- Projections do not consider effects of warming climate on demographics

Where?

- While overall growth is moderate, rates vary significantly around the region
- Growth is concentrated in suburban and exurban towns
- Larger towns, especially the older service center communities, tend to be growing slowly or losing residents



Scarborough, 1950-2002



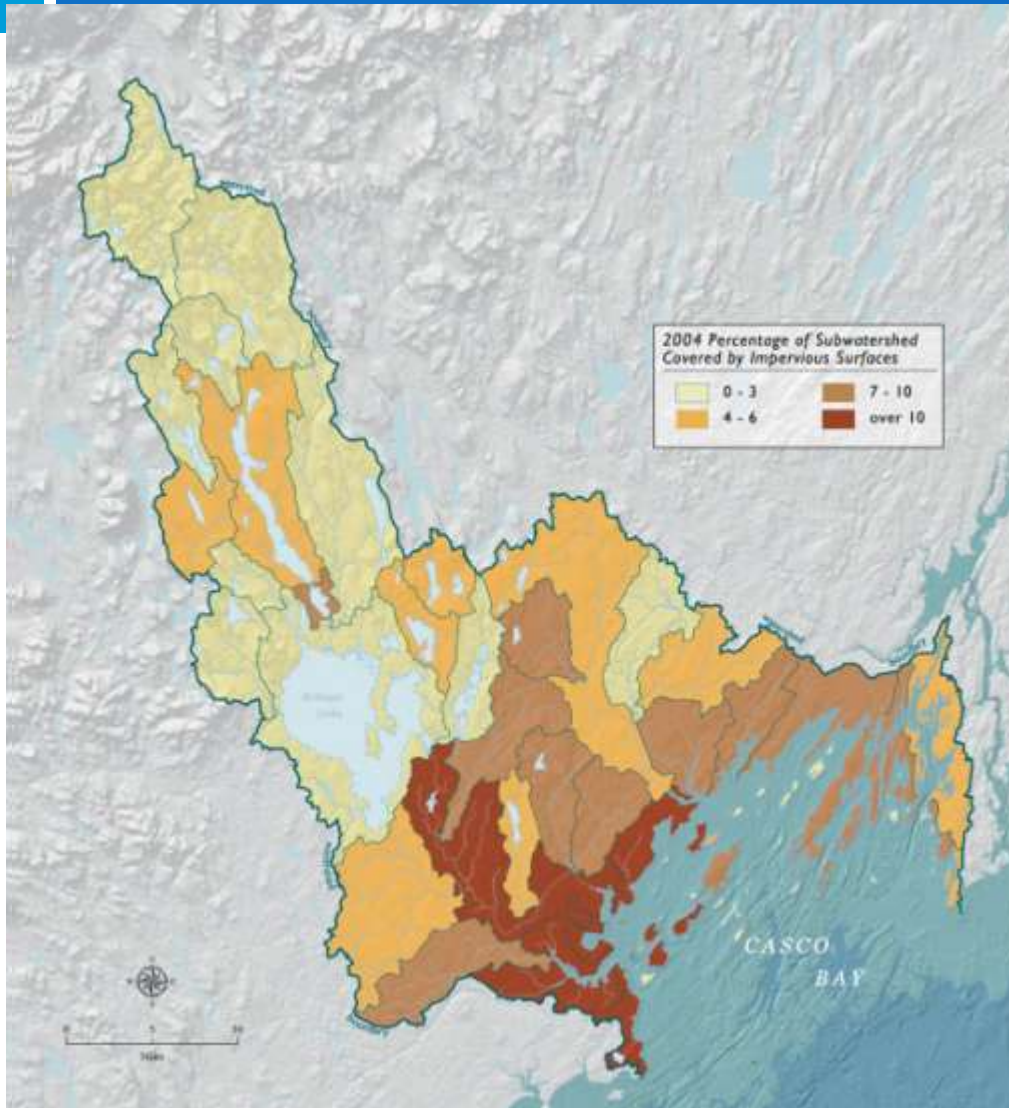
A Forested Watershed, but Little Interior Forest



- ~ 69 percent of the Casco Bay watershed is forested
- 17.5 percent is high quality forest interior habitat.



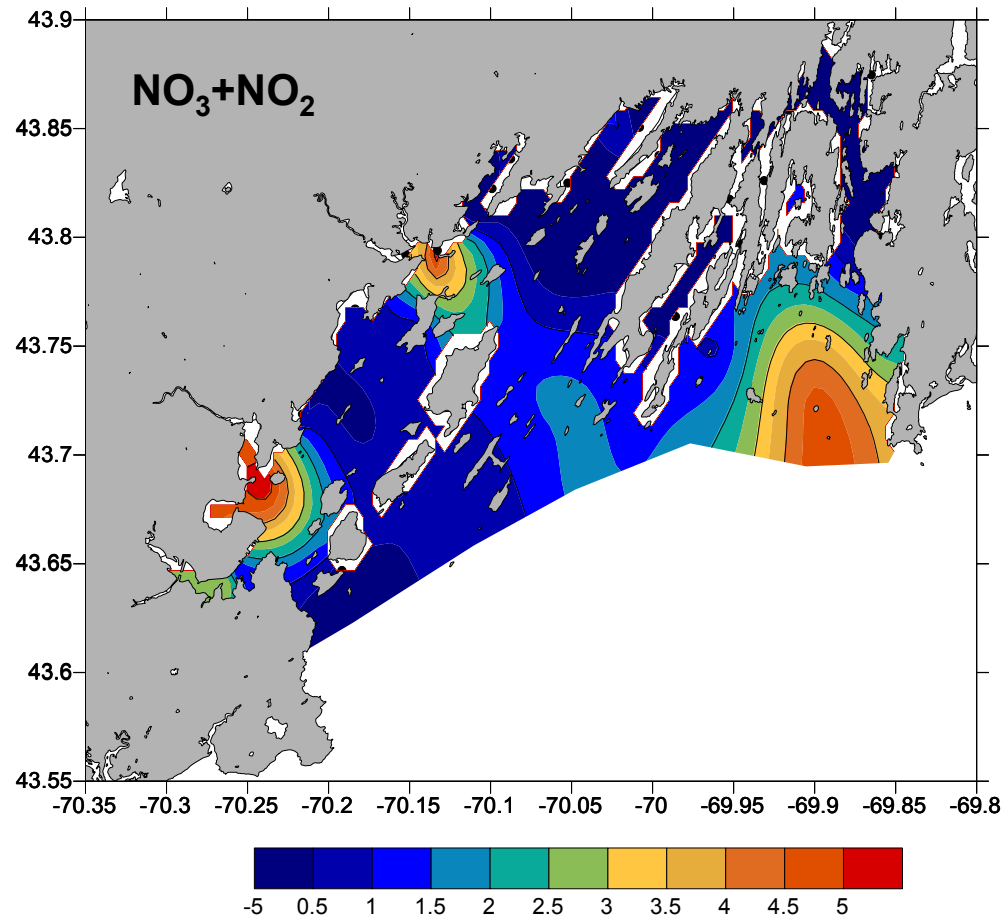
Our Impaired Waters are Suburban



- A close relationship between impaired waters and impervious cover

Impact on Casco Bay?

- Changes in the watershed directly affect Casco Bay
- Forested watersheds
 - ▣ Minimize flooding and erosion
 - ▣ Retain nutrients
 - ▣ Provide good habitat for anadromous and resident fishes



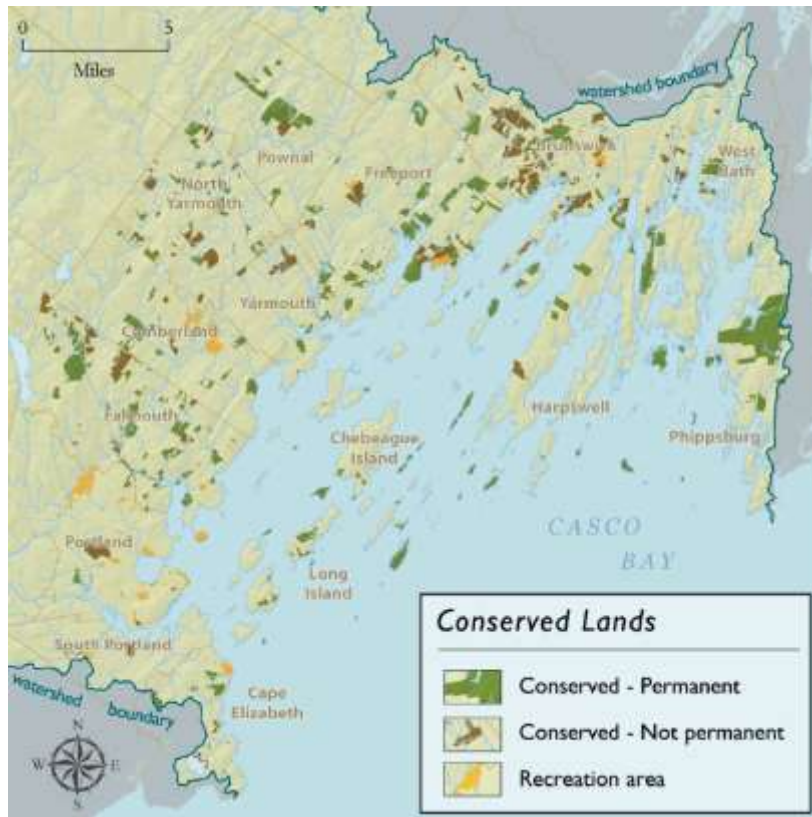
Nutrient Concentrations in
Casco Bay, May 10-11, 2007

Critical question

- Some ecosystem services are declining in the Casco Bay Watershed
- What role can habitat conservation play
 - ▣ Protecting ecosystem services and
 - ▣ Maintaining the quality of the Maine landscape?



Protected Land



In 16 Lower Casco Bay Communities

Year	Number of Sites	Area Permanently Protected (acres)	Percent of Study Area
1997	246	7,300	3.5%
2005	341	10,900	5.2%
2010	438	15,694	7.5%

- Protected land has doubled in less than 15 years – a 5.8% growth rate.
- Up to 12% including lands set aside including areas without binding protection
- No location is more than three miles from permanently protected lands
 - The typical distance is less than two-thirds of a mile.

How much protected land is enough?

- Below ~ 80% forest
 - ▣ Declining water quality
 - ▣ Loss of forest interior
- Above about 10% imperviousness
 - ▣ Stream insect communities reflect declines in water quality



CBEP Habitat Protection Fund

- Grants to support land conservation
- Typical grant \$10,000 - \$20,000
- CBEP invested > \$250,000 from 2006 to early 2010
 - 12 projects
 - > 4,500 acres
- An additional \$40,000 pledged to two projects since then

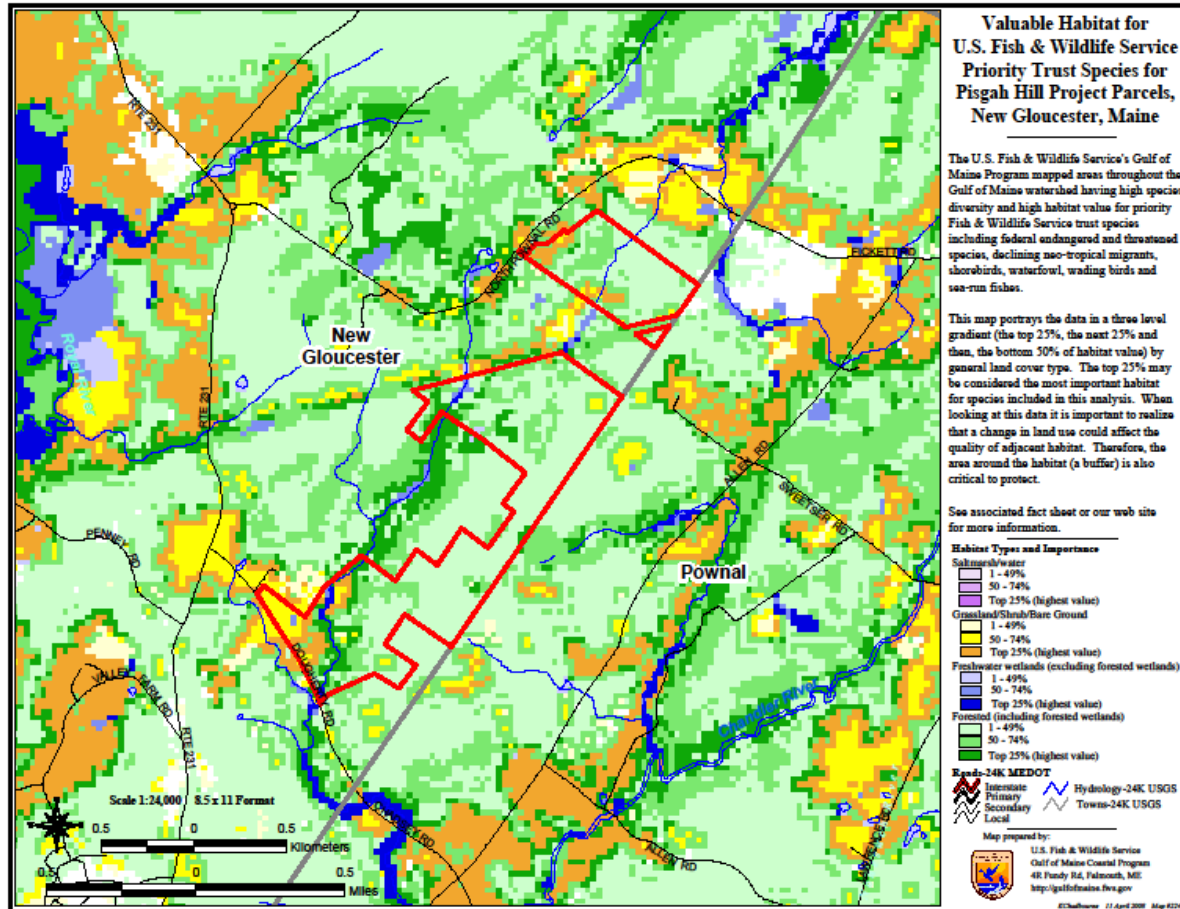


Criteria for Evaluating Proposals

- ☐ Land integral to an aquatic ecosystem
- ☐ High habitat value(s)
- ☐ Public access
- ☐ Part of a larger conservation vision
- ☐ Contiguous with other protected lands
- ☐ Level of threat from development
- ☐ Size of the project (larger is better)
- ☐ Cost-effectiveness
- ☐ Likelihood of successful implementation
- ☐ Matching funds



FWS Habitat Evaluations



- FWS carries out GIS-based habitat analysis
- Provides report to CBEP and to project proponents

Recent Projects (2008-2010)

Project	Location	Acres	Partners	Primary Purpose
Basin Cove / Curtis Cove	Harpswell	87.4	HHLT	Bolster Coastal Wetlands grant
Clark Farm and Forest	Windham	~ 550	TPL / Windham Land Trust / Maine FLT	Support for appraisals
Falmouth Conservation Corridor	Falmouth	319.5	Town of Falmouth	Bolster LMF proposal
Henshaw Property, Maquoit Bay	Brunswick & Freeport	237	Brunswick-Topsham LT and MCHT	Bolster Coastal Wetlands grant
Laskey Property, Maquoit Bay	Brunswick	83	MCHT	Bolster Coastal Wetlands grant
Morgan Meadows	Raymond and Gray	122	Maine DIF&W	Bolster LMF proposal
Northwest River Forest	Sebago	1724	Maine DIF&W. Loon Echo LT	Early project funding
Pisgah Hill Ridge	New Gloucester	~200	RRCT and Pownal LT	Support for appraisals
Stillings Property	Falmouth	25	Town of Falmouth	Acquisition costs

Evaluation



- Habitat protection in the region is robust
 - ▣ But so is development...
- CBEP funding supports significant land conservation
 - ▣ Generally a (very) small fraction of Project funding
- CBEP has limited direct control over conservation priorities
- Support other strategies for habitat conservation

What's this all about?



- What would it take to restore anadromous salmon to Maine's Rivers?
 - ▣ (Re)constructing landscapes in which cold water fish can thrive.
- How do we do that and accommodate ~ 15% more people in The Casco Bay watershed in the next 20 years?
- Land conservation has a role to play
 - ▣ Significantly less expensive than restoration or replacement of lost functions

Frog in a Cement Pond



Thank You



Curtis Bohlen

Director, Casco Bay Estuary Partnership

cbohlen@usm.maine.edu

Suburbanization..

- Reduces provision of ecosystem services
 - Stresses rivers and streams
 - Eliminates forest interior habitat
- Reduces distinctiveness of place
 - One MacDonald's is much like another....
- Reduces opportunities for wild harvest
 - Hunting, fishing, gathering
- Reduces access to land for passive recreation
 - While populations are increasing

