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_Casco Bay Estuary Partnership_

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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

Nature Dominated Systems

Change
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

Population Growing

- Population in the Casco Bay Watershed has been growing ~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

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Sites</th>
<th>Area Permanently Protected (acres)</th>
<th>Percent of Study Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>246</td>
<td>7,300</td>
<td>3.5%</td>
</tr>
<tr>
<td>2005</td>
<td>341</td>
<td>10,900</td>
<td>5.2%</td>
</tr>
<tr>
<td>2010</td>
<td>438</td>
<td>15,694</td>
<td>7.5%</td>
</tr>
</tbody>
</table>

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

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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