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Casco Bay Estuary Partnership

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Recommended Citation
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?

Source:
Istituto di Scienza e Tecnologia dell'Inquinamento Luminoso.
http://www.lightpollution.it/worldatlas/pages/fig1.htm
Two Landscape Extremes

Human Dominated Systems

Manhattan

Change

Nature Dominated Systems
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 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
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)

<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>
</tr>
<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>
</tr>
<tr>
<td>Falmouth Conservation Corridor</td>
<td>Falmouth</td>
<td>319.5</td>
<td>Town of Falmouth</td>
<td>Bolster LMF proposal</td>
</tr>
<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>
</tr>
<tr>
<td>Morgan Meadows</td>
<td>Raymond and Gray</td>
<td>122</td>
<td>Maine DIF&amp;W</td>
<td>Bolster LMF proposal</td>
</tr>
<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>
</tr>
<tr>
<td>Pisgah Hill Ridge</td>
<td>New Gloucester</td>
<td>~200</td>
<td>RRCT and Pownal LT</td>
<td>Support for appraisals</td>
</tr>
<tr>
<td>Stillings Property</td>
<td>Falmouth</td>
<td>25</td>
<td>Town of Falmouth</td>
<td>Acquisition costs</td>
</tr>
</tbody>
</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