

Valuing the Economic Benefits of Conservation Land in Downeast Maine: Executive Summary

Full report available online: <https://www.downeastconservationnetwork.org/>



Overview

- Natural ecosystems provide numerous goods and services that contribute to both human well-being and the economy. Examples include the provision of food and fiber, clean water, climate regulation, recreation, and tourism.
- These services provide values that can be measured in the marketplace, such as sale of goods, visitor spending, and employment. Many ecosystem services also provide non-market values that can be measured using various methods.
- Land designated as conservation can provide some of these services in perpetuity.
- The more than 700,000 acres of conservation land in Downeast Maine (i.e., Hancock and Washington counties) are an integral provider of ecosystem services and the associated economic benefits for the region.
- Key values of conservation land in Downeast Maine investigated in this study include recreation, clean water, blueberry and timber harvests, forest carbon sequestration, science and education, visitor spending, and employment.

Methods

- We use a mix of data, GIS mapping, economic techniques, and stakeholder input to estimate the spatial extent, contribution, and value of conservation land in Downeast Maine.
- While the impacts of conserved lands on tax bases and the role of the Tree Growth Tax law are important related issues, this study did not cover those aspects.
- Data was primarily collected from several publicly available databases from local, state, and federal sources.
- The GIS mapping of study area defined the spatial extent of conservation land by land use and land cover.
- Well-recognized market and non-market techniques were applied to estimate economic value of conservation land across a wide-range of land uses and ecosystem services.
- Draft results of the analysis were shared with range of regional stakeholders, which provided guidance for updating data, assumptions, and refinement.
- Dissemination of results will follow a formalized communications and outreach strategy.

Results

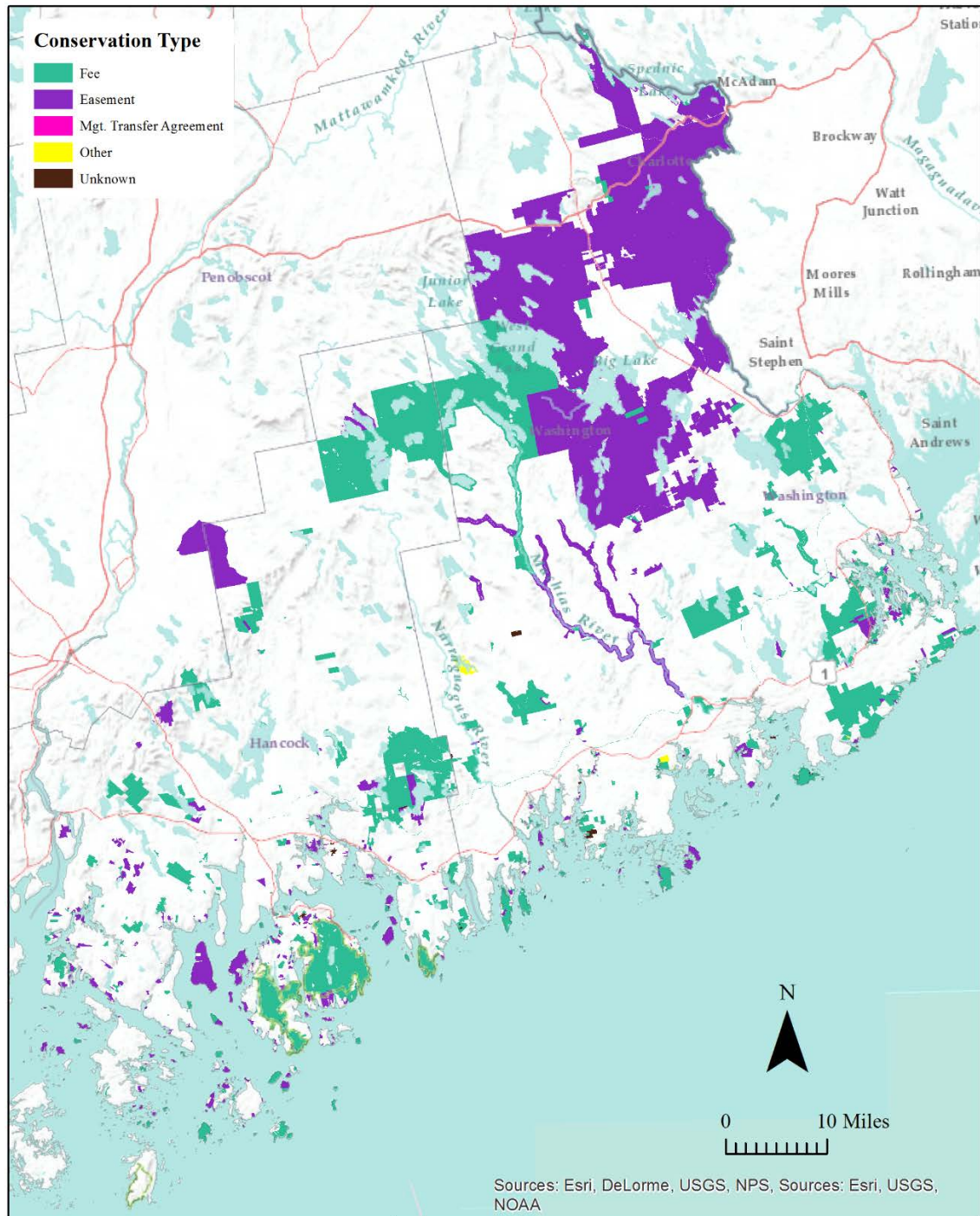
Land Area and Designation

- There are a total of 702,654 acres of conservation land in Downeast Maine, which comprise of 19.6% of the total area. Approximately 58% of that land is located in Washington County.
- 72% of Downeast conserved lands are forestland (Figure 1). About 18% of the land is classified as wetlands (18%), followed by shrub (4.7%), developed (1.1%), open water (1.4%), and grassland (1.0%), and blueberry barrens (0.5%).
- About 57% of conservation land in the region is registered as conservation easement, while 42% is fee acquisition.
- Nearly 60% of the conservation land is under private ownership, while the remaining 40% is public.

Economic Benefits

- Table 1 lists the estimated economic benefits of Downeast conserved land. Figures are listed in total annual values and broken out by benefit category and geographical area.
- Visitor spending provides the largest amount of our monetized benefits, totaling more than \$304 million per annum. More than 95% of that can be directly attributed to the existence of Acadia National Park.
- Recreation is estimated to provide almost \$58 million in benefits per year. Most of this value is attributed to the hunting, fishing, and boating opportunities that is provided by conserved land located throughout the study area.
- The value of carbon sequestered in standing forests on conservation land is estimated to provide about \$42 million per year in benefits to society from mitigating the effects of climate change. Only a small portion of this value is accrued through participation in carbon markets.
- Employment directly associated with managing conservation land is estimated to be at least \$13.9 million per year.
- The commercial harvest of timber and blueberries from conserved land is estimated to be \$17.5 and 4.4 million per year, respectively. This figure illustrates that putting land in conservation does not necessarily eliminate the opportunity for a commercial operation.
- The provision of clean water and drinking water supply are estimated to collectively provide almost \$17 million per year, although we note that this value could be higher if the region faced a higher threat of deteriorating water quality due to land use change.
- The total ecosystem services benefits of Downeast conserved land equates to about \$206/acre/yr. This value falls into the range of similar valuation studies that were conducted for comparable geographical areas, ecosystems, and benefit categories.

Conserved Lands by Conservation Type



Sources: Conserved lands data from MEGIS and regional conservation organizations; Land use/land cover from NLCD 2011.

Figure 1. Conserved Lands by Conservation Type for Downeast Maine.

Table 1. Economic benefits of Downeast conserved land (\$/yr)

| Category | Hancock County | Washington County | Downeast Maine |
|-------------------------------------|----------------|-------------------|----------------|
| <i>Ecosystem service benefits</i> | | | |
| Blueberry harvest | \$2,138,685 | \$2,303,009 | \$4,441,694 |
| Timber harvest | N/A | N/A | \$17,500,000 |
| Forest carbon sequestration | N/A | N/A | \$42,189,413 |
| Recreation, all types | \$39,873,910 | \$17,978,905 | \$57,852,801 |
| Science and Education | \$3,158,958 | \$1,870,926 | \$5,029,885 |
| Beach Access | \$880,570 | \$153,718 | \$1,034,288 |
| Clean water | \$7,120,383 | \$4,172,278 | \$11,292,662 |
| Water supply | \$4,029,482 | \$1,489,591 | \$5,519,072 |
| Wildlife habitat provision | \$21,136 | \$12,518 | \$33,654 |
| <i>Additional economic benefits</i> | | | |
| Visitor spending | \$296,963,195 | \$7,464,585 | \$304,427,778 |
| Conservation Employment | N/A | N/A | \$13,903,184 |

Communication and Outreach

- The findings of this study are likely to be far reaching and raise various emotions depending on how various constituents perceive the role of Downeast conservation lands.
- An integral part of this project is to facilitate the operationalization of the results for effective natural resource governance in the region.
- The full study details a set of best practices for prevailing over potential barriers and achieving a shared understanding of contentious issues among stakeholders leading to effective governance.
- Findings and implications will be discussed in several forums to encourage diverse input from a wide range of stakeholders
- Stakeholder input will be used to improve out outreach and determine next steps in this research program.

Discussion and Next Steps

- While many of the benefits calculated here are those that accrue to residents of Downeast Maine, some benefits accrue to non-residents.
- While Acadia National Park is a small percentage of the conserved land in the area, it accounts for a disproportionate share of the benefits, particularly those calculated for direct employment and visitor spending.
- It is important for the Downeast region to consider how best to leverage the conserved lands resources for greater economic impact within the region, and how best to distribute the benefits across more residents.
- Understanding the role that conserved lands plays in larger economic issues, and the role that taxation plays, is an important topic to explore in future studies.
- Emerging ecosystem service values, such as rockweed harvesting, may also be topics for future study.

Report prepared for Downeast Conservation Network by Lesley Lichko, M.S., Mindy Crandall, Ph.D., Tora Johnson, Ph.D., and Adam Daigneault, Ph.D., University of Maine and University of Maine at Machias.

