



COLLEGE OF THE ATLANTIC

A Small Four-Year School Uses Forests, Farms, and Islands for Student-Led Planning, Research, Food Production, and Study



Academic Conservation Briefs

By Shuyi Lin



At a glance:

- Conserved forest land, organic farms, and islands
- Research stations
- Hands-on research and learning
- Land use planning
- Food access programs

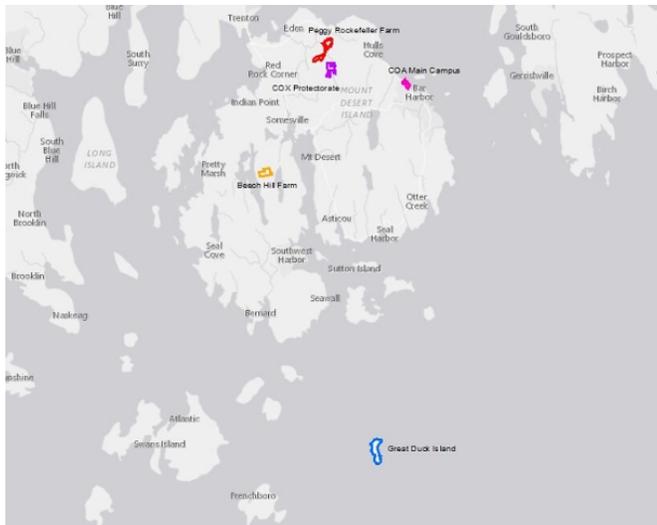


An aerial view shows the main campus of the College of the Atlantic.
Credit: College of the Atlantic

“The students have been heavily involved in these land-use projects from the beginning, including planning for land conservation in the Cox Protectorate, researching and designing renewable energy systems at the farms, and conducting field research on the two islands. This student involvement adds to the educational value of these lands and reflects the mission of the college, in which the students integrate knowledge and take the initiative to proactively investigate and advocate for land conservation.”

The College of the Atlantic (COA) is a private, four-year liberal arts college located in the town of Bar Harbor on Mount Desert Island in Maine, surrounded by Acadia National Park. COA has 350 students and 35 faculty members. The College, founded in 1969, awards bachelor’s and master’s degrees in the field of human ecology only, with an interdisciplinary approach to learning and a number of options for areas of study within the degree programs. Focus areas include arts and design, environmental sciences, humanities, international studies, sustainable food systems, literature and writing, and socially responsible business. The COA’s conserved properties provide important laboratories and facilities for students to plan, grow, research, and learn.

The campus comprises 37 acres on Frenchman Bay, including an arboretum. In addition, COA owns a forest preserve, called the Cox Protectorate; two nearby organic farms; and properties on two off-shore islands that each include research stations. The farms, Beech Hill Farm and Peggy Rockefeller Farms, are living laboratories for classes and student research. Peggy Rockefeller Farms is part of a long-term watershed monitoring project conducted by the U.S. Geological Survey. Both farms supply food to the school and community and each contributes to several food access programs that serve the greater community.



The off-shore island properties include the Ed Blair Research Station on Mount Desert Rock, a center for marine science, and the Alice Eno Field Research Station on Great Duck Island, where students conduct studies on birds and natural history. Each property has its own story, including how it was acquired, how it was conserved, and how each has become an important asset to COA's students, faculty, and surrounding community.

The Cox Protectorate

The Cox Protectorate is 101 acres of protected forest located in Bar Harbor, Maine. Located in the Northeast Creek watershed, the Cox Protectorate hosts important and diverse habitats for wildlife and plants. The eastern side of the property includes a wetland ecosystem. The western side is characterized by mixed forests and granite communities. In addition, a variety of wildlife, including 10 mammal species and over 30 bird species, inhabit the Cox Protectorate. This special land provides a tremendous opportunity for research and field study to students of the COA.

History of Cox Protectorate

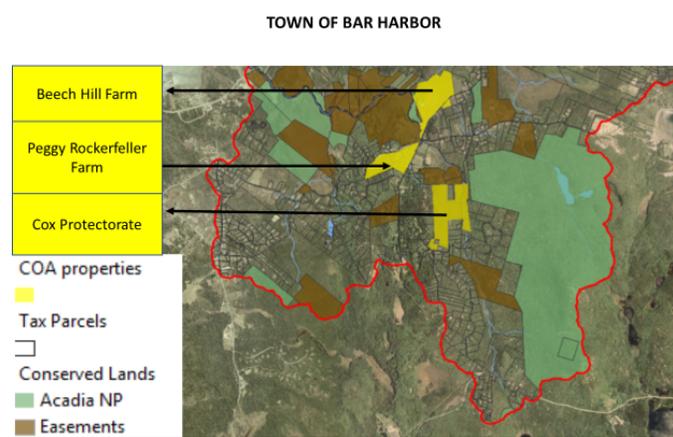
During the nineteenth and twentieth centuries, the land that is now the Cox Protectorate was used mainly for dairy and vegetable farms. Logging also occurred during this time. In 1999, a group sought to develop the western 64 acres of the land and acquired an additional 20 acres of land in the vicinity. However, in the 2002–2003 period, when the group ran out of funds to develop the land and wanted to sell it, Thomas Arthur Cox, a former Trustee of COA, purchased the land and decided to conserve it. In 2010, the property was donated to COA.

When Cox donated the Protectorate to the school, he did not impose restrictions or conditions on the transfer. However, he wrote a manifesto explaining that his wish was to have the land used mainly for conservation and educational purposes, with the upper land ridges designated to be undeveloped and used as an open-air classroom for the students. The flatter area close to Mill Brook Road, however, could be used for housing for the faculty and college president.

Even though there are no conditions imposed on Cox's donation to the school, his writing has served as a guide in the COA's decision-making regarding land use. Currently, the final plan for land use for the Cox Protectorate is still not fully determined. However, it is most likely that COA will keep the Cox Protectorate undeveloped and mainly used as an educational resource. Even though faculty housing is an allowed use of the property, the COA has decided that they will not construct any housing in the Cox Protectorate, except for possibly an educational basecamp where equipment can be stored for students.

Educational Value of the Cox Protectorate

The Cox Protectorate has offered tremendous educational value to the students at COA. For example, students have been involved in the land-planning process by collecting data and proposing land-use plans. The proximity of the college to Acadia National Park already provides numerous opportunities for outdoor activities. However, the Cox Protectorate allows different possibilities for the students to collect wildlife and plant data, research habitats and ecosystems, and take field classes. Just as Cox had wished, the Cox Protectorate has become an outdoor classroom for the students of COA, who will continue to benefit from this piece of property.



This map of Bar Harbor (see red boundary line) shows several of the College of Atlantic's conserved properties. Credit: College of the Atlantic



Beech Hill Farm includes several greenhouses and vegetable fields, as well as apple orchards, pasture, and forest. Credit: College of the Atlantic

Beech Hill and Peggy Rockefeller Farms

The Beech Hill Farm and the Peggy Rockefeller Farms, both owned by COA, provide organic food for both the staff and students of the college, as well as residents of Mount Desert Island. This food also goes to several food security programs. Both farms engage in organic and sustainable farming practices and were certified by the Maine Organic Farmers and Gardeners Associations, and they each provide multiple opportunities for hands-on learning.

Beech Hill Farm

Beech Hill Farm is a 73-acre property that includes vegetable fields, apple orchards, pasture lands, greenhouses, and forested areas. Beech Hill Farm was initially established in 1989 by COA alumni Barbarina Heyerdahl and her husband, Aaron, as a part of her senior project. The Heyerdahls managed and cultivated the farm for 10 years and then donated the property to COA in 1999.

Along with the property transfer, the Heyerdahls also granted a conservation easement to Maine Coast Heritage Trust. The easement was for the purpose of “protecting and preserving the highly scenic and open views of and across the protected property enjoyed by the public from the Beech Hill Road” and “prevent[ing] the conversion of open lands on prime agricultural soils to development or other land uses that would limit their productivity and availability for agricultural uses in the future.”

Peggy Rockefeller Farms

Peggy Rockefeller Farms raises livestock such as sheep, cows, and chickens. The farm encompasses 125 acres, out of which 80 are conserved second-growth forest and wetlands. In 2010, David Rockefeller Sr. donated the entire property to COA to be used for the purpose of agriculture and conservation. The donation of the land was also accompanied by a gift of an endowment that would help cover costs of management, maintenance, and repairs.

Acadia National Park holds an easement over the entire property that indicates that it may be employed for residential, conservation, and agricultural use only. In addition, the farm lies within the Northeast Creek Watershed, a study area that is monitored by the US Geological Survey for water quality and nitrogen loading. In 2014, COA received a \$589,300 grant from David Rockefeller as seed funding for Peggy Rockefeller Farms, one of the college’s laboratories for understanding and experimenting with the human ecology of food systems. The grant will aid in the development of a demonstration center for COA’s Sustainable Food Systems program while acting as a resource for members of the Maine community who want to learn about sustainable food production.



Peggy Rockefeller Farms raises livestock, including sheep, cows, and chickens. Credit: The Maine Edge

Addressing Food Security

Beech Hill Farm has several ways of distributing food to the Mount Desert Island community. First, the farm has its own farm stand where community members can purchase organic food at a reasonable price. In addition to products grown at Beech Hill Farm, the farm stand also carries food products from a variety of nearby farms and organizations. The profit made in the farm stand allows Beech Hill Farm to be self-sustaining.



Beech Hill Farm has several ways of distributing food to the local community. Credit: College of the Atlantic

Beech Hill Farm also contributes substantially to local food pantries by participating in the Gleaning Initiative and the Mainers Feeding Mainers Initiative. Both programs aim to provide local food pantries with retail-quality food that goes to members of the community in need. Over the past two years, the farm has provided over 1,000 pounds of food to the Bar Harbor Food Pantry through the Mainers feeding Mainers Initiative and 4,000 pounds of food to Healthy Acadia’s Gleaning Initiative.

To further tackle the issues of food security and food access on Mount Desert Island, Beech Hill Farm collaborates with Share the Harvest, COA’s student-



The College of the Atlantic has linked curriculum with sustainable energy projects. Credit: Tristan Spinski, *The New York Times*

run food access program. Instead of providing food directly to food pantries, the program helps low-income communities by providing vouchers that can be used to purchase food in the farm stand and the Bar Harbor Farmers Market. In addition, the program offers delivery service, where food can be brought to people who are unable to visit the farm stand due to economic or mobility reasons.

Educational Value of the Farms

Aside from providing food, the two farms offer educational value as well. For example, each of the two farms provide students with valuable research and learning opportunities to design and develop energy systems to offset energy use at both farms.

Anna Demeo, former Director of Energy Education and Management at COA, received grants for multiple renewable energy projects on Beech Hill Farm in 2014. The students of the College were involved in every step of the projects, including the implementation of solar, wind, and biomass energy systems; the design of energy efficient insulation, a heat pump, and refrigeration systems; and the monitoring of energy use at the farm. The students have also developed a website to share information and creative solutions to reduce energy use in an organic farm (see More Information at the end of this case study for the link and other resources).

Similarly, Peggy Rockefeller Farms is fueled by renewable energy. As a class project, students studied energy needs at the farm and designed ways to mitigate the environmental impact of those demands. Because of the more restricted conservation easement for Peggy Rockefeller Farms that limits development, the students came up with creative solutions and were able to coordinate the installation of 100 solar panels.

In addition to student involvement in the energy planning process for the two farms, the farms also provide a teaching ground for farming practices and

policies. At COA, various courses, such as U.S. Farm and Food Policy, Bees and Society, and Sheep to Shawl, utilize farm resources as a way to engage academic learning into real-life practices. The two farms also provide opportunities for students to conduct their course projects and final projects.

In addition to the work of farming, food security, food policy, and renewable energy, the two farms serve as a resource for early education programming. For two years, COA students have been coordinating a Farm to School program at the elementary school in Bar Harbor. The program uses experiential learning practices to introduce elementary students to the flavors of local food and the importance of sustainable food systems.

Mount Desert Rock

Mount Desert Rock is a small treeless island about 25 nautical miles south of COA's campus. The island is home to the Ed Blair Marine Research Station. Together, the island and research center serve as an important platform for marine research, both for COA and the greater scientific community.

The island was acquired from the U.S. Coast Guard in 1998, and Allied Whale has a long history of seasonally occupying the island. Mount Desert Rock became the base of summer operations for Allied Whale and provided a foundation for important studies such as the development of photo-



Mount Desert Rock, owned by College of the Atlantic, is a remote, treeless island that sits about 25 nautical miles south of the college campus. Credit: College of the Atlantic

identification techniques for humpback and finback whales. Recently, Allied Whale has initiated a five-year study of marine mammal populations in the northern Gulf of Maine, using Mount Desert Rock as a base of operations. Members of Allied Whale, together with staff, faculty, and administration of COA, continue to develop the fully operational research station, and the plan is to expand beyond marine mammal science.

Great Duck Island

Great Duck Island, located in Hancock County, Maine, about 90 minutes south of COA's campus by boat, is a 220-acre island. The COA owns approximately 12 acres of the island, including the old light station and boathouse. The rest of the island is owned by The Nature Conservancy,



the Maine Department of Inland Fisheries and Wildlife, and a private summer resident. Through a cooperative partnership with these



College of the Atlantic owns a portion of Great Duck Island, shown here. Credit: College of the Atlantic

landowners, COA's students and faculty have access to the Alice Eno Field Research Station that is located on the island. Student research at the field station, which is powered by solar panels, has included studies of the island's breeding bird population and changes in the island's forestland brought about by the introduction of the snowshoe hare.

Lessons Learned

COA provides ample opportunities for field research and study across several types of conserved properties, including the forested Cox Protectorate, two organic farms, and two islands with research stations. Each of these properties has its own story relating how it was acquired, how each was conserved, and how they continue to be managed and used by the COA. These stories offer a few key takeaways for other institutions who are inspired by COA's story:

- Funding for various land conservation projects came from a combination of grants and college funds, including the Partridge Family Fund, which is designated for innovative projects on sustainable land use and agriculture.
- The students have been heavily involved in land-use projects from the beginning, including planning for land conservation in the Cox Protectorate, researching and designing renewable energy systems at the farms, and conducting field research on the two islands. This

student involvement adds to the educational value of these lands and reflects the mission of the college, in which the students integrate knowledge and take the initiative to proactively investigate and advocate for land conservation.

- The two farms serve as an example of how small colleges can balance conservation and land cultivation while connecting the students to the local community, even when a more restrictive conservation easement calls for creative land-use strategies.
- The farmland at COA demonstrates the ways that institution-owned farms can provide for students and communities, alike.

Overall, COA serves as a model for other small-sized colleges that value student-led initiatives and the hands-on application of knowledge. The land conservation policies utilized here illustrate collaboration between students, faculty, state departments, nonprofit organizations, and members of the Mount Desert Island community, all of whom deeply care about conservation, sustainability, and community welfare.

More Information

Mainers Feeding Mainers Gleaning Initiative

<https://healthyacadia.org/initiatives/gleaning.html>

Beech Hill Farm Energy website <https://sites.google.com/site/beechhillfarmenergy/matrix>

Mount Desert Rock <https://www.coa.edu/islands/mount-desert-rock/>

Great Duck Island <https://www.coa.edu/islands/great-duck-island/>

Beech Hill Farm <https://www.coa.edu/farms/beech-hill-farm/>

Peggy Rockefeller Farms <https://www.coa.edu/farms/peggy-rockefeller-farms/>

The Natural History of the Protectorate (a YouTube video) <https://www.youtube.com/watch?v=ff3xRQGe84A>



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