

The mission of the Casco Bay Estuary Partnership is to help conserve the ecological integrity of Casco Bay and its watershed through science, public stewardship and effective management.

2022



ANNUAL REPORT

SCIENCE-BASED | NON-REGULATORY | LOCALLY-LED | COLLABORATIVE | WATERSHED-FOCUSED

Casco Bay Estuary Partnership
University of Southern Maine



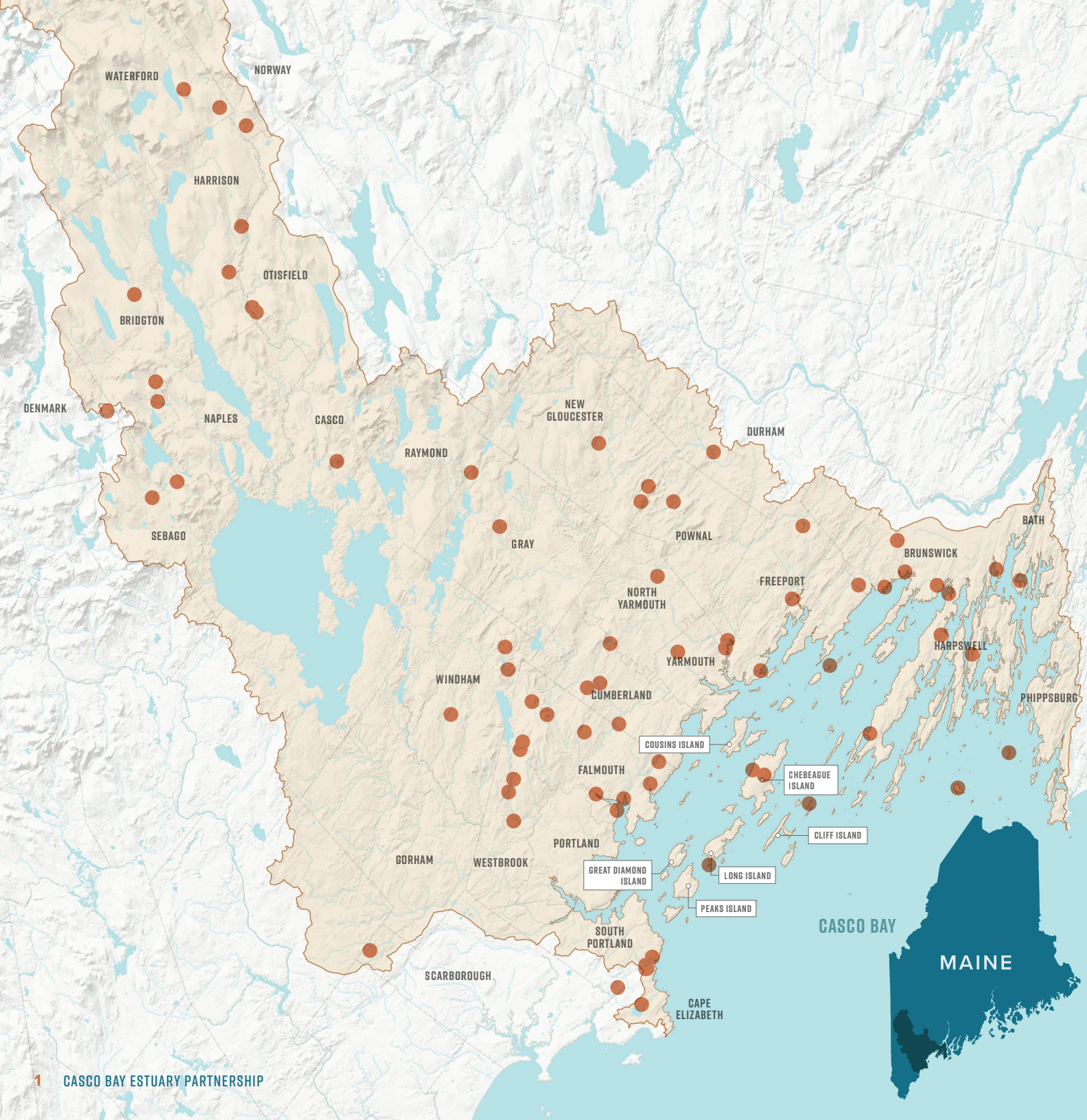
Photos (unless otherwise noted):
Jerry Monkman, ecophotography.com

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CBEP 22 YEARS OF HABITAT PROTECTION SUPPORT

- 13,000 Acres of land and water protected with CBEP support
- \$970,000 for habitat protection contributed by CBEP with EPA funding
- 74 Projects supported in the Casco Bay Watershed in 26 communities
- CBEP will integrate DEIJ values into future land protection grant opportunities



Letter from the DIRECTOR & CHAIR

Recent federal legislation, including the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act provide significant funding for clean water, habitat restoration and climate resilience. Many of our Partners are already working to put those new resources to work on behalf of our communities and the Bay.

Significantly, the IIJA provides a significant five-year increase in funding for all National Estuary Programs, including CBEP. That increase in funding will allow us to tackle some long-standing priorities, like developing a high-resolution circulation model of Casco Bay. And as we update our strategic plan next year, we will be thoughtfully planning how to use our new resources in an equitable and inclusive fashion.

The funding will also give CBEP an historic opportunity to greatly expand our work with communities to prepare for climate change. We look forward to building new partnerships to help communities, and particularly their most vulnerable members, protect infrastructure, conserve habitat, and enhance the resilience of aquatic ecosystems, including our rivers and streams, salt marshes and bays.

In gratitude and partnership,



Curtis C. Bohlen
Director



Charlene Poulin
Management Committee Chair

THANK YOU TO OUR CBEP MANAGEMENT COMMITTEE MEMBERS

We would like to thank Jacki Cohen for her many years of service to the Partnership. Jacki has served on the Management Committee since the early 1990s and spent many years as its Chair. We will miss her steady leadership, experience and wisdom.

Gretchen Anderson, Environmental and Sustainability Coordinator, Windham

Erno Bonebakker, Casco Bay Islands Alliance

Damian Brady, Associate Professor, University of Maine School of Marine Sciences

Jacki Cohen, Citizen representative

Andrew Coughlin, Facilities Director, Mast Landing Brewing Company

Dan Devereaux, Coastal Resource Manager, Town of Brunswick

Wendy Garland, Division Director, Bureau of Water Quality, Maine Department of Environmental Protection

Charles Hebson, Chief Hydrologist, Maine Department of Transportation

Heather Hunt, Project Manager, Cumberland County Soil & Water Conservation District

Rachel Lasley-Rasher, Assistant Professor of Biology, University of Southern Maine Department of Biological Sciences (Co-USM seat)

Bryant Lewis, Shellfish Program Supervisor, Maine Department of Marine Resources

Regina Lyons, Chief, Ocean & Coastal Protection Section, U.S. Environmental Protection Agency

Ben Pearson, Compliance Section Coordinator, City of Portland Water Resources Division

Steve Walker, Program Coordinator, Beginning with Habitat Program, Maine Department of Inland Fisheries and Wildlife

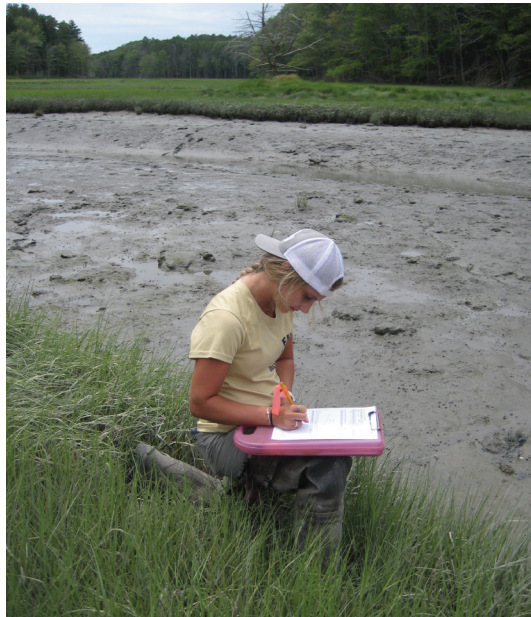
Sara Mills-Knapp, Sustainability Program Manager, Greater Portland Council of Governments

Tom Shyka, Product and Engagement Manager, Northeastern Regional Association of Coastal and Ocean Observing Systems

Karen Wilson, Associate Research Professor, University of Southern Maine Department of Environmental Science and Policy (Co-USM seat)

CBEP is funded by the US Environmental Protection Agency under Cooperative Agreements #CE00A00673-0 and #CE00A00682-0 with the University of Southern Maine.

Protecting & Restoring HABITATS



MARSH MONITORING

With the help of 2022 Marsh Monitoring Intern Maddy Young and CBEP Resilience Fellow Josee Stetch, CBEP continued to monitor tidal marsh response to past tidal restoration improvements at Long Marsh and Appletree Marsh in Harpswell, and at Thomas Bay Marsh in Brunswick. CBEP also monitored living shoreline demonstration sites in Brunswick during the 2022 summer field season.

Eckert property. Photo courtesy of BTLT

THE HABITAT PROTECTION FUND

Provided funding for seven projects (one to be announced early next year):

Brunswick-Topsham Land Trust

\$7,000 toward transaction costs associated with acquisition of the Eckert Property, a 25-acre parcel on Maquoit Bay in Brunswick. The Eckert property is located within the Maquoit and Middle Bay Focus Area of Statewide Ecological Significance and contains significant frontage along the upper marshes and tidal creeks of Maquoit Bay.

Chebeague & Cumberland Land Trust

\$10,000 toward costs associated with acquisition of the 54-acre Read Easement, a relatively large parcel in the heart of Cumberland with excellent habitat and recreational values.

Loon Echo Land Trust

\$5,000 toward transaction costs associated with acquisition of Rolfe Hill, a 439.5-acre parcel in Casco, home to nearly 60 acres of wetlands and an additional 380 acres of undeveloped upland forest.

Royal River Conservation Trust

\$7,000 toward transaction costs associated with acquisition of Thayer Brook Preserve, a 212-acre parcel in Gray, which has exceptional ecological and recreational values, including trail connections to two major schools.

Western Foothills Land Trust

CBEP supported two WFLT projects, both containing important National Wildlife Inventory-mapped wetlands and stream frontage. Twin Bridges Extension: \$5,000 in support of transaction costs for two parcels totaling 78 acres in Otisfield. Mill Hill East: \$7,500 in support of transaction costs for multiple lots totalling 643.5 acres in Waterford and Harrison.

Read Easement. Photo courtesy of CCLT



Protecting WATER QUALITY

PORTLAND AREA NITROGEN GROUP (PANG)

In response to a recommendation of the Nutrient Council's 2019 report, Maine Department of Environmental Protection and CBEP formed the Portland Area Nitrogen Group (PANG) to develop regional consensus around nutrient criteria for marine waters in the Greater Portland Harbor area of Casco Bay. A draft model will be completed in the summer of 2023 and a final by the following summer.



OCEAN MODELING & CLIMATE PREDICTION

CBEP is funding a new Casco Bay coastal ocean model, based on existing work by Northeastern Regional Association of Coastal Ocean Observing Systems (NERACOOS), which will generate daily three-day forecasts of ocean conditions in Casco Bay at high spatial resolution. It will offer hourly predictions of currents, water levels, wave heights and wave periods, salinity, and temperature. Such predictions are essential for storm surge and flood prediction, port operations, and emergency management. Urban ocean models can also inform environmental mitigation systems such as oil spills response and stormwater management. The model will clarify processes in the coastal ocean, including pollution transport and coastal ecology.

CBEP held a series of community workshops and meetings in fall of 2022 to learn how the Casco Bay Model could help address community needs. The Casco Bay model is expected to be in full operation by summer of 2023. A National Science Foundation grant to CBEP, in collaboration with the City of Portland, University of Maine, NERACOOS, and Scientific Solutions, Inc., is helping fund this project.



The Town of Arrowsic held a community climate workshop for residents at the fire station.

HELPING COMMUNITIES PREPARE FOR CLIMATE CHANGE

CBEP, working with the New England Environmental Finance Center and Kennebec Estuary Land Trust, helped five southern Midcoast communities enroll in the new **Community Resilience Partnership** Program and develop funding applications for Community Action grants.

A virtual workshop, “Building Strong Communities,” organized by New England Environmental Finance Center and CBEP, drew over 40 participants from inland communities seeking ways to access grant funds for priority community projects.

CBEP and partners in the **Social Resilience Project** facilitated a virtual “tabletop” exercise for a coastal storm event, which drew 54 people representing social service, emergency management, municipal, and conservation sectors. The result was increased awareness and connection between the different sectors to help vulnerable populations plan for storm events.



A Brunswick High School marine science class collects green crabs at Wharton Point on Maquoit Bay in Brunswick.



ENGAGING STUDENTS AND NEW PARTNERS WITH CASCO BAY

With the help of a CBEP Community Grant and in partnership with Brunswick Coastal Resource Manager Dan Devereaux and local clambers, **Brunswick High School** students are conducting a 5-year study on invasive green crab populations, their connection to rising water temperatures and their negative impacts on the local clamming industry.

How prevalent are blue crabs in Casco Bay? A Community Grant project by the **Wells National Estuarine Research Reserve (Wells NERR)** aimed to figure that out through surveys of adults, larvae, and environmental DNA (eDNA). Community volunteers sampled at seven locations in Casco Bay from July through October. No adult blue crabs were caught off the islands by volunteers but researchers will have other sample results early next year.

The Town of **Long Island School** along with **Oceanside Conservation Trust** used their grant funds to introduce students to local climate change impacts and the role of citizen scientists. Students and teachers visited a **Climate Change Observatory Network (CCON)** monitoring post and learned how to use a phone to capture and upload climate change impact photos.



Photo courtesy of Jeremy Miller, Wells NERR

Our Partners AT WORK



WITH CBEP SUPPORT, OUR PARTNERS ACCOMPLISHED MUCH IN 2022

- 1 CBEP joined **Lakes Environmental Association (LEA)**, **Trout Unlimited** volunteers, **Sebago Clean Waters**, and **Hancock Lumber Company** to remove a remnant stone, earthen, and timber dam on Burgess Brook in Naples. The Crooked River and its tributaries support a wild brook trout population and provide nearly all the spawning habitat for landlocked Atlantic salmon in the Sebago Lake watershed. This work is part of a larger project to correct stream crossings that are negatively impacting fish habitat and pose flooding risks in the Sebago Lake watershed. Photos courtesy of Sebago Clean Waters
- 2 CBEP staff and partners met with EPA officials at Cousins River Marsh in Yarmouth, to hear from **Maine Coast Heritage Trust** staff about a newly conserved 43-acre parcel and its nearly 22 acres of wetlands and important wildlife habitat.
- 3 At Wharton Point in Brunswick, Jessica Joyce of **Tidal Bay Consulting** and Josee Stetch, CBEP 2022 Coastal Resilience Fellow, discuss their work with the Casco Bay Regional Shellfish Working Group, which addresses issues facing the wild-harvest shellfish community and shares expertise and best practices.
- 4 Mike Doan demonstrated **Friends of Casco Bay's** marine water quality and coastal acidification work at the Gulf of Maine Research Institute Pier in Portland.

