



Assessing Kachemak Bay's Blue Carbon Resources and Increasing Community Awareness and Commitment to Preserving Wetland Ecosystem Services

Project Location

Kachemak Bay, Alaska

Project Duration

October 2017 to June 2019

Project Lead

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Project Type

Science Transfer – Promoting
the use of science

Project Partners

- Kachemak Bay National Estuarine Research Reserve
- Silvestrum Climate Associates
- Smithsonian Environmental Research Center
- Waquoit Bay National Estuarine Research Reserve

Project Webpage

nerssciencecollaborative.org/project/Walker18

Overview

The southern Kenai Lowlands cover 9,400 square kilometers and include huge expanses of wetlands, predominantly peatlands and tidal saltmarshes at river mouths and coastlines. These wetlands sequester large stores of carbon and provide numerous other ecological services. However, population growth and development increasingly put the privately owned and unprotected public lands of the southern Kenai Lowlands at risk. In response, local communities have begun to explore proactive conservation measures to keep these wetlands intact and the carbon they store out of the atmosphere. In 2016, at the request of the Kachemak Bay Community Council, the Kachemak Bay National Estuarine Research Reserve partnered with the Smithsonian Environmental Research Center to conduct pilot tests of saltmarsh carbon sequestration, and shared the results with the council, municipalities, government agencies, and local non-profits. The results spurred interest in blue carbon valuation throughout the region.

Through a National Estuarine Research Reserve Science Collaborative Science Transfer project to build capacity for blue carbon in Alaska, the Kachemak Bay Reserve drew on the expertise of Waquoit Bay Reserve and their Bringing Wetlands to Market initiative to develop approaches for long-term blue carbon research and stakeholder engagement in the Lower Kenai region. Researchers from the Smithsonian Environmental Research Center and professionals from Silvestrum Climate Associates provided technical expertise on peatland assessments and protocols, and context for carbon markets, respectively. The project offers a novel way of thinking about building conservation programs that preserve multiple benefits of wetlands and make economic sense.

Project Approach

Kachemak Bay Reserve staff developed an interdisciplinary team to work collaboratively to develop blue carbon assessment efforts for the Kenai Lowlands. Following an initial webinar aimed at familiarizing partners with blue carbon concepts, characteristics of the region's ecosystems, and socioeconomic conditions, the team planned and hosted two site-based workshops geared toward land use planners, permitting entities, conservation non-profits, board members of the Kachemak Heritage Land Trust, and the Kachemak Bay Reserve Community Council. Following the workshops, project partners met to discuss next steps. In the process of discussing potential outcomes and impacts, collaborators reached the conclusion that the most viable approach for the region would be to center a carbon project around avoiding development impacts to peatlands. To continue momentum, the team developed communications strategies for stakeholder engagement and fundraising.

Products

- **A logic model for a research plan**, including assessments of existing peatland extent and condition in the Kachemak Bay region, summaries of previous studies and data for peatlands, methodologies for measuring peatland carbon, sampling strategies, and potential future partnerships.
- **A stakeholder engagement strategy table** identifying stakeholder audiences, points of contacts, interests, influence, important goals, contributions, and contact information.
- **A GIS-generated map** showing peatlands by major land owners in the Kenai Lowlands, Alaska region.
- **Multimedia materials** associated with webinars given on the subjects of measurement tools and financial incentives for the management of Kenai Peninsula's peatlands.

Benefits

- Kachemak Bay Reserve staff and partners built capacity to communicate about blue carbon and peatland ecosystem services. Numerous presentations, discussions, and site-based experiences advanced a conversation about blue carbon and peatland carbon in the region, enhanced the capacity for partnerships, and strengthened stakeholder networks.
- Developed a blue carbon approach specifically for peatlands, a first within the research reserve system.
- Laid the groundwork for tangible conservation and restoration activities in the Kenai Lowlands by increasing capacity and enhancing awareness around ecosystem service valuation, mitigation for land use purposes, and community resilience.

What's Next

- The team has secured \$35,000 in funding from the U.S. Fish and Wildlife Service to conduct research on peatland depths from 2019 to 2020.

About the Science Collaborative

The National Estuarine Research Reserve System's Science Collaborative supports collaborative research that addresses coastal management problems important to the reserves. The Science Collaborative is managed by the University of Michigan's Water Center through a cooperative agreement with the National Oceanic and Atmospheric Administration (NOAA). Funding for the research reserves and this program comes from NOAA. Learn more at nerrsciencecollaborative.org or coast.noaa.gov/nerrs.