



# Carrying Out Climate Scenario Planning for the Kenai Peninsula, Alaska

## Overview

### **Climate change impacts in Alaska are much more pronounced than in other regions of the United States.**

Communities in the Kenai Peninsula are already coping with a variety of impacts related to a warming climate, including reductions in wetland areas, glacial ice coverage, and freshwater availability, and increases in temperatures, ocean acidification, and harmful algal blooms. Efforts to document these recent changes will be leveraged to create tangible recommendations and a long-term local strategy for adaptation to rapid climate change. Barriers hindering effective climate change planning on the peninsula include the uncertainty of future trajectories, a need for a synthesis of regional data, and limited capacity for interagency collaboration. This project aims to address these needs and help coastal communities on the Kenai Peninsula plan for a changing climate.

Drawing upon experience using scenario planning to help local communities prepare for climate change in the Tijuana River Valley (Southern California), the project team will use the best available science to facilitate local dialogue addressing how climate change may impact the Kenai Peninsula. The project will engage regional leaders and community stakeholders to collaboratively develop plausible future planning scenarios based on a wide range of possible environmental responses to a changing climate. Ultimately this process and the resulting scenarios will help to inform area resource managers and land use planners as they lay the groundwork for future research, regulation, and development. Additionally, the project will document the process and lessons learned to further demonstrate the applicability of scenario planning across geographically distinct communities.

## Anticipated Benefits

- Increased awareness and understanding of climate change science and vulnerabilities among Kenai Peninsula decision makers.
- Strengthened stakeholder network to address a changing climate and increase coastal resilience.
- Expanded regional capacity to prepare for climate change with tangible adaptation actions.

### Project Location

Kachemak Bay National Estuarine Research Reserve

Tijuana River National Estuarine Research Reserve

### Project Duration

September 2015 to August 2017

### Project Lead

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### Project Type

Science Transfer – promoting the use of science

### Project Partners

- Kachemak Bay National Estuarine Research Reserve (Alaska)
- Tijuana River National Estuarine Research Reserve (Southern California)

## Project Approach

Coastal managers from California and Alaska are partnering to apply the Tijuana River Reserve's expertise in community-based collaborative scenario planning to prepare for the future in Kachemak Bay, a region in need of an effective strategy to prepare for and adapt to climate change.

An interdepartmental planning team from both reserves, guided by a steering committee, will

- **Synthesize climate change science and impacts** – Compile the best available science on climate change impacts projected for the Kenai Peninsula.
- **Identify priorities** – Informally survey stakeholders to gain insight into local climate observations, risk perceptions, and regional perspectives on steps needed for successful community adaptation.
- **Engage stakeholders** – Convene stakeholders to provide an overview of the best available science on local climate change impacts and compile community climate scenarios to inform local decision-making processes and management actions.
- **Document lessons learned** – The process and lessons learned will be documented and distributed broadly throughout the reserve system.
- **Apply project results** – Kachemak Bay Reserve will utilize the climate scenarios developed in this project to inform future data collection priorities, and advance local adaptation planning and actions.

## Anticipated Products and Targeted End Users

- Workshops that engage Kenai Peninsula decision makers, including city and borough elected officials, tribal leaders, city and environmental planners, natural resource managers, researchers, municipal public works, and emergency personnel.
- Climate scenario decision-support tool for the Kenai Peninsula to expand regional decision makers' understanding of risks and opportunities resulting from a changing climate.
- An enhanced regional network of local leaders engaged in preparing for climate change in Kachemak Bay and throughout the Kenai Peninsula.

### 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 [www.nerrs.noaa.gov](http://www.nerrs.noaa.gov) or [www.graham.umich.edu/water/nerrs](http://www.graham.umich.edu/water/nerrs).*