



The Kasitsna Bay Laboratory's mission is to improve understanding of the response of subarctic coastal ecosystems to climate change, human impacts and extreme events.



Overview

The **Kasitsna Bay Laboratory** is the Alaska field station of the Center for Coastal Fisheries and Habitat Research, under the National Centers for Coastal Ocean Science (NCCOS) of NOAA's National Ocean Service. The University of Alaska Fairbanks (UAF) partners with NCCOS to operate the laboratory and run a cold water diving program as part of the West Coast and Polar Regions Undersea Research Center.

UAF has operated a scientific diving training program at the lab for several years, funded by NOAA's National Undersea Research Program and the UAF School of Fisheries and Ocean Sciences graduate program.

Kasitsna Bay Laboratory is situated within the Kachemak Bay National Estuarine Research Reserve. Research education and outreach activities are coordinated with the Reserve and frequently conducted in collaboration with local community and tribal organizations, with local and regional schools, with the Kenai Peninsula College of UAA.

Location

The Kasitsna Bay Lab is located on the Kenai Peninsula in southcentral Alaska, about 200 miles southwest of Anchorage, on the south side of Kachemak Bay in lower Cook Inlet. The lab is off the main Alaska highway system, but is accessible by both water and air taxi from the city of Homer, and is connected by road to the city of Seldovia, located about 9 miles away.



The Cook Inlet region has one of the highest tidal ranges in North America, and is surrounded by mountains, glaciers, and active volcanoes, including Augustine Volcano, which erupted several times last winter.

The diverse marine habitats in Kachemak Bay, from the kelp forests and rocky fjord substrates to seagrass beds on extensive mudflats, provide a natural laboratory for marine research and education. The region also contains multiple national parks, national wildlife refuges, state parks and critical habitat areas, and Kachemak Bay is the largest of 27 National Estuarine Research Reserves.

Facilities

- \$12.5 million in new construction and renovations since 2000, including a new pier and dock.
- New research facilities include a wet/dry laboratory building with a 1,400 square foot running seawater laboratory
- Five dry laboratories, classroom, offices and storage space
- Year-round cold water diving supported by a new SCUBA dive building and air compression system
- Housing for 48 people, with kitchen and laundry facilities, with internet
- Extensive machine shop capability, currently being upgraded, to support both research and facility operations.





Education

The Kasitsna Bay Lab has a long tradition of hosting marine science classes for graduate, undergraduate, and K-12 students, as well as for teacher training. Some courses to be held at the lab in 2007 include:

- **Scientific Diving and Advanced Scientific Diving**, taught by Brenda Konar, UAF, March 2007
- **Marine Biology and Ecology Field Course**, taught by Katrin Iken, May - June 2007
- **Cold Water Diving**, taught by Brenda Konar, UAF, August 2007
- **Marine Studies for Science Teachers**, taught by Katrin Iken, Brenda Konar, and Brenda Norcross, UAF, June 2007:
A series of week-long teacher training classes on marine invertebrates, macroalgae and connections between fisheries and oceanography.

Research

Research and education efforts at the Kasitsna Bay Lab take advantage of the pristine surroundings and the very high tidal range. A major research focus is on understanding the response of subarctic coastal and estuarine ecosystems to change – particularly climate variability, human impacts and extreme events. The goal is to provide federal, state, local and tribal agencies with the information, tools and training needed for scientifically-based resource management, using an integrated approach to understanding the ecosystem.

Recent laboratory research topics have included fisheries, mariculture, coastal monitoring, marine biodiversity, trophic dynamics, cold water diving, and oil spill response. Some current projects at the lab include:



- Role of grazers in the recolonization of hard bottom communities in Kachemak Bay
- Essential larval and juvenile fish habitat in nearshore waters of Kachemak Bay
- Habitat use by kelp associated crab populations in Kachemak Bay
- Dynamics of chemical defenses in four Kachemak Bay kelp species as a response to gastropod grazing patterns
- Characterization and modeling of seagrass resources in Kachemak Bay

For more information:

For more information on the Kasitsna Bay Laboratory, please contact Kris Holderied, acting NOAA Kasitsna Bay Lab director (kris.holderied@noaa.gov) or David Christie, the UAF Kasitsna Bay Lab director and director of the West Coast and Polar Regions Undersea Research Center (dchristie@guru.uaf.edu).

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