



Educational Programs

ALL PROGRAMS ARE FREE

*Alaska Islands & Ocean Visitor Center
is a partnership between
Kachemak Bay Research Reserve
and
Alaska Maritime National Wildlife Refuge,
dedicated to understanding and conserving the marine environment*

Educational Programs at Islands and Ocean:

- * Incorporate experiential hands-on activities into learning
- * Cover topics from Kachemak Bay to the farthest reaches of Alaska and beyond
- * Include activities in the exhibit areas, lab / classrooms, trail system, and beyond to fully extend the learning experience
- * Are based on State standards & school district curricula
- * Are led by trained naturalists
- * Promote respect for Alaska's coastal unique coastal natural resources

Islands & Ocean facilities are set up to support you with your learner group:

- * lab / classroom / auditorium
- * student restrooms
- * outdoor amphitheater
- * bookstore / gift shop
- * trails to wetlands and beach
- * bus parking area
- * student mudroom
- * recycling containers
- * interactive exhibit halls

Updated 1/2/2009





MAKING RESERVATIONS FOR EDUCATION PROGRAMS:

To schedule an educational program at Islands & Ocean with Kachemak Bay Research Reserve and/or Alaska Maritime National Wildlife Refuge, **YOU MUST CONTACT EACH ORGANIZATION SEPARATELY**. If you can't come to us, we may be able to adapt and carry our programs to your classroom, just ask. Minimum group size - 10 student.

MAKING RESERVATIONS FOR



RESEARCH RESERVE EDUCATION PROGRAMS

To book or inquire about the Reserve's marine science education programs during the school year, please contact:

Carmen Field, KBRR Education Specialist
907-226-4659 or carmen_field@fishgame.state.ak.us



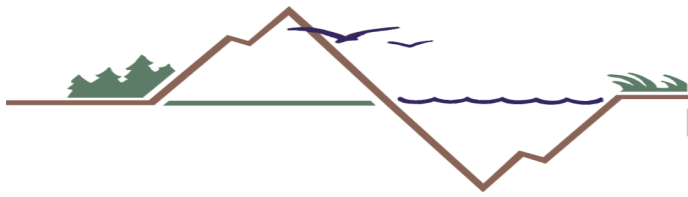
MAKING RESERVATIONS FOR REFUGE EDUCATION PROGRAMS

Taught by professional educators, in spectacular indoor and outdoor settings, at no cost to you!

Bookings are made on a first-come, first-reserved basis. To book or inquire about the Refuge's education programs please contact:

Lisa Matlock, Refuge Environmental Education Specialist
907-226-4617 or lisa_matlock@fws.gov

Ease your trip planning or expand your experience while in Homer by tapping into:
<http://Homerfieldtrips.com>



KACHEMAK BAY RESEARCH RESERVE

Education Programs

In 2005-2006 Research Reserve education staff offers grade-specific, indoor/outdoor classes within the following three concept units:

- * High Seas Drifters [Ocean Science]
- * Estuary Ecology & Research [Estuarine/Coastal Science]
- * Careers in Marine Science

HIGH SEAS DRIFTERS (Grades K - 12): These lab classroom programs provide students an opportunity to gain hands-on experience with marine organisms, monitoring the marine environment, and scientific lab equipment. Participants' understanding of the marine environment and ecology will be greatly enhanced by the following grade-specific High Seas Drifters programs:

K: The Ocean (lab class) - This 45-minute lab program introduces young students to the ocean environment through a brief illustrated overview, live animals, art activities and more.

1st: Ocean Animals (lab class) - This 45-minute lab program introduces young students to the diversity of ocean animals - both vertebrate and invertebrate - found in the Kachemak Bay marine environment through a brief illustrated overview, live animals, art activities and more.

2nd: Ocean Habitats (lab class) - This 45-minute lab program introduces young students to ocean habitats, including open ocean, kelp forests, sea floor types, and beach habitats through a brief illustrated overview and hands-on activities.

3rd: Ocean Plants (lab class) - This 1-hour lab program introduces young students to ocean plants - seaweeds & phytoplankton - through a brief illustrated overview and hands-on activities.

4th: Marine Invertebrates (lab class) - This 1.5-hour program introduces students to characteristics and adaptations of marine invertebrates through an illustrated overview presentation, handling of live animals, microscope observation and inquiry-based activities.

5th: Ocean Tides & Currents (lab class) - This 1.5-hour program introduces students to characteristics of tides and global currents, including ocean circulation, waves - including tsunamis, and tidal cycles through an illustrated overview presentation and hands-on, inquiry-based activities in our lab classroom.

6th: Ocean Ecosystems (lab class) - This 1.5-hour program introduces students to the complexity of ocean ecosystems, focusing on nearshore/offshore/deep ocean, water column, communities, interrelationships, & food webs.

7th: Plankton Ecology & Taxonomy (lab class) - This 1.5-hour program introduces students to marine zooplankton and phytoplankton identification, classification, and lifestyles through an illustrated presentation on plankton ecology, microscope use instruction, and microscope identification

of live marine plankton. Information recorded by students during this class becomes incorporated into KBRR plankton database for Kachemak Bay and Cook Inlet.

9th - 12th: Ocean Physics (lab class) - This 1.5-hour program introduces high school students to properties of sea water, including salinity, density, temperature, turbidity, and pH with hands-on, inquiry-based activities. Special focus may be available upon request.

9th - 12th: Marine Biology (lab class) - This 1.5-hour program introduces high school students to concepts of marine biology, with focus determined by each classroom teacher (e.g. intertidal ecology, marine invertebrate classification, marine habitats and inhabitants, etc.).

4th - 12th: Plankton Art Workshop (lab class) - This 1.5 to 2.5-hour lab program introduces students to the world of marine plankton and plankton art. Instruction includes an illustrated overview of plankton ecology, video clips of live plankton, review of plankton art forms, and free time for microscope observation of plankton and initial artwork design.

K - 12th or mixed grade-level groups:

Marine Life Lab (lab class) - This 1 to 1.5-hour lab program introduces students to marine life of Kachemak Bay through grade-appropriate learning stations featuring live and preserved organisms, plankton observation, marine art activities, and more.

ESTUARY ECOLOGY & RESEARCH (Grades K - 8): These primarily field programs will introduce students to coastal habitats, estuaries, the Reserve, our research questions and current projects in Kachemak Bay. **All Estuary Ecology & Research field programs are available only in late April, May, September, & early October.** Students will learn important concepts of estuarine ecology through hands-on, inquiry-based activities during the following grade-specific Estuary Ecology & Research programs:

K: Our Ocean's Coast (lab/field class) - This 1-hour lab / field program introduces young students to Alaska's coast through a brief in-class illustrated overview of the coastal environment, followed by a guided hike along Beluga Slough to Bishops Beach with hands-on, age-appropriate outdoor activities.

1st: Coastal Animals (field/lab class) - This 1-hour lab / field program introduces young students to the diversity of coastal animals - both vertebrate and invertebrate - found in the Kachemak Bay marine environment through a brief in-class illustrated overview and guided hike with hands-on, age-appropriate activities along a trail skirting Beluga Slough.

2nd: Coastal Habitats (field/lab class) - This 1-hour lab / field program introduces young students to coastal habitats - including beach types and salt marshes - through a brief, in-class illustrated overview and guided hike with age-appropriate, hands-on activities along a trail skirting Beluga Slough.

3rd: Nearshore Plants (field class) - This 1-hour field program introduces young students to near-shore plants - particularly salt marsh and salt tolerant plants - through a guided hike with hands-on, age-appropriate activities along a trail skirting Beluga Slough.

4th: Life in the Estuary (field class) - This 1.5-hour field program introduces students to characteristics and adaptations of estuarine plants and animals through a guided hike along a trail skirting Beluga Slough, incorporating hands-on, inquiry-based activities.

6th: Estuary Ecosystems (lab class) - This 1.5-hour program introduces students to the complexity of estuarine ecosystems, focusing on estuaries, the National Estuarine Research Reserve (NERR) System, communities, interrelationships, & food webs.

7th: Estuary Ecology & Classification (field/lab class) - This 1.5-hour lab/field program introduces students to identification, classification, and lifestyles of estuarine flora & fauna through an illustrated overview presentation and field excursion along a trail bordering Beluga Slough, incorporating hands-on, inquiry-based activities.

CAREERS IN MARINE SCIENCE (Grades 4 - 12):

4th - 12th: Careers in Marine Science (lab class) - This 1-hour program introduces students to the variety of careers in marine science. Group discussion, related hands-on activities, Meet A Reserve Marine Scientist illustrated presentation, and more may be incorporated into this lab class.

MAKING RESERVATIONS FOR RESEARCH RESERVE EDUCATION PROGRAMS

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Carmen Field, KBRR Education Specialist
907-226-4659 or carmen_field@fishgame.state.ak.us



Alaska Maritime National Wildlife Refuge

Environmental Education Programs

The refuge offers grade-specific, educator-led, indoor and outdoor programs within these three themes: Marine Habitat, Marine Wildlife, and Maritime Culture & History. Note which programs are appropriate for each grade level in the grid below. Program descriptions below offer more details including: content, how long the activity takes, whether it’s indoor or outdoor, how many students can take part in it, and whether the program is tide specific, specific to one time of year, or has other constraints.

IN YOUR CLASSROOM

K-12 Marine Debris - Available late March or early April, scheduled when you request your field or Islands & Ocean-based program

AT ISLANDS & OCEAN or IN THE FIELD - HOMER

All classes that visit the refuge are welcome to explore the Islands and Ocean Visitor Center exhibit hall. Please contact us to schedule your visit since we MUST insure staffing for your class. A scavenger hunt is available to your students upon request.

	Marine Habitat	Marine Wildlife	Maritime History & Culture
K-2	Intertidal Life Exploration (BB)	Do Birds Wear Underwear? (IOVC) Otterly Wonderful Otters (IOVC)	
3-5	Intertidal Life Exploration (BB) Nature Photo Workshop (IOVC / BB)	“Club Mud” Shorebirds (MB) Seabird Adaptations (IOVC) Marine Mammals of Alaska (IOVC) Alaska’s Endangered Species (IOVC)	World War II in the Aleutians (IOVC)
6-8	Intertidal Life Exploration (BB) Nature Photo Workshop (IOVC/BB) Island Biogeography (TBD) Oil Spill! (TBD)	“Club Mud” Shorebirds (MB) Waterbird Lab (IOVC) Marine Mammals of Alaska (IOVC) Alaska’s Endangered Species (IOVC)	Footprints on an Ancient Land (IOVC) Aleutian Archeology (TBD)
9-12	Intertidal Life Exploration (BB) Nature Photo Workshop (IOVC / BB) Island Biogeography (TBD) Oil Spill! (TBD)	Trespassers in Nature (IOVC) Counting the Wild (IOVC) Climate Change & Marine Willdife (TBD)	Aleutian Archeology (TBD)

(IOVC) Islands and Ocean Visitor Center

(BB) Bishop’s Beach

(MB) Mud Bay

(TBD) To Be Developed

Alaska's Endangered Species

Powerpoint program to explain the process of how species become listed under the Endangered Species Act and what that listing means. Also includes an exploration of Alaska endangered species pelts, skulls, and taxidermied birds.

60 minutes Grades 3-8 Max: 30 students INDOORS Available all year

Aleutian Archeology (*Under Development*)

Powerpoint program about Unangan culture and the unique challenges of doing archeology in the Aleutian Islands.

60 minutes Grades 6-12 Max: 30 students INDOORS Available all year

Climate Change & Marine Wildlife (*Available for Testing*)

Powerpoint about refuge biologists and their work along Alaska's remote coastline. Use real data gathered over the past two decades to explore changes in populations and conditions for marine wildlife and their relationship to climate change. **requires pre-reading of scientific article.

2 hours Grades 9-12 Max: 30 students INDOORS Available all year

"Club Mud" - Shorebirds

Flock to Homer's Mud Bay with thousands of migrating shorebirds. Learn to identify them with field guides, binoculars and spotting scopes. Additional stations cover feeding behaviors, bird banding reports, Avian Olympics, migration, and/or dichotomous key use.

2 hours Grades 3-8 Max: 30 students OUTDOORS May 1-15 only

Meet at Mud Bay. Your transportation should park in the old airport parking lot on Kachemak Drive. We will meet you and your students, at the appointed time, at the base of the road down to the small spit in Mud Bay. Program is tide dependent; please call for available times.

Counting the Wild

Develop wildlife population counting skills. Decode bands to learn the history of our bird guests. Role play the life of a refuge biologist in one of our remote camps.

90 minutes Grades 9-12 Max: 30 students INDOORS Available all year

Do Birds Wear Underwear?

Learn to identify the main types of feathers and their purposes. Experiment on feathers to understand how they work. Use hand lenses to examine how feathers react to different substances. Act out a poem about the "life span" of feathers.

45 minutes Grades K-2 Max: 30 students INDOORS Available all year

Footprints on an Ancient Land

Explore the impact of the Aleuts, trappers, World War II, the Cold War, and Refuge biologists on the Aleutian Island ecology. Be part of a mock court case, the plaintiff is "Mother Nature", the defend-ers are the many people who have left more than footprints.

60 minutes Grades 6-8 Max: 30 students INDOORS Available all year

Intertidal Life Exploration

Visit Bishop's Beach and investigate the types, location, and adaptation of the intertidal life. Discover the links between intertidal life and other marine wildlife.

2 hours Grades 4-6 Max. 30 students OUTDOORS April, May & September only
Requires tide of -3 or lower. Meet at the end of the trail, down from Ocean Shores Motel. Rubber boots a MUST!!

Island Biogeography (Under Development)

Explore the special role of islands in the world and how islands are related to wildlife populations in Alaska.

90 minutes Grades 9-12 Max: 30 students INDOORS Available all year

Marine Debris

Experience the challenges marine life faces with entanglement, ingestion, inhalation and soiling through a variety of activities. A Powerpoint program, garbage collection & analysis, brainstorming on proactive remedies, and feeding frenzy activity are all included.

60-90 minutes Grades K-12 Max: 30 students INDOORS/OUTDOORS March or April only
This program is the refuge's outreach program. A refuge educator will bring this program to your classroom in the spring before your class visits Homer on a field trip.

Marine Mammals of Alaska

Discover how whales, seals, sea lions, polar bears and sea otters make their living in Alaska's frigid waters. Touch and compare skulls and pelts of these sea animals. Practice echolocation, whale sounds, identification skills, and using blubber as insulation.

60 minutes Grades 3-8 Max: 30 students INDOORS Available all year

Oil Spill! (Under Development)

Use the same Environmental Sensitivity maps that the experts use in the field to respond to a mock oil spill on the Alaska coastline. Respond to both the short term need to stop the oil from spreading and the long term protection of wildlife and human health in their exercise.

4 hours Grades 6-12 Max: 30 students INDOORS Available all year

Otterly Wonderful Otters

View entertaining footage of sea otters above and below the water. Act out sea otter behavior and learn about sea otter adaptations. Make a sea otter puppet.

45 minutes Grades K-2 Max: 30 students INDOORS Available all year

Nature Photo Workshop

Using refuge digital cameras, explore the world of nature through the lens. Learn about composition techniques and take home a CD and at least one printed photo.

2 hours Grades 3-12 Max: 15 students INDOORS/OUTDOORS Available all year

Seabird Adaptations

Meet the seabirds of the Alaska Maritime National Wildlife Refuge. Discover their adaptations and key role in marine ecology. Assist in "building" a seabird. Become immersed in the Seabird Experience theater.

60 minutes Grades 3-5 Max: 30 students INDOORS Available all year

Trespassers in Nature

Discover why rats are the biggest worldwide threat to island ecosystems. Learn the unique story of the return of the Aleutian Cackling Goose from endangered species status. Investigate the domino effect of invasive species impacts.

60 minutes Grades 9-12 Max: 30 students INDOORS Available all year

Waterbird Lab

Use real taxidermied seabird, sea duck, sea goose, and shorebirds to learn about what a bird's foot, beak, and wing can tell you about its habitat and food. Includes a Powerpoint introduction and conclusion.

90 minutes Grades 6-8 Max: 30 students INDOORS Available all year

World War II in the Aleutians

Wear a helmet and step back in time to a military briefing on Kiska Island during WWII. Act out the many human roles and challenges that people faced in the "Forgotten War". In a mock reunion 60 years later, a "reporter brings out the "rest of the story" of human impacts.

60 minutes Grades 3-6 Max: 30 students INDOORS Available all year

MAKING RESERVATIONS FOR REFUGE EDUCATION PROGRAMS

To inquire about booking a refuge education program during the school year, please contact:

Lisa Matlock

Refuge Education Specialist

95 Sterling Hwy, Suite 1, Homer, AK, 99603

(907) 226-4617

lisa_matlock@fws.gov

All education programs are booked on a first-come, first-served basis.