



EARTHWATCH 2017

SEA OTTERS AND SEAGRASS IN ALASKA



DEAR EARTHWATCHER,

Welcome to the Sea Otters and Seagrass in Alaska expedition! Alaska is a wild and beautiful place, and the southeast coastal area has spectacularly huge forests and dramatic coastlines. You are likely to see bear, deer, whales, and of course, sea otters in their natural habitat. Consequently, your time on this project will be an adventure filled with compelling data, remarkable wildlife observations, and keen insights about the powerful influence of top predators in marine ecosystems.

Our research is following the recolonization of sea otters to an area where they were hunted to extinction during the fur trade. This population expansion is a natural experiment where we can decipher the role of sea otters, a top predator, in nearshore marine ecosystems. Humans are a key player as well, as sea otters compete for valuable shellfish and are hunted for their fur by coastal Alaska Natives. We will identify the composition of nearshore marine seagrass, invertebrates, and fishes in areas where sea otters vary in the duration and intensity of occupation. Through these studies, we will be able to identify the key linkages between sea otters and the nearshore marine food web.

On this expedition, you'll help document the effects of sea otters. Classic ecological studies from the 1970s and 1980s identified the key role of sea otters in kelp forest through their consumption of sea urchins. Kelp is abundant where there are sea otters and absent where sea urchins are abundant. These studies were some of the first to identify "trophic cascades", where one species can indirectly affect another in perhaps unexpected ways. The linkages between sea otters and seagrass are even more complex and virtually unstudied. Untangling the effects of these keystone forces of nature is anything but simple, leads to unexpected "aha" moments, and to the realization that everything is connected, sometimes in surprising ways. Our research has global relevance, because seagrass provide critical habitats for juvenile fishes and also can store carbon in the sediments. Seagrasses in Southeast Alaska may contribute significantly to healthy fisheries and help to ameliorate climate change.

I look forward to having you join us afield. Together we'll collect data to improve our understanding as a society of the critical role of sea otters. Data you collect will help inform how we humans manage top predators and guide a path toward coexistence.

So pack your warm clothes, be prepared to work hard and come experience the last frontier.

Sincerely,

Dr. Ginny Eckert
University of Alaska Fairbanks



TABLE OF CONTENTS

GENERAL INFORMATION	2
TRIP PLANNER	3
THE RESEARCH	4
DAILY LIFE IN THE FIELD	6
ACCOMMODATIONS AND FOOD	8
PROJECT CONDITIONS	10
SAFETY	14
TRAVEL TIPS	15
EXPEDITION PACKING CHECKLIST	16
PROJECT STAFF	17
RECOMMENDED READING	18
LITERATURE CITED.....	18
EMERGENCY NUMBERS	19



GENERAL INFORMATION

SEA OTTERS AND SEAGRASS IN ALASKA



EARTHWATCH SCIENTISTS

Dr. Ginny Eckert, PI, Professor, University of Alaska Fairbanks
Wendel Raymond, PhD student, University of Alaska Fairbanks

RESEARCH SITE

Prince Wales Island, Alaska

EXPEDITION DATES

- Team 1** May 8–17, 2017
- Team 2** May 22–31, 2017
- Team 3** Jun 6–15, 2017
- Team 4** Jun 20–29, 2017
- Team 5** Jul 6–15, 2017
- Team 6** Jul 19–28, 2017
- Team 7** Aug 4–13, 2017
- Team 8** Aug 16–25, 2017

Complete travel information is not available in this version of the briefing.

Please contact Earthwatch with any questions.



TRIP PLANNER

SEA OTTERS AND SEAGRASS IN ALASKA

TRIP PLANNER

IMMEDIATELY

- Make sure you understand and agree to Earthwatch's **Terms and Conditions** and the **Participant Code of Conduct**.
- If you plan to purchase additional travel insurance, note that some policies require purchase when your expedition is booked.

90 DAYS PRIOR TO EXPEDITION

- Log in at earthwatch.org to complete your volunteer forms.
- Pay any outstanding balance for your expedition.
- Book travel arrangements (see the Travel Planning section for details).
- If traveling internationally, make sure your passport is current and, if necessary, obtain a visa for your destination country.

60 DAYS PRIOR TO EXPEDITION

- Make sure you have all the necessary vaccinations for your project site.
- Review the Packing Checklist to make sure you have all the clothing, personal supplies and equipment needed.

30 DAYS PRIOR TO EXPEDITION

- Leave the Earthwatch 24-hour helpline number with a relative or friend.
- Leave copies of your passport, visa, and airline tickets with a relative or friend.

Read this expedition briefing thoroughly. It provides the most accurate information available at the time of your Earthwatch scientist's project planning, and will likely answer any questions you have about the project. However, please also keep in mind that research requires improvisation, and you may need to be flexible. Research plans evolve in response to new findings, as well as to unpredictable factors such as weather, equipment failure, and travel challenges. To enjoy your expedition to the fullest, remember to expect the unexpected, be tolerant of repetitive tasks, and try to find humor in difficult situations. If there are any major changes in the research plan or field logistics, Earthwatch will make every effort to keep you well informed before you go into the field



THE RESEARCH

SEA OTTERS AND SEAGRASS IN ALASKA



THE STORY

The geographical expansion of sea otters (*Enhydra lutris*) over the past fifty years is a natural experiment that scientists can use to observe the role of apex predators on the resilience of marine ecosystems.

Between the mid-1700s and 1900, sea otters were hunted to near extinction for their fine, dense, and highly valuable fur (Kenyon 1969). In the 1960s, these animals were reintroduced in Southeast Alaska, and their population has grown from roughly 400 to more than 25,000 in the region since that time (USFWS 2014).

In marine subtidal kelp forests, sea otters structure the food web as apex predators (Duggins 1980, Duggins et al. 1989, Estes & Duggins 1995). Recent evidence suggests that this species is important to seagrasses as well (Hughes et al. 2013), but it is unclear exactly what that role is in Southeast Alaska.

Seagrass meadows are one of the most widespread habitats in shallow coastal systems, providing a critical habitat for sea otters, as well as a wide range of other species, including fish, birds, and invertebrates. Seagrasses filter nutrients, enhance water quality, stabilize sediments, and serve as an important carbon sink (seagrasses are responsible for 10% of all carbon buried in the ocean). Yet seagrass meadows have been disappearing worldwide, due to factors such as climate change, agricultural run-off, commercial fishing, invasive species, and nearshore development. Recent evidence, however, suggests that seagrass declines may be explained by top-down cascading effects caused by declines in apex predators (Moksnes et al. 2008, Baden et al. 2012). There's potential that apex predators like sea otters are critical to reversing the decline of seagrasses worldwide.



This recovery of sea otters in Southeast Alaska provides an outstanding opportunity to understand their impact on coastal ecosystems. By studying seagrasses in areas where sea otters are abundant as compared to regions where there are very few otters, scientists will be able to more fully observe the impact of these otters on their environment. By better understanding this interaction, scientists can help to conserve sea otters and their habitat.

RESEARCH AIMS

Little is known about the ecology of sea otters in Southeast Alaska in seagrass habitat. By studying the impact of sea otters on critically important seagrass ecosystems, scientists aim to demonstrate the role these animals play within their environment.

Seagrasses are found worldwide and represent one of the most productive and diverse ecosystems. Seagrass meadows enhance biodiversity, productivity, and provide critical ecosystem services, the most important being nutrient cycling, carbon sequestration, and providing habitat for a wide variety of fish, bird and invertebrate species, many of them commercially important (Waycott et al. 2009).

If it is determined that sea otters have a positive impact on seagrass in this region, then conserving both sea otters and seagrasses becomes a matter of global importance.

This research study has three overarching objectives:

- Compare seagrass extent, density and community composition along a gradient of sea otter occupation.
- Compare nearshore fish composition and abundance in seagrass along a spatial gradient of sea otter occupation and over time at historically sampled sites.
- Identify the diets and activities of sea otters in soft sediment coastal areas.
- Experimentally identify the mechanisms and players in a trophic cascade.

HOW YOU WILL HELP

When you arrive, the researchers will orient you to the local surroundings and brief you on the work you'll be doing. Fieldwork orientation and training will begin on the second day. Most if not all of the fieldwork days will begin early (in some cases around 3:00 or 4:00 a.m. to allow for travel to the site during the appropriate tide). You will be involved with some of the following activities (which may vary depending on the tides and the season):

- Count and observe sea otters: Quantify sea otter abundance and diet at each of the field sites using methods established by U.S. Geological Survey.
- Conduct seagrass surveys: Help to set up transects, count seagrass shoots, and collect samples.
- Conduct fish surveys: Help set beach seines to count, measure and identify fish in the seagrass bed.
- Sample crab pots: Bait and set traps for crabs, and identify and measure crabs captured.
- Quantify the impacts of sea otters through digging.
- Process samples: In the lab, volunteers will process and separate seagrass samples and invertebrates and preserve samples for identification.



DAILY LIFE IN THE FIELD

PLANS FOR YOUR TEAM

Staff will meet with volunteers at the Hollis Ferry Terminal, and will drive you to your accommodations less than an hour away. Upon arriving at the accommodations, you'll receive an orientation to the house and a safety and logistics briefing. Next, we'll prepare dinner together. After dinner you'll receive an introductory lecture on the overall research project. For the next 8 days we will be conducting research either by foot or by boat at many sites along the coast of Prince Wales Island. Teams will conduct a variety of surveys and fieldwork (see above) depending on the tide and the weather. Most of the research will be conducted early in the morning while afternoons will be spent processing field samples and entering data as well as some free time. We will eat dinner fairly early so we can get up early again the next day. On the last day, we'll talk about the results and trends we're finding and the relevance of the data collected. In general research days will include 4–5 hours per day in the field, plus 2–3 hours of data entry/sample processing and occasional lectures. On the last day and some afternoons we will plan for a few recreational activities where you can explore the rich cultural and natural history of Prince of Wales Island.

DAILY ACTIVITIES

Most mornings, we will wake up very early to accommodate the best field conditions for the research. This could be as early as 3 or 4 in the morning or as late as 8 or 9 am depending on the tides and weather. Volunteers can eat breakfast before or just bring snacks with them to the field. We will eat a second breakfast or early lunch in the field or when we get back to the accommodations. Travel time to the field will vary depending on the fieldwork location for the day. This could involve a short or long drive and an hour or more boat ride to get to our sites. After spending a few hours, observing sea otters, collecting eelgrass, seining for fish or setting crab traps we will come back from the field to rest and eat. It is possible that weather may prohibit sampling in the field on some days. While summer is generally calm and storms are less frequent, high winds can prohibit boat travel. The nice thing about working in an island system though is that we can often hide from the wind and travel and work in sheltered areas.

The afternoons will be spent processing field samples, reloading/replenishing equipment and entering data as well as an opportunity to have some free time. Some afternoons or evenings you'll receive lectures or participate in discussions on the science we're doing. Dinner will be prepared by staff and volunteers taking turns and will be around 5 pm to accommodate the early start the next day. After dinner we will do a short briefing for the next day's work and then go to bed or relax.

RECREATION TIME:

Throughout your time on Prince Wales Island, you will be able to experience the real Alaska, exploring the natural wonders of the island. Prince of Wales Island is home to a wealth of beautiful flora and fauna. Whales, salmon, sea otters, bears, and deer can be found around or on the island. Volunteers will have ample opportunity to view these charismatic species while conducting the research and during recreation time throughout the expedition. Southeast Alaska also has a rich cultural community and history. Volunteers will have the opportunity to visit tribal cultural sites and museums, including, for example, totem parks or a carving shed where totem poles are actively restored. World-class fishing opportunities are available, and arrangements can be made for salmon or halibut fishing during the recreation day. Luxury lodges offer multi-day fishing trips for before or after the expeditions.

ITINERARY & DAILY SCHEDULE

The following itinerary is subject to change due to weather and tides.

DAY 1:

Arrive; meet the team, travel to accommodations

DAY 2:

Orientation to the field site, training in research methods

DAYS 3–8:

Intertidal fieldwork

DAY 9:

Recreation day

DAY 10:

6 a.m. depart for 8 am ferry to Ketchikan





ACCOMMODATIONS AND FOOD

ABOUT YOUR HOME IN THE FIELD



SLEEPING

Teams will stay in a house on Prince Wales Island near the town of Craig. Volunteers will share a room with one or two other volunteers. Couples rooms can be arranged as long as advance notice is given. Bedding and towels will be provided.

BATHROOMS

The house will have running water (hot/cold), and conventional toilets. However in the field we will not have access to a bathroom for several hours. Participants must be comfortable using the woods as their bathroom.

ELECTRICITY

The house will have electricity. You are welcome to bring electrical equipment. All lodging facilities have standard electrical outlets.



PERSONAL COMMUNICATIONS

Limited Internet access will be available. Streaming video and music are not possible, given limited bandwidth. A project computer will be available for e-mail and basic web access. Most cell phone providers have voice and data coverage in populated areas on the island and excellent service in Craig/Klawock.

Please note that personal communication with outsiders is not always possible while participating in an expedition. Earthwatch encourages volunteers to minimize outgoing calls and immerse themselves in the experience; likewise, family and friends should restrict calls to urgent messages only.

FACILITIES AND AMENITIES

There is a television in the house (movies can be watched in the evening on laptops if desired). There is a washer and dryer for team use. Within the town of Craig/Klawock there is a grocery store, dining options, library, and boutiques. There are also hiking trails nearby.

DISTANCE TO THE FIELD SITE

Distance to the field site will vary each day depending on which site we go to. This will likely involve up to a two-hour drive and/or up to an hour boat ride to get to our sites.



FOOD AND WATER

All meals will be jointly prepared by researchers and volunteers at the house. Breakfast/lunch and/or snacks will be brought to the field. Fish or berries harvested during free time can be incorporated into group meals. The following is a sample menu, which may change with dietary preferences of the team and ingredient availability. We'll take you shopping as needed for any special foods you wish to purchase to supplement. You are welcome to bring your favorite recipe to cook for the group.

TYPICAL MEALS

BREAKFAST	Cereal or granola, oatmeal with nuts or fruit, eggs, toast, juice, coffee
LUNCH	Sandwiches (peanut butter or deli meats), fruit, chips
DINNER	Salad, chicken, beef, fish/salmon, pasta, pizza, burritos, stews, rice, various vegetables
DESSERT	Cookies, cake, ice cream, wild berries
BEVERAGES	Water (tap water comes straight from a glacial aquifer), juice, coffee, tea

SPECIAL DIETARY REQUIREMENTS

Please alert Earthwatch to any special dietary requirements (e.g., diabetes, lactose intolerance, nut or other food allergies, vegetarian or vegan diets) as soon as possible, and note them in the space provided on your volunteer forms.

Vegetarian, vegan, gluten-free and lactose-free diets can be accommodated with advance notice.

NOTE: We are unable to meet the needs of individuals with celiac disease or severe nut allergies, or other restrictions that require a cross-contamination-free kitchen, due to our close quarters.

PROJECT CONDITIONS

THE FIELD ENVIRONMENT



Prince of Wales Island is the fourth largest island in the United States and is situated just north of the Canadian border in the southern portion of the Alaskan panhandle. Prince of Wales and the surrounding islands have rocky and sandy shorelines that rise to hills and mountains up to 4000 feet elevation. The summer months provide ample sunlight, topping out at approximately 18 hours a day. The area is very remote and practically pristine and is home to a wealth of beautiful flora and fauna. Temperatures are generally mild in the summer with averages between 50–60° F. Rainfall is abundant, and sunny days are few and far between. Because of storms and the unique coastal mountain environment the weather can change unexpectedly and without much warning. Therefore preparing for all types of weather is advisable. Research will be conducted if it is raining, but we do not work during high winds. Although temperatures might be in the 60s, the field environment can be cold and wet, especially while travelling by boat. Dressing appropriately is key. Please see the packing list for more details. We will mostly be travelling by boat to field sites and will not have access to bathroom facilities for several hours but we will be able to access the shoreline so participants can use the woods if necessary.

Attitudes towards sea otters by local residents of Prince of Wales Island are variable, as many people have observed shellfish resources decline after sea otters moved in. A large number of people lead a subsistence lifestyle and live “off-the-grid”, and sea otters have directly reduced their supply of clams, crabs and other shellfish. It is as if several aisles of the grocery store are no longer stocked. As a result, many local residents view sea otters as competitors. Additionally coastal Alaska Natives harvest sea otters for their fur and sell handicrafts made from this fur for their livelihood. Volunteers will need to be respectful of hunters and subsistence harvesters and appreciate the hard life of local harvesters in this very remote setting.

GENERAL CONDITIONS

HUMIDITY: 70%–100%

TEMPERATURE RANGE:

DAY: 42° F to 70° F (6° C to 22° C)

NIGHT: 34° F to 50° F (1° C to 10° C)

RAINFALL: Monthly average in summer: 3–6 in (70–160 mm)

ALTITUDE: 30 meters (100 ft.)





ESSENTIAL ELIGIBILITY REQUIREMENTS:

All participants must be able to:

- Follow verbal and/or visual instructions independently or with the assistance of a companion.
- Enjoy being outdoors all day in all types of weather.
- Get up early (between 3–6 am) for field work for up to 8 hours a day.
- Walk 1 mile with a backpack carrying personal equipment (food, water, various layers of clothing), as well as a small amount of research equipment, totaling a maximum of 20 lbs.
- Walk off-trail on slippery vegetation and rocks and uneven terrain (sand, mud, rocks, barnacles).
- Lift or move heavy field gear (50 pounds) such as a beach seine in water while trudging through mud.
- Be comfortable around water and be able to wade waist deep using waders.

- Comfortable on a small boat for up several hours to get to field sites without access to bathroom facilities.
- Maintain a seated, upright position within a boat for several hours during transit. This can be uncomfortable for individuals with back problems. Participants susceptible to motion sickness to consider taking medications as appropriate.
- Comfortable getting in and out of boats from shore.
- Be able to kneel and bend repeatedly for extended periods of time.
- With training provided, be prepared for likely encounters with wild animals, including black bears. This involves carrying bear spray, and during an encounter following instructions exactly in order to leave the area calmly, but quickly, in a group, so as to not upset the bear and not to endanger teammates.
- With provided training, be prepared to handle live organisms from small invertebrates to crabs and fish.
- Tolerate the presence of insects such as mosquitos and biting flies.
- Be able to handle live invertebrates and fish. Some of these organisms will be sacrificed for later data collection. Volunteers will need to comfortable being around and potentially being a part of this sort of destructive sampling.
- Sit or kneel on the ground to eat lunch or record data; designated rest places (e.g., benches) are not available.
- Get oneself up into and down out of a vehicle and ride, seated, with seatbelt fastened.
- Endure long days with up to 8 hours of field work and keep focus during afternoon lab work.
- Remain respectful of the wildlife we're studying, as well as their habitat. This includes not approaching any wildlife we see, such as sea otters, whales, black bears, deer, or wolves.



POTENTIAL HAZARDS

SEA OTTERS AND SEAGRASS IN ALASKA

CLAMS

HAZARD TYPE	ASSOCIATED RISKS AND PRECAUTIONS
Transportation	Only project technicians and the principal investigator will transport participants in project vehicles. Seat belts must be worn at all times. Volunteers are not permitted to drive. Field staff will avoid driving at night or while tired. While driving, staff will maintain appropriate distance between vehicles and travel at safe speeds to allow stopping when necessary. Cell phone, first aid kit and water will be in the vehicle in case of accident/break down on road. No operation of cell phone is permitted while driving. Participants susceptible to motion sickness to consider taking medication as appropriate.
Climate and Weather	The weather is unpredictable, with frequent abrupt changes in May, June, July, and August. This could disrupt travel and field work on a daily basis. All project staff are First Aid certified, and at least one staff is Wilderness First Aid certified. Hypothermia is a frequent hazard on this project. The gear required reflects the need for everyone to have multiple layers, including a waterproof outer layer, dry feet and body, and a warm head and hands, which are key preventative measures for hypothermia. Staff will monitor weather conditions and not go out if conditions are unsafe such as high winds or severe storms. Participants will be instructed (and reminded frequently) to drink plenty of water throughout the day and to bring at least two liters of water into the field each day; to wear sunscreen and appropriate clothing, including sunglasses, a wide-brimmed hat and/or scarf. Participants must not overexert themselves when jet lagged or tired, and inform a staff member when feeling tired or ill. The team will take regular breaks as needed and staff will monitor participants for general health at all times.
Earthquakes and Tsunamis	Earthquakes and Tsunamis are possible in Southeastern Alaska. Participants will be instructed what to do and where to go in case of an earthquake and evacuation routes will be posted. Evacuation centers are located in Craig.
Terrestrial Wildlife	Project staff will explain protocols and safety measures during orientation for addressing any encounters with wildlife, such as black bears or wolves. Bears are likely to be encountered on the island while hiking or on the shoreline while on a boat. Wolves are rarely seen. Participants are encouraged to carry binoculars to help spot wildlife hazards (e.g., bears) at a safe distance. Trained staff will carry pepper spray ("bear spray"). Additionally, adult participants will be trained in the transport and use of wildlife pepper spray, and will be encourage to carry pepper spray canisters when in forested areas or on trails. Participants will be asked to go in pairs if they want to go out during free time for a walk.
Plants	Participants will be instructed on identification and avoidance of hazardous vegetation, including Devil's club, cow's parsnip, and twisted stalk. Participants with allergies to hay, grass, wildflowers or other US plants should bring appropriate medications (antihistamines, etc.).
Insects	Biting flies and mosquitos are very common, but ticks are rare in the region. As the climate is cool, the best strategy is to wear long sleeves and pants to prevent bites. Insect repellent may help and can be sprayed on clothing or skin. Participants with allergies to biting and/or stinging insects must bring medications (antihistamines, at least two EpiPens, etc.) as appropriate.



Marine Wildlife	While working near water participant may encounter a variety of marine wildlife, which could cause pinches, bites, punctures and stings. Participants will be shown how to properly handle wildlife and wear gloves when handling them.
Terrain and Working Near Water	You will be working in the intertidal zone, which can be uneven and slippery. Participants will be advised to walk carefully in wet, slippery and sometimes in deep muddy conditions. Persons with existing injuries that prohibit mobility should consider whether this project is appropriate for them. You will have to walk through water, mud, and vegetation. Drowning is always a risk when one works in an estuarine environment, and you should know how to swim. You will be taught how to navigate safely through the intertidal zone with and without equipment. Using caution and wearing appropriate footwear such as waterproof boots or waders while traversing the terrain is necessary. We will have a limited number of waders for volunteer use, for those that are comfortable using them.
Boating	We will also use boats to travel across open water to study sites. We have two vessels, a large (27ft) boat with heater and a cabin and an open skiff (16 ft.); both are fully equipped with safety equipment (life jackets, flares, first aid kit), navigation, and communication items. However, there is always potential for the ride to become bumpy for some portion of the trip. Volunteers that are prone to seasickness should carry medication with them. During rougher conditions there is the potential for sea spray to be present which will get volunteers wet. A completely waterproof outer layer is essential to stay dry. Volunteers will be given a safety briefing and instructed how to get on and off boats safely to avoid slipping.
Equipment	Participants must be able to carry equipment up to 50 pounds such as a beach seine through water. It is easy to get caught up in equipment or other gear, especially on boats, and trip. Proper handling instructions will be given to participants in order to avoid slips, trips and entanglements.
Personal Security	Participants should take standard precautions such as keeping aware of money and personal belongings, especially in crowded places (e.g. airport).
Waterborne Illness and Paralytic Shellfish Poisoning	Although water quality is generally good, participants should not drink water directly from streams and should wash their hands after fieldwork and before eating. Ample drinking water of high quality will be provided. Participants should also not eat any self-caught shellfish as they may have dangerous levels of paralytic shellfish poisoning. Commercially produced shellfish are tested and considered safe to eat.
Distance from Medical Care	In the town of Craig there is a health center for basic medical care during business hours. The Southeast Alaska Regional Health Consortium (SEARHC) provides emergency medical services 24 hours per day. These facilities are approximately 20 minutes drive from accommodations and up to several hours from field sites. The Coast Guard can respond to major emergencies while in the field and can assist with evacuations if needed. The patient's condition and the services available will affect where they are taken for care. The closest hospital is in Ketchikan which can be accessed via ferry or charter plane. Life threatening conditions such as cardiac arrest require medi-vac via private jet to Seattle, the closest location with full-service hospitals. It may take between 3 ½ to 5 hours to arrange transport and reach the full service hospital. If you have a chronic condition, which could require immediate urgent medical care (e.g. heart conditions, kidney problems, severe asthma, etc.) or if you are pregnant, please discuss your participation on this expedition with your physician.



SAFETY

HEALTH INFORMATION



EMERGENCIES IN THE FIELD

Accommodations and vehicles all have first aid kits. In the event of a medical emergency, the Earthwatch scientists will administer first aid, and depending on the seriousness of the injury or condition, either take the volunteer to the medical center using one of the project vehicles (always available) or call emergency services by cellphone. It is possible to get seriously injured patients to the hospital in Seattle by private jet, if necessary. While in the field, the scientists will carry a VHF radio and each will carry a cell phone for emergency communication. Satellite phones will be carried in areas without cell service. Volunteers will also be encouraged to bring cellphones into the field for emergency use. If a volunteer has to leave the expedition early for emergency reasons, the Earthwatch scientists will determine the most appropriate form of transport to the airport (either one of the project vehicles or ambulance).

For emergency assistance in the field, please contact Earthwatch's 24-hour emergency hotline number on the last page of this briefing. Earthwatch is available to assist you 24 hours a day, 7 days a week; someone is always on call to respond to messages that come into our live answering service.

IMMUNIZATIONS

Please be sure your routine immunizations are up-to-date (for example: diphtheria, pertussis, tetanus, polio, measles, mumps, rubella and varicella). Medical decisions are the responsibility of each volunteer and his or her doctor, and the following are recommendations only. Visit the Healix Travel Oracle website through the "Travel Assistance and Advice" page in your Earthwatch portal, cdc.gov or who.int for guidance on immunizations.

PROJECT VACCINATIONS

REQUIRED: If traveling from countries or region where yellow fever is endemic, you must have a certificate of vaccination. You may need to present this certificate when you arrive in country.



TRAVEL TIPS

SUGGESTIONS FOR THE ROAD



YOUR DESTINATION

LANGUAGE: English

TIME ZONE: Alaska Time Zone (AKDT), which equals GMT/UTC -8 hours in the summer months.

CULTURAL CONSIDERATIONS: Casual, modest dress is acceptable nearly everywhere. Tipping restaurant wait staff, taxi drivers, airport curbside baggage handlers, and hotel bellhops is customary.

Many Alaskans have negative opinions of sea otters as they see them as direct competitors for their food (shellfish and crab). Please be respectful of hunters and subsistence fisherman when speaking with locals about the research work you are doing on the island.

ELECTRICITY: The U.S. standard voltage used for small appliances, hair dryers, electronic equipment, etc. is 120 volts, 60Hz, supplied through type A or B sockets

MONEY MATTERS

LOCAL CURRENCY: US dollar (USD)

PERSONAL FUNDS: \$100–\$200 should suffice if you'd like to purchase additional food or supplies. There is an ATM and two banks in Craig, and most locations accept credit cards. International volunteers should plan to exchange currency before traveling to Alaska.

PASSPORTS AND VISAS

Passport and visa requirements are subject to change. Check with your travel advisor, embassy or consulate in your home country for requirements specific to your circumstances. Generally, passports must be valid for at least six months from the date of entry and a return ticket is required.

CITIZENSHIP	PASSPORT REQUIRED?	VISA REQUIRED?
United States	No	No
United Kingdom	Yes	No
Europe	Yes	No
Australia	Yes	No
Japan	Yes	No

If a visa is required, participants should apply for a TOURIST visa. Please note that obtaining a visa can take weeks or even months. We strongly recommend using a visa agency, which can both expedite and simplify the process.

CONTACT INFORMATION

You may be required to list the following contact information on your visa application and immigration form, or if your luggage does not make it to baggage claim at your destination:

5 mile Port Nicholas Road
Craig, AK
99921



EXPEDITION PACKING LIST

WHAT TO BRING

EXPEDITION PACKING CHECKLIST

GENERAL

- This expedition briefing
- Your travel plans, rendezvous details, and Earthwatch's emergency contact information
- Photocopies of your passport, flight itinerary, and credit cards in case the originals are lost or stolen; the copies should be packed separately from the original documents
- Passport and/or visa (if necessary)
- Certification of vaccination (if necessary)

CLOTHING/FOOTWEAR FOR FIELDWORK

- Warm layers of clothing that are NOT COTTON
- One pair of long underwear bottoms
- At least two long underwear shirts
- Fleece or synthetic down jacket
- Warm pants (could be fleece or athletic style pants)
- Waterproof jacket & rain pants
- Well worn-in, waterproof hiking boots or rubber boots (Xtratuff or BOGS)
- At least 4 pairs of wool socks
- Wide brimmed hat for sun protection
- Warm hat or beanie
- Mittens or gloves
- Waders (optional) if you already have them—we will provide some limited sizes

CLOTHING/FOOTWEAR FOR LEISURE

- Earthwatch T-shirt (we recommend you wear it for the rendezvous)
- At least one set of clothing to wear in town and for end of expedition
- Sneakers for leisure activities
- Comfortable shoes to change into after conducting fieldwork

FIELD SUPPLIES

- Thermos or hot beverage travel mug that seals
- Small daypack or dry bag for your personal items on boat
- Sunscreen lotion with SPF 30 or higher
- Two one-liter water bottles

- Sunglasses
- Binoculars (optional)
- Insect repellent

BEDDING AND BATHING

- Basic bedding and towels will be provided. You are welcome to bring a sleeping bag and your own towel as an alternative.

PERSONAL SUPPLIES

- Personal toiletries (biodegradable soaps and shampoos are encouraged)
- Antibacterial wipes or lotion (good for cleaning hands while in the field)
- Personal first aid kit (e.g., anti-diarrhea pills, antibiotics, antiseptic, itch-relief, pain reliever, bandages, blister covers, etc.) and medications
- Spending money

OPTIONAL ITEMS

- Laptop or tablet for personal use
- Pocket knife (remember to pack in your checked luggage!)
- Field guides to plants and animal tracks (we will have some)
- Flip flops for the shower
- Flashlight with extra batteries and extra bulb
- Camera, film or memory card(s), extra camera battery
NOTE: if you plan to take into the field, you must have a way to keep it dry (dry case or bag)
- Hardware for sharing digital photographs at the end of the expedition
- Books, games, art supplies, etc. for free time
- Earplugs and eye masks for sleepers sensitive to sound or light

NOTE: Do not bring more luggage than you can carry and handle on your own. If traveling by air and checking your luggage, we advise you to pack an extra set of field clothing and personal essentials in your carry-on bag in case your luggage is lost or delayed.



PROJECT STAFF

YOUR RESOURCES IN THE FIELD



DR. GINNY ECKERT, PI, is a professor at the School of Fisheries and Ocean Sciences, at University of Alaska Fairbanks. She began studying sea otters to identify the overlap between human fisheries and sea otter diets in 2009. Her research continues to look at the role of sea otters in the marine environment. She has been working in Southeast Alaska since 1999 and is a leader in the field of marine community ecology. **She will be present on some teams.**



WENDEL RAYMOND, Co-PI, is currently pursuing his PhD at the University of Alaska Fairbanks in Fisheries. He received a prestigious National Science Foundation grant to support his graduate studies on this project. He is studying the interactions between sea otters and their environment. In particular he is interested in the trickle-down effects of sea otters and how their appetite and behaviors can alter overall ecosystem diversity and function particularly for shellfish species. **Wendel will be present on all teams.**



CATHY MATTSON, Field Technician, just received a B.Sc. in Marine Biology from University of Alaska Southeast in Juneau. Cathy has worked with the Eckert lab over the past year and a half in both the field and lab. Last summer Cathy worked on a project measuring carbon sequestration in seagrass beds with and without sea otters and plans to continue this work this summer. Cathy grew up in Juneau and is excited to share part of her back yard with Earthwatch. **Cathy will be present on all teams.**

NOTE: Staff schedules are subject to change.



RECOMMENDED READING

YOUR RESOURCES AT HOME

RESOURCES

ARTICLES

- Estes JA, Duggins DO. 1995. Sea Otters and Kelp Forests in Alaska: Generality and Variation in a Community Ecological Paradigm. *Ecological Monographs* 65: 75-100.
- Hughes BB et al. 2013. Recovery of a top predator mediates negative eutrophic effects on seagrass. *Proceedings of the National Academy of Sciences* 110: 15313-15318.
- Larson et al. 2013. Impacts of sea otter (*Enhydra lutris*) predation on commercially important sea cucumbers (*Parastichopus californicus*) in southeast Alaska. *Canadian Journal of Fisheries and Aquatic Science*. 70: 1498-1507.
- Moksnes et al. 2008. Trophic cascades in a temperate seagrass community. *Oikos* 117: 763-777.

BOOKS

- Serendipity: An Ecologist's Quest to Understand Nature by James Estes
- Fish identification guide

PROJECT-RELATED WEBSITE

- Earthwatch project website: <http://earthwatch.org/expeditions/sea-otters-and-seagrass-in-alaska>
- Project website: <http://seagrant.uaf.edu/research/projects/10/otter/>

EARTHWATCH SOCIAL MEDIA

- FACEBOOK: [facebook.com/Earthwatch](https://www.facebook.com/Earthwatch)
- TWITTER: twitter.com/earthwatch_org
- INSTAGRAM: [instagram.com/earthwatch](https://www.instagram.com/earthwatch)
- BLOG: earthwatchunlocked.wordpress.com
- YOUTUBE: [youtube.com/earthwatchinstitute](https://www.youtube.com/earthwatchinstitute)

LITERATURE CITED

- Baden S et al. (2012) Shift in seagrass food web structure over decades is linked to overfishing. *Mar Ecol Prog Ser* 451:61-73
- Duggins DO (1980) Kelp beds and sea otters: an experimental approach. *Ecology* 61:447-453
- Duggins DO, Simenstad CA, Estes JA (1989) Magnification of secondary production by kelp detritus in coastal marine ecosystems. *Science* 245:170-173
- Estes JA, Duggins DO (1995) Sea otters and kelp forests in Alaska: generality and variation in a community ecological paradigm. *Ecol Monogr* 65:75-100
- Hughes BB et al. (2013) Recovery of a top predator mediates negative eutrophic effects on seagrass. *Proc Natl Acad Sci USA* 110:15313-8
- Kenyon KW (1969) The sea otter in the eastern Pacific Ocean. *N Am Fauna* 68:1-352
- Moksnes PO, Gullström M, Tryman K, Baden S (2008) Trophic cascades in a temperate seagrass community. *Oikos* 117:763-777
- USFWS (2014) Northern Sea Otter (*Enhydra lutris kenyoni*): Southeast Alaska Stock. USFWS, Anchorage, AK
- Waycott M et al. (2009) Accelerating loss of seagrasses across the globe threatens coastal ecosystems. *Proc Natl Acad Sci U S A* 106:12377-12381



EMERGENCY NUMBERS

AROUND-THE-CLOCK SUPPORT



EARTHWATCH'S 24-HOUR EMERGENCY HOTLINE

Call Earthwatch's 24-hour on-call duty officer in the U.S.:

+1 (978) 461.0081

+1 (800) 776.0188 (toll-free for calls placed from within the U.S.)

After business hours, leave a message with our live answering service. State that you have an emergency and give the name of your expedition, your name, the location from which you are calling, and if possible, a phone number where you can be reached. An Earthwatch staff member will respond to your call within one hour.

TRAVEL ASSISTANCE PROVIDER: HEALIX INTERNATIONAL

+44.20.3667.8991 (collect calls and reverse charges accepted)

U.S. TOLL FREE: +1.877.759.3917

U.K. FREE PHONE: 0.800.19.5180

E-MAIL: earthwatch@healix.com

You may contact Healix International at any time. They can assist in the event of a medical or evacuation emergency or for routine medical and travel advice, such as advice on visas and vaccine requirements.

FOR VOLUNTEERS BOOKED THROUGH THE EARTHWATCH AUSTRALIA OFFICE:

Earthwatch Australia 24-Hour Emergency Helpline

+61.0.3.8508.5537



MESSAGE FROM EARTHWATCH

DEAR EARTHWATCHER,

Thank you for joining this expedition! We greatly appreciate your decision to contribute to hands-on environmental science and conservation. It is volunteers like you who fuel our mission and inspire our work.

While at Earthwatch, I've had the opportunity to field on a few expeditions, most recently in Kenya with one of my daughters. Each expedition has touched me deeply, and made me proud to be able to roll up my sleeves alongside my fellow volunteers and contribute to such meaningful work.

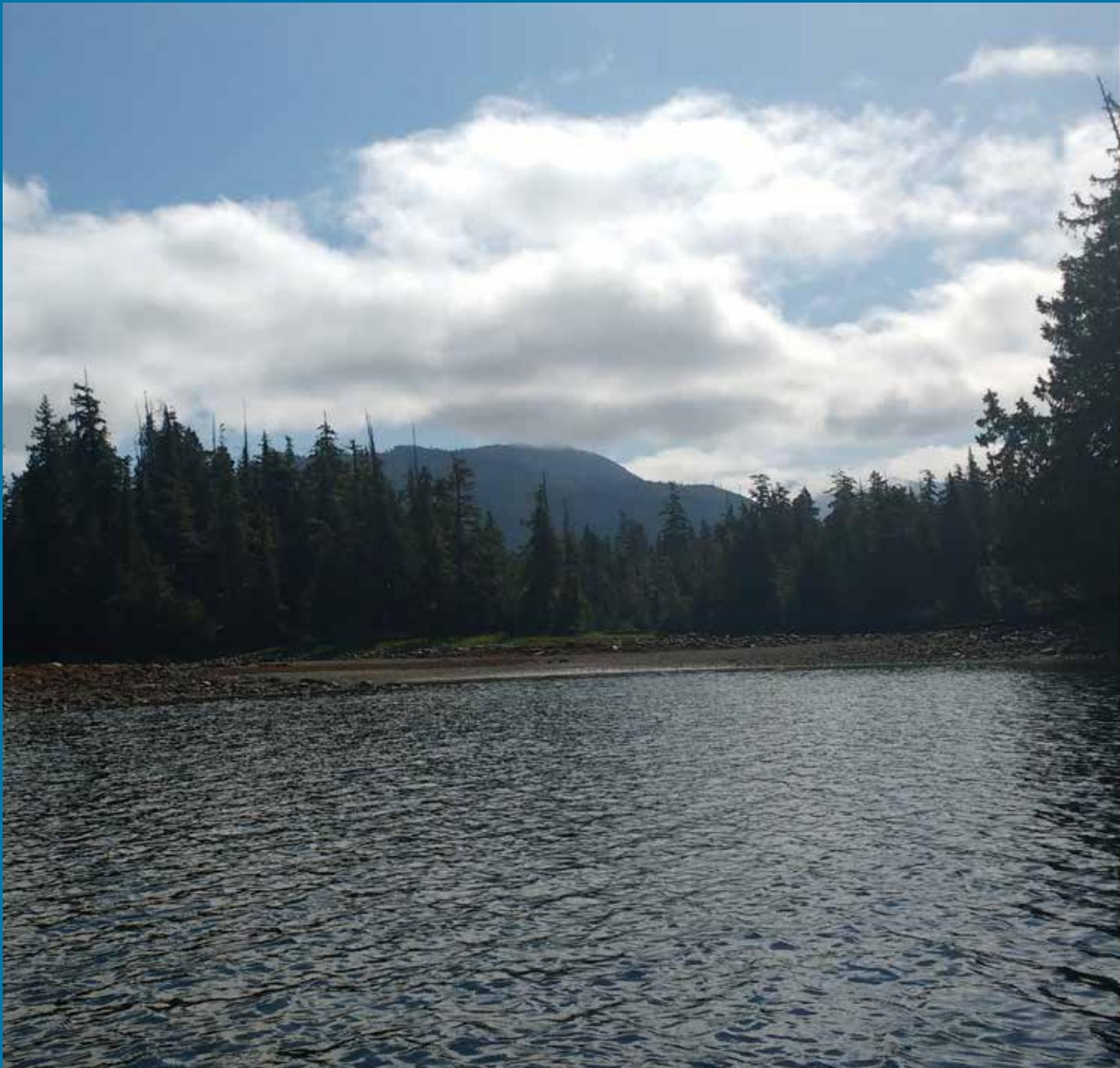
As an Earthwatch volunteer, you have the opportunity to create positive change. And while you're out in the field working toward that change, we are committed to caring for your safety. Although risk is an inherent part of the environments in which we work, we've been providing volunteer field experiences with careful risk management and diligent planning for nearly 45 years. You're in good hands.

If you have questions as you prepare for your expedition, we encourage you to contact your Earthwatch office. Thank you for your support, and enjoy your expedition!

Sincerely,

A handwritten signature in black ink that reads "Scott Kania". The signature is written in a cursive, flowing style.

Scott Kania
President and CEO, Earthwatch



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