



U.S. Fish & Wildlife Service - Alaska

Alaska Maritime National Wildlife Refuge



AN INTRODUCTION TO SEABIRD MONITORING FIELD CAMPS ON THE AMNWR

For more info see: <http://alaskamaritime.fws.gov/>

BACKGROUND

The Alaska Maritime National Wildlife Refuge (AMNWR) consists of more than 2,500 islands, headlands, rocks, islets, and reefs of the Alaskan coast. The refuge stretches from Cape Lisburne on the Chukchi Sea to the tip of the Aleutians and eastward to Forrester Island on the border of British Columbia. The 4.9 million acre refuge is a spectacular blend of tundra, rain forest, cliffs, volcanoes, beaches, lakes, and streams. Most of the refuge is Wilderness. The AMNWR is synonymous with seabirds -- millions of them. About 75% of Alaska's marine birds (15 to 30 million birds among 55 species) use the refuge. The refuge also has the most diverse wildlife species of all the refuges in Alaska, including thousands of sea lions, seals, walrus, and sea otters. The main offices of the AMNWR are located in Homer, on the Kenai Peninsula of mainland Alaska. There are 5 Units of the Alaska Maritime NWR each of which is administered by a different biologist (Gulf of Alaska, Alaska Peninsula, Aleutian Islands, Chukchi Sea, and Bering Sea). The following islands are those where we have season-long annual seabird monitoring camps:



- Buldir and Aiktak islands are part of the Aleutian Islands Unit,
- Chowiet Island is part of the Alaska Peninsula Unit
- St. George and St. Paul islands in the Pribilofs are part of the Bering Sea Unit
- St. Lazaria is within the Gulf of Alaska Unit.

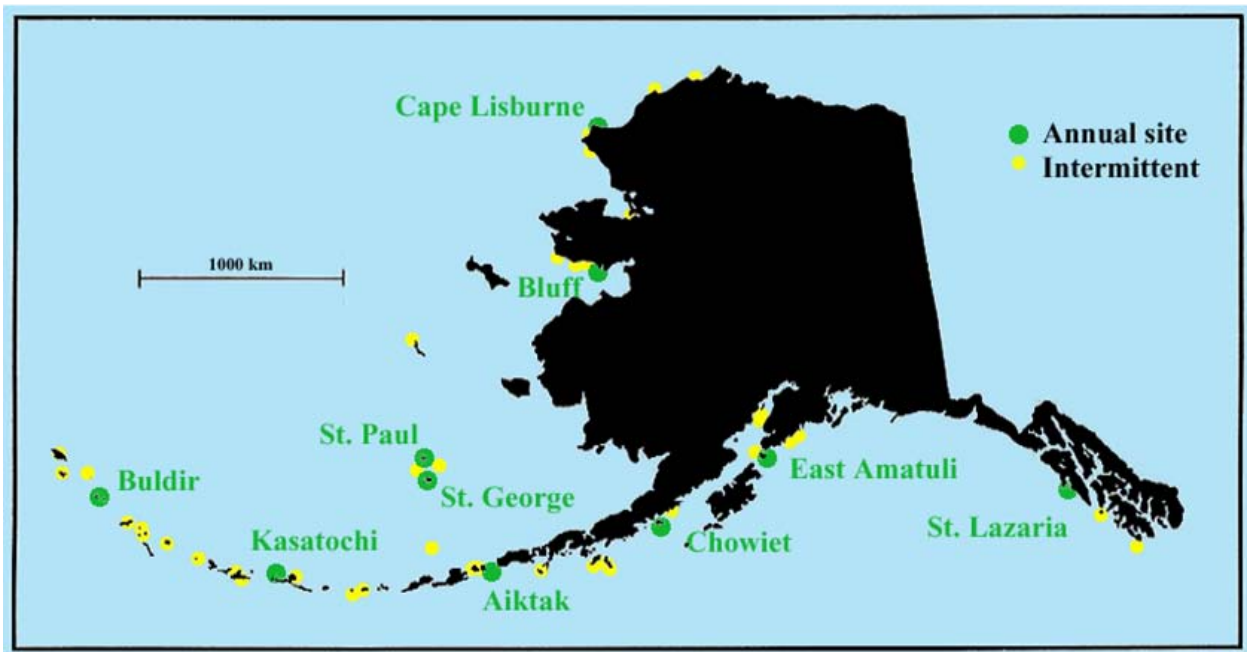
The AMNWR annually monitors populations, productivity, and other parameters at 9 sites for a number of seabird species that serve as indicators of fluctuations in the marine food web and ecosystem health, in order to provide baseline information that can be used for inter-year comparisons. The objective of the monitoring program is to detect changes in populations, reproductive performance, nesting chronology, survival, and food habits of these species. Data collected are used to detect trends in marine bird populations, to provide a basis for directing management and research actions, and to assess effects of management.

The Alaska Maritime NWR islands are probably among the most fascinating places you will ever work. You will be overwhelmed by the beauty, remoteness, and incredible abundance of wildlife. Because your experience on your island is likely to be different from anything or anywhere you have ever done or been, we want to make

sure everyone has a clear idea of what to expect. You will join a select few biologists, researchers, and explorers who have had the opportunity to visit these islands for an extended period. This document should help to explain some of the requirements and opportunities for those who will be working in this remote and challenging environment. Much of it will be common sense to most people, but it is intended to cover a wide variety of things that could come up during your time on the island.

GENERAL DESCRIPTION OF THE ISLANDS

The AMNWR has the largest nesting population of seabirds (approximately 40 million) in North America, and is one of the few refuges in the United States managed primarily for seabirds. It also provides unique nesting habitat for Aleutian Canada geese and other waterfowl, is an important migration and staging area for a wide variety of waterfowl, shorebirds, and passerines, and provides wintering habitat for emperor geese and other waterfowl



All islands are relatively exposed, and often subject to rough surf conditions that restrict small boat operations. The weather throughout the Refuge is typical of a northern maritime climate, characterized by overcast skies, frequent and violent storms, high winds, fog, and precipitation. Year-round temperatures are cool but not normally severe, with a mean annual temperature of 4.4°C (40°F); in the summer the average temperature at sea level is about 8.8°C (48°F). Average annual precipitation is 166 cm. Vegetation on the islands is composed of maritime and alpine tundra and consists mostly of grasses, sedges, sphagnum mosses, lichens, and a variety of forbs. There are no erect trees or shrubs. Because of the high winds, there are very few biting or otherwise bothersome insects in the Aleutians, unlike most of the rest of Alaska.

Aleutian Islands Unit

Buldir and Aiktak islands are the main field camps coordinated by the Aleutian Islands Unit. The Aleutians comprise about 2 million acres and extend over 1,100 miles from Unimak Island west to Attu Island. The Aleutians are actually tips of an arc of 57 submerged volcanoes, 27 of which are active and rise 2,000 to over 9,000 feet above sea level. Bounded by the Pacific Ocean to the south and the Bering Sea to the north, the AIU includes over 200 treeless islands, islets, and rocks. Some 260 bird species have been recorded in the AIU. Logistical operations for the AIU are centered on Adak Island in the central Aleutians, about halfway between mainland Alaska and Russia.

Buldir Island.--Located in the western Aleutian Islands, about 500 km west of Adak, Buldir has been the site of an intensive monitoring program since 1988. The island is an extinct volcano encompassing about 2000 ha, and is approximately 6.4 km long and 3.2 km wide. The coastline is very rugged and exposed, with sheer eroding cliffs. Lowland areas are characterized by exceedingly lush vegetation, becoming shorter and more tundra-like at higher elevations. The highest point is about 670 m above sea level. Buldir is the most isolated island in the Aleutians, providing the only landfall in a 220 km stretch of open ocean. At least 21 species of seabirds numbering at least 3.5 million individuals nest on Buldir, making it one of the largest and most diverse seabird colonies in Alaska. Buldir is one of the few islands in the Aleutians to which arctic foxes were never introduced.



Kasatochi Island.--Located in the central Aleutians, about 100 km east of Adak, Kasatochi was first used as an intensive monitoring site in 1996. Kasatochi was thought to be the emergent summit of an extinct volcano, roughly circular in shape, with a central lake-filled crater. There were no reliable reports of the volcano being active after 1899, until 2008 when it erupted catastrophically on 7 August. Extensive pyroclastic flows obliterated all life on the island, destroyed our field camp and changed the coastline extent. Our crew escaped safely, but only time will tell how wildlife will recover. We intend to visit the island in the future, but not have a season-long camp anymore. Tens of thousands of auklets nested on the island, as well as smaller populations of murre and other seabirds. Populations of burrow-nesting seabirds had not yet recovered from predation by arctic foxes, which were introduced to Kasatochi by fur farmers in 1927 and not removed until the late 1980s.



Aiktak Island.--Located in the eastern Aleutians on the west side of Unimak Pass. Unimak Pass is the main shipping route between the North Pacific Ocean and the Bering Sea. Enormous container ships in transit to and from Asia are often seen on the horizon from the east side of the island. Tigalda Island sits three miles to the west of Aiktak, and Ugamak Island is directly to the north across a 0.8 km channel. Aiktak is a small island, approximately 2km by 1km, with a circumference of 7.3



km and a maximum elevation of 170m (556 ft). The total area of the island is 155ha. Aiktak is low-lying on the north shore with 10-15 m (40-50 ft) rock cliffs alternating with grassy slopes. On the south side of Aiktak are sheer bluffs, the tops of which approach the highest parts of the island. Several small islets lie just offshore on the eastern and western sides of the main island. Aiktak is home to perhaps 100,000 tufted puffins. Thousands of Glaucous-winged gulls nest over the hillsides. Common and Thick-billed murres are found on the steep cliffs along the south shore. There are no terrestrial mammals on the island

Alaska Peninsula Unit

Chowiet Island.--Located about 80km south of the Alaska Peninsula, Chowiet is in the Semidi group of nine islands, which supports about 2.4 million seabirds of 20 species. The seabird population supports many avian predator species which also breed in the Semidis, including the bald eagle, peregrine falcon, glaucous-winged gull, and common raven. Dominant vegetation includes umbelliferous roots, beach rye-grasses, ferns, herbs and is classified as Alaskan maritime. Shorelines are generally precipitous; the highest elevation is approximately 300 m with sheer cliffs rising more than 200 m in many areas of the islands. All islands are treeless except for Chowiet Island, which has a small number (<10) of Sitka spruce (*Picea sitchensis*), most likely introduced by fox ranchers in the early 1900s. Fox ranching occurred on Chowiet and Aghiyuk Islands from 1885 to about 1914 (Bower and Aller 1917), after which the natural die off of the introduced arctic and red foxes took place. The only land mammals that presently exist on the islands are arctic ground squirrels and they occur on all of the Semidi Islands except for South, Suklik and Aghik.



Bering Sea Unit

St. Paul and St. George Islands.—Located in the southeastern Bering Sea are the two largest islands in the Pribilof group. Both islands have small villages (St Paul about 600 people and St George about 100 people). The Pribilofs are home to the largest breeding concentration of seabirds in Alaska. Millions of red-legged and black-legged kittiwakes along with common and thick-billed murres breed on cliffs up to 300 m and literally extending for miles and miles. Crews live in houses in the community and enjoy the local native culture. Transport to the islands is via commercial small aircraft with regular service.



Gulf of Alaska Unit

St. Lazaria Island. —This small island (65 ac/12 ha) stands out from the other monitoring sites in that it's the only one in a forest biome. Air and surface sea water temperatures are typically mild and consistent. Both have a mean annual temperature of ~10o+C (50-55o+F). Summer precipitation is moderate as this is where a temperate rainforest dominates the landscape; fall and winter bring significant precipitation. Past human occupation included seasonal use by Tlingit, and a short period when the U.S. military used it as an outpost during World War II. Spectacular seabird life is compacted on



this small, yet scenic, island. Nearly a half-million seabirds, most of them storm-petrels, return the island for their 4-month long breeding season. Other species studied include murrelets, tufted puffins, rhinoceros auklets, pelagic cormorants, glaucous-winged gulls and pigeon guillemots. Fall migration often brings oddities to island to expand the species list. Adjacent marine waters hold fishing opportunities and the chance to see humpback whales close to shore.

PROJECTS

Much of the work conducted at AMNWR monitoring sites is similar, though not all projects are conducted at all sites. The following list will give you a general idea of the variety of work you'll be doing. Once you get to Homer, you will be provided with detailed survey protocols. The type of work you do depends on the island and the mix of species breeding there. Here's an idea of what to expect:

- * *Fork-tailed and Leach's Storm-petrels*.--Estimate burrow density and monitor productivity. Measure and weigh chicks. Collect food loads. (May also encounter some Cassin's Auklets and Ancient Murrelets in the burrow plots)
- * *Pelagic and Red-faced Cormorants*.--Monitor populations and productivity.
- * *Aleutian Cackling Geese*.--Record incidental observations of nests; float eggs to determine chronology.
- * *Glaucous-winged Gulls*.--Conduct population counts and monitor productivity. Collect regurgitated pellets and identify prey items.
- * *Black-legged and Red-legged Kittiwakes*.--Count numbers of birds and nests in plots. Monitor productivity. Collect food samples. Capture, band, and resight birds as a means of estimating survival.
- * *Common and Thick-billed Murres*.--Monitor populations and productivity on index plots. Attempt to describe food habits.
- * *Pigeon Guillemots*.--Conduct boat-based population surveys. Attempt to monitor food habits.
- * *Crested and Least Auklets*.--Conduct surface counts as a way of providing an index to changes in populations. Monitor productivity in a number of nesting crevices. Measure chick growth rates. Collect food loads being brought to chicks by adults. Capture, band, and resight auklets as a means of estimating survival.
- * *Whiskered and Parakeet Auklets*.--Monitor productivity in a number of nesting crevices. Collect food loads being brought to chicks by adults.
- * *Tufted puffins*.--Estimate burrow density and occupancy rates. Monitor productivity. Collect food loads.
- * *Horned puffins*.--Monitor productivity. Collect food loads.
- * *Rhinoceros auklets* (Chowiet & St. Lazaria only). Estimate populations, collect food loads, monitor productivity in some years.
- * *Peregrine Falcons and Bald Eagles*.--Count breeding pairs. Monitor productivity at accessible aeries. Collect prey remains.
- * *Passerines and Shorebirds*.--Conduct an off-road point count survey and beach transects. Record incidental observations of nests and fledglings.
- * *Annotated List*.--Record all incidental observations of birds and marine mammals.



- * *Steller Sea Lions*.--Monitor populations at rookeries. Collect scat if requested by NMFS.
- * *Beached Bird Surveys*.--Conduct beach transects and record observations of dead birds. COASST (University of Washington) surveys have also been incorporated at our monitoring sites.
- * *Oil Contamination Surveys*.--Conduct beach transects and collect samples of oil.

LIVING AND WORKING CONDITIONS

Getting To and From the Islands.—Camps in the Aleutians and off the Alaska Peninsula are serviced by the M/V *Tiglax* (pronounced “teegk-lahgk”), a 120 ft research vessel operated by the Refuge. Typically all crews congregate in Homer in the spring, and crews heading to Aiktak and Chowiet depart from Homer aboard the *Tiglax*. From Homer it takes about 24 hours to get to Chowiet and another 2 days to Aiktak. In order to get to Buldir and Kasatochi, you will first have to spend some time at Adak. You should plan on bringing with you (or mailing well in advance) just about everything you will need until your stay in the Islands is over. If meeting the *Tiglax* in Adak, you will then travel to your field camp at Buldir on the ship. It takes about 36 hours to go from Adak to Buldir. If weather



conditions are unsuitable for unloading the camp, you might spend a few days waiting for the seas to calm down, or a week or more if it is decided to unload other camps first.

It is important to pay attention and follow instructions at all times while on board the *Tiglax* and while riding in their inflatable skiffs. The crew is very familiar with conditions in the islands, which can be frustratingly uncooperative; the most helpful things you can do are listen carefully and follow instructions. If you are prone to seasickness, be sure to bring medications or other remedies. Alcohol is prohibited on the *Tiglax* and in field camps. If you wish to fish from the *Tiglax* (opportunities may arise when the boat is at anchor), you must purchase a saltwater fishing license before you come to Adak.

Commercial air service is available to the Pribilofs (St. Paul and St. George) and crews will fly there from Anchorage after spending time in Homer for training. Expect about a 3 hour flight from Anchorage. Summertime in the Pribilofs brings a lot of fog, and flight cancellations are frequent to say the least.

We also use commercial air service (MD-80/737) to fly to Sitka, our base of operations for St. Lazaria. From there, we charter a vessel to transport us (& our mound of gear) over the 14 miles of Sitka Sound to reach the island.

Living Conditions.--At Buldir, there will usually be 3 or 4 people in the refuge crew, depending on the amount of work planned for that season. In addition, there are usually several auklet researchers on Buldir for part or all of the season. There are 2 small but comfortable cabins, one in which up to 6 people can sleep and the other with an office and kitchen area. There are also weatherports, which can be used for storage or as an alternate sleeping area. There

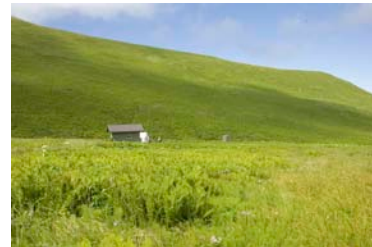


is a 4-burner propane stove with an oven for cooking. Kerosene heaters are used for warmth and drying clothes. There is a small shower stall that can be used with a solar shower bag. Rainwater for drinking, washing, and cooking is collected on the roof and funneled into a 50 gal cistern. There is also a stream nearby that can be used during rainless periods. The campsite is located above a beach perfect for an evening stroll. Solar panels provide power for recharging radio, small electronic devices, and computer batteries. 110v 60hz AC (through a power inverter) and 12v DC are available.

At Aiktak, a crew of 2 people will share a small (4 x 4 m) but comfortable 1-room cabin, as a base of operations. There is a elevated viewing deck outside and inside: shelves for storage, a bunkbed, a small table, and a counter that functions as a kitchen. Appliances include a kerosene heater, propane stove. Solar panels provide power for recharging radio, small electronic devices, and computer batteries. 110v 60hz AC (through a power inverter) and 12v DC are available. Tents can be erected behind the cabin for storing extra food and equipment. There is an outhouse, and a solar shower can be hung from a post outside the cabin for a warm, if somewhat breezy, shower.



At Chowiet, a crew of two will share a small cabin that was built in 2002. A wall tent is usually erected next to the cabin for storing extra food and equipment. A stream nearby provides plenty of water, which must be filtered before drinking. Appliances in the cabin are the same as Aleutian sites mentioned above. Solar panels provide power for recharging radio, small electronic devices, and computer batteries. 110v 60hz AC (through a power inverter) and 12v DC are available.



Both Pribilof camps, St. George and St. Paul, are situated in small Aleut villages. St. George is home to about 100 people and St. Paul is home to about 2000. A crew of 2-3 will live in a bunkhouse-style building with access to all of the amenities – showers, telephones, and internet. There is no cell phone coverage and your phone will not work. Each island has a small grocery store, although they are not regularly stocked and items like fresh produce can be a luxury. 110v 60hz AC power is available to recharge your camera batteries and ipod.

At St. Lazaria, there is typically a crew comprised of 3 people who share the island with about a half-million birds (mostly storm-petrels). There is a cabin that sleeps 3 comfortably and a wall tent that can accommodate 2 people. Solar panels provide power for recharging radio, small electronic devices, and computer batteries. 110v 60hz AC (through a power inverter) and 12v DC are available. We have cell phone coverage and your phone should work. There is good commercial radio reception. We collect & filter water for drinking from the roof of the cabin. We make a trip to Sitka every 3-4 weeks to restock our supplies, take a long shower, & catch a movie or just relax.

At all islands, food is provided by the refuge, and you should have an opportunity to describe your preferences before the field season. As a rule, everyone shares equally in cooking dinner and doing camp chores.

Contact with the Outside World.--All camps (are in daily contact with the refuge office in Adak via SSB radio (cell phone at St. Lazaria). Weather forecasts are broadcast, and camps report their activities.

During a 3-4 month field season, the *Tiglux* may stop at your island only once or twice, so there is very little opportunity to receive mail or supplies. Important messages that are simple



and brief can be relayed over the radio via the Adak office. At each camp, there is also a satellite telephone available for use in an emergency and a limited number of personal-use minutes each week (20) are provided by the Refuge. Your friends may send free 160 character messages to your sat phone by visiting the Iridium website and choosing send a message. They will need to know your sat phone number which will be provided to you. You do not have the ability to text back.

Mail and messages can reach you via the Homer and Adak offices (or direct to Pribilofs). Use the mailing addresses listed below for all letters and parcels. Ask your supervisor where your friends should send mail. This can vary if you will receive your mail from the M/V Tiglax since it makes various port calls before it visits you.

Mailing Addresses: (Your name here)
USFWS – (your island here)
95 Sterling Highway, Suite 1
Homer, AK 99603

(Your name here)
USFWS – (your island here)
P.O. Box 5251
Adak, AK 99546

(Your name here)
USFWS – (your island here)
P.O. Box 938
St. George, AK 99591

(Your name here)
USFWS – (your island here)
P.O. Box 188
St. Paul, AK 99660

Phone Number: (907) 235-6546 Homer 8-5 M-F
 (907) 592-2406 Adak 8-5 M-F and msgs checked 0900 and 2100 daily x7d/wk

Messages can be received for you 8:00-5:00, Monday through Friday except National Holidays. These numbers should only be used for important events related to your family, significant friends, or future career developments. Because of time constraints, we cannot regularly handle phone calls and relay messages of a general nature.

Working Conditions.--The purpose of the field camps on AMNWR is to conduct intensive seabird monitoring, and that should be your primary motivation for going there. All islands are subject to all regulations governing federal wildlife refuges. You must be in good physical condition, able to work in a cold wet environment, scramble up steep slopes, and walk along rocky and slippery beaches (this is not the place for people with bad knees or arthritis brought on by dampness). You must be able to live and work closely with other people whose world views might differ from your own, in a cramped and isolated setting. You may go months without seeing anyone but

your campmates; if you are used to having lots of people around to talk to and interact with, you may find it hard to adjust to the isolation. You must be flexible and patient, and not mind working odd or long hours. Other helpful characteristics include an ability to understand and follow safety guidelines, exercise sound judgement in all matters pertaining to safety, work under the direction of a camp leader, follow detailed instructions without supervision, maintain a sense of humor when things go wrong, and remain happy through long periods of bad weather.

Much of the work on all of the islands involves long hours spent on actively eroding talus fields or perched on the edges of sheer cliffs. To feel comfortable on the islands, you should not be excessively nervous about heights or falling rocks.

Expedition Behavior.-- Though we focus our scientific studies on fish, wildlife, and plant species and their habitats, human interactions are a major component of any field camp. Mountaineering expeditions and field camps are similar in that you live in rustic conditions in isolated locations with small groups of people not of your own choosing, yet sharing a common goal. Mountaineering schools around the world teach "expedition behavior," which we will borrow for use in our field camps.

Expedition behavior is defined as the effect you have on your companions. This can be positive or negative, motivating or demoralizing. Poor behavior can doom a mountaineering expedition, or at least make it an unhappy experience. It can also disrupt the living and working environment in a field camp.

Expedition behavior is a learned skill that employees can control. Each employee is expected to make a conscious commitment to get along with others despite differences. Living in the outdoors for an extended time with the same group usually brings out a person's "true colors." Personality traits of a co-worker that would never bother you in the office might become very irritating in a field camp. You might be acting in a way that is irritating to your co workers, even if you are convinced you are the easiest person to live with. You are expected to: 1) be tolerant of others behavior as long as it does not compromise the safety and effectiveness of the project, 2) be aware of your own behavior and be committed to the well-being of the group, and 3) discuss potential problems early before they become big issues, and be open-minded if someone initiates a discussion with you. Maintaining positive expedition behavior is one of the most important duties of your job.

Clean-up of Facilities.-- Field camps require you to participate in chores and cleaning. Assume a full share of responsibility. Cooking, cleaning, sweeping floors, washing dishes, hauling water and the like are not part of your paid duties. However, everyone is expected to contribute to these chores. It may be necessary to post a schedule of chores to ensure everyone is doing their share. Everyone shares equally in all food, and along with that privilege comes the responsibility of only taking your fair share of items, especially such limited supply items as fresh fruit and vegetables. All residents must keep this in mind regardless of their particular dietary preferences or regimes. Remote camps can be a very difficult place to get by with a very regimented or limited diet, and *may not be the place for you* if you are not flexible in this regard.

Quiet Hours.-- Despite being surrounded by wilderness, field camp facilities are usually cramped and certainly not sound-proofed. The schedule of many field camps requires that people are on different work shifts, and therefore are sleeping or resting at different times. Respect the quiet hours that are established for each field camp.

Guests.-- Personal guests are not encouraged to visit field camps because of their remote nature, but it might be arranged. Be sure to get approval from your supervisor before guests visit a camp. If approval is granted, guests must provide their own transportation, lodging, and food. Guests will not be allowed to use government flights, government charters or boats, or consume camp food.

Privacy.-- Privacy is minimal in most field camps. Be supportive and understanding of others needs for privacy and alone time. Respect your crew members' personal property. There is usually little or no locked storage in camp. Never use someone else's property (such as fishing gear), or read someone else's mail or journal without their consent.

If you like lots of alone time, be aware that being too removed from the other crew member(s) can cause strained relations in camp. Strive for a balanced approach.

Bathing and changing clothing can be a challenging issue in camp, especially if the crew is of mixed gender. As a crew, set up a method to preserve each other's privacy and stick to it. There is zero tolerance for invading anyone's privacy during these activities. Any infractions in this area can quickly become a sexual harassment issue. Be courteous to your campmates. Don't assume that others don't mind smelling your 3-week funk. They probably do mind.

Irreconcilable Differences.-- If you find you are unable to resolve personal or professional differences between yourself and a co-worker which make it unbearable to work or live together, discuss the situation immediately with your field supervisor or manager. Removing someone from a remote field camp due to irreconcilable differences is a last resort. We work hard to interview and place like-minded individuals in camps so this is hopefully not common.

Physical Ailments and Health Insurance.--You should not have a history of physical impairments or conditions that would affect your ability to live and work comfortably and efficiently on your island. If you know you are prone to minor physical ailments, be sure to bring proper supplies (e.g. ankle wraps if you tend to get sore ankles, medicated ointment for sore muscles, seasickness remedies, or medication for conditions like yeast infections). If a medical condition arises, you will have access to medical consultation through satellite telephone. All field personnel should be trained in basic CPR and first aid, and every camp is outfitted with a complete first aid kit. You should consider carrying a small emergency first aid kit with you in your day pack in addition to bring the items mentioned above. We strongly recommend that you get a physical exam and a dental check-up because you will be gone for several months. Delays, possibly as long as days, for medical help are a reality of the assignment and you should carefully consider this factor before accepting the position.

Employees and volunteers of the refuge are covered under the Worker's Compensation program and can submit claims for injuries incurred while working. However, you should check with your insurance company to make sure that you have coverage for a medical emergency evacuation (air ambulance) and for any other medical costs you might incur while on the island, in case you suffer a non-work-related problem. It is your responsibility to make sure you have proper health insurance.

WHAT (AND WHAT NOT) TO BRING

The Aleutians, Gulf of Alaska, and Bering Sea are infamous for their unpleasant weather and violent storms.

Summer temperatures are moderate (32-60°F), and rain, fog, and high winds are prevalent. We carry on with our field work in all but the worst weather conditions, so proper field gear is essential. The refuge will provide equipment for work-related activities, including:

- * neoprene chest waders
- * semibreathable rain gear
- * backpack and daypack
- * survival suit and flotation suit for boat work
- * sleeping bags and pads
- * tents, stove, cooking and eating utensils, water bottles, etc.
- * food while in the field
- * binoculars, spotting scope, field guides, compass, flashlight, headlamp, etc.

We hope our recommendations help you plan what to bring. We devised lists of essential and optional gear. It was important, but difficult, to develop these lists because individual preferences vary. The list may change again with your recommendations! As you pack, keep in mind the Rule of Two: If something is important or essential, bring two. That backup, spare, extra amount, etc., will keep you outfitted. Otherwise you may have to do without anything that you lose, run out of, or break until you come off the island!

You will need to provide your own footwear and clothing. For comfort and convenience, some people choose to use their own backpacks and sleeping bags when working in the field. Try to pack light because everything must go ashore through the surf in a small inflatable boat from the *Tiglax*. All of our field camps are very cold, damp places, even in the middle of summer, so you need to bring plenty of warm clothes that are water resistant and can dry quickly. Cotton clothing should be avoided as much as possible, and should not be worn while working in the field. Cotton absorbs moisture from the damp air, making you feel cold and damp, and once it gets wet it is very hard to dry. It also absorbs and holds dirt very tenaciously and is hard to clean. If you're tempted, just imagine putting on a dirty pair of wet jeans every morning! Workwear blends of cotton and synthetic fibers are acceptable, but fleece, wool, and polypropylene are the most comfortable, and will keep you warm even when wet. The best way to prevent the overheating and chilling that put you at risk of hypothermia is to dress in layers. The best outdoor wear on cold windy days is a waterproof or water resistant shell, over pile, over long underwear. Some people like to wear rain gear directly over their long underwear during July and August, or when hiking. There may be an occasional warm sunny day, so bring a t-shirt and a pair of shorts, but don't count on using them often! If money is a concern, try visiting your local thrift or army surplus store; they usually have some good deals on wool clothing. The following are suggestions to use as guidelines when selecting what to bring:

Essential Gear
<p>Clothing – Outerwear</p> <p>Pack to last up to 2-3 weeks between washes. Bring clothes that you don't care if you ruin, and expect them to be well worn and stained when you leave (occupational hazards such as bird whitewash, sweat, gas, and oil).</p> <p><input type="checkbox"/> 1 water/wind-resistant rain jacket</p> <p><input type="checkbox"/> 1 water/wind-resistant rain pant</p> <p><input type="checkbox"/> 1 wind-resistant fleece jacket</p> <p><input type="checkbox"/> 2 lt wt to expedition wt intermediate layering top</p>

- ___ 1 heavy wool sweater
- ___ 2-3 wind resistant synthetic/quick dry pants
- ___ 2 wool or fleece hats
- ___ 1 fingerless, mid-weight gloves for work requiring dexterity (banding)
- ___ 2 pr fleece or wool gloves (removable waterproof shells are also nice)
- ___ fleece neck gaiter



Windbreaker liners on fleece items are a great idea and worth the money. Try to think layers: 1- base layer of underwear, 2nd layer of = light protection/warmth, 3rd layer of warmth (jacket), 4th = shell. Shed/don layers as temperature and activity changes

Clothing – Underwear

- ___ 2-3 pr polypropylene, silk, or wool tops (crew neck or T)
- ___ 2-3 pr polypropylene, silk, or wool bottoms
- ___ 6-10 underwear
- ___ 3-4 sports bras for women
- ___ polypropylene liner socks (not necessary but a good idea)
- ___ 10-12 pr thick polypropylene or wool socks (the more, the better--your feet WILL get wet)



All under wear should be polypropylene, silk, wool or other moisture wicking synthetic. No cotton.

Shoes

- ___ Knee-high rubber boots with good ankle fit and wool inserts that can be removed and dried (Xtra Tuff brand is ideal). These are highly recommended and considered almost a necessity.
- ___ Hiking boots. Make sure they are water resistant or sno-sealed. They can take quite awhile to dry out when wet. Don't come out with new and unbroken boots. Blisters are not fun in your first week.
- ___ gaiters if you plan to wear hiking boots (Gore-tex lined or water-resistant).
- ___ comfortable shoes to wear around camp or on the *Tigla* (Tevas, Crocs, sneakers, etc.)



Some people find it difficult to hike for extensive distances over rough terrain in knee-boots. If you need the support bring hiking boots. Most people use knee boots for 90% of their work.

Gear

- ___ pocket knife, preferably with a locking blade or utility multi-tool (leatherman, Gerber)
- ___ 1 waterproof watch
- ___ 1 alarm clock that actually wakes you
- ___ personal first aid kit
- ___ hand/foot/body warmers (chemical heating pads) if you are prone to cold feet, etc.
- ___ sunglasses

Toiletries

There is no convenience store if you run out...

- ___ prescription medicine
- ___ shampoo/conditioner
- ___ nail cutter
- ___ razor and blades

<input type="checkbox"/> toothpaste <input type="checkbox"/> toothbrush/floss <input type="checkbox"/> pads/tampons <input type="checkbox"/> prescription glasses/contact lenses and solutions	<input type="checkbox"/> skin lotions, potions <input type="checkbox"/> tweezers <input type="checkbox"/> towel and soap
Sundries <input type="checkbox"/> stationery/ envelopes <input type="checkbox"/> stamps (the self-sticking variety do well in humidity. Bring more than you think you need.)	
Optional, but Important, Stuff	
Clothing <input type="checkbox"/> Complete set of comfortable, non-work clothes to wear around camp which you never use for field work. Again, think synthetics, not cotton	
Entertainment <input type="checkbox"/> CDs, iPod, or MP3 player <input type="checkbox"/> Camera/video camera <input type="checkbox"/> Recharging cords for AC and DC (think car power port) power <input type="checkbox"/> Plenty of flash cards, flash drives, external HD for storage of electronic media. <input type="checkbox"/> Books <input type="checkbox"/> favorite recipes <input type="checkbox"/> fishing gear and appropriate licenses <input type="checkbox"/> small musical instrument, art supplies, knitting, etc. <input type="checkbox"/> cell phones only work on St. Lazaria, don't bother at other camps Sports models that are weather resistant work well. Bring plenty of batteries or recharging cords or connections for your electronic devices.	
Radio AM/FM radio reception is poor on portable radios except at St. Lazaria and St. Paul/St. George. Shortwave radios work well at other camps with an external antenna. Each camp's High frequency radio can pick up shortwave frequencies including BBC etc. Bring frequency listings and broadcast times if you are a shortwave listener.	