



EARTHWATCH 2017

# ARCHAEOLOGY OF THE MONGOLIAN STEPPE



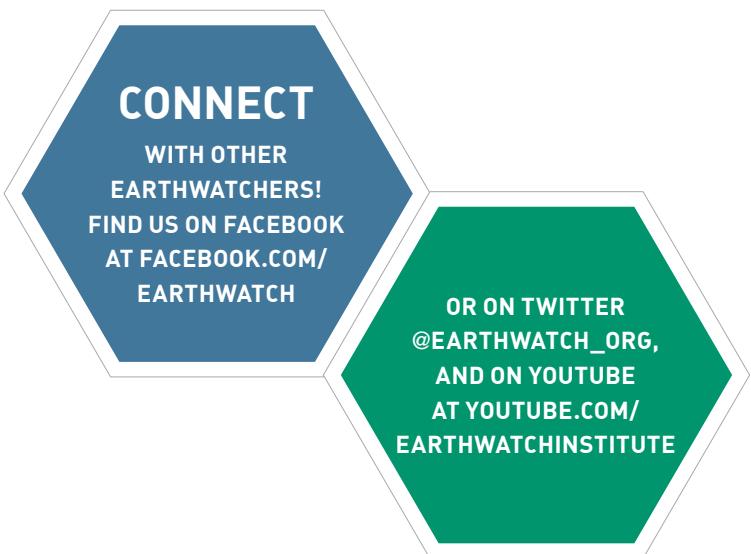
## DEAR EARTHWATCHER,

We are very pleased to welcome you to our project at Ikh Nart Nature Reserve in Mongolia. Along with our Mongolian colleagues, we will pass on to each of you the extraordinary chance to participate in our research in discovering, understanding, and protecting archaeological sites representing the rich cultural heritage of this Mongolian landscape. Since 2010, our work at Ikh Nart has focused on Mongolian Cultural Heritage. Our initial work contributed to the development of a five-year plan for Ikh Nart that has as its goals, the protection and preservation of both the natural and cultural landscape as well as making Ikh Nart fiscally sustainable. Your team will learn the basic principles and methods of archaeological survey and excavation as well as the importance of recording what archaeologists see and do there. You will learn how to recognize artifacts, archaeological features, and sediments representing different Mongolian geological eras, as well as a bit of archaeological terminology in both English and Mongolian. There will be plenty of opportunity for questions and discussion. Most of your learning will be hands-on in the field. We find that dealing with actual situations is the best way to teach and learn—for different situations call for different approaches.

We look forward to meeting each of you in Mongolia. You will share in an experience to remember as we assist in advancing the understanding, protection, and preservation of the cultural heritage of the Mongolian people.

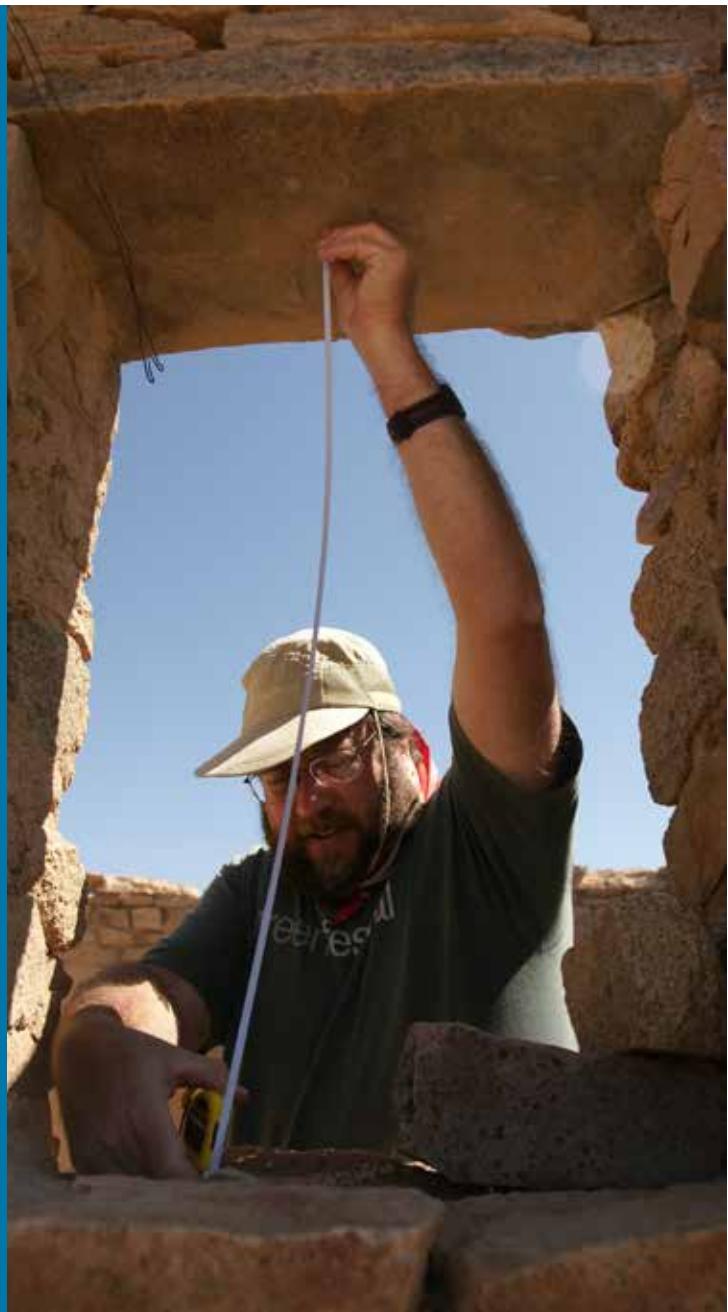
Best Regards,

Dr. Joan Schneider  
Dr. Arlene Rosen  
Co-Principal Investigators



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# GENERAL INFORMATION

## ARCHAEOLOGY OF THE MONGOLIAN STEPPE



### EARTHWATCH SCIENTISTS

**Dr. Arlene Rosen**, Co-Principal Investigator  
**Dr. Joan Schneider**, Co-Principal Investigator

### RESEARCH SITE

Ikh Nart Nature Reserve, Ikh Nartii Chuluun Region,  
Dalanjargalan Soum, Dornogobi Aimag, Mongolia

### EXPEDITION DATES

**Team 1:** Jul. 20–Aug. 2, 2017

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

Please contact Earthwatch with any questions.



# TRIP PLANNER

## ARCHAEOLOGY OF THE MONGOLIAN STEPPE

### 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](http://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

## ARCHAEOLOGY OF THE MONGOLIAN STEPPE



### THE STORY

Ikh Nart Nature Reserve in Eastern Mongolia is home to the remains of thousands of years of human activities, as well as to endangered species such as argali (big-horn sheep) and ibex. Based on our previous work we predict that nearly 5,000 archaeological sites exist within Ikh Nart; those sites span more than 9,000 years. To date, we have visited, recorded, and assessed only 150 of those sites. With your help we will learn more in order to understand this unique landscape in order to preserve and protect it.

From 2010–2016, we made great progress toward our preservation goals in Ikh Nart. So far we've logged sites ranging from New Stone Age (Neolithic) about 7,000 years ago, an era marked by the transition from hunting and gathering to the first domestication of herd animals through Tibetan Buddhist period sites of the 13th century AD up until 1937. Chronologically, these include sites from the Neolithic, Bronze Age, Iron Age, Turkic, and those periods preceding and after the Mongol Empire. The sites vary from small to large, and from simple to complex, and a single site may represent more than one time period. We have recorded many different types of burial features, structures, rock art, living sites, stone tool quarries and workshops, and Buddhist monastic communities. We've also documented an array of artifacts including stone and metal arrowheads, ceramic vessel fragments of all periods, metal containers, horse trappings, a variety of stone cutting, piercing and scraping tools, grinding implements, metal tools and decorative items. We have already recorded 150+ sites that have been registered at the Mongolian Institute of Archeology in Ulaanbaatar.



In 2016 a portion of our team began a phase of excavation at an archaeological site in Ikh Nart, which dates to approximately 4,500 years before present. This is a time period in which the hunter-gatherer populations of the valley were beginning to raise herds of sheep and goats—a major shift from their previous way of life. It is only through excavation that we will gain important insights into the reasons for this important transition, which led to later specializations of Mongolian nomadic herder societies. We will be collecting a wide range of evidence including stone tools, bones for zooarchaeological analysis and archaeobotanical remains. You will have an opportunity to participate in this ongoing excavation, recovery and preliminary processing of these important artifacts in the 2017 season.

As an Earthwatch volunteer, you will help us locate new areas of past human activity based on a GIS (Global Information Systems) predictive model. You will both survey the ground surface and help excavate buried sites identified through this model and our past investigations in order to better understand that period of time leading to ancient Mongolians adopting a pastoral (herd-centered) economy—a period of time for which almost nothing is known.

The information gathered by our University of Texas at Austin team will complement data collected by our Earthwatch sister project: the Wildlife of the Mongolian Steppe teams. ([earthwatch.org/expedition/wildlife-of-the-mongolian-steppe](http://earthwatch.org/expedition/wildlife-of-the-mongolian-steppe))—to provide smart, holistic recommendations for the management of the reserve.

## RESEARCH AIMS

First, in 2017, we plan to “ground truth” the GIS predictive model that is based on our previous work at Ikh Nart. Second, we will explore, through selective excavation, environmental and archaeological evidence for a changing landscape that led human land-use patterns to evolve from general foraging groups to hunter-pastoral communities.

## HOW YOU WILL HELP

On this expedition, you’ll get the chance to work with a team of Mongolian and U.S. archaeologists. You will learn research methods used by professional archaeologists and will help us locate, describe, record, excavate, and map archaeological sites. Your tasks will include:

- Learning archaeological survey methods
- Walking sample survey areas as part of a team
- Describing, drawing to scale, photographing, and mapping (using GPS technology) archaeological sites
- Compiling data on descriptive site forms and databases
- Learning the rudiments of archaeological excavation methods and why we use them.
- Contributing ideas for interpretive materials, such as informative exhibits, pamphlets, and signs, to encourage visitors and locals to help preserve the cultural heritage of the Mongolian people represented within Ikh Nart
- Encouraging Ikh Nart research staff, camp staff, and visitors to focus on actively preserving the cultural resources within the reserve.



# DAILY LIFE IN THE FIELD

## PLANS FOR YOUR TEAM



When you arrive at camp, project staff will present an introduction to archaeology, a list of common archaeological terms and their meanings in English and Mongolian, and an orientation to archaeological field survey and excavation methods. By joining our teams, you are agreeing to spend half your field time with the survey team and the other half with the excavation team. Both require substantial physical effort and we urge you to be sure your physical condition allows this.

The first field day will start with practicing survey methods, and opportunities for hands-on learning will continue throughout the expedition as we encounter different archaeological situations. We will then visit an excavation site near camp and you will be introduced to our excavation methods and recording. Ordinarily, we will conduct fieldwork in morning and afternoon sessions, and either return to camp for lunch or eat in the field. The survey team will walk up to 3.7 miles (6 kilometers) per day. Our excavation team, focused on answering specific research questions, will have a similar schedule. During the excavation phase, you may be required to dig with a shovel or trowel, lift buckets and shake sieves with heavy dirt loads before searching for artifacts in the screens, so please read up on safe methods for lifting and carrying.



Each volunteer will maintain a field notebook as part of our work. Team leaders will give you this notebook at the start of the session, and collect it at the end so that it can become part of the permanent record at Ikh Nart. This will be one of your important contributions to the project as citizen scientists. The notebook suggested on the packing checklist would be for your own use, perhaps to record your impressions and experiences in Mongolia or to write down Mongolian words you would like to remember. Evenings will be spent updating our data sets, discussing the day's work, or planning. We might hear short talks about the research projects of others living at camp.

**RECREATIONAL ACTIVITIES:** We will likely take a half-day trip to the Soum Museum during the expedition. The exact day will be determined during the expedition. There also may be an opportunity to visit the southern Airag Soum Center. We plan to visit local families on day 7.

While at Ikh Nart, we will have a half-day off for a Mongolian-style barbecue and recreation, which may include hiking, wildlife watching, or visiting local families. All teams will be visited by the local women's craft collective: "Ikh Nart Is Our Future." The collective provides income for local women through the production of felt and other Mongolian craft items, made almost exclusively from local materials. You will have the opportunity to purchase traditional handicrafts inspired by the beauty of the Ikh Nart Nature Reserve, with all proceeds directly benefitting the collective.

## ITINERARY

Weather and research needs can lead to changes in the daily schedule. We appreciate your cooperation and understanding

## TYPICAL DAILY SCHEDULE

6:00 a.m.	Rise and wash
7:00 a.m.	Breakfast, lunch preparation, and clean up
8:00 a.m.	Collect gear, break into groups, receive a quick briefing on the day's tasks, and leave for field location
8:00 a.m.-12:00 p.m.	Fieldwork with break for a snack about 10:00 a.m.
12:00 noon	Break for lunch and siesta during the heat of the day
2:00 p.m.	Start of the afternoon fieldwork session
3:30 p.m.	Snack
5:30 p.m.	Return to camp; wash up
7:00 p.m.	Dinner
8:00 p.m.	Recreational time, showers, mapping, presentations, or discussions

## OVERVIEW

### DAY 1

Rendezvous in Ulaanbaatar, settle in; optional cultural activities; group dinner

### DAY 2

Train ride from Ulaanbaatar to Shivee-Gobi (approx. 7.5 hours) and drive to field site (approx. 1.5 hours), settle in and get acquainted with camp.

### DAY 3

Half-day orientation and training. Second half of day: survey and excavation teams established for first half of fieldwork; start work.

### DAYS 4-6

Survey and data collection or excavation and recording (depending on your first-half assignment).

### DAY 7

Day off for recreational time: hiking, wildlife viewing, visiting local families, and a traditional Mongolian barbecue.

### DAYS 8-10

Teams switch assignments (with some flexibility). Survey and data collection or excavation and recording

### DAY 11

Half day in the field or laboratory, to finish up. After lunch, pack to leave. Drive camp vehicles to Darlanjagalan.

### DAY 12

Late night/early AM train to Ulaanbaatar. Sleeper cars on train.

### DAY 13

Arrive UB early AM; transfer to hostel. Remainder of day free for exploring city, shopping, etc. Optional Cultural Show (cost approximately 25,000 MNT). Evening farewell dinner and depart on overnight train.

### DAY 14

Breakfast and Departure to airport

# ACCOMMODATIONS AND FOOD

## ABOUT YOUR HOME IN THE FIELD

### SLEEPING

#### ULAANBAATAR

Zaya's Guesthouse in Ulaanbaatar is comfortable and clean. We usually try to accommodate two volunteers of the same gender in each room. We can also house couples together, when possible, with advance notice to Earthwatch. Some rooms have their own bathrooms, although some guests must share. The guesthouse is formed of a few large apartments with kitchens, living rooms, bathrooms, and bedrooms that we rent. The guesthouse offers breakfast and has free Internet access on one computer and wireless access in Apartment 5. Zaya's sits in the heart of Ulaanbaatar, within easy walking distance of tourist sites, restaurants, banks, and shopping areas.

Zaya's Guesthouse may offer transport to and from the airport for a reasonable fee, although this is not always possible, and can help arrange excursions at your own expense before or after the Earthwatch expedition. They have a comprehensive list of equipment and camping gear that can be rented, and can send you a list of what's available, with costs, if you email them at [info@zayahostel.com](mailto:info@zayahostel.com).

Please specify that you are with Earthwatch if you decide to book additional nights at Zaya's before or after the expedition. Our Earthwatch team accommodation at Zaya's is limited to the Rendezvous date and the night of arrival back in UB. If you wish to arrive earlier at Zaya's or stay later, it is up to you to book accommodations on your own.

#### IKH NART

The research camp lies in the heart of the project's study area. At the camp, you'll stay in tents or traditional Mongolian gers. There are currently seven gers at the research camp, three of which are for Earthwatcher lodging. One ger is the kitchen, and another serves as the dining hall and lounge area. There are also two gers that are for project staff quarters.

Each ger can house up to eight people, but we usually limit them to five people each. We make every effort to house people of the same gender together, depending on team makeup. Gers are larger than standard tents (you can easily stand upright in them), they have storage space, water filters, and water basins. They tend to be warmer than tents at night. However, the camp's standard tents offer more privacy—they sleep two people comfortably. The research site has three standard tents for team use, but you can bring your own tent if you wish.

All team members staying in gers will sleep on beds, but you will need a sleeping bag or other bedding, as we have no linen. Your bed will have a sleeping pad (but can bring your own if you prefer). It can get cold at night, so please bring a warm bag and layers of clothing. Also bring your own towels; quick-dry backpacking camp towels are especially good and can be purchased at most outdoor equipment stores.

### BATHROOMS

There is one outhouse with two sit-down "eco-design" toilets. The toilets are composting toilets and use dry manure. You will be instructed in their proper use on arrival. In the field you will follow the nomadic tradition of using the great outdoors when nature calls.

Several "sun showers" (insulated bags with a nozzle that hold water that is warmed by sunlight) are available at camp. You can wash regularly, using our "state-of-the-art shower house (two enclosures). You can bring your own sun shower (available at many outdoor stores) if you like.

### ELECTRICITY

Power at camp comes from solar panels and windmills. We use much of this energy to recharge project equipment, but there's usually enough power to recharge your electrical items, although project equipment has first priority. Gers have lights for reading, etc. For good reading visibility, however, we suggest you have your own light source such as a flashlight, lantern, or headlamp. We have outlets for American and European style plugs only. We have a solar-powered freezer and a root cellar to keep food cool.

### DISTANCE TO THE FIELD SITES

Although we use vehicles to access distant portions of the Reserve, we sometimes walk to work at nearby locations.

**ADDITIONAL POLICIES:** For safety reasons, participants may not ride motorcycles, horses, or camels during the expedition. If you wish to ride horses or other animals during your visit to Mongolia, please do so before or after the expedition. While there may be an opportunity to observe traditional Mongolian wrestling, participants are not allowed to participate in the wrestling events.



## FOOD AND WATER

A Cook will prepare most meals. We'll generally eat breakfast and dinner together in the dining ger. You will often make your own packed lunch with food set out each morning to take into the field. Sometimes, depending on circumstances, we return to camp for lunch. All Earthwatch participants and staff members will be expected to assist in serving and cleaning up after meals. Below are examples of the foods you might expect in the field. Please bear in mind that the variety depends on availability. This list is intended to provide a general idea of food types, but it is very important that volunteers be flexible and bring supplementary food of their choice.

## TYPICAL MEALS

<b>BREAKFAST</b>	Fresh bread, oatmeal, cold cereal (usually muesli and cornflakes), yogurt, hot rice or wheat porridge, rolls and jam, leftover dinner (a typical Mongolian breakfast), and on rare occasion eggs and Mongolian sausage.
<b>LUNCH</b>	Sandwiches with various fillings (peanut butter and jelly, tuna fish, cheese, tomato, salami), apples cucumbers, cookies, crackers, and traditional Mongolian baked goods.
<b>DINNER</b>	Mixed vegetable and meat stew, pasta dish, soup, salad, traditional Mongolian meals with emphasis on meat (vegetarian and vegan options are generally possible with sufficient advance notice to Earthwatch).
<b>SNACKS</b>	Chocolate, cookies, peanuts, Mongolian baked goods (you may want to bring protein bars or some sort of other favorite snack to eat in the field).
<b>BEVERAGES</b>	Juice, tea, instant coffee, spring water, some soda, airag (fermented mare's milk—see below) See "alcohol" section below.

<b>WATER</b>	At the research camp, we get drinking water from a small spring nearby or from a water tank filled from a nearby well. All team members should assist in filling water containers. Gers have passive water filters. The filters clog frequently when used heavily and therefore need to be cleaned regularly (once every other day). We'll ask you to help clean the filters. If the passive filters are kept full, they provide more than enough water for the team. We usually also have a very limited supply of bottled water.
<b>ALCOHOL</b>	On this project, we strive to maintain an alcohol-free research camp. Several rituals surround drinking traditional mildly alcoholic drinks in Mongolia, and project staff members will brief you on these traditions should the need arise. Please do not bring any alcohol with you. As noted, we try to maintain a dry camp. You will occasionally have the opportunity to drink airag (fermented mare's milk), which is only mildly alcoholic (less ABV than beer) and is often used ceremonially. Please be warned that it often causes diarrhea, especially with first time consumers.

## 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.

Accommodating special diets is not guaranteed and can be very difficult due to availability of food, location of field sites, and other local conditions. SPECIAL NOTE: It is extremely hard to accommodate gluten-free and vegan diets on this expedition. Volunteers are strongly encouraged to carry supplemental food and snacks of their choice especially if they have dietary restrictions.

# PROJECT CONDITIONS

## THE FIELD ENVIRONMENT

The terrain in Ikh Nart is sparsely covered by semi-arid steppe vegetation with areas of large rocky outcrops. The altitude is approximately 1,250 meters (4,199 feet). Permanent cold-water springs are present in some of the shallow valleys draining the reserve.

Temperatures vary considerably from day to day, even within a single day. During the Earthwatch expeditions, the weather is likely to be relatively wet and hot. From May through September, the temperature can range from -12°C (10°F) to over 38°C (100°F). It can get rather cold in May and September, especially at night. July and August, and increasingly June, can be hot.

Precipitation is generally low, though most falls in the summer and there can be severe thunderstorms and even flash floods. These are more likely to occur in late June and Early July.

### GENERAL CONDITIONS

#### MAY AND SEPTEMBER

**HUMIDITY:** 35% to 61%

**TEMPERATURE RANGE:** 10°F/-12°C to 90°F/32°C

**ALTITUDE:** 3,780-ft./1150 m to 4,100-ft./1250 m

**RAINFALL:** 0.4 in/1 cm per month

#### JUNE THROUGH AUGUST

**HUMIDITY:** 40% to 66%

**TEMPERATURE RANGE:** 25°F/-4°C to 100°F/38°C

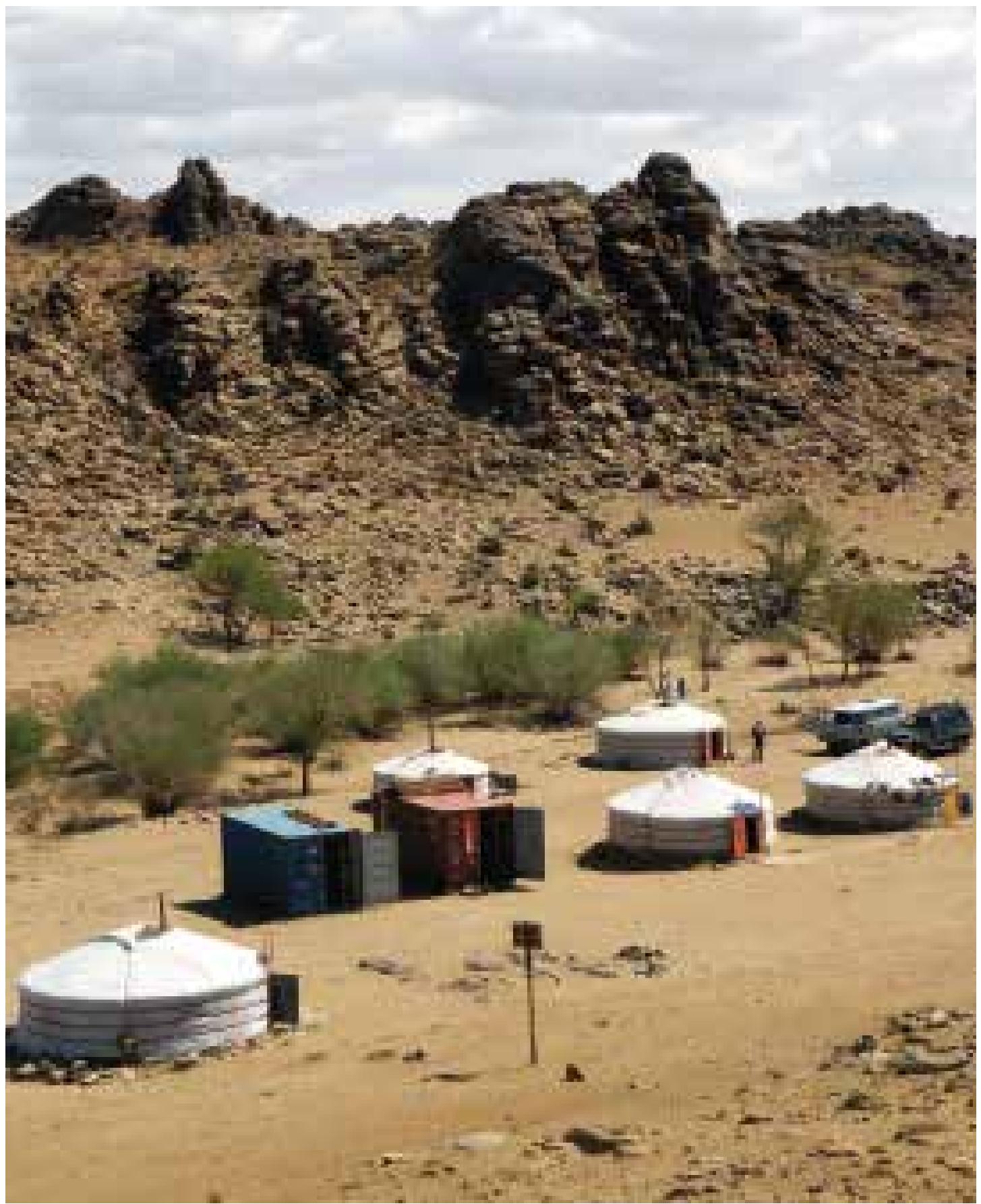
**RAINFALL:** 1.5 in/3.8 cm per month

### ESSENTIAL ELIGIBILITY REQUIREMENTS:

All participants must be able to:

- Follow verbal and/or visual instructions independently or with the assistance of a companion.
- Have the physical stamina to carry buckets, hold an archaeological screen, and stand for 3–4 hours at a time.
- Enjoy being outdoors all days in all types of weather (see above), in the potential presence of wild animals and insects
- Tolerate widely varying temperatures as low as 25°F (-4°C) at night and over 100°F (38°C)
- Tolerate long periods of time spent working in direct sunlight with little-to-no shade available (4–6 hours per day)
- Traverse distances of 4–6 miles (6–10 km) on a daily basis, and be willing to travel for longer distances of 10–15 mi (16–24 km) by vehicle for some activities on some days. The terrain in Ikh Nart can be uneven and sometimes rocky, with shallow and occasionally steep drainages and valleys, making hiking fairly strenuous. Volunteers can expect some of the hiking to be over steep rocky outcrops (often with loose rock debris) or through soft sand. Distance varies greatly with activity, so volunteers can expect some lighter days and other more strenuous days of hiking. No volunteers will be asked to exert themselves more than they are comfortable with. Once out of camp, there is restricted means of communication, so ensuring that you are well hydrated and working within your fitness comfort levels is extremely important as getting help if required will take some time.
- Be able to get low enough to the ground to pick up buckets, dig with a shovel or trowel, and record archaeological features for up to six hours on ten days.
- Shake and sift excavated material through screens and carry buckets of dirt during the excavation periods
- Climb rock outcrops using nontechnical climbing to reach archaeological features (may be opted out of)
- Carry a light pack while out in the field (under 4.5 kg/10 lb.) with personal daily supplies such as lunch, water, and some basic field gear (binoculars, writing and recording materials, flagging, camera, GPS, measuring tapes etc.)
- Get oneself up into and down out of a vehicle, and ride, seated with seat belt fastened (when available), for about two to six hours a day over bumpy roads and terrain, depending on that day's activity, for eleven days of the expedition
- Live comfortably without constant and reliable source of electricity
- Comfortably live in a camp community with minimal privacy.





# POTENTIAL HAZARDS

## ARCHAEOLOGY OF THE MONGOLIAN STEPPE

HAZARD TYPE	ASSOCIATED RISKS AND PRECAUTIONS
Transportation	<p>There are few paved roads outside of Ulaanbaatar. Urban and rural roads are often poorly maintained and can be very bumpy, sandy, or rocky. We may also encounter fast drivers, poor lighting, pedestrian traffic, and a lack of safety standards and traffic controls; however, the project drivers have experience driving in Mongolia. You must wear a seat belt whenever possible; note that some project vehicles may not have seat belts for all seats. You may not drive vehicles or drive or ride on motorbikes. In Ulaanbaatar, vehicular and pedestrian traffic can be very heavy; take caution when crossing streets on foot.</p>
Hiking/Walking/ Climbing	<p>Terrain is often uneven, and you'll often hike over loose gravel, rocks, steep slopes, or in loose sand. The area has several high rocky outcrops, which are often covered with loose debris; take care to avoid injury while climbing on rocks. Wear sturdy, broken-in footwear with ankle support and watch your steps carefully. Use a walking stick and knee braces if needed. Do not overexert yourself and inform a staff member immediately if you feel tired or ill.</p> <p><b>Terrain:</b> The rocky outcrops create a maze-like terrain, which can cause confusion. Risks include becoming lost, disoriented, and/or dehydrated. Carry sufficient water and extra batteries for your GPS units, and work with a knowledgeable staff member until you are familiar with the area. Never wander off alone. Always let your team leaders know if you leave camp to hike, in what direction you are going, and when you expect to return. Your team member will always carry and know how to use a GPS unit; project staff will also instruct you on how to use this essential equipment if you are unfamiliar with it.</p>
Animals/Plants	<p>A venomous snake, the Central Asian viper, inhabits Ikh Nart. This snake is very rarely lethal, unless the person has an allergy or other compromising condition. Avoid picking up, touching, or approaching snakes, and inform a staff member if one is spotted.</p> <p>Avoid domestic dogs whenever possible, as rabies is present in Mongolia. You can scare most dogs away by picking up a rock (you don't usually have to throw it). Volunteers may wish to discuss rabies vaccination with their physicians (see the safety section). Ticks in the area may transmit tick fever (similar to Lyme disease). They are more prevalent during wet season (July-September), and they are relatively large and easy to spot. Wear appropriate footwear (hiking boots that cover the ankle) and check for ticks daily.</p> <p><b>Plants:</b> Several plants are thorny or prickly. Wear foot protection at all times and don't handle plants without looking carefully for thorns, prickles, or nettles.</p> <p><b>Allergies:</b> You will be working in grassland areas with potentially high pollen count (especially in spring) and dust. Felts are used for warmth in gers. Volunteers with allergies should bring appropriate medication (antihistamines, at least two Epi-Pens, etc.) and inform project staff as well as Earthwatch of your condition and the location of your medication.</p>
Climate/Weather	<p>In this arid environment, you must always carry sufficient water in the field and drink frequently. You will spend most of the day working in direct sun. Even on cool days, use and re-apply high-SPF sunscreen, high-SPF lip balm, and wear protective clothing (long sleeves, long legged trousers, broad-brimmed hats, and sunglasses).</p> <p>Severe thunderstorms can happen at any time, but are rare in late summer and autumn. Strong winds are also possible and can create dust storms. The temperature can vary greatly from day to night and from day to day. Bring clothes that can be layered and a bandana or scarf for protection from windborne dust and sand, and carry waterproof clothing.</p>
Project Tasks/ Equipment	You will likely excavate on this project. You will be given a full briefing on safe use of tools and training in the work required. You must take care when bending and kneeling especially if you have back or knee problems. The excavation areas must be clearly marked and everyone must take care when walking around the area to avoid falling into holes, which could cause sprains and strains.



Personal Security	Crime, especially theft, is on the rise in Ulaanbaatar, so guard against pickpockets and people who might cut your bags to get at items inside. Try to never walk around alone, especially after dark. Avoid wearing expensive jewelry and displaying money or cameras, and leave any unnecessary valuables at home. Mongolia has seen some protests against privatization policies and government corruption in recent years. Further protests are possible but are unlikely to turn violent. The risk of terrorism is minimal but volunteers should avoid public demonstrations, large crowds, and political rallies. Be particularly careful about securing your personal belongings and hand cases around the State Department Store and even inside on the escalators.
Distance from Medical Care	On this project we will be up to six hours (320 km/200 mi) away from the hospital in Ulaanbaatar, and medical care in Mongolia is not generally up to Western standards. Serious medical cases would require international evacuation, most likely to Hong Kong, Seoul, or Beijing, which may be possible only in daylight. Obtain necessary routine medical and dental care prior to traveling and keep a copy of your personal health records and prescriptions with you. Disclose any medical conditions to Earthwatch and project staff, and inform project staff of the location of any important medications. Inform a staff member immediately if you feel at all unwell. The nearest clinic is in Shivee-Gobi, 1.5 hours or 60 km (37 mi) away. If you have a chronic condition which could require immediate medical care (heart conditions, kidney problems, severe asthma, etc.) or if you are pregnant, seriously discuss your participation on this expedition with your physician.
Disease	<b>Water:</b> Tap water in Mongolia is not safe to drink. Only drink water provided by the project, or bottled water when in Ulaanbaatar.
Isolation	Some volunteers might find the isolation uncomfortable. We will likely have limited communication with the outside world. A satellite telephone will be turned on from 7:30 a.m. to 8:30 a.m. (Mongolian time) every day to receive emergency calls. Also, we have cell-phone contact from camp so that will permit limited email on most days. We can call internationally from this phone if necessary.
Accommodations	There is a risk of fire within the camp. You will be instructed what to do should this occur. All gers have very low doorways and wooden frames. Please ensure that you lower your head whenever entering and exiting ger doorways.
Unexploded Ordinances	In some areas of Mongolia there are historic military remnants, including mortars and rounds. While it is rare that you will encounter these ordinances, project staff will brief you on what to expect in the field. Please be aware of your surroundings and keep an eye on where you step. If military remnants are found, please notify project staff immediately.



# SAFETY

## HEALTH INFORMATION



### EMERGENCIES IN THE FIELD

On this project we will be up to six hours (320 km/200 mi) away from the hospital in Ulaanbaatar, and medical care in Mongolia is not generally up to Western standards. Serious medical cases would require international evacuation, most likely to Hong Kong, Seoul, or Beijing, which may be possible only in daylight.

**NOTE:** Project staff members are not medical professionals.

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

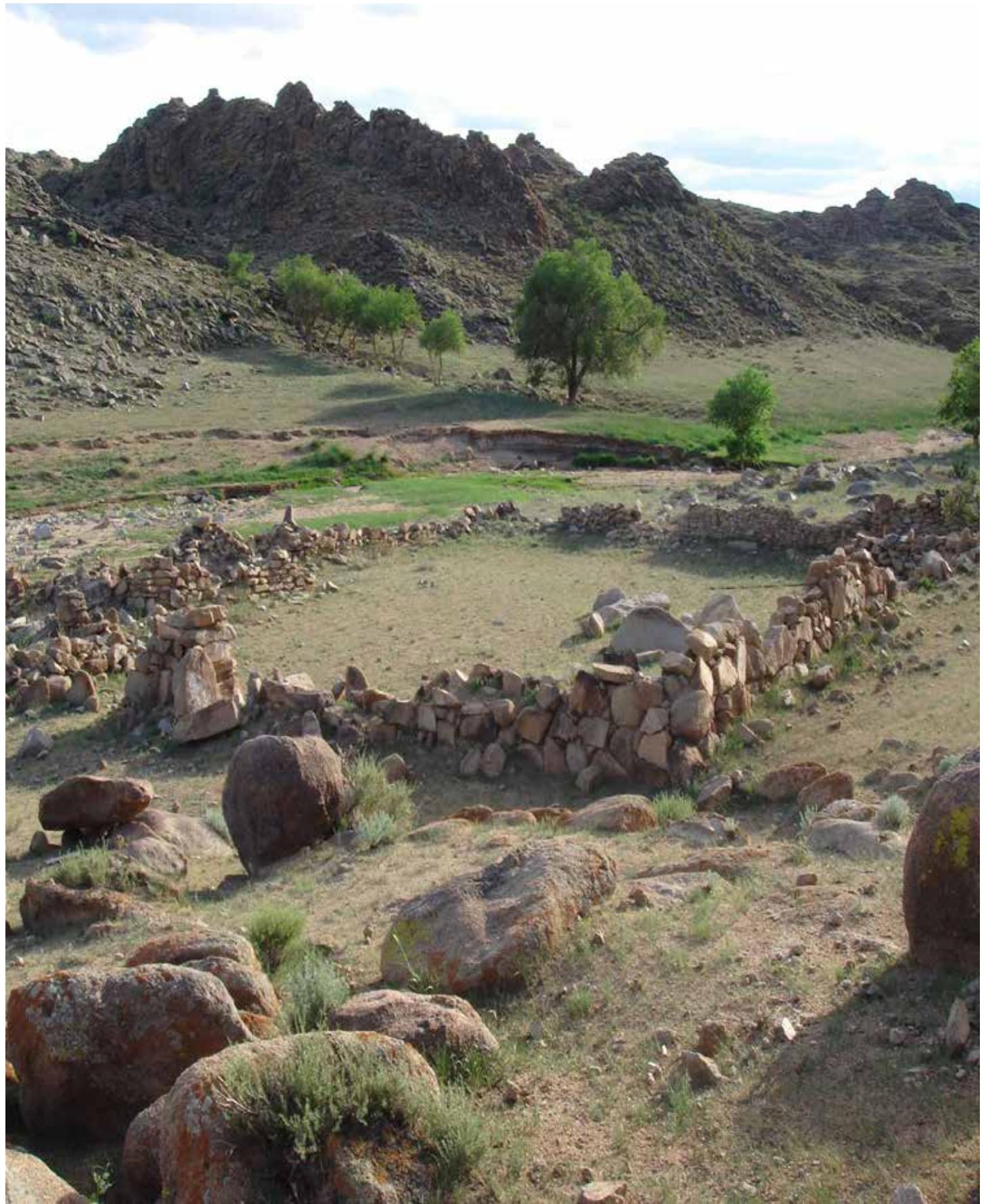
Please be sure your routine immunizations are up-to-date (for example: diphtheria, pertussis, tetanus, polio, measles, mumps, rubella and varicella). Medical decisions are the responsibility of each volunteer and his or her doctor, and the following are recommendations only. Visit the Healink Travel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

**RECOMMENDED FOR HEALTH REASONS:** Typhoid, Hepatitis A, Hepatitis B, rabies





# TRAVEL TIPS

## SUGGESTIONS FOR THE ROAD

### YOUR DESTINATION

**LANGUAGE:** Mongolian. The project will be conducted in English.

**TIME ZONE:** GMT +9; The Mongolian government decided to use Daylight Saving Time (DST) in 2015. Mongolia is currently divided into two time zones. Most of the country, including its capital Ulaanbaatar, observes Ulaanbaatar Time (ULAT), which is 8 hours ahead of UTC (Coordinated Universal Time) during the standard time period and 9 hours ahead of UTC when DST is in use.

**CULTURAL CONSIDERATIONS:** Mongolians love to give and receive gifts, and you may wish to bring some small items to give: calendars, pins or buttons, small flashlights, inexpensive pocket knives or tools, small puzzles, playing cards, tea, batteries, your own handmade crafts or trinkets, clothing (including used clothing if it is clean and in very good shape), water bottles, pens and paper—be creative, but keep luggage restrictions in mind. Of course, if you want to give more expensive items, such as leaving your pair of binoculars, your Swiss Army knife or Leatherman, or your handheld GPS unit with a student, those gifts are greatly appreciated. Earthwatch does not expect volunteers to give any gifts, and any such gestures are entirely voluntary on your part.

**TIPPING:** Mongolians generally do not tip. If service is good, you might want to leave 1,000–3,000 MNT, but generally no more.

**ELECTRICITY:** 220 volts, 50 Hz two-prong Type C European-style plugs (American-style outlets are also available in camp). See the Accommodations section for more information about electricity at the accommodations.

**TAXIS:** In Ulaanbaatar, any car will serve as a taxi, but be wary of theft. To be safe, only official or “tourist” taxis are recommended. Do not get in a taxi that already has people other than the driver in it, and avoid private cars with several young men in them. You can call a taxi to pick you up or have your hotel or hostel call one for you.

### MONEY MATTERS

**LOCAL CURRENCY:** Mongolian tugrug (MNT).

**PERSONAL FUNDS:** We recommend that you bring the equivalent of about US\$100, depending on whether or not you intend to buy gifts, souvenirs, cashmere, etc. Cash in the form of the newest possible US \$20 dollar bills will usually bring the highest exchange rate. Bills in poor condition may not be accepted. You'll only find ATMs in Ulaanbaatar; many banks and the State Department Store (on Peace Avenue, two blocks from Zaya's, 5th floor) have ATMs, although they may not always function. The Chinggis Khaan-Ulaanbaatar airport also has an ATM. Restaurants and shops in Ulaanbaatar increasingly accept Visa and MasterCard credit cards, but most establishments still do not accept either. We recommend changing any money at the State Department Store in Ulaanbaatar on your arrival (the money exchange is located on the 1st floor near the entrance doors), as they have the best rates. Once in Ikh Nart Nature Reserve, there will be no access to banks or cash machines, and locals and women's coop only accept cash in the local currency (often only small bills are accepted).

Traveler's checks are very difficult to spend in Mongolia and you will be charged a fee to use them, in addition to the fee you pay to acquire them. If you bring traveler's checks, you will have to change them in a bank in Ulaanbaatar. You can't cash a traveler's check, or use foreign currency, outside of Ulaanbaatar.



## 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	Yes	No
United Kingdom	Yes	Yes
Europe	Yes	Yes
Australia	Yes	Yes
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.

You will need a visa if you fly through Russia and may need one for China (if it involves an overnight stay), so you are encouraged to fly through Korea or Turkey instead. If traveling through China or Russia, you may need a visa for each time you pass through that country—for both inbound and outbound travel.

**IMPORTANT:** Should you be planning for an extended stay in Mongolia, be aware that you will need a special permit to be obtained on your arrival in Mongolia. All visitors wishing to stay longer than 30 days should be aware that additional requirements apply, whether or not a visa was initially required. Visitors of more than 30 days must register with the Naturalization and Foreign Citizens Agency in Ulaanbaatar within the first seven days of arrival.

Travelers are advised to check visa regulations well in advance of traveling. One source of information is [cibvisas.com/](http://cibvisas.com/).

## 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:

### Ms. Selenge Tuvdendorj

Mongolian Conservation Coalition  
Ulaanbaatar, Mongolia  
+976 9927-1239 or +976 11326-051  
[stuvdendorj@yahoo.com](mailto:stuvdendorj@yahoo.com)



# 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)
- Documentation for travel by minors (if necessary)

#### CLOTHING/FOOTWEAR FOR FIELDWORK

- Earthwatch T-shirt
- Lightweight, quick-drying, long-sleeved shirts
- Lightweight, quick-drying pants/trousers
- Short-sleeved shirts
- Heavy, warm long pants/trousers
- Hat with a broad brim to protect your head, neck, and face from sun, wind, and dust
- Sturdy hiking boots
- Rain gear (trousers/pants and jacket)—it rains in summer
- Windbreaker + warm jacket
- Fleece/jumpers/sweater
- Warm gloves + warm hat
- Work Gloves
- Long underwear
- Women—strongly supportive sports bra as travel is off road and very bumpy

#### CLOTHING/FOOTWEAR FOR LEISURE

- At least one set of clothing to keep clean for end of expedition
- Comfortable footwear for camp

#### FIELD SUPPLIES

- Small daypack
- Drybag or plastic sealable bags (good for protecting equipment like cameras from dust, humidity, and water)
- Plastic sealable bags or plastic box for lunches
- Insect repellent spray
- Two one-liter water bottles
- Pens or pencils
- Pocket-sized straightedge or ruler
- Clipboard
- Five-meter (16 foot) pocket tape measure, with both centimeter and inch scales

#### BEDDING AND BATHING

- Sleeping bag (warm enough for low temperatures like -7°C/20°F)
- Towel
- Mesh shopping bag; useful for carrying things to the showers (not essential).

#### 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
- Laundry soap for washing essential items by hand
- Flashlight or headlamp (preferred) with extra batteries and extra bulb
- Alarm clock



## EXPEDITION PACKING CHECKLIST

### OPTIONAL ITEMS

- A few wire hangers or other means to hang clothing and personal items from the roof of the ger (a Mongolian tradition).
- Good quality hiker's compass, such as Silva or Brunton, with mirror top (We will provide compass-reading lessons)
- Binoculars
- Sleeping pad
- Travel guide (The Bradt Travel Guide to Mongolia is recommended, see Recommended Reading for details)
- Pocket-sized notepad for recording personal impressions in the field
- Pillow (a pillowcase and rolled-up sweater/jumper may suffice and save on space)
- Camp chair
- Insulated cup
- Daily journal

- Sun shower
- GPS unit
- Snack food
- Spare batteries
- Knee pads for kneeling during excavation
- Gaiters
- Camera, film or memory card(s), extra camera battery
- Hardware for sharing digital photographs at the end of the expedition
- Books, games, art supplies, playing cards, etc. for free time
- Earplugs for light sleepers

**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



**ARLENE M. ROSEN, PhD** is Professor of Anthropology at the University of Texas, Austin, as well the Director of the Environmental Archaeology Laboratory there. She received her PhD from the University of Chicago, and over some 40 years has conducted archaeological research in a number of localities including Algeria, Egypt, Israel, Syria, Iraq, Turkey, Russia, Kazakhstan, China and Mongolia. She is currently working on human environmental relations during later prehistory and in early complex societies in the Eastern Mediterranean Levant, China, and Mongolia. She is the author of *Civilizing Climate: Social Responses to Climate Change in the Ancient Near East* (2007: Altamira Press), and numerous journal articles dealing with issues of human adaptations to climate change and human impact on the environment. **Present on Team 1.**



**JOAN S. SCHNEIDER, PhD** received her degrees in anthropology from the University of California, Riverside. Retired from her position as associate state archaeologist with the California State Parks, she continues to teach and pursue her research interests. Her research focuses on why prehistoric people (particularly women) chose certain stones for tools and vessels, and how these stones relate to the tasks performed or uses of the artifacts. Schneider has worked for over 30 years in the deserts of the world, including the Colorado, Mojave, Sonoran, and Negev. She has conducted field projects in Joshua tree and Death Valley National Parks in the U.S., and in northern Israel, as well as directing archaeological field school for the University of Nevada, Las Vegas.



**YADAMAA TZERENDAGVA (TSEDÖ), PhD**, Center for Archaeological Study, Institute of History and Archaeology, Mongolian Academy of Sciences. He is particularly interested in lithic technology and rock art, but studies all phases of his country's past. He has published in English, Mongolian, and Russian. Most of his research has taken place in the Altai (northern) region of Mongolia, and this is his first project in the southeastern portion of the country, where almost no archaeological research has been done.



**JENNIFER FARQUHAR, MS**, received her master's degree from California State University, Sacramento, and has expertise in lithic (stone tool) analysis. Before she recently returned to graduate school at the University of Pittsburgh, she was, for many years, a principal archaeologist with Albion Environmental, Inc. in Santa Cruz, California, an environmental consulting firm. She is past-president of the Society for California Archaeology. Her interest in Mongolia has grown since she participated in the Ikh Nart project in 2012. She plans to include her work at Ikh Nart within her PhD dissertation research.



**PATRICK HADEL** attended San Diego City College and has extremely wide and deep experience in field archaeology. His research interests include cultural resource conservation and interpretation and Geographical Information Systems (GIS) applications in archaeology. His Mongolian experiences include six years (2011–2016) with the Ikh Nart project and previous work in the northern part of Mongolia. At present he holds a staff position with Dudek, an environmental consulting firm.



**ROBIN CONNORS, MS**, is associate state archaeologist for California State Parks. She holds a Master's degree from San Francisco State and represents Anza-Borrego Desert State Park on the research team. Anza-Borrego and Ikh Nart are official sister parks and Ms. Connors is our current expert on Cultural Heritage Conservation, assisting our Mongolian colleagues in planning for heritage conservation and sustainability.



**DALANTAI SARANTUYA** is a staff archaeologist at the Institute of Archaeology and History, Center for Archaeological Study, Mongolian Academy of Sciences. He is a graduate of Mongolian Educational University and has been with the Ikh Nart project since 2010. In 2012 he received an Earthwatch Schulman Award for emerging conservation leaders. He is working on improving his skills in written and spoken English and has attended the special Intensive English Program at the University of California, Riverside.

**NOTE:** Staff schedules are subject to change and this list contains just a few staff members. There are multiple western and Mongolian staff members who join teams in the field.



# RECOMMENDED READING

## YOUR RESOURCES AT HOME

### RESOURCES

#### ARTICLES

- Honeychurch, W., (2010). Pastoral nomadic voices: a Mongolian archaeology for the future. *World Archaeology* 42, 405-417.
- Janz, L. (2016) [October]. Fragmented landscapes and economies of abundance: the Broad Spectrum Revolution in arid East Asia. *Current Anthropology* 57(5).
- Williams, M. (ed). "Mongolia: Biodiversity at a Crossroads." In *Biodiversity Briefings from Northern Eurasia*, Volume 2, Issue 1. The Center for Russian Nature Conservation, 2003.

#### BOOKS

- Chambers, J. *The Devil's Horsemen: the Mongol Invasion of Europe*. New York: Atheneum, 1985.
- Finch, C. (ed). *Mongolia's Wild Heritage: Biological Diversity, Protected Areas, and Conservation in the Land of Chingis Khan*. Boulder, CO: Avery Press, 1999.
- Gallenkamp, C. *Dragon Hunter: Roy Chapman Andrews and the Central Asiatic Expeditions*. New York: Viking Press, 2001.
- Goldstein, M.C. and C.M. Beall. *The Changing World of Mongolia's Nomads*. Berkeley: University of California Press, 1994.
- Man, J. *Gobi: Tracking the Desert*. New Haven: Yale University Press, 1997.
- Morgan, D. *The Mongols*. Cambridge, MA: Blackwell Publishers, 1986
- Ratchnevsky, P. *Genghis Kahn: His Life and Legacy*. Cambridge, MA: Blackwell Publishers, 1991.
- Tschinag, Galsan *The Blue Sky*. 2007. A boy in a nomadic family in northern Mongolia provides an account of his childhood.
- Waugh, Louisa : *Hearing Birds Fly: a Nomadic Year in Mongolia*, 2003. An English-speaking woman spends a year in a western Mongolian village.
- Weatherford, Jack. *Genghis Khan and the Making of the Modern World*. New York: Broadway Publishers, 2004. An excellent introduction to the Mongolian Empire period.

Schneider, J.S., Tserendagva, Y., Hart, T.C., Rosen, A.M., Spiro, A. [2016], Mongolian "Neolithic" and Early Bronze Age ground stone tools from the northern edge of the Gobi Desert, *Journal of Lithic Studies*, Vol 3, No 3. (available online)

#### FIELD GUIDES

- Reading, R.P., D. Kenny, and B. Steinhauer-Burkart. (2011). *Ikh Nart Nature Reserve: Argali Stronghold*. 2nd ed. Nature-Guide No. 4, Mongolia. **NOTE:** available for purchase from Joan Schneider at [joanschn@gmail.com](mailto:joanschn@gmail.com) for US\$ 10 plus shipping. All proceeds go to support our conservation activities in Ikh Nart.

#### FILMS

- Bodrov, S. (director). 2007. *Mongol* (based on the early life of Genghis Khan)
- Davaa, B. and Falorni, L. (directors). 2003. *The Story of the Weeping Camel* (nominated for an Academy Award).

#### PROJECT-RELATED WEBSITE

- IKH NART WEBSITE: [IkhNart.com/home.html](http://IkhNart.com/home.html)

#### EARTHWATCH SOCIAL MEDIA

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



# 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](mailto: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



# NOTES



# NOTES



# 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,



Scott Kania  
President and CEO, Earthwatch



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