# Timeline and Checklist

## In preparing for your upcoming Earthwatch expedition, please ensure that you:

### Immediately

- Read this Expedition Briefing and all enclosed materials thoroughly.
- Book an appointment with a doctor; you will need him or her to sign the Health section of your Earthwatch Participation Form.
- Make sure you understand and agree to Earthwatch policies and participant responsibilities.

### At least 60 days prior to your expedition start date

Complete and return your volunteer forms. **Below are the specific forms required for this expedition:**

- Earthwatch Participation Form for Adults
- Travel Form

You can download forms at [earthwatch.org/volunteerforms](http://earthwatch.org/volunteerforms).

- If you plan to purchase additional travel insurance, note that some policies require purchase when your expedition is booked (see the **Insurance** section for more information).
- If traveling internationally, make sure your passport is current and obtain a visa for your destination country, if necessary (see the **Passports and Visas** section for more details).
- Make sure you have all the necessary vaccinations for your project site (see the **Health Information** section).
- Purchase a guide book for your destination country.
- Bring your level of fitness up to the standards required (see the **Project Conditions** section).
- Review the packing list to make sure you have all the clothing and any special equipment needed.
- Obtain any necessary prescription medications that will be needed for your travels.

### Up to 30 days before you leave for the expedition

- Read any required reading or websites recommended by the Earthwatch scientist(s) for your expedition.
- Make sure you have enough personal funds for your expedition (see the **Travel Planning** section).
- Leave the Earthwatch emergency contact number with a friend or relative (see the **Emergency Contacts** section).
- Leave a copy of your passport, visas and airline tickets with a friend or relative.
- Confirm your travel arrangements.

**Note:** If you have accepted an expedition placement within 60 days of the start date, you must return your fully completed volunteer forms as soon as possible.
Climate Change and Caterpillars

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Caterpillar found near the Southwest Research Station

© Lee Dyer
General Information

<table>
<thead>
<tr>
<th>Project title</th>
<th>Climate Change and Caterpillars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthwatch scientists</td>
<td>Dr. Lee Dyer, Professor, University of Nevada at Reno</td>
</tr>
<tr>
<td></td>
<td>Dr. Angela Smilanich, Lecturer, University of Nevada at Reno</td>
</tr>
<tr>
<td></td>
<td>Dr. David Wagner, Professor, University of Connecticut</td>
</tr>
<tr>
<td></td>
<td>Nick Pardikes, Graduate Student, University of Nevada at Reno</td>
</tr>
<tr>
<td>Research site</td>
<td>Chiricahua Mountains region, Arizona, United States</td>
</tr>
<tr>
<td>Rendezvous Location &amp; Time</td>
<td>La Quinta Inn and Suites Tucson Airport, Tucson, AZ, USA</td>
</tr>
<tr>
<td></td>
<td>Arrival: 6:30 p.m. on Day 1</td>
</tr>
<tr>
<td></td>
<td>Departure from airport: Any time on Day 11</td>
</tr>
<tr>
<td></td>
<td>Please see the Rendezvous section for more information.</td>
</tr>
<tr>
<td>Expedition Dates</td>
<td>Team 5: August 2 – 12, 2012</td>
</tr>
<tr>
<td>Expedition length:</td>
<td>11 days</td>
</tr>
<tr>
<td>Team size max:</td>
<td>12 participants</td>
</tr>
</tbody>
</table>

Emergency Contacts

<table>
<thead>
<tr>
<th>Emergency contact number at Earthwatch headquarters in the US:</th>
</tr>
</thead>
<tbody>
<tr>
<td>+1 (978) 461-0081</td>
</tr>
<tr>
<td>+1 (800) 776-0188 Note: The 800-number works as a toll free call only for calls placed within the US.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Medical and Security Assistance Helpline Numbers (For assistance while in the field)</th>
</tr>
</thead>
<tbody>
<tr>
<td>When calling any of the helplines, please mention Earthwatch and policy reference number 560020011200.</td>
</tr>
<tr>
<td>CECA Emergency Medical &amp; Travel Assistance:</td>
</tr>
<tr>
<td>+44 (0)20 3059 8770</td>
</tr>
<tr>
<td>You may call this number collect or reverse charges if necessary in a medical emergency.</td>
</tr>
<tr>
<td>Henderson Risk Security Assistance and Advice:</td>
</tr>
<tr>
<td>+44 (0)20 3059 8772</td>
</tr>
<tr>
<td><a href="mailto:axisenquiries@hendersonrisk.com">axisenquiries@hendersonrisk.com</a></td>
</tr>
</tbody>
</table>
Dear Earthwatcher,

Welcome to Earthwatch! We greatly appreciate your decision to contribute to hands-on environmental science and conservation. As an Earthwatch volunteer, you have the opportunity to create positive change. Each year we connect thousands of people just like you with research projects—approximately 65 projects in more than 35 countries—where they can participate in the fieldwork necessary to understand and help an array of species, habitats, and cultures. These projects focus on: climate change, cultural heritage, ecosystem services, and oceans.

We are committed to caring for the safety of all those involved in our activities anywhere in the world. Although risk is an inherent part of the environments in which we work, through careful risk management and diligent planning we believe that all participants can have educational and inspirational Earthwatch experiences. We’ve been providing volunteer field experiences for 40 years, so you’re in good hands.

It is essential that you carefully read your Expedition Briefing and fully complete the volunteer forms so that you are prepared. Your Expedition Briefing includes important information such as instructions for reaching the rendezvous point, what risks are present on the research project and how to avoid them, what to pack, what immunizations you need, how to physically prepare for your expedition, and more. It also explains the research being conducted on the project, why it’s important, and what role you’ll play as an Earthwatch volunteer.

Well-prepared volunteers are better able to enjoy the unique and exciting experiences that an Earthwatch expedition offers and will be more helpful to the scientists’ important work. Open-mindedness, the ability to work on a team, and a desire to learn are all keys to a successful and enjoyable Earthwatch experience. We hope this expedition will inspire you to get more involved in conservation and sustainable development priorities—not just out in the field but also when you return home. We encourage you to share your experiences with others, and to transfer your skills and enthusiasm to environmental conservation efforts in your workplace, community, and home.

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

Sincerely,

[Signature]

Ed Wilson
President and CEO
Dear Earthwatch Volunteer,

Welcome to the Climate Change and Caterpillars expedition in Arizona! I hope that the expedition will be interesting, challenging, and fun for everyone involved with the project. Before you delve into the Expedition Briefing, I’d like to tell you a little about why I think this project and your help are important.

This project includes a large, international collaborative team that is focused on understanding plant, caterpillar, and parasitoid interactions in forests from Brazil to Canada. We are naturalists as much as we are basic researchers, and we all have a passion for the wild lands where we work. Most of us have been involved in local and global environmental issues, and it was partly our concern about the disappearing natural areas of the world that caused us to focus our research efforts on threatened natural ecosystems across the Americas.

The other attribute that attracted us to the study sites in this project is what attracts most naturalists, ecologists, botanists, and entomologists to complex ecosystems: biodiversity. We are especially interested in interaction diversity—the unique types of regulatory pressures exerted by populations of different species on one another, such as the effects of hawks on foraging behaviors of jays. The diversity of the forest and desert that comprise our site in Arizona is remarkable. My collaborators, field assistants, and I will have plenty of opportunities to point out some of our favorite organisms at the research station, and I am sure that you will leave the project with a long list of unique sightings, favorite species, and intriguing interactions.

This project was started as a result of many discussions. Two questions tended to dominate: how predation and parasitism levels vary among caterpillars with different evolutionary histories, and how parasitism differs at sites that have clear climatic or biological differences. With respect to the latter question, we have found some interesting patterns of parasitism across rainfall and temperature gradients, and decided that a comparative approach could answer many interesting questions about how forests respond to climatic variation. This is a particularly important area of research, given the impending impacts of global climate change.

The fieldwork for this project is very simple and enjoyable. We collect caterpillars, take care of them, and see if they are parasitized. Finding caterpillars isn’t too hard, but finding more than a very few of any particular species can be quite difficult, depending on the species. Also, the time of year that the teams participate in our projects presents special challenges to finding caterpillars—their densities in the field will be relatively low, and most of the caterpillars will be small and hard to see. Since we want to look at caterpillar species in several different types of landscapes, from desert to old fields to mature forests, we need high sample sizes throughout the year, and we need as much help as we can get.

So get ready! We are going to be outside a great deal, hiking along roads and on trails and searching off trail. There will also be a variety of interesting jobs back at the station, doing state-of-the-art chemistry, caring for caterpillars, or entering data. The best part about working in the field is, of course, that we are working in diverse ecosystems and will see a lot more than just caterpillars and plants. I look forward to working with you.

Sincerely,

Lee Dyer, Earthwatch scientist
The Research

Climate Change and Caterpillars

The Climate Change and Caterpillars project in Arizona examines factors that affect interactions between plants, plant chemistry, caterpillars, and their natural enemies, which is an important area of study for both agricultural and basic ecology. Volunteers at the Arizona site will conduct caterpillar research in the desert and mountain communities associated with the Southwest Research Station in the Chiricahua Mountains and the nearby Santa Rita Experimental Range in the Coronado National Forest. Other Earthwatch teams conduct work throughout the year in forests and mountains in Nevada and California, a rainforest at La Selva Biological Station in Costa Rica, a cloud forest at Yanayacu Biological Station in Ecuador, and in urban areas, swamps, and bottomland hardwood forests around New Orleans, Louisiana.

The natural enemies the project studies are called “parasitoids” and include many different species of wasps and flies that kill caterpillars by depositing their eggs on them. This ensures that the parasitoids’ offspring will have both a safe environment in which to grow (inside the caterpillar) and a good supply of food (caterpillar tissue). The project will rear replicates of over 300 species of caterpillars that are native to the research sites, and record parasitoid loads will. In addition, specific chemical compounds will be isolated from some of the species of caterpillars and food plants, and the compounds will be examined as potential defenses against parasitoids. This approach will allow the project to uncover significant associations between defenses and levels of parasitism by different guilds of parasitoids. Comparisons between the different sites will allow the project to test hypotheses about the effects of important climatic factors on caterpillar-parasitoid interactions. The study will also obtain essential natural history information on forest plants, caterpillars, and parasitoids, and the predictive models developed can be extended to address questions about the suitability of particular parasitoids as controls of specific insect pests in agricultural systems. Some of the caterpillars with which the program will work are agricultural pests (e.g., the armyworm); others are threatened by habitat loss and fragmentation (e.g., the iridescent blue butterfly). All of the caterpillars are striking to look at and have a spectacular diversity of shapes, colors, and appearances, all of which are potential defenses. Many of the species found through this project will be new to science.

All of the teams at the five research locations named above have the same duties, and spend plenty of time in the forest gathering and identifying caterpillars and food plants and conducting experiments, as well as time in the laboratory raising caterpillars and working on chemical analyses.
Project Location
The Southwest Research Station (SWRS) is located in the Chiricahua Mountains (see Chiricahua National Monument on the map below), surrounded by woodlands of oak, juniper, and pinyon pine trees. The area offers incredible diversity. Within a short drive up the Chiricahua Mountains, which reach nearly 9,800 feet, five life-zones (areas of similar plant and animal communities) can be encountered: Lower Sonoran, Upper Sonoran, Transition, Canadian, and Hudsonian. The uniqueness and diversity of the region is well recognized by the bird-watchers who visit Cave Creek Canyon, one of the top birding sites in the US. The great diversity in this area is partly due to the unique geographical position of the Chiricahua and surrounding mountains. These mountains have been called “sky islands” due to their isolation from nearby mountain ranges by expanses of desert valley. This isolation results in many endemic species exclusive to the “island.”

The Santa Rita Experimental Range (SRER), managed by the University of Arizona, is located in the Coronado National Forest (near Kartchner Caverns State Park on the map below). It was founded in 1903, which makes it one of the five oldest field stations in America. Because scientists have conducted research there for over 100 years, the range can provide a wealth of information on the surrounding vegetation, which can help researchers distinguish permanent changes to the natural environment from changes that are part of long-term, cyclical processes. For information on the climate and conditions of the research area, see the Project Conditions section.

Cultural, Social, and Political Environment
People in the US are generally conservative, but there is a wide diversity of political, religious, and philosophical points of view. The region in Arizona where you will work is sparsely populated. This area was important to Native Americans and early settlers because of a number of natural springs occurring in the otherwise dry region. The Butterfield Stagecoach Line ran from Fort Bowie to Tucson along the north edge of the Chiricahuas, and was the major southern immigration and trade route for European settlers. The Dragoon Mountains, to the west of the Chiricahuas, served as an invaluable refuge for Apache groups under the command of Chief Cochise in the 1860s and 1870s, from which they safely stage attacks on stagecoaches and military installations. Today the Cochise Stronghold is part of the Coronado National Forest and is a great place for experiencing solitude, hiking, and rock climbing.
Research Achievements
To effectively protect and manage diminishing natural ecosystems, as much information as possible is needed about the organisms that live there and how they interact, particularly organisms as diverse and important as parasitoids. With research sites in a rainforest, cloud forest, desert, diverse temperate forest, and hurricane-damaged ecosystem, this project increases general natural history knowledge and is therefore beneficial to everyone who wishes to protect these ecosystems. The project’s most significant accomplishment is the compilation of natural history data related to approximately 2,000 combined species of caterpillars, plants, and parasitoids. The project has been able to share its natural history information with local communities and scientists alike.

Also, managers of agricultural systems (e.g., banana plantations) who are attempting to control pests without using pesticides will benefit from increased knowledge of the parasitoid community. There are two ways that this can occur:

1) The project can find new species of parasitoids that may be useful in controlling pests of nearby plantations.
2) The project can guide existing biocontrol programs by predicting which types of enemies are likely to be the most successful for controlling a particular pest.

In regards to the first objective, the project found at least 10 new species of parasitoids in the families Braconidae (wasps) and Tachinidae (true flies) that are currently being treated by taxonomists. In regards to the second objective, the project used prey defensive characteristics as predictors of successful pest eradication by predators versus parasitoids. Predictions derived from models explained 53% of the variation in success of biocontrol efforts (Dyer and Gentry 1999). Eventually, we plan to start working with local farmers or individuals near the other sites as we have already done in Costa Rica, where we work with investigators at CORBANA (a cooperative for small banana farmers) and at the EARTH (Escuela de Agricultura de la Region Tropical Humeda) University facilities near Gaupiles to attempt to put the new parasitoid information and model predictions to practical use.

Additionally, the project has benefited specific educational systems through the participation of schoolteachers and high school students as volunteers, who then incorporated ideas learned from this project into their classes. The larger education community has also benefited because the research addresses basic theoretical questions in ecology.


Working in the lab at the station
Dr. Lee Dyer has worked with a variety of organisms in the tropics for the past 19 years and in temperate areas for the past 23 years. He received a B.S. in biochemistry and English from the University of California at Santa Barbara, and a Ph.D. in ecology from the University of Colorado, Boulder. His thesis work examined interactions between plants, herbivores, and their natural enemies, and took him to Costa Rica, Colorado, and California. Lee was a professor for 5 years at Mesa State College in Colorado where he established the Western Colorado Center for Tropical Research and received the distinguished faculty scholar award. He is now a professor in the Biology Department at the University of Nevada, Reno. Lee spends his free time hanging out with his son, rock climbing, listening to music, and reading books. He will be in charge of the project, and his specialties relevant to the project are statistical modeling, community ecology, caterpillar natural history, and basic natural products chemistry.

Dr. Angela Smilanich is an ecologist who has worked with lepidopteran larvae (caterpillars) for the past 10 years. Starting as an undergraduate majoring in biology at Mesa State College in Colorado, she has pursued a career studying how and why a caterpillar chooses to eat certain plants and not others. She received her Ph.D. in 2008 from Tulane University in New Orleans. Her dissertation work focused on the causes of variation in the caterpillar’s immune system. Her most recent research as a postdoctoral scholar at Wesleyan University in Connecticut focuses on the self-medication behavior of woolly bear caterpillars. In her free time, Angela enjoys running, reading, traveling, and eating delicious chocolate. Angela will be in charge of team activities, field work, and lab work on the caterpillar immune system.

Dr. David Wagner is an insect taxonomist and ecologist who has worked with caterpillars for the past 30 years. He is an expert in larval lepidopteran systematics and has published several key books on caterpillar identification, most notably *Caterpillars of Eastern North America* (Princeton University Press). Dr. Wagner received his B.S. in plant pathology with a minor in entomology from Colorado State University. He performed his Ph.D. work at UC Berkeley on the biosystematics of ghost moths. He is currently a full professor at the University of Connecticut in the Department of Ecology and Evolutionary Biology, where he continues to identify and catalog the diversity of life in places such as the Northeast, Costa Rica, Ecuador, and on our project here in Arizona. In his free time, Dr. Wagner enjoys playing volleyball, biking, fishing, watching UConn basketball, spending time with his family, macrophotographing and traveling.

Nick Pardikes is currently an ecology, evolution, and conservation biology graduate student at the University of Nevada, Reno. He graduated from New Mexico State University with a B.S. in biology and was a member of the Aggies baseball team during his tenure. Nick has spent the past four years playing professional baseball in Europe, where he traveled and gained some life experience by immersing himself in different cultures. Now, as a graduate student working with Dr. Dyer, his focus lies on the mechanisms and patterns of biodiversity. He uses caterpillars linked to tritrophic interactions as a model system to study evolutionary process, such as adaptive radiation and origins of diversity. He hopes to contribute to difficult questions, such as why there are so many species, and how biotic interactions contribute to biodiversity. Outside of graduate school and research, Nick enjoys hiking, backpacking, mountain biking, snowboarding, listening to music, and playing the guitar.

All of these staff members will be present for Team 5.
Daily Life in the Field

VOLUNTEER TRAINING AND ASSIGNMENTS

Training

The team will be divided into groups, with the composition changing frequently to allow everyone to get to know each other. The tasks are varied enough that each volunteer usually finds a niche and feels satisfied with his or her contribution to the team effort. When the team is not working, there are many events that contribute to team development. Each evening there will be time for discussions about the progress of the research and feedback from the volunteers.

All field training will be conducted in the first two days in the field and lab. Volunteers will go on an orientation hike with the Earthwatch scientist or a staff member, and will spend some time in the laboratory learning all of the techniques to be used. You will then practice the various jobs under staff supervision. The researchers are confident that the team will collect quality data as past field training has been very successful.

The researchers will give at least three informal lectures, with topics including:

- Introduction to caterpillars, the theory behind the project, the methods to be used, and the plan of action
- Natural history and ecology of parasitoids
- Caterpillar taxonomy

Usually one or two extra lectures are added, as requested by volunteers. Any other talks will be optional and will be open to other researchers and visitors to the station. It is very common for researchers to present lectures on their projects in the region, so volunteers may have the opportunity to learn about other ecological research projects. The team may also have daily discussions about the progress of the project.

The Earthwatch scientists will give the team a more detailed onsite project briefing when they arrive.
Assignments
Volunteers will be involved with most aspects of the project. The work includes helping in the field as well as the lab. The project especially welcomes anyone with computer and web-design skills.

Fieldwork
Work in the field (about 70% of total time) will be divided between four different tasks:

1) Searching for caterpillars (40%)
2) Collecting host plants (30%)
3) Collecting material for laboratory or computer analyses (20%)
4) Maintaining experiments (10%)

All of these tasks need to be done continuously, so volunteers can choose to do particular jobs more frequently than others as they prefer. Searching for caterpillars in the forest is very straightforward, and you will be given plenty of instruction and tips on how to find caterpillars. Host plant collection involves hiking to previously identified sites of host plants and gathering leaf material for caterpillars being reared in the laboratory. The bioassays involve securing small vials containing nectar and caterpillar extract to trees, and collecting them after a specific period of time.

Laboratory Work
Work in the laboratory (about 30% of total time) will include three different tasks:

1) Entering data (15%)
2) Working on computer tasks (15%)
3) Caring for caterpillars in the project’s “zoo” (70%)

Again, these tasks need to be done continuously, and you can usually choose to do one more frequently than others. Rearing caterpillars consists of moving the caterpillars into clean bags, checking them for parasitoids, moving pupae to different bags, and collecting adults or parasitoids from the bags. Adults are either released or preserved for further identification. We will set up a laboratory as well as an outdoor tent for caterpillar rearing, with lines for hanging caterpillar bags, tables for processing and observing caterpillars, and great views.
TEAM ITINERARY AND DAILY SCHEDULE

Please be aware that weather and research needs can lead to changes in the daily schedule. Should this situation arise, your cooperation and understanding are appreciated.

Overview

<table>
<thead>
<tr>
<th>Time of Day</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>Arrive at La Quinta Inn</td>
</tr>
<tr>
<td>Day 2</td>
<td>Travel to research station (SRER), orientation walk, training and collecting, evening talk followed by planning</td>
</tr>
<tr>
<td>Day 3</td>
<td>Collecting (morning) and caterpillar zoo (afternoon), evening talk</td>
</tr>
<tr>
<td>Day 4</td>
<td>Start any experiments planned for the expedition (all day), collecting, zoo</td>
</tr>
<tr>
<td>Day 5</td>
<td>Collecting, zoo, laboratory work</td>
</tr>
<tr>
<td>Days 6-7</td>
<td>One and a half recreational days (these days are not fixed), optional trip to the Arizona-Sonora Desert Museum on Day 6</td>
</tr>
<tr>
<td>Days 7-9</td>
<td>Travel to SWRS, collecting, zoo</td>
</tr>
<tr>
<td>Day 10</td>
<td>Finish studies and prepare all caterpillars for maintenance by staff, travel to Tucson, dinner</td>
</tr>
<tr>
<td>Day 11</td>
<td>Departure</td>
</tr>
</tbody>
</table>

Typical Daily Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 a.m.</td>
<td>Breakfast</td>
</tr>
<tr>
<td>8:30 a.m.</td>
<td>Work in the field</td>
</tr>
<tr>
<td>12:00 noon</td>
<td>Lunch</td>
</tr>
<tr>
<td>1:00 p.m.</td>
<td>Work in the field for half the team, work in the laboratory for the other half</td>
</tr>
<tr>
<td>4:00 p.m.</td>
<td>Recreational time (excellent time for birding, playing soccer, helping with other researchers’ projects, hiking, etc.)</td>
</tr>
<tr>
<td>6:00 p.m.</td>
<td>Dinner</td>
</tr>
<tr>
<td>7:30 p.m.</td>
<td>Discussion and planning time</td>
</tr>
<tr>
<td>8:30 p.m.</td>
<td>Recreational time (good time for night walks, talking to other biologists or visitors, or relaxing at the station)</td>
</tr>
</tbody>
</table>

Recreational Time: Volunteers may hike or relax around the SRER on the recreational days. We will organize one optional trip to the Arizona-Sonora Desert Museum in Tucson on Day 6, which will cost about US$50. This is a full-day excursion. You may also choose to stay at the research station and enjoy the desert for free.
Earthwatch Recreational Time Policy

Earthwatch will generally accompany participants from the rendezvous to the end of the expedition with the exception of recreation time.

- For days when no research activities are scheduled, referred to as recreational days, Earthwatch scientists will offer either a planned team activity or a range of recreational activities that have been vetted and comply with Earthwatch standards. Participants will also have the option of remaining at camp or project accommodations to rest.

- Participants who are determined to pursue options other than those recommended by the project staff will be required to sign a release before doing so. If there is a period of time during a regular research day when no research activities are scheduled, adult participants may have the opportunity to leave the project site on their own; they will be asked to sign out of the project giving their intended destination. Not appearing for the next scheduled activity will trigger the Emergency Response Plan (ERP) regarding missing people. Earthwatch will assess the general risks of adult participants leaving the project site on their own at night after work hours, but cannot guarantee participant safety or an awareness of all issues.

- In some cases, due to local conditions, it may be advisable to restrict adult participants to the project camp or accommodation after dark. This will be clearly communicated in the on-site safety briefing. However, if the local conditions are such that adult participants can go out at night under their own recognizance, there will be a sign-out process through which participants should state their proposed destination and estimated return time. Participants will be given twenty-four-hour contact information for project staff should assistance be needed. The sign-out is informational only and will not be used to enforce a curfew on adult participants. Adult participants should understand that unless contacted for help, project staff will not start a search for a missing participant unless he or she fails to appear the following morning or for the next scheduled research activity.
**ACCOMMODATIONS**

### Sleeping

The team will be housed at the Southwest Research Station (SWRS) and the Santa Rita Experimental Range (SRER), both of which house scientists from all over the country studying the ecology, behavior, and evolution of many different organisms in the area.

Team members will sleep in cabins and share single-sex rooms with two to four twin beds in each. It will not be possible to have a private room for singles. It may be possible to accommodate couples if arranged in advance; please inquire with Earthwatch. All bedding, including sheets, pillows, and towels will be supplied.

### Bathrooms

Each room has a bathroom with a shower and a small kitchen with a refrigerator. Hot water is available at all times.

### Electricity

Rooms do not have televisions or telephones, but there are electrical outlets for any personal devices such as digital cameras or laptop computers.

### Internet and Communications

Cell phones will not work at either station, but there is cell service within a 10 minute walk from SRER, and for SWRS there is a public phone where calls may be made with any standard calling card.

Wireless Internet access is available at both stations (the project will have a computer available for limited time periods for internet access).

### Facilities and Amenities

Note that you are advised to bring a headlamp for reading in bed when the overhead room lights go out, which is whenever the first person in your room asks that they be turned off.

Take a few minutes to explore the station websites:

SWRS: [research.amnh.org/swrs/](http://research.amnh.org/swrs/)

SRER: [ag.arizona.edu/SRER/](http://ag.arizona.edu/SRER/)

There are several nice hiking trails near both stations for recreational time and at SWRS, the Portal store and restaurant is 15 minutes away on foot.

There are no laundry facilities at SRER, but SWRS has a couple of washers and driers for guests.
FOOD

At SRER meals will be prepared cooperatively by the team staff and volunteers in one of the cabins at 7:00 a.m., 12:00 p.m., and 6:00 p.m. Helping in the kitchen is not mandatory, but it is greatly appreciated, especially if you have any culinary skills. Cold breakfasts (cereal and muffins) will usually be provided, as the team will be out in the field early. In good weather meals will be eaten outside on picnic tables. If the team will be out for an entire day, bagged lunches will be prepared to take along.

At SWRS meals will be prepared by kitchen staff at the dining room at 7:00 a.m., 12:00 p.m., and 6:00 p.m. For both sites, vegetarian meals can be prepared. The team staff and volunteers will eat together.

Below are examples of the foods you might expect in the field. Please bear in mind that 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.

| Breakfast: | Cereal, toast, muffins, eggs, pancakes |
| Lunch/Dinner: | Classic American and Mexican food, with vegetarian options |
| Snacks/Other: | Volunteers can usually purchase snacks or ice cream after fieldwork in the late afternoon, or you can bring your favorite snacks from home |
| Beverages: | Juice, iced tea, hot tea, coffee, water |

Special Dietary Requirements

Please alert Earthwatch to any special dietary requirements (e.g. diabetes, lactose intolerance, nut or other serious food allergies) 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 to vegans: Please be aware that it is often difficult to accommodate vegans. If this is an issue, then participation on this Earthwatch expedition should be carefully considered.
Travel Planning

You are encouraged to register your travel itinerary with your embassy. For information on embassies around the world, see embassyworld.com.

- Citizens of Australia may register online at: oraodfat.gov.au.
- Citizens of the United States may register online at: travelregistration.state.gov.
- Citizens of other countries are encouraged to check with their appropriate embassy or consulate regarding registration.

RENDEZVOUS

While Earthwatch may be able to suggest resources to aid volunteers with travel planning, it is important to remember that you are responsible for making your own travel arrangements to the rendezvous site and that airline information is subject to change. **It is essential for the success of the expedition that you do not plan to arrive late or leave the expedition early.**

Upon arriving at the Tucson Airport, you should take the free shuttle to the La Quinta Inn and Suites Tucson Airport. You must meet Lee Dyer at 6:30 p.m. in the hotel lobby (see the Project Staff section for a picture of Dr. Dyer). The team will drive to SRER in the morning of Day 2. **Note:** the hotel cost for the first and last night of the expedition are included in the volunteer contribution.

Please inform Earthwatch of your exact arrival and departure times by filling out and returning your Travel Form as soon as possible.

<table>
<thead>
<tr>
<th>Location</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Meet-up point:</td>
<td>Lobby of the La Quinta Inn and Suites Tucson Airport</td>
</tr>
<tr>
<td>Address:</td>
<td>7001 South Tucson Boulevard Tucson, Arizona 85706</td>
</tr>
<tr>
<td>Telephone number:</td>
<td>+1 (520) 573-3333</td>
</tr>
<tr>
<td>Time:</td>
<td>6:30 p.m.</td>
</tr>
</tbody>
</table>

Early Arrival

Earthwatch volunteers are advised not to arrive early at the project site; however, those who must arrive in Arizona early should consult a travel guidebook for information on local accommodations and attractions.

Earthwatch volunteers may not arrive early at the research station. If you would like to arrive early in Tucson, you may choose to make reservations to stay at the rendezvous site, the La Quinta Inn (recommended), or at one of the many other hotels in Tucson that vary in price from US$25-200 per night, including several that are right next to the rendezvous hotel. Alternatively, you could camp (see visittucson.org) at one of the many excellent US Forest Service campgrounds in the area. Note that early volunteers must still meet Lee and the team at the rendezvous time and place listed above.
Late Arrival

Please do not reserve a flight that arrives after your team’s scheduled rendezvous time. **If your flight is delayed and/or you miss the rendezvous**, you can meet the team at the La Quinta Inn until about 8:00 a.m. on the second morning of the expedition. If you arrive later than 8:00 a.m. on the second day, you will need to call Lee Dyer to make arrangements for joining the team at your own expense. His cell phone number is 504-220-9391, and he will check messages daily.

If you are unable to reach Lee Dyer, **call Earthwatch’s emergency line at +1 (978) 461-0081 or +1 (800) 776-0188 (see Emergency Contacts for calling instructions).**

Remember that 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.

Departure

The team will return to Tucson on the afternoon of the second-to-last day of the expedition. Accommodations at the La Quinta Inn, as well as dinner and breakfast the following morning, are all provided. Volunteers can take the airport shuttle to the airport at any time on the last day of the team (please keep in mind that you will have to check out of your room according to the hotel’s check-out time). There is no airport tax for volunteers departing from Tucson.

**Note: Early departures cannot be accommodated except in cases of emergency.** Before leaving a project early for any reason you must sign an Earthwatch release form.

PASSPORTS AND VISAS

Visa Information

Citizens of the EU, Australia, Canada and Japan **do not** need a tourist visa for entry. Citizens of other countries should check with their travel agent or a visa agency for specific visa and entry requirements. Travelers are advised to check visa regulations well in advance of traveling.

**Note: If you are traveling from outside the US to Canada, Mexico, Latin America, South America, the Bahamas or the Caribbean and have a stopover in the US, you are required to register through the ESTA program.**

Passport Information

Travelers to the United States from other countries will need passports valid for at least six months beyond the dates of travel. Note that as of January 2007, under the Western Hemisphere Travel Initiative, all citizens of US dependencies and Canada will be required to present a passport when traveling to and from the Americas, the Caribbean, Bermuda and the US (previously only required to present proof of citizenship).

Electronic System for Travel Authorization (ESTA)

Online registration is now mandatory for all visitors traveling to the United States without a visa. The Electronic System for Travel Authorization (ESTA) is used to screen short-term visitors who are citizens of the 36 countries eligible for the US Visa Waiver Program (for a list of participating countries, see [travel.state.gov/visa/temp/without/without_1990.html](http://travel.state.gov/visa/temp/without/without_1990.html)).
Visitors are required to complete ESTA at least three days before traveling to the US. Once approved, the authorization will be valid for up to two years if the individual’s passport does not expire in the meantime. Applications can be submitted through the ESTA website, esta.cbp.dhs.gov/esta. Note: As of publication, ESTA costs approximately US$14.00.

Citizens of countries covered by the Visa Waiver Program (VWP) traveling to the US for tourism or business for 90 days or less do not need to obtain a visa provided they have a valid passport (for exceptions see the VWP Quick Reference Guide on travel.state.gov/pdf/VWP-QuickReferenceGuide.pdf).

### For Volunteers Requiring Visas ONLY: Essential Information

<table>
<thead>
<tr>
<th>Type of Visa</th>
<th>Volunteers requiring a visa must get a <strong>TOURIST VISA</strong>.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where to Get a Visa</td>
<td>Contact the nearest <strong>US embassy or consulate</strong> to find out how to apply for your visa. Please note that this process can take weeks or more. We strongly recommend using a <strong>visa agency</strong>, which can both expedite and simplify the process. See below for a list of visa agencies.</td>
</tr>
<tr>
<td>Required Information</td>
<td>You will need to send your <strong>passport</strong> (valid for at least six months beyond your stay), a <strong>Visa Application and Immigration Form</strong>, <strong>2-4 passport-size photos</strong>, and <strong>payment</strong> to the embassy or visa agency (if applicable). Please be sure that your passport is valid for at least six months beyond your stay.</td>
</tr>
</tbody>
</table>
| Contact Information  | You may be required to list the following contact information on your Visa Application and Immigration Form:  
**Lee A. Dyer**  
Biology Dept. 0314  
University of Nevada  
Reno NV 89557  
504-220-9391 |
| Cost of a Visa        | Generally between US$40-100, but varies from country to country and can potentially cost **up to US$180**. A visa agency will charge an additional fee. |

**Note:** The purpose of your visit is for vacation, holiday or travel. Foreign immigration officials do not always understand the concept of a “working vacation” or “volunteering.” Words such as “working,” “volunteering,” “research,” or “scientific expedition” can raise questions concerning the country’s foreign labor laws and/or prompt questions about official scientific research permits and credentials, etc., to which volunteers on their own will not be equipped to respond. All required research permits for the project are in place and have been approved by the proper authorities.

### Visa Agencies

<table>
<thead>
<tr>
<th>In the United States</th>
<th>In Europe</th>
<th>In Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Travisa</strong></td>
<td><strong>CIBT, Inc.-UK</strong></td>
<td>Ask your travel agency if it can send</td>
</tr>
<tr>
<td>290 5th Avenue, 4th Floor</td>
<td>25 Wilton Road</td>
<td>your visa application on your behalf.</td>
</tr>
<tr>
<td>New York, NY 10001</td>
<td>Lower Ground Floor</td>
<td></td>
</tr>
<tr>
<td>Tel: (212) 613-2223</td>
<td>Victoria SW1V 1LW</td>
<td></td>
</tr>
<tr>
<td>Fax: (212) 613-2287</td>
<td>Tel: 0844-736-0211</td>
<td></td>
</tr>
<tr>
<td>Hours: 9:00 AM to 5:00 PM EST</td>
<td>Fax: +44 (0) 207-828-5411</td>
<td></td>
</tr>
<tr>
<td>Web: <a href="http://travisa.com">travisa.com</a></td>
<td>Calling from Europe outside UK: +44 (0) 207-802-1000</td>
<td></td>
</tr>
<tr>
<td>(*See the website for additional offices)</td>
<td>Email: <a href="mailto:info@uk.cibt.com">info@uk.cibt.com</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Web: <a href="http://uk.cibt.com">uk.cibt.com</a> (has alternate address for urgent requests)</td>
<td></td>
</tr>
</tbody>
</table>
**INSURANCE**

MedEvac assistance, advice, and insurance are included in the contribution you pay to Earthwatch. This covers trip cancellation and your travel medical risks, including medical expenses and emergency medical evacuation, while you are traveling. This coverage is valid in the country of your Earthwatch expedition (Note: For US volunteers, as long as the expedition is over 100 miles from your place of residence) and during travel to and from your expedition. Please see the Earthwatch website for more information on insurance provision.

If you have additional vacation time before and/or after your Earthwatch expedition that forms part of your overall time away from your place of residence, this additional vacation time is not covered under this policy. If you are in any doubt as to whether your travel plans before and/or after your Earthwatch expedition constitute additional vacation time, please contact the insurance provider.

**This insurance policy is secondary to your existing health insurance policy (e.g. the NHS in the UK).**

<table>
<thead>
<tr>
<th>If you signed up through Earthwatch UK/Europe, or Earthwatch Japan:</th>
<th>If you signed up through Earthwatch US:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Details of the included insurance policy can be found at earthwatch.org/europe/insuranceinfo.</td>
<td>Details of the US insurance policy can be found at earthwatch.org/insurance.</td>
</tr>
<tr>
<td>Please refer any queries regarding this policy to Earthwatch’s Operations department at +1 978 450 1232 or <a href="mailto:insurance@earthwatch.org">insurance@earthwatch.org</a>.</td>
<td>Please refer any queries regarding this policy to Earthwatch’s Operations department at +1 978 450 1232 or <a href="mailto:insurance@earthwatch.org">insurance@earthwatch.org</a>.</td>
</tr>
<tr>
<td>You can find information about additional insurance available to UK residents for coverage before or after your Earthwatch project at earthwatch.org/europe/insuranceinfo. Should you have any questions about whether you require coverage for your travel plans, please review the policy summary and the FAQs at the website above.</td>
<td>You can find information about additional insurance available for coverage before or after your Earthwatch project at earthwatch.org/insurance. Should you have any questions about whether you require coverage for your travel plans, please review the policy summary and the FAQs at the website above.</td>
</tr>
</tbody>
</table>

**Emergency Medical and Evacuation Assistance (For All Volunteers)**

Emergency medical and evacuation assistance is available for all Earthwatch participants from CEGA Medical, a twenty-four-hour international emergency medical and evacuation service. Please see the contact information on the General Information page.

For non-emergency information from CEGA, such as advice on visa and vaccine requirements, you may call the CEGA Non-Emergency Medical & Travel Advice helpline at **+44 (0) 20 3059 8770**.
ADDITIONAL TRAVEL INFORMATION

Luggage

- **General considerations:** Do not bring more luggage than you can carry and handle on your own. If traveling by air and checking your luggage, you are advised to pack an extra set of field clothing and personal essentials in your carry-on bag in case your luggage is lost and/or takes several days to catch up with you. Many airlines have strict baggage policies. Please check with your airline(s) on baggage weight limits, liquid restrictions, fees for checked baggage, etc.

- **Checking luggage:** Please note that if you will be taking an international flight that has one or more connections within the country of your destination, it will be necessary to collect any checked bags at the airport where you first arrive in the destination country. After proceeding through customs, you will have to recheck your luggage before flying on to your final destination.

Money Matters

- **Local currency:** US Dollar. See [xe.com/ucc](http://xe.com/ucc) for currency information and exchange rates.

- **Personal funds:** Bring some cash (US$100-200 is usually sufficient) for snacks, extra beverages, and souvenirs.

- **Tipping:** If you go to a restaurant in the area on your own, it is appropriate to tip the server 15-20% of the total bill.

Your Destination

- **Time zone:** GMT/UTC -7. For time worldwide with GMT/UTC, see [worldtimeserver.com](http://worldtimeserver.com).

- **Language:** English

- **Electricity:** standard US 120 volts, 60 hertz, plugs with two flat prongs (some also have a third round grounding pin). For additional information see [kropla.com/electric2.htm](http://kropla.com/electric2.htm).

- **Telephone dialing codes:** When calling the US from another country, dial the country’s international dialing code, followed by (00) and the number. When calling within the US, omit the (00) and dial 1+ number. When calling another country from the US, dial (00), followed by the other country’s country code and the number. **PLEASE NOTE:** you should check with your cell phone provider to obtain any carrier-specific dialing codes you may need; many providers have dialing procedures that may differ in whole or in part from these directions. For additional information, see [kropla.com/dialcode.htm](http://kropla.com/dialcode.htm).
RECOMMENDED READING

Below are additional recommended materials for those interested in further preparing for the expedition. Some may be purchased online through popular vendors. See the Helpful Resources section for suggested vendor websites.

Scientific media

Book

Articles
The first article is highly recommended. The others may be available at university libraries.

Link to these papers: wolfweb.unr.edu/~ldyer/papers.htm.


Popular media


Project-related websites

- caterpillars.org
- Project blog: climatechangeandcaterpillars.blogspot.com/
- Santa Rita Experimental Range: snr.arizona.edu/project/srer

Project Field Report

Each Earthwatch Institute-supported project submits a report on the past year’s research and results to Earthwatch, generally on an annual basis. The most recent field report for this project is available online through earthwatch.org/FieldReportpdf/dyer-field-report-2011.pdf. Note: Reports are not available for all projects.
HELPFUL RESOURCES

Please see Earthwatch’s Volunteer Resources pages for additional information on:

- Travel agencies with whom Earthwatch volunteers can get preferential rates
- Recommended kit and clothing providers
- Recommended travel booksellers

Volunteers who sign up through our US office, visit: earthwatch.org/volunteerresources
Volunteers who sign up through our UK office, visit: earthwatch.org/europe/volunteerresources

Searching for caterpillars in desert habitat

© Annie Madio
Project Conditions

Please show this section to a doctor when he/she is completing the Health section of your Earthwatch Participation Form. Be sure to discuss vaccination requirements with the doctor well in advance of your departure date. See the Health Information section for vaccination information.

To the doctor:

This patient has volunteered to join a field research team that has specific physical demands of which you and the patient should be aware. **We need your accurate evaluation of this patient’s ability to meet the conditions detailed below in order to care for his/her health and safety, and to assess that he/she can participate fully and effectively.**

### General Conditions

The field sites range in elevation from 3,000-9,000 feet above sea level; SWRS is situated at about 5,400 feet and SRER is about 3,600 feet above sea level. The trails can be quite steep, but are normally dry. The team will be collecting in forests as well as desert habitat. Temperatures range from the high 90s°F during the day to the low 60s°F at night. August is the monsoon season at both sites, so although the annual rainfall is low, the area can receive very heavy rains and flash floods at any time.

The weather is expected to vary within the limits below.

<table>
<thead>
<tr>
<th>Conditions during August</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humidity</td>
</tr>
<tr>
<td>Temperature range</td>
</tr>
<tr>
<td>Rainfall</td>
</tr>
</tbody>
</table>

### Essential Eligibility Requirements

All participants must be able to:

- Traverse over uneven, forested, mountainous or hilly terrain for 2 to 4 hours for a distance of 3 to 12 miles (5 to 20 km) per day, often in high temperatures.
- Independently follow verbal and visual instructions.
- Enjoy being outdoors all day in all types of weather (see above), including high temperatures but usually low humidity.
- Enjoy being outdoors in the potential presence of wild animals, snakes, and insects.
- Enjoy working as a team, and function cohesively within a group.
- Carry personal daily supplies, such as lunch, water, and camera.
- Get low enough to access and collect samples on the ground and in the brush.
- Tolerate working at high altitude (see above).
- Sit and ride, with seatbelt fastened, in project vehicles for up to approximately three hours per day.
The Effects of High Altitude

Altitude has unique physiological effects, and different people react in different ways. Good physical fitness (primarily cardiovascular health) can help prevent altitude sickness; however, even some people in great physical condition can experience negative effects from high altitude. Do not assume that your good physical health guarantees a positive response. The only way to know exactly how your body will react is to slowly increase your elevation, resting frequently and exercising lightly with each stage of ascent. When this is not possible, plan to take it easy upon first arrival in high altitude areas. It is recommended that you are well hydrated to ease the transition. And while alcohol and sedatives are not directly linked with altitude-related illnesses, avoiding them is also recommended. While the beginning of the project is designed to help you acclimatize to the altitude, taking additional precautions will put you in a better position to fully enjoy your Earthwatch expedition experience.

The effects of high altitude can include symptoms such as dizziness, nausea, headaches, sleepiness and shortness of breath. To acclimatize properly to high altitude, it is best to be in good physical health and thoroughly hydrated, and to ascend in stages.

Note: Reporting any signs of altitude-related illness (e.g. headache, nausea or fatigue) to staff and fellow volunteers is absolutely critical. Early detection and treatment minimizes the risk of serious consequences.

<table>
<thead>
<tr>
<th>POTENTIAL HAZARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Type</td>
</tr>
<tr>
<td>Transportation</td>
</tr>
<tr>
<td>Climate/Weather</td>
</tr>
<tr>
<td>Walking/Hiking/Climbing</td>
</tr>
<tr>
<td>Cliffs</td>
</tr>
<tr>
<td>Animals/Plants</td>
</tr>
<tr>
<td>Swimming during recreational time</td>
</tr>
<tr>
<td>Traveler’s diarrhea</td>
</tr>
</tbody>
</table>
HEALTH INFORMATION

Routine Immunizations
All volunteers should make sure to have the following up-to-date immunizations: DPT (diphtheria, pertussis, tetanus), polio, MMR (measles, mumps, rubella) and varicella (if you have not already had chicken pox). Please be sure your tetanus shot is current.

Project Vaccinations
Medical decisions are the responsibility of each volunteer and the following are recommendations only. While Earthwatch can provide details regarding suggested vaccinations, we are not a medical organization and decisions about which vaccinations to receive should be made between you and a doctor. Health conditions around the world are constantly changing, so keep informed and consult your physician, a local travel health clinic, the US Center for Disease Control (cdc.gov), and the World Health Organization (who.int) for the latest health information for travelers. Please consult a physician for guidance on vaccinations if you intend to travel to other parts of the country.

If traveling from a country or region where yellow fever is endemic, a certificate of vaccination is required.

Advice Regarding Diseases
Please see the CDC (cdc.gov) or WHO (who.int) websites for more information.

- Tuberculosis: The WHO estimates that one-third of the world’s population is infected with the bacterium (M. tuberculosis) that causes tuberculosis (TB). Incidence of tuberculosis is higher in developing countries, particularly in Asia, Africa, the Caribbean and Latin America. In general, approximately 10% of persons infected with M. tuberculosis are at risk for developing active TB during their lifetimes. TB is considered highly treatable with medications that are of relatively low toxicity and cost. Volunteers returning from developing countries are encouraged to have a (PPD)-tuberculin skin-test to screen for potential infection.

Additional Health Information Resources
- Travel health website: mdtravelhealth.com
- The Travel Doctor: tmvc.com.au
- Australian Department of Health and Aging: health.gov.au
- Hospital for Tropical Diseases: thehtd.org
- Traveller's Healthline Advisory Service Tel: (020) 7950-7799
- MASTA Travelers’ Healthline (UK) Tel: (0906) 8-224100 (within the UK)
EMERGENCIES IN THE FIELD

A project vehicle will be available to provide emergency transportation if necessary. The injured/ill individual would be quickly and safely transported to the closest facility by the Earthwatch scientist or project staff.

<table>
<thead>
<tr>
<th>Proximity to Medical Care</th>
<th>Project staff are not medical professionals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician, nurse or EMT on staff</td>
<td>Wilderness First Aid: Angela Smilanich</td>
</tr>
<tr>
<td>Staff certified in safety training</td>
<td></td>
</tr>
<tr>
<td>Nearest medical facility</td>
<td>Southeast Arizona Medical Center</td>
</tr>
<tr>
<td></td>
<td>2174 W. Oak Avenue</td>
</tr>
<tr>
<td></td>
<td>Douglas, Arizona 85607</td>
</tr>
<tr>
<td></td>
<td>Tel: +520 364 7931</td>
</tr>
<tr>
<td></td>
<td>Distance: approximately 2 hours drive from the station</td>
</tr>
<tr>
<td>Nearest full service hospital</td>
<td>University Medical Center</td>
</tr>
<tr>
<td></td>
<td>1501 N. Campbell Avenue</td>
</tr>
<tr>
<td></td>
<td>Tucson, Arizona 85724</td>
</tr>
<tr>
<td></td>
<td>Tel: +520 694 0111</td>
</tr>
<tr>
<td></td>
<td>Distance: approximately 3 hours drive from the station (45 minutes by helicopter)</td>
</tr>
</tbody>
</table>

COMMUNICATIONS

Emergency Communications in the Field

Volunteers can be reached in the field by telephone and email. In emergency situations only, the SWRS office telephone can be called during business hours (see below). Emergency faxes can also be received via the office number; please call the office first to let them know a fax is being sent. Guests cannot be reached through the main station numbers. There is one pay phone at the nearby store in Portal (about a 15-minute walk). Most international calling cards will work with this phone. There is no cell phone coverage at either station. There is no phone at SRER, but there is cell phone access about one half mile from the station.

The emergency contact number at Earthwatch in the US is +1 (978) 461-0081 or +1 (800) 776-0188 (see Emergency Contacts for calling instructions).

Personal Communications

Family and friends of Earthwatch volunteers should be aware that personal communication with outsiders is not always possible while participating in an expedition. Earthwatch encourages volunteers to minimize outgoing calls; likewise, family and friends should restrict calls to urgent messages only. Measures have been taken to ensure that appropriate communication tools are available in cases of emergency.

All volunteers are asked to remember that Earthwatch expeditions offer a rare chance to escape from hearing ringing phones and others’ phone conversations, and to regulate their cell-phone use with respect for fellow volunteers and staff accordingly.
## Contact Information

If necessary, volunteers can be reached via the contact information below.

<table>
<thead>
<tr>
<th>Addresses</th>
<th>Santa Rita Experimental Range (SRER)</th>
<th>Southwestern Research Station (SWRS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Florida Headquarters</td>
<td>P.O. Box 16553</td>
</tr>
<tr>
<td></td>
<td>SNRE Tucson, AZ 85721</td>
<td>Portal, Arizona 85632</td>
</tr>
<tr>
<td>Phone</td>
<td>There is no phone at SRER, but there is cell phone access about half a mile from the station.</td>
<td>Tel: +1 (520) 558-2396 (office, for emergencies only).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fax: +1 (520) 558-2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There is no cell phone service at SWRS.</td>
</tr>
<tr>
<td>Email</td>
<td>Volunteers can be reached at personal email addresses; there is free wireless Internet at both stations.</td>
<td></td>
</tr>
</tbody>
</table>
Earthwatch Institute Policies & Participant Rights and Responsibilities

This document contains important information concerning Earthwatch Institute policies and participant rights and responsibilities for inclusion on an Earthwatch expedition. Please read this document thoroughly and sign the Liability Release section of your Earthwatch Participation Form to indicate that you understand and accept the risks inherent to your expedition and the policies, rights, and responsibilities enumerated in this document. Participants will not be permitted to partake in an expedition until Earthwatch has received the signed release form.

**Intellectual Property Rights**
It is permissible to share photos, videos, and stories of your expedition with family, friends, local media, and in a public forum. Sharing your new perspectives and experiences is welcomed and encouraged.

However, please recognize that all information, data, and images shared or gathered in the course of your expedition’s field work become the intellectual property of the Earthwatch scientist (ES). Co-opting or plagiarism of data, images or information gathered during an expedition for use in a scientific thesis, masters or PhD work, or for profit or for the academic or business use of a third party without the permission of the ES is strictly prohibited. Please be aware that data gathered during the interviewing of local people becomes the intellectual property of the ES. Earthwatch scientists have the right to place additional restrictions on your ability to share data or certain research-related images.

Conversely, an Earthwatch scientist may give written permission to use data and images for academic or profitable activity. Please be sure to ask what is acceptable to the Earthwatch scientist.

Fellows or scholarship recipients are sometimes required to submit a written report reflecting what they have learned on a project, sometimes as a step toward developing a curriculum. Earthwatch scientists have the right but not obligation to review and edit materials involving information gathered on one of their expeditions.

**Discrimination**
Earthwatch does not discriminate on the basis of race, religion, ethnicity, national origin, gender, sexual orientation, or any other reason prohibited by applicable law and respects participants’ right to privacy. However, you must be aware that local laws in countries in which Earthwatch operates may not be anti-discriminatory and that the possibilities exist that local residents may not have an awareness of best practice regarding discrimination.

Discrimination on the basis of race, religion, ethnicity, or sexual orientation will not be tolerated on Earthwatch teams. Disruptive behavior, or verbal, physical or any other type of abuse or harassment will also not be tolerated. Violation of Earthwatch’s non-discrimination policy is grounds for expulsion from the program without a refund.

**Intimate relationships**
Earthwatch scientists, their staff, their colleagues, and their associates are prohibited from becoming romantically involved with participants during the entire duration of the period that the team is in the field. Romantic relationships that may otherwise seem permissible may eventually create an unpleasant or unproductive work environment and are therefore strongly discouraged for the duration of an Earthwatch project.

**Sexual Harassment**
Please recognize that the relationship that exists between Earthwatch scientists and staff and participants is analogous to the student-teacher relationship. Therefore, please be aware of the following policies.

Sexual harassment of participants by the Earthwatch scientist or Earthwatch staff is prohibited. Likewise, sexual harassment of other participants, Earthwatch field staff, or local people by participants is also prohibited.

Sexual harassment infringes on an individual’s right to an environment free from unsolicited and unwelcome sexual overtones of conduct either verbal or physical. Sexual harassment does not mean occasional compliments of a socially acceptable nature.
Sexual harassment refers to conduct which is offensive, which harms morale, or which interferes with the effectiveness of Earthwatch expedition teams; such conduct is prohibited. Lewd or vulgar remarks, suggestive comments, displaying derogatory posters, cartoons or drawings, pressure for dates or sexual favors and unacceptable physical contact or exposure are examples of what can constitute harassment. No one should be touched in areas that otherwise would be covered by a bathing suit. It is important to realize that what may not be offensive to you, may be offensive to participants, the local population, and Earthwatch field staff.

Any individual who feels subjected to sexual harassment or has any knowledge of such behavior should report it at once to his or her PI or to Earthwatch staff members. All Earthwatch scientists and Field Team Leaders (FTLs) will notify Earthwatch immediately when an accusation of sexual harassment or abuse is made or witnessed.

All reports of sexual harassment will be handled with discretion and will be promptly and thoroughly investigated. Any participant who is found to have engaged in conduct constituting sexual harassment will be immediately removed from the expedition at his or her own expense. If a minor is immediately involved in allegations of sexual harassment, his or her parents will be contacted.

**Drugs**

Laws on drug use in most countries are severe and may carry lengthy imprisonment or death penalties. I understand and accept that the manufacture, possession, use, purchase and/or sale of illegal drugs or other illegal substances while on an Earthwatch expedition is strictly prohibited. Prescription drugs may only be purchased and used by the individual indicated on the prescription in keeping with their intended use guidelines.

**Alcohol**

Local statutes, customs, practices, ordinances, and regulations with regard to the use, possession, sale, or purchase of alcohol are applicable to all participants and project staff in Earthwatch expeditions. Participants and project staff on Earthwatch expeditions must comply with the law of the country in which a project is located regarding the minimum age required to consume alcohol. In addition, restriction on the use, possession, sale, or purchase of alcohol may be set by the Earthwatch scientist. Any restrictions on the consumption of alcohol should be clearly outlined by the project staff in the briefing to participants at the start of the project, and in the Expedition Briefing.

Consumption or possession of alcohol or smoking is not permitted on any Earthwatch Teen Team, regardless of local law.

Excessive consumption of alcohol by staff or participants is not acceptable on any Earthwatch project. Intoxication can jeopardize personal safety, in addition to the safety of the team. It can also cause delay, and hinder response in the event of a crisis or emergency situation.

Earthwatch staff and the Earthwatch scientist have the discretion to remove individuals from the project who consume alcohol in a time and manner that endanger the safety and/or productivity of the expedition.

**Minors**

Earthwatch considers participants under eighteen (18) years of age to be minors. Minors are not permitted to participate on any of Earthwatch’s standard teams unless accompanied by a parent or guardian in which case the minimum age is sixteen (16). Minors on regular teams do not receive additional guidance or supervision from Earthwatch beyond what is offered to the adult participants. The number of minors on regular teams is limited to two (2) per team. Earthwatch has developed teams specifically for 16 and 17 year olds (“Teen Teams”) as well as teams specifically for families (“Family Teams”) with children as young as 10 years old. These teams focus on the same research activities and have the same expectations as our regular teams, but with more facilitation and support. Exceptions for some projects are made at the discretion of Earthwatch and the Earthwatch scientist. Due to a more in-depth screening process for certain programs that select candidates based on school year rather than age, there may be 18 year olds fielding on the same team as 16 and 17 year olds. Please be aware that some Earthwatch projects do not allow participation by minors in any circumstance.

**Participants and Driving**

Participants are not allowed to drive project vehicles or aircraft during an expedition. In select circumstances, participants may be able to drive boats under the direct supervision by project staff. These circumstances are pre-determined by project staff in collaboration with Earthwatch. Participants must respect the restrictions for boat driving in place for each project.
If a project environment is such that participants can drive their own vehicles to the rendezvous, those who have driven themselves to the project may not drive their own vehicles to, from or for project activities, including the transport of project equipment after arriving at the site.

Participants who have driven themselves to the project may choose to utilize their own vehicle during recreational time, but project staff will brief them on the driving restrictions. All driving during recreational time is done at your own risk.

Please be advised that the only exception to the above driving restrictions is emergency situations.

Riding in other participants' vehicles is not covered under the participants’ insurance policy for the expedition. Riding in another participant’s vehicle is done at a participant’s own risk.

**In the Event of an Emergency**

In the event of emergencies, judgments must be made by Earthwatch field staff and participants. While Earthwatch makes an effort to ensure that qualified people make the most informed decisions possible, occasionally first aid may be administered and other immediate steps taken by expedition participants who are not licensed medical providers.

Each Earthwatch expedition has safety protocols and emergency procedures in place. Earthwatch encourages team members (the field staff and participants) to exercise their best judgment with regard to their own safety and the safety of other team members. Other participants may perform “Good Samaritan” actions, or actions taken to assist fellow participants during emergency situations in the field. However, Earthwatch does not encourage or expect you to jeopardize your own safety or that of others in attempting to rescue or assist your fellow team members.

**Right of Refusal**

Earthwatch reserves the right to refuse an applicant’s participation on Earthwatch projects at any time and to terminate any work being done by a participant and require the participant to vacate the project site if any of the Earthwatch Expedition Team in his or her absolute discretion considers it appropriate. In this event, the participant (and his/ her parent/ guardian, if appropriate) will be responsible for arranging and paying for any accommodation, travel or other arrangements which may be necessary following the termination of a participant’s involvement in a project, for whatever reason and may not be eligible for a refund.

Earthwatch and the project staff may not refuse a participant for discriminatory reasons (race, religion, ethnicity, national origin, sexual orientation, or any other reason prohibited by applicable law). However, participants may be denied in the interest of team compatibility. Earthwatch will make reasonable efforts to accommodate participants with disabilities and the organization endeavors to find appropriate expeditions for those participants that have physical limitations. Refusal of a participant is an unusual event and is generally due to either an applicant’s failure to meet the essential eligibility requirements of a particular project, or in the interest of team compatibility. In the event that an applicant is refused participation for health reasons, Earthwatch will refund in full any deposit or payment made toward the expedition.

Earthwatch scientists have the right to refuse special requests, such as media visits (film, photography or print), special groups or teams (students, donors, etc.), if they conflict with Earthwatch scientist schedules, safety, research objectives or general performance of the team.

Any participant found in violation of any of the policies described in this document (“Earthwatch Institute Policies & Participant Rights and Responsibilities”) is subject to removal from the team at their own expense. By signing the Liability Release section of your Earthwatch Participation Form, participants are indicating that they have read and understand the policies in this document. Removal of a participant from a team is at the discretion of the Earthwatch scientist or Field Team Leader and Earthwatch staff. In addition, Earthwatch will support the right of the scientist to send participants away from a project once in the field should their behavior compromise the safety, research objectives or general performance of the team, or if the participant has violated a stated policy. In the event that a minor is dismissed from a project, Earthwatch will contact the participant’s parents or legal guardian prior to their dismissal. Should a participant be removed from a team, he/she is responsible for any or all costs associated with departure from the team and will receive no refund of the share of costs of the expedition nor any expenses incurred in participation on the expedition.

(November 2010)
# Expedition Packing Checklist

## Required Items

- This Expedition Briefing
- 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)
- Calling card/mobile phone (with international calling capabilities if applicable)
- Credit card that may be used (internationally, if applicable) in the event of an emergency (travel delays, etc.)

## Clothing/Footwear for Fieldwork

- Be sure to bring your Earthwatch T-shirt and remember to wear it, as appropriate, throughout your expedition
- Well worn-in (NOT brand new) comfortable hiking boots/shoes
- Lightweight, quick-drying, long-sleeved shirts
- Lightweight pants/trousers
- Wide-brimmed hat for sun protection
- Rain jacket

## Clothing/Footwear for Leisure

- One set of clothing to keep clean for end of expedition
- Shorts
- T-shirts
- Jacket, sweater, or sweatshirt for cool evenings and rainy days
- Pants for cool evenings at the station
- Sleepwear

## Field Supplies

- Headlamp or flashlight/torch with extra batteries and bulbs (essential for fieldwork at night, to find your way to your room or reading after lights out, to prevent stepping on snakes, and to avoid other hazards)
- Small daypack/rucksack for daily needs
- Dry bag or plastic sealable baggies (e.g. Ziploc) for protecting equipment such as camera from dust, humidity, and water
- Pocket knife (pack in checked luggage, not carry-on)
- Sunscreen lotion with SPF 30 or higher (waterproof/sweatproof advised)
- Sunglasses with retainer strap
- Umbrella
- Two one-liter water bottle(s)
**Bedding and Bathing**

- **Note:** Bedding and towels will be provided by the project.

**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 personal medications
- Sunscreen lotion with SPF 30 or higher

**Miscellaneous**

- Spending money
- Camera, film/memory card(s), extra camera battery (if you bring a digital camera, bring your interface cables for downloading)

**Optional Items**

- Travel guide for Arizona
- Swimsuit for recreational time
- Field guide books, especially on birds
- Books, games, journal, art supplies, etc. for down time
- Battery operated alarm clock or digital watch with alarm (you will need to get up fairly early in the morning and should not rely on your roommates to wake you)
- Favorite snack foods
- Compass
- Binoculars (waterproof are best)
- Earplugs
- Some duct tape (this is always handy, but a whole roll is not necessary)
- Blank CD or DVD for sharing digital photographs at the end of the expedition

**Note:** Required and Optional Items lists are accurate to the best of Earthwatch’s knowledge at the time of publication.
Our Mission

Earthwatch engages people worldwide in scientific field research and education to promote the understanding and action necessary for a sustainable environment.

We believe that achieving a sustainable future requires objective scientific data from the field—and that the scientific process must engage the general public if it is to change the world. To that end, we involve people from all walks of life directly in global field research.

We invite you to join us.
Earthwatch engages people worldwide in scientific field research and education to promote the understanding and action necessary for a sustainable environment.