



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.

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-- An international nonprofit organization founded in Boston, Massachusetts in 1971--



Dear Earthwatcher,

Welcome to Earthwatch! We greatly appreciate your decision to contribute to important hands-on environmental science and conservation. As an Earthwatch volunteer, you have the opportunity to create positive change for our world while having a life-changing experience. Each year we send thousands of people just like you into the field to understand and help an array of species, habitats, and cultures on approximately 85 research projects in more than 40 countries. These projects focus on: **Climate Change, Cultural Heritage, Ecosystem Services, and Oceans.**

We place the highest priority on the health and 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, careful risk management and diligent planning means all participants can have safe, educational, and inspirational Earthwatch experiences. Our dedicated Field Management team works around the clock to assess and manage the risks of conducting field research in a variety of locations and conditions. We've been providing safe experiences **for more than 35 years**, so you're in good hands.

To keep Earthwatch teams safe and happy, **we require all expedition participants prepare for their experience by reading this Expedition Briefing and completing a number of volunteer forms, which vary by expedition and by regional Earthwatch office.** Volunteers signing up through the US office can find the forms online at <http://www.earthwatch.org/volforms>. Volunteers signing up through Earthwatch offices in the UK, Australia, or Japan should contact those offices at the information listed below for more information.

It is essential that you carefully read your Expedition Briefing, which includes important logistical information such as instructions for reaching the project site, what to pack, where your team will stay, what immunizations you need, how to physically prepare for your expedition, entry requirements for the project country, and more. Your Briefing also explains the research being conducted on the project, why it's important, and what role you'll play as an Earthwatch volunteer.

If you have questions as you prepare for your expedition, contact the appropriate Earthwatch office:

<u>Australia Office</u>	<u>Japan Office</u>	<u>UK Office</u>	<u>US Office</u>
T: +61 (0) 3-9682-6828	T: +81-(0)3-3511-3360	T: +44 (0) 1865-318-831	T: +1 800-776-0188
earth@earthwatch.org	info@earthwatch.jp	info@earthwatch.org.uk	info@earthwatch.org

Well prepared volunteers are better able to enjoy the unique and exciting experiences that an Earthwatch expedition offers, and are also a greater help to the scientists' important work. Most expeditions do not require prior experience. Volunteers who are attentive and open-minded, can work in a team environment, and are eager to learn will be most successful. Your expedition may have fitness requirements, so please review the *Project Conditions* section. Those with photography and film skills are encouraged to share media from the expedition with Earthwatch.

Thank you for your support, and enjoy your expedition!

Sincerely,

A handwritten signature in black ink, appearing to read "Anne T. Ogilvie".

Anne T. Ogilvie
International Director of Field Management

PS: Upon returning from your expedition, you will receive an email welcoming you back and asking you to fill out an online Expedition Evaluation. Please take the time to complete this evaluation in order to help us improve the Earthwatch experience. Your feedback is appreciated!



Dear Earthwatch Volunteer,

We are really looking forward to working with you in the amazing Elkhorn marine estuary and associated Monterey Bay, a region of the central California coast and one of the most biologically rich regions of the Eastern Pacific. We have been conducting our elasmobranch studies in the Monterey Bay area since 1990. The 2009 Earthwatch expedition season will include an offshore, open water component that will consolidate and compliment the estuarine and tidal wetlands research; this adds a new chapter in the development of these fascinating near and off-shore long-term monitoring studies and related education and conservation efforts.

Your participation and assistance in this ongoing research and conservation project is excellent news for the world and greatly bolsters the scientific understanding and environmental protection of the sharks and rays of Monterey Bay. It's hard yet rewarding work that is perfectly tailored for individuals who care about the ocean and enjoy being on and in the water while working with these beautiful animals.

Sincerely,

Sean Van Sommeran
Principal Investigator, *Sharks and Rays of Monterey* Earthwatch project
Executive Director, Pelagic Shark Research Foundation

Sharks and Rays of Monterey

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GENERAL INFORMATION

PROJECT TITLE:	Sharks and Rays of Monterey
PRINCIPAL INVESTIGATOR(S):	Sean Van Sommeran , Executive Director, Pelagic Shark Research Foundation
RESEARCH SITE:	Elkhorn Slough, Moss Landing, Monterey Bay, California
EXPEDITION LENGTH:	10 days
TEAM SIZE MINIMUM/MAXIMUM:	4 / 6 volunteers
MINIMUM AGE OF PARTICIPATION:	18 years of age *

VOLUNTEER FORMS OVERVIEW

All Earthwatch expedition participants are required to read and complete a number of volunteer forms. Some of these forms are used to ensure your safety in the field, to inform Earthwatch and project staff of your current health and fitness as they pertain to your expedition, to notify Earthwatch and project staff of your travel plans, etc. **These forms must be filled out and returned to Earthwatch AFTER you sign up for an expedition.** Other forms are for your reference and will inform you of certain Earthwatch policies and resources. You do not need to return these forms. **See the letter at the front of this Briefing to learn how to get the forms *you* need to return; volunteer forms vary by Earthwatch office.**

Some details below apply ONLY to volunteers signing up through the US Earthwatch office.

Volunteer forms are available at <http://www.earthwatch.org/volforms>. Instructions for completing your forms are included on this web page. However, you may not need to complete all of the forms listed online. **Please see below for a list of the specific forms required for this expedition.**

Note: It is very important that you read and understand both your Expedition Briefing and the volunteer forms listed below.

Volunteers Forms to be Returned to Earthwatch

Please complete and return the following forms to Earthwatch:

- A: Personal Profile
- B: Health Form
- C: Travel Details Form
- D: Liability Release
- W1: Water Skills General

How to return your forms: Forms B and D require written signatures and must therefore be printed out and signed. All other forms may be filled out electronically. You may return your forms to your Earthwatch by mail, fax (+1 978-461-2332 for US volunteers), or email (forms requiring signatures may be scanned and emailed). If you mail hard copies of your forms to Earthwatch, please do not staple them together and be sure to keep a copy of each form for your records. *Please see the welcome letter at the start of this briefing for contact information for all Earthwatch offices.*

Deadline for form submission: Your volunteer forms must be completed and returned to Earthwatch no later than 60 days prior to your expedition.

If you sign up within 60 days of your expedition: If signing up to participate within 60 days of an expedition's start date, please complete each form to the best of your ability and send them to Earthwatch immediately. Please note the date of your doctor's appointment on Form B: Health Form. You will need to resend Form B: Health Form after having it completed and signed by your doctor.

Other Forms for Your Reference

The forms listed below are for your reference only and do not need to be returned to Earthwatch. However, **it is very important that you read and understand these forms, which are included in the Appendix of your printed Expedition Briefing.**

- Earthwatch Policies and Participants' Rights and Responsibilities
- Financial Terms and Conditions

The additional forms below are also for your reference and benefit and are available online at <http://www.earthwatch.org/volforms>.

- Tax Deduction (Earthwatch expeditions, with the exception of Family Teams, are tax-deductible for US residents only)
- The Medical and Evacuation Insurance FAQ and Policy Summary (these documents include important information on both the insurance included in your expedition contribution and upgraded coverage available to Earthwatch participants) * can be found at www.earthwatch.org/insurance.

* In addition to the medical and emergency evacuation insurance included in your expedition contribution, Earthwatch also recommends that participants purchase travel insurance. Optional travel insurance is available through CSA Travel Protection. See <http://www.csatravelprotection.com/?aff=83534816>.

THE EXPEDITION

1. PROJECT OVERVIEW

"This is one of the most amazing experiences I have ever had--both personally and professionally. Before my Earthwatch trip to Monterey Bay, I hadn't realized how many different animals were living in places like Elkhorn Slough. I would pass by these kinds of areas with minimal thought for what might be under the surface. Learning about the habitat threats to the sharks and rays, and then getting to work with them firsthand gave me a much better understanding of the challenges these and similar populations face."

~ Maria Vugrin, 2007 Earthwatch Volunteer

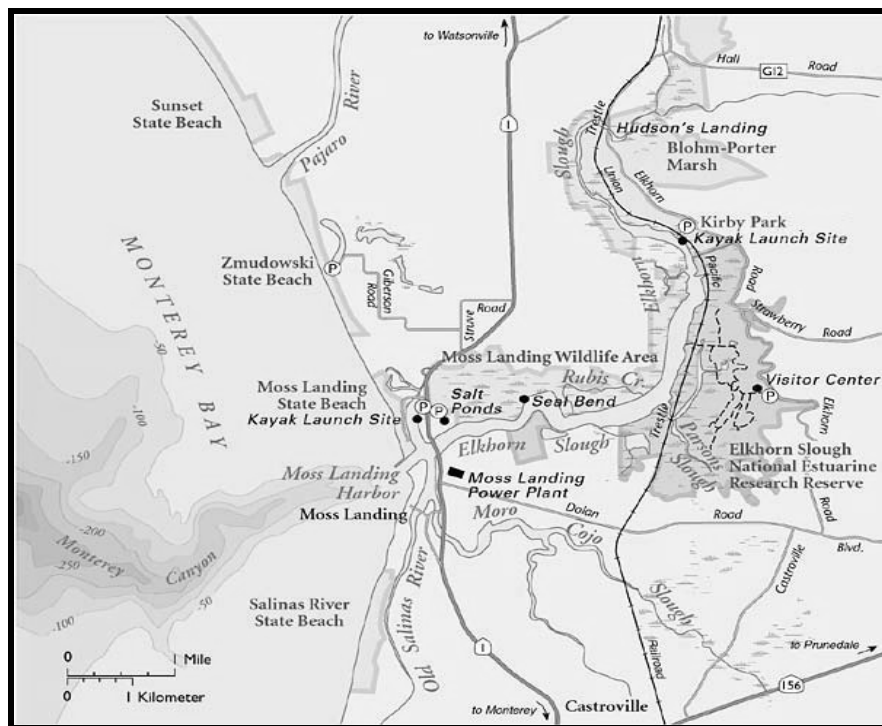
Sharks and rays are incredibly efficient predators and foragers; they have been phenomenally successful at thriving despite low reproductive rates. However, the expansion of modern fishing activities, industrial development, and the associated habitat disruption has been devastating to some shark and ray populations throughout the world. These two animal groups are especially vulnerable to habitat destruction and fishing pressure because of their slow rates of maturation and reproductive turnover. Sharks and rays are unusually long-lived and give birth to relatively small numbers of young compared to other types of fish. Many species breed only every other year and have 13-month gestation periods.

Several species of elasmobranchs (a fish class containing sharks, rays and skates) make their home in the tranquil waters of Elkhorn Slough, a marine tidal estuary located at the mouth of California's Monterey Bay submarine canyon and winding approximately seven miles inland. During the 20th century, severe habitat disruption threatened these populations and brought their numbers into sharp decline. Since 1991, the Pelagic Shark Research Foundation (PSRF) has worked with local anglers to mitigate the devastating effects of hunting on elasmobranch populations in Elkhorn Slough. These efforts have not only improved the situation dramatically, but have resulted in an increased interest in understanding and preserving these populations.

The *Sharks and Rays of Monterey* project is a long-term monitoring study focused on determining the population dynamics, gender and generational ratios of the seven primary species of sharks and rays known to inhabit Elkhorn Slough, and on characterizing their habitat and site use. The seven species studied are the leopard shark, the gray smooth hound, the brown smooth hound, the bat ray, the thornback ray, the shovelnose guitarfish and the round stingray.

Earthwatch volunteers will also help the PSRF study shark species over the deep waters of the Monterey Bay marine canyon, collecting, tagging and releasing highly migratory species such as blue sharks, shortfin mako sharks, and others including the rare basking shark. Monterey Bay presents a unique setting whereby research vessels can drive 30 minutes out of any of the bay's three harbors and have more than a mile of water under the boat. These deep, nutrient rich waters are the seasonal hunting grounds and migration waypoint for several species of pelagic sharks that are heavily impacted on the high seas and open ocean by factory ships and coastal poaching throughout the entire Pacific Rim. The relatively protected waters of the Monterey Bay National Marine Sanctuary offer a perfect venue for collecting vital information and data on these threatened oceanic shark populations.

As a participant on the *Sharks and Rays of Monterey* project, you will help the PSRF compile a long-term dataset on the presence and abundance of oceanic and estuarine sharks and rays in the Elkhorn Slough National Estuarine Research Reserve and the Monterey Bay National Marine Sanctuary. This project is of great public interest and has been highlighted on the National Geographic Channel, Animal Planet and the Discovery Channel.



Note: See *Sharks and Rays of Monterey: The Research* in the Appendix of this Expedition Briefing for information on the research objectives, methods, and results to-date of this project.

2. RESEARCH AREA

History of the Monterey Bay Area

Long before Portuguese explorer Juan Rodriguez Cabrillo “discovered” the Monterey Bay Peninsula nearly 500 years ago, the region was settled by Native Americans who were attracted by the wealth of natural resources in and around the bay. Those hunters and gatherers found an abundance of wildlife, seafood, and plants to sustain themselves, and established several villages in the area. Although Cabrillo first spotted the stunning peninsula on November 17, 1542 while seeking riches in the New World and claimed it for the crown, he and his crew never actually set foot on Monterey’s shores. Rough seas prevented them from landing, and it would be 60 years before another European explorer, Spain’s Sebastian Vizcaino, stepped ashore. Vizcaino named the region after the Count of Monte Rey, under whose orders he was sailing. Europeans began colonizing the peninsula in 1770 when Spaniards Caspar de Portola and Franciscan Father Junipero Serra arrived. Father Serra established the Mission San Carlos de Borromeo in Monterey, while Portola and his crew built the first of four California presidios. Six years later Spain, which controlled both California and the Baja Peninsula, named Monterey as the capital of California. In 1822, after Mexico seceded from Spain, Monterey became the Mexican capital. Land in the region was redistributed, huge cattle ranches were established, and the Port of Monterey was opened to international trade. English and American vessels arrived regularly to haul away hides and tallow, and Monterey’s Custom House was built in 1827 in response to the booming traffic. Nineteen years later, Mexico’s rule over California ended and Monterey, along with the rest of California, became a United States territory. In 1849, 48 California delegates convened at Monterey’s Colton Hall to draft California’s constitution. California entered the Union the following year, becoming the 31st state.

Monterey Today

Today, the Monterey Bay area offers a variety of excursions and visiting opportunities with a blend of natural beauty, upscale entertainment and soothing seaside communities. Because of its climate and location, the peninsula draws much of its revenue from tourism. Monterey has three military installations and an increasing number of educational facilities in addition to its beautiful scenery. This community, comprised of seven cities and numerous unincorporated areas of Monterey County, is world-famous for its majestic beauty, magnificent coastline, golf and recreation facilities, and its educational leadership, particularly in the field of international languages.

The economy of Monterey County has traditionally been comprised of agriculture, primarily in the Salinas Valley, tourism, primarily on the coastal areas, and the military, including the Naval Postgraduate School and the Defense Language Institute at the Presidio of Monterey. With the significant downsizing of Fort Ord in 1993 and the relocation of its 13,000 soldiers and their dependents, the community looked to replace the military “industry” with an educational industry, as a compatible third element of the economy. These efforts have far-reaching implications, but are strongly supported by a broad cross-section of the community.

California, in general, and Monterey Bay in particular host a progressive, environmentally aware community with top notch educational institutions and a variety of alternative mindsets. Artists and free-thinkers are proud to call this area home and the atmosphere is generally laid back and relaxed.

Elkhorn Slough

Elkhorn Slough harbors the third largest tract of tidal salt marsh in California after San Francisco and Tomales Bays. It attracts visitors with its many miles of trails, an excellent interpretative center, channels for canoeing, and float boats for bird and wildlife viewing excursions. The slough has a watershed area of approximately 70 square miles (112 square kilometers) and opens into Monterey Bay at Moss Landing Harbor, extending inland approximately 6.8 miles (11 kilometers). The average water depth is 4.6 feet (1.4 meters). Surrounding the slough are hills and uplands that lie between the Pajaro and Salinas Valleys in Monterey and San Benito County. This ecological treasure at the center of the Monterey Bay coastline provides habitat for numerous plants and animals, including more than 340

species of birds. This roster of birds includes several rare and endangered species, such as the brown pelican, snowy plover, and peregrine falcon. The tremendous number and variety of birds at the slough attracts thousands of bird-watchers from across the country each year. The slough also serves as an important shark, ray and fish nursery.

Because of its ecological richness, the State of California has designated Elkhorn Slough as a preserved area, and the National Oceanic and Atmospheric Administration (NOAA) has included its tidal waters as part of the Monterey Bay National Marine Sanctuary and established a National Estuarine Research Reserve on its shores.

3. PROJECT STAFF

Principal Investigator

Sean Van Sommeran has over 30 years of experience at sea and has been conducting research, education and conservation projects for the past 15 years on the Monterey Bay and California coast and Eastern Pacific. He has also conducted research work in Australia, Chile, Costa Rica and offshore Mexico. Sean is Executive Director of the Pelagic Shark Research Foundation (PSRF) based in Santa Cruz, California. The PSRF co-sponsored the white sharks' protected status in California waters and recreational sport fish limits for other marine species. An instructor for an elasmobranch field course conducted seasonally in the Monterey Bay National Marine Sanctuary and Elkhorn Slough National Estuarine Research Reserve, Sean received a World Wildlife Fund award in 1996, a Santa Cruz County Fish and Game Commission Award in 1999, and a fellowship with the independent Conservation Science Institute in 2004. He has been an associate and consultant with Barbara Block's shark lab, the Tuna Research and Conservation Center, Stanford University and Hopkins Marine Station, and holds a California Department of Fish and Game Scientific Collection Permit, including protected species amendments as well as National Marine Sanctuary Permits and amendments/authorizations to work with white sharks and marine mammals.

Field Team Staff

Katie Kent holds an A.A. in Marine Science and Technology from the Monterey Peninsula College and has been working with the PSRF since 2005. She is an experienced boater and diver and has great data collection and analysis skills including working with GIS (Global Positioning System).

Callaghan Fritz-Cope has been a PSRF staff member since 1996. He is a commercial diver and professional/technical photographer and videographer and a California native. He has worked for the PSRF in California, Mexico, Central and South America, Australia and South Africa.

Curtis Kraver has been a PSRF staff member since 1996. He is a commercial diver and boat captain and a California native. He has worked for the PSRF in California, Mexico, Costa Rica and the Gulf of Mexico.

Jake North is the project mechanic and boat driver. He is also a ranch hand at Bartlette properties in the Santa Cruz mountains. He has volunteered with the Pelagic Shark Research Foundation since 1999 and has worked in Elkhorn Slough and on other PSRF projects.

Field Assistants

This season **Sharks and Rays of Monterey** is lucky enough to be joined by three previous Earthwatch volunteers: **Nina Subhas, Hillary Wong, and Elsa Valentine**. Nina participated in Team 1 during the 2008 fielding season, Hillary was part of Team 3 of the same year, and Elsa, Team 6. These three field assistants will help not only in the field but as part of the cooking and clean-up crew. Nina will also drive the project's truck.

Current Staffing Schedule (Subject to Change)

Staff Member Present	Team I	Team II	Team IV	Team V
Sean Van Sommeran	x	x	x	x
Katie Kent	x	x	x	x
Callaghan Fritz-Cope	x	x	x	x
Curtis Kraver	x	x	x	x
Nina Subhas			x	x
Hillary Wong	x	x	x	x
Elsa Valentine	x	x	x	X
Jake North	x	x	x	x

Staff Member Present	Team VI	Team VII	Team VIII	Team IX
Sean Van Sommeran	x	x	x	x
Katie Kent	x	x	x	x
Callaghan Fritz-Cope	x	x	x	x
Curtis Kraver	x	x	x	x
Nina Subhas	x	x	x	x
Hillary Wong	x	x	x	x
Elsa Valentine	x	x	x	X
Jake North	x	x	x	x

DAILY LIFE IN THE FIELD

4. VOLUNTEER TRAINING AND ASSIGNMENTS

Training

On the day after arrival, the team will take a field trip to the Elkhorn Slough National Estuarine Research Reserve's visitor and interpretive center. Volunteers will have the opportunity to peruse the several survey sites using maps, charts, and terrain tables furnished at the wildlife reserve. You will be briefed on wildlife reserve and sanctuary rules and regulations, safety protocols and an overview of local wildlife, natural history and field methods. During the expedition, volunteers will receive instruction in the basics of the research equipment, techniques and safety. The project has a strong safety and emergency protocol and staff will organize a safety meeting with each incoming team. During the past 15 years of operation, the project has maintained a perfect safety record.

Training in research operations will include the collection, handling, sampling, tagging and releasing of estuarine and oceanic sharks and rays within Elkhorn Slough, Monterey Bay and the associated research reserve and marine sanctuary. Volunteers will be trained to take measurements and note them on datasheets. You will also be instructed in animal handling techniques, monitoring of temporary holding pens, release techniques, net handling and setting, equipment care, and both deck and wading techniques. The staff will provide practical and experiential training and instruction, as well as presentations on shark and ray natural history. There may also be lectures on subjects such as elasmobranch ecology, local history and context, conservation and the importance of long-term monitoring programs.

Team spirit is an important aspect of any group project. Working closely with interesting animal species, sharing common interests with your teammates, and investing time in a good cause will all add to the group dynamic and overall learning experience.

The Principal Investigator will give the team a more detailed onsite project briefing when you arrive.

Assignments

The *Sharks and Rays of Monterey* project involves various tasks, procedures and methods. Team members must be attentive and willing and able to multitask and rotate assignments. You must also be a good swimmer, physically fit, willing and able to work in and around water for long periods of time, and prepared to work with marine wildlife in challenging circumstances and conditions. Experience with small boats and data recording and attention to detail would be beneficial, but are not required for participation.

Prior to surveys, team members will gather equipment and load it onto the project vehicles/vessels for transit to the day's survey site. The surveys are conducted five to seven days per week, and each day involves a minimum commitment of seven hours. Volunteers are expected to participate daily.

During surveys, estuarine and oceanic elasmobranchs are captured, tagged, released and tracked. Team members work with nets from small boats, directly in the water, or from shore. At the start of each survey, the time, tide state and water temperature are carefully noted; this information is logged every 10 minutes and at the time of capture for each animal. All animals captured are carefully stored in temporary holding pens until the end of the survey and are then tagged and released. Data collection is relatively straightforward and entails recording data, taking periodic notes, reading simple instrumentation, handling and tending to the animals, assisting staff in tagging and measuring the specimens, and maintaining equipment.

During the open water capture studies, the oceanic sharks are baited close to the boat and then scooped up in long-handled hoop nets. They are briefly hauled aboard to be tagged, tissue sampled and released back into the water. This process is completed within 3-4 minutes; team members need to work very quickly and must follow all staff

instructions very carefully and attentively. Volunteers assist staff by keeping watch, recording data on clip boards, passing instruments and taking photos/video. **Volunteers will not capture or handle sharks.** Sharks are captured and handled by trained and experienced staff only.

Tasks will be rotated every couple of hours in the field, though tasks and the rotation schedule will vary based on field conditions, research needs, etc. All volunteers will get to participate in all activities and will be trained to do so. The open water capture studies only permit two volunteers on the boat at a time. Therefore, volunteers will rotate between days conducting the open water studies and days focused on the work in Elkhorn Slough. You will likely participate in the open water studies just once or twice during the expedition, but bear in mind that this is subject to change. Household chores will also be divided evenly among team members and likewise rotated.

Note: This work is dynamic and constantly changing as tides rise and fall and groups of animals move about. You should be flexible and prepared to change sites often during the course of the day. You need to be alert and ready for frequent set-up and re-deployment of nets, pens, boats, animals and crew. You must also be prepared to swim and work in the water (60-70°F), though team members rotate to avoid becoming fatigued or hypothermic.

5. TEAM ITINERARY

- Day 1:** Pick-up at airport, travel to accommodations, team member introductions, orientation to facilities and accommodations
- Day 2:** Orientation to research area, walk to shoreline, orientation/navigation, sites inspection, project briefing after dinner, introduction to methods, PowerPoint presentation
- Day 3:** Site selection, initial field survey
- Days 4-5:** Routine surveys, fieldwork
- Day 6:** Rest/Recreational day*
- Days 7-9:** Fieldwork, debriefing, prepare for extraction
- Day 10:** Travel to airport for departure

*You will be responsible for your own arrangements and expenses during the rest/recreational day. Possibilities include free activities such as swimming, surfing, and hiking, as well as inexpensive (US\$5) tours of Año Nuevo Island State Park and Elkhorn Slough Reserve Center. Kayaking and whale-watching may be possible for less than US\$50, and passes will be available for the Monterey Bay Aquarium and UCSC Seymour Marine Life Center. Shopping and dining can be organized according to the tastes of volunteers. For those who wish to simply rest and unwind, the project accommodations are conveniently located right on the beach. Volunteers should consult a travel guidebook for information on local attractions. See the *Helpful Resources* section for suggested guidebooks.

Earthwatch Recreational Time Policy

Earthwatch has a duty of care to our participants from the rendezvous to the end of the expedition. In order to ensure you are as safe during your recreational time as you are during research time, we have put a number of measures in place.

- If there is a recreational day during the expedition, the project staff will offer either a planned team activity or a small choice of recreational activities that have been vetted and comply with Earthwatch standards. You will also have the option of remaining at the project accommodations to rest. All participants are strongly encouraged to take part in the group activity, but if you are determined to pursue other options you will be asked to sign a release before doing so, stating that Earthwatch is not responsible for your welfare.
- When there is a period of free time scheduled into a regular research day, the staff will ask you to sign out of the project (using a means which may vary by project and project location) if planning to leave the group. This will

include your destination and estimated time of return. If participants do not show up to the next activity the project staff will then know where to begin a search.

- In the evenings when you can go out at night, you will again be asked to sign out of the project as above. The project staff will give you 24-hour contact information for them should assistance be needed. The sign-out is informational only and will not be used to enforce a curfew. Please be aware that project staff would not start a search until the following morning or the next scheduled activity unless contacted for help sooner.

6. DAILY SCHEDULE AND TASKS

Below is an example of a typical research day, but please note that schedules will fluctuate due to weather, tides, research needs and work conditions. You are expected to be flexible and your cooperation and understanding are appreciated.

6:30 am:	Breakfast
7:00 am:	Daily briefing
7:30 am:	Depart for field
8:00 am:	Begin fieldwork
12:30 pm:	Lunch
2:30 pm:	Continue fieldwork
5:00 pm:	Travel back to base
6:30 pm:	Dinner
7:30 pm:	Data entry or evening electives (volunteers and staff will alternate tasks)
10:00 pm:	Suggested bedtime

7. ACCOMMODATIONS

Volunteers and staff will stay in a five-bedroom, two-bathroom rented house in Pajaro Dunes Colony, a quiet coastal community near Moss Landing and Elkhorn Slough. Moss Landing is a coastal community consisting of a large expanse of beach, sand dunes and a harbor. Inside the harbor are a boating community, research institutions and commercial fishing activities. The 3,000-meter deep Monterey Canyon begins just 100 meters offshore.

The house is right on the beach and has a large kitchen/dining area and living room with a fireplace, television, DVD player and stereo system. The house has high-speed internet connection and there are electrical outlets (110 volts) in most rooms. You are welcome to bring your own laptop computer if you wish.

Bedrooms will be shared and may be single or mixed gender. Some volunteers may also stay on futons in the main room. You are asked to be flexible regarding sleeping arrangements during the expedition. With advanced notice and depending on the make-up of the team, it may be possible to accommodate couples. Please notify Earthwatch of such requests. Teams will be living and working in close quarters; your flexibility, patience and consideration for your teammates are necessary to ensure an enjoyable expedition for all. Earplugs are highly recommended for light sleepers. There are drawers in the rooms and secure places to keep personal items. Bedding and towels are provided. Laundry is available for US\$1 per load and daily laundering is common due to the nature of the project's hands-on fieldwork.

Transport to and from the field will be provided. Staff will take turns transporting and guiding volunteers. Transport from the rendezvous site to the accommodations takes approximately 25 minutes. Transport from the accommodations to the field site takes around 15 minutes (10 miles).

Note: Beach bonfires may be arranged at night and the option to sleep on the beach may be available if the entire team agrees to stay together. Because the beach is so close to the accommodations, it is more likely that volunteers will retire to the house each night.

8. FOOD

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.

Monterey Bay offers a wide variety of foods, including options for vegetarians and vegans. Food will be purchased before the team arrives. Special diets can be accommodated if the staff know about them in advance so please note any dietary restrictions on your volunteer forms. The menu will be posted in the kitchen and will be fixed for the duration of the expedition. Meals will be prepared by team members on a rotating basis with the help and supervision of staff. Volunteers may also assist with clean-up. While it may be possible to dine out or barbeque on the beach on some evenings, you should expect to eat most meals at the project house. Any meals eaten at restaurants and/or away from the team will be at your own expense.

- Breakfast:** Eggs and potatoes (when time allows), cereal with milk or soy milk, fresh fruit (the team may visit a breakfast café at your own expense during the recreational day)
- Lunch:** Sandwiches, health bars (bagged and eaten onboard, on the dock, or in the field)
- Dinner:** Variety of simple dishes such as BBQ, pizza, baked potatoes and fish with salad
- Snacks:** Health bars, cookies, fresh fruit, yogurt
- Beverages:** Coffee, tea, water, soda, juice (during non-research time, volunteers 21 years of age or older may consume alcohol in moderation at their own expense)

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 and strict vegetarians: Please be aware that it is often difficult to accommodate strict vegetarians and vegans. It may be possible to get meatless meals but vegans and strict vegetarians may have a problem avoiding animal products altogether. If this poses a problem, then participation on this Earthwatch expedition should be seriously reconsidered.

TRAVEL PLANNING

9. BEFORE YOU LEAVE

Note: Earthwatch Institute's international emergency medical and evacuation assistance provider, International SOS, has a wealth of useful information available at their website, including visa, passport, currency, medical, etc. information for the country in which this project takes place. See www.internationalsos.com and enter Earthwatch's member identification number: 14ACPA000075. Under "Select Resource" choose "English Country Guide," and then select this project's country from the list. For a listing of other useful websites for passport and visa requirements, see the *Helpful Resources* section.

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 (which previously only needed proof of citizenship) will be required to present a passport when traveling to and from the Americas, the Caribbean, Bermuda and the US.

Visa Information

Note: 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 27 countries eligible for the US Visa Waiver Program (see below). Visitors are required to provide details including their passport number, country of residence and any involvement in criminal or terrorist activities to the 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 (<https://esta.cbp.dhs.gov>).

Note that if you are traveling 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.

Travelers are advised to check visa regulations well in advance of traveling. 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. Passports for VWP countries issued on or after October 26, 2006 must include biometric information (so-called e-passports include a chip with the relevant information); otherwise, the holder is required to obtain a visa. VWP citizens with passports issued between October 26, 2005 and October 25, 2006 do not require a visa as long as they have machine-readable passports with a digital photograph of the holder. Citizens with valid but older machine-readable passports (issued prior to October 26, 2005) that do not have a digital photograph are still allowed into the US without a visa.

Currently, the following countries participate in the Visa Waiver Program: Andorra, Australia, Austria, Belgium, Brunei, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Japan, Liechtenstein, Luxembourg, Monaco, the Netherlands, New Zealand, Norway, Portugal, San Marino, Singapore, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom. Citizens of other countries should check with a travel or visa agency for specific visa and entry requirements. Entry requirements are subject to change, so please check for updates in advance of your travel. If you do need a visa, the chart below should be helpful.

Essential Information for Volunteers Requiring Visas

Type of Visa	You must get a TOURIST VISA .
Where to Get a Visa	Contact the nearest United States embassy or consulate to find out how to apply for your visa. Please note that this process can take weeks or more. If you have less than six weeks or wish to save yourself trouble, we strongly recommend using a visa agency , which can both expedite and simplify the process. See below for a list of visa agencies.
Required Information	You will need to send your passport (valid for at least six months beyond your stay), a Visa Application and Immigration Form , 2-4 passport-size photos plus payment to the embassy or visa agency (if applicable). Please be sure that your passport is valid for at least six months beyond your stay..
Contact Information	Contact Earthwatch for contact information for your Visa Application and Immigration Form.
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 (depending on the amount of time it takes to process the application), which you can inquire about directly.

Reminder: 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 even “volunteering.” Words such as “working”/“volunteering,” “research” or a “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

In the United States	In Europe	In Australia
PassportVisaExpress.com 1911 North Fort Myer Drive, Suite 104 Arlington, VA 22209 Tel: +1 888 596-6028, +1 703 351-0992 Fax: +1 703 351-0995 Email: info@passportvisaexpress.com Web: www.passportvisasexpress.com	CIBT, Inc.-UK 25 Wilton Road Lower Ground Floor Victoria SW1V 1LW T: 0844 736 0211 Fax: +44 (0) 207 828 5411 Calling from Europe outside UK: +44 (0)207 802 1000 Email: info@uk.cibt.com Web: www.uk.cibt.com (has alternate address for urgent requests)	Ask your travel agency if they can send your visa application on your behalf.

Volunteers Under 18 Years of Age

Entry to Foreign Countries

In an effort to prevent international child abduction many governments have initiated procedures at entry/exit points. It may be possible for 16- and 17-year-olds to participate on standard Earthwatch teams *if* accompanied by a parent or guardian. In this case, if the minor will be traveling with only one guardian or if for any reason they will be traveling alone (such as for a Teen Team), it may be necessary to have a notarized letter from all legal guardians stipulating that they may travel unaccompanied or in the presence of a single guardian. This letter must give an explanation for why only one parent or someone other than a parent is signing the letter. For example, if one parent is deceased, only one parent has legal guardianship, or someone other than the parents are legal guardians, the letter should state that.

In addition, airlines may also have documentation requirements for unaccompanied minors. Parents of minors are responsible for checking with each airline that their child will be flying to ensure that sufficient documentation is provided. This could include a copy of a birth certificate or a notarized letter stating that the minor has his or her parent’s permission to travel alone or with only one parent.

Note: Requirements by specific countries and airlines vary and change frequently. You MUST keep informed of the requirements on your own to avoid problems at immigration. If a letter is not available, the volunteer under 18 can be refused entry into the country. There is nothing Earthwatch Institute can do to help in this circumstance.

Insurance

Emergency medical and evacuation insurance (MedEvac) is automatically included in the project cost you pay to Earthwatch. This coverage is valid in the country of your Earthwatch expedition and during international travel to and from your expedition. If the expedition takes place in your home country, coverage begins at the official rendezvous date and time for the expedition and ends at the official departure date and time described in this briefing document, and is incremental to your existing health insurance.

Please note that due to different governing laws in each country, policies are specific to each regional Earthwatch office:

For Volunteers Who Sign Up Through the Earthwatch UK/Europe Office or Earthwatch Japan

Emergency medical and evacuation (MedEvac) insurance, plus trip cancellation/curtailment insurance is included in the contribution you pay to Earthwatch. Cover for personal property is also included. Details of this insurance policy, including the duration for which you are covered are included in your Expedition Briefing Pack. Please refer any queries regarding this policy to Michelle Ralph at Sutton Winson in the UK. You can email her on michelle.ralph@swib.co.uk or call her on +44 (0)1444 251164.

For Volunteers Who Sign Up Through the Earthwatch US Office

Emergency medical and evacuation (MedEvac) insurance, plus trip cancellation/curtailment insurance is included in the contribution you pay to Earthwatch. Details of this insurance policy, including the duration for which you are covered can be found at www.earthwatch.org/insurance. Please refer any queries regarding this policy to Michelle Ralph at Sutton Winson in the UK, michelle.ralph@swib.co.uk. Or, from the US, dial 011-44-1444-251164. Please note the time difference between the US and the UK, and call during UK business hours, which are from 08:45 to 17:00 GMT (from November to April) and GMT +1 (from April to November). You may also leave a message and request that she call you back.

Optional Additional Insurance for US and Canadian Volunteers

Earthwatch is offering comprehensive optional travel insurance through CSA Travel Protection as a service to our US and Canadian volunteers. We are not able to offer this optional insurance to Earthwatch Europe volunteers due to UK laws. While our inclusive insurance (see above) covers your emergency medical needs and trip cancellation/curtailment up to £3000, the optional CSA policy covers lost luggage, pre-existing conditions, travel delays, etc. For more information on this optional additional insurance policy, call CSA Travel Protection at 1-800-348-9505 or visit www.csatravelprotection.com. Details can also be found on the Earthwatch website at <http://www.earthwatch.org/insurance>. **Please note:** Some coverage is dependent on purchasing insurance within 24 hours of paying in full for your expedition. Should you decide to purchase our optional insurance, please **use the following producer code to indicate your affiliation with Earthwatch: 83534816.**

Emergency Medical and Evacuation Assistance (For All Volunteers)

The emergency medical and evacuation assistance provider for Earthwatch is International SOS (ISOS). ISOS is a 24-hour international operation that provides medical assistance and evacuation, a 24-hour medical help line and other travel-related services such as international health and security information in advance of your trip.

To contact International SOS in the event of an emergency, dial:

- For assistance **within the US:** ISOS Philadelphia, +1 215 942 8459
- For assistance **outside the US:** ISOS London, +44 (0) 208 762 8550

State that you are on an Earthwatch expedition. The following information must be provided:

1. The Insured Person's name
2. The Assured is EARTHWATCH, the Certificate No: GP 0010214 and SOS reference #14CPA000075
3. The telephone number and facsimile number where the Insured Person can be reached
4. The Insured Person's address abroad
5. The nature of the emergency

Travel Agencies

Earthwatch is pleased to partner with **Fly for Good** (www.flyforgood.com), and we strongly suggest you book your airfare for your expedition through them whenever possible; they are our recommended provider. Below are some Frequently Asked Questions about using Fly for Good as an Earthwatch volunteer:

Who is Fly for Good?

Fly for Good negotiates airfare discounts, known as "humanitarian rates," for non-profit volunteers. As part of this new partnership, Earthwatch volunteers will be able to take advantage of Fly for Good's negotiated airfare contracts, which allow for discounts of up to 50% on international flights. You can also book domestic flights at normal published fares.

Are there any special requirements I must fulfill in order to take advantage of Fly for Good's airfare?

Any volunteer traveling on a Fly for Good airfare must be able to prove affiliation with a non-profit organization conducting volunteer work overseas. Volunteers must be able to produce written proof of affiliation if asked at the airport. Your Earthwatch Expedition Briefing and your copy of your confirmation email from Earthwatch are all that is needed as written proof of your Earthwatch volunteer affiliation.

How do I get started?

Before you can access Fly for Good's discounted rates you must set up a profile. Go to "[Sign in](#)" and enter your information. When asked to enter an Approval code, enter: "EW360". "List Earthwatch Institute" as your affiliated non-profit. At this point your account will be approved and you will be sent an e-mail confirmation. You now have access to Fly for Good's humanitarian fares.

What is the Login for?

The [sign-in](#) is required to satisfy the airline carriers that are offering excellent deals through Fly For Good. This step protects you, Fly for Good, and the airlines from fraud. It's completely secure, and Fly for Good does not share your information with anyone.

How can I contact Fly for Good?

If you are not finding the best rates, have complicated itineraries, or need to talk through your purchase with someone you can call Fly for Good toll free in the US at: 877 FLY 4 GOOD (877 359 4466). Mention Earthwatch Institute and EW360 when asked for an approval code. E-mail inquiries can be sent to info@flyforgood.com

Earthwatch volunteers will have 24-7 access to Fly for Good staff in the event that flight issues cannot be resolved with your airline by calling 800.440.4242 (US) or 402.548.6277 (International).

Please Note

- Humanitarian discounts are on International Airfare only.
- Humanitarian discounts are on select routes (see below for the most popular ones).
- On routes that do not have a discounted fare, Fly for Good offers the lowest published fare.

- The humanitarian discounted airfare is only for Earthwatch volunteers or Earthwatch staff traveling for an Expedition.
- The humanitarian discounted airfare is marked with a “HUM” below the price on the booking engine—in the absence of a humanitarian discounted fair, it will say “Adult”.

To learn more about humanitarian discounts visit www.flyforgood.com

Some of Fly For Good’s more popular discounted airlines and routes:

- Air France to Europe, the Middle East, Africa and the Asia/Pacific region.
- British Airways from the US to Africa, the Gulf and Middle East, India, the Far East & Australia.
- Delta to Central America, South American, Mexico, the Caribbean, Europe, the Middle East, and Africa. Ethiopian Airlines to Africa and India.
- Northwest/KLM to Africa, Europe, the Middle East, Asia, Africa, and India.
- United/Lufthansa from the US to Europe, Africa, the Middle East and Asia.

The Fly For Good partnership with Earthwatch also offers volunteers superior cancellation policies on humanitarian discount airfares. Though these policies vary according to both routes and airlines, as a general rule the benefits include:

- Being able to make changes to tickets with reduced fees, often 50-75% less than regular ticket-changing fees.
- Securing refundable fares with reduced penalties, often 50-75% less than regular tickets.
- Free stopovers to cities while traveling internationally.
- Being able to bring an additional piece of luggage beyond the normal 2 piece limit. (Please confirm with airline.)

A list of other suggested travel agents can be found in the *Helpful Resources* section. Be sure to give your rendezvous details to your travel agent as soon as possible so they can plan your trip accordingly.

Other Advice / Information

- *Local currency:* US Dollar. See the International SOS website (above) and www.xe.com/ucc for currency information and exchange rates.
- *Language:* English
- *Telephone dialing codes:* When calling the United States from another country, dial the country’s international dialing code, followed by 1 and the number. When calling within the United States, dial 1 and the number. When calling another country from the United States, dial 011, 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.
- *Electricity:* 110 volts, plug types A (two flat pins) and B (two flat pins, round grounding pin)



Plug Type A

- *Time zone:* GMT/UTC -8
- *Personal funds:* Monterey Bay is an expensive, upscale area and entertainment, food and recreation can be somewhat costly. There are plenty of local banks and cash machines/ATMs within walking distance of the

accommodations. Credit cards are readily accepted in most locations. Cash is recommended for coffee shops and small vendors.

- *Tipping:* Tipping is customary in the United States for good service received. Wait staff at most restaurants, bars, coffee shops and ice cream parlors should be tipped. Custom dictates a 15 - 20% tip for meals. Tour guides (wildlife viewing, etc.) should also be tipped. Taxi drivers will expect a tip, but the public bus system staff will not.
- *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.

10. PROJECT CONDITIONS

Please show this section to your physician when he/she is completing your health statement. Be sure to discuss inoculation requirements with your physician well in advance of your departure date. See the Health Information section for inoculation information.

To the examining physician:

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

General Conditions of the Research Site

The Monterey Bay Peninsula boasts moderate, temperate weather, with the temperature averaging 57°F year-round. Temperatures increase significantly inland toward Salinas and Carmel Valley. During the summer months (June, July and August), morning fog is the rule rather than the exception, due to warm air moving across the cool waters of the Pacific Ocean. However, this usually burns off by afternoon. Please bear in mind that you will be working by the water in the early mornings, so be prepared for foggy, cool and wet conditions. Dressing in layers is highly recommended so that you can easily adjust your clothing as the days warm up in the afternoons. Late October through early April is considered the rainy season. September and October are generally clear and sunny, with a typical average rainfall of 0.10 inches. Dry conditions in summer mean that wildfire is always a threat in the forested mountain regions. In winter, mudslides can occur on mountain roads if a lot of rain is received over just a few days.

The area's climate and lifestyle encourage comfortable, light- to medium-weight clothing that can be layered. Temperatures drop rapidly as the sun goes down, therefore jackets, sweaters or sweatshirts are strongly advised for evenings.

Average Temperatures and Precipitation in Monterey Bay

Month	Mean Max.	Mean Min.	Daily Mean	Record High	Record Low	Precipitation
June	67°F / 19°C	50°F / 10°C	58.4°F / 15°C	101°F / 38°C	42°F / 6°C	0.2in / 5mm
July	68°F / 20°C	51°F / 11°C	60°F / 15°C	98°F / 37°C	43°F / 6°C	0.1 in / 3mm
August	69°F / 21°C	52°F / 11°C	61°F / 16°C	95°F / 35°C	45°F / 7°C	0.1 in / 3mm
September	72°F / 22°C	53°F / 12°C	63°F / 17°C	101°F / 38°C	43°F / 6°C	0.3 in / 8mm
October	70°F / 21°C	51°F / 11°C	61°F / 16°C	104°F / 40°C	35°F / 2°C	0.8 in / 20mm

Water Conditions

Typical water temperature during project	50°F / 10°C	to	60°F / 16°C
Typical water visibility	0 m/0 ft	to	2 m/6.5 ft
Typical maximum water depth in area	0 m/0 ft	to	4 m/13 ft
Anticipated sea state during project	Calm	to	strong tidal current
Timing of water-based surveys	Day	and	night
Types of water environment	Variously sandy, muddy, tidal estuary, wetlands		

There is also a small boat that will go out into open water once per team over the Monterey Marine Canyon, weather permitting. The team will leave early in the morning and be out until approximately 1:00 p.m., provided that waters are calm. The team will travel approximately 8 miles off-shore with a mile of depth below the boat. Visibility and water temperatures are the same as listed in the chart above.

Physical Demands

Below are the expected demands of the project, but please keep in mind that conditions may change and the project could potentially be more or less strenuous than the chart indicates.

Activity	Workload/Intensity
Sitting/Bending	0-5 hours per day depending on the day's tasks
Hiking	2-3 miles per day
Walking	2 miles per day
Carrying/Lifting	50-pound sharks/rays, 5-gallon buckets and other equipment over 500 yards for up to 1 hour per day
Swimming	1-3 hours per day
Working on a boat	1-5 hours per day

Note: For safety reasons it is imperative that volunteers are good swimmers since the project will entail wading in shallow water and deep mud to attend to nets and swimming to collect specimens. Everyone is expected to be able to swim at least 100 feet at the surface wearing a wetsuit and fins. The tidal waters can be cold and slippery and volunteers who are not strong swimmers would be at greater risk of fatigue and injury.

This project is physically rigorous and requires wading in deep mud (mud can be thigh-deep at times), some modest hiking, carrying and swimming. Volunteers should be reasonably fit, **must be able to swim** and should be able to carry 50-pound sharks/rays as well as five-gallon buckets of water and other equipment. Heavy loads will be shared among team members. Some of the animals are 200 pounds and take four people to carry. The small boats used to conduct research are open and exposed to sun, wind and spray. You must be prepared for and comfortable with performing the research tasks in the water or confined to the research boat, being wet and cold for extended periods of time (up to five hours) and away from conventional bathroom facilities. Participants will need to be alert and prepared for frequent set-up and re-deployment of equipment and changing of sites during the workday in response to changing tides and animal movement.

Participants must also be able to cope with seasickness and remain functional; immunity or at least a tolerance of seasickness is required for working offshore aboard the research boat. If you suffer from seasickness be sure to bring appropriate medications with you and discuss their side effects with your physician. While not required, volunteers with diving and/or surfing experience are ideally suited to this project's work conditions.

Potential Hazards

Hazard Type	Associated Risks and Precautions
Transportation	Staff will transport the team to the field sites; volunteers will not be permitted to drive. Normal risks associated with driving will be present. You will be briefed on safety and emergency procedures. Seatbelts must be worn at all times.
Terrain	Terrain will vary and may include flat or hilly hard ground, deep mud, and shallow water in the slough. Bring appropriate footwear, wear a wetsuit when appropriate, and use caution.
Study animals	Shark bites and stings by rays are possible if the animals are not properly handled, though there has never been a serious injury during the project. Project staff will instruct volunteers on proper handling techniques. Open water work involves capturing sharks (usually 1-3 meters in length) and bringing them into the boat to attach ID tags and collect DNA samples and measurements. Only trained staff will be permitted to catch and handle sharks during the open water work. Volunteers will not be permitted to capture or handle sharks during the open water work. Precautions to prevent injury to crew members and study animals are taken; for your own safety, you must follow all staff instructions very carefully and attentively.
Other animals	Deer are common but evasive. Mountain lions are occasionally observed in the greater area but are quiet, solitary and elusive, and typically avoid people by nature. Rattlesnakes are seen very rarely in the area; they are timid and will avoid humans unless cornered or attacked. Avoid tromping around in high grass and areas where there are a lot of rocks in the sun without shuffling and signaling your presence.
Plants	Poison oak is present in the area and volunteers should avoid contact. The plant will be identified by staff when spotted.
Climate/ Weather	Long days in the field may cause dehydration, sunburn and fatigue. The sun can be strong, so drink plenty of water (provided) throughout the day, use high factor sunscreen (SPF 30 or above), and wear sunglasses and a hat with a wide brim. Rain is possible and fog is present in the morning on the water. Dress in layers to avoid becoming chilled.
Water	This project involves a lot of swimming and wading. The water is fairly cold and long exposure to water without proper protection may cause hypothermia. Wetsuits are required; volunteers will not be permitted to participate without them. Safety advice will be provided and water-based tasks will be rotated.
Working on a boat	Open water work will be conducted over a deep sea canyon in a 22- or 27-foot power boat; surveys typically take about three hours, depending on weather and animal activity. Slough work will be conducted either from shore or from a 12-foot inflatable boat or aluminum skiff. You must be careful when entering and exiting vessels to avoid slipping, falling overboard, etc. Seasickness may be of concern; come prepared with appropriate medication (non-drowsy formulas are better) and discuss the potential side effects with your physician. Working aboard a boat poses inherent risks. Bouncing and jostling can be uncomfortable for those with bad backs or neck pain. Boat surfaces are wet and can be slippery, putting one at risk of falling and injury. Unplanned immersion in the water from falling overboard can also put one at risk of injury, including cold-related injuries. The boats are carefully maintained and equipped with appropriate safety equipment, including personal flotation devices (PFDs) for each person. PFDs are required at all times when on the boat. Staff will brief volunteers on boating risks and precautions. Only experienced staff will operate the boat.
Personal security	Monterey Bay is an upscale community and is generally not dangerous. The project house is located in a secure estate which is very safe and well kept. However, good judgment and caution should always be used when walking alone and/or at night in poorly lit areas. It is always best practice to leave unnecessary valuables at home.

Medical Conditions of Special Concern

Individuals who are not physically fit, cannot swim, or have bad backs or limited mobility will not be able to function in the field. This project involves lots of swimming and moving through deep mud and sand while handling animals. Injured or impaired joints and arthritic, respiratory or spinal injuries/conditions would diminish one's ability to function as a volunteer. All participants should be able to carry/lift up to 50 pounds. Participants with hydrophobia, discomfort in or around boats, uncontrolled inner ear infections, conditions that affect balance, blood clotting issues and/or any condition that limits swimming or breathing should consider carefully participation on this expedition as these conditions would make participation uncomfortable or impossible.

If you suffer from motion or seasickness and intend to treat this with either over-the-counter or prescribed medication, please discuss the use and side effects (e.g. drowsiness) with your physician. You should be able to tolerate cold, wet, sunny and hot conditions for long periods of time. Finally, instruction, training and survey work require the full attention of participants. Volunteers should be able to listen attentively and follow instructions and directions carefully.

11. HEALTH INFORMATION

See www.internationalsos.com for information on the current health conditions in the United States. At the homepage, enter Earthwatch's member identification number: 14ACPA000075. Under "Select Resource" choose "English Country Guide," and then select United States from the list.

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.

Medical decisions are the responsibility of each volunteer. Note that 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 (www.cdc.gov), the World Health Organization (www.who.int), International SOS (see above), and/or the resources in the *Helpful Resources* section for the latest health information for travelers. Please consult your physician for guidance on inoculations if you intend to travel to other parts of the country.

12. PACKING CONSIDERATIONS

PLEASE SEE THE PACKING CHECKLIST AT THE BACK OF THIS BRIEFING AND REMEMBER TO TAKE YOUR BRIEFING WITH YOU ON YOUR EXPEDITION.

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.

Note: Many airlines have strict baggage policies. Please check with your airline(s) on baggage weight limits, liquid restrictions, fees for checked baggage, etc.

Please be aware that the team will be working in a very sensitive wildlife reserve area and needs to maintain a low-key presence. Aside from your wetsuit (see *Essential Items* below), **your field apparel must be of earth and field tones**; please do not wear bright-colored garments or those with large labels/logos.

Weather Considerations

Please take weather conditions into consideration when packing for your expedition. Climate information can be found in the *Project Conditions* section. Temperatures drop rapidly as the sun goes down, and a jacket/sweater is advised if you plan to be outdoors in the evenings. Pack light but do not forget sunscreen, sunglasses, a hat, a moderate-weight windbreaker and several layers of clothing as days on the water can be cold. Recreational swimming during project activities will not be allowed as the water in the bay is cold (50-60°F) even in the summer.

Cultural Considerations

At the project house and during non-research time, there is no dress code and volunteers may dress as they feel comfortable. Monterey Bay tends to be a liberal, relaxed and open community. Shorts and t-shirts are fine for both men and women during warm days. Jeans, a t-shirt and a light sweater are the norm around town. Monterey and Pacific Grove are upscale communities and you will find plenty of opportunities to dress up if you like during recreational time.

Essential Items

Make sure to bring your Earthwatch Expedition Briefing with you! It includes essential information to which you may need to refer during your expedition, as well as during your journey to and from the project site.

Wetsuits and booties are required. Surf suits are ideal, though heavier dive suits will work. If preferred, you can rent a wetsuit and booties near the research area at your own expense. Wetsuit and bootie rentals will cost US\$10-30 per day, but will require a deposit of approximately US\$100 (credit cards are preferred). The suits can be reserved ahead of time, though it is not generally necessary. You may wish to contact the rental companies directly regarding available sizes.

The following local companies rent out wetsuits and booties:

- Kayak Connection
413 Lake Avenue, #4
Santa Cruz, CA 95062
Tel: +1 831 479 1121
Web: http://www.kayakconnection.com/KC_Pages/Equipment_Rentals.html
- Paradise Surf Shop
3961 Portola Drive
Santa Cruz, CA 95062
Tel: +1 831 462-3880
Web: <http://www.paradisesurf.com/lessons.html>

While working in Elkhorn Slough, you will need to wear your wetsuit. Otherwise, team members typically wear an earth-toned hat, sunglasses, and an over-jacket or windbreaker. For the open water work, you are advised to bring warm clothing layers, a hat that can be secured on the head, and sunglasses (preferably with polarized lenses). A rain jacket, rain pants, and rubber boots are also highly recommended. White-soled anti-slip boots or shoes are preferred onboard the open water vessel.

Please see the Expedition Packing Checklist for a complete list of what you will need to take with you. You are encouraged to go through the list and mark off each required item right before you leave for your expedition.

13. RECOMMENDED READING

Please read *Sharks and Rays of Monterey: The Research* in the Appendix of this Expedition Briefing. This document was prepared by the Principal Investigator(s) and Earthwatch and explains the research conducted through this project as well as some results to date. Below are additional recommended materials for those interested in further

preparing for the expedition. Many can be purchased online through popular vendors. See the *Helpful Resources* section for suggested vendor websites.

Scientific Media

- Ferguson, A. and G. Cailliet. 1990. *Sharks and Rays of the Pacific Coast*. Monterey Bay Aquarium Foundation, 886 Cannery Row, Monterey Bay, California.
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- Vega, R.L. 1999. *Organochlorine pesticides and polychlorinated biphenyls in leopard shark (Triakis semifasciata) serum: A comparison of contaminant profiles in leopard shark serum from urban and agricultural estuaries*. University of California Santa Cruz, CA.
- Woolery, E.S. 2003. *Leopard sharks and their prey: effects of prey availability on the movement patterns of Triakis semifasciata within the Elkhorn Slough National Estuarine Research Reserve*. San Jose State University, Moss Landing.

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 may be available online through http://www.earthwatch.org/exped/vansommeran_research.html. Note that reports are not available for all projects.

14. EMERGENCIES IN THE FIELD

Proximity to Medical Care

Staff Certified in Safety Training	Certification Type
Sean Van Sommeran (PI)	Surf Rescue, CPR, First Aid, Wildlife Rescue
Curtis Craver	CPR, First Aid, Vessel Operations
Josh Laeder (park ranger)	CPR, First Aid, Wildlife Rescue
Callaghan Fritz-Cope	CPR, First Aid
Scott Lucas	Dive Safety, Wildlife Rescue
Jake North (mechanic and driver)	CPR, First Aid

Nearest Hospital	
Watsonville Community Hospital 75 Neilson Street Watsonville, CA 95076 Tel: +1 831 724-4741	Distance: 12 miles (20 minutes) from the slough Distance: 7 miles (12 minutes) from the house

15. COMMUNICATIONS

PLEASE NOTE: You should check with your cell phone provider to obtain any carrier-specific dialing codes you may need while on your expedition or en route there or home; many providers have dialing procedures that may differ in whole or in part from directions listed in this Briefing. All volunteers are asked to remember that

Earthwatch expeditions offer a rare chance to “unplug” from hearing ringing phones and having to hear others’ phone conversations, and to regulate their cell-phone use with respect for fellow volunteers and staff.

Emergency Communications in the Field

The research team will have access to a mobile phone when out in the field. A marine VHF radio will also be available for emergency use. Because the research site is close to an urban area, communication will not be a problem.

The emergency contact number at Earthwatch headquarters in the US is +1 978 461-0081. After business hours, leave your message with the live answering service. State that you have an emergency communication and leave a clear message with the name of the expedition, 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.

Personal Communications

PLEASE NOTE: 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.

Mobile phone reception is available in the area and you may bring and use your own phone, though you are asked to refrain from making or receiving calls during project activities. There is a landline phone in the project house. Local calls are free from this phone but a calling card is required for long distance calls. In the event that you use the house phone for a long distance call, you will be charged US\$10 per call plus toll charges for any long distance calls billed to the owner’s phone bill. Internet cafes and free internet service at the public library are available in downtown Pacific Grove. The house has a high-speed connection as well that you may use if you bring your own laptop and cables.

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

Address		Volunteer Name Pajaro Dunes Company 105 Shell Road, House #111 Watsonville, CA 95076
Phone		Project house landline: +1 831 722-0675 PSRF office: +1 831 459-9346 To be used for short, urgent messages only. Callers should consider the local time and call only during day and early evening hours. In the event of an emergency, volunteers can be reached though Earthwatch (see <i>Emergency Communications</i> above).

16. HELPFUL RESOURCES

Passport and Visa Information

- Embassies around the world: <http://www.embassyworld.com>
- For Japanese citizens: http://www.rainbowt.jp/travel/visa_top.html
- For Australian citizens: <https://www.passports.gov.au> and <http://www.dfat.gov.au/visas/index.html>
- Passport Visa Express (for US citizens): www.passportvisasexpress.com
- UK-based visa service www.uk.cibt.com

- Thames Consular Services Ltd: <http://www.visapassport.com>
- Travel Document Systems: <http://www.traveldocs.com/index.htm>

Travel Guidebooks and Booksellers

- Lonely Planet: <http://www.lonelyplanet.com>
- Rough Guide: <http://travel.roughguides.com>
- Amazon: <http://www.amazon.com>
- Barnes and Noble: <http://www.bn.com>

Travel Agencies and Advice

- Fly For Good: www.flyforgood.com
511 East Travelers Trail
Burnsville, MN 55337 USA
Tel: +1 877.359.4466 (877.FLY.4.GOOD)

Earthwatch has an official partnership with Fly For Good and strongly recommends volunteers use their services to book airfare for Expeditions and take advantage of Fly For Good's humanitarian discount rates on several international airlines and routes; see the *Before You Leave* section for more information.

- Travelocity: www.travelocity.com
3150 Sabre Dr.
Southlake, TX 76092
E-mail: travelocity@travelocity.com

Earthwatch is a partner with Travelocity in their Travel For Good/Change Ambassadors Grant Program, which allows would-be volunteers to apply for funding that can be used to cover the costs of an Earthwatch expedition and its associated travel costs. Visit www.travelocity.com/travelforgood.com for more details.

- STA Travel: <http://www.statravel.com>
65 Mt. Auburn St.
Cambridge, MA 02138
Tel: +1 617 576.4623
Fax: +1 617 576.2740
Email: cam@statravel.com
- STA Travel (UK): <http://www.statravel.co.uk>
Tel: +44 (0) 1865 792800
Fax: +44 (0) 1865 792911
Email: manager.oxford@statravel.co.uk
Quote code: EWE01/02
- Wexas International (Europe): <http://www.wexas.com>
Tel: +44 (0) 20 7581 8761
Fax: +44 (0) 20 7581 7679
Email: southern@wexas.com
Quote code: EWE01/02
- Democracy Travel (contact Jean S. West, Assistant Manager)
4818 MacArthur Blvd NW
Washington DC 20007
Tel: 202 965 7200 or 866.557.9968 (toll free US and Canada)
Fax: 202 342 0471
Email: jean@democracytravel.com
- World Travel Guide: <http://www.worldtravelguide.com>
- UK Foreign Office travel advice: <http://www.fco.gov.uk/travel>

- Third World Traveler: http://www.thirdworldtraveler.com/Travel/Travel_Links.html

Airline/Airport Resources

- Flight comparison tools: <http://www.bookingbuddy.com> and <http://www.1800-fly.com>
- Airport codes worldwide: <http://www.logisticsworld.com/airports.asp>

Country Information

- Country information from around the world: <http://www.countryreports.org>
- Travel Document Systems: <http://www.traveldocs.com/index.htm>
- National Geographic Map Machine: <http://plasma.nationalgeographic.com/mapmachine>
- US State Department: <http://www.state.gov>
- Time worldwide with GMT/UTC: <http://www.worldtimeserver.com>
- Currency converter: <http://www.xe.com>
- Electrical current converter: <http://kropla.com/electric2.htm>
- Telephone dialing codes: <http://kropla.com/dialcode.htm>
- Online unit conversions: <http://www.onlineconversion.com>
- Worldwide weather: <http://www.wunderground.com> or <http://www.tutiempo.net/en>
- ATM locator: <http://visa.via.infonow.net/locator/global/jsp/SearchPage.jsp> or <http://www.mastercard.com/atmlocator/index.jsp>

Health Information

- Travel health website: <http://www.mdtravelhealth.com>
- Center for Disease Control: <http://www.cdc.gov>
Tel: +1 800 311-3435 or +1 888 232-3228
- World Health Organization: <http://www.who.int>
- The Travel Doctor: <http://www.tmvc.com.au>
- Disease outbreaks: <http://www.who.int/csr/don/en>
- Hospital for Tropical Diseases: <http://www.thehtd.org>
- Travellers Healthline Advisory Service
Tel: 020 7950 7799
- MASTA Travelers' Healthline (UK)
Tel: 0906 8 224100 (within UK)

APPENDIX

Sharks and Rays of Monterey: THE RESEARCH

The following information was taken from the research proposal submitted by the Principal Investigator(s) to Earthwatch Institute. Included is a description of the research conducted through this project, some results to date, and other information regarding the accomplishments of the project and the staff. Specific details regarding research sites, methods, etc. is subject to change slightly from year to year and such changes may not be incorporated into this document.

BACKGROUND, OBJECTIVES, AND METHODS

Introduction

Shark populations are slow to recover from over-harvesting and several US species are considered threatened or endangered with regional extinction. Virtually all historic commercial shark fisheries in the US and abroad have ended in a population crash of the species of shark being targeted. Historically, commercial shark fisheries have exhibited a boom/bust cycle of over-harvest and decline where the fishery invariably ends with an abrupt crash. While commercial fishing mortality of sharks in US waters has averaged 20,000 metric tons per year, computer modeling and statistical analysis indicates that anything above 10,000-12,000 metric tons will eclipse the targeted shark species' abilities to reproduce at sustainable rates. According to the National Oceanic Atmospheric Administration (NOAA), between the early 1970s and late 1980s the abundance of many shark species found along the southeast coast of the US has declined as much as 80%.

In addition to being directly targeted in various commercial and recreational fisheries throughout the world, sharks are all too often captured incidentally as by-catch in tuna and billfish fisheries. Shark by-catch in large-scale high-seas fisheries around the world could be as much as 50% of the reported take of commercial shark fisheries. The number of sharks caught annually by various high-seas fisheries between 1989 and 1991 has been estimated at 11.6 to 12.7 million. To this day a complete accounting of shark and ray catches is lacking; all the while the fisheries continue to expand. In many cases this by-catch is discarded. It is also estimated that numerous high-seas commercial fisheries discard more than 210,000 metric tons of elasmobranches annually.

The oceans of the world are being purged of sharks and large fish. The demand for shark meat, fins, and cartilage are high. There has been little or nothing at all done at the international level to address these issues. While the UN has rendered oversized drift gill-nets illegal there is inadequate enforcement and a lack of overall judicial fortitude regarding high-seas poaching and over-harvesting. Some nations have taken steps independently, but these efforts are often last resorts applied to an already crashing shark fishery.

Local independent grassroots education and advocacy are crucial to the efforts of wildlife conservationists and management officials. Scientific research is crucial to the understanding and protection of sharks from overexploitation. Many important species, which are protected on a local or regional basis, are now understood to be highly migratory and therefore exposed to fisheries and poaching pressures outside of those relatively protected zones. A more comprehensive monitoring and management plan is needed to address these issues in order to assure the future presence of the world's sharks.

Project Background

In Monterey Bay, California, a similar kind of threat has haunted some estuarine shark species and brought their populations to a sharp decline. Historically the greatest threat to the sharks and rays of Elkhorn Slough has been habitat destruction due to industrial development and agricultural encroachment and associated pollutants and displacement. This included highways, railroad lines, dams, dykes, burms, draining/filling and landfill dumping that occurred during the 19th century and most of the 20th century. Since the early 1980s, much of the dammed-off areas of the slough have been breached and reconnected to the main channel of the Elkhorn tidal marine estuary. Many species of birds, fishes, marine mammals, sharks and rays have reclaimed these tidal canals and mud flats making for a great success in the realms of marine conservation and habitat restoration.

Fifty years ago, when the Elkhorn Slough oyster fishery off Moss Landing, California, was facing collapse due to the commercial over-harvesting of oysters, local fishers created a contest to rid the waters of oyster-eating sharks and rays. Once the sharks and rays were eradicated, they reasoned, the vanishing shellfish populations would rebound and even higher levels of oyster-harvesting would result.

In 1946, the first organized shark and ray hunt was attended by an enthusiastic public. Hundreds of harmless leopard sharks and bat rays were killed by citizens armed with pitchforks, shotguns and even dynamite. Although the shark and ray populations were greatly reduced in the aftermath of the hunts, the oyster fishery nonetheless collapsed shortly afterward.

However, the shark hunt continued to appeal to local anglers and archers. Each spring they returned to the hunt, taking advantage of the mating and birthing season in Elkhorn Slough's waters. Two distinct sporting events emerged: an annual "rod-and-reel" event and a shark archery hunting event using bows-and-arrows and crossbows. This annual event attracted more than 100 participants on some occasions and a large number of sharks and rays were eliminated annually.

From 1951 to 1962 researchers at the California Academy of Sciences monitored derby catches yearly and recorded species composition, total length, weight, sex, gut content, stage of sexual maturity and fishing effort (Herald and Dempster 1952, Herald 1953, Herald *et al.* 1960). Data collection was resumed in 1971 by collaborating organizations such as Moss Landing Marine Laboratories, the California Department of Fish and Game, the California Academy of Sciences and San Francisco State University. A tag-and-release program was initiated in 1990 by the Pelagic Shark Research Foundation (PSRF).

Beginning in 1991, the PSRF has worked with local anglers to mitigate the devastating effects of organized shark hunts on elasmobranch populations in Elkhorn Slough. These efforts have not only improved the situation dramatically, but have resulted in an increased public interest in understanding and preserving the elasmobranch populations of Elkhorn Slough, Monterey Bay and beyond.

Our long-term monitoring project developed concurrently to this interest and is centered on a telemetry and DNA tissue-sampling program. The project focuses on determining the population dynamics, gender and generational ratios of the seven species of sharks and rays known to inhabit Elkhorn Slough, and on characterizing their habitat and site use. These species are the leopard shark (*Triakis semifasciata*), the gray smooth hound (*Mustelus californicus*), the brown smooth hound (*Mustelus henlei*), the bat ray (*Myliobatis californica*), the thornback ray (*Platyrrhinoidis triseriata*), shovelnose guitarfish (*Rhinobatis productis*) and the round stingray (*Urolophus halleri*).

Data collected from shark derbies (King and Cailliet 1992) including species composition and catch-per-unit effort (CPUE) were evaluated between 1951 and 1990 and showed the almost complete disappearance of the shovelnose guitarfish after 1972 and a lowering of the CPUE over the years. Trends in the size structure of the population for the most abundant species such as bat rays and leopard sharks varied significantly over the years. The PSRF's efforts are showing higher abundances of some species considered relatively rare, such as the thornback ray and guitarfish.

The sharks and rays inhabiting Elkhorn Slough use this area throughout the year but are particularly abundant during their mating season when adults enter the estuary to give birth to their young in the sheltered lagoons and canals inland from the mouth of the slough. This is the time at which the animals are most vulnerable.

The PSRF also conducts a long-term monitoring program on seasonally abundant species of pelagic sharks over the open waters of Monterey Bay marine canyon, including primarily the blue shark and the shortfin mako. Since 1990 the PSRF has developed innovative methods for collecting, sampling and releasing these highly migratory species. We have been able to gain valuable information and data by tracking shark movements throughout the Pacific and providing DNA tissue samples to the US Fish and Wildlife Service, the Conservation Science Institute and numerous university students and researchers. The PSRF study was the first to track a blue shark across the entire Pacific, from Monterey Bay to within 600 miles of Japan (2000/2002), a feat that received wide recognition by the California Department of Fish and Game and international press/media. The project was awarded by the World Wildlife Foundation's innovations grant in 1996 and was awarded a grant by the Santa Cruz County Fish and Game Commission in 1999.

Objectives and Methods

This project aims to broaden and consolidate a comprehensive database for monitoring the populations and natural history of the several species of sharks and rays that inhabit the marine estuaries and tidal flats of the Elkhorn Slough and the migratory shark species that inhabit the open waters of the Monterey Bay marine canyon. Specific research objectives and methods are described below.

Monitoring Sharks and Rays in Elkhorn Slough

The methodology involves routine surveys of various tidal estuarine habitats within Elkhorn Slough. Wetsuit clad researchers, working from small boats and from the shoreline, set and attend entanglement nets and work beach seine nets to capture sharks and rays. At the start of each survey the time, water temperature, salinity, turbidity, current velocity, tide level and water depth are carefully noted, and these measurements are repeated every 10 minutes and at the time of capture for each animal. The nets are carefully watched for contact with sharks and rays; each animal is immediately untangled and transported to holding pens via floating baskets.

All animals captured are carefully placed in temporary holding pens and the time of capture, species, gender, total length, clasper length (for males), previous ID tag or transmitter presence are noted. Untagged animals are tagged and the identification tag number is also noted (some animals may be recaptures from previous surveys/years and already have a tag number which is noted). A tiny fin clipping is taken for DNA analysis.

At the end of the survey all animals are released. The duration of each survey is 3-5 hours per day, and the survey is conducted five days per week between the months of April and October each year. Periodic off-season surveys are conducted once a month between October and April.

Surveys are conducted at various sites within the Elkhorn Slough marine tidal estuary system, including the main channel, the northern tidal flats and in canals associated with the Monterey Bay National Marine Sanctuary (MBNMS), the southern tidal flats and associated lagoons and the Long Valley system of the Elkhorn Slough National Estuarine Research Reserve (ESNERR).

Short-term goals include education and training of marine science students, conservationists and researchers in the proper methods of collecting, handling, sampling work up, tagging and release of estuarine sharks and rays in Elkhorn Slough.

By sampling a variety of micro-habitats within the slough for presence/absence of certain species, age classes or gender classes of sharks and rays, the study will determine annual and inter-annual variations in habitat use patterns. This information will inform local management strategies for the different species and the best practices for stock enhancement and health by, for example, selectively closing certain areas of the slough to sport fishing.

Long- and short-term fluctuations in population abundance can be easily monitored using mark-recapture studies. It is assumed that an animal is captured when caught in the net, marked when tagged with a permanent ID-tag, and recaptured when caught again and the tag number noted. There are no expected mortalities due to marking and handling, and all animals captured are released. A critical assumption of any mark-recapture model is that animals do not lose their marks during the sampling period. Mark-recapture models further assume that all marks are recorded correctly at each sampling occasion. By maintaining high standards of data collection, most errors of this type can be avoided.

Population data can be analyzed using the state-of-the-art program MARK developed by Gary White at Colorado State University, which incorporates software and theory developed by many people (White and Burnham 1999).

Analyzing data from mark-recapture studies of open populations is theoretically complex, because births, deaths, immigration or emigration may be confounded by our ability to detect these processes. For instance, if we fail to detect an animal at the start of the study, we may mistakenly assume that it arrived later by birth or immigration, and if we fail to detect an animal previously detected, we may mistakenly assume that it died or emigrated. The key to open population theory is estimating survival probability and capture probability. Once capture probability is known, population sizes for each capture occasion can be estimated. Movement patterns are determined by either using recaptures of marked individuals at different sites within the slough (and eastern Pacific) to determine these general patterns and/or by means of acoustic and/or satellite telemetry on a selected number of individuals.

Monitoring Migratory Sharks in the Open Waters of Monterey Bay

The Monterey Bay marine canyon study focuses on the monitoring and understanding of the highly migratory species of sharks that move into the Monterey Bay area every summer and fall. The project routinely surveys three primary sites within Monterey Bay and over the Monterey Bay marine canyon.

Using a standardized unit and method of effort, the project counts and collects sharks (mostly blue sharks, 1-3 meters total length) over these particular sites and attaches long-term ID tags and takes tiny fin clippings which are forwarded to lab partners with the US Fish and Wildlife Service and various marine labs; all the sharks photographed are released unharmed. The long-term ID tags have proven valuable in tracing these highly migratory sharks' range or movement, population dynamics and relative fisheries pressures as well as providing a venue for national and international coordination and cooperation and sharing of data and information. The ID tags work in same way as ear tags on mammals and/or leg bands on birds. The DNA samples are not only interesting academically but are crucial to management and enforcement efforts regarding worldwide "finning and trophy" markets.

The research vessel leaves at first light and takes up station over the marine canyon after a 30-60 minute transit to the designated site. Sharks are attracted to the surface using an enclosed container of fresh fish as bait; once a shark is detected it is logged in via latitude and longitude (GPS) and species. The shark is then coaxed close enough for staff members to carefully scoop it up in a long-handled net and bring it aboard the research boat. Trained staff brace the animal against the bulkhead of the boat and secure its head with a wet-towel, which functions as a blind-fold, muzzle, grab handle for staff, and padded head covering for the shark as it is worked up by staff and volunteers.

Two staff and two Earthwatch volunteers comprise the team of four on the marine canyon surveys. The trained and experienced staff capture and secure the sharks while the two Earthwatch volunteers act as recorder (data sheets) and assistant (handing DNA vials, tape measure and tags to staff), and take ID and documentation photographs and videos.

The Earthwatch teams of 4-6 will divide into pairs and rotate between work in the slough and work over the marine canyon, thus giving the volunteers a wider and more in depth look at Monterey Bay's sharks and rays, as well as an opportunity to experience the spectacular wildlife of both the Elkhorn Slough and Monterey Bay proper.

RESULTS AND OPPORTUNITIES

Long-term monitoring projects such as this are able to provide accurate insights into the natural history, behavior and baseline population dynamics of animals living in particular environments, specific habitats and micro-sites. This provides an efficient platform for gathering such information while providing a vehicle for marine science students, researchers and educators to gain valuable experience and training; this project also creates an avenue for motivated conservationists to participate in an ongoing and effective project.

Locally, the project has provided a learning venue for hundreds of college and high school students as well as visiting researchers and students from abroad. From the organization's inception numerous interns and students have participated in our research, education and conservation programs. The PSRF is active in the community and has a long and successful track record for grassroots educational efforts and for raising the public's interest and awareness regarding sharks, rays and the greater marine environment and its fascinating denizens. Our group regularly organizes slideshows, lecture presentations at schools from elementary through college levels, and to private groups or meetings. The PSRF also inspired the Santa Cruz Shark Fest and Sanctuary Celebration, an annual event held every September in Santa Cruz.

LITERATURE CITED

- Herald, E.S. 1953. The 1952 shark derbies at Elkhorn Slough, Monterey Bay, and at Coyote Point, San Francisco Bay. *California Fish and Game*, 39: p. 237-243.
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- Herald, E.S. and R.P. Dempster. 1952. The 1951 shark derby at Elkhorn Slough, California. *California Fish and Game*, 38: p. 133-134.
- King, A.E. and G.M. Cailliet. 1992. The Elkhorn Slough Shark Derby: Past and present. *Chondros*, 3(2): p. 1-4.
- White, G.C. and K.P. Burnham. 1999. Program MARK: survival estimation from populations of marked animals. *Bird Study* 46: 120-139.



Earthwatch Institute Policies & Participant Rights and Responsibilities

(Revised October 10, 2008)

This document contains important information concerning Earthwatch Institute (EW) policies and Participant rights and responsibilities for inclusion on an Earthwatch expedition. Please read this document thoroughly and sign and return the release forms that have been provided to you (either online or by mail from your regional Earthwatch office) to indicate that you understand the risks inherent to your expedition and the policies, rights, and responsibilities enumerated in this document. **You will not be permitted to partake in an expedition until Earthwatch has received the signed release form.**

Contents:

1. Consent to Inherent Risks
2. Intellectual Property Rights (IPR)
3. Sexuality, Sexual Behaviour, and Drug and Alcohol Policies
 - Fraternalization
 - Sexual Harassment
 - Drugs
 - Alcohol Policy
4. Recreational Time
5. In the Event of an Emergency: "Good Samaritan" Actions
6. Participants and Driving
7. Right of Refusal
8. Removal from an Expedition
9. Responsible Behavior
 - Cultural and Community Interactions
 - Sustainable Field Practices

1. Consent to Inherent Risks

An Earthwatch expedition can be an enjoyable, enlightening, and potentially life-changing experience, but some of the characteristics that may make an expedition attractive to you may also put you or your property at risk. All true expedition work involves a degree of risk which varies from expedition to expedition. The expedition Briefing describes some of the foreseeable inherent risks involved in the activities that you are choosing to participate in. You must review and consider these risks carefully before signing and returning the Liability Release and accepting a Participant position. By signing the Liability Release, you are accepting the potential consequences of these risks. The conditions present for field research projects, many of which take place in remote areas of the world, include limited access to emergency and health services and limited or nonexistent communication facilities or other local infrastructure or services. Participants on Earthwatch Institute expeditions experience the whole range of climate, terrain and temperature extremes, bivouac living, physical work and other potential hazards including (but not limited to) political instability, war, transport difficulties and risks such as lack of vehicular safety standards commonly found in developed countries (for example, the absence of seatbelts) and increased incidence and severity of vehicular accidents, strikes, sickness, quarantine, natural disasters, wildlife behaviour and movements and other forces beyond the control of Earthwatch Institute and its associates.



2. Intellectual Property Rights (IPR)

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 during the research portion of your expedition become the intellectual property of the Principal Investigator (PI). Co-opting or plagiarizing data, images or information gathered during an expedition for use in a scientific thesis, masters or Ph.D. work, for profit, or for the academic or business use of a third party without the permission of the PI is strictly prohibited. Please be aware that data gathered during interviews of local people becomes the intellectual property of the PI. Principal Investigators have the right to place additional restrictions on your ability to share data or images.

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

3. Sexuality, Sexual Behaviour, and Drug and Alcohol Policies

EW does not discriminate on the basis of race, religion, ethnicity, sex, gender identity, or sexual orientation, and respects Participants' right to privacy. However, Participants must be aware that sexual behaviour and/or open displays of their sexual orientation and/or gender identity *may* offend or clash with the sensibilities of local residents in an expedition's area of operations, and may even potentially violate local laws.

Further, Participants must remember that their actions have impacts on fellow Participants, on the PI and the research team, and on local partners, and could, in certain contexts, result in an uncomfortable, hostile and/or unproductive work environment.

To ensure enjoyable and productive work conditions and smooth relations with local peoples, EW has defined the following code of conduct. Beyond practicing cultural sensitivity and showing common courtesy, please be mindful of the following limitations.

Fraternization

PIs, Earthwatch staff, research staff, their colleagues, and their associates are prohibited from becoming romantically or sexually involved with Participants during the entire duration of the period that the team is in the field.

Sexual Harassment

Sexual harassment of Participants by the PI, research staff, or EW staff is prohibited. Likewise, sexual harassment of the PI, research staff, fellow Participants, EW staff, or local peoples by Participants is also prohibited.

Sexual harassment infringes on an individual's right to an environment free from unsolicited and unwelcome sexual overtones or 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 EW expedition teams; such conduct is prohibited. Lewd or vulgar remarks, suggestive comments, displaying derogatory posters, cartoons or drawings, pressure for dates or sexual favours 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 your fellow Participants, the local population, EW staff members, or the PI.

Any individual who feels subject to sexual harassment or has any knowledge of such behaviour should report it at once to his or her PI or to EW staff members. All PIs and Field Team Leaders (FTLs) will notify EW immediately when an accusation of sexual harassment or abuse is made or when such behaviour is 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 removed from his or her expedition.

Drugs

The manufacture, possession, use, purchase and/or sale of illegal drugs as defined by Australia, Japan, the United Kingdom, the United States *and* the host country of the expedition, is strictly forbidden while working or participating on an EW expedition. Prescription drugs may only be purchased and used by the individual indicated on the prescription, in keeping with the intended-use guidelines and local laws in the area of the expedition.

Alcohol Policy

Participants in EW 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, restrictions on the use, possession, sale, or purchase of alcohol may be set by the PI or Earthwatch staff. 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.

Local statutes, customs, practices, ordinances, and regulations with regard to the use, possession, sale, or purchase of alcohol are applicable to all participants in EW expeditions.

Note: Any and all 16-20 year old Participants on Earthwatch Teen Teams or Family Teams are NOT permitted to consume or possess alcohol, regardless of local law.

Excessive consumption of alcohol by staff or participants is not acceptable on any Earthwatch expedition. 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.

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

4. Recreational Time

Earthwatch has a duty of care for the health and safety of Participants from the rendezvous to the end of the expedition. For days when no research activities are scheduled, referred to as recreational days, Earthwatch 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 the 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, 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 determine the relative safety of Participants leaving the project site on their own at night after work hours. In some cases, due to local conditions, it may be advisable to restrict Participants to the project accommodations after dark. This will be clearly communicated in all project materials and reinforced in the on-site safety briefing. However, if the local conditions are such that Participants can go out at night under their own responsibility there will be a sign-out process through which participants will state their proposed destination and estimated return time. Participants will be given 24 hour contact information for field staff should assistance be needed. The sign-out is informational only and will not be used to enforce a curfew on Participants. Participants should understand that unless contacted for help, field staff will not start a search for a missing Participant unless they fail to appear the following morning or for the next scheduled research activity.



5. In the Event of an Emergency: Good Samaritan Actions

In the event of emergencies, judgments must be made by PIs, EWI staff, and Participants. While EW makes an effort to ensure that qualified people make the most informed decisions possible, occasionally first aid must be administered and other immediate steps taken by expedition participants who are not officially certified to make these decisions.

Each EW expedition has safety protocols and emergency procedures in place. However, in rare, unforeseeable emergency situations, EW does not restrict participants (the PI, staff, and Participants) from exercising their best judgment with regard to their own safety. EW does not restrict "Good Samaritan" actions, or actions taken to assist fellow participants during emergency situations in the field. However, EW neither encourages nor expects you to jeopardize your own safety or that of others in attempting to rescue or assist your fellow team members.

6. 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 direct supervision by project staff. These circumstances are predetermined 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.

Participants who have driven themselves to the project may choose to use their own vehicle during recreational time, but project staff must brief them on the driving restrictions and advise Participants that all driving during recreational time is done at their own risk.

Participants are actively discouraged from driving other Participants during recreational time. Riding in another Participant's vehicle is done at the Participants' own risk. Riding in other Participants' vehicles is not covered under the Participants' insurance policy for the expedition.

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

7. Right of Refusal

EW reserves the right to refuse an applicant's participation on EW projects. Earthwatch and the project staff may not refuse a Participant for discriminatory reasons (race, religion, sex, sexual orientation, etc.). Earthwatch will make every reasonable effort to accommodate participants with disabilities and the organization endeavours to find appropriate expeditions for those participants who have physical limitations. Refusal of a participant is an unusual event and is generally due to either an applicant's failure to meet the health requirements of a particular expedition, or in the interest of team efficiency.

Project and field staff 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 project schedules, safety, research objectives or general performance of the team.



8. Removal from the Expedition

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. By signing the “Liability Release” form, participants are indicating that they have read and understand these policies. Removal of a Participant from a team is at the discretion of the PI and EW staff. In addition, EW will support the right of the scientist to send Participants away from a project once in the field should their behaviour compromise the safety, research objectives or general performance of the team, or if the Participant has violated a stated policy.

9. Responsible Behaviour

Cultural and Community Interactions

Earthwatch is committed to working closely with communities. Participants and project staff are encouraged to engage and interact with local communities wherever possible. Our aim is to support projects which leave a lasting legacy with local communities and which form partnerships with local organizations.

Being culturally sensitive is important when visiting a foreign country. Patience, good humour, an acceptance of differences, using common sense, and showing respect will help visitors enjoy cultural differences and make them part of a rich experience wherever they travel. Participants are often guests of the country and as such are obliged to consider the culture of the local people and minimize disturbance to their daily routine. Racism and other forms of prejudice will not be tolerated on any Earthwatch project. After consultation with Earthwatch staff, Participants who display racist or other discriminatory behavior will be asked to leave the expedition.

Earthwatch stresses the need for responsible behavior and common courtesy when travelling, particularly in rural areas. When in doubt about what may cause offense when working in areas you are not familiar with, be sure to ask your PI or Earthwatch field staff. Try wherever possible to learn and respect the local customs and appropriate dress codes before you join the team as being involved with the local community is one of the rare privileges of joining an Earthwatch project. Be aware of the natural curiosity that your presence will create and be mindful not to impose your own cultural beliefs or value systems on the people you meet and the places you visit.

Particular sensitivity is required when it comes to photography and gifts. Earthwatch expeditions feature many authentic encounters with local communities and the opportunities for photography or video are endless, but it is important to always ask permission before taking photos. Many local people find being photographed or videotaped intrusive or even threatening, so always ask your PI or field staff if it would be appropriate. When it comes to gifts, please ask the advice of the PI or field staff as to the type and value of the gift in order to avoid any embarrassment or the creation of unrealistic expectations within the community.

Sustainable Field Practices

As an environmental organisation, Earthwatch recognizes our leadership role in conducting activities as responsible stewards of the social and physical environment and using our resources to promote social and environmental awareness, local action, and global thinking.

Every attempt should be made to minimize your impact on the environment you are working in. Please avoid leaving any litter or non-natural waste. Be aware of the risks of fires and follow directions of the field staff when it comes to camping in order to avoid creating a larger impact than is necessary. Be particularly mindful of using any rivers, streams or wells as the local communities may be dependent on those as vital sources of drinking water. When in doubt ask the field staff.

Financial Terms & Conditions

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Some terms and conditions may apply only to volunteers signing up through the US office; please contact your regional Earthwatch office in Australia, Japan, the UK, or the US with any questions.



PROJECT COST

The price of each project, which we call your contribution, for each team may vary according to team dates so please check prior to making your reservation. On average projects range from \$700 to \$4,500, excluding airfares (see below).

Through a unique method of funding, 100 percent of your contribution is used to support research and exploration sponsored by Earthwatch Institute. By balancing costs across our program, we are able to assist research that would not be self-supporting. Depending on the size and needs of your team, roughly 50 percent goes to field costs: 34 percent to advance planning, reconnaissance, team recruitment, and logistical support; and 16 percent is used for administrative backup, communications, and post-expedition follow-up.

COSTS NOT INCLUDED

The main additional costs will be your transportation expenses to and from the rendezvous site, as listed in the expedition guide. This means that airfares are not covered in the contribution. Additional costs may include passports, visas, airport taxes, and the costs of any side trips made during time off from the project. Some projects have additional in-country travel costs to reach the project site. Ask your Expedition Coordinator if this is relevant to your project.

TRANSFER, CANCELLATION & REFUND POLICY

You may transfer from one expedition to another without penalty up to 120 days before your expedition begins, after which time our cancellation policy applies.

If you cancel more than 120 days prior to your expedition's start date, Earthwatch will apply the \$300 initial deposit either toward another expedition of your choice or to an Expedition Fund.

Cancellation between 60-119 days of the expedition start date will result in 50% of your total contribution being retained by Earthwatch. You then have the option to refund the remainder, transfer it to another expedition, or apply it towards your Expedition Fund.

Earthwatch memberships are non-refundable as they are considered a charitable gift. Additional donations made beyond the minimum contribution are also non-refundable and are considered a charitable gift to Earthwatch Institute.

METHOD OF PAYMENT

To hold a space on a team, you must submit a non-refundable \$300 deposit with your reservation (full contribution is required if booking under 90 days before your team fields). The remainder will be solicited through monthly statements or is payable at any time directly through your Expedition Coordinator. You can pay major credit card (Visa, MasterCard, American Express) or certain securities.

PAYMENT POLICY

Sign up one hundred twenty (120) days or more prior to team departure: A minimum \$300 deposit is required to reserve a place on a project. The balance of payment is due one hundred twenty (120) days prior to team departure.

Sign up between sixty (60) and one hundred nineteen (119) days prior to team departure: Full contribution required to reserve a place on a project.

Sign up less than fifty-nine (59) days prior to team departure: Full payment is required to reserve a place on a project. As funds must be sent directly to the project at this stage, the contribution is non-refundable unless due to Principal Investigator or Earthwatch Institute (EW) refusal (see *Earthwatch Institute Policies-document D*). Trip cancellation insurance is recommended. You are advised to check flight availability prior to payment.

Cancellation within 59 days of the expedition start date will result in 100% of your contribution being retained by Earthwatch. Under no circumstances is a refund available to those who cancel within 59 days of their start date. Trip cancellation insurance is available at an additional cost and is strongly recommended.

Note: Any funds retained due to late cancellation are utilized to support expedition field research and will be considered a charitable gift to Earthwatch Institute.

EXPEDITION PACKING CHECKLIST

Essential 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 inoculation (if necessary)

Required Items

Clothing/Footwear for Fieldwork

Note: While working in Elkhorn Slough, your hat and clothing (aside from your wetsuit) must be **plain and earth-toned** and not brightly colored or marked with large labels/logos.

- Wetsuit (3-5 millimeters) and booties (surf suits are ideal, though dive suits will suffice; see the *Packing Considerations* section for advice)
- Be sure to bring your Earthwatch t-shirt and remember to wear it, as appropriate, throughout your expedition
- Medium-weight windbreaker
- Rain suit (jacket and pants)
- Sweatshirt, fleece jacket and/or sweater
- Lightweight, long-sleeved shirts
- T-shirts
- Durable working pants (khakis and denims are preferred)
- Shorts (please avoid bringing very short shorts/Speedos)
- Socks (preferably not cotton)
- Durable field shoes/boots that can get wet if you don't want to wear your booties for the open water work (rubber boots, such as Xtra Tuffs brand, are highly recommended; you may use your wetsuit booties, but your feet may get cold)
- Earth-toned baseball cap with visor
- Warm hat for chilly mornings

Clothing/Footwear for Leisure

- Set of casual clothing to keep clean for recreational time, travel before and after the expedition, etc.
- Sneakers, walking shoes and/or sandals

Field Supplies

- Drybag or plastic sealable bags (good for protecting equipment such as camera from dust, humidity, and water)
- Insect repellent spray
- Water bottle(s)
- Sunglasses, preferably polarized
- Small daypack/rucksack
- Sunscreen with SPF 30 or higher
- Chapstick or lip balm
- Notebook and pencil
- Camera, film/digital memory, extra batteries, etc. (a long lens of at least 200X is recommended)

Bedding and Bathing

- Bedding and towels will be provided

Personal Supplies

- Personal toiletries (biodegradable soaps and shampoos are encouraged)
- Antibacterial wipes or lotion (good for “washing” 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

Miscellaneous

- Spending money (see *Other Advice/Information* in the *Before You Leave* section.)
- Camera, film/memory card(s), extra camera battery (if you bring a digital camera, bring your interface cables for downloading) (A long lens of at least 200X is recommended)

Optional Items

- Flashlight or headlamp with extra batteries and extra bulb
- Blank CD or DVD for sharing digital photographs at the end of the expedition
- Travel guide
- Binoculars, if you already own a pair
- Hiking shoes if you would like to go hiking in your recreational time
- Sleeping bag if you might be interested in sleeping on the beach (this option may not be available)
- Calling card
- Earplugs for light sleepers
- Books, games, art supplies, etc. for leisure time

Before you leave...

- Did you read your ENTIRE Expedition Briefing?
- Have you paid the entire balance of your contribution for the project?
- Have you turned in all your forms to Earthwatch (see the *Volunteer Forms Overview* at the beginning of your Expedition Briefing)?
- Is your passport current and have you obtained a visa for your destination country (if necessary)?
- Have you had all the necessary vaccinations for your project site and obtained all necessary medications?
- Have you reconfirmed your airline ticket?
- Do you have enough cash and/or traveler's checks?
- Have you made a photocopy of your airline ticket and passport in the event they get lost or stolen?
- Did you pack your Earthwatch t-shirt?
- Did you pack some extra clothing in your carry-on bag in case your luggage is lost and takes a day or two to catch up with you?
- Did you pack all prescription medications and bring copies of the prescription?
- Did you pack extra eyeglasses/contact lenses?
- Did you pack a small personal first-aid kit? (e.g. bandages, antibacterial ointment, aspirin, anti-diarrhea medication, laxative, moleskin for blisters, sun block, etc.)
- Do you have everything on your packing list? *Remember to break in new footwear beforehand!
- Have you brought your level of fitness up to the standards required for your project as stated in the Project *Conditions* section?
- Did you pack your Expedition Briefing? Bring it with you! It has valuable information pertaining to the project, rendezvous, and contact information.
- Did you purchase a guidebook for your destination country?
- Have you purchased travel insurance or emergency evacuation insurance?
- Have you left the Earthwatch Emergency Hotline number (+1 978 461-0081) with a family member or friend? *This is for emergencies ONLY. An Earthwatch staff member is on-call 24 hours a day, seven days a week.