



## TAGGING THE TERRAPINS OF THE JERSEY SHORE

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# Expedition Briefing 2012

EVERYTHING YOU NEED TO KNOW BEFORE YOU GO



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# Timeline and Checklist

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

## Immediately

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

## At least 90 days prior to your expedition start date

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

- Earthwatch Participation Form for Adults, including Water-Based Projects section
- Travel Form

European volunteers can download forms on: [earthwatch.org/europe/volunteerforms](http://earthwatch.org/europe/volunteerforms)

US/North American volunteers can download forms at: [earthwatch.org/volunteerforms](http://earthwatch.org/volunteerforms)

Australian volunteers can download forms on: [earthwatch.org/australia/expeditions/volunteer\\_forms/](http://earthwatch.org/australia/expeditions/volunteer_forms/)

Japanese volunteers can download forms on: [earthwatch.jp/getinvolved/condition/formdownload-i.html](http://earthwatch.jp/getinvolved/condition/formdownload-i.html)

- Pay any outstanding balance on the minimum contribution for your expedition.
- Book travel arrangements (see the *Rendezvous* section for details).
- If you plan to purchase additional travel insurance, note that some policies require purchase when your expedition is booked (see the *Insurance* section for more information).
- If traveling internationally, make sure your passport is current and obtain a visa for your destination country, if necessary (see the *Passports and Visas* section for more details).
- Make sure you have all the necessary vaccinations for your project site (see the *Health Information* section).
- Purchase a guide book for your destination country.
- Bring your level of fitness up to the standards required (see the *Project Conditions* section).

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

- Review the packing list to make sure you have all the clothing and any special equipment needed.
- Obtain any necessary prescription medications that will be needed for your travels.

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

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

**Note:** If you have signed up for an expedition within 90 days of the start date, you must return your fully completed volunteer forms as soon as possible.

# Tagging the Terrapins of the Jersey Shore

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# General Information

<b>Project title</b>	Tagging the Terrapins of the Jersey Shore
<b>Earthwatch scientists</b>	<b>Dr. Harold W. Avery</b> , Associate Professor, Drexel University, Philadelphia <b>Dr. Walter F. Bien</b> , Director of the Office of Pinelands Research, Drexel University, Philadelphia <b>Dr. Edward A. Standora</b> , Professor, Buffalo State College, State University of New York <b>Dr. James R. Spotila</b> , Betz Chair Professor of Environmental Science, Drexel University, Philadelphia <b>Dr. John P. Wnek</b> , Senior Instructor, Marine Academy of Technology and Environmental Science (MATES) School, Manahawkin, New Jersey
<b>Expedition Dates</b>	<b>Team 1:</b> June 10–18, 2012 <b>Team 2:</b> June 24–July 2, 2012 (Teen Team) <b>Team 3:</b> July 8–16, 2012 (Teen Team) <b>Team 4:</b> July 22–30, 2012 (Teen Team) <b>Team 5:</b> August 5–13, 2012 <b>Team 6:</b> August 19–27, 2012
<b>Expedition length:</b> 9 days	<b>Minimum age of participation:</b> 18 years*
<b>Team size max:</b> 12 participants	

**\*Note:** Teams 2, 3, and 4 are reserved for participants from 15 to 18 years of age. (18-year-olds may only participate if they have just finished their last year of high school.) Volunteers on this team will receive a separate Expedition Briefing. It may also be possible for 16- and 17-year-olds to participate on standard teams if accompanied by a parent or guardian. Contact Earthwatch for more information and see *Volunteers Under 18 Years of Age* in the *Passports and Visas* section for traveling advice for minors.

# Emergency Contacts

## Emergency contact number at Earthwatch headquarters in the US:

**+1 (978) 461-0081**

**+1 (800) 776-0188** **Note:** The 800-number works as a toll free call *only* for calls placed within the US.

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

## Medical and Security Assistance Helpline Numbers (For assistance while in the field)

When calling any of the helplines, please mention Earthwatch and policy reference number 560020011200.

CEGA Emergency Medical & Travel Assistance:

**+44 (0)20 3059 8770**

You may call this number collect or reverse charges if necessary in a medical emergency.

Henderson Risk Security Assistance and Advice:

**+44 (0)20 3059 8772**

[axisenquiries@hendersonrisk.com](mailto:axisenquiries@hendersonrisk.com)



Dear Earthwatcher,

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

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

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Ed Wilson". The signature is fluid and cursive, with a large loop at the end.

Ed Wilson  
President and CEO



Dear Earthwatch Volunteer,

Welcome to the *Tagging the Terrapins of the Jersey Shore* expedition! On behalf of the other Earthwatch scientists (Drs. Walter Bien, Ed Standora, Jim Spotila, and John Wnek), Ph.D. students, and myself, I thank you for choosing to participate in our research project on the diamondback terrapin. Estuaries are fascinating ecosystems where freshwater meets the sea, and where land meets the water in very complex and interesting ways. Barnegat Bay Estuary is an extremely rich ecosystem for birds, fish, invertebrates, and other wildlife. You will soon discover how the diamondback terrapin (*Malaclemys terrapin*), a medium-sized estuarine turtle, transgresses the aquatic and terrestrial habitats of the estuary during its life-cycle to survive and reproduce.

Once harvested for its meat, the diamondback terrapin is a survivor of the many changes that have occurred since colonial times in coastal estuaries along the East Coast of the United States. How have dredging and the deposition of dredge sediments, alteration of submerged aquatic vegetation, and development of land along estuarine margins affected the diamondback terrapin? What is the population trend of terrapins in Barnegat Bay? Are current conservation and management practices adequate to ensure the survival of this estuarine inhabitant and the rich biota that share the estuary? Your assistance on this research expedition will help answer these and many other fundamental questions about terrapins and other species inhabiting Barnegat Bay Estuary, and the research findings will be applied to the management and conservation of other estuarine ecosystems in North America and the world.

I am sometimes asked, "Why have an Earthwatch expedition in New Jersey?" People who ask this don't know southern New Jersey. Recently designated as a Marine Conservation Zone, Barnegat Bay has some of the last remaining salt marsh ecosystems in the entire mid-Atlantic coast of the United States. You will be staying at the Lighthouse Center for Natural Resource Education, a 180-acre reserve closed to public access and located on the margins of Barnegat Bay adjacent to one such salt marsh. Barnegat Bay is a place of contrasts: it is situated adjacent to one of the most popular shore destinations in the country, Long Beach Island, and one of the least developed and biologically unique terrestrial ecosystems of the northeastern United States, the New Jersey Pine Barrens. The New Jersey Pine Barrens is a protected Biosphere Reserve designated by the United Nations Educational, Scientific, and Cultural Organization (UNESCO), and covers nearly one-quarter of the state of New Jersey. In fact, the Pine Barrens is the largest existing natural ecosystem in the mid-Atlantic seaboard between Boston, Massachusetts and Richmond, Virginia. You will have a chance to explore this fascinating ecosystem on a canoe trip on your day off. For adventurers and foreign travelers who enjoy cities, Barnegat Bay is reasonably near Philadelphia, where our founding forefathers wrote the Declaration of Independence; New York City, where world-class museums and attractions abound; Baltimore, home of the US National Aquarium; and Washington, DC, the capitol of the United States. These cities are close enough to enjoy on your own before or after the expedition. Knowing these things about southern New Jersey, I ask, "Why *hasn't* there been an Earthwatch expedition in southern New Jersey before?"

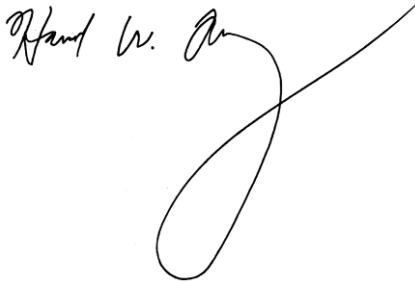
On this expedition, you will work with a dynamic research team on a scientifically relevant and diverse research study. You will assist with the core study, a long-term population study of the diamondback terrapin, as well as on projects being conducted by talented undergraduate and Ph.D. students. These students are conducting their

research using the diamondback terrapin as their model, in the fields of population ecology, behavioral ecology, population genetics, and reproductive ecology.

You will also share in a truly enriching cultural experience of United States history, and discover one of our nation's less accessible areas for endemic animals and plants. You will experience the backwaters and wooded rivers of the Pine Barrens that once had bustling towns and are now overgrown with forest; course down tributaries that were used during Revolutionary War times to smuggle supplies and products such as cannonballs past the British to George Washington, who was encamped at Valley Forge, Pennsylvania; discover a little-known cedar bog ecosystem with dappled light and sphagnum moss, where you will see rare and endangered carnivorous plants, other rare plants, and animals; and experience the unique music, culture, and folklore of an American culture known as "The Pineys," who inhabit the surrounding Pinelands of New Jersey where you will stay.

Again, thank you for your interest and participation in the *Tagging the Terrapins of the Jersey Shore* expedition. We look forward to meeting you and sharing nine days of adventure, fun, discovery, and most of all, scientific research!

Sincerely Yours,

A handwritten signature in black ink, appearing to read "Harold W. Avery". The signature is fluid and cursive, with a large loop at the end.

**Harold W. Avery, Ph.D.**, *Associate Professor*  
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# The Research

## Tagging the Terrapins of the Jersey Shore

You are about to embark on an extraordinary adventure of discovery and learning. Whether you are traveling by canoe, motorboat, or simply walking and wading its shallows and margins, you will soon be discovering the plants and animals that constitute one of the most productive and species-rich ecosystems in the world, the Barnegat Bay estuarine ecosystem. The Barnegat Bay Estuary, while rich in human culture and biodiversity, is also an important ecosystem to the life cycle of many marine species in the North Atlantic Ocean, from plankton to marine mammals. Recently designated as a Marine Conservation Zone (MCZ), the first such designation in New Jersey, Barnegat Bay has some of the last salt marsh ecosystems left in the mid-Atlantic coast of the United States. Ironically, the estuary is located near one of the fastest developing areas of the United States (Ocean County, New Jersey), as well as one of the most undeveloped and unique terrestrial ecosystems in the eastern United States (the New Jersey Pine Barrens). The Pine Barrens is designated as a Biosphere Reserve by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Biosphere Reserve System. The reserve spans over one million acres across 22% of New Jersey, making it the largest existing natural ecosystem in the mid-Atlantic seaboard between Boston, Massachusetts and Richmond, Virginia. The fast growth of human development and population size along the New Jersey coast makes Barnegat Bay very susceptible to anthropogenic changes. Studies of animal populations in the region provide the opportunity to understand how human impacts affect communities of wildlife and provide insights to how environmental changes affect the entire marine ecosystem. Well-designed studies also serve as models to develop solutions to common conservation issues occurring in other parts of the United States and the world.

The long-term goal of this research project is to determine the population status and viability of the diamondback terrapin in relation to natural and anthropogenic changes in Barnegat Bay. To achieve this goal, we study the reproductive ecology and habitat use of individual turtles in relation to environmental changes to the estuary. This project will provide the scientific information necessary to better manage the Barnegat Bay Estuary ecosystem and will serve as a model for the conservation and management of other marine estuary ecosystems here in the United States and throughout the world.

The diamondback terrapin is a medium-sized turtle (less than 24 centimeters in length) inhabiting estuaries and salt marshes along the Atlantic and Gulf coasts of the United States. Terrapins inhabiting Barnegat Bay forage in marshes and nest in less-disturbed bay beaches, non-submerged marsh areas, and on artificial islands made from the products of dredging, called “dredge islands.” The diamondback terrapin is not only an important species of marine wildlife and component of a fragile ecosystem, but also functions as a model organism requiring aquatic and terrestrial areas to complete its life cycle. The terrapin is therefore a good indicator of habitat degradation. Previous research on this unique estuarine turtle has allowed us to estimate population size, determine genetic diversity, gene flow and dispersal rates, hatching success rates on both dredge spoils and natural soils, and determine levels of PCB, DDT, and PDBE contamination in adults and hatchlings.

You, as an Earthwatch volunteer, will assist in our daily field research activities and will have the opportunity to work with Earthwatch scientists, graduate students, undergraduate students, and interns. You will mend, set, and check nets for terrapins, and will then measure the turtles and photograph them to record injuries and important phenotypic characteristics. You will also assist graduate student Abby Dominy in quantifying the color and patterns of terrapins to determine whether females choose males of certain colorations or patterns for mating. You will also assist in helping to measure eggs and planting them in artificial nests at our onsite hatchery (June – July), recording predation, flooding, nest temperatures, and other pertinent data. You will help survey nesting beaches for nesting female terrapins. Finally, you will assist in determining the hatching success of nests, and will

assist in the marking, photographing, and releasing of hatchlings from both natural nests and nests protected in our project hatchery (August).

Your efforts and the data you collect will contribute to the publication of scientific articles, as well as policy changes to Barnegat Bay, and species protection for the terrapin. Wildlife managers in the State of New Jersey need basic information on the population dynamics of the diamondback terrapin to increase the protection of the terrapin. Data from this project will be used to augment the protection of the terrapin as well as protection of disappearing salt marsh habitat that is requisite for the long-term survival of the diamondback and countless other estuarine community species.

### **Research Area**

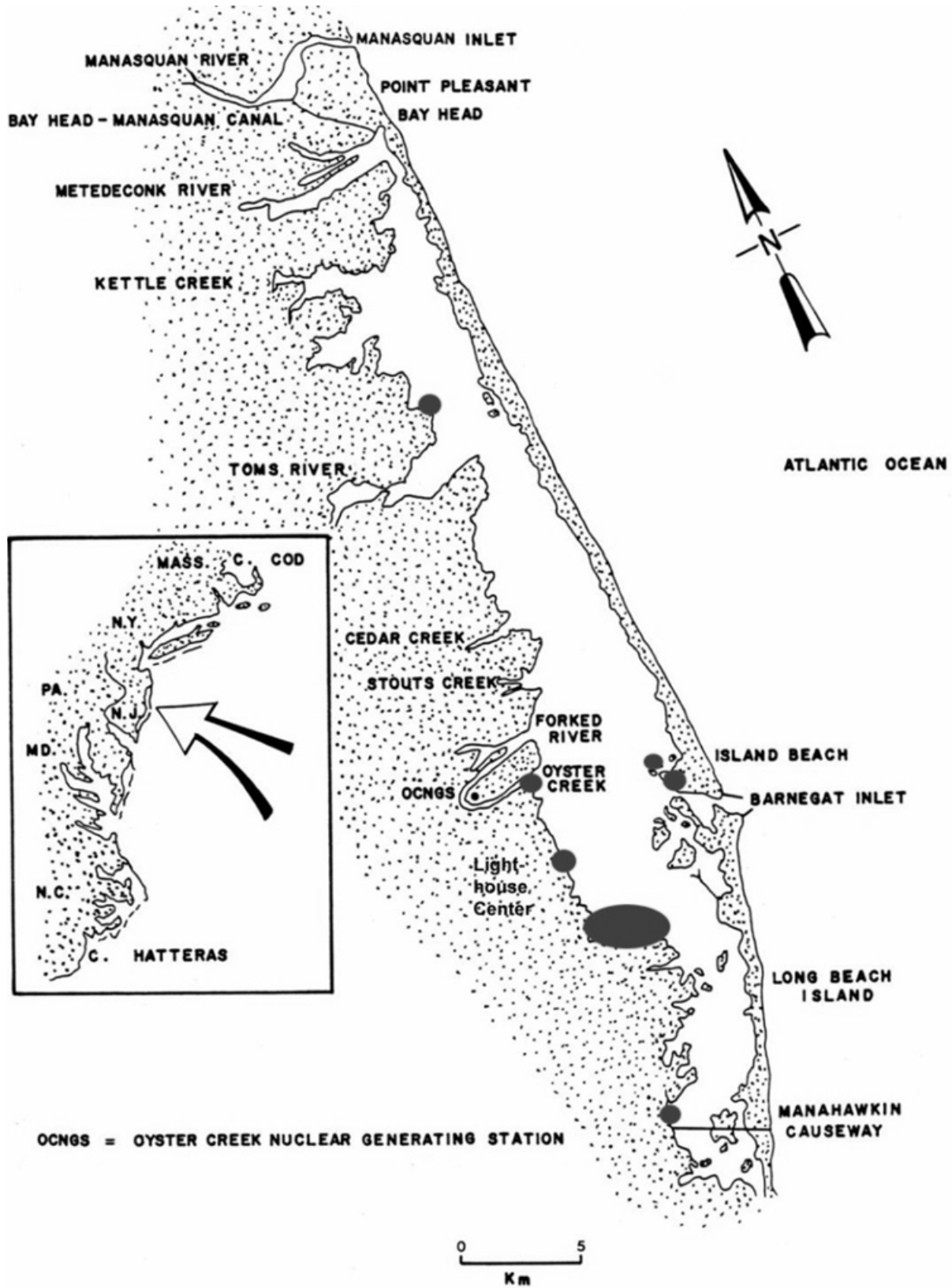
The main study sites are indicated on the map below. These sites include the marsh systems of the Lighthouse Center (the project's base of operations), the Sedge Island Wildlife Management area, and areas within the Edwin Forsythe National Wildlife Refuge. Other sites studied in the past are also delineated. All of these sites are located within the Barnegat Bay Estuary. The Barnegat Bay area is mostly at sea level with areas of maritime forest adjacent to the bay. The Pine Barrens is farther inland and is approximately 100 feet above sea level. The weather is typically sunny, warm, and humid during the day (see the *Project Conditions* section).

Ocean County, New Jersey, is characterized by a rich history greatly influenced by the resources of Barnegat Bay. During the late 18<sup>th</sup> and 19<sup>th</sup> centuries, cannonballs and other iron products, charcoal, and glass were produced using local resources and industry. The commercial growth and harvest of cranberries and blueberries was also an important contributor to the regional economy. The area was then, and continues to be, a melting pot of cultures and ethnicities. Today, tourism is a very important industry and people are still moving to the area, attracted by the bay and its beauty. The Barnegat Bay area is approximately a one and a half hour drive from Philadelphia and two hours from New York City. The research station is in Waretown, New Jersey, which hosts an interesting array of people. The town is home to the Albert Music Hall, a locally famous gathering spot for local musicians every Saturday night.

### **Research Achievements**

This study will provide critical information on the nesting ecology and habitat requirements of northern diamondback terrapins in Barnegat Bay Estuary. The Barnegat Bay Watershed covers 660 square miles and has an associated human population of over 500,000 in southern New Jersey (BBEP 2001). It is important to determine how the human population and its associated environmental impacts have affected, and continue to affect, populations of terrapins in Barnegat Bay. Our research will be of direct importance to developing effective conservation plans and public policies in New Jersey's first Marine Conservation Zone.

Two great challenges face conservation biologists and population ecologists: first, determining the causes of death of individuals from a population, and second, accurately measuring the rates of mortality and survivorship for all ages or size classes of the population. Survivorship and mortality data are critically important for determining whether or not the population is declining and heading toward extinction. By capturing terrapins, and marking and recapturing individuals over time, we will collect data on the causes of mortality and determine death rates of individual terrapins in Barnegat Bay. We will also make accurate estimates of birth rates by monitoring nests and hatchling survivorship. For the first time in 2012, we will be setting up remote cameras on nest beaches and monitoring predation of nests. By combining data on death rates and birth rates, we will construct predictive models on the population dynamics of diamondback terrapins. Such models will be used to interpret the potential impacts of human disturbance in other estuaries and coastal marine ecosystems in the United States.



# PROJECT STAFF

## Earthwatch scientists

**Dr. Harold W. Avery** is an associate professor and the director of the Barnegat Bay Research Program in the Department of Biology at Drexel University, Philadelphia. He is an experienced Earthwatch scientist and is currently also an Earthwatch scientist on the *Costa Rica's Sea Turtles* expedition, and was also the principal investigator for the *Mojave Desert Tortoise* Earthwatch expedition in California in 2003-2004. Dr. Avery has been studying turtles for over 30 years and has published many scientific articles on turtles. Dr. Avery's research specialties include population ecology, nutritional ecology, physiological ecology, and conservation biology. His current and past research projects include conservation and population ecology of turtles and tortoises. He and his students are currently studying the population ecology of reptiles in Pennsylvania and New Jersey. He has worked at the University of Georgia's Savannah River Ecology Laboratory in South Carolina, and the University of Michigan, and has spent 12 years as a research biologist with the federal government in the Department of the Interior. He received his B.S. and M.S. degrees in biology from State University College at Buffalo, New York, and his Ph.D. in biology from the University of California, Los Angeles in 1998. Dr. Avery has published many scientific and technical papers on the biology of the desert tortoise and freshwater turtles, and is recognized as the world's expert on the effects of livestock grazing on tortoises. He is also an avid amateur astronomer, rock hound, collector of fluorescent minerals, member of the American Fern Society, and collector of rare vinyl records, among many other interests.

**Dr. James R. Spotila** is the Betz Chair Professor of environmental science at Drexel University in Philadelphia. He has over 110 reviewed scientific publications in professional journals in the areas of physiological ecology, population ecology, environmental policy, and conservation. He is an Earthwatch scientist on the *Costa Rica's Sea Turtles* expedition, and his former student, Dr. Alison Leslie, was the lead Earthwatch scientist on the former *Crocodiles of the Zambezi* expedition. Dr. Spotila has a B.S. in biology from the University of Dayton, and a Ph.D. (1970) from the University of Arkansas in vertebrate zoology. He has been a professor for 37 years at both the State University College at Buffalo and Drexel University. From 1998 to 2000, he was chief environmental scientist for the U.S. Department of the Army in the Clinton Administration. Dr. Spotila is an avid fisherman, fossil hunter, and amateur military historian. He grew up in Cleveland, Ohio, and is married with two children. His book, *Sea Turtles: A Complete Guide to Their Biology, Behavior, and Conservation*, has won three national awards, including Best Biology Book of 2005.

**Dr. Walter F. Bien** is director of the Office of Pinelands Research at Drexel University. He is considered an authority on the ecology of the New Jersey Pine Barrens, where he currently conducts field research on plant community ecology, herpetology, ornithology, and fire ecology. Other research interests include paleoecology, marine ecology, and restoration ecology. Dr. Bien teaches graduate and undergraduate courses in marine biology, terrestrial ecology, tropical ecology, and field botany. He was an Earthwatch scientist on the *Costa Rica's Sea Turtles* expedition (1998-2005) and Co-principal investigator on a red-bellied turtle population study at the Philadelphia airport (2004-2006). Before coming to Drexel University, Dr. Bien was a public educator for 31 years, and taught environmental education courses to teachers at the kindergarten through 12<sup>th</sup>-grade levels. He serves on several education-related boards associated with science education initiatives and is an ardent bird watcher, fisherman, and naturalist. He has published several scientific papers, the most recent on the spatial ecology of the timber rattlesnake on the Warren Grove Gunnery Range in the Pinelands of New Jersey.

**Dr. Edward A. Standora** is a professor in the Biology Department at Buffalo State College, State University of New York, in Buffalo. He is a former Earthwatch scientist on the *Costa Rica's Sea Turtles* Earthwatch expedition. He received his B.S. in biology from Fairleigh Dickinson University, his M.A. in biology from California State University at Long Beach, and his Ph.D. in zoology/ecology at the University of Georgia. He is a recipient of the

State University of New York Research Foundation Award, and the SUNY Chancellor's Award for Research and Scholarship. His area of expertise is in developing and using telemetry systems and microclimatological instrumentation to examine the biophysical and physiological ecology of aquatic vertebrates. He is one of the pioneers in the field of biotelemetry, designing and constructing multichannel systems for monitoring shark behavior off the California coast in the late 1960s. He has used telemetry to monitor alligators, fish, freshwater turtles, and four species of sea turtles. In addition to his sea turtle work in Costa Rica, he has worked with Kemp's Ridley turtles in Long Island Sound and loggerhead turtles in Florida. Dr. Standora and his students are presently studying the thermal ecology and home ranges of spotted turtles for the New York Department of Environmental Conservation. His wife, Susan, who often joins in the field research, is a middle school science teacher and avid conservationist who writes grants and conducts fundraisers for endangered species. Dr. Standora grew up in New Jersey, and enjoys canoeing, snorkeling, and body surfing. He has spent many summers in, on, and around Barnegat Bay.

**Dr. John P. Wnek** is a senior instructor and educator at the Marine Academy of Technology and Environmental Science (MATES) School in Manahawkin, New Jersey. Studying under Dr. Avery, he earned his Ph.D. at Drexel University in 2010 on the diamondback terrapin of Barnegat Bay. His dissertation, entitled "Anthropogenic Impacts on the Reproductive Ecology of the Diamondback Terrapin, *Malaclemys terrapin*," was critically important in showing the impacts of dredge material on the hatching success and survivorship of young terrapins from nests in anthropogenically modified substrate common in Barnegat Bay. John is a native of New Jersey and spent his youth at Barnegat Bay. His knowledge of the animals inhabiting Barnegat Bay is extensive, and his knowledge of teaching at the high school level, with lesson plans based on the diamondback terrapin, brings a dynamic wealth of knowledge to students, teachers, and volunteers involved in the expedition.

## Earthwatch field staff

**Abby Dominy** is a third-year Ph.D. candidate in Drexel University's environmental science program. Ms. Dominy graduated from Drexel in 2008 with a bachelor's degree in environmental science and biology (and an English minor). Ms. Dominy was first introduced to turtle research in 2005 when Dr. Avery conducted a study on the impacts of wetland fragmentation on the state-threatened red-bellied turtle. In 2007, Ms. Dominy participated in the SEA Semester Program, which integrates hands-on crewing on a traditional sailing vessel with oceanographic techniques. She also completed a project on the distribution of myctophid fish species on the C-209 cruise track. In the summer of 2007, Ms. Dominy worked on another red-bellied turtle project at the John Heinz National Wildlife Refuge as well as the diamondback terrapin project in Barnegat Bay. In the winter of 2008, she participated in the Bioko Island Expedition (as part of the Bioko Biodiversity Protection Program), which surveys the declining primate and sea turtle populations on an island associated with Equatorial Guinea. From October 2008 to March 2009, Ms. Dominy was a research assistant for The Leatherback Trust in Costa Rica, working with the critically endangered leatherback sea turtle. In the summer of 2008, she came back to the terrapin project as a volunteer coordinator, and is looking forward to completing her Ph.D. field research this summer at Barnegat Bay. Her PhD research is on the visual ecology, sexual selection, and genetics of the diamondback terrapin of Barnegat Bay.

**Julianne Winters** is a fourth-year Ph.D. candidate in Drexel University's environmental science program, studying with Dr. Avery. While pursuing a B.S. in conservation biology (with a minor in dance) at Cedar Crest College, Ms. Winters presented a thesis project regarding the impact of overfishing on population dynamics of *Strombus gigas*, queen conch, at Turneffe Atoll, Belize. In addition to Belize, she has conducted field work in Costa Rica, Arizona, California, the Pennsylvania Poconos, and New Jersey. In the summer of 2007, Ms. Winters worked as a conservation and education intern at the Philadelphia Zoo, helping give diamondback terrapin hatchlings a head start. There, she also researched and suggested a marsh habitat management plan for the Mid-Atlantic Conservation Alliance of the Association of Zoos and Aquariums. Ms. Winters was also the recipient

of the J. Robert Halma Prize from Cedar Crest College's Department of Biological Sciences in 2008 for her academic work and community engagement reflecting ideals of scientific scholarship and stewardship of the environment. Although Ms. Winters has completed her field work for her Ph.D., she will be presenting her fascinating research findings and sharing her broad knowledge of terrapins during an evening presentation on the expedition.

### Staffing Schedule (Subject to Change)

Staff Member Present	Team 1	Team 2	Team 3 (Teen)	Team 4 (Teen)	Team 5	Team 6
Dr. Harold Avery	x	x	x	x		x
Dr. James Spotila	x (part)	x (part)	x (part)	x (part)	x (part)	x (part)
Dr. Walter Bien	x (part)	x (part)	x (part)	x (part)	x (part)	x (part)
Dr. Edward Standora	x		x	x		x
Dr. John Wnek	x	x	x	x	x	x
Abby Dominy	x	x	x	x	x	x
Julianne Winters	x	x	x	x	x	x

# Daily Life in the Field

## VOLUNTEER TRAINING AND ASSIGNMENTS

### Training

Fieldwork and actual data collection will begin on the first full day, at a pace appropriate for beginning researchers. Volunteers will work in small research groups of two or three, with each group being supervised by a staff member. Supervising biologists are trained to brief volunteers on assignments on a daily basis and as the research progresses. Staff will assess the comprehension of volunteers by asking questions, observing and supervising work closely, and checking the data volunteers record and the measurements volunteers make. The approach at Drexel University is to “learn by doing,” and staff members are encouraged to give constant feedback to provide positive reinforcement as you gain skill in the project.

- Volunteers will be integrated into the research team and will carry out most project activities under staff supervision. In addition to safety training and an orientation to the research area, staff will train you in all specific skills needed for this research; however, the following are helpful for participation: a high-school-level education in math, science, reading, and writing; the ability to record data accurately; and an interest in working with animals.
- Safety of the volunteers is one of our top concerns, and a very important goal of any expedition is to bring everyone back from the field alive and well. Also of great concern is the safety and care of the turtles. Safety training will be emphasized on the first two days of the expedition. This includes safety at the Lighthouse Center and on boats, the proper use of field equipment, and training in capturing and handling turtles. Because many types of boats will be used during both fieldwork and leisure, a boat safety manual will also be available onsite. Before going into the field, staff will check the clothing and supplies you'll bring to reduce potential problems.
- On the first day in the field, the Earthwatch scientist(s) will give an orientation lecture and will lead volunteers on a tour of the field site. Key information regarding tick- and mosquito-bite prevention and care will be stressed. Volunteers will be trained in protocols for handling terrapins, taking measurements of terrapins, and gaining general identification of potentially injurious plants (e.g. poison ivy), animals (e.g. sea nettles), and weather conditions (e.g. thunderstorms) that pose potential safety risks. On the second day, there will be continued training in the use of field equipment, including GPS (Global Positioning System) units; meters for measuring salinity and temperature of bay water; meters for measuring air temperature and wind speed; and communication radio. Staff will provide detailed instruction to ensure that the volunteers fully understand the research protocols and data collection.
- Volunteers will be given introductory training and supervision to take standardized photographs of terrapins and to make morphometric measurements.
- Volunteers will be trained on how to induce egg-laying and care for eggs in the on-site hatchery.

The Earthwatch scientists will give the team a more detailed onsite project briefing when you arrive.

## Assignments

Data on home range and movements will be collected throughout the study using GPS units, and you will be trained to use these units to record locations of terrapins. You will also help monitor weather conditions, salinity, water temperature, and other field measurements, and will collect and record data, handle terrapins under staff supervision, and assist in completing health assessments of terrapins.

Assignments will vary somewhat according to the season. During late spring and early summer, volunteers will work in smaller teams to locate nesting female terrapins, and will assist project staff with setting and checking traps, marking and tagging terrapins, taking and recording measurements of body size and weight for each captured terrapin, and marking nests and installing nest protection devices. Also, each volunteer will be trained in assisting Abby in her measurements of pigmentation coloration and patterns of terrapins. In mid to late summer, volunteers will continue to trap terrapins as well as assist with measurements of each captured terrapin. You will also assist in obtaining data on the thermal and soil characteristics of nests. During late summer, volunteers will assist with nest monitoring and determination of hatchling success. You will assist in marking and releasing hatchlings that emerge from nests.

The most strenuous aspect of this expedition is wading in water (with waders supplied on site) to check terrapin traps. Volunteers can do more or less of an activity depending on personal preference and capability. There are always other very important things to do that are less strenuous but crucial to the population ecology research of terrapins, such as recording data; measuring environmental parameters like salinity, water temperature, etc.; and turtle processing.

Volunteers will participate in the following activities:

### **Population Studies of the Terrapin. You will:**

- Load the boats with daily gear, including trapping equipment, data collection equipment, and safety equipment.
- Mend nets.
- Assist the boat operator in launching, navigating, and trailering the boat.
- Set, check, and take down traps in the water (less than 1 meter deep; we provide all volunteers with waders).
- Measure and record environmental conditions, such as salinity and temperature.
- Mark and tag terrapins, and record measurements of body size, weight, sex, age, and other important characteristics for each captured terrapin.
- Assist in x-radiography of gravid (egg-bearing) female terrapins.
- Assist in data entry.

### **Effects of Watercraft on Terrapins. You will:**

- Record and photograph any injured terrapin caught with a project camera. Volunteers will be trained on proper photographic techniques.

### **Effects of Shoreline Development and Global Climate Change on Terrapin Nesting. You will:**

- Assist in quantifying nesting success through participating in many nest site measurements: GPS location, weather, nest temperature, nest gasses, hatching success, etc.
- Take additional measurements to record the specific location of nests in relation to the high water line, the vegetation line, and other triangulations.
- Help collect data on predators at nesting beaches by setting up and maintaining remote cameras. As terrapin nesting activity ends around mid-July, teams that occur later in the field season will be involved in interpreting the images collected by earlier teams.

**Morphology and Genetics. You will:**

- Measure the dimensions of the terrapins, scrub algae off the carapace and plastron, and record camera settings during photographing. Terrapin blood samples will also be taken, and volunteers will assist by labeling blood collection cards.
- Assist staff members in collecting eggs from induced females, measuring the eggs, digging nest chambers in the hatchery, installing predator-exclusion devices around nests, and labeling nests. Volunteers will also assist in monitoring the hatchery for hatchling emergence and recording morphology, photographing, marking, and releasing hatchlings.
- Assist staff members in downloading temperature measurements taken by dataloggers in the field (e.g. water temperature, nesting beach temperature, emergent wetland temperature).

## TEAM ITINERARY AND DAILY SCHEDULE

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

### Day 1

Travel to Lighthouse Center. Orientation and tour of center. Settle into rooms. Introductions and presentation on research project and safety protocols by project staff.

### Day 2

Boat tour of Barnegat Bay and terrapin study sites on Drexel University's *Peter S. Kilham* research vessel. Walking tour of surrounding salt marsh and freshwater ecosystems to learn estuary fauna and flora. Field training on use of equipment for studying diamondback terrapins, learning field safety and research protocols such as PIT (passive integrated transponder) tagging, setting traps, etc. Collect data on first terrapin with staff supervision. Introduction and presentation of the research.

### Day 3

Field research on trapping, and processing of terrapins by small motorboat. Visit Sedge Island and its terrapin nesting areas. Dinner at the Lighthouse Center. Informal evening presentation on past and current research on terrapins, local species of Barnegat Bay, and other research studies of Ph.D. students.

**A typical research day will follow this schedule:**

Time	Activity
6:30 a.m.	Rise
7:00 a.m.	Breakfast
8:00 a.m.	Depart for the study site and begin fieldwork
12:00 noon	Lunch at the Lighthouse Center
1:30 p.m.	Continue fieldwork or participate in special afternoon activity
4:30 p.m.	Travel back to the accommodations, clean-up, and rest
6:00 p.m.	Dinner
7:00 p.m.	Evening program (e.g. project related presentations)
8:00 p.m.	Recreational time

## Day 4

Field research on trapping, and processing of terrapins. Tour of Jenkinson's Aquarium ([jenkinsons.com/aquarium](http://jenkinsons.com/aquarium)) at Point Pleasant (optional). Dinner out in Waretown.

## Day 5

Optional recreational day: volunteers will have the choice of conducting field research with staff or participating in a canoe trip down beautiful and historic Wading River in the heart of the Pine Barrens. This option includes a visit to an acid bog to see carnivorous and endangered plants and other incredible, and otherwise inaccessible wildlife and scenery. No additional fees are associated with any of the described recreational trips.

## Day 6

Field research on trapping, and processing of terrapins. Monitoring of nests and capturing of nesting female terrapins for PIT tagging and X-raying. Afternoon boat ride to track individual terrapins. Tales of the Pine Barrens with a program presented by Dr. Walter Bien or a visiting historian. Night-time astronomy at the Lighthouse Center with local astronomy club, The Astronomical Society of Toms River Area (ASTRA).

## Day 7

Morning fieldwork of trapping, and processing of terrapins. Option to continue afternoon fieldwork on terrapins, spend the afternoon processing turtles and returning them to their locations of capture. Optional evening concert at the famous Albert Music Hall ([alberthall.org](http://alberthall.org)) in Waretown to hear locally and nationally famous country, bluegrass, and folk music.

## Day 8

Field research on trapping, and processing of terrapins at the Lighthouse Center and Sedge Island system. Capture blue crabs on Barnegat Bay later in the afternoon, or participate in an afternoon boat ride to see the salt marsh. Participate in evening searches for nesting female terrapins and return terrapins to their locations of capture. Evening talk by Dr. James Spotila on Sea Turtles of the World.

## Day 9

Farewell breakfast/brunch in Waretown. Departure.

## Earthwatch Recreational Time Policy

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

- For days when no research activities are scheduled, referred to as recreational days, Earthwatch scientists will offer either a planned team activity or a range of recreational activities that have been vetted and comply with Earthwatch standards. Participants will also have the option of remaining at camp or project accommodations to rest.
- Participants who are determined to pursue options other than those recommended by the project staff will be required to sign a release before doing so. If there is a period of time during a regular research day when no research activities are scheduled, adult participants may have the opportunity to leave the project site on their own; they will be asked to sign out of the project giving their intended destination. Not appearing for the next scheduled activity will trigger the Emergency Response Plan (ERP) regarding missing people. Earthwatch will assess the general risks of adult participants leaving the project site on their own at night after work hours, but cannot guarantee participant safety or an awareness of all issues.
- In some cases, due to local conditions, it may be advisable to restrict adult participants to the project camp or accommodation after dark. This will be clearly communicated in the on-site safety briefing. However, if the local conditions are such that adult participants can go out at night under their own recognizance, there will be a sign-out process through which participants should state their proposed destination and estimated return time. Participants will be given twenty-four-hour contact information for project staff should assistance be needed. The sign-out is informational only and will not be used to enforce a curfew on adult participants. Adult participants should understand that unless contacted for help, project staff will not start a search for a missing participant unless he or she fails to appear the following morning or for the next scheduled research activity.

## Additional Policies

Participants who have driven themselves to the project may not drive their own vehicles for project activities, including the transport of project equipment. Participants may choose to use their own vehicles during recreational time, but be advised that all driving during recreational time is done at your own risk. You are actively discouraged from driving other participants during recreational time. Riding in another participant's vehicle is also done at your own risk. Riding in other participants' vehicles is not covered under the participants' insurance policy for the expedition.

# ACCOMMODATIONS

The project's base of operations will be the Lighthouse Center at Barnegat Bay, in Waretown, New Jersey. The Lighthouse Center is approximately 60 miles from New York City and Philadelphia. It is 45 minutes north of Atlantic City, New Jersey. Formerly the Lighthouse Center for the Blind, which ran a program at the current location from the mid-1920s through 1996, the property was sold and purchased through the Trust for Public Lands who, donated it to the New Jersey Department of Environmental Protection's Division of Fish and Wildlife in 2000. Today this facility provides excellent accommodations for Earthwatch volunteers as well as field assistants and scientists.

## Sleeping

Bedroom accommodations are in an area of the main building known as the West Wing. The West Wing has central air-conditioning which provides comfort during the hotter times of year. Each room will accommodate one to two volunteers, depending on the size of the team. All rooms have sufficient space for two people, with two twin beds and two dressers as well as a window that is usually kept shut for air-conditioning. Rooms and bathrooms are shared and are single gender. Couples accommodations may be arranged with prior notification, and a limited number of private rooms are available to small teams at no additional cost; please let Earthwatch know if you are interested in either option. The field staff and onsite Earthwatch scientist(s) also stay in the West Wing and will be on site during the entire expedition.

## Bathrooms

Bathrooms with hot water, showers, and flush toilets are located between bedrooms, and are accessed through each bedroom. (Up to 4 people will share a bathroom.) There is a separate sink area with counter, mirror, etc. from the toilet and shower room.

Laundry facilities are available, and washings will be scheduled at specified times. Laundry is free, but to conserve water, clothing will be washed with staff assistance during the middle of the expedition with shared loads.

## Electricity

Electricity is supplied and reliable. Volunteers are encouraged to bring cameras, iPads and other small electronics. All plugs are standard grounded plugs using 120v. Plugs are in bedrooms, bathrooms (for electrical razors etc.), and throughout the West Wing.

## Internet and Communications

Wireless Internet is free and available for iPads and laptops. There is also a shared computer available for volunteer use. Please be aware that weather conditions and other failures may periodically make internet unavailable.

## Facilities and Amenities

Situated on 180 acres of undeveloped coastal habitat, the center offers beautiful views of Barnegat Bay, spectacular birding and nature-watching in its surrounding salt marshes and pine forests, and incomparable opportunities for hiking and sightseeing at some of the last remaining natural scenery of the New Jersey shore.

Despite its name, the center does not have a lighthouse on its property, but the famous Barnegat Lighthouse is located right across the bay and is visible from the Lighthouse Center shoreline.

The center features a marine laboratory, outdoor and indoor lounging areas, a dining hall, hiking and marked nature trails, and many other facilities available to Earthwatch volunteers.

## Distance to Field Site

The Lighthouse Center is actually one of the field sites for our expedition. We have over 50 marked terrapins that utilize the Lighthouse Center as part of their home range, and we often catch a dozen or more each year by just walking the road to the bay. The small boats we'll use for fieldwork are moored less than 2 miles away, and we'll ride to them in project vehicles.

## Services and Restaurants in Walking Distance

Services and restaurants are not within walking distance of the accommodations. Dr. Avery and his staff are available to give rides into Waretown, which is less than a mile away.

## House Rules

Note that the rules at the Lighthouse Center must be adhered to; if these rules are broken, the offending volunteer may be asked to leave the expedition at his/her own expense. The following regulations will be strictly enforced on the grounds of the Lighthouse Center:

- **No smoking**
- **No alcoholic beverages**
- **No drug use**

There will be opportunities for adult volunteers (ages 21 and older) to attend events in nearby Waretown, Point Pleasant, and elsewhere for social drinking.



*Volunteer bedroom at the Lighthouse Center*

# FOOD

Meals will typically be served at the dining hall of the Lighthouse Center, provided by Ms. Pat Augustine, an incredible chef and professional caterer who prepares all meals (breakfast, lunch, and dinner). Vegetarian meals may be arranged, but project staff must be informed of the need for such dishes at least two weeks before the start of the expedition. Please inform Earthwatch as soon as possible if you would like vegetarian meals. All meals are eaten together with staff and volunteers sharing a large dining hall.

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.

<b>Breakfast:</b>	Hot and cold breakfasts will be provided; will include (but not be limited to) bagels, muffins, eggs, toast, oatmeal, and cereals.
<b>Lunch:</b>	Sandwiches, casseroles, beverages, fruit, snack foods.
<b>Dinner:</b>	At the Lighthouse Center, meals are prepared from scratch and will include hot main dishes; beverages; sides such as potatoes, fries, and vegetables; and dessert. Typically, on one night volunteers will eat at a local restaurant.
<b>Snacks/Other:</b>	There will be snack items on hand, including fruit, cookies, potato chips, corn chips, and other local delicacies, such as blue crabs, and pies.
<b>Beverages:</b>	At breakfast, there will be coffee, tea, and juices. At lunch, water and other drinks such as ice tea or fruit juice will be available. At dinner, there will be iced and hot tea, coffee, and water.
<b>Water:</b>	The Lighthouse Center has a filter system and the water is potable. Water will be available at the center and in the field. You can fill your personal bottle at any time.

## Special Dietary Requirements

Please alert Earthwatch to any special dietary requirements (e.g. diabetes, lactose intolerance, nut or other serious food allergies) as soon as possible, and note them in the space provided on your volunteer forms. Accommodating special diets is not guaranteed and can be very difficult due to availability of food, location of field sites, and other local conditions.

**Special note to vegans:** Please be aware that it is often difficult to accommodate vegans. If this is an issue, please carefully consider participation in this expedition.

# Travel Planning

You are encouraged to register your travel itinerary with your embassy. For information on embassies around the world, see [embassyworld.com](http://embassyworld.com).

- Citizens of Australia may register online at: [orao.dfat.gov.au](http://orao.dfat.gov.au).
- British citizens may register online at: [fco.gov.uk/en/travel-and-living-abroad/staying-safe](http://fco.gov.uk/en/travel-and-living-abroad/staying-safe).
- Citizens of the United States may register online at: [travelregistration.state.gov](http://travelregistration.state.gov).
- Citizens of other countries are encouraged to check with their appropriate embassy or consulate regarding registration.

## RENDEZVOUS

The rendezvous and departure information for this project has been removed from this web version of the expedition briefing. It is only available in the printed version of the briefing. Please do not make any travel arrangements to join an expedition without having full and up-to-date travel information from Earthwatch. Full rendezvous details, including places and times are available from Earthwatch upon request prior to registration for an expedition. Please use the “Contact Us” button on the top right-hand corner of the website to get in touch with an Earthwatch representative, who will be very happy to help you.

## PASSPORTS AND VISAS

### Visa Information

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

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

### Passport Information

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

### Electronic System for Travel Authorization (ESTA)

Online registration is now mandatory for all visitors traveling to the United States without a visa. The Electronic System for Travel Authorization (ESTA) is used to screen short-term visitors who are citizens of the 36 countries eligible for the US Visa Waiver Program (for a list of participating countries, see [travel.state.gov/visa/temp/without/without\\_1990.html](http://travel.state.gov/visa/temp/without/without_1990.html)).

Visitors are required to complete ESTA **at least three days before traveling to the US**. Once approved, the authorization will be valid for up to two years if the individual's passport does not expire in the meantime. Applications can be submitted through the ESTA website, [esta.cbp.dhs.gov/esta](http://esta.cbp.dhs.gov/esta). **Note:** As of publication, ESTA costs approximately US\$14.00.

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

### For Volunteers Requiring Visas ONLY: Essential Information

<b>Type of Visa</b>	Volunteers requiring a visa must get a <b>TOURIST VISA</b> .
<b>Where to Get a Visa</b>	Contact the nearest <b>US embassy or consulate</b> to find out how to apply for your visa. Please note that this process can take weeks or more. We strongly recommend using a <b>visa agency</b> , which can both expedite and simplify the process. See below for a list of visa agencies.
<b>Required Information</b>	You will need to send your <b>passport</b> (valid for at least six months beyond your stay), a <b>Visa Application and Immigration Form</b> , <b>2-4 passport-size photos</b> , and <b>payment</b> to the embassy or visa agency (if applicable). Please be sure that your passport is valid for at least six months beyond your stay.
<b>Contact Information</b>	You may be required to list the following contact information on your Visa Application and Immigration Form:  Dr. Harold Avery 241 Montclair Rd. South, Barnegat, NJ 08005 +1 856-630-1708
<b>Cost of a Visa</b>	Generally between US\$40-100, but varies from country to country and can potentially cost <b>up to US\$180</b> . A visa agency will charge an additional fee.

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

### Visa Agencies

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

## Volunteers Under 18 Years of Age

### Entry to Foreign Countries

It may be possible for 16- and 17-year-olds to participate on standard Earthwatch teams *if* accompanied by a parent or guardian. However, in an effort to prevent international child abduction, many governments have initiated procedures at entry/exit points to protect minors. Thus, if a 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.

### Airline Documentation Requirements

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 or on a flight. There is nothing Earthwatch Institute can do to help in this circumstance.

### Additional Passport and Visa Resources

- For Japanese citizens: [rainbowt.jp/travel/visa\\_top.html](http://rainbowt.jp/travel/visa_top.html)
- For Australian citizens: [passports.gov.au](http://passports.gov.au) and [dfat.gov.au/visas/index.html](http://dfat.gov.au/visas/index.html)
- For US citizens: [passportvisasexpress.com](http://passportvisasexpress.com)
- Travel Document Systems: [traveldocs.com/index.htm](http://traveldocs.com/index.htm)

## INSURANCE

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

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

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

### **If you signed up through Earthwatch UK/Europe, or Earthwatch Japan:**

Details of the included insurance policy can be found at [earthwatch.org/europe/insuranceinfo](http://earthwatch.org/europe/insuranceinfo).

Please refer any queries regarding this policy to Earthwatch's Operations department at +1 978 450 1232 or [insurance@earthwatch.org](mailto:insurance@earthwatch.org).

You can find information about additional insurance available to UK residents for coverage before or after your Earthwatch project at [earthwatch.org/europe/insuranceinfo](http://earthwatch.org/europe/insuranceinfo). Should you have any questions about whether you require coverage for your travel plans, please review the policy summary and the FAQs at the website above.

### **If you signed up through Earthwatch US:**

Details of the US insurance policy can be found at [earthwatch.org/insurance](http://earthwatch.org/insurance).

Please refer any queries regarding this policy to Earthwatch's Operations department at +1 978 450 1232 or [insurance@earthwatch.org](mailto:insurance@earthwatch.org).

You can find information about additional insurance available for coverage before or after your Earthwatch project at [earthwatch.org/insurance](http://earthwatch.org/insurance). Should you have any questions about whether you require coverage for your travel plans, please review the policy summary and the FAQs at the website above.

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

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

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

## **ADDITIONAL TRAVEL INFORMATION**

### **Luggage**

- *General considerations:* Do not bring more luggage than you can carry and handle on your own. If traveling by air and checking your luggage, you are advised to pack an extra set of field clothing and personal essentials in your carry-on bag in case your luggage is lost and/or takes several days to catch up with you. Many airlines have strict baggage policies. Please check with your airline(s) on baggage weight limits, liquid restrictions, fees for checked baggage, etc.
- *Checking luggage:* Please note that if you will be taking an international flight that has one or more connections within the country of your destination, it will be necessary to collect any checked bags at the airport where you first arrive in the destination country. After proceeding through customs, you will have to recheck your luggage before flying on to your final destination.

### **Money Matters**

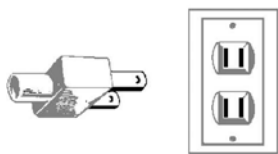
- *Local currency:* US Dollar only. See [xe.com/ucc](http://xe.com/ucc) for currency information and exchange rates.
- *Personal funds:* You may want to bring money for the optional recreational day/evening trips, souvenirs, and other activities not covered in the program. A minimum of US\$200 is recommended. Most local businesses

accept credit cards, and there are many ATMs in the area (including at the rendezvous location), so it is strongly recommended that volunteers bring credit cards and ATM cards. However, New Jersey State Parks do NOT accept credit cards and there is no place to get cash once inside. Therefore, you should also bring some cash for visiting state parks. Money can be exchanged at many local banks; however, this may be easier to do at Philadelphia International Airport than locally. There will be an opportunity for exchange at the start of the expedition, and it is important that project staff members know the type of currency to be traded so they can notify the bank to make provisions. **Please notify Earthwatch at least two weeks in advance if you will need to exchange foreign currency.**

- *Additional information:* Tipping is expected for restaurant waiters and taxis. Dress is casual but shirt and shoes are required for entering businesses and for casual dress around the Lighthouse Center.

## Your Destination

- *Language:* English.
- *Electricity:* 110 volts AC, 50 hertz. Plugs are standard US two flat parallel prongs or two flat parallel prongs and one cylindrical grounding prong. For additional information, see [kropla.com/electric2.htm](http://kropla.com/electric2.htm).



Plug Type A



Plug Type B

- *Time zone:* GMT/UTC -5 Eastern Standard Time. For time worldwide with GMT/UTC, see [worldtimeserver.com](http://worldtimeserver.com).
- *Telephone Dialing codes:* When calling the US from another country, dial the country's international dialing code, followed by (00) and the number. When calling within the US, omit the (00) and dial 1+ number. When calling another country from the US, dial (00), followed by the other country's country code and the number. **PLEASE NOTE:** you should check with your cell phone provider to obtain any carrier-specific dialing codes you may need; many providers have dialing procedures that may differ in whole or in part from these directions. For additional information, see [kropla.com/dialcode.htm](http://kropla.com/dialcode.htm).

## Country Information

- UK Foreign and Commonwealth Office: [fco.gov.uk/en/travel-and-living-abroad/](http://fco.gov.uk/en/travel-and-living-abroad/)
- Country information from around the world: [countryreports.org](http://countryreports.org)
- National Geographic Map Machine: [plasma.nationalgeographic.com/mapmachine](http://plasma.nationalgeographic.com/mapmachine)
- US State Department: [state.gov](http://state.gov)
- Online unit conversions: [onlineconversion.com](http://onlineconversion.com)
- Worldwide weather: [wunderground.com](http://wunderground.com) or [tutiempo.net/en](http://tutiempo.net/en)
- ATM locator: [visa.via.infonow.net/locator/global/](http://visa.via.infonow.net/locator/global/) or [mastercard.com/atmlocator/index.jsp](http://mastercard.com/atmlocator/index.jsp)

# RECOMMENDED READING

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

## Scientific media

### Books

#### Highly recommended:

- Brennessel, B. *Diamonds in the Marsh: A natural history of the Diamondback Terrapin*. University Press of New England, 2006.
- Mountford, K. *Closed Sea: From Manasquan to the Mullica, A History of Barnegat Bay*. New Jersey: Down the Shore Publishing, 2002.

#### Suggested for further reading:

- Nybakken, J.W. *Marine Biology: An Ecological Approach*. Fifth Edition. San Francisco, CA: Benjamin Cummings, 2001.
- Teal, J. and M. Teal. "Life and Death of a Salt Marsh." In *Atlantic Monthly Press Book*, pg. 278. Boston, MA: Little, Brown and Co., 1969.
- Garland, M.S. and J. Anderton (editors). *Watching Nature: A Mid-Atlantic Natural History*. Washington, DC: Smithsonian Books, 1997.
- Gosner, K.L. "Atlantic Seashore: Invertebrates and Seaweeds of the Atlantic Coast from Bay of Fundy to Cape Hatteras." *Roger Tory Peterson Field Guide*. Norwalk, CT: The Easton Press, Norwalk, CT, 1978.
- Burger, J. *A Naturalist along the Jersey Shore*. New Brunswick, NJ: Rutgers University Press, 1996.
- Hughes, K. *Barnegat: Life by the Bay*. Dover, NH: Arcadia Publishing, 1997.
- Mountford, K. *Closed Sea: From Manasquan to the Mullica A History of Barnegat Bay*. Harvey Cedars, NJ: Down the Shore Publishing, 2002.
- McPhee, J. *The Pine Barrens*. NY: Ballantine Books Inc., 1967.
- Forman, R.T.T. *Pine Barrens: Ecosystem and Landscape*. New Brunswick, NJ: Rutgers University Press, 1998

## Popular media

### Field guide:

- Perry, B. "The Middle Atlantic Coast: Cape Hatteras to Cape Cod." *A Sierra Club Naturalist's Guide*, pg. 470. San Francisco, CA: Sierra Club Books, 1985.

## Project-related websites

- [terrapinstationnj.blogspot.com/](http://terrapinstationnj.blogspot.com/)
- Barnegat Bay National Estuary Program: [bbep.org](http://bbep.org)
- Diamondback Terrapin Working Group: [DTWG.org](http://DTWG.org)
- Buffalo State Faculty Spotlight, Dr. Edward Standora: [buffalostate.edu/bulletin/acrosscampus.xml?aid=2207](http://buffalostate.edu/bulletin/acrosscampus.xml?aid=2207)

## Project Field Report

Each Earthwatch Institute-supported project submits a report on the past year's research and results to Earthwatch generally on an annual basis. The most recent field report for this project is available online at [earthwatch.org/FieldReportpdf/Avery\\_FieldReport2009.pdf](http://earthwatch.org/FieldReportpdf/Avery_FieldReport2009.pdf). **Note:** Reports are not available for all projects.

# HELPFUL RESOURCES

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

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

Volunteers who sign up through our US office, visit: [earthwatch.org/volunteerresources](http://earthwatch.org/volunteerresources)

Volunteers who sign up through our UK office, visit: [earthwatch.org/europe/volunteerresources](http://earthwatch.org/europe/volunteerresources)

# Project Conditions

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

## To the doctor:

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

## General Conditions

Summertime in the Barnegat Bay area is typically hot and humid, though weather conditions can be extremely variable from June to August. Temperatures can range from 50°F (10°C) in early June to nearly 100°F (38°C) in July and August. Intensity of sunlight is greatest during July through August. Rainfall during the summer months varies greatly with a chance of late afternoon or evening thunderstorms throughout the season. A southerly wind usually blows onshore by early afternoon, providing a cool breeze. At night, summer temperatures usually average in the high 70s°F (20s°C).

The terrain is generally flat, and may become saturated with water after rains. The salt marsh terrain and land bordering the bay are usually saturated with tidal water. Terrapin nest areas located on mainland beaches and islands may pose difficulty for walking, as they are typically composed of loose sand. Nest areas also have high exposure to heat and sun.

### Conditions are expected to vary within the limits below.

Mid-June–August	
<b>Humidity</b>	50% to 80%
<b>Temperature Range</b>	65–95°F / 18–35°C
<b>Altitude</b>	0–100ft / 0–30m
<b>Rainfall</b>	3.79–4.56 in/9.6–11.6 cm per month

The level of physical exertion required for daily fieldwork varies greatly from one activity to another. Each team member will rotate activities during the day to avoid overexertion or the feeling of repetitiveness. Assignments will be tailored to individual physical capabilities and aptitude. If a volunteer feels uncomfortable with some of the more strenuous activities, such as walking in marsh and nesting areas, and wading in chest-deep water wearing waders, it will be possible to participate in other tasks instead, such as checking nest areas within easy access of the boat, taking water salinity and temperature measurements, or air temperature and wind speed. Data sheets are also completed in the field, and terrapins need to be released that had been already captured and processed. Each team will be in communication with one another, and there will always be opportunities for volunteers to rest or rotate with another team member.

Field research will begin around 8:00 a.m. and end around noon. Fieldwork will generally last five or six hours per day, but will never exceed eight hours.

## Essential Eligibility Criteria

All participants must be able, independently or with the assistance of a companion, to:

- Follow verbal and or visual instructions.
- Wear all protective equipment recommended or required by industry standards.
- Tolerate up to 35°C (95°F) heat and high humidity levels.
- Enjoy being outdoors all day in all types of weather.
- Work aboard a small boat, at a distance of over 6 km (3.7 mi) from the Lighthouse Center for approx. 2-3 hours per day.
- Maintain a seated, upright position within boat during transit, which can sometimes be bumpy. Note that this can be uncomfortable for individuals with back problems.
- Carry personal daily supplies such as lunch, water, and some small field equipment, usually less than 4.5 kg (10 lbs).
- Get low enough to access and check traps on the ground, about 1 hour a day.

## Boat Conditions:

Boats used in terrapin research are motorized and outfitted with all equipment to access shallow waters where terrapins live and are trapped. These boats typically do not have overhead canopies, therefore terrapin hats (provided on first day) and sunglasses are advisable. There are no toilets on boats. Bathrooms are available prior to and after the boat ventures. If necessary, boats can return to the shore to allow volunteers to use a bathroom. At times, there may be windy conditions, which can cause bumpy rides. Very rough conditions are avoided by delaying or not going out on the water. Volunteers can wear waders (provided at the field site) to minimize getting wet from splashes.

## Water Conditions

The information provided is as accurate as possible, but please keep in mind that once in the field conditions may change. Water is generally shallow in Barnegat Bay. However, at times water can be choppy. Volunteers should expect to be sprayed with water at times during transit in power boats. Personal flotation devices, provided by the expedition, are to be worn at all times while in a moving power boat or wading with waders.

Typical water temperature during project	15°C/59°F	to	30°C/86°F
Typical water visibility	0.5 ft/0.15 m	to	6 ft/1.83 m
Typical maximum water depth (bottom depth) in area	0.5 ft/0.15 m	to	15 ft/4.57 m
Types of water environment	bay, salt marsh		
Anticipated sea state during project	0.5 ft/0.15 m	to	2.5 ft/0.76 m
Timing of boat-based work	Between 8 a.m. and 1 p.m. on typical day.		

## POTENTIAL HAZARDS

Hazard Type	Associated Risks and Precautions
Transportation	Volunteers will be transported to and from the research sites in project vans. Seatbelts must be worn at all times when vehicle is moving.
Walking/Hiking/ Climbing	Walking and wading in soft mud and sand can be difficult and tiring, especially on hot days. Be sure to take rest breaks when needed to avoid overexertion. Using waders, boots, and long pants is important in the field in certain areas. Waders must be worn when wading, as there may be rocks, glass, or other sharp objects that could cause injury. Also, rubber-soled, close-toed shoes (e.g. sneakers, tennis shoes, or runners) are required while on the boat to prevent slipping and while on land to protect against rough terrain. Avoid walking through unfamiliar vegetation.
Working on a Boat	All volunteers must remain seated, but not on the sides of the boat, while a boat trip is underway. Personal floatation devices (PFDs) must be worn on the boat at all times. PFDs must also be worn at all times while canoeing. Volunteers should be comfortable in and around water, and be able to comfortably climb in and out of small boats.
Terrapins	Injury, as well as bacterial infections can result from terrapin bites. Training and taking simple precautions are necessary before handling. Staff will supervise and instruct participants on proper handling techniques. All boats and vehicles have first aid kits for treating such minor injuries.
Insects	Mosquitoes, green flies, and other small biting insects are abundant in the area. Participants who may react badly to mosquito bites are advised to bring medication such as ibuprofen or Benadryl. Deer ticks, known to carry Lyme disease, and spotted ticks, which can cause ehrlichiosis, are also present. All volunteers must protect against mosquitoes and ticks by using repellent (supplied on site), wearing neutral-colored long sleeves and pants, and securing clothes to prevent insects from reaching the skin (tucking pant legs into socks). Remember to check yourself regularly and thoroughly for ticks. Ticks can be removed at the Lighthouse Center. Bees are present as well, so if you are allergic remember to bring appropriate medication (e.g. at least two EpiPens, antihistamines).
Snakes	No venomous snakes have been seen at the Lighthouse Center. During our trip to the Pine Barrens, it is possible to see timber rattlesnakes. Always be aware of where you are stepping.
Poison Ivy	Poison ivy is a native plant that can cause rashes and allergic reactions. All volunteers will be trained to identify poison ivy. In case of contact, topical treatments will be available.
Lyme Disease	Note that Lyme disease (carried by deer ticks) has been documented at the Lighthouse Center and study areas where volunteers will be working. Spotted ticks in the area can also cause ehrlichiosis, a bacterial disease (for more information, see <a href="http://cdc.gov">cdc.gov</a> ). Remember to use repellent, wear neutral-colored long sleeves and pants, tuck pants into socks while working in the field, and check yourself for ticks regularly and thoroughly.
Climate/Weather	Temperatures can exceed 90°F (32°C) during the summer, and heat exhaustion and sunburn are common hazards. High-factor sunscreen, sunglasses, appropriate clothing, and a brimmed hat are musts, and volunteers must drink plenty of fluids to avoid dehydration. Thunderstorms are also weather-related hazards. At early signs of a storm (e.g. build-up of clouds and distant thunder), everyone will return to an assigned meeting area deemed safe from lightning strikes. Being prepared with rain gear is very important.

Project Tasks/ Equipment	Use of turtle traps, collection of terrapins, and handling of equipment all pose risks if not done correctly. Traps must be set well to prevent injury to terrapins. Incorrectly pulling traps and equipment off the boat may cause back injury. Project staff will instruct participants on proper equipment usage. Other marine organisms (e.g. crabs, fish, and eels) besides terrapins may be captured in turtle traps. They can bite, pinch, and/or stab with their fins, and must be removed carefully using proper handling gloves, as instructed by staff.
Personal Security	At the center, individual bedrooms cannot be locked, but the entire wing is lockable when no one is present. There will be up to three other volunteers sharing your bathroom and it is your responsibility to secure all items of value. The Lighthouse Center is not currently scheduled to host any other overnight groups besides Earthwatch this season, but will have some daytime visitors.
Swimming	Be aware that swimming may be an optional activity on the recreation day, and typical water-related risks (i.e. strong current, jellyfish, etc.) will be present. Swimming is undertaken at your own risk.
Traveler's diarrhea	Traveler's diarrhea affects 20-50% of all international travelers. Always wash your hands with soap and water or a hand sanitizer before eating, and drink filtered or bottled water. You should also carry an over-the-counter anti-diarrheal medication in your personal first aid kit. Speak to your doctor about other options for treating traveler's diarrhea and see the CDC website for advice on avoiding this condition.

## HEALTH INFORMATION

### Routine Immunizations

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

### Project Vaccinations

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

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

### Advice Regarding Diseases

- *Lyme disease* is a concern for those working outdoors in New Jersey. Spread by tick bites, Lyme disease is caused by a bacterium and causes fever, achiness, skin rash, and other symptoms if left untreated. Simple spraying with insect repellent and remaining on trails is usually enough to prevent getting tick bites. Volunteers are instructed on the first day of the expedition on how to treat a tick bite to reduce risks of contracting Lyme disease.

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

### Additional Health Information Resources

- Travel health website: [mdtravelhealth.com](http://mdtravelhealth.com)
- The Travel Doctor: [tmvc.com.au](http://tmvc.com.au)
- Australian Department of Health and Aging: [health.gov.au](http://health.gov.au)
- Hospital for Tropical Diseases: [thehtd.org](http://thehtd.org)
- Traveller's Healthline Advisory Service Tel: (020) 7950-7799
- MASTA Travelers' Healthline (UK) Tel: (0906) 8-224100 (within the UK)

## EMERGENCIES IN THE FIELD

Medical treatment and attention is readily available to volunteers. The Lighthouse Center has basic first aid supplies available for 24-hour use. Ms. Pola Galie, the Lighthouse Center manager, is on site and trained in providing first aid. Project staff will also carry basic first aid kits in automobiles and boats during the expedition, and will use these kits to treat minor injuries in the field. The local first aid station in Waretown, New Jersey (tel: +1-609-693-4007) is aware of the Earthwatch program and will be notified of expedition dates prior to the start of each expedition. In the event of a medical emergency, the station will be called. If the emergency is on the water, the New Jersey Marine Police will be notified using a VHF radio or cell phone. In all cases, there will be an immediate first aid response, and transportation will be available to get the injured volunteer to medical facilities on land.

For major injuries, volunteers will be brought to the local hospital, Southern Ocean Hospital, either by project vehicle or by local ambulance. In life-threatening situations, staff will call 911, and injured volunteers will be transported to a hospital that provides the best possible treatment for the injury type. For example, major head trauma would require emergency evacuation by helicopter to Jersey Shore Medical Hospital in Monmouth County, New Jersey. In all cases, the study areas are within a few miles of the mainland and within close proximity to good transportation routes.

<b>Proximity to Medical Care</b>	
Physician, nurse or EMT on staff	Project staff members are not medical professionals.
Staff certified in safety training	CPR (Cardiopulmonary Resuscitation): Jim Spotila, Hal Avery, John Wnek, Julianne Winters, Abigail Dominy. First Aid: Pola Galie, caretaker of Lighthouse Center
Nearest hospital and/or clinic	Southern Ocean Hospital 1140 Route 72 West Manahawkin, New Jersey 08050 Tel: +1 609-597-6011
Distance	15 to 20 minutes from the Lighthouse Center

# COMMUNICATIONS

## Emergency Communications in the Field

Dr. Avery's cell phone (+1 856-630-1708), or Abby Dominy's cell phone (+1 267-243-8805), will be available in the field in the event of an emergency. Cellular reception is strong at Barnegat Bay, as the study sites are all within a few miles of the well inhabited mainland. All boats have VHF radios for communication. Other field staff members also carry cell phones and VHF radios for communication.

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

## Personal Communications

The area has cell phone reception, and volunteers who bring their cell phones can use them. Non-essential personal communications should be limited to times when not involved in project tasks or activities.

Landline telephones and fax machines are not available at the Lighthouse Center for volunteer use. Internet is generally available 24 hours per day, but is subject to occasional outages. Post office mail and Federal Express services are available in Waretown, New Jersey. Volunteers intending to call home (especially outside the US) should bring their own cell phones with chargers, or ask a staff member for a ride to the nearest pay phone in Waretown. Volunteers who wish to use a pay phone are advised to purchase a phone card that provides service throughout the United States and overseas prior to the expedition. Volunteers are asked to be considerate of the researchers, staff, and other team members, and restrict personal communications to times when not involved in project tasks or activities.

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

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

## Contact Information

This information is available in the print version of the briefing only.

# Earthwatch Institute Policies & Participant Rights and Responsibilities

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

## **Intellectual Property Rights**

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

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

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

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

## **Discrimination**

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

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

## **Intimate relationships**

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

## **Sexual Harassment**

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

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

Sexual harassment infringes on an individual's right to an environment free from unsolicited and unwelcome sexual overtones of conduct either verbal or physical. Sexual harassment does not mean occasional compliments of a socially acceptable nature.

Sexual harassment refers to conduct that is offensive, harms morale, or interferes with the effectiveness of Earthwatch expedition teams; such conduct is prohibited. Lewd or vulgar remarks, suggestive comments, displaying derogatory posters, cartoons, or drawings, pressure for dates or sexual favors, and unacceptable physical contact or exposure are examples of what can constitute harassment. No one should be touched in areas that otherwise would be covered by a bathing suit. It is important to realize that what may not be offensive to you may be offensive to participants, the local population, and Earthwatch field staff.

Any individual who feels subjected to sexual harassment or has any knowledge of such behavior should report it at once to his or her principal investigator or to Earthwatch staff members. All Earthwatch scientists and field team leaders will notify Earthwatch headquarters immediately when an incident of sexual harassment or abuse is witnessed, or an accusation of sexual harassment or abuse is made.

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

### **Drugs**

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

### **Alcohol**

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

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

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

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

### **Minors**

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

### **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 after arriving at the site.

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

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

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

### **In the Event of an Emergency**

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

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

### **Right of Refusal**

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

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

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

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

# Expedition Packing Checklist

## Required Items

- This Expedition Briefing
- Photocopies of your passport, flight itinerary and credit cards in case the originals are lost or stolen; the copies should be packed separately from the original documents
- Passport and/or visa (if necessary)
- Certification of vaccination (if necessary)
- Documentation for travel by minors (if necessary) (see *Volunteers Under 18 Years of Age* in the *Travel Planning* section)

### **Clothing/Footwear for Fieldwork**

**Note:** Waders will be provided by the project

- Be sure to bring your Earthwatch T-shirt and remember to wear it, as appropriate, throughout your expedition
- Lightweight, quick-drying long-sleeved and short-sleeved shirts
- Lightweight, quick-drying long pants/trousers (will get wet when wading). Note: Shorts are NOT PERMITTED in the field
- Closed-toed shoes or sneakers with rubber (non-slip) soles. Note: Sandals/open-toed shoes are NOT PERMITTED in the field.
- Well worn-in hiking shoes/boots or sneakers for walking on land
- Socks (long enough to tuck your pant legs into)
- Brimmed hat to protect against the sun (Each volunteer receives a brimmed cap with the expedition's terrapin logo on the first day).
- Tight-fitting hat for boat use
- Bandana for the field
- Rain jacket or poncho

### **Clothing/Footwear for Leisure**

- One set of clothing to keep clean for end of expedition and for trips into town during expedition
- Flip-flops or sandals that could be worn in the water or shower
- Swimsuit to be used at Ocean Beach or on Pine Barrens canoe trip
- Light jacket or sweatshirt
- Shorts
- Comfortable footwear
- Jeans

### **Field Supplies**

- Small daypack/rucksack
- Dry bag or plastic sealable bags (good for protecting equipment such as camera from dust, humidity, and water)
- Insect repellent spray
- Two one-liter water bottle(s)

## **Bedding and Bathing**

**Note:** All sheets, bed covers, pillowcases, pillows and bath towels will be provided by the project.

- Small wash cloth
- Beach towel

## **Personal Supplies**

- Personal toiletries (biodegradable soaps and shampoos are encouraged)
- Antibacterial wipes or lotion (good for cleaning hands while in the field)
- Personal first aid kit (e.g. anti-diarrhea pills, antibiotics, antiseptic, itch-relief, pain reliever, bandages, blister covers, etc.) and personal medications
- Sunscreen lotion with SPF 30 or higher
- Ointment for sunburn, preferably with aloe

## **Miscellaneous**

- Approximately US\$200 for spending money (there are ATMs available and credit cards are accepted by most businesses, but not at New Jersey State Parks)
- Camera, film/memory card(s), extra camera battery (if you bring a digital camera, bring your interface cables for downloading)
- Sunglasses (preferably polarized)

## **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
- Books, games, journal, art supplies, etc. for recreational/rest time and travel
- Calf-height rubber boots if you prefer to wear your own (boots are available onsite)
- Waders if you prefer to wear your own (waders will be provided as necessary)

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



## Our Mission

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

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

*We invite you to join us.*

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