HELPING ENDANGERED CORALS IN THE CAYMAN ISLANDS
PLANNING CHECKLIST

IMMEDIATELY
- Make sure you understand and agree to Earthwatch’s Terms and Conditions and the Participant Code of Conduct.
- If you plan to purchase additional travel insurance, note that some policies require purchase at the time your expedition is booked.

6 MONTHS PRIOR TO EXPEDITION
- Log in at earthwatch.org to complete your participant forms.
- If traveling internationally, make sure your passport is current and, if necessary, obtain a visa for your destination country.
- Bring your level of fitness up to the standards required (see the Project Conditions section).

90 DAYS PRIOR TO EXPEDITION
- Pay any outstanding balance for your expedition.
- Book travel arrangements (see the Travel Planning section for details).
- Make sure you have all the necessary vaccinations for your project site.

60 DAYS PRIOR TO EXPEDITION
- Review the packing list to make sure you have all the clothing, personal supplies, and equipment needed.

30 DAYS PRIOR TO EXPEDITION
- Leave the Earthwatch 24-hour helpline number with a parent, relative, or friend.
- Leave copies of your photo ID and flight reservation number with a parent, relative, or friend.

READ THIS EXPEDITION BRIEFING THOROUGHLY. It provides the most accurate information available at the time of your Earthwatch scientist’s project planning and will likely answer any questions you have about the project. However, please also keep in mind that research requires improvisation, and you may need to be flexible. Research plans evolve in response to new findings, as well as to unpredictable factors such as weather, equipment failure, and travel challenges. To enjoy your expedition to the fullest, remember to expect the unexpected, be tolerant of repetitive tasks, and try to find humor in difficult situations. If there are any major changes in the research plan or field logistics, Earthwatch will make every effort to keep you well informed before you go into the field.
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Welcome to the Helping Endangered Corals in the Cayman Islands expedition!

You may have heard that coral reefs around the world are threatened. Between 1999 and 2004, coral bleaching and coral diseases have caused the live stony coral cover to drop from 26% to between 15–17% on coral reefs surrounding Little Cayman. The good news is that unlike many other coral reefs, the reefs around Little Cayman experienced almost a full recovery within seven years, raising the question: What conditions led to such a significant coral cover response and recovery? How can we use this information to improve coral reef health overall? These are critical questions when taking into account that Little Cayman is home to the “Great Eight”; that is, eight Evolutionarily Distinct and Globally Endangered (EDGE) stony coral species including the once-dominant, but now International Union for the Conservation of Nature (IUCN) Red-Listed critically endangered, staghorn (Acropora cervicornis) and elkhorn (Acropora palmata) coral species.

The question of coral reef resilience is of particular importance each year following the high seawater temperatures that typically occur between July and October. Caribbean stony corals, including those in Little Cayman, bleach when ocean temperatures exceed 87°F for a prolonged period of time. Little Cayman coral reefs experience moderate-to-severe bleaching events when enduring these conditions, but our hope is that Little Cayman corals continue to show strong resiliency. Coral bleaching events can lead to high mortality among our stony coral population, which means that the structure integrity of the limestone reefs is taxed. However, not all corals perish after experiencing a coral bleaching event; Some species and individual coral colonies survive these stress events, producing resilient species which are genetically strong for the future of our coral reefs. Our Earthwatch volunteers can be part of this critically important time in modern coral reef ecology and localized geologic history!

Our Little Cayman Research Centre has several ongoing long-term research projects related to coral reef resilience and its relationship with reef biodiversity. Earthwatch volunteers can help on a broad suite of projects depending on seasonality, weather, and urgency:

- We monitor the health of wild stony corals on the reef and in the lagoons before, during, and after bleaching events to document resiliency among species. You can help us document which corals are resistant to bleaching, which are susceptible but are likely to recover, and which are unlikely to survive.

- We give reef recovery a “boost” by transplanting nursery-reared staghorn and elkhorn corals back onto the natural reef system, these are called “coral outplants”. We need to monitor these outplants for at least five years or until they start sexually reproducing and contributing to the reef’s genetic biodiversity on their own. We also need to track which reef creatures are the pioneers on these newly transplanted coral homesteads. You can help record coral survival, monitor health, and document growth as well as identify fish and invertebrate behaviors associated with the newly transplanted coral colonies or on naturally existing colonies in the wild.

- To understand recovery, we also have to understand those processes which impact recruitment of new corals on the reef that are needed to replace individual coral colonies which have died as a result of a bleaching or disease event. The biggest competitor is fast growing macro-algae, which quickly take up space on the reef, leaving limited room for juvenile corals to settle. Volunteers can help with surveys, which measure coral recruitment and algal competition.

- Corals have natural allies on the reef including sea urchins, parrotfish, and other herbivorous “grazers” of the competitive macro-algae. You can help scientists by assessing and recording sea urchin and fish population dynamics along with their associated behaviors and locations to map trends on the reef over time.

- You will also be asked to participate in beach clean-up efforts in order to promote positive environmental stewardship. The marine debris collected will be sorted and disposed of properly, with the possibility of samples being sent to a collaborating agency for analysis as part of a larger marine debris and ocean currents project.

NOTE FROM THE PI

DEAR EARTHWATCHER
The above projects are incredibly important to the future of coral reef health; however, they just scratch the surface of what we can do with your help. We need to learn everything we can about the Great Eight in order to protect them on the reefs surrounding Little Cayman, the Cayman Islands overall, and regionally within the Caribbean Sea. You can help us map the distribution of EDGE corals, which will tell us where they thrive naturally and which corals they prefer as nearest neighbors. Perhaps we will find natural refuges where corals can escape the high temperatures. Or maybe we will discover certain sites which house EDGE species in higher densities than others. Or perhaps we will learn new reef ecology lessons which have not been previously recorded. Together, these projects could lead to the discovery of why Little Cayman corals are capable of resilience and a positive trajectory, leading to discoveries of change to help the future of Caribbean coral reefs and reefs around the world.

We look forward to having you on our expedition!

Sincerely,

Dr. Carrie Manfrino
THE STORY

Global stressors such as climate change and ocean acidification are impacting coral reefs around the world, prompting debates about whether reefs will survive beyond 2050 (Knowlton and Jackson 2008; Pandolfi et al. 2011). Record-breaking El Niño years, such as 1998, resulted in warming parts of the ocean and destroying coral reefs around the world, including those in Little Cayman. However, unlike many other regions, the coral colonies surrounding this island have bounced back.

Scientists have yet to understand what made these reefs so resilient. Little Cayman’s unexpected coral recovery provides researchers with a unique opportunity to examine why some reefs recover from stressful events while others do not (Manfrino et al 2003; Coelho and Manfrino 2007; Manfrino et al. 2013).

By studying the secrets of this resilient reef, researchers will help to inform managers of best practices to assist in the protection of coral reefs elsewhere in the Caribbean and around the world. These strategies may even help to provide crucial habitat for fish, invertebrates and increase reef biodiversity (Lirman et al. 2010; Johnson et al. 2011; Keil et al. 2012).
RESEARCH AIMS
The Earthwatch volunteer research teams will help assess coral recovery and survival following a stressful short-term event such as a coral bleaching event or localized storm. Assessments will also be conducted in response to longer-term stressors such as ocean acidification and climate change. The expedition teams will work to improve our understanding of what makes a reef resilient, knowledge that will help researchers protect reefs both locally and elsewhere throughout the world.

The project will focus primarily on stony corals, particularly those Great Eight known as “EDGE” species—or Evolutionarily Distinct and Globally Endangered. Protecting these unique and endangered corals is a high priority for researchers and environmental policy makers. However, corals are not the only inhabitants on the reef and their survival is dependent upon both competitors and teammates. Expedition teams may also work on coral-related projects involving parrotfish, sea urchins, lionfish, sponges, or even algae.

The research project has the following primary objectives:

**1. STONY CORAL RECOVERY**—Monitor and survey coral reefs surrounding Little Cayman to fully document the extent of potentially recurring massive coral bleaching events.

**2. STONY CORAL MONITORING AND ASSESSMENT**: Nursery-reared staghorn and elkhorn corals are transplanted onto the natural reef with hopes to help regenerate the reefs and to assist in the creation of a suitable complex framework for reef inhabitants. These corals require monitoring and assessment post-transplant for the next 2-5 years dependent upon permit requirements.

**3. CORAL RECRUITMENT**: Study the processes impacting the recruitment of new corals including competition for space and resettlement of old dead, yet still standing coral skeletons.

**4. CASCADING IMPACTS**: Examine species interactions on the coral reef, which influence stony coral recovery, regeneration, and recruitment including organisms such as parrotfish, sea urchins, lionfish, sponges, and macro-algae.

**5. EDGE SPECIES RECONNAISSANCE**: Record the distribution and health of the Great Eight EDGE species around Little Cayman’s shallow reefs and lagoon ecosystems.

HOW YOU WILL HELP
As an Earthwatch volunteer, you will be involved in activities to help achieve several or all of CCMI’s scientific objectives. Depending on seasonality, weather, and urgency, you will be involved in a combination of the following (Note: it is highly unlikely that any given team will be involved in each of the following):

- Learn to identify the Great Eight-EDGE species of stony corals and other common species of coral, fish, invertebrates, and macro-algae.
- Conduct stony coral health assessment surveys while snorkeling to document bleaching events and potential resilience. Volunteers will record coral “vital signs” using color charts from the international organization “CoralWatch” and underwater photography.
- Construct new nursery structures to support nursery maintenance or expansion projects.
- Conduct shallow water quadrat surveys to determine coral recruitment and competitive species percent-cover.
- Conduct snorkel scout surveys to map the locations of EDGE corals and their nearest neighbors.
- Assist with weekly community beach clean-up effort and potentially investigate the contents of sediment samples from the beach.
Participants will receive training in basic stony coral identification, with an emphasis on EDGE species and the “Great Eight”. As a team, volunteers will be taught and practice data collection field techniques on snorkel in shallow water, where everyone can easily ask questions. Once the team is comfortable, we’ll conduct our research snorkels just alongside the backreef edge side-by-side. Volunteers will prepare materials, collect data, handle equipment, take in-water photographs and videos, and break down equipment. Expedition volunteers who are able to bring their own computers or tablets may also help with data entry, image analysis, and data analysis.

Teams will also learn about the Little Cayman coral nursery and restoration programme. To assist with this research programme, volunteers may be asked to build new structures for later deployment in the nursery. Provided workshops will train you to monitor the TLE (growth), health, and survival of outplanted or wild colonies.

All teams will get to interact with CCMI – Little Cayman Research Centre’s in-house researchers, staff, interns, and students with plenty of opportunities to learn about each of our exciting projects.

**DAILY ACTIVITIES**

Your days will start relatively early, with a continental help-yourself style breakfast between 7:00–8:00 a.m. As a team, we will take turns doing dishes after each meal, before beginning our activities. On most mornings, you’ll gather up your gear in preparation for in-water tasks. We depart for field days around 8:30–9:00 a.m. Our home reef, Grape Tree Bay is just steps from our patio making research needs relatively easy. Travel to other research sites around Little Cayman can take 10–30 minutes maximum. A typical morning includes a 15-minute briefing, a 30–60-minute lecture, and one to two hours of fieldwork. Remember to prepare for your time in the field appropriately getting enough rest, eating well, drinking plenty of water, and wearing the appropriate sun protective clothing or applying lots of sunscreen.

We’ll return to the Little Cayman Research Centre in time for equipment break down and a quick rinse before lunch. Again, as a team, we will take turns doing dishes after each meal, before beginning the afternoons activities. Teams will reconvene around 2:00 p.m. for the afternoon sessions, which will include a mix of fieldwork, data entry, data analysis, photo analysis, self-study time, or preparations for the next field day.

The dinner bell rings at 6:00 p.m., a time to enjoy good food, insightful conversation, and watch the sunset. Volunteers have the evenings to yourselves so you can relax, enjoy a bike ride, or share your amazing adventures with friends and family via social media. There may be some previously scheduled activities on island which our Little Cayman Research Centre staff are attending, and you would be more than welcome to join! On Thursday evenings, listen to our CCMI sponsored Reef Lecture Series given at a local resort. If we are really lucky between July and September, juvenile sea turtles may hatch, and we can watch them make their way across the beach to the ocean. Adult teams may also have options for other evenings including island attractions like the Hungry Iguana Restaurant, Wednesday night trivia, or Friday night karaoke.

**DAILY SCHEDULE**

**DAY 1**
- Arrivals
- Health and Safety briefing, Little Cayman Research Centre orientation, and settle in

**DAY 2**
- **Morning.** Research orientation and snorkel check-out
- **Afternoon.** Practice research session and practice research snorkel

**DAYS 3–5**
Fieldwork. Daily activities include:

**Morning**
- Morning Lecture
- Field briefing and preparation
- Research snorkel
- Field debriefing and break-down
- Data Entry

**Afternoon**
- Afternoon Lecture
- Field briefing and preparation
- Research snorkel
- Field debriefing and break-down
- Data Entry
- Days data analysis

**DAY 6**
- Finish up research needs
- Fun snorkel
- Island exploration
- Beach picnic lunch
- Wrap-up discussion

**DAY 7**
- Departures
ACCOMMODATIONS AND FOOD

ABOUT YOUR HOME IN THE FIELD

SLEEPING
Participants will stay at the LCRC dormitory facility. Dorms are well ventilated with fans and situated to benefit from the local Caribbean breeze. Rooms are equipped with air conditioning to run in the warmer months, but please be conservative in their use by running them only in the evenings when necessary. Rooms will be separated by gender and shared with one or more participants to a maximum of six in bunk style beds. Individuals will participate in the daily maintenance and upkeep of their living quarters.

BATHROOMS
At the LCRC, the bathhouse is an off-the grid, solar-powered building, with composting toilets, and a grey water garden. The bathhouse is a separate building from the sleeping quarters, requiring volunteers to go up and down three sets of stairs. There are lights leading the way for night visits, but we suggest bringing a flashlight or headlamp for just such occasions. There is a small ½ bathroom in the dormitory facility, however this is for emergency use during the night only. If any volunteers have special needs regarding the bathhouse, please let the LCRC staff know. We ask that you use the water in the showers sparingly. The only freshwater source on Little Cayman is via rain collection and hence water is a precious resource for the whole island. Please undertake “navy showers” where water is turned off whilst using lathering up with toiletries.
All of the facilities at the Little Cayman Research Centre have working electricity, however as we are a conservation organization, we ask that you do use it sparingly. Little Cayman is very safe island, so of course you are welcome to bring personal electrical equipment such as cameras, computers and phones (although we would advise you keep these in your dorms outside of the necessary lab or classroom hours). All lodging facilities have standard North American electrical outlets, 110–120 Volts.

PERSONAL COMMUNICATIONS

Wireless Internet access is available in the main building of the Little Cayman Research Centre. Regular phone calls to and from the Cayman Islands are expensive. The best way to make a phone call from Little Cayman is to purchase a phone card at the airport in Grand Cayman on the FLOW or Digicell network or use free WIFI dependent applications such as Facebook, WhatsApp, or Skype. Foreign phone cards do not work in the Caymans. Some cell phone services work in Cayman with partner companies, but this is something that we advise you look up before your arrival. Please note that personal communication with outsiders is not always possible while participating in an expedition, due to long days, power outages, or internet failure. Earthwatch encourages volunteers to minimize outgoing calls and immerse themselves fully in the experience; likewise, we encourage family and friends to restrict calls to urgent messages or check-in’s only. There is a phone in the main office of the Little Cayman Research Centre which volunteers are welcome to use in the case of an emergency. Volunteers should note, that dialing 911 is universal and you will be briefed on that during your health and safety welcome briefing.

Little Cayman Research Centre 1-345-948-1094

DISTANCE TO THE FIELD SITE

The distance to our field sites varies from right outside the door to a 15–30 minute van ride.

FOOD AND WATER

A fully equipped commercial kitchen and screened-in dining area overlooking the ocean can easily accommodate 20 visitors. It is open for three meals per day when groups of four or more are residing. The screened-in community dining area provides an excellent place for visitors to reflect on the day’s events while enjoying dinner. Meals are designed to be healthy and hearty, with a variety of local cuisine, American style favorites, and are able to meet any allergies and most food preferences you may have. The following are examples of the types of food you may enjoy on this project. Availability of certain items is subject to change based upon food delivery to the island, so please maintain a flexible attitude.

The following are examples of foods you may find in the field. Variety depends on availability. We appreciate your flexibility.

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<td>DINNER</td>
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<td>DESSERT</td>
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<td>BEVERAGES</td>
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SPECIAL DIETARY REQUIREMENTS

Please alert Earthwatch to any special dietary requirements (e.g., diabetes, lactose intolerance, nut or other food allergies, vegetarian or vegan diets) as soon as possible, and note them in the space provided on your volunteer forms.

Please note that due to the limitations of island supply, CCMI may not be able to accommodate kosher, halal, vegan, paleo, or other special diets.
The peak tourist season in Cayman is during the winter, from mid-November to April. During this time there is little rain, brilliant sunshine, and a constant cool sea breeze; however, this breeze can often pick up enough to create non-ideal snorkeling conditions.

May to November is the rainy season, but unless there is a tropical depression sitting over Cayman, the rain is normally only heavy for a few hours and then stops for the rest of the day. It is not uncommon to have heavy rain in one part of town while it remains dry nearby. Snorkeling conditions are ideal at this time of year.

### GENERAL CONDITIONS

**HUMIDITY:** 75%–85%

**TEMPERATURE RANGE:**
- July: 85–95°F (29–32°C)
- December/January: 81°F (27°C)

**RAINFALL:**
- July: 6.6 in (16.7 cm)
- December: 3.2 in (8.1 cm)
- January: 0.7 in (1.8 cm)

**ALTITUDE:** Sea Level

### WATER CONDITIONS

Water conditions should be relatively benign, since we work within our environmental parameters. Occasionally surface currents or surges may be encountered; however, volunteers will never be asked to enter the water in unfavorable or unsafe conditions.

**TYPICAL WATER TEMPERATURE DURING PROJECT:** 25°C (78°F) to 30°C (88°F). Note: A 3mm wetsuit is recommended for November–February groups, and only a thin rash guard for the remainder of the year.

**TYPICAL WATER VISIBILITY:** 10m (33 ft.) to unlimited

**SNORKEL SITE TYPE:** Sheltered lagoon or coral reefs

**ANTICIPATED DEPTH OF SNORKELS PER DAY:**
- 0 m (along shoreline) to 15 m (50 ft.)

**SNORKEL ACTIVITIES WILL BE INITIATED FROM:** Shore

**TIMING OF SNORKELING ACTIVITIES:** Morning (8:30am) – Late Afternoon (5:00pm)

### ESSENTIAL ELIGIBILITY REQUIREMENTS:

All participants must be able to:

- Follow verbal and/or visual instructions independently or with the assistance of a companion.
- Wear all protective equipment recommended or required by industry standards.
- Learn to make and record observations of stony coral species and habitats.
- Be comfortable snorkeling in open water (two to four hours a day) where they are unable to stand on the bottom, and be comfortable using full snorkeling gear (mask, fins, snorkel).
- Arrive with previous snorkeling experience, comfort swimming without the aid of a flotation device, and ability to “duck dive” or “free dive” (holding one’s breath and diving below the surface of the water for short periods of time, to depths of 1–2 meters) in order to complete the necessary research methods required.
- Enter and exit the water from a rocky, sandy, or rubble shoreline.
- Work on or near shore for about two to three hours per day with limited break options (e.g., no bathroom except for the ocean).
- Maintain a seated, upright position within a van or truck during transit, which can sometimes be bumpy along unpaved roads (this can be uncomfortable for individuals with back problems).
- Hike or walk along rocky shoreline study sites, which can range from ankle-deep to hip-deep water, on very uneven and unstable surfaces.
- Enjoy being outdoors for most of the day in all types of weather.
- Endure tropical (hot and humid) work conditions.
- Be tolerant of the presence of bugs, lizards, and crabs.
## POTENTIAL HAZARDS

### HELPING ENDANGERED CORALS IN THE CAYMAN ISLANDS

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<th>ASSOCIATED RISKS AND PRECAUTIONS</th>
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<td>Transportation</td>
<td>Traffic accidents and injuries are always a hazard of road transport. Every passenger will have a seat; however, seatbelts are only required for personal sitting in the very front or rear of the vehicle and for those under the age of 14. Vans will travel no faster than 25 mph on public roads, most of which are unpaved. Volunteers will not drive; only CCMI-LCRC staff above the age of 22 years of age will operate vehicles and boats.</td>
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<tr>
<td>Hiking</td>
<td>Hiking is not a requirement of the research activities, but nature trails are available nearby for recreation. Volunteers should wear proper footwear, have good endurance, and at times have protective clothing in the thick bush to avoid cuts and scrapes. Volunteers must make research centre staff aware of route and expected time of return whenever going offsite from the Little Cayman Research Centre.</td>
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<tr>
<td>Cycling</td>
<td>Bicycles are available for recreational use; however, no helmets are available. Cycling is on rural, unpaved roads with very few cars. Volunteers must make research center staff aware of route and expected time of return. A maintenance check on all bikes will be conducted before the arrival of volunteers.</td>
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<td>Stinging animals (insects, jellyfish, coral, lionfish, etc.)</td>
<td>Mosquitoes and sand flies are heavily present on Little Cayman, and all-natural insect repellent in tandem with long-sleeved shirts and pants will help protect from stings and bites. We also recommend that you pack some anti-itch cream for after bite care for your additional comfort. Fire coral, sea urchins, lionfish, or jellyfish may be present in the water, especially around the full moon. All dangerous creatures will be introduced during the health and safety briefing, as well as during snorkel or terrestrial outings briefings. Please note that if you have a severe reaction to bee stings you may have a similar reaction to other types of stings as well; please consult with your physician prior to your visit.</td>
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<td>Sharks and large fish</td>
<td>Attacks by sharks and other large fish are extremely rare. Team members will be instructed to exit the water in a calm manner in the event of an animal acting aggressively. Hurricane season is June to November, but most hurricane activity occurs in late August through September. Should a hurricane appear to be heading for The Cayman Islands during an expedition, the expedition will end and team members will evacuate to a location determined by the local airline (Cayman Airways); Miami, Tampa, Houston, Jamaica, and Honduras are all possibilities to be considered, based on the location and direction of the storm. Project staff will not wait for a hurricane warning to evacuate. Due to the difficulties of getting off island, staff will take the most conservative approach to ensure that volunteers don’t experience undue stress or danger. Dehydration and sunburn are possible. You’ll be briefed on proper clothing, sunscreen use, and fluid intake. Project staff sets an example and will monitor participants for symptoms of exposure or dehydration. Take particular care when working during the hottest periods of the day. Due to high humidity, those who use a hearing aid may find it doesn’t work properly and may wish to purchase a hearing aid dehumidifier.</td>
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<tr>
<td>Climate/Weather</td>
<td>Personal security</td>
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<td>Crime on Little Cayman is extremely low, but volunteers will be advised to keep valuables out of sight. As visitors to our small island, the community knows who the tourists and locals are. As you are a representative of Earthwatch and of CCMI, we ask that you please avoid excessive intoxication, illegal drug use, and overly suggestive behavior.</td>
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<tr>
<td>Swimming</td>
<td>Swimming is central to the research you’ll conduct and is also possible during allotted recreational time; typical in-water related risks will be present. A certified lifeguard will not be available at all times, but all staff members have boating, dive safety, and first aid certifications. Volunteers of any age may not swim alone, as per our health and safety protocols. We ask that you please adhere to the buddy system for all in-water activities.</td>
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<tr>
<td>Snorkeling</td>
<td>Snorkeling has inherent risks, e.g., the effects of environmental conditions, nitrogen buildup (for those who’ve recently been scuba diving), barotrauma, boat traffic, marine life, and risks specific to one’s own physical health or history. When snorkeling, properly control your breathing to reduce the risk of hyperventilation and shallow-water blackout. You must bring and maintain your own mask, snorkel, fins, boots, and exposure protection (rash guard or wetsuit). Flotation devices will be provided for those who prefer them or are required to use them. You must ensure that all gear is in good working order and that you are trained in appropriate responses if a failure occurs while in the water. Our CCMI staff will be present in the water at all times with you during research activities. Swimming and snorkeling will only happen in calm seas. No one goes in the water, staff or volunteers, when the activities lead staff member determines that conditions are unsafe.</td>
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Distance from Medical Care

While Grand Cayman has extensive medical facilities, Little Cayman has only one small health clinic with one nurse and one doctor who visits the island on Wednesdays. The local medical clinic is a 15-minute drive from the field station. If someone becomes seriously ill or injured on Little Cayman, they will need to be airlifted to Cayman Brac (approximately one hour for daytime arrival and transport) or Grand Cayman (approximately two to three hours for daytime arrival and transport). Nighttime evacuation may not be possible, as the Little Cayman airstrip does not have a lighted runway. Please read the Earthwatch and CCMI 2020 Emergency Action Plan for further details.

If you have a chronic condition, which could require immediate medical care (e.g., heart conditions, kidney problems, severe asthma), please discuss your participation in the expedition with your physician prior to your visit.

EMERGENCIES IN THE FIELD

Project staff members are not medical professionals.

STAFF CERTIFIED IN SAFETY TRAINING:

FIRST AID AND CPR: PI FTLs Maisy Fuller, Sonny Culkin, Giacomo Santoro, Miriam Pierotti
ISLAND EMERGENCY RESPONSE:
Field Station Manager, Sonny Culkin [on-site] or Director of Operations, Jon Clamp [off-site]

For emergency assistance in the field, please contact Earthwatch’s 24-hour emergency hotline number on the last page of this briefing. Earthwatch is available to assist you 24 hours a day, 7 days a week; someone is always on call to respond to messages that come into our live answering service.

IMMUNIZATIONS & TRAVEL VACCINATIONS

Please be sure your routine immunizations are up to date (for example: diphtheria, pertussis, tetanus, polio, measles, mumps, rubella and varicella) and you have the appropriate vaccinations for your travel destination. Medical decisions are the responsibility of each volunteer and his or her doctor, and the following are recommendations only. Visit the cdc.gov or who.int for guidance on immunizations.

If traveling from countries or regions where yellow fever is endemic, you must have a certificate of vaccination.
TRAVEL TIPS
SUGGESTIONS FOR THE ROAD

YOUR DESTINATION

LANGUAGE: English.

TIME ZONE: Eastern Standard Time (EST), UTC/GMT -5 hours. The Cayman Islands do not observe daylight savings time.

CULTURAL CONSIDERATIONS: Casual, weather appropriate, modest dress is acceptable nearly everywhere. It is considered culturally unacceptable to walk around in swimwear alone, so please plan accordingly. Tipping restaurant wait staff, taxi drivers, airport curbside baggage handlers, and hotel bellhops is customary.

LOCAL CURRENCY: The official currency is the Cayman Islands dollar (CIS$), permanently fixed at an exchange rate of CIS$0.80 to US$1 (CIS$1 equals US$1.25). Cayman dollars and US dollars are accepted throughout the islands, although you’ll usually get change in CIS$ even if you pay with US$. The local currency comes in CIS$1, 5, 10, 25, 50, and 100 notes. All major currencies can easily be changed at any bank. ATMs are easy to find across Grand Cayman. There is one ATM on Cayman Brac, as well as one on Little Cayman, both of which are open 24hrs/day. The bank on Little Cayman is only open on Mondays and Thursdays for very abbreviated banking hours.

PERSONAL FUNDS: $100–200 should suffice if you’d like to purchase additional food or supplies. There may be an opportunity for evening activities where you would like to purchase food or beverages. A visit to the local National Trust House will also be scheduled if the research allows and they do have a modest gift shop if you would like to support local merchants. Money can be withdrawn from an ATM at the Grand Cayman airport or upon your arrival in Little Cayman. International volunteers may use credit cards and ATM cards at local banks to obtain currency in Cayman Island dollars if desired.

COUNTRY AND PROJECT ENTRY REQUIREMENTS

Entry visa requirements differ by country of origin, layover, and destination. These visa requirements do sometimes change unexpectedly. For this reason, please confirm your visa requirements at the time of booking and, again, 90 days prior to travel. Please apply early for your visa (we recommend starting 6 months prior to the start of your expedition) as refunds will not be made for volunteers cancelling due to not obtaining their visa in time to meet the team at the rendezvous. You can find updated visa requirements via the following site:

www.travisa.com

If a visa is required, participants should apply for a TOURIST visa. Please note that obtaining a visa can take weeks or even months. We strongly recommend using a visa agency, which can both expedite and simplify the process. (NOTE: Generally, passports must be valid for at least six months from the date of entry and a return ticket is required.)

Upon arrival you must keep the immigration card given to you! Visitors are advised to keep it with their travel documents, as you will be required to present it to an Immigration Officer upon your departure.

CONTACT INFORMATION

You may be required to list the following contact information on your visa application and immigration form, or if your luggage does not make it to baggage claim at your destination:

Sonny Culkin
Manager@reefresearch.org
Little Cayman Research Center
North Coast Rd, PO Box 37
Little Cayman, KY3-2501, Cayman Islands
+1 345-948-1094 (office)
+1 345-925-8583 (cell)
TRAVEL PLANNING
RENDEZVOUS AND DEPARTURE INFORMATION
COMPLETE TRAVEL INFORMATION IS NOT INCLUDED IN THIS PUBLIC VERSION OF THE BRIEFING.

Please find the complete briefing, available only to project participants, in your Earthwatch Portal. The version in your Portal will include all of the travel information for you to book appropriate flights. Please DO NOT book flights without referring to this information.
EXPEDITION PACKING CHECKLIST

WHAT TO BRING

GENERAL
- This expedition briefing
- Your travel plans, rendezvous details, and Earthwatch’s emergency contact information
- Photocopies of your passport, flight itinerary, and credit cards in case the originals are lost or stolen; the copies should be packed separately from the original documents
- Passport and/or visa (if necessary)
- Certification of vaccination (if necessary)
- Documentation for travel by minors (if necessary)
- Signed CCMI Waiver

CLOTHING/FOOTWEAR FOR FIELDWORK
- Snorkel gear (fins, snorkel, and mask that fit you well; we highly recommend strap-back fins with boots for entry along a rocky shore)
- Mesh bag or backpack to carry snorkel gear
- Water shoes/booties (ideally can be worn inside fins)
- Two Swimming suits
- Two Rash guards or a thin wetsuit (or shirts you can wear in the water to protect you from the sun and potentially stinging animals)
- Rain jacket
- Wide brim hat

CLOTHING/FOOTWEAR FOR LEISURE
- At least one set of clothing to wear outside in the evenings (we recommend a long sleeve shirt and long pants to prevent bites from mosquitoes)
- At least one set of clothing to keep clean for travel at the end of the expedition
- Pair of light shoes or sandals/flip-flops to wear around the accommodations
- Pair of comfortable walking or light hiking shoes to wear on a beach clean-up or on a nature walk

FIELD SUPPLIES
- Small daypack to keep your personal items together and dry
- Organic/All-Natural Sunscreen lotion with SPF 45 or higher
- Lip balm with sunscreen
- Field notebook and pencils (cheap mechanical pencils)
- Two reusable one-liter water bottles
- Organic/All-Natural Insect repellent
- Sunglasses

BEDDING AND BATHING
NOTE: All bedding is provided by the project.
- Bath and 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, anti-allergen pills, antibiotics, antiseptic, itch-relief, pain reliever, bandages, blister covers, etc.) and any necessary medications
- Spending money
- Flashlight or headlamp with rechargeable batteries (don’t forget your charger!)

OPTIONAL ITEMS
- Laptop (can be used for recreational purposes but also to contribute to research activities)
- Binoculars
- Flip flops or sandals for the shower
- Camera with film or memory card(s) and extra camera battery
- Hardware for sharing digital photographs at the end of the expedition
- Dry bag or plastic sealable bags (e.g. Ziploc) to protect equipment like cameras from dust, humidity, and water
- Books, games, cards, etc. for free time
- Earplugs for light sleepers

NOTE: Do not bring more luggage than you can carry and handle on your own. If traveling by air and checking your luggage, we advise you to pack an extra set of field clothing and personal essentials in your carry-on bag in case your luggage is lost or delayed.
NOTE: Staff schedules are subject to change.

**DR. CARRIE MANFRINO**, CCMI President & Director of Research and the Earthwatch Project Principle Investigator [PI]. Carrie founded the Central Caribbean Marine Institute [CCMI] in 1998 and has since built the Little Cayman Research Centre [LCRC] around her dream of sustaining biodiversity through research, education, and conservation. Her Ph.D. in Marine Geology and Geophysics is from the University of Miami’s Rosenstiel School of Marine and Atmospheric Sciences. As a professor of oceanography and marine geology, Carrie has dedicated over 18 years to marine research. She is a well-published researcher who collaborates with scientists from around the world. Dr. Manfrino as President and Director of Research for CCMI her deep-rooted curiosity is in the extinction risks of modern corals and she is concerned about the influence reef degradation has on coastal communities. She leads a diverse research programme with collaborators from all over the world who work on topics including impacts of ocean acidification and climate change on corals, algae, and fish. Dr. Manfrino is a scientist and educator at heart, her greatest aspiration is for children to be ocean literate and she is invested in supporting early career scientists, especially in bringing science to society and in engaging women in science.

**MAISY FULLER**, CCMI Education Coordinator and Earthwatch Project Co-PI. Maisy joined the CCMI team in 2018. She has a Msci in Marine Biology from the University of Southampton and spent her third year abroad at the University of Western Australia. Since leaving university, she has worked on marine conservation projects in Panama, Malaysia and the Philippines as both a marine researcher and educator. In addition, Maisy is a PADI Divemaster. Maisy is passionate about the marine environment and firmly believes that scientific research and community outreach and education go hand in hand. Through her work at CCMI, Maisy hopes to be able to educate and inspire a wide range of audiences about the ocean and its inhabitants. This includes spreading awareness about the threats currently facing the marine environment and how everyone has a part to play in reducing human impacts.

**MIRIAM PIEROTTI**, CCMI Marine Education Intern and Earthwatch Project Field Team Leader. Miriam joined CCMI in June 2019. She is originally from Italy where she completed her BSc in Biology with a major in Environmental Science. After spending one year in Ireland volunteering for Estuarine Environment Research at UCC, she took her MSc in Applied Marine Science at the University of Plymouth. She has worked on different research projects including microplastic particles distribution and plastic pollution impacts on protected marine species in South Italy. Miriam firmly believes in scientific education as a powerful tool to raise awareness on marine threats and conservation methods.

An **EARTHWATCH TEEN TEAM FACILITATOR** (TEEN team only) or two will accompany the teen team from the time you step off the plane for the rendezvous until the end of the expedition. If you have any questions or problems, such as issues with another participant, homesickness, or an emergency back home, please talk to your facilitator. Follow your facilitator’s advice on safety and personal conduct. All facilitators have experience teaching and leading groups of teenagers. Remember, your facilitator is there for you. (Teen: Facilitator ratio is approx. 6:1)
RECOMMENDED READING
YOUR RESOURCES AT HOME

RESOURCES

ARTICLES
- Additional articles and student posters can be accessed from CCMI’s website www.reefresearch.org/publications

BOOKS

PROJECT-RELATED WEBSITE
- CENTRAL CARIBBEAN MARINE INSTITUTE WEBSITE: http://reefresearch.org/

CCMI SOCIAL MEDIA
- FACEBOOK: facebook.com/reefresearch
- TWITTER: twitter.com/reefresearch
- INSTAGRAM: instagram.com/reefresearch
- YOUTUBE: youtube.com/reefresearch

EARTHWATCH SOCIAL MEDIA
- FACEBOOK: facebook.com/Earthwatch
- TWITTER: twitter.com/earthwatch_org
- INSTAGRAM: instagram.com/earthwatch
- BLOG: https://blog.earthwatch.org/
- YOUTUBE: youtube.com/earthwatchinstitute
LITERATURE CITED

EMERGENCY NUMBERS
AROUND-THE-CLOCK SUPPORT

EMERGENCY NUMBERS NOT INCLUDED IN THIS PUBLIC VERSION OF THE BRIEFING.

The version in your Portal will include all of the necessary emergency numbers.
Field Waiver, Liability & Disclaimer

THIS DEED OF INDEMNITY AND WAIVER (this “Waiver”) is made the _______ day of ________________ between __________________________________________, the parent or legal guardian of ___________________________ (my “Child”) of ___________________________ (address) and each of the Little Cayman Research Centre (the “Research Centre”), the Central Caribbean Marine Institute (also known as CCMI), incorporated under the laws of the State of New Jersey and recognized as a federal 501(c)(3) non-profit organization and its affiliates, CCMI, a company limited by guarantee in the United Kingdom, and CCMI, a local company incorporated in the Cayman Islands and registered as a local charity and any of their respective parent companies, subsidiaries and affiliates (together hereinafter called “CCMI”).

In consideration of my child ___________________________ (my “Child”) being given the opportunity to participate in a CCMI programme (the “Programme”) at the Research Centre, I hereby acknowledge, agree and confirm as follows:

I am aware of the risks of injury or harm that may occur to my Child as a result of my Child’s participation in the Programme. I assume such risks on my own for myself and my Child as a condition of my Child’s being permitted to participate in the Programme. To my knowledge, my Child has no existing medical condition that could worsen or result in further injury (to my Child or to others) as a result of my Child’s participation in the Programme. I understand that neither the CCMI, nor the Research Centre nor any of their affiliates nor any of their officers, directors, trustees, agents or employees is responsible for administering any medical care or medication required by my Child whateversover (“Medical Treatment”) during my Child’s participation in the Programme. In case of emergency, the Research Centre or any of its officers, directors, trustees, agents or employees is authorized to seek Medical Treatment for my Child, and I accept full financial responsibility for all the costs of such Medical Treatment and any associated costs connected thereto.

In the event that CCMI or the Research Centre or any of their affiliates or any of its officers, directors, trustees, agents or employees deems it necessary at their sole discretion to evacuate my Child from the Research Centre for any reason including (without limitation) in the event of a threat of a hurricane or other act of God or to relocate my Child into an alternative building for example (without limitation) a shelter, I hereby authorize CCMI or the Research Centre or any of their affiliates or any of its officers, directors, trustees, agents or employees to take any and all action that they deem necessary (“Emergency Action”) and I accept all financial liabilities related thereto.

For my Child and for myself and for my Child’s heirs, successors and assigns, I hereby release and forever discharge CCMI and any of their parent companies, subsidiaries and affiliates, and their respective officers, directors, trustees, shareholders, agents, employees, successors and assigns all in their official or individual capacities (“Indemnified Persons”) from any and all actions, costs, suits, demands, claims, damages, losses and liabilities direct or indirect however arising (including without limitation reasonable attorney’s fees) of any type or kind whatsoever arising out of or caused (“Loss”) by my Child’s participation in the Programme any Medical Treatment provided or as a result of any Emergency Action taken in connection with any damage, loss or theft of any of my Child’s personal property, equipment, clothing, or effects.

I hereby agree to indemnify, defend and hold harmless the Indemnified Persons from and against any Loss of any type or kind whatsoever arising out of or caused by my child’s participation in the Programme any Medical Treatment provided or as a result of any Emergency Action taken.

I understand and agree that none of the Indemnified Persons may be held liable or responsible in any way for any injury, death, or other damages to me, my Child, my family, or any of their estate, heirs or assigns that may occur as a result of my Child’s being permitted to participate in the Programme or as a result of the negligence of any party, including the Indemnified Persons, whether passive or active. In consideration of being allowed to participate in the Programme, I hereby personally assume all risks of the Programme, whether foreseen or unforeseen, that may befall my Child while my Child is a participant in the Programme, including but not limited to the academics, confined water and/or open water activities including (without limitation) any snorkeling or other swimming activities or the use of public or private transportation. I further release, exempt and hold harmless said course and Indemnified Persons from any claim or lawsuit by me, my Child, my family, or any of their estate, heirs, or assigns, arising out of my Child’s enrollment and participation in the Programme. This Waiver may be signed in counterpart, each of which shall be deemed an original, but all of which shall constitute an instrument.

I acknowledge and agree that any Indemnified Person may rely on the terms of this Waiver and take the benefit of any of the terms contained herein. I understand and agree that the Research Centre or CCMI has the discretionary right to terminate my participation in the Programme if they conclude further participation would pose a risk to the safety of myself or others or if they conclude the Participant’s behaviour is disruptive to the best interests of the Programme. Permission is hereby given for the use the Participant’s likeness, photographs, statements, video tape, voice, music or articles in the promotion of future Programmes. This Waiver is governed by the laws of the Cayman Islands and the Courts of the Cayman Islands shall have exclusive jurisdiction.

___________________________
Signature of Participant, or Parent or Legal Guardian if Participant is a minor
___________________________
Witness Signature
___________________________
Print Name___________________________ Date: ___________________________ Witness Name___________________________

EXECUTED and DELIVERED as a DEED
By

EXECUTED and DELIVERED as a DEED
For and on behalf of CCMI

___________________________
Signature of CCMI representative
___________________________
Witness Signature
___________________________
Print Name___________________________ Date: ___________________________ Witness Name___________________________
MESSAGE FROM EARTHWATCH

DEAR EARTHWATCHER,

Thank you for joining this expedition! We greatly appreciate your decision to contribute to hands-on environmental science and conservation. It is volunteers like you who fuel our mission and inspire our work.

While at Earthwatch, I’ve had the opportunity to field on a few expeditions, most recently in Kenya with one of my daughters. Each expedition has touched me deeply, and made me proud to be able to roll up my sleeves alongside my fellow volunteers and contribute to such meaningful work.

As an Earthwatch volunteer, you have the opportunity to create positive change. And while you’re out in the field working toward that change, we are committed to caring for your safety. Although risk is an inherent part of the environments in which we work, we’ve been providing volunteer field experiences with careful risk management and diligent planning for nearly 45 years. You’re in good hands.

If you have questions as you prepare for your expedition, we encourage you to contact your Earthwatch office.

Thank you for your support, and enjoy your expedition!

Sincerely,

Scott Kania
President and CEO, Earthwatch