



SNORKEL FOR QUEENSLAND'S MARINE MAMMALS



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DEAR EARTHWATCHER,

I am delighted you have decided to join this program and look forward to meeting you soon. This program forms part of Healthy Waterways recently expanded monitoring program. Healthy Waterways is a not-for-profit NGO dedicated to ensuring that scientific knowledge and understanding is applied to the management of South East Queensland waterways. Our aim is to ensure that the community and decision makers understand the intrinsic ecological, social and economic values of maintaining healthy waterways. To achieve this, we produce a Healthy Waterways report card, that focuses community and political attention on waterway issues.

Healthy Waterways led the world in monitoring to support management in 1999, when it launched the Ecosystem Health Monitoring Program (EHMP). This is one of the first times, in the world, that a regional environmental report card was used to synthesise complex environmental data and influence waterway management. Fifteen years on, Healthy Waterways is still leading the world in this waterway monitoring, and is now expanding the program to meet the changing information needs of waterway managers.

The objective of Healthy Waterways monitoring and reporting is to provide information that inspires and informs actions to achieve healthy waterways. In addition to the traditional environmental indicators, we are implementing indicators that quantify the social and economic aspects of waterway management, demonstrating the community benefits of waterways that extend beyond environmental aspects.

This Earthwatch program will provide substantial components of the annual assessment of seagrass habitats in Moreton Bay, arguably the most important natural asset of the bay. The seagrass of Moreton Bay support numerous animals through the provision of food and shelter from predation. Without extensive seagrass meadows in Moreton Bay, some species could go regionally extinct and other species would have large declines in their populations.

This is the first time volunteer scientists will be contributing information that forms a core component of Healthy Waterways annual report card. The sampling program has been designed by the Healthy Waterways Scientific Expert Panel on Coastal Ecosystems, to ensure the data collected is of optimal use and relevance to managers.

Participants in this program will be responsible for establishing a long term data set on the extent and condition of seagrass in Moreton Bay as well as providing an early warning if seagrass meadows begin to decline. The program has been designed to include an assessment of the major threat to seagrass (dirty water and mud from adjacent catchments) as well as seagrass condition. As Moreton Bay is a RAMSAR wetland, this information is of both national and international significance.

I am looking forward to working with you in the field to achieve our common interest of providing knowledge that will help the South East Queensland community preserve the amazing underwater habitats of Moreton Bay.

Dr James Udy



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GENERAL INFORMATION

SNORKEL FOR QUEENLAND'S MARINE MAMMALS



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 Dr Paul Maxwell (Healthy Waterways, Griffith University)
 Prof. Rod Connolly (Griffith University)
 Dr Tim Stevens (Griffith University)
 Dr Chris Roelfsema (University of Queensland)

RESEARCH SITE: Moreton Bay, Queensland, Australia.

RENDEZVOUS LOCATION:

Arrival time:

Check-out time from field site:

Do not book any domestic departing flights before 9:30 pm, and international flights before 10:30 pm

EXPEDITION LENGTH: 7 days

TEAM SIZE MAX: 10 participants

MINIMUM AGE OF PARTICIPATION: 18 years of age

EXPEDITION DATES:

TEAM 2: 13-19 March 2016

TEAM 3: 14-20 August 2016

Please see the Travel Planning section on pg. 14 for more information.

TRIP PLANNER

TO DO IMMEDIATELY

- Make sure you understand and agree to Earthwatch policies and participant responsibilities (see page 26).
- Book appointment with your general practitioner for recreational medical examination (a requirement of this expedition)

90 DAYS PRIOR TO EXPEDITION

- Log in at earthwatch.org to complete your volunteer forms. Below are the specific forms required for this expedition:

Earthwatch Participant Form for Adults

Travel Form

Snorkel Medical Form

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.

- Pay any outstanding balance on your expedition.
- Book travel arrangements (see the Travel Planning section, pg. 14, 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, pg. 22, 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,

pg. 17, for more details).

- Make sure you have all the necessary vaccinations for your project site (see the Health Information section, pg. 21).

- Bring your level of fitness up to the standards required (see the Project Conditions section, pg. 18).

60 DAYS PRIOR TO EXPEDITION

- Review the expedition packing checklist (pgs. 4 and 5) 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 friend or relative (see pg. 30).
- Leave copies of your passport, visa, and airline tickets with a friend or relative.
- Confirm your travel arrangements.

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 humour 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.





EXPEDITION PACKING CHECKLIST

REQUIRED ITEMS

GENERAL

- This expedition briefing
- A copy of your Recreational Dive Medical (AS 4005)
- 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)
- Australian Residents only: Please bring your Medicare card and (if applicable) your private health insurance and ambulance cover policy numbers

CLOTHING/FOOTWEAR FOR FIELDWORK

- Earthwatch T-shirt
- Lightweight and quick-drying long sleeve shirts (a must for safety reasons-for sun protection on the boat)
- Rash vest/swim shirt (made of spandex and nylon or polyester) to wear under wetsuit while snorkelling
- Wide-brimmed hat (preferably one that is at least partially waterproof)
- Swimsuit(s) for snorkelling
- Sunglasses (polarized lenses are best)—neck strap recommended
- Thick-soled dive booties for walking in muddy intertidal zones and rough terrain.

- Warm wind/water proof jacket

NOTE: Volunteers will be getting in and out of the water at intervals throughout the day and travelling by boat to different research sites. It is essential to have a warm wind/water proof jacket that can go over the top of your wet wetsuit to keep you warm. We would suggest bringing a second water proof jacket that will stay dry on the inside for use on land.

- Snorkel gear (mask, flippers, snorkel). These can be hired from the resort if you do not own them, however it will cost you \$35.00 per day to hire snorkel gear and a wetsuit. It will be cheaper to buy these before the expedition. Please see page 16 for details on where you can buy snorkel gear in Brisbane.

- Wetsuit (Full length, during cold August it must be at least 5 mm thickness). Can hire with snorkel gear from resort for \$35.00 per day or can buy at one of the dive shops listed on page 16.

NOTE: Since water will be cold in August it is essential that your wetsuit is at least 5 mm or 7 mm thickness. During the warmer months (October to March) you may use a thinner wetsuit, but it must be full length to provide you protection from stingers.

CLOTHING/FOOTWEAR FOR LEISURE

- One set of clothing to keep clean for end of expedition
- Several changes of clothes to wear around resort (e.g. shorts and t-shirts)
- Warm clothing for cool mornings and evenings (e.g. jacket, sweater, fleece, jumper)
- Footwear for walking around resort (thongs, sandals or sneakers)
- Socks and underwear
- Pyjamas or other sleepwear
- Second wind/water proof jacket (for dry land use)

FIELD SUPPLIES

- Small daypack (large enough to hold below listed items)
- Dry-bag or plastic sealable bags (good for protecting equipment such as camera from dust, humidity, and water)
- Insect repellent spray
- Two One-Litre refillable water bottle(s)
- Lunch box
- Waterproof sunscreen with SPF 30 or higher
- Beach Towel

BEDDING AND BATHING

NOTE: Blankets, pillows and linen will be provided by the resort.

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-diarrhoea pills, antibiotics, antiseptic, itch-relief, pain reliever, bandages, blister covers, etc.) and personal medications

Note: Prescription medications must be accompanied by a doctor's note to enter Australia.

- Spending money in the form of cash, credit, or ATM cards

SUGGESTED ITEMS

MISCELLANEOUS

- Flashlight or headlamp with extra batteries and extra bulb
- Earplugs for light sleepers
- Hardware for sharing digital photographs at the end of the expedition
- Travel guidebook
- Books, games, journal, art supplies, etc. for recreational/rest time and travel
- Water-resistant wristwatch
- Underwater camera, film/memory card(s), extra camera batteries (if you bring a digital camera, bring your interface cables for downloading)
- Binoculars (preferably waterproof)
- Pencil, pen, notebook
- Bathrobe
- Hood for wetsuit (if you feel the cold this will keep you warmer in August. Not necessary for other teams)

NOTE: Required and suggested items lists are accurate to the best of Earthwatch's knowledge at the time of publication



THE RESEARCH

SNORKEL FOR QUEENSLAND'S MARINE MAMMALS



THE STORY

Moreton Bay in South East Queensland is an iconic marine ecosystem, as it provides habitat that supports dugongs, turtles, shore birds and many other species. The combination of muddy habitats on the western side of the Bay, sandy habitats on the Eastern side of the Bay, corals and large areas dominated by seagrass allows the Bay to support highly diverse marine life, including dolphins, dugongs, turtles and more than 43 species of shorebirds (Queensland Environmental Protection Agency). The bay is ranked among the top ten dugong habitats in Australia (Queensland Environmental Protection Agency), and is the only place in Australia where herds of dugongs gather. Furthermore, the loggerhead turtle population in Moreton Bay is the most significant in the country. It was declared a Marine Park and listed as a RAMSAR site in 1993. RAMSAR sites are sites that have been nominated by the RAMSAR Convention, which is formally known as the Convention on Wetlands of International Importance, especially as Waterfowl Habitat. These sites were nominated because they are rare, unique or representative wetlands, important for conserving biological diversity. Moreton Bay was added to this list due to its significance in terms of providing habitat for many marine and shore animals, as well as being a critical link between the estuaries of South East Queensland and the Pacific Ocean.

It is one of Queensland's most important coastal resources, but is being threatened by Brisbane, the capital of Queensland, which is a rapidly expanding city only 14 km away from the bay. This puts the marine ecosystems of Moreton Bay under extreme danger of degradation or loss, due to the increasing pollution from the adjacent catchment. The greatest threat to Moreton Bay is the increased levels of mud and toxins entering the Bay from surrounding areas. These anthropogenic inputs are harmful to the plants and macroinvertebrates living in the bay, resulting in a decrease in the abundance of species that make up the base of the food chain that support the important populations of dugongs, turtles and shore birds.

It is clear that Moreton Bay is in danger, and it will be disastrous for the species that currently inhabit it if it becomes overly degraded by human impacts and climate change. This project aims to collect ecological data on the condition of seagrass habitats and macroinvertebrate communities, as well as quantify critical processes within the meadows and determine the extent of anthropogenic threats, such as mud and turbidity (dirty water). Seagrass habitats form the base of the food webs for many vulnerable or endangered species that exist in Moreton Bay, including dugongs, turtles and migratory shorebirds. By better understanding the condition of

seagrass and the threats they are currently exposed to, it is possible to identify changes in management practices that can reduce harm to these important habitats and ultimately improve the health of species that depend upon them for food and/or protection.

THE RESEARCH

This project will integrate a community monitoring program into an established regional monitoring program. Healthy Waterways was the first organisation in Australia to use an environmental report card to deliver complex scientific data in a clear format. They have been reporting annually for 12 years, providing annual updates on the health of many aquatic ecosystems to the community, environmental managers and politicians. The integration of this Earthwatch program will enhance the quality of ecological data that can be collected, demonstrate the value of volunteer programs in ecological monitoring and provide a new avenue for educating community members on the main impacts on marine ecosystems.

The project aims to:

- Create a long-term data set that will enable ecological shifts, due to changes in water quality and climate change, to be identified quickly and brought to the attention of the community, environmental managers and politicians.
- Assist Healthy Waterways to maintain and enhance the condition of the South East Queensland waterways and support the implementation of management practices that provide sustainable use and benefit from the waterways. This can only be achieved by providing ecological information to support knowledge-based management decisions. This research project will be integrated into the various monitoring and research programs that Healthy Waterways undertakes or supports to ensure that the information collected is relevant to resource managers, and the findings are regularly synthesized and provided to resource managers, politicians and the community.

In order to achieve all of these project aims, 3 important aspects of Moreton Bay's ecology need to be quantified. Therefore, the objectives of the project are to:

- 1) Quantify changes in the sediment composition in Moreton Bay.
- 2) Maintain an up-to-date map of seagrass extent and condition in Moreton Bay and work with scientists to measure critical processes that make seagrass resilient.

- 3) Establish a long-term data set of small fish and other marine animals that inhabit the seagrass meadows. This project has three themed objectives:

HOW YOU WILL HELP

Gathering all of the necessary data to achieve this project requires people power, which is where you come in. You'll help with all aspects of the fieldwork. You will also help process samples taken and compare our findings with findings from previous expeditions to establish whether there have been changes throughout the years. There are tasks associated with each of the three objectives, and they are as follows:

Objective 1- Quantify changes in the sediment composition in Moreton Bay.

- Sample the top 10-20 cm of sediment using a sediment grab or corer in a transect across Moreton Bay (approximately 20 sites).
- Use sediment sieves to characterise the sediment into standard grain sizes (silt, mud, sand, gravel).

Objective 2- Maintain an up-to-date map of seagrass extent and condition in Moreton Bay and work with scientists to measure critical processes that make seagrass resilient.

- Collect visual observations at specific locations on seagrass presence/absence and condition (will be snorkelling in order to do this).
- Use observations, remote sensing and underwater video to map seagrass extent and condition in the Moreton Bay region.
- Quantify the benthic light throughout a tidal cycle, determine the impact of seagrass on sediment resuspension and deposition, and investigate nutrient release rates from seagrass meadows compared to bare sediment.

Objective 3- Establish a long-term data set of small fish and other marine animals that inhabit the seagrass meadows.

- Perform seine netting to collect small fish and animals in the seagrass beds. This involves dragging a small net through the seagrass to determine what is living there.



YOUR DESTINATION

ABOUT SOUTH EAST QUEENSLAND

South East Queensland is a biogeographical, political and administrative region of the State of Queensland in Australia. It is comprised of predominantly rural landscapes that lie to the west of the urbanised coastal centres, including Brisbane, Gold Coast, Sunshine Coast, Ipswich and Logan. The research site, Moreton Bay is within South East Queensland, and extends approximately 125 km from Caloundra in the North almost to Surfers Paradise in the South. It is characterised as lagoonal because there is a chain of islands off its shore that restrict the flow of oceanic water. It is separated from the Coral Sea by three main islands, namely Moreton Island, North Stradbroke Island and South Stradbroke Island.

Participants will stay at Tangalooma Island Resort, a beautiful tropical resort on Moreton Island, only a 75-minute boat ride away from Brisbane. Moreton Island is one of the least polluted and least disturbed coastal environments along the Queensland-New South Wales Coastline. Apart from a small area of sandstone and rhyolite at Cape Moreton, Moreton Island is made entirely of sand, making it the third largest sand island in the world. It has the highest established coastal sand dune in the World, called Mount Tempest (285 metres high). Moreton Island is part of Moreton Bay Marine Park, which is the only place in the world where significant populations of dugongs and turtles can be found so close to a major metropolitan area. This means it is likely that you will have the pleasure of seeing these



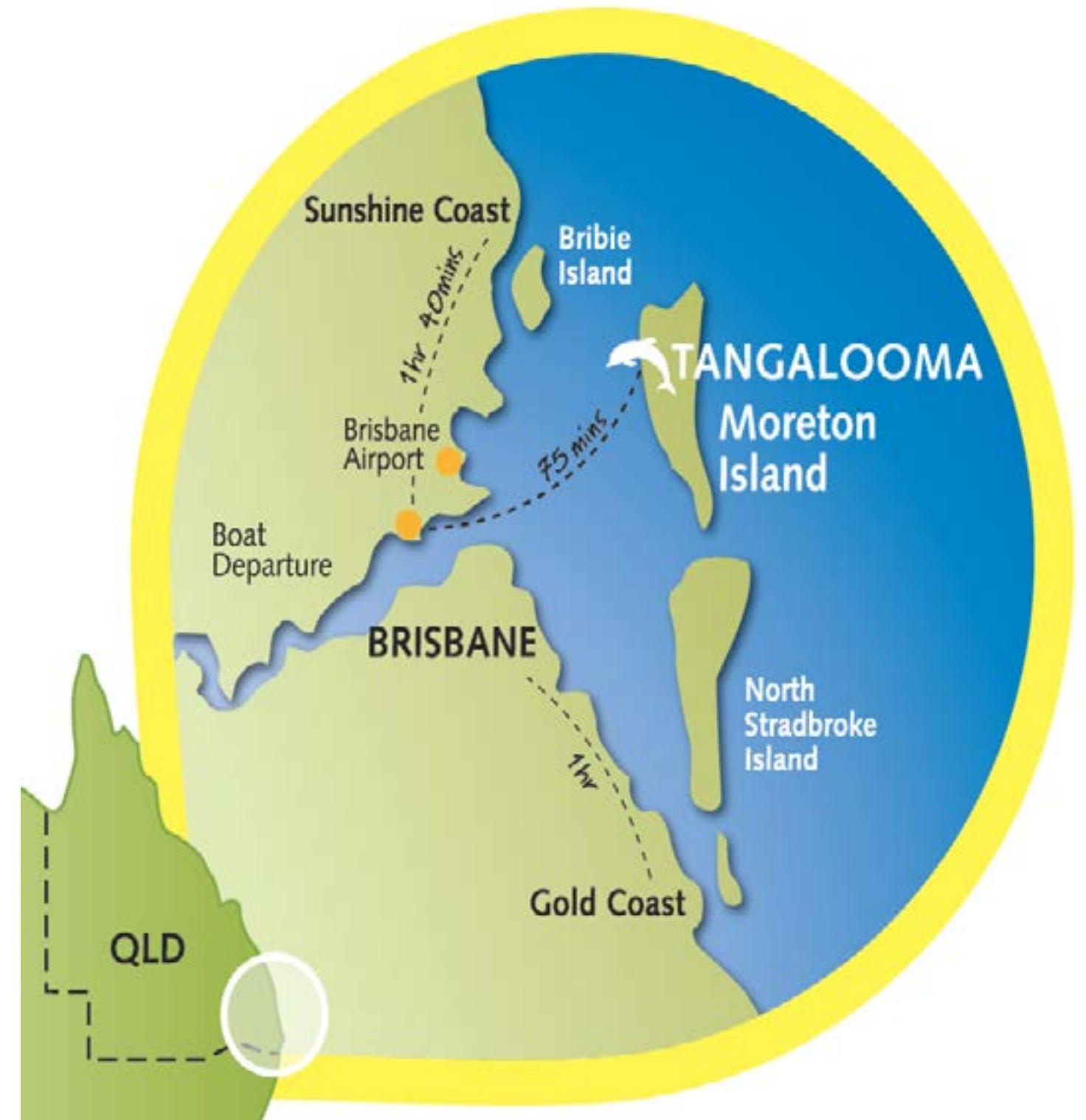
beautiful creatures in the water near the field sites and/or the resort.

PHYSICAL ENVIRONMENT

The wetlands of Moreton Bay are extremely varied and range from perched freshwater lakes and sedge swamps on the islands, to intertidal marshes, mudflats, sandflats and estuarine mangrove habitats adjoining the bay's islands and mainland. It is a subtropical climate and therefore supports subtropical wildlife species. For information on the climate, weather and hazards of the area, see the Project Conditions section on pg. 18.

CULTURAL, SOCIAL AND POLITICAL ENVIRONMENT

The cultural atmosphere in South East Queensland is very relaxed and friendly. Generally, the climate and social atmosphere allow for very casual dress standards. Moreton Island is home to the Nighi clan, who, together with the Noonukul and Goenpul clans of North Stradbroke Island make up the Moreton Bay people. Although Moreton Island is in close proximity to Brisbane, Australia's third largest capital city, the island still has a rich, colourful and thriving indigenous culture.



Location of Orpheus Island



DAILY LIFE IN THE FIELD

PLANS AND POLICIES

TRAINING: On arrival at Tangalooma Resort, we'll have lectures and training sessions to orient you to the general biogeography, flora and fauna of the region. Another talk will be given on the "dos and don'ts" of fieldwork, including the most likely hazards and ways to avoid and/or deal with them. All volunteers will be trained in a variety of field skills and survey techniques.

Demonstrations will be given on each separate activity in the field prior to commencement of that technique. These will include:

- Using a sediment grab or corer to sample the sediment. This activity will be done from the boat. If you're lucky, you may be able to see dolphins, whales and dugongs swim by!
- Using sieves to analyze sediment particle sizes.
- Using virtual observations, remote sensing and underwater video to map the seagrass coverage and assess its condition. An underwater camera will be dropped from the boat and you will film and take GPS points of the seagrass as you cruise along. You will also get to snorkel along transects near the shore to collect seagrass samples. On the first day you will need to perform a swim/snorkel test in order to be able to snorkel throughout the rest of the trip. A snorkel demonstration can be given if requested.

- Wading in intertidal areas with seine nets to collect small fish and other marine animals. These areas are full of fascinating marine creatures. Surveying these areas will allow you to see many interesting and beautiful creatures.

Additional talks will be given on

- 1) The Healthy Waterways program-how it has provided the foundation to support knowledge-based decision-making in relation to the management of waterways for over 20 years.



2) The role of seagrass in maintaining healthy coastal ecosystems, with a focus on their importance in supporting vulnerable and endangered marine vertebrates as well as commercial and recreational fisheries.

Once all of the training and talks are done, you can explore the island and the resort until dinner and will then have more free time in the evening. Days 2-6 will be full days of field work, with some laboratory work and data analysis in the evenings. There are many activities for you to do at the resort during your free time (see Recreation on page 13).

TRANSPORT AND DRIVING POLICY: Tangalooma does not allow cars on the resort, but you will see people driving around in golf buggies. However, it is an Earthwatch Policy that participants may not drive any type of vehicle while on the project. This includes time that has been designated as non-research time. Participants who ignore this policy and do drive or ride in another participant's vehicle during the project will be doing so at their own risk and will not be covered under the Earthwatch insurance policy for the expedition.

EARTHWATCH RECREATIONAL TIME POLICY

Project staff will generally accompany participants from the rendezvous to the end of the expedition. For recreational days, when no research activities are scheduled, Earthwatch scientists will offer either a team activity or a range of recreational activities that comply with Earthwatch standards. Participants may also remain at project accommodations. Those who pursue other options must sign a release form.

If there is a period of time during a regular research day when no research activities are scheduled, adult participants may leave the project site on their own; they will have to sign out first. Unless contacted for help, project staff will not search for a participant unless he or she fails to appear the following morning or for the next scheduled research activity.

Earthwatch will assess the general risks of adult participants leaving the project site, but cannot guarantee participant safety or an awareness of all issues. In some cases, due to local conditions, adult participants may have to stay at the project site during recreational time, which will be clearly communicated on site.

ITINERARY AND DAILY SCHEDULE

Weather and research needs can lead to changes in the daily schedule. It may be necessary to have land only days if the water is too rough or it is raining too hard to do the water-based field activities. However, there are plenty of activities that can still be undertaken from the island if required. Please understand if the daily schedule changes due to weather.



TYPICAL DAY IN THE FIELD

A typical day of full sampling will involve getting up early and having breakfast at 7:00 am then preparing equipment for the day's activities. The team will be broken up into several groups and will rotate through the different research activities. These activities are dependent on the tide times, so different activities will be done at different times during the tidal cycle. Each participant will get the chance to do each activity. You will return to the resort around 5:00 pm each evening, giving you time to clean up and relax before dinner. Some nights after dinner you will be required to do additional laboratory work with the samples collected throughout the day and/or to analyse the data. You will also have free time during some of the evenings when you can relax and unwind after a hard day's work.

DAY 1: ARRIVAL DAY

Time of Day	Activity
11:30 am	Rendezvous in Brisbane at Holt Street Wharf Ferry Terminal.
12:30 pm-1:45 pm	Take ferry to Tangalooma Island Resort on Moreton Island
2:30 pm-3:30 pm	Talks on safety, logistics and sampling techniques
3:30 pm-6:30 pm	Settle into accommodation, free time until dinner
6:30 pm-7:30 pm	Dinner

DAYS 2-6: FIELDWORK DAYS

Time of Day	Activity
7:00 am-8:00 am	Breakfast Prepare equipment
Morning	Field Activities: <ul style="list-style-type: none"> • sampling sediment from the boat or on land mapping seagrass using video footage and remote sensing equipment • snorkelling to collect seagrass samples • seine netting to collect small fish and animals living in the seagrass meadows • setting up measuring devices such as light loggers, sediment traps and benthic nutrient flux chambers.
12:00 pm - 1:00 pm	Lunch
Afternoon	Field Activities: <ul style="list-style-type: none"> • sampling sediment from the boat or on land mapping seagrass using video footage and remote sensing equipment • snorkelling to collect seagrass samples • seine netting to collect small fish and animals living in the seagrass meadows • setting up measuring devices such as light loggers, sediment traps and benthic nutrient flux chambers.
5:00 pm	Return to resort (some evenings we may have snacks and sundowner drinks on Velella (sailing vessel) as we return from fieldwork)
6:30 pm- 7:30 pm	Dinner
Evening	Lab work, data analysis and/or free time

DAY 7: DEPARTURE DAY

Time of Day	Activity
Morning	Breakfast, pack and tidy up
Afternoon	Recreational day on the Island
7:00 pm- 8:15 pm	Take ferry from Moreton Island back to Brisbane
8:30 pm	Say farewell to team



ACCOMMODATIONS AND FOOD

ABOUT YOUR HOME IN THE FIELD



SLEEPING

The accommodation consists of beachfront villas, each sleeping 7. Each villa spans 2 levels and has 2 bedrooms with private balconies with spectacular views across Moreton Bay. There is a queen bed in the main bedroom, 2 single beds in the second bedroom, 2 single bunks in the upstairs alcove, and 1 single divan and single trundle in the lounge room. The villas are furnished in a relaxed island décor and have ceiling fans throughout. There is a fully self-contained kitchen, including a full size fridge, convection oven, microwave oven, dual gas stove-top, electric frying pan, kettle and toaster.



BATHROOMS AND LAUNDRY FACILITIES

Each villa has a bathroom on the upper level, with hot showers and flushing toilets. The villas also contain a washing machine, vacuum cleaner, iron and ironing board for your use.

ELECTRICITY

Electricity is 24 hours at the resort. There are power points available in the rooms for recharging your electronic equipment.

INTERNET AND COMMUNICATIONS

Optus Mobile Broadband modems are available from reception and cost \$10 per day plus a \$150 refundable deposit. There are also 4 internet kiosks available for use in the Cane Lounge at a cost of \$4 for 15 minutes. The resort has access to Telstra 3G and Optus Internet reception so you can bring your own portable internet stick with you if you would like access to the internet without spending too much money. However, please note that Vodafone reception is very weak and in some places non-existent.

There is standard telstra phone reception but it is limited on the island. Earthwatch encourages volunteers to minimize outgoing calls and immerse themselves in the experience. Likewise, family and friends should restrict calls to urgent messages only.



DISTANCE TO FIELD SITE

Travel to the field site will change slightly with different sampling areas, but it will never be more than 40 minutes.

RECREATION

Each villa has a living room with a TV and DVD player if you wish to relax in the evenings. The most exciting evening activity however is the wild dolphin feeding program which occurs every evening at sunset. One night of this is included in the accommodation for each person, therefore you can partake in this activity once for free. There are 8 playful bottlenose dolphins that visit the shores, and with the help of a member of the Dolphin Care team you can get up close to these beautiful creatures by feeding them. There are strict guidelines that are followed however, to ensure that the dolphins maintain their natural instincts and independence. They are only fed 10-20% of their daily food requirements so they must also hunt for themselves and do not become too reliant on the resort's feeding program. You also get the chance to learn more about these dolphins during the free daily Dolphin Behaviour and Data Collection Presentation in the Marine Education and Conservation Centre.

There are over 40 free activities at the resort that you can partake in during your recreational time. These include a variety of eco walks and presentations, tennis, archery, basketball, golf putting and many more. You will be working hard during the day collecting data and helping with the research, but there are many fun and relaxing things for you to do in the evenings to unwind.

FOOD

The Earthwatch scientist firmly believes in the value of good food, and a wide variety of fresh foods will be available throughout the expedition. The team will be preparing their own meals in the villa kitchens. Fresh drinking water will always be available at the accommodation quarters.

Breakfast: Cereals, toast, pastries and spreads

Lunch: Sandwich meats, spreads and salads, cheese, fresh fruit, muesli bars

Dinner: Pasta, curries, stir fries, BBQ meat, salads, etc.

Snacks: fruit, crackers, sweet biscuits, muesli bars

Beverages: coffee, tea, milk, fruit juices/cordial, water

SPECIAL DIETARY REQUIREMENTS

Please alert Earthwatch to any special dietary requirements (e.g. vegetarian or vegan diets, 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. Vegetarian and vegan diets will be accommodated.



TRAVEL TIPS

SUGGESTIONS FOR THE ROAD

LUGGAGE

GENERAL CONSIDERATIONS: Do not bring more luggage than you can carry and handle on your own. If travelling 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.

TRANSFERRING LUGGAGE: If you will take an international flight with one or more connections in the country of your destination, you must collect any checked bags at the airport where you first arrive in the destination country. After proceeding through customs, you must recheck your luggage before flying on to your final destination.

PACKING YOUR LUGGAGE: Make sure to check the Expedition Packing Checklist for a complete list of what you will need to take with you. You are encouraged to go through the list and mark off each required item right before you leave for your expedition. Also take weather conditions into consideration when packing.

LOST AND DELAYED LUGGAGE: If your luggage goes astray, please have the airline send it to Tangalooma Island Resort (Moreton Island, QLD 4025).

MONEY MATTERS

LOCAL CURRENCY: Australian Dollar. See xe.com/ucc for currency information and exchange rates.

PERSONAL FUNDS: No personal funds are required during the expedition, but you may want to have some money (cash or credit cards are best) for snacks, drinks, souvenirs, or to participate in recreational activities. Money exchange is available at the Brisbane Airport in the International Terminal on levels 2 and 3 and in the Domestic Terminal on levels 1 and 2. You can also draw funds in Australian dollars at ATMs, which are found easily in Brisbane. Most Visa and MasterCard credit cards will work in Australian ATMs, but it is a good idea to check with your bank beforehand.

WHERE TO BUY SNORKEL GEAR

Listed below are a few dive shops in Brisbane that sell snorkel gear:

- Dive World: 12/17 Rivergate Place, Murrarie, QLD 4172
- ARENO Scuba Diving Centre: 54 Deshon Street, Woolloongabba, QLD 4102
- Go Dive Brisbane: 1/178 Albion Road, Windsor, QLD 4030

All of these dive shops are between a 10 to 20 minute drive from the rendezvous location. A snorkel set (flippers, mask and snorkel) should cost around \$50.

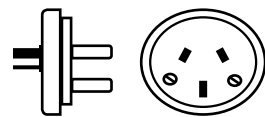
YOUR DESTINATION

LANGUAGE: English

TIME ZONE: GMT/UTC +10 For time worldwide with GMT/UTC see: worldtimeserver.com.

TELEPHONE DIALLING CODES: When calling Australia from another country, dial the country's international dialling code, followed by 61 and the number. When calling within Australia, omit the 61. When calling another country from Australia dial 0011, followed by the other country's country code and the number. **NOTE:** you should check with your cell phone provider to obtain any carrier-specific dialling codes you may need; many providers have dialling procedures that may differ in whole or in part from these directions. For additional information see kropla.com/dialcode.htm

ELECTRICITY: The electricity in Australia is 230 V and 50 Hz so you may need to bring a converter if you are from another country. The plugs have three prongs, as illustrated below. You should be able to buy one at the airport when you arrive, but it may be more expensive so it is a good idea to buy one at home before you leave. For additional information see kropla.com/electric2.htm



OTHER USEFUL LINKS:

UK FOREIGN AND COMMONWEALTH OFFICE:
fco.gov.uk/en/travel-and-living-abroad/

COUNTRY INFORMATION FROM AROUND THE WORLD:
countryreports.org

NATIONAL GEOGRAPHIC MAP MACHINE:
plasma.nationalgeographic.com/mapmachine

ONLINE UNIT CONVERSIONS: onlineconversion.com

WORLDWIDE WEATHER: wunderground.com or tutiempo.net/en

AUSTRALIAN GOVERNMENT'S TRAVEL SECURITY WEBSITE:
Information on security measures at Australian airports: travelsecure.infrastructure.gov.au

PASSPORTS AND VISAS

WILL YOU NEED A PASSPORT?

Yes. In most cases, your passport must be valid for a minimum of six months after the date of entry into the country you are visiting.

WILL YOU NEED A VISA?

Citizens of every nation except for Australia and New Zealand need to apply for a visa to enter Australia. There are 3 types of tourist visas available for various nations (ETA, EVisitor & Visitor subclass 600). You can complete a questionnaire directly on the Australian immigration website immi.gov.au/visawizard/ that will determine which of these visas is right for you. Alternatively, you can also check with your local travel agent or a visa agency to find out. Participants are advised to check visa regulations well in advance of travelling.

INFORMATION FOR VOLUNTEERS REQUIRING VISAS ONLY

TYPE OF VISA TO GET: TOURIST

The purpose of your visit is for vacation, holiday or travel. 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 labour laws and about official scientific research permits and credentials, etc., to which volunteers will not be equipped to respond on their own. All required research permits for the project are in place and have been approved by the proper authorities.

WHERE TO GET A VISA: Depending on which visa you are

eligible for, you can apply for it online at immi.gov.au/ or contact the nearest Australian embassy or consulate to find out how to apply. This process can take weeks or even months. We strongly recommend using a visa agency, which can expedite and simplify the process.

SUGGESTED AGENCIES

IN THE U.S.: Travisa; 212-613-2223; travisa.com

IN EUROPE: CIBT, Inc. (U.K.) uk.cibt.com

IN AUSTRALIA: Ask your travel agency if they can send your visa application on your behalf.

COST OF A VISA: If you are a EU passport holder, your visa will generally be for free. Other visas can cost AU\$20 or even AU\$115 in some circumstances. A visa agency will charge an additional fee.

CONTACT INFORMATION: You may be required to list the following contact information on your visa application and immigration form:

Cassandra Nichols
Earthwatch Australia
126 Bank Street
South Melbourne
VIC 3205, Australia
EMAIL: cnichols@earthwatch.org.au
PH.: +61 (0) 3 9016 7590



PROJECT CONDITIONS

THE FIELD ENVIRONMENT

GENERAL CONDITIONS

The information that follows is as accurate as possible, but please keep in mind that conditions may change.

The climate in South East Queensland is subtropical with an average year round temperature of approximately 23°C/73.4°F. It is generally fairly mild and dry during the winter. The south east trade winds are a predominant feature with occasional westerlies during the winter and northerlies during the summer. There are two tidal cycles each day in Moreton Bay, with a maximum range of approximately 2.5m.

CONDITIONS		
Conditions	March	August
Mean Humidity	62%	55%
Mean Temperature Range	21-26° C / 70-79° F	14-20° C / 57-68° F
Mean Rainfall	175.0 mm/ 0.57 ft	76.0 mm/ 0.25 ft
Altitude	Sea level	Sea level

Water Conditions	March	August
Mean water temperatures	21°/69.8°F	21°/69.8°F
Timing of seagrass sampling	Seagrass samping will be done during low tide times	Seagrass samping will be done during low tide times

ESSENTIAL ELIGIBILITY REQUIREMENTS

Physical Demands: The project can be demanding physically, due to strong currents and sea swells while snorkelling. Those who are prone to seasickness should bring preventative treatments with them since you will be spending time on the boat for some of the research activities.

Expected demands of the project: Please keep in mind that conditions may change and the project could potentially be more or less strenuous than these points indicate. All participants must be able, independently or with the assistance of a companion, to:

Activity	Workload/Intensity
Sit	For several hours at a time while sitting in the boat doing live videoing of seagrass beds and collecting sediment using a sediment grab. Also while listening to various talks and presentations and while performing data analysis and entry at the end of a field day.
Bend	For several hours at a time while sampling flora and fauna in seagrass meadows.
Walk	For several hours during surveys of intertidal areas collecting seagrass, sediment and fish and other marine creatures.
Carry	Participants will be expected to carry their own backpacks with their lunch, water and personal supplies and will need to assist with carrying reserch equipment.
Stand	For several hours during surveys of intertidal areas collecting seagrass, sediment and fish and other marine creatures.
Swim	For several hours at a time during the snorkelling activities.

BOATING REQUIREMENTS: In order to assist on the research boat you will need to be relatively fit and agile. Although research boats may have a canopy for shading, sun protection is required. Depending on winds, the trip may be bumpy and participants may feel cold on the return trip after being in the water all day. An all-weather proof or wind breaker jacket may be advisable.

SNORKELLING REQUIREMENTS: In order to participate in the project you must complete a Recreational Dive Medical, which can be performed by any General Practitioner and replaces the medical section within the application form. You will need to undertake a snorkel/swim test on day 1 of the project to ensure you are able to perform the research tasks that require snorkelling.

PARTICIPANTS MUST ALSO BE ABLE TO:

- Follow verbal and/or visual instructions.
- Enjoy being outdoors all day in all types of weather, in the potential presence of wild animals and insects.
- Tolerate 30°C (85°F) heat and high humidity levels.
- Travel in a boat in potentially bumpy conditions for several hours while doing live videoing of seagrass beds and/or collecting sediment using a sediment grab. Those with chronic or constant back or neck pain should be considering their ability to participate.
- Be comfortable swimming and snorkelling in slightly wavy conditions (will not snorkel if the water is too rough).
- Adhere to the briefing guidelines, be aware of their limitations and apply common sense while participating.

POTENTIAL HAZARDS

Hazard Type	Associated Risks and Precautions
Transportation	Transportation during the day will be by boat. There is potential for the boat to capsize, for people to slip on the boat or fall overboard, or for unsecured equipment to cause personal injury. Participants will be briefed on boat safety at the beginning of the project. All participants are to remain seated when the boat is in motion and should not lean over the railings or dangle body parts or personal effects over the side of the boat. All equipment, including research equipment and snorkel gear will be stowed safely so it cannot move around. Life jackets are located under the seat benches and are clearly marked. Only qualified and experienced staff will operate the boats and the boats will be fitted with first aid kits, a GPS and a UHF radio. The team may also be driven to some of the field sites if the weather does not permit us to go by boat. If this is the case, the team will be driven by a Tangalooma staff member in one of their 4 wheel drive coaches. It is possible for the vehicles to get in a road accident. All driving will be done by licensed resort staff who have experience driving in this area, and participants are not permitted to drive at any time during the project. Everyone in the vehicles will be wearing seatbelts at all times.
Working in boats	Boats are well maintained, and include, UHF radio, life preservers, emergency flares, fire extinguisher, and first aid kit. Life jackets are available for all passengers. All participants must be able to swim. The boat is only used in daylight hours and only when sea state is acceptable to the skipper. The skipper is certified and experienced in driving boats in the area. Boat communications include EPIRB, flares, UHF radio and mobile phones.
Walking/Hiking/ Climbing	Participants will be walking on muddy and rough terrain and in intertidal flats. There is the potential for sprains, strains, breaks, fractures, etc. to occur. It is also possible for people to cut themselves on coral in the intertidal flats. Participants must wear thick-soled dive booties when walking in these area to protect their feet. They must walk carefully in these areas and always watch where they are walking.
Snorkelling	Only participants with appropriate swimming abilities and fitness are allowed to participate in the field work that involves snorkelling. Participants are paired up so that a strong snorkeller is matched with a weaker snorkeller. An experienced project staff member is always present, in order to supervise snorkellers. Participants will wear wetsuits which provide buoyancy. During the safety briefing participants learn snorkelling safety signals, and are advised how to use them if they run into trouble.
Climate/Weather	Most people underestimate how harsh the sun can be in Australia, even in winter. Working for long periods in warm conditions can result in rapid fluid loss and dehydration, therefore participants should be drinking plenty of water throughout the day. Spare drinking water will be on the boat each day. Sunscreen (SPF 30 or above), long sleeves, a hat and sunglasses are essential and should be worn even when the sky is overcast; be sure to bring these items with you. If participants are feeling faint or dizzy, they should cool themselves off by dipping in the ocean and sitting in the shade.
Project Tasks/ Equipment	It is possible for a participant to be injured by the improper use of field equipment or by performing a field task incorrectly. In order to increase safety, a safety briefing will be given on the first day to familiarise you with specific risks and methods, and proper PPE will be worn. Project staff will be supervising field activities at all times to ensure that participants are using the equipment safely and performing the tasks properly. If anyone is unsure of how to properly do a task or use a piece of equipment, they should ask project staff. If someone is injured during field work, the injury will be cleaned thoroughly and monitored throughout the next few days for infection.



Hazard Type	Associated Risks and Precautions
Animals and Plants	<p>There are dangerous stinging marine organisms in this region including stone fish, blue bottle jellyfish (also known as a Portuguese Man of War), cone shells and blue ring octopuses. Participants will be briefed on these organisms at the start of the project. During stinger season (generally from early November to early June), participants will be required to wear personal protective equipment (wetsuits/stinger suits) while snorkelling. It is required that participants wear appropriate closed shoes while walking on sand/mudflats and in intertidal areas.</p> <p>There are a number of annoying invertebrates, such as leeches, mosquitoes, spiders, wasps, bees, and March flies on the island. These can mostly be avoided by being aware of your surroundings, tucking pants into socks and applying insect repellent. Participants with allergies to insects should come prepared with the necessary treatment (at least two Epi-Pens, antihistamines, etc.) and inform project staff of these allergies. Participants are encouraged to check themselves for leeches regularly.</p> <p>There are poisonous snakes and spiders present on the Island but encounters with them are uncommon. All snakes should be treated as venomous as it requires skilled identification to tell otherwise. Participants should not go anywhere near a snake if one is seen and should warn others nearby that the snake is there. Participants should keep the doors of their villas closed at night and should check shoes before putting them on if they were left outside. If you are bitten by a snake or a spider, tell someone nearby so you can get to a medical centre or hospital as soon as possible. If you saw the snake or spider, remember what it looked like so you can receive the correct anti-venom from the medical centre.</p> <p>It is possible to encounter a shark in these waters (although very unlikely). While snorkellers are in the water, someone on the boat will be doing a surface lookout and all snorkellers should be scanning the water while in it. If a shark showing aggressive behaviour is spotted, snorkellers are to move slowly away from the area and exit the water.</p> <p>A type of marine cyanobacteria called Lyngbya occurs in Queensland coastal waters, and has at times been quite abundant in Moreton Bay. It grows attached to seagrass, corals and other shallow substrates and can grow rapidly to form blooms under certain conditions. It can produce skin and eye irritation following direct contact. If ingested or inhaled it can cause irritation to the respiratory and gastrointestinal tracts. You should avoid swimming or wading in areas where Lyngbya is growing or floating in the water and should not have direct contact with material washed onto the beach.</p>
Disease	<p>There are a number of tropical diseases in the area, but the chances of contracting one is very low. Instruction will be provided on how to minimise this risk. Diseases found in tropical regions include Ross River fever, Australian bat lyssavirus, leptospirosis, Q fever, Queensland tick typhus, scrub typhus, melioidosis, Japanese encephalitis, dengue fever, filariasis, leishmaniasis, onchocerciasis, trypanosomiasis, schistosomiasis, hepatitis, and typhoid. Please see the Health Information section (pg. 20) for immunization recommendations. Most diseases are preventable with basic safety precautions. Many of these diseases can be contracted through insect bites, so participants should wear protective clothing, including long sleeved shirts and pants to prevent bites. They are also advised to apply insect repellent frequently.</p>
Distance from Medical Care	<p>There are no hospitals on Moreton Island itself, but there are several on the mainland and a few medical centres on an Island nearby (Bribie Island). There is a ferry that can take you across to the mainland and it takes approximately 75 minutes. There is an emergency services helipad on the Island so you can get to a hospital more quickly in an emergency. If you are pregnant, have any serious and life-threatening allergies or medical conditions you should talk with your physician prior to joining this expedition.</p>
Severe Weather Conditions	<p>Storms, winds and rains may cause field conditions to become more hazardous. Weather will be monitored daily and activities will be cancelled if severe weather warnings are present.</p>



SAFETY

HEALTH INFORMATION

ROUTINE IMMUNISATIONS

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

Medical decisions are the responsibility of each volunteer and his or her doctor, and the following are recommendations only. Earthwatch can only provide details regarding suggested vaccinations, but we are not a medical organisation.

Health conditions around the world are constantly changing, so keep informed and consult your physician, a local travel health clinic, the US Centre for Disease Control (cdc.gov), or the World Health Organization (who.int) for the latest health information for travellers.

Any prescription medication brought into Australia needs to be accompanied with a letter from your doctor for Customs Inspection purposes. For further information about the regulation of medications, please see: tga.gov.au/consumers/travellers.htm. Medical attention, of high quality, will be sought should any serious ailments occur.

PROJECT VACCINATIONS

REQUIRED: If travelling from countries or region where yellow fever is endemic, you must have a certificate of vaccination.

RECOMMENDED: Tetanus is generally recommended for health reasons.

ADDITIONAL HEALTH INFORMATION RESOURCES

TRAVEL HEALTH WEBSITE: mdtravelhealth.com

THE TRAVEL DOCTOR: tmvc.com.au

AUSTRALIAN DEPARTMENT OF HEALTH AND AGING: health.gov.au

HOSPITAL FOR TROPICAL DISEASES: thehtd.org

ADVICE REGARDING DISEASES

Traveller's diarrhoea affects many international travellers. Other diseases found in tropical regions within Australia may include (but are not limited to):

Ross River fever: In Queensland, cases of Ross River virus occur throughout the year, but most cases occur between February and May. The virus is not fatal, but the time it takes to recover fully is prolonged in some people. For further information, please see the factsheet at http://access.health.qld.gov.au/hid/InfectionsandParasites/ViralInfections/rossRiverVirus_fs.asp

Dengue fever: Dengue mosquitoes do not breed in rivers, swamps, creeks, bush land or mangroves; they breed in containers in our backyard, particularly during the wet season (November to March). For further information, visit www.health.qld.gov.au/dengue/info/definition.asp

Barmah Forest virus: Barmah Forest virus has similar symptoms to Ross River virus although usually the illness is of shorter duration. For further information, please see the factsheet at http://access.health.qld.gov.au/hid/InfectionsandParasites/ViralInfections/barmahForestVirus_fs.asp

You can decrease your risk of most diseases above by avoiding mosquito bites:

- Use insect repellents and wear protective, light-coloured clothing.
- Avoid being outside during times of heavy infestation of mosquitoes, e.g. early evenings in the warmer months.
- Screen living and sleeping areas.
- Check your home regularly for potential mosquito breeding areas, e.g. any uncovered water containers, small wading pools and old tyres should be emptied regularly.

Leptospirosis: Ensure all cuts and grazes are covered if handling animals, plants, or soil in tropical and sub-tropical areas. For detailed information please refer to the factsheet. http://access.health.qld.gov.au/hid/InfectionsandParasites/BacterialInfections/leptospirosis_fs.asp

If you feel ill once you return from your trip, make sure you inform your doctor that you have recently returned from a tropical or sub-tropical region.

EMERGENCIES IN THE FIELD

The project will be equipped with a satellite phone and an Emergency Position-Indicating Radio Beacon (EPIRB) in the event that a life-threatening emergency should occur. Whenever possible, staff in the field will carry a satellite phone for emergencies to contact the appropriate emergency authorities. All teams will carry a first-aid kit and a staff member with a senior first aid certificate will be present.

If an accident or emergency occurs project staff will assess the severity of the problem and notify emergency authorities or transport any injured person(s) to medical attention immediately. In the unlikely event of a medical emergency that cannot be handled by a local doctor, the patient will be taken by car or ambulance to the nearest hospital (one of the hospitals in Brisbane). From there the patient can be transferred, if necessary, to another medical institution via a Queensland Rescue Service helicopter. It is unlikely that volunteers will be more than 50 kilometres or two hours from medical aid at any time.

PROXIMITY TO MEDICAL CARE

Physician, nurse, or EMT on staff: Project staff are not medical professionals.

However, there is a nursing station and ambulance on the island if required.

Staff certified in safety training: All project scientists and Earthwatch team leaders are qualified in CPR and hold a First Aid certificate.

NEAREST MEDICAL TREATMENT

ST. ANDREW'S WAR MEMORIAL HOSPITAL
457 Wickham Terrace, Brisbane, QLD 4001
Telephone: +61 7 3834 4444

WYNNUM HOSPITAL
Whites Road, Lota, QLD 4179
Telephone: +61 7 3893 8000

REDCLIFFE HOSPITAL (only if air ambulance needed)
ANZAC Ave, Recliffe, QLD 4020
Telephone: +61 7 3883 777

There is an emergency helipad on the Island so it is possible to reach a hospital on the mainland more quickly than by ferry if necessary.

INSURANCE

MedEvac assistance, advice and insurance are included in the contribution you pay to Earthwatch. It covers your travel medical risks, including medical expenses and emergency medical evacuation, while you are traveling, as well as trip cancellation insurance, baggage and personal money insurance. This coverage is valid in the country of your Earthwatch expedition and during travel to and from your expedition. Please see the FAQ for information about when coverage starts and ends. (Note: For US volunteers, the coverage is valid only when the expedition is over 100 miles from your place of residence. For AU volunteers, the coverage is limited if the expedition is less than 50km from your place of residence).

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

Please note that due to different governing laws in each country, policies are specific to each regional Earthwatch office. Please check with your sign up office about your insurance coverage.

If you signed up through the U.K., U.S., or Japan: 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.

For more information, please visit: www.earthwatch.org/expeditions/travel-insurance.

Refer any queries regarding Earthwatch's Operations Department at +1 (978) 450-1222 or insurance@earthwatch.org

If you signed up through Earthwatch Australia, contact them directly at +61 (0) 9016 7590 or earth@earthwatch.org.au

EMERGENCY MEDICAL AND EVACUATION ASSISTANCE

Emergency medical and evacuation assistance from CEGA Medical, a twenty-four-hour international service, is also included in your contribution. Please see the contact information at the end of this document.

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

PROJECT STAFF

YOUR RESOURCES IN THE FIELD



EARTHWATCH SCIENTIST DR JAMES UDY is the Chief Scientist of Healthy Waterways, a not-for-profit NGO dedicated to ensuring that scientific knowledge and understanding is applied to the management of SEQ waterways. Prior to becoming the Chief Scientist at Healthy Waterways, Dr Udy has lead several multidisciplinary research groups focusing on improving our understanding of aquatic processes, with a focus on reducing the harmful effects of nutrients and sediment in freshwater and marine environments. Dr Udy is a recognized expert in seagrass ecology and recently lead two national workshops that provided advice to environmental managers on the current condition of seagrass habitats in Australia and the key threats to them.

James is the Principal Investigator on Snorkel for Queensland's Marine Mammals and will be present on all teams.



EARTHWATCH SCIENTIST DR ALISTAIR GRINHAM is a senior research fellow in the School of Civil Engineering and has been actively researching in South East Queensland and Solomon Islands for over 10 years. His research has focused on the development of physical and biogeochemical models of freshwater storages and coastal lagoonal systems including Moreton Bay. Primary research activities have been creating digital elevation models of these systems and monitoring sea level and water currents as well as benthic, pelagic and catchment biogeochemical processes. These research activities have been to support efforts in the sustainable development of marine resources in the face of global climate change as well as to better understand the impact of catchment modification (e.g. urbanisation, logging and mining activities) on these systems.



EARTHWATCH SCIENTIST DR PAUL MAXWELL is a marine ecologist leading the science and innovation team at Healthy Waterways, the organisation responsible for improving waterways health in south east Queensland. Paul has spent most of his career studying Moreton Bay and its catchments but is primarily interested in how critical coastal habitats can adapt to increasing pressures without losing the services they provide. Paul grew up in the region and spent lots of time exploring Moreton Bay and its tributaries. He is a member of the Queensland Waders study group that monitor the migratory shorebird populations in the Bay. He holds a PhD. in Marine Science from Griffith University.



EARTHWATCH SCIENTIST PROF ROD CONNOLLY is a professor in Marine Science at Griffith University in southeast Queensland, Australia. His research expertise is in the links between fisheries and coastal habitats including coral, seagrass, mangroves and saltmarsh. He uses chemical tracers, particularly stable isotopes, to determine carbon pathways and sequestration in estuaries and coastal waters. Rod is a member of several scientific panels overseeing water quality and habitat conservation programs around Australia. He is interested in incorporating the science and monitoring of ecosystem health into adaptation strategies. Through his work on marine reserves and resilience he is helping to find sustainable solutions to the issues of urbanisation and climate variability.



RECOMMENDED READING

YOUR RESOURCES AT HOME



EARTHWATCH SCIENTIST DR TIM STEVENS has more than three decades experience working in the assessment and conservation of marine biodiversity, in Australia, Europe, and the UK. He has worked extensively on marine protected area design and management, as well as exploring the little known habitats of deep reefs. This has given him ample opportunity to spend time messing about in boats and diving as much as he can. He currently teaches Marine Biology at Griffith University, where he uses every opportunity to take his students out of the class room and get them wet and muddy, experiencing the marine environment at first hand.



EARTHWATCH SCIENTIST DR CHRIS ROELFSEMA is a researcher and lecturer at the School of Geography, Planning and Environmental Management at the University of Queensland. He specialises in integrating field and satellite or airborne satellite image data to map, monitor and model coral reef and seagrass environments. The work that he does helps to answer critical questions about the impacts of climate change in these marine environments. He has developed new mapping techniques using various methods for collecting field data, including using volunteers and robots. Since 1999, Chris has studied Asian Pacific coral reefs and seagrass habitats, in Moreton Bay as well as in many different locations. He is very experienced with seagrass mapping since he has mapped many seagrass properties in these research sites. As a scientist and diving instructor, Chris has assisted Reef Check and CoralWatch and has organised several volunteer marine conservation projects.

NOTE: In addition, there will be various Research Assistants joining the expedition. A staffing schedule is still to be announced.

EARTHWATCH FIELD STAFF

An Earthwatch field staff member will accompany almost every team into the field to provide additional logistical support.

SCIENTIFIC MEDIA

BOOKS

- Davie P. et al. 2011. *Wild Guide to Moreton Bay and adjacent coasts 2nd edition* (volume 1 &2). Brisbane, Australia. Queensland Museum.
- Dennison W, Abal E. 1999. *Moreton Bay Study: a scientific basis for the healthy waterways campaign*. Brisbane Australia. South East Queensland regional water quality management strategy.
- Gregory H. 1996. *The Brisbane River Story: Meanders through time*. Brisbane Australia. Australian Marine Conservation Society.
- Ludlow P. 2000. *Moreton Bay People. The complete collection*. Brisbane Australia: Peter Ludlow, www.users.bigpond.com/pludlow
- Ludlow P 2003. *Moreton Bay letters*, www.users.bigpond.net.au/pludlow
- Moreton Bay waterway and catchment partnership. 2001. *Discover the waterways of South East Queensland*. Brisbane Australia. South East Queensland regional water quality management strategy.
- State Library of Queensland 1996. *Brisbane's Moreton Bay: our heritage in focus*. Brisbane Australia. State Library of Queensland.

FIELD GUIDES

- Menkhorst, P. and Knight, F. 2001. *A Field Guide to the Mammals of Australia*. Melbourne: Oxford University Press.
- Pizzey, G. and Knight, F. 1999. *Field Guide to the Birds of Australia*. Sydney: Harper Collins.
- Simpson, K., and Day, N. 1996. *Field Guide to the Birds of Australia*. Melbourne: Penguin Books.
- Wilson, S. 2005. *A Field Guide to Reptiles of Queensland*. Collingwood, Australia: CSIRO.
- Moreton Bay and Catchments
- Carter P. 1994. *Historic North Stradbroke Island Dunwich*,

Queensland. North Stradbroke Island historical museum society.

- Poole, S. (1996). *Wild Places of Greater Brisbane*. Queensland Museum. South Brisbane.
- Queensland Museum (1995). *Wildlife of Greater Brisbane*.
- Queensland Museum (2003). *Wild plants of Greater Brisbane*.

SOCIAL MEDIA: EARTHWATCH AUSTRALIA

- FACEBOOK: facebook.com/EarthwatchAustralia
- TWITTER: twitter.com/Earthwatch_Aus
- YOUTUBE: youtube.com/user/EarthWebBoy
- INSTAGRAM: instawebgram.com/i/earthwatch_australia/
- PINTEREST: pinterest.com/earthwatchaus/
- GOOGLE+: plus.google.com/+EarthwatchSouthMelbourne/posts
- FLICKR: flickr.com/photos/earthwatchaustralia/

SOCIAL MEDIA: EARTHWATCH INTERNATIONAL

- FACEBOOK: facebook.com/Earthwatch
- TWITTER: twitter.com/earthwatch_org
- YOUTUBE: youtube.com/earthwatchinstitute



PARTICIPANT CODE OF CONDUCT

This document contains important information concerning Earthwatch Institute policies and participant rights and responsibilities for inclusion in 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. You will not be permitted to participate 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. Copying 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 not be antidiscriminatory and that the possibility exists that local residents may not have an awareness

of preferred 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 prohibited for the duration of an Earthwatch project.

SEXUAL HARASSMENT

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

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

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

Sexual harassment refers to conduct which is offensive, which harms morale, or which interferes with the effectiveness of Earthwatch expedition teams; such conduct is prohibited. Lewd or vulgar remarks, suggestive comments, displaying derogatory posters, cartoons, or drawings, pressure for dates or sexual favors, and unacceptable physical contact or exposure are examples of what can constitute harassment. No one should be touched in areas that 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, or Earthwatch field staff.

Any individual who feels subjected to sexual harassment or has any knowledge of such behavior should report it at once to the



Earthwatch scientist, Field Team Leader, or other Earthwatch staff member. The Earthwatch scientist or Field Team Leader will notify Earthwatch when an accusation of sexual harassment or abuse is made or when such conduct is witnessed.

All reports of sexual harassment will be handled with discretion and will be promptly and thoroughly investigated. Any participant who is found to have engaged in conduct constituting sexual harassment will be removed from the expedition at his or her own expense. If a minor is 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 impose lengthy prison terms or the death penalty. The manufacture, possession, use, purchase, 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 on 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 on-site briefing to participants at the start of the project and in the expedition briefing.

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

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

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





MINORS

Earthwatch considers participants less than 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 fifteen (15). Guardians accompanying minors on standard teams must be 21 years of age or over. Minors on standard teams do not receive additional guidance or supervision from Earthwatch beyond what is offered to the adult participants. The total number of minors on standard teams may be limited on a project by project basis; this will be noted in the expedition briefing. A maximum of two minors may accompany each parent or guardian on a standard or Family Team. Earthwatch has developed teams specifically for 15-, 16- and 17-year-olds ("Teen Teams") as well as teams specifically for families ("Family Teams") with children as young as 10 years. 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 may be made at the discretion of Earthwatch and the

Earthwatch scientist. Due to a more in-depth screening process for certain programs that select candidates based on school year rather than age, there may be 18-year-olds fielding on the same team as 15-, 16- and 17-year-olds. Please be aware that some Earthwatch projects do not allow participation by minors in any circumstance.

PARTICIPANTS AND DRIVING

Participants are not allowed to drive project vehicles (including motorcycles or all terrain vehicles) or aircraft during an expedition. In select circumstances, participants may be able to drive boats under the direct supervision by project staff. These circumstances are 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 any 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 in an Earthwatch project at any time and to terminate any work being done by a participant and require the participant to vacate the project site if the Earthwatch scientist, Field Team Leader, or other Earthwatch staff member in his or her absolute discretion considers it appropriate. In this event, the participant (and his or her parents or guardians, if appropriate) will be responsible for arranging and paying for any accommodation, travel, or other arrangements which may be necessary following the termination of a participant's involvement in a project, for whatever reason, and will not be eligible for a refund.

Earthwatch may not refuse an applicant's participation in a project for discriminatory reasons (race, religion, ethnicity, national origin,

gender, sexual orientation, or any other reason prohibited by applicable law). However, an application may be denied in the interest of team compatibility or due to logistical limitations. 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 an applicant is an unusual event and is generally done either because of 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 visits by media (film, photography, or print), special groups, or teams (students, donors, etc.), if they conflict with Earthwatch scientist schedules, safety, research objectives, or general performance of the team.

Any participant found in violation of any of the policies described in this document ("Participant Rights and Responsibilities") is subject to removal from the team at his or her own expense. By signing the Liability Release section of your Earthwatch Participation Form, you are indicating that you have read and understand the policies in this document. Removal of a participant from a team is at the discretion of the Earthwatch scientist, Field Team Leader, or other Earthwatch staff. In addition, Earthwatch will support the right of the Earthwatch scientist, Field Team Leader, or other Earthwatch staff to send a participant away from a project once in the field should his or her 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 guardians prior to his or her dismissal. Should a participant be removed from a team, he or she is responsible for any and all costs associated with departure from the team and will receive neither refund of the minimum contribution for the expedition nor any expenses incurred by participation on the expedition.

(November 2012)



COMMUNICATIONS

CONTACT INFORMATION

EMERGENCY COMMUNICATIONS

Telephones will be available for emergency communication while on Moreton Island. The project will have a satellite phone for emergency communications only. All project boats will be equipped with UHF radios which can be used for emergencies. Generally, two separate groups in the field will be able to contact each other over short distances via UHF radio, but not by satellite phone (satellite phones remain off in order to maintain full charge to call authorities during an emergency). In the event of an emergency the first point of contact will be emergency services at phone number 000. After this first contact the satellite phone can be used to attempt to contact Earthwatch directly.

EMERGENCY NUMBERS:

POLICE: 000

FIRE AND AMBULANCE: 000

JOYCE PALMER HEALTH SERVICES: +61 (0) 7 4752 5291

INGHAM HEALTH SERVICES: +61 (0) 7 7420 3000

THE TOWNSVILLE HOSPITAL: +61 (0) 7 4796 1111

THE EARTHWATCH AUSTRALIA OFFICE CAN BE CONTACTED ON THE FOLLOWING NUMBERS:

DURING OFFICE HOURS: +61 (0) 3 9016 7590

AFTER HOURS: +61 (0) 3 8508 5537

PERSONAL COMMUNICATIONS

Personal communication with outsiders is not always possible while participating in an expedition. Earthwatch encourages volunteers to minimize outgoing calls and immerse themselves in the experience; likewise, family and friends should restrict calls to urgent messages only.

CONTACT INFORMATION

There is internet access on Moreton Island, although there is a cost associated with it. There is limited mobile reception on Moreton Island, and you may use your own mobile phones during non-research time if you choose. Please see the "Internet and Communications" section on page 12 of this briefing for more

information. The satellite phone cannot be contacted from the outside, as it must remain turned off to maintain battery charge for emergency situations.

Again, 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.

EARTHWATCH'S 24-HOUR EMERGENCY HOTLINE (OUTSIDE AUSTRALIA)

Call Earthwatch's 24-hour on-call duty officer in the U.S.:

+1 (978) 461-0081

+1 (800) 776-0188 (toll-free for calls placed from within the US)

HEALIX INTERNATIONAL:

+44 (20) 3667-8991 (collect calls/ reverse charges accepted)

US TOLL FREE: 1 (877) 759 3917

UK FREE PHONE: 0(800) 197 5180

EMAIL: earthwatch@healix.com

EARTHWATCH'S 24-HOUR EMERGENCY HOTLINE (WITHIN AUSTRALIA):

+61 (0) 3-8508-5537

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

MESSAGE FROM EARTHWATCH

DEAR EARTHWATCHER,

Thank you for joining our expedition! We do appreciate your decision to be involved in hands-on environmental science and conservation, as a significant personal contribution to a sustainable planet.

As an Earthwatch volunteer, you have the opportunity to create positive change.

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 over 40 years. You're in good hands.

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 our Earthwatch office. Thank you for your support, and enjoy your expedition!

Best regards,



Professor David McInnes
Chief Executive Officer, Earthwatch Australia

CONNECT

WITH OTHER
EARTHWATCHERS!
FIND US ON FACEBOOK
AT FACEBOOK.COM/
EARTHWATCH
AUSTRALIA

OR ON TWITTER
@EARTHWATCH_ORG_AUS,
AND ON YOUTUBE
AT YOUTUBE.COM/
EARTHWATCHINSTITUTE





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