


2010

Marine Biology in Australia



Robin Cotter & Phil Pepe
Phoenix College
1/1/2010



Tropical Marine Biology in Australia International Education Program June 8-30, 2010

To Interested Parties,

Experience the exciting underwater world of tropical Australia and learn about the management of the Great Barrier Reef Marine Park. This unique summer program will be held in Brisbane, Stradbroke Island, and Heron Island on the Great Barrier Reef. The spotlight will be on the inner workings of coral reefs and their incredibly diverse flora and fauna. You will spend your days exploring the coast, snorkeling (optional scuba diving), participating in reef preservation activities, and discussing a variety of fascinating coral reef and marine parks management topics.

Snorkel and scuba dive off beautiful Heron Island in the Great Barrier Reef Marine Park. Monitor the health of coral reefs and survey the invertebrates and fishes of the GBR. Explore the mangrove and Eucalypt forests of Stradbroke Island and observe native birds and other Australian wildlife. Learn about Aboriginal natural arts from members of the Dunwich Indigenous Community. Observe unique Australian animals at the Erwin family's Australia Zoo in Beerwah.

Robin Cotter, a biologist from Phoenix College, will be your teacher and guide. Philip Pepe, a PADI Instructor from TEAL Australia, will be your expert connection to Australian marine parks management and the underwater world of the GBR.

The University of Queensland will be teaming up with Phoenix College to offer students a unique opportunity to study tropical marine biology abroad. Brisbane will be our base of operations. Classes will be packaged together to optimize your field experience in Australia. Professor Cotter will conduct a series of orientation meetings at Phoenix College during the spring semester and prior to departure for Australia. TEAL and MCCD will assist you in arranging transportation, lodging, diving, and other logistics.

We invite your active participation in this program.

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PHOENIX
COLLEGE

GO FAR, CLOSE TO HOME.

Experience Science Education in Tropical Queensland, Australia

June 8-30, 2010

This unique, marine biology program is open to all participants with a desire to learn about tropical habitats by direct experience. The program will be run in Australia from June 10 to June 29, 2010. The University of Queensland's Marine Stations will be our base of operations.

The program will convey the excitement of the amazing diversity of Australia's marine life. The purpose is to understand the significance of Australia's marine systems and their importance in the global setting. You will gain a foundation of knowledge that will enable you to seek answers to today's meaningful questions about sustaining the diversity of the world's oceans, coasts and estuaries.

You will spend your days in a guided exploration of two coastal islands: Stradbroke Island and Heron Island on the Great Barrier Reef. The program will include lectures, readings from popular literature, practical workshops, cultural events, guided nature walks and snorkeling or scuba diving excursions led by trained naturalists and guides.

You will learn by active engagement in the environment. By observing the fauna and flora of the coastal zone you'll discover how organisms fit into the ecosystems they share. By participating in fascinating discussions of tropical marine biology and marine conservation you'll find out about the diversity

of habitats, sites of conservation significance, and endangered plants and animals. By engaging in ecological studies of corals, fish, and invertebrates you'll utilize methods employed by environmental scientists and gain a better understanding of their work.

The prerequisites for the program are positive motivation, good physical conditioning, and swimming proficiency. You will also be required to participate in a series of orientation activities prior to departure for Australia.

Once in Australia you will attend program events in Brisbane, and at the Moreton Bay and Heron Island Marine Research Stations in Queensland. You will be required to participate in an intensive course of study offered by Phoenix College and TEAL AU (Tropical Ecology Adventure Learning in Australia). You will earn 3 credits through Phoenix College: 1 credit for BIO148 Coral Reef Ecology and 2 credits for BIO149AL Field Biology: Ecological and Environmental Field Experience.

Upon completion you will also receive a certificate for a course of study in tropical coastal ecology focused on coral reef, mangrove, and sea grass habitats called "Understanding Australia's Marine Environments". The program is equivalent to the University of Queensland's MARS2005 course offered by the Centre for Marine Studies.

Course Work

Course Number	Course Title	Credits	Prerequisites
BIO 148	Coral Reef Ecology	1	None
BIO 149AL	Ecological Field Experiences	2	None
Certificate	Australia's Marine Environments	0	None

Academic Activities (76.5 hrs)

On Site Orientations: 4.5 hrs

Lecture Activities: 20 hrs

Field and Lab Practical Activities: 52 hrs

Academic Requirements

Students are required to participate in all academic activities.

The grade for BIO 148 will be based on 4 open-book, essay exams with a choice between two questions on each exam. Each essay will be worth 25 points for a total of 100 points for the course. The essays are due: 1) 6/15, 2) 6/21, 3) 6/24, and 4) 6/28.

The grade for BIO 149 will be based on 25 lab/ field assignments completed during the activities. Each assignment will be worth 4 points for a total of 100 points for the course.

The certificate will be awarded for completion.

Books and CDs

[Great Barrier Reef Marine Park](#) by Great Barrier Reef Marine Park Authority

[Indo-Pacific Coral Reef Field Guide](#) by Gerald Allen & Roger Steene

[Tropical Pacific Invertebrates](#) by Patrick Colin & Charles Arneson

The Books and CDs are available on loan from the Phoenix College Library

Sites to be Visited

Brisbane

[Moreton Bay Research Station](#), Stradbroke Island

Myora Springs, Stradbroke Island

Dunwich, Stradbroke Island

Point Lookout, Stradbroke Island

Blue Lake National Park, Stradbroke Island

[Australia Zoo](#), Beerwah

[Heron Island Research Station](#), Heron Island

Itinerary (subject to change)

Date	Activities
June 8 (Tues)	Night Departure from Los Angeles
June 9 (Wed)	Fly from Los Angeles to Australia
June 10 (Thur)	Arrive Brisbane, Australia Transfer to Hotel Orientation at Hotel marks the official start of the program (1.5 hrs) Explore Brisbane on foot and by Rivercat Overnight in Brisbane
June 11 (Fri)	Transfer to Cleveland Ferry to Stradbroke Island Welcome Activity (1.5 hrs) North Stradbroke Island Historical Museum (2 hrs) Overnight at Moreton Bay Marine Lab
June 12 (Sat)	“Island Talks: Coastal Habitats” (2 hrs) Nature Walk Myora Springs and Mangrove Watch (2 hrs) Goompi Trail Nature Walk with Aboriginal Guide (2 hrs) Overnight at Moreton Bay Marine Lab
June 13 (Sun)	“Island Talks: Marine Mammals” (2 hrs) Traditional Aboriginal Art & Boomerang Throwing Workshops (2 hrs) Point Lookout Whale Watch (2 hrs) Overnight at Moreton Bay Marine Lab
June 14 (Mon)	“Island Talks: Coastal Forests” (2 hrs) Blue Lake Forest Hike-Karboora Walking Track (4 hrs) Overnight at Moreton Bay Marine Lab
June 15 (Tues)	Ferry to Cleveland Transfer to Brisbane Overnight in Brisbane
June 16 (Wed)	Australia Zoo in Beerwah-Australian Wildlife Encounters (4 hrs) Overnight in Brisbane
June 17 (Thur)	Free Day in Brisbane Optional Cultural Activities – South Bank Overnight in Brisbane
June 18 (Fri)	Transfer to Gladstone Ferry to Heron Island Welcome Activity and Orientation (1.5 hrs) Coral Caye Island Walk Pisonia Forest (2 hrs) Overnight at Heron Island Research Lab
June 19 (Sat)	“Reef Talks: Coral Habitats” (2 hrs) Lagoon Reef Walk (2 hrs) “Marine Life Practical: Corals” (2 hrs) Overnight at Heron Island Research Lab

June 20 (Sun)	<p>“Reef Talks: Coral Monitoring” (2 hrs) Reef Snorkel-Coral Watch (2 hrs) “Marine Life Practical: Coral Substrates” (2 hrs) Overnight at Heron Island Research Lab</p>
June 21 (Mon)	<p>“Reef Talks: Coral Diseases & Bleaching” (2 hrs) Lagoon Transect- Reef Check (2 hrs) “Marine Life Practical: Bleaching” (2 hrs) Overnight at Heron Island Research Lab</p>
June 22 (Tues)	<p>“Reef Talks: Coral Ecosystems” (2 hrs) Reef Snorkel-Coral Watch/Plankton Tow (2 hrs) “Marine Life Practical: Plankton” (2 hrs) Overnight at Heron Island Research Lab</p>
June 23 (Wed)	<p>“Reef Talks: Sharks & Rays” (2 hrs) Shark Bay-Shark and Ray Watch (2 hrs) “Marine Life Practical: Seaweeds” (2 hrs) Overnight at Heron Island Research Lab</p>
June 24 (Thur)	<p>“Reef Talks: Reef Fish Families” (2 hrs) Reef Snorkel-Fish Watch (2 hrs) “Marine Life Practical: Food Webs” (2 hrs) Overnight at Heron Island Research Lab</p>
June 25 (Fri)	<p>“Reef Talks: Echinoderms” (2 hrs) Lagoon Transect- Cucumber Count (2 hrs) “Marine Life Practical: Fish ID” (2 hrs) Overnight at Heron Island Research Lab</p>
June 26 (Sat)	<p>“Reef Talks: Worms & Mollusks” (2 hrs) Reef Snorkel-Fish Watch (2 hrs) “Marine Life Practical: Invertebrate ID” (2 hrs) Overnight at Heron Island Research Lab</p>
June 27 (Sun)	<p>Wrap-up (2 hrs) Overnight at Heron Island Research Lab</p>
June 28 (Mon)	<p>Ferry to Gladstone Fly to Brisbane Overnight in Brisbane</p>
June 29 (Tue)	<p>Readying for Departure Fly from Brisbane to Los Angeles</p>

Housing and Accommodations

Brisbane City YHA:

In Brisbane, participants will be housed at Brisbane City YHA at 392 Upper Roma Street, Brisbane 4000. Brisbane City YHA is centrally located and offers guests state of the art facilities. It has, Wi-Fi internet throughout, indoor and outdoor dining, food store, nightly entertainment and a roof top swimming pool with views of the city and Brisbane River. Brisbane City YHA accommodates groups of 10 - 80 in its specialist Groups facility: The Rainforest Floor. Facilities include multi-share dorms and offers secure TV room, dining area and kitchen, as well as conference and AV facilities. Three participants will occupy a dorm room.. The hostel is located 600 meters from the Roma Street Station in the Brisbane Transit Centre **and** is 15km from the airport.

University of Queensland Marine Research Station Facilities:



At Stradbroke Island and Heron Island, participants will be housed at University of Queensland Marine Research Station Dormitories. The dormitories are located on Station grounds just meters from the beach in quiet and peaceful surroundings. The bunk room dormitories are supported by group dining, shower, toilet, and laundry facilities. Eight participants will occupy a bunkroom. For more information visit the UQ web. Breakfast, lunch, and dinner will be provided during the 14 days spent at University of Queensland Research Stations. SCUBA diving is an optional activity. It will be available during our stay at the Heron Island Marine Station through the Dive Center at the Heron Island Resort. The SCUBA fees will be paid directly to the Dive Center by diving participants.

Transportation

International Air Travel:

Participants will be responsible for booking and paying for their own International Air Travel, a roundtrip to Brisbane through Los Angeles. Several airlines serve Brisbane from the US west coast. These include V-Australia, Qantas, New Zealand Air, Delta, American, and United. Prices will vary depending upon the participant's departure location and the carrier. Participants are responsible for meeting the group for the Orientation at Brisbane Hotel to officially start the program on June 10.

Example Only: Current Cost (Total Air, Taxes & Fees) \$1,023.50 Flight - 1 round trip ticket




Tue, Jun 08	Depart:	11:20pm	Los Angeles, CA (LAX) to		Qantas Airways - Nonstop Flight 16
	Arrive	6:10am	Brisbane, QL (BNE)		
		Arrives Thu, Jun 10			
Wed, Jun 30	Depart:	11:05am	Brisbane, QL (BNE) to		Qantas Airways - Nonstop Flight 15
	Arrive	7:00am	Los Angeles, CA (LAX)		

Australian Domestic Air Travel:

TEAL will arrange booking and paying for Australian Domestic Air Travel. A roundtrip to Gladstone from Brisbane using Qantas connects with the ferry to Heron Island and the

international return flight through Los Angeles: departing Brisbane on June 18 (Fri) to connect with the and returning June 28 (Mon).

Example Only: Current Cost (Total Air, Taxes & Fees) \$258.20 Flight - 1 round trip ticket

 QF2332	 <i>Brisbane to Gladstone</i> Depart Fri 08:50 AM 18 Jun 10 Arrive Fri 09:55 AM 18 Jun 10
 QF2341	 <i>Gladstone to Brisbane</i> Depart Mon 04:30 PM 28 Jun 10 Arrive Mon 05:35 PM 28 Jun 10

Train Travel:

City Train (Brisbane and Surrounds)

International Airport to Roma Street. Roundtrip Current Price: \$29.00

Roma Street to Cleveland Roundtrip Current Price: \$10.00

Domestic Airport to Roma Street Roundtrip Current Price: \$29.00

Roma Street to Beerwah Roundtrip Current Price: \$18.00

Ferries:

Stradbroke Flyer + 61 7 3286 1964

Cleveland to Dunwich Roundtrip Current Price: \$20.00

Courtesy bus picks up from and drops off at Cleveland Train Station 10 minutes before connection.

Voyagers Catamaran +61 2 8296 8122

Gladstone to Heron Island Roundtrip Current Price: \$236

Airport transfer \$14

Budget Summary

Costs are estimated in USD based on an exchange rate of \$0.90 US = 1 AUD

ITEM	COST PER PARTICIPANT
*Roundtrip International Airfare (LA->BR)	*\$1,250.00
Roundtrip AU Domestic Airfare (BR->GL)	\$250.00
Brisbane City YHA Accommodations (5 nights)	\$300.00
Brisbane Trains	\$100.00
**Food in Brisbane	**\$350.00
Australia Zoo Fees & Transfers	\$55.00
Stradbroke Island Ferry & Transfers	\$ 25.00
Moreton Bay Marine Station (4 nights) Dorms/Classroom	\$140.00
Moreton Bay Marine Station (4 days) Meals	\$125.00
Indigenous Cultural Activities	\$ 35.00
Bus Transport on Stradbroke Island	\$40.00
Roundtrip AU Domestic Airfare (BR->GL)	\$ 250.00
Heron Island Ferry & Transfers	\$ 229.00
Heron Island Research Station (10 nights) Dorms Classrooms	\$370.00
Heron Island Research Station (10 days) Meals	\$450.00
Snorkel Package & Boat Rental (4 trips)	\$190.00
TEAL Education Fee	\$400.00
MCCD Instructor Expense Fee	\$421.00
MCCD Tuition and Fees	\$323.00
DAN Insurance	\$100.00
i-Next Medical/ Travel Insurance	\$ 45.00
TOTAL	\$5,510.00

* International Air Travel:

Participants will be responsible for booking and paying for their own International Air Travel. The \$1,250.00 cost estimate is for a roundtrip to Brisbane from Los Angeles. Prices will vary depending upon the participant's departure location. Participants are responsible for meeting the group for the Orientation at Brisbane City YHA to officially start the program on June 10.

**Food:

Breakfast, lunch, and dinner will be provided during the 14 days spent at University of Queensland Research Stations. The program does not provide any other meals. Participants can eat out at local restaurants during the 6 days spent in Brisbane or prepare meals at the hotel kitchen. A food budget of approximately \$350.00 is suggested and included in total cost.

Optional SCUBA Package:

SCUBA diving is an optional activity. It will be available during our stay at the Heron Island Marine Station through the Dive Center at the Heron Island Resort and will cost approximately \$272.00 for 4 dives including gear rental. The SCUBA fees will be paid directly to the Dive Center by diving participants.

Site Assessment

State Department Security Assessment:

Australia is a highly developed, stable democracy. U.S. citizens may travel to Australia on a valid U.S. passport with an Australian Electronic Travel Authority (ETA) or visa to enter Australia. It's possible to arrange for an ETA and a number of e-visas via the internet.

No special precautions are necessary. The crime rate is low but tourists may be the target of petty thieves. Persons violating Australian laws may be arrested, imprisoned and/or deported. Penalties for possession, use, and trafficking in illegal drugs are strict and convicted offenders can expect jail sentences and fines.

State Department Safety Assessment:

Excellent medical care is available but doctors and hospitals often expect immediate cash payment for health services. Americans are strongly urged to consult with their medical insurance company to confirm whether their policy applies in Australia. Supplemental coverage may be necessary. The State department rates the road conditions, availability of roadside assistance and safety of public transportation, as good. Visitors are reminded that all traffic operates on the left side of the road and vehicles use right hand drive. Pedestrians are reminded to look carefully in all directions. The FAA has assessed Australia's civil aviation as in compliance with international safety standards. Australia is located in an area of low seismic activity and the probability of a major earthquake is remote.

[CDC Health Assessment:](#)

Australia is a remarkably healthy country. The CDC recommends that traveler's in highly developed areas of Australia observe health precautions that would apply while traveling in the United States. Diseases of insanitation such as cholera and typhoid fever are unheard of and traveler's diarrhea is uncommon. Nevertheless, the CDC recommends safeguarding food and drinking water. Tropical diseases such as yellow fever and malaria are as yet unknown. Periodic outbreaks of mosquito borne diseases such as dengue and Ross River fevers are rare and highly localized. The CDC recommends the following vaccines as needed: booster doses of tetanus-diphtheria and measles and a one-time dose of polio. For more information visit the CDC website.

The most likely health risks to affect participants will be motion sickness, sunburn, heat rash, blisters, cuts and scratches. There is also an increased risk of dive injuries and encounters with dangerous marine organisms due to the activities associated with the program.

Legal Matters

When it is alleged that an offence is committed, [Queensland Police](#) will investigate the matter. If the investigator considers there is enough evidence to prove that a law has been broken, they will charge the accused with an offence. If there is an arrest, the accused has the right to telephone a friend, relative or lawyer before any formal questioning begins. By

law, the police must ensure anyone charged with a criminal offence appears in the Magistrates Court as soon as possible after their arrest. The role of the courts is to decide if you are guilty beyond a reasonable doubt and if so, what the penalty will be.

[Legal advice is readily available](#). Contact: [Legal Aid Queensland](#), a [duty lawyer at the Magistrates Court](#), or a private lawyer.

Police have the power to stop your car and ask to see your license (you're required to carry it), check your vehicle for roadworthiness, and also to insist that you take a breath test for alcohol-drink driving offences are taken very seriously.

Emergency Action Plan:

U.S. Consulate General:

MLC Centre, Level 59, 19-29 Martin Place, Sydney NSW 2000, T: (02) 9373 9200

Australian Maritime Safety Authority:

Brisbane: Lvl 10/ 410 Ann St, Brisbane, Qld 4000, T: (07) 3001 6800

Police Station:

Brisbane City Police Station, 46 Charlotte St, Brisbane, Qld 4002, T: (07) 3258 2582

Gladstone Police Station, 16 Yarroon St, Gladstone, Qld 4680, T: (07) 4971 3209

Brisbane Courts:

[Brisbane Court](#) 1 and 3 (Adult) 240 Roma Street BRISBANE QLD 4000, T: (07) 3247 4760

Legal Aid Queensland Duty Lawyer Contact T: 1300 65 11 88

Medical Facilities:

[Mater Private Hospital](#) Brisbane, 301 Vulture St, South Brisbane Qld 4101, T: (07) 3163 1111

[Travelers' Medical Service](#), 245 Albert St, Brisbane, Qld 4002, T: (07) 3211 3611

Diving Medical: Dr. John Corfe, 245 Albert St, Brisbane, Qld 4002, T: (07) 3211 3611

Emergency Medical Services:

General Emergencies: T: 000

Medivac Services:

Ambulance: Spring Hill Ambulance Station, Spring Hill, 219 Boundary St, Brisbane, Qld 4004, T: 1300 650 377

Caloundra Ambulance Station, West Terrace, Caloundra, Qld 4551, T: (07) 5420 9990

Helicopter: CareFlight Medical Services, Level 20, 144 Edward Street, Brisbane, Qld 4000, Phone/Fax: (Non-Emergency contact) T: (07) 3137 9844 F: (07) 3210 0395 CMS Air Ambulance (Jets) *Emergency Contact Only* T: 1300 883 422

Hyperbaric Chambers:

[The Wesley Centre for Hyperbaric Medicine](#): Suite 53, Sandford Jackson Building, Wesley Hospital, Auchenflower, Brisbane, Qld 4066, T: (07) 3371 6033

Townsville General Hospital: 100 Angus Smith Drive, Douglas, Townsville, Qld 4814,
T: (07) 4796-2080

[Divers Alert Network](#):

Diving Emergencies in Australia
1-800-088-200 (toll free)

[Non-Emergencies in Australia](#)
+61-3-9886-9166

First Aid:

First aid kits are located on University of Queensland Facilities, in the bus and on the charter boats. Oxygen administration equipment is present on all charter boats.