

Biology 394, Spring 2015

International Field Trips in Biology- Summer Tropical Forest and Coral Reef Experiences in Belize

Course Prerequisites: Students should have taken coursework in the biological sciences, including ecology or evolution, and plant or animal organismal biology. Students with this background are likely to be juniors or seniors, though exceptional freshman or sophomore students will also be considered. Students should possess situational flexibility, capability in the field (including hiking and swimming), group interaction skills, and cultural awareness.

Course Description: This course will engage ISU undergraduates in biological and cultural experiences in Belize. Biological learning will be primarily experiential and will include tropical forest and marine ecosystem components and interactions with skilled local guides. Cultural learning will involve interactions with Belizeans, including Garifuna people. The first half of the trip to Belize will be to a field station in the Maya Mountains run by the Toucan Ridge Ecology and Education Society (T.R.E.E.S.; <http://treesociety.org>) with logistics for off-site field and cultural experiences managed by Ecorana Environmental (<http://ecorana.ca>). Dr. Vanessa Kilburn (a Canadian PhD) is a partner in managing both T.R.E.E.S. and Ecorana, has organized biologically and culturally-oriented trips in Belize for years, and frequently works with academic groups, including study abroad courses. She will be on site the duration of our stay at T.R.E.E.S. to help arrange guides and transportation for daily trips, and to help us address any problems or emergencies that may develop. Dr. Kilburn will also arrange terrestrial transportation within country. The second half of the trip will be to the University of Belize operated Calabash Caye Field Station, which is located on a small island in the Turneffe Atol. The Station Manager is Nicole Craig. The field station frequently hosts research and study abroad visitors and is well suited to this task. In addition to group lodging and dining facilities, it is staffed by professional boat captains and divers who are skilled at working safely with visitors, including students. We will coordinate with Ms. Craig to arrange boat travel from Belize City to Calabash Caye, and return, as well as boat travel within the Turneffe Atol as needed for daily activities involving students.

Course Goals:

- (1) Expose ISU undergraduate students to diverse tropical terrestrial and marine ecosystems in a developing country setting.
- (2) Provide students with high quality field biology, group learning, and cultural experiences.

Learning Outcomes:

- (1) Gain an international, multicultural perspective.
- (2) Gain an appreciation of foreign cultures and people.
- (3) Understand a pre-historic culture (Mayan) and the reasons for its growth and collapse.
- (4) Learn about tropical forest ecosystems, their importance for biodiversity and carbon sequestration, and implications of deforestation.
- (5) Learn about coral reefs, impacts of invasive species, and causes of and concerns about coral bleaching.
- (6) Achieve all of the above through experiential learning.

Grading: A-F

Topics to be covered:

- Overview of trip schedule and activities.
- Site-specific info on safety, security, and health issues.
- The Mayans and their history in Belize.
- Settlement of Belize by European and African immigrants.
- Modern, multicultural Belize, including the Garifuna People and culture.
- Biodiversity and geology of Belize's Maya Mountains.
- Belize's Karst topography and cave systems.
- Biodiversity and geology of the Belize Barrier Reef.

- Expected behavior and learning outcomes.
- Travel preparation (packing, etc.).

Tentative Travel Itinerary

- Wed. June 3: Depart Des Moines for Belize City. Ground transportation to Monkey Bay Lodge. Guided night walk at the Belize Zoo and Tropical Education Center.
- Thu. June 4: Bird watching in the AM. Travel to T.R.E.E.S. Kriol drumming performance.
- Fri. June 5: Guided trip to caves at Blue Hole National Park
- Sat. June 6: Guided trip to Xuantunich Mayan ruins.
- Sun. June 7: Hiking and river swimming at T.R.E.E.S.
- Mon. June 8: Introduction to research and conservation projects at T.R.E.E.S.
- Tue. June 9: Guided trip to Dandriga/Hopkins, Gulisi Garifuna Museum, musical presentation and Sittie River Bioluminescence Tour.
- Wed. June 10: Guided trip to hike Five Blues Lake National Park.
- Thu. June 11: Depart T.R.E.E.S. for Belize City and then Calabash Caye Field Station.
- Fri. June 12: Introduction to snorkeling coral reef habitats.
- Sat. June 13: Coral reef Three Corner Caye exploration.
- Sun. June 14: Coral reef inner lagoons snorkeling.
- Mon. June 15: Coral reef and mangrove related activities. Sea kayaking.
- Tue. June 16: Depart Calabash Caye in the AM for Belize City and then for Des Moines.

General Risks of Travel in Belize / Responses to Risk:

- To avoid the hurricane season, the trip to Belize will be in June.
- The US Department of State suggests vaccinations for hepatitis A and typhoid, and that tetanus and diphtheria vaccinations should be up to date. Students and instructors will be required to follow these guidelines.
- The US Department of State identifies a low risk of malaria in the regions of Belize where the course will go but recommends taking chloroquine. Students and instructors will use mosquito repellent and take chloroquine as recommended.
- To avoid diarrheal illnesses, careful choice of food, use of bottled water, and frequent hand washing will be stressed.
- Only Belize City is identified by the US Dept. of State as of concern for personal safety and security. Accordingly, the course will visit Belize City solely as needed for travel.
- In the event of unexpected, significant accidents, T.R.E.E.S. and Calabash Caye are located within 0.5 hours of a hospital (in Belmopan & Belize City, respectively).

Risks Specific to the Course:

- Hiking in a tropical forest: We will be accompanied by a certified Belizian guide. Boots and proper clothing are required.
- Visiting a cave system in a national park: We will be accompanied by a certified Belizian guide. Helmet (provided) and headlamp are required.
- Snorkeling coral reef environments: We will be accompanied by University of Belize certified boat captains and guides. Mask, snorkel, and fins are required (available for rent).

Course Policies: Grades are reduced for academic misconduct. The usual policy is to deny credit for the grading exercise in question for the first offense. Second offenses result in a grade of “F” for the course. Disruption of the course, or interference of the course and the participation of others in it will result in a grade of “F” for the first offense. Students who fail the course for academic misconduct are barred from further course activities in any capacity. All incidents of academic misconduct are reported to the Office of Academic Affairs, and records of the incidents are inserted into the file(s) of the student(s) in question.

Students with Disabilities: Iowa State University is committed to assuring that all educational activities are free from discrimination and harassment based on disability status. All students requesting accommodations are required to meet with staff in Student Disability Resources (SDR) to establish eligibility. A Student

Academic Accommodation Request (SAAR) form will be provided to eligible students. The provision of reasonable accommodations in this course will be arranged after timely delivery of the SAAR form to the instructor. Students are encouraged to deliver completed SAAR forms as early in the semester as possible. SDR, a unit in the Dean of Students Office, is located in room 1076, Student Services Building or online at www.dso.iastate.edu/dr/. Contact SDR by e-mail at disabilityresources@iastate.edu or by phone at 515-294-7220 for additional information.