



S F S THE SCHOOL
FOR FIELD STUDIES

13

SEMESTER & SUMMER PROGRAMS



Environmental Field Studies Abroad

AUSTRALIA
BHUTAN
COSTA RICA
KENYA
PANAMA
TANZANIA
TURKS & CAICOS

www.fieldstudies.org



Overview

The School for Field Studies: A Legacy of Environmental Leadership

In the early 1980s, some of our nation's top colleges and universities introduced environmental studies into their curricula, pioneering the notion that effective stewardship of our planet and its limited resources must include not only scientists, but also informed and concerned individuals from all walks of life, and in all professions.

In the summer of 1981, we sent our first group of 75 students into the field. Today, with more than three decades of international education and research behind us, we are widely known as the premiere environmental study abroad program. Through our network of field stations, students have learned how to collaborate with local community partners and engage in scientific inquiry to address critical environmental problems and create long-term solutions.

Who Studies With SFS?

SFS is not just for biology majors. We encourage students from many disciplines to join our programs around the world—environmental science, history, anthropology, political science, liberal arts, art, drama, education, economics, pre-vet and pre-med, engineering, business administration, communications, and many others. We welcome a diverse student body and promote an atmosphere open to different learning styles and perspectives.

Educational Approach

Our interdisciplinary, field-based approach to education is designed so that students learn through experience. In our case-based curriculum, students explore and evaluate local environmental issues. Through classroom activities, field exercises, and Directed Research projects, they learn the value of collaborating with peers and the local community to develop practical, workable solutions to environmental problems. They also participate in another culture and learn field research skills by working with an international faculty and staff.

Semester Program Structure

Semester programs run for approximately three months, including a midterm break in most programs. We compress a 16-week semester into 14 weeks, so be prepared for a very intensive, but rewarding, learning experience! Students are enrolled in four courses at four credits each. Academic activities occur six days a week with at least part of one weekday devoted to a community service activity.

Every semester program includes three topical courses—ecology, resource management, socio-economics—and some programs also include a culture and language course. Students learn through classroom lectures, field lectures and exercises, group projects, and other activities. In the Directed Research course, students pursue locally relevant and applied research questions through hypothesis-driven field research.

Objectives of the SFS Academic Program

Our semester programs help students identify and analyze local environmental issues, explore options for solving problems, and understand the decision-making process for taking action. The three topical courses prepare students for the Directed Research projects in the field by providing the conceptual foundations and building technical field and analytical skills critical for field research. Research questions are designed in partnership with local stakeholders and are defined in each Center's Five Year Research Plan.

Admission

Most SFS programs have rolling admissions year-round, and completed applications are considered on a first-come, first-served basis. Programs fill quickly, so we encourage you to submit your completed application early to ensure admission into the program of your choice. For details on how to apply, please refer to page 2. Visit our website to apply online or download an application.

Curriculum and Credit

Most students from SFS Affiliate schools receive credit directly from their home institutions. All other students are registered at and receive credit from Boston University, our accrediting institution. See page 32 for details.

Field Skills Taught in Our Programs

Students will learn a suite of skills and analytical techniques useful for both natural and social science field research. Potential field methods include species identification, animal behavior observations, habitat assessment and mapping, water quality assessment, ecological restoration techniques, and animal and plant population sampling techniques, all in a variety of ecosystems, including forests, coral reefs, and savannah. Both quantitative and qualitative social science field research methods will be used, including structured questionnaires, informal interviews, and participant observation for social network analysis, cost-benefit studies, and ethnography. Descriptive and inferential statistics are used in data analysis and hypothesis testing.

Summer Courses

Summer students gain four credits in four intense weeks of field study except in our Bhutan course, which carries six credits and runs for six weeks. Some programs are sequential, offering eight credits in eight weeks. Summer programs include lectures, field exercises, and field excursions.

Financial Aid

Approximately one-third of our students receive SFS financial aid in the form of scholarships and loans. All SFS aid is need-based. If you need financial assistance, please submit an SFS financial aid application (available at www.fieldstudies.org) as soon as possible once accepted to a program. You should consult with your home school to determine whether you may use your institutional and federal financial aid. Additionally, you may be able to receive funding from your home institution. You must apply early to be considered for SFS financial aid. For details regarding financial aid and program costs, please refer to page 3.

Language Preparation

All SFS courses are taught in English. Where English is not widely spoken, however, your interaction with the local community will be greatly enhanced if you have local language conversation skills. Costa Rica, Panama, and East Africa semester students will receive two additional credits (20 contact hours of language instruction; 20 hours of lecture, field, and community activities) for our culture and language courses. You will need at least three years of high school Spanish with high academic achievement or at least one semester of college-level Spanish (or the equivalent test scores) in order to participate in our Costa Rica semester program.



Safety Is a Priority

The safety of our students is our constant priority, and proactive risk management is integral to everything we do. Along with robust safety systems and a reputation for safe, structured programs, SFS manages the entire timeline of a student experience. Through diligent medical screening, providing students with clear expectations regarding living and health preparations, and educating about environmental and cultural awareness, personal responsibility, and conduct, we can give students the right tools for success. While no one can guarantee safety anywhere, we have proven safety systems in place, and SFS is known for our diligent approach to risk management.

The SFS model is a structured program that manages itineraries and logistics to protect and enhance the student experience. Our small number of programs enables us to provide detailed attention to each one. We operate in small, rural towns where we have been for decades and are an integral part of the community. Most of our staff are in-country nationals—meaning we employ locals who not only provide a rich abroad experience, but understand and manage the local programs from a local perspective. This helps us to understand politics, natural disasters, community unrest, and other threats better and more quickly.

SFS maintains a detailed risk management system that we operate globally for all our programs. We tailor this system to the specific needs of each of our field stations, enabling us to adapt to the dynamic changes of the natural and political world to both prevent and respond to risk quickly and soundly. SFS seeks input from a variety of external resources and continually monitors world news, as well as briefs from the U.S. State Department and Overseas Security Advisory Council. SFS also has a strong, proactive approach to health and safety by emphasizing outstanding staffing, training, attention to detail, and educating students on accurate expectations, resources, and preventative care.

Highlights to the SFS Approach to Program Safety and Risk Management:

- **Safety Department:** Full-time professionals focusing on systems creation, training, policy, and protocol, and performing safety assessments and review. The team also focuses on day-to-day coverage of the field, as well as manages all student medical screening.
- **Student Affairs Manager (SAM):** Each field station is staffed with a SAM who is responsible for promoting safety and health in our programs. A full time residential manager, the SAM coordinates logistics, programming, community outreach, student advising and counseling, and on-site risk management, and serves as the primary medical responder. SAMs also foster intercultural competence to assist our students in their navigation of an unfamiliar environment, and help to facilitate a supportive, cooperative community culture to enhance a positive living experience.
- **Excellent communications systems** including a 24/7, headquarters-staffed emergency line for parents and families of students, and at each field station a satellite phone, cell phone coverage, land lines, Internet access, and structured timely check-ins with headquarters.
- **Training:** Field staff members are provided with a 36-hour Wilderness Advanced First Aid course; SAMs are required to hold current certification as a Wilderness First Responder (72-hour course). SFS conducts regular training updates and reviews throughout the year at all our field stations.
- **Medical Screening:** SFS employs a thorough process that evaluates medical, psychological, physical fitness, and behavioral history and aptitude to match the right program with prospective students to encourage a positive, successful abroad experience.
- **Safety Advisory Committee:** Comprised of experienced professionals with international medical, mental health, program management, and outdoor education expertise.

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SFS Centers

KENYA + TANZANIA

The SFS Center for Wildlife Management Studies

AUSTRALIA

The SFS Center for Rainforest Studies

PANAMA

The SFS Panama program for Tropical Island Biodiversity & Conservation Studies

COSTA RICA

The SFS Center for Sustainable Development Studies

TURKS & CAICOS ISLANDS

The SFS Center for Marine Resource Studies

For Center Director, faculty and staff bios, visit
www.fieldstudies.org

Admissions Requirements and Instructions

APPLY ONLINE NOW

When to Apply

The School for Field Studies reviews applications on a rolling basis, beginning approximately one year before the session begins. While there is no admissions deadline for semester programs, students should apply early to ensure admission to their program of choice. Semester students should check with their home institution regarding school-specific deadlines. Decisions are generally available within two to four weeks of the date when your application becomes complete. Review cannot begin until all application materials have been received.

Before You Apply

Due to the field-based nature of our programs, the academic experience will likely be very different from your home school and traditional study abroad programs. Before applying, be sure to read the program components and relevant information. Please contact the SFS Admissions Office at 800.989.4418 with any questions regarding our programs. You also should check with your home school about their deadlines and requirements for study abroad.

Requirements and Policies

You must be at least 18 years of age, in good academic standing, have completed at least one college-level ecology or biology course, and are encouraged to have taken coursework in statistics, international development, economics, and one semester of college prior to the start of the program. Gap-year students are welcome to apply. For more details, please contact the admissions office.

Applicants for the semester program in Costa Rica or Panama must have completed a college-level course in ecology, biology, or environmental studies, and are encouraged to have taken coursework in international development, economics, or anthropology. Applicants for the Costa Rica program must have taken three years of high school Spanish with high achievement or have taken one college-level course in Spanish prior to participation.

Applying to SFS

1. Review program information and prerequisites located in the catalog or at www.fieldstudies.org. Please feel free to call 800.989.4418 if you need help deciding which program is right for you.
2. Collect necessary materials to complete your application:
 - **SFS APPLICATION FOR ADMISSION.** You may apply online or download the application PDF from our website.
 - **PARTICIPATION APPROVAL FORM** to be completed by your study abroad advisor. If you attend one of SFS' Affiliate Institutions, the form must be completed by the designated Affiliate representative. A list of Affiliate institutions and representatives can be found on the SFS website or on page 32 in this catalog.
 - **NON-REFUNDABLE APPLICATION FEE OF \$50.** Credit card or check made payable to The School for Field Studies.
 - **CURRENT OFFICIAL TRANSCRIPTS** from all schools attended. It is not necessary for college students to submit high-school transcripts after a full academic year of college coursework has been completed.
 - **SFS ACADEMIC REFERENCE FORM** to be completed by a teacher, professor, or academic advisor who is well acquainted with your current academic performance. You may submit your references online using our online application, or download a PDF.
 - **SFS CHARACTER REFERENCE FORM** to be completed by someone who knows you well, such as another academic source, a job supervisor, volunteer advisor, athletic coach, etc. It is not appropriate for this reference to be completed by a relative, peer, or family friend. You may submit your references online using our online application, or download a PDF.

We encourage you to apply online. If you do submit print application materials, however, please send them to:

The School for Field Studies
100 Cummings Center, Suite 534-G
Beverly, MA 01915-6239

After You Apply

Once an application is received, you will be contacted by email with information about any missing materials. If your application is incomplete, it is your responsibility to follow up on any missing materials. SFS is unable to begin the application review process until all necessary materials are received. To expedite the completion of your application, we suggest that you submit all of your application materials together. Once your application is complete, we will contact qualified candidates to schedule a short, informal phone interview.

Admissions decisions are generally available within two to four weeks of completing your application. You should apply early to allow sufficient time for your application to be processed.

Please note that final acceptance to all programs is contingent upon medical approval. If you would like to check the status of your application materials received by SFS, please log in to your SFS account to view your Admissions Checklist.

Medical Approval and Disability Information

PHYSICAL EXAMINATION AND MEDICAL INSURANCE
All acceptances are contingent upon medical approval. You must submit an online medical review form and an SFS physical examination and authorization form signed by a qualified medical professional within 10 business days of acceptance. Please refer to the SFS website for information about the medical approval process. Students with late medical forms may forfeit their space on a program. All medical forms will be reviewed by the SFS safety office. You must be able to meet the physical challenges presented by SFS programs without undue risk to yourself or others. Academically qualified individuals may be disqualified from participating on medical grounds. You will not be allowed to join an SFS program without proof of current medical insurance.

Disability Information

Students with disabilities are welcome on SFS programs; however, students with disabilities requesting accommodations are responsible for notifying SFS. Students requesting accommodation for physical disabilities should contact the SFS Safety and Student Life Department. Students requesting learning accommodations should contact the SFS Dean's Office. Notification of a disability or request for learning difference accommodations must be made in writing and submitted within 10 business days of acceptance. Please be aware that the level of accessibility, services, and accommodations to which you may have access at your home campus may not be available overseas. Please refer to the appropriate SFS program manual for more information, or call us at 800.989.4418 for further assistance.

Dietary Restrictions

If you have any special medically related dietary restrictions, you must contact the SFS Safety and Student Life Department within 10 business days of acceptance and document the restrictions on your online medical review form. Students with special dietary preferences (vegetarian, vegan, kosher, etc.) should discuss these with their admissions counselor during the interview process. SFS makes every effort to accommodate diet needs within the limitations of local supply, availability, cultural practice, and cost. All dietary restrictions require discussion and approval prior to arrival.

Non-discrimination Policy

SFS is an equal opportunity institution.

SFS admits students of any sex, religion, race, color, national or ethnic origin, sexual orientation, or economic status to all the rights, privileges, programs, and activities generally accorded or made available to students of SFS.

SFS does not discriminate on the basis of sex, religion, race, color, sexual orientation, national or ethnic origin, physical or mental disability, or other protected status in the administration of its educational policies, admissions policies, scholarship loan programs, and other School-administered programs.

Tuition, Financial Aid, and Scholarships

Financial Aid

A key component of our mission is to ensure that as many interested and eligible students as possible are able to participate in our programs. Since our founding in 1980, more than 14,000 students have participated in our programs across the globe. We strive to make SFS accessible by offering the following scholarship and loan options to summer and semester students.

SCHOLARSHIPS

SFS General Scholarship Fund

All SFS applicants are eligible. Awards are determined on the basis of need.

Andreas Family Foundation Scholarship

These funds are designated for students at public institutions in the United States. The awards are for semester programs only.

ENDOWED SCHOLARSHIPS*

Stephen F. Lee Memorial Scholarship

Established in memory of Stephen F. Lee, an SFS alumnus (FL '86), intern (HI '87, '88), and faculty member (HI '89), this scholarship gives preference to applicants seeking a marine program.

Heather Jo Leibowitz Memorial Scholarship

Honoring the memory of Heather Jo (KY '04), this scholarship is awarded on the basis of need to applicants to the East Africa program. Preference is given to those who have a commitment, as Heather Jo did, to making a difference in the lives of resource-dependent communities in East Africa.

McKee Scholarship

This endowed scholarship was made possible by the generosity of Charles D. McKee, a member of the SFS Board of Trustees and father of two SFS alumnae. It is awarded on an annual basis to a financially deserving student.

Tozer Scholarship

This endowed scholarship was made possible through the generosity of former Trustee W. James Tozer Jr. and his wife, Elizabeth. The Tozer Scholarship is awarded on the basis of need.

Fountain Scholarship

The Fountain Scholarship was established by the film director of *The Fountain*, *The Wrestler*, and *Black Swan*, Darren Aronofsky (KY '85; AK '86). It provides tuition assistance to those SFS applicants who (a) have spent most of their lives in an urban environment whether in the United States or abroad; (b) demonstrate financial need; and (c) demonstrate a commitment to and concern for environmental issues.

*All recipients of scholarship awards must write a report at the end of their term that can be shared with the donors. Some scholarships also request a few photos.

LOANS

Zero-Interest Loans

This program was created through the generosity of the Merck Family Foundation. Semester loans must be repaid within two years and summer loans within one year of program completion.

Low-Interest Loans

This low-interest loan program is designed to assist semester students in bridging the gap between current financial resources and total program cost. This loan is set at a competitive market rate with manageable repayment terms.

Many applicants receive aid through their home schools or other outside sources. **You may qualify for SFS assistance, even if you are not receiving aid from your home school.** If you will need financial assistance, please complete an SFS Financial Aid Application as soon as possible. Financial aid applications are reviewed following acceptance. For an application or more information on how to qualify for assistance, please call the SFS admissions office at 800.989.4418 or visit www.fieldstudies.org.

SEMESTER STUDENTS: Many schools allow students to take institutional financial aid off campus. Check with your financial aid office to see what aid you can apply to your SFS program. Please look into applying for additional funds, including loans, through your home school, including your study abroad office, prior to applying for SFS aid. Because the credits you earn for your SFS participation will in all likelihood be applied toward your degree, your school should be able to process a Stafford Loan or other federal sources of support to assist your SFS participation.

Deposits and Tuition

Payment of a non-refundable program deposit is due 10 business days following acceptance to an SFS program. Semester: \$650; Summer: \$450. All deposit payments are non-refundable EXCEPT in cases where SFS financial aid is sought.

Students who are accepted on a contingency basis and elect to pay the deposit are NOT eligible for a deposit refund should the student fail to meet the required contingency. Final tuition payment is due no later than 60 days prior to the start of the program.

You must complete and return the financial aid application within 10 business days of acceptance to qualify for refund status on your program deposit. See the SFS website for a complete description of our refund policies.

SEMESTER COSTS FALL 2012 – SPRING 2013

Program	Tuition	Room & Board	Total Program Cost
Kenya + Tanzania	\$14,550	\$4,400	\$18,950
Australia	\$14,550	\$4,400	\$18,950
Turks & Caicos	\$14,550	\$4,200	\$18,750
Costa Rica	\$14,550	\$4,200	\$18,750
Panama (Fall '12)	\$14,550	\$1,950	\$16,500
Panama (Spring '13)	\$14,550	\$3,950	\$18,500

Fall 2013 program costs will be announced in March 2013 and posted to the SFS website.

SFS refund policies are available on the website. For complete course budgets, including out-of-pocket expenses, please visit www.fieldstudies.org.

SUMMER COSTS 2013

Program	Tuition	Room & Board	Total Program Cost
Australia/New Zealand	\$3,950	\$1,850	\$5,800
Australia	\$3,950	\$1,350	\$5,300
Costa Rica	\$3,950	\$1,200	\$5,150
Turks & Caicos	\$3,950	\$1,300	\$5,250
Kenya Public Health	\$3,950	\$1,300	\$5,250
Tanzania	\$3,950	\$1,850	\$5,800
Bhutan	\$5,850	\$3,125	\$8,975



Wildlife Management Studies

SEMESTER PROGRAM DATES

Spring 2013: Feb 4-May 12 & Feb 5-May 13*

Fall 2013: Sept 2-Dec 8 & Sept 3-Dec 9

*The spring 2013 semester will operate in Tanzania only. For more information, visit www.fieldstudies.org/eastafrica.



KENYA + TANZANIA

EAST AFRICA

ENVIRONMENTAL ISSUES

Current conservation and rural development practices in the Maasai steppe, in the southwestern region of Kenya and northern Tanzania, are influenced by shifting land-use patterns and socio-economic changes occurring among the Maasai and other ethnic groups.

The traditional nomadic, pastoral lifestyle of the Maasai has helped to maintain the integrity of open grasslands, serving as a critical migration corridor between Kenya's and Tanzania's national parks and community wildlife sanctuaries for wide-ranging wildlife species, such as elephant, wildebeest, giraffe, and zebra. That traditional lifestyle is dramatically changing to a more sedentary, agro-pastoral one in both countries. Permanent homesteads, land sub-division, and extensive agriculture exert more pressure on the region's natural resources, including water, productive grasslands, and wildlife populations.

The competition for land and increasingly scarce resources has ecological, social, and economic costs, including fragmentation of critical wildlife dispersal areas, breakdown in land administration, disparities in land ownership, and human-wildlife conflict. Even in protected areas, negative impacts of habitat destruction, tourism, administrative decisions, and poaching are endangering biodiversity, and to some extent wildlife-based tourism, which is an important revenue generator for the government and local communities.

SFS strives to understand the socio-economic, political, and environmental drivers and implications of land reform for wildlife conservation and rural livelihood in these changing landscapes in Kenya and Tanzania. Students will evaluate and promote the management of wildlife populations and their critical dispersal areas, productive grazing lands, reliable water points, and safe homesteads to help wildlife survive and the Maasai and their neighbors to meet current and future livelihood needs.



THE SFS CENTER FOR WILDLIFE MANAGEMENT STUDIES

The Center operates in two locations, one in southwestern Kenya near Amboseli National Park, and one in Tanzania near Lake Manyara National Park.

In Kenya, SFS students live at our Kilimanjaro Bush Camp (KBC) in the remote foothills of Mount Kilimanjaro, near the town of Kimana. KBC is an excellent site for examining land use and conservation issues in and around nearby national parks. The camp is nestled within a lush zone of yellow acacia trees with clear undergrowth, giving a perfect view of the magnificent vegetation mosaic. Students sleep in thatched-roof *bandas*, with a main building or *chumba*, which houses a dining room, kitchen, and a classroom.

In Tanzania, students live at Moyo Hill Camp located between Lake Manyara National Park and the famous Ngorongoro Conservation Area. This wonderfully scenic area, world-renowned for its beauty, geography, history, and wildlife, is near an escarpment overlooking the Rift Valley and the Ngorongoro Hills, with plenty of hiking trails to enjoy.



Kenya + Tanzania Program Description

OUR RESEARCH

Northern Tanzania and southern Kenya, home to world-famous national parks such as Amboseli, Tsavo, Tarangire, Lake Manyara, Kilimanjaro, Serengeti, and the Ngorongoro Conservation Area, offer a tightly packed hub of wildlife conservation. This extremely scenic area, which is the center of tourism in East Africa, has been the home of the Maasai people for centuries. The two regions share some bio-physical characteristics and cultural elements, but subtle and distinct differences in conservation and development policy, soil and vegetation composition, water resource availability, and culture provide an opportunity for comparing and contrasting wildlife management studies. In this two-country program, students will compare and contrast the socio-economic, policy, and environmental drivers and implications of demographic change, land reform, and wildlife populations for wildlife conservation and rural livelihood.

Despite the seemingly negative trends on availability and quality of habitat and resources for wildlife and livestock on the Maasai steppe,

there are many opportunities for effective conservation, natural resource management, and rural development. Wildlife use the diverse habitats surrounding the SFS field stations as migration corridors between protected areas. The Maasai, and now other settlers, depend on this same area as a communal grazing zone for livestock and for growing food. As a result, they often face economic hardship due to crop damage from migrating wildlife, loss of livestock, and resource depletion and competition.

Pollution and climate change also threaten the already strained water supply and the health of numerous species of birds and animals. Thus, the Center's research is framed by the needs of both human communities and dispersing and migrating wildlife in the region.

Our curriculum and research focus on determining how changes in land use and resource availability in the Maasai steppe ecosystems can be managed to foster the well-being of local communities while safeguarding and promoting biodiversity conservation.

Through classroom and field activities, students compare and contrast the conservation issues in the Tarangire-Manyara ecosystem of northern Tanzania with those in the Amboseli-Tsavo ecosystem in Kenya.

Students begin the program at one field station, gaining general knowledge about the wildlife in the region, the pastoralist lifestyle, and principles of wildlife management. Just shy of the halfway point in the semester, students travel overland to the other field station to apply the foundational knowledge of wildlife management to the specific issues in that region. They conduct the Directed Research in the final month of the program at the second field site. Students visit multiple protected areas and community areas at both sites.

Field Research, Lectures, Exercises, and Skills Development

Field expeditions might include:

- Manyatta: Rare opportunity to glimpse Maasai culture, including rural settlements not usually visited by tourists. Musical ceremonies, demonstrations in fire-making, dances by Maasai morans (warriors), and lessons in spear throwing.
- Amboseli and Lake Nakuru National Parks: Multi-day excursions illustrating the management implications of high concentrations of animals in a confined area. The impact of the elephants, whose trumpeting punctuates the night, are clearly visible by daylight.
- Lake Manyara National Park: Large mammal identification, baboon ecology, threats to wetlands from tourism, land-use changes, and local resource uses.
- Tarangire National Park: Excursions on animal counting, wildlife management, lion ecology and behavior, conservation models, and preservation of corridors.
- Ngorongoro Conservation Area: A day trip to learn integrated management, inclusion of indigenous communities in management, large mammal ecology, animal identification, and the role of vulcanism in species diversity.

COURSES

Semester students are registered in five academic courses accredited through Boston University:

Course No.	Name	Credits
BI/EE(NS) 371	Techniques in Wildlife Management	04
BI/EE(NS) 372	Wildlife Ecology	04
EE(SS) 302	Environmental Policy and Socio-Economic Values	04
EE 491 or 492	Directed Research	04
LE 205E	Introduction to Swahili Language and East African Tribal Communities* 02	

Go to page 24 for course descriptions



- Serengeti National Park: Multi-day field expedition to learn about wildlife management issues, large mammal ecology, large mammal diseases, and large mammal migrations.
- Sample of field research skills development: Habitat assessment and mapping, species identification, research design, data collection, valuation methods, census of populations, GIS, transect and patch sampling, animal behavior observations, geology, and soil identification.

Student Directed Research Project Examples

- Economic analysis and socio-cultural ramifications of cultural manyattas adjacent to protected areas.
- The role of privately owned conservation areas in Maasai group ranches as nuclear areas for potential wildlife dispersal and migration routes within the Amboseli ecosystem in Kenya.
- Range condition, trend, and productivity in the Maasai group ranches of the Amboseli region of Kenya.
- Impact of humans and large mammals, such as elephants, on plant communities in group ranches and implications of these on wildlife conservation and human livelihoods.
- Subdivision of the Maasai group ranches and their implication on land-use and wildlife conservation.
- Tourism impact in national parks and local investments.
- Large mammal density, diversity, and behavior along a conservation gradient.
- Role of communities in conservation.
- Wildlife dispersal and corridor use.
- Competition between wildlife and livestock species.

Student Research Contributions

- Collaboration between SFS and Kimana Group Ranch members on a project funded by the European Union through the Community Development Trust Fund entitled Kimana Community Water Resource Conservation. The main objective of the project is to enhance water use and management of water catchment areas while improving local livelihoods.

- Collaboration of SFS, Kenya Wildlife Service (KWS), and tourism investors in the ecosystem for encouragement of wise tourism practices that conserve biodiversity and benefit local communities.
- Collaboration of SFS with Tanzania National Parks Authority and Ngorongoro Conservation Area.
- Collaboration of SFS with District Councils of Monduli and Karatu in Tanzania.
- Collaboration of SFS with African Wildlife Foundation in Manyara Ranch.

Get Involved With the Local Community

- Presentations of research findings to community stakeholders.
- Visits to local markets and a neighboring boma (Maasai homestead) for traditional Maasai celebrations, a lecture on culture and artifacts, jewelry making with Maasai mamas, conducting interviews for research work.
- Visit and stay with Iraqw and Maasai communities in Tanzania and Kenya.
- Community service work in local schools, hospitals, orphanages, and with a local women's group.

*Introduction to Swahili Language and East African Tribal Communities (LE 205E)

offers listening, oral, and written practice of Swahili at the beginner level of proficiency. This training will enhance student communications with Maasai, and increase the immersion experience. The socio-cultural module helps students develop a more refined understanding of East African tribal culture and our community partners.

The spring 2013 semester will operate in Tanzania only.

For details and how to apply visit:
www.fieldstudies.org/eastafrica



SFS AT WORK

In Maasailand, indigenous trees are being cut down for agricultural development and charcoal production. This deforestation, in combination with a long drought, has resulted in widespread soil erosion, habitat loss, and a negative impact on the health of humans, livestock, and wildlife. Soil degradation threatens the water supply, and dust bowls are causing respiratory and vision complications.

To counter this disturbing trend, our faculty and students are planting trees in partnership with local elementary schools and community members. Local conservation organizations grow saplings of indigenous species, like Acacia and Balanites, in nurseries and sell them to SFS for the reforestation effort. Plantings have taken place in degraded sites in Kimana, Mbirikani, and Kuku Group Ranch, as well as along major rivers such as the Noltresh and Kikarangot.*

Tree plantings, in conjunction with student research, have increased awareness in the region on the important role of trees in maintaining a healthy environment. Many communities have begun to speak openly against tree destruction. These shifting attitudes will hopefully lay the groundwork for future reforestation and conservation projects.

**Similar work has started to take place in the Karatu area, Tanzania.*



Sustainable Development Studies

SEMESTER PROGRAM DATES

Spring 2013: Feb 4-May 9

Fall 2013: Sept 2-Dec 5



COSTA RICA

ATENAS

ENVIRONMENTAL ISSUES

Costa Rica is internationally recognized for its efforts to ensure biodiversity conservation and protect natural resources. The country supports more than 5 percent of the world's biodiversity and boasts 230 protected areas (about 26 percent of the country). The cloud forests, rainforests, volcanoes, and mountain tops shelter as many as 9,000 plant species, including at least 1,500 species of orchids alone. More than 1,000 species of butterflies and 883 bird species, such as quetzals, toucans, hummingbirds, and scarlet macaws, are found throughout Costa Rica's various tropical ecosystems. The magnificent beaches bordering both coasts are among the world's largest known nesting sites for sea turtles. The country, however, has experienced significant resource degradation linked to population growth, agriculture, and development—all of which threaten this tropical paradise.

Although Costa Rica's recent transition from an agriculture-based to a service economy presents opportunities that could benefit the whole country, it also implies emerging threats to biodiversity and the well being of the human population. Climate change and the infrastructural development for productive and recreational activities present some of the most critical challenges facing the country.

The reorganization of land-use practices is an urgent imperative as the rapid conversion of rural agricultural landscapes into urban areas, the consequent loss and fragmentation of forests, inappropriate waste disposal, and the increased demand for water and other natural resources provoke future social conflict and environmental degradation.



THE SFS CENTER FOR SUSTAINABLE DEVELOPMENT STUDIES

The Center is located within a small Rainforest Alliance Certified™ mango and orange farm on a hillside with spectacular views overlooking the fertile Central Valley. Facilities include a dormitory, a small laboratory, an outdoor classroom, an organic garden and greenhouse with organoponics, a patio, a small soccer field, and a swimming pool. The Center's farm is aiming toward integration: The organic waste is recycled as compost, whereas our free-range chickens and pigs contribute to farm production, production of fertilizer, and overall integration and recycling of materials.

Our campus is part of the small neighborhood of La Presa/Los Angeles. The friendly town of Atenas is only 3 miles from campus, while Costa Rica's tropical forests, beaches, mountains, and volcanoes are within a day's travel.





Costa Rica Program Description

OUR RESEARCH

Costa Rica is currently undergoing a period of rapid economic and social change. As this resource-rich, wonderfully bio-diverse country continues along a path of rapid development, it is increasingly influenced by globalized markets and policies, such as free-trade agreements with the United States, China, Canada, Mexico, and Chile, among others.

Costa Rica's economy has shifted from one based chiefly on agriculture to one driven by services, such as ecotourism and industrial exports. At the same time, rapid rural-to-urban conversion is straining natural resources in ecologically fragile areas. The country is at a critical juncture as resource management decisions are being made in an effort to keep pace with competitive global markets.

Our goal is to analyze different development and resource management models that protect the biodiversity of Costa Rica's ecosystems while promoting socio-economic benefits for its people. Students will examine the effects of globalization on classic development issues such as agriculture, biodiversity protection, economic development,

urban sprawl, population growth, waste management, and water resources.

This program focuses on evaluating the actual success of Costa Rica's world-renowned conservation systems and developing alternative strategies for economic development and biodiversity conservation, such as land-use planning, organic agriculture, and conservation outside of protected areas. Visits to cloud forests, dry forests, volcanoes, lowland rainforests, and agricultural plantations offer opportunities to examine management schemes, identify benefits of protected areas, and determine which systems offer the best options for economic development, the maintenance of cultural norms, and the preservation of biodiversity. Understanding the priorities for Costa Rica's policies, within the context of environmental changes, is key as students analyze potential sustainable solutions for Costa Rica and the Central American region.

Field Research, Lectures, Exercises, and Skills Development

- Compare and contrast development and resource use issues during an extended field expedition to Nicaragua, Panama, or remote Costa Rican locations (conditions permitting).
- Explore rare and threatened tropical dry forest ecosystems while camping in the national parks of the Guanacaste Province and studying one of the most sustainable management models for protected areas in Latin America.
- Visit national parks to investigate the pressures of ecotourism on small gateway communities. Learn about cloud forest ecology.
- Learn about bioindicators of ecosystem health and rainforest ecology.
- Develop management policies by continuing our long-term bird monitoring programs and analyzing the impact of the road as a barrier and source of mortality for the fauna in Carara and Santa Rosa National Parks.
- Participate in research projects using surveys, interviews, and other investigative methods to better understand people's perceptions about their surrounding environment. Learn the various approaches to social science research design and techniques.
- Visit Monteverde Cloud Forest Reserve, a famous private reserve in Latin America initiated by donations, and examine the impacts of heavy visitation.
- Develop field research skills in ecological sampling for plants, birds and invertebrates; rapid rural appraisal; habitat assessment and mapping; species identification; infrastructure assessment in protected areas; and survey and interview techniques.

COURSES

Semester students are registered in five academic courses accredited through Boston University:

Course No.	Name	Credits
EE(NS) 377	Tropical Ecology and Sustainable Development	04
EE(SS) 303	Economic & Ethical Issues in Sustainable Development	04
EE(NS) 374	Principles of Resource Management	04
EE 491 or 492	Directed Research	04
LS 205E	Language, Culture, and Society of Costa Rica*	02

Go to page 24 for course descriptions



Student Directed Research Project Examples

- Management practices of Carara National Park in response to increased tourism.
- Evaluation of the socio-economic benefits of Costa Rica's national parks for neighboring communities.
- Impact of road traffic noise on the avifauna of national parks.
- Evaluation of ecosystem services, such as biodiversity conservation and carbon sequestration, in agroforestry systems such as shade-grown coffee farms.
- Assessment of public perceptions on the problems and solutions associated with environmental impacts resulting from climate change, urbanization, or management of solid wastes.
- Assessment of community capitals around protected areas.

Student Research Contributions

- Completion of the Management Plan of the Cerro Atenas Protected Zone: Evaluation of the ecological status of freshwater springs.
- Evaluation of the impact of invasive species on plant diversity at the Municipal Forest of Atenas.
- Monitoring of visitation in national parks of the Central Volcanic Range Conservation area (ACCVC).

Get Involved With the Local Community

Conversations and collaborations with local residents, small business owners, and farmers to better understand their perspectives and needs provide the framework for SFS research plans. Activities might include:

- Monitoring and maintaining trail infrastructure at the Municipal Forest with local schools and conservation organizations.
- Help to restore a local stream by integrating many community actors.

- Long-term community projects: U.S. culture and English taught in the elementary schools, environmental education at the Municipal Forest, and recycling projects.
- Establishment of nurseries of native tree species, and reforestation and watershed conservation projects with local conservation organizations.
- Soccer games, community festivals, and short homestays.

Costa Rica Program Prerequisites

Applicants for the semester program in Costa Rica must be at least 18 years of age, in good academic standing, and must have completed a college-level course in Spanish, as well as ecology, biology, or environmental studies, and are encouraged to have taken coursework in international development, economics, or anthropology prior to participation.

*Language, Culture, and Society of Costa Rica

(LS 205E) offers listening, oral, and written practice of Spanish at beginner, intermediate, and advanced levels of proficiency. Written grammar and vocabulary exercises help students develop Spanish language skills and tools required for their coursework and research projects. The socio-culture module helps students develop a more refined understanding of Costa Rican culture.

For details and how to apply visit:
www.fieldstudies.org/costarica



SFS AT WORK

Although the Central Valley of Costa Rica covers only 4 percent of the national territory, the area contains nearly 60 percent of the population, as well as a major part of the economic activity of the country. Urban growth is highly dynamic and lacks adequate planning. The negative impacts on the environment and quality of life are becoming increasingly evident. The challenge is to integrate development with conservation of natural resources and critical ecosystem services. With this purpose, so-called protected zones were created in Costa Rica in the 1970s. These areas conserve important watersheds and forest fragments. Land within the protected zones is privately owned, causing conflicts of interest between conservation and productive activities. Currently there is increasing pressure from urban development within the boundaries of some protected zones.

The Center for Sustainable Development Studies is studying the importance and effectiveness of the Cerro Atenas (700 ha) and Rio Grande (900 ha) protected zones, both located in the Western Central Valley. Using digitized maps from 1991 and revised digital maps from 2008, a GIS database was created to analyze land-use dynamics in the Western Central Valley during the last decades.

Initial results show that the protected zones play a critical role in the provision of environmental services such as fresh water resources and mitigation of natural disasters; however, the effectiveness of these areas is limited due to increasing pressures and a lack of current management plans. This project will inform the Ministry of Environment (MINAET) and local municipalities to improve the management of protected areas.



Tropical Rainforest Studies

SEMESTER PROGRAM DATES

Spring 2013: Feb 4-May 9

Fall 2013: Sept 2-Dec 5



AUSTRALIA

ATHERTON TABLELANDS

ENVIRONMENTAL ISSUES

Tropical rainforests are among the Earth's most important and diverse ecosystems, yet thousands of acres disappear each day, largely as a result of human activity. Along with the loss and fragmentation of tropical rainforest areas due to practices such as timber felling and farming, global climate change is very likely contributing to accelerating the loss of plant and animal species. The potentially devastating effect of climate change is playing out in the World Heritage-listed Wet Tropics rainforests of Far North Queensland, where climate models predict a significant rise in local temperatures over the next century that would result in a nearly 50 percent extinction rate among endemic species in affected areas. The world-renowned Wet Tropics are often viewed as the "canary in the coal mine," as a threat of this magnitude could possibly result in the loss of more than half of all Australian bird species and endemic mammals.

For thousands of years, the tropical rainforests of Queensland have been home to many Aboriginal groups that play a vital role in co-management arrangements of the Wet Tropics. The forests also are home to numerous primitive plant species, birds, and marsupials found nowhere else in the world. The Daintree rainforests are, in fact, home to the oldest living plants on Earth and contain unique plant species, identifying Australia's tropical forests as the oldest in the world. Giant strangler figs, abundant vines and epiphytes, large pythons, colorful parrots, the giant cassowary, bandicoots, and tree kangaroos fill these forests with color, sound, and complexity. Northeastern Queensland's ancient rainforests preserve millions of years of evolutionary history, though sadly, these repositories have been greatly affected by habitat loss, fragmentation, and climate change. The eastern seaboard of northern Australia once supported extensive rainforests, but logging, mining, and agricultural production have destroyed and disrupted rainforest habitats. Today, over much of the area, only fragments of the original forests remain.

Australia confronted the threat of rainforest loss much faster than most tropical countries, and continues to be a global front-runner in recognizing the significance of ecosystem services and restoration ecology practices to maintain and ensure healthy rainforests. Still, the integrity and survival of these rainforests hinge upon developing management solutions that consider larger-scale impacts, including global climate change, while also providing economic benefits for the local community.



THE SFS CENTER FOR RAINFOREST STUDIES

The Center lies on the edge of the Atherton Tablelands in the heart of the traditional land of the Yidinji people. Protected World Heritage forests and farmland surround the rolling hills covered in tropical foliage. Student cabins are nestled within mature rainforest, which comprises a third of the property's 153 acres. Sightings of tropical birds, bandicoots, pademelons, primitive musky rat kangaroo, amethystine pythons, and other unique rainforest species are common. The site is alive with the sounds of the rainforest. Students share eight-person cabins with separate shower and bathroom blocks. The main building of the field station has a computer laboratory, Internet access, and a student common room.



Australia Program Description

OUR RESEARCH

While representing only a small percentage of the world's rainforest, the astonishing biodiversity of Australia's rainforest and the country's dynamic conservation efforts make Queensland an extraordinary laboratory for studying rainforest management and restoration. Recent cyclones have further damaged the remaining rainforest fragments, raising questions on how to manage these hyper-disturbed areas. Management strategies developed here may serve as a model for conserving other rainforests around the world.

The ecological and economic benefits of rainforests are increasingly well understood, but much less is known about rainforest ecosystem dynamics and the ability to restore a rainforest once it has been cleared. Our goals are to help understand the dynamics of rainforest ecosystems, including potential impacts of global climate change, and in turn, develop rainforest restoration strategies that benefit both ecosystems and human communities.

Student research addresses a critical local and regional environmental problem—loss and

fragmentation of once extensive rainforests—and examines environmental policies related to the issue on local and national levels. SFS staff and students, in collaboration with local landholders and stakeholder organizations, focus on enhancing the condition of tropical rainforests, as well as determining how to regenerate and restore the rainforest on the Atherton Tablelands.

Students learn field research techniques as they collect data on topics as diverse as potential responses of biotic communities to global climate change, habitat use and animal behaviors, resilience to cyclonic events, land use, local resident involvement in restoration projects, and cost-effective and ecologically beneficial methods of restoration. Student work represents a vital contribution toward broader studies on global climate change, ecological integrity of rainforest fragments, and developing restoration practices to maximize rates of plant growth and colonization by fauna. Students are actively involved in either replanting initiatives or site maintenance with local land-care groups.

Field Research, Lectures, Exercises, and Skills Development

- Chillagoe: Camp in the Outback and explore caves, rock formations, remnant dry rainforests, and eucalypt savannah.
- Cape Tribulation and the Daintree Rainforests: Walk through lowland rainforests, giant sedges with peppermint stick insects, mangrove forests, and palm forests; traverse the Daintree River, famous for its crocodiles; visit the canopy tower at the Daintree Discovery Centre; sample and examine an array of forest types across the landscape.
- Lend a hand at the TREAT (Trees for the Evelyn and Atherton Tablelands Inc.) nursery.
- Learn about the geology and historical biogeography of the Atherton Tablelands.
- Assess seedling recruitment of restored tropical rainforest at revegetation sites.
- Examine growth and mortality of tropical rainforest species.
- Sample plant functional traits and their effect on drought, frost, and cyclone resistance.
- Examine fauna in endangered plant communities.
- Develop field research skills including GIS, rainforest management strategies, seedling propagation, social science research methods (e.g., interviewing and surveys), transect and patch sampling, data recording and analysis, valuation methods, research design, plant functional trait sampling, restoration techniques, and climate modeling.

COURSES

Semester students are registered in four academic courses accredited through Boston University:

Course No.	Name	Credits
BI/EE(NS) 369	Rainforest Ecology	04
EE(NS) 370	Principles of Forest Management	04
EE(SS) 302	Environmental Policy and Socio-Economic Values	04
EE 491 or 492	Directed Research	04

Go to page 24 for course descriptions



Student Directed Research Project Examples

- Using plant functional traits to predict drought and cyclone resistance.
- Climate modeling and rainforest corridor plantings and restoration.
- Micro bat use of rainforest fragments.
- Flying fox counts and management planning for species (like flying foxes) living in human communities.
- Use of restored and natural rainforests by rainforest birds.
- Patterns of colonization of restored rainforest by vertebrates.
- Using scats and scratch marks to investigate habitat use by tree kangaroos.
- Determining carbon sequestration values of rainforest restoration.
- Monitoring the Peterson Creek revegetation project.
- Evaluating policy instruments that are used to tackle environmental problems.

Student Research Contributions

Understanding local views on the ecological and socio-economic challenges facing the community of North Queensland is key to our mission. Our ongoing research and close ties with community stakeholders allow students to make meaningful contributions including:

- Assisting community members with planting more than 15,000 trees over the last few years, some of which were grown from seed at our field station, to restore degraded forests, improve water quality, and sequester carbon.
- Assessing tree seedling recruitment and growth working toward recommending best practices for achieving a successful restoration.
- Assisting community members with restoration of more than 1 mile of rainforest from grassland along the lower Peterson Creek.
- Assisting in developing biodiversity management action plans for species such as the flying foxes in the Yungaburra community.
- Instigating environmental education exchanges in partnership with Department of Resource Management Rangers.

Get Involved With the Local Community

Conservation, resource use, and rainforest restoration are extremely important to local farmers, resource managers, and concerned community groups. With the results of our research, we offer advice to local decision-makers and create linkages between our staff and the stakeholders involved in rainforest restoration and management. SFS students enjoy getting involved in community volunteer projects and social activities such as:

- Community service trips to help local conservation groups and communities plant rainforest trees.
- Participating in annual community fauna surveys such as the crane count (October) and spectacled flying-fox counts (November).
- Attending special lectures on tree kangaroos, spectacled flying fox, rock wallaby, cassowary, and other local wildlife in conjunction with local conservation groups.
- Hosting community dinners and participating in short home stays.
- Bush dances, community festivals, visiting the Malanda theatre, socializing at the local pubs and sporting competitions, such as lawn bowling with Aussies.
- Meeting with Aboriginal elders of the Yidinji, Ngadjon Jii, and Barbaram tribes to learn more about their culture and their effort to reclaim their role in land management.
- Learning how to make and play didgeridoos.

For details and how to apply visit:

www.fieldstudies.org/australia



SFS AT WORK

Our students continue to work with the local land-care and catchment management groups TREAT (Trees for the Evelyn and Atherton Tablelands Inc.), Barron River Catchment Group, Terrain NRM, and the Wet Tropics Management Authority on rainforest restoration and corridor rejuvenation. Students contribute technical expertise by providing some species of rainforest seedlings from the on-site Center nursery in addition to planting trees.

We are a valuable partner in the Green Corridor initiative to revegetate the entire length of the Barron River (the largest catchment area across the Wet Tropics); our students and staff have been instrumental in planting tens of thousands of trees across the region. Revegetation efforts have resulted in increased native habitat, restored agricultural lands, and effective management against invasive plant species. Invasives (and ferals) jeopardize the resilience of the rainforest fragments that remain and are one of the largest threats to rainforest revitalization across the Wet Tropics.

Once isolated fragments of World Heritage forest are now connected via corridors, resulting in vital remnants of protected rainforest conservation for future generations. Research at the Center examines which species are being monitored using these restored corridors as new habitat.



Tropical Island Biodiversity & Conservation Studies

SEMESTER PROGRAM DATES

Spring 2013: Feb 4-May 9

Fall 2013: Sept 2-Dec 5



PANAMA

BOCAS DEL TORO

ENVIRONMENTAL ISSUES

Panama is the great connector between two continents, a corridor that links the natural riches of Central America to South America. Few places on Earth can claim the density of species and ecosystem richness that this isthmus can. Bocas del Toro, Panama, is a place where forest and shore come together and present almost limitless opportunities to study the ecology and conservation of both the marine and terrestrial realms. It is this dynamic interface between forested islands and life-filled waters that drives our understanding of fragile habitats, natural resource use, and indigenous ways of life based on deep relationships with the environment.

The goal of this undergraduate study abroad program is to assess the state of the archipelago's fragile natural habitats, define the main environmental issues, and understand the community goals in natural resource management. As part of our work in Panama, SFS strives to help islanders maintain balance and harmony between people and nature in this fragile ecosystem.

The recent influx of tourists and ex-pat residents has put strains on the natural places of the archipelago. Habitat loss, pollution, and the encroaching recreational practices of humans mean both marine and terrestrial species of the islands have become stressed. At the same time, protection efforts are under way, driven in equal measure by government and resident initiatives. We are assessing which activities are harmful to the flora and fauna, and which support species and habitat conservation, and, ultimately, local livelihoods. In addition, as the planet copes with disruptive weather events and changing climatic influences, we are investigating how the local environment and residents of the archipelago are adapting.



SFS IN BOCAS DEL TORO, PANAMA

The field station on Isla Colón in Bocas del Toro, Panama, is located on the vibrant Caribbean waters of Almirante Bay and near stands of old-growth rainforest. The dorms, classrooms, and common spaces have been built with scholars in mind. SFS has several partners in Bocas del Toro including the Smithsonian Tropical Research Institute (STRI) and other research, conservation and community organizations.



Panama Program Description

OUR RESEARCH

The curriculum and research program focus on defining key island systems, both natural and human, and how they interface. Key indicators for the status of the habitats, species, and local economies will be developed based on local perceptions and knowledge, accepted research protocols, and local relevance. Through field observations and research, we identify and understand the pressures, both direct and indirect, on the environment and economic systems. And, finally, we evaluate the responses by society aimed at mitigating pressures and restoring balance in the environment.

We use a suite of field research methods, including the following, among others:

- Household questionnaires
- Key informant interviews
- Mapping natural habitat and social networks
- Biodiversity surveys on land and in the water
- Sampling populations of key species for demographics and structure

Through research, students gain an understanding of the interdependence of livelihood strategies of island residents, population structure of key species, and habitat arrangements and conditions.

Field Research, Lectures, Exercises, and Skills Development

- Snorkeling for field research and species identification on coral reefs and other marine habitats.
- Shallow water excursions to the fragile intertidal surf zones where giant starfish and spiny sea urchins abound.
- Deep exploration of old-growth rainforests; viewing giant orchids, colorful macaws, monkeys, and numerous arrow frogs.
- Monitoring beach erosion and palm stand loss due to rising sea levels.
- Lectures from Panamanian and international researchers and government environmental officials.

- Visits to large banana plantations on the mainland to understand the impact of the commercial agricultural industry on the local economy and fragile coastal environment.
- Excursions to neighboring islands to visit indigenous housing settlements and observe the livelihoods of traditional farmers, fishers, and forest gatherers.
- Visits to eco-lodges and resort hotels to understand how development imparts pressures on fragile marine and terrestrial habitats and ecosystems.
- On an extended multi-day trip, visit a different ecosystem—likely the volcanic highlands of central Panama—to observe montane forests and streams.

Student Directed Research Project Examples

- Status of key species, including sea turtles, dolphins, corals, lobsters, fin fish, and reef fish.
- Determine condition of marine and coastal habitats: coral reef, seagrass, mangrove, and coastal wetlands.
- Survey livelihood strategies of residents: fisheries, ecotourism, agriculture, ranching, and forestry.
- Chemical-physical dynamic at the terrestrial-marine interface: nutrient and energy flows, physical and chemical properties.
- Habitat changes at the terrestrial-marine interface: receding beaches, mangroves, and siltation of reefs.
- Perceptions of environment and environmental services by local people and tourists.

COURSES

Semester students are registered in five academic courses accredited through Boston University:

Course No.	Name	Credits
BI/EE (NS) 379	Tropical Coastal Ecology	04
EE (NS) 374	Principles of Resource Management	04
EE (SS) 302	Environmental Policy and Socioeconomic Values	04
EE 491	Directed Research	04
LS 205E	Language, Culture, and Society of Panama*	02

Go to page 24 for course descriptions



Get Involved With the Local Community

Conservation, resource use, forest preservation, and marine species monitoring are extremely important to local farmers and fishers, resource managers, and concerned community groups. With the results of our research, we offer data and recommendations that inform decision-makers and build relationships between SFS and the stakeholders involved in tropical island system conservation and management.

SFS students get involved in community volunteer projects and social activities such as:

- Participating in community service trips to help local conservation groups and communities, such as monitoring sea turtle nesting and baby sea turtle emergence.
- Meeting with indigenous leaders and elders of the Ngobe to learn more about their culture and their efforts to promote their role in land management and sustainable natural resource use.
- Hosting community lectures or demonstrations.
- Attending community festivals and sporting competitions, such as baseball, soccer, and rodeo.

Panama Program Prerequisites

Applicants for the semester program in Panama must be at least 18 years of age, in good academic standing, and must have completed a college-level course in ecology, biology, or environmental studies. Students are encouraged to have taken coursework in international development, economics, or anthropology prior to participation.

*Language, Culture, and Society of Panama (LS 205E)

This course provides two integrated modules, Spanish Language Instruction and Panamanian Society and Culture. The Spanish Language Module, taught by professional Spanish language instructors, offers reading, listening, oral and written practice of the Spanish language at three general levels of proficiency (beginner, intermediate, and advanced) to increase students' comprehension and communication skills. The Panamanian Society and Culture Module emphasizes direct contact and interaction with the local communities in Panama. A combination of lectures, field experiences and classroom discussion will immerse students in the cultural context of Panama, helping to prepare them to work effectively in community-based directed research efforts.

For details and how to apply visit:
www.fieldstudies.org/panama





Marine Resource Management Studies

SEMESTER PROGRAM DATES

Spring 2013: Feb 4-May 9

Fall 2013: Sept 2-Dec 5



TURKS & CAICOS

SOUTH CAICOS, BRITISH WEST INDIES

ENVIRONMENTAL ISSUES

For the tourists who flock here, the Turks and Caicos Islands (TCI), which lie at the southeastern end of the Bahamian archipelago, are a diving and angling paradise. The clear waters are considered among the world's top 10 diving destinations. Nearly 50 species of coral and more than 350 fish species, including spotted eagle rays, sharks, groupers, and snappers are easily spotted in the vibrant, warm waters just steps from our field station. Nearby seagrass beds, mangrove forest stands, sandy shoals, and deep reefs lend a patchwork appearance to the miles of shallow blue waters that surround the Islands. But beneath the turquoise waters, a delicate ecosystem is under assault.

This diverse marine environment supports the TCI economy directly and indirectly through fisheries and tourism. The diversity and health of island, coastal, and ocean habitats, including mangrove, seagrass, coral reef, sand banks, and deep, open ocean contribute to the value of TCI fisheries and tourism through the ecosystem functions that they perform. The TCI have an extensive network of more than 30 established protected areas to promote the sustainability of natural and historic resources, with four in close proximity to our location on South Caicos. Lack of scientific knowledge, local understanding, and environmental stewardship, however, hinder management of resources and the effectiveness of these protected areas. Demand for marine resources is expected to increase with the onset of tourism on this small island, creating pressure on marine populations and ecosystems. Without scientific quantification assessment and environmental education, the existence of many of these resources is threatened.

SFS has a critical role to play during the next five years, quantifying and establishing social and ecological baselines, conducting ongoing monitoring of reef environments, and helping to mitigate change to the marine environment through research and education.



THE SFS CENTER FOR MARINE RESOURCE STUDIES

The Center, located just steps from our crystal clear ocean laboratory, is adjacent to Cockburn Harbour, a town of about 1,100 residents. Our field station sits at the edge of the water, elevated about 40 feet above the water, looking directly out over the sea. Within a 3-mile radius are coral reefs, mangrove islands, seagrass beds, carbonate platform flats, and deep water diving. The main facility has a dining area, kitchen, classroom, computer room, and a veranda with spectacular island and ocean views. Students share living quarters in two residence wings. We are fully equipped for marine operations with access to docks, motor boats, a compressor, and plenty of tanks and weights for SCUBA diving.



Turks & Caicos Program Description

OUR RESEARCH

With so many local residents dependent upon marine resources for their livelihood, along with increasing resource consumption by tourists, finding viable options for managing fisheries and conserving critical habitats, including coral reefs, is crucial.

Snorkeling and SCUBA diving in waters surrounding South Caicos, students learn field research techniques to identify a wide range of marine organisms and habitats, and learn about marine ecology and coastal ecosystems. Students grapple with the challenges of balancing the economic needs of the fishing community with fisheries management and analyze the costs and benefits of potential new fisheries. Assessing the pros and cons of resource management and habitat conservation options, and their associated social and economic implications, brings students face-to-face with the real-life dilemmas for governmental regulators and the residents of South Caicos.

TCI has an extensive network of 33 protected areas, but little is known about their function and

effectiveness. With the Admiral Cockburn Land and Sea National Park and East Harbour Lobster and Conch Reserve on their doorstep, students evaluate the concept and practice of marine protected areas (MPAs) as a resource management tool.

Students help monitor the condition of the spectacular coral reefs, both inside and outside the MPAs, using scientifically rigorous monitoring techniques. Through field exercises and research, students:

- Study essential marine habitats.
- Assess the status and level of local fishing efforts.
- Monitor the effects of tourism and habitat destruction.
- Study marine species interactions.
- Investigate the community structure and social relationships, feasibility of recycling programs, along with other issues related to marine natural resource management and local livelihood.

The growing tourism industry in the TCI as a whole is increasing the demand for reef fish on restaurant menus. Local fishers on South Caicos recognize this market, and commercial sale of certain reef fish species is rapidly increasing. Apart from having established “no-take” marine protected areas and banning spear fishing, there are currently no regulations in place to manage the harvest of reef fish. It is critical for the TCI to establish a comprehensive management plan for reef fish species so they can be harvested in a sustainable manner to avoid population declines.

Field Research, Lectures, and Exercises

- SCUBA or snorkeling for field research and species identification exercises.
- Fish, coral, seagrass, and mangrove identification.
- Ecosystem functioning and anthropogenic impacts.
- Habitat enhancement and restoration.
- Lecture from Department of the Environment and Coastal Resources (DECR) on the TCI government fisheries’ regulations and enforcement.
- Lecture and site tour from local tourism developer on plans for constructing a resort.
- Visits to local processing plants and discussions with operators
- Field research skills development may include marine organism behavioral observations; biodiversity assessment; survey design and interviewing techniques; environmental impact assessment; MPA assessment, data collection and analysis; scientific writing and oral presentation; peer evaluation and review; snorkel and SCUBA skills; GIS; cost/benefit analysis; valuation methods; habitat assessment and mapping; species identification; and habitat enhancement and restoration.

COURSES

Semester students are registered in four academic courses accredited through Boston University:

Course No.	Name	Credits
BI/EE(NS) 373	Tropical Marine Ecology	04
EE(NS) 374	Principles of Resource Management	04
EE(SS) 302	Environmental Policy and Socio-Economic Values	04
EE 491 or 492	Directed Research	04

Go to page 24 for course descriptions



Student-Directed Research Project Examples

- Population size assessment of potentially commercial fin fish species around South Caicos.
- Fin fish dock landings.
- Coral reef ecology, including growth, survival, and recruitment.
- Baseline biodiversity surveys in critical habitats.
- Interactions between mangrove and seagrass faunal communities.
- Ecology of Nassau grouper.
- Local perceptions of tourism and fishing industries.
- Feasibility studies for recycling programs on South Caicos and the TCI.
- Habitat enhancement and restoration.

Student Research Contributions

- Lobster, conch, and fin fish stock assessments have provided important information for allowing government agencies to establish sustainable fishing rules and guidelines.
- Natural resource workshop with the DECR and the National Park Service to provide the TCI government workers with training on coral reefs, lobster biology, marine fishes, turtles, and sharks.
- Working with the DECR, Protected Areas Department, and local businesses to develop a protocol for coral reef monitoring and queen conch distribution.
- Applying baseline data to examine reef health trends, species interactions, and impacts of coral diseases.
- Students present findings at the South Caicos Environmental Forum, run and hosted by SFS, to disseminate findings to the local community.

Get involved With the Local Community

We are dedicated to helping the community conserve its natural resources and develop sustainably. Students become involved with the community, learning about the Caribbean culture and the challenges they face. Community activities may include:

- Providing swimming lessons and environmental education for local children.
- Reading, tutoring, and volunteer projects at the local library and grade school.
- Teaching English to Haitians and Dominicans to help their integration into the community.
- Creating public service announcement films and beach clean-ups to raise environmental awareness.

SCUBA Certification

It is not necessary to use SCUBA to participate in our program—many students choose to snorkel instead. If you intend to use SCUBA, however, you must be certified before arrival. Divers and snorkelers must bring their own SCUBA and snorkeling equipment (with certification, insurance, etc.). Weights and tanks are provided on-site at no cost.

For details and how to apply visit:

www.fieldstudies.org/tci



SFS AT WORK

Staff and students at the Center and local fishermen of South Caicos have been collecting lionfish in an effort to eradicate the invasive species. The analysis of captured individuals will help to gain a better understanding of their habitat selection, feeding ecology, and reproductive behavior—all valuable information for management strategies on both a local and regional scale.

The preliminary data suggest that lionfish settle in the shallow nursery habitats, including seagrass beds, mangroves, and shallow reefs. Large aggregations of mature, reproducing adults are found associated with deep reefs. The limited data suggest that eradication programs on South Caicos may be helping to reduce populations in the shallow habitats, and thus it is imperative to increase eradication efforts throughout each integral habitat.

South Caicos fishermen have been encouraged to continue catching lionfish on a regular basis and have been bringing specimens to the Center for consumption and analysis. In an effort to encourage the implementation of lionfish as a profitable and tasty fisheries species in South Caicos, the Center staff frequently offers lionfish dishes during community events and hosts fish fries.

Semester Course Descriptions

BI/EE (NS) Students choose to register for either Biology or Environmental Studies credit
EE (NS) Environmental Studies (Natural Science)
EE (SS) Environmental Studies (Social Science)
LE Swahili Language
LS Spanish Language
NS Natural Sciences
SS Social Sciences

KENYA + TANZANIA*

BI/EE (NS) 371 TECHNIQUES IN WILDLIFE MANAGEMENT introduces students to the questions, principles, and tools used by resource managers in the East Africa savanna ecosystem. Students study habitat assessment, plant and animal identification, associations and distributions, and other approaches to evaluating the savanna ecosystems. Behavioral, physiological, and social responses of animals to a changing environment will be examined. Field and laboratory techniques for monitoring ungulate populations and optimizing management practices will be presented. Decision-making processes, on which wildlife management programs are based, will be addressed.

BI/EE (NS) 372 WILDLIFE ECOLOGY presents students with the information and conceptual background necessary to understand the underlying ecological principles of the East Africa savanna ecosystem. We will focus on the fundamental processes and inter-relationships between the biotic and abiotic environment. We begin with basic ecological principles, setting them against the background of East Africa. Factors underlying distributions, population biology, and behavioral ecology will be examined along with competition and predation using African examples. Theoretical models will be discussed in light of our observations on field trips.

EE (SS) 302 ENVIRONMENTAL POLICY & SOCIO-ECONOMIC VALUES provides insight into the broad social context surrounding natural resources to determine effective approaches to resource management. Objectives are to understand socio-cultural context, including hierarchies and power structures; formal and informal decision-making processes; value systems relevant to natural resources, including religious factors and environmental ethics; past and present uses of natural resources; economic factors (local, regional, external); ownership patterns; attitudes and other factors that affect change and their historical basis; and legal basis for enforcement of environmental policy. Introduction of major constituencies that effect conservation (NGO conservation groups, economic interests, etc.) and their underlying philosophies.

EE 491 (FALL) EE 492 (SPRING) DIRECTED RESEARCH prepares students to distinguish hidden assumptions in scientific approaches and separate fact from interpretation, cause from correlation, and advocacy from objectivity. Specific tools will include experimental design, field techniques, basic descriptive statistics, and parametric and non-parametric quantitative analysis. Succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations will be emphasized.

*The spring 2013 semester will operate in Tanzania only. For more information, visit www.fieldstudies.org/ eastafrica.

LE 205E INTRODUCTION TO SWAHILI LANGUAGE AND EAST AFRICAN TRIBAL COMMUNITIES contains two distinct but integrated modules. The Swahili language module offers listening, oral, and written practice of the Swahili language, at a basic level of proficiency, to increase students' communication and comprehension skills. Much of the Maasai population does not speak Swahili, but it is the national language in Kenya and Tanzania—this phenomenon will be explained in the second course module. The socio-cultural aspects of East African tribes module emphasizes understanding of, and direct contact and interaction with, the native communities with which SFS works, primarily the Maasai. This exposure to culture and language will be reviewed and processed through lectures, field exercises, and classroom discussion. The socio-cultural module is designed to help students experience intense immersion in the culture and be therefore more adept at working effectively in their community-based Directed Research efforts.

AUSTRALIA

BI/EE (NS) 369 RAINFOREST ECOLOGY introduces structure and function of tropical rainforests including floral and faunal components. Ecological processes that maintain biodiversity and the evolutionary processes that generate it will be presented. We will examine the dynamic relationships between plants and animals, including pollination and seed dispersal. On a larger scale, we will examine tropical vegetation patterns along climatic gradients and discuss mechanisms for preserving and restoring tropical ecosystems.

EE (NS) 370 PRINCIPLES OF FOREST MANAGEMENT presents the ecological and analytical tools used in the management of terrestrial, living resources. We will use examples from the tropics to stress the theories and skills that provide the foundation for land management worldwide. The assessment and minimization of adverse environmental impacts caused by resource development, as well as the restoration and rehabilitation of areas suffering from chronic human-induced disturbances, provide key foci for applying principles learned.

EE (SS) 302 ENVIRONMENTAL POLICY & SOCIO-ECONOMIC VALUES provides insight into the broad social context surrounding natural resources to determine effective approaches to resource management. Objectives are to understand socio-cultural context including hierarchies and power structures; formal and informal decision-making processes; value systems relevant to natural resources, including religious factors and environmental ethics; past and present uses of natural resources; economic factors (local, regional, external); ownership patterns; attitudes and other factors that affect change and their historical basis; and legal basis for enforcement of environmental policy. Introduction of major constituencies that effect conservation (NGO conservation groups, economic interests, etc.) and their underlying philosophies.

EE 491 (FALL) EE 492 (SPRING) DIRECTED RESEARCH prepares students to distinguish hidden assumptions in scientific approaches and separate fact from interpretation, cause from correlation, and advocacy from objectivity. Specific tools will include experimental design, field techniques, basic descriptive statistics, and parametric and non-parametric quantitative analysis. Succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations will be emphasized.

PANAMA

BI/EE (NS) 379 TROPICAL COASTAL ECOLOGY introduces students to the ecology of coastal and marine ecosystems as well as terrestrial systems that affect the marine environment. Students will learn to identify species in these habitats. The concept of island biogeography will help to frame the examination of the status and delicate nature of tropical island systems. Climate change and its impacts on small islands will be addressed. Field exercises will be held in forests and coastal waters where students will encounter mud and monkeys one second, damselfish and moray eels the next.

EE (NS) 374 PRINCIPLES OF RESOURCE MANAGEMENT examines fisheries management (commercial and artisanal) focusing on local fisheries, including fin fish, lobster, and sport fish. We will study the environment from the lens of tourism, examining the impact of tourism on fragile habitats. Another theme of the course will be land use and land cover change – especially in regard to increasing pasture land and plantation land under cultivation (mostly banana) in close proximity to the ocean and important watershed habitats. Additional themes will be climate change and how this affects natural resources and livelihood on land, sea, and forest resources, including timber and non-timber forest products.

EE (SS) 302 ENVIRONMENTAL POLICY AND SOCIO-ECONOMIC VALUES provides a critical look at the livelihood strategies of island residents, the land use and environmental regulations in place, and actual or recommended responses by society (including government, civil society, and individuals) aimed at mitigating pressures and restoring balance in the environment. Students will gain an understanding of the local perceptions of conservation of natural resources and the pressure points between development and preservation. The economic importance of tourism may be measured and examined against habitat degradation. Common property issues will be addressed in relation to land use of indigenous islanders and new property owners wishing to build on once sovereign land. Gauging environmental awareness and literacy of tourists will help students to understand their impact on the future of endangered island ecosystems that will be put under continuous pressure with the climbing number of visitors.



EE 491 (FALL) EE 492 (SPRING) DIRECTED RESEARCH prepares students to distinguish hidden assumptions in scientific approaches and separate fact from interpretation, cause from correlation, and advocacy from objectivity. Specific tools will include experimental design, field techniques, basic descriptive statistics, and parametric and non-parametric quantitative analysis. Succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations will be emphasized.

LS 205E LANGUAGE, CULTURE, AND SOCIETY OF PANAMA contains two distinct but integrated modules. The Spanish language module offers listening, oral and written practice of the Spanish language at beginner, intermediate, and advanced levels of proficiency. Students will engage in oral and written grammar and vocabulary exercises; and develop Spanish language skills and tools required for their research projects. The socio-culture module helps students to develop a more refined understanding of Panamanian culture and the various communities with which we work. Students participate in lectures, field exercises, and other activities including a homestay—all of which teach them strategies and skills for working with people in a community-based research context and help them to assist with community extension projects.

COSTA RICA

EE (NS) 377 TROPICAL ECOLOGY & SUSTAINABLE DEVELOPMENT examines the ecological impact of human activity, especially agriculture in a tropical country. The agro-ecology of important crops will be studied, with emphasis on biodiversity as the source of production means and materials. Students will identify renewable and nonrenewable resources and examine their historical use. We will study the long-term and large-scale impact of local agricultural and other practices on the national and global environment (e.g., water pollution, waste management, climate change). Options for alternative resources use, land restoration, and preservation will be examined from ecological, socio-political, and economic viewpoints. Factors that constrain or promote particular options will be included. Basic field techniques and measurements will also be covered.

EE (NS) 374 PRINCIPLES OF RESOURCE MANAGEMENT is designed to examine the connection between society and natural resources and how application of management tools can lead to biodiversity conservation and sustainable livelihoods. This course introduces underlying concepts and practical tools used in addressing complex environmental problems, including protected area planning and management, guidelines for ecologically sustainable development, and environmental impact assessment. Local case studies will be examined using the theory and practice learned in this course.

EE (SS) 303 ECONOMIC & ETHICAL ISSUES IN SUSTAINABLE DEVELOPMENT addresses the principles and applications of ecological economics, or the scientific and management aspects of sustainability. Allocation, distribution, and scale will be presented as parameters to assess the sustainability of development models (at macro and micro levels). Basic concepts of ecological economics cost-benefit valuation techniques will be presented and applied. The roles of local people, government, and private, national, and bilateral aid agencies will be examined as constraints for the implementation of sustainable development models. The empowerment of local people and their reaction to non-local proposals for sustainable development will be examined through the review of specific case studies.

EE 491 (FALL) EE 492 (SPRING) DIRECTED RESEARCH prepares students to distinguish hidden assumptions in scientific approaches and separate fact from interpretation, cause from correlation, and advocacy from objectivity. Specific tools will include experimental design, field techniques, basic descriptive statistics, and parametric and non-parametric quantitative analysis. Succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations will be emphasized.

LS 205E LANGUAGE, CULTURE, & SOCIETY OF COSTA RICA contains two distinct but integrated modules. The Spanish language module offers listening, oral, and written practice of the Spanish language at beginner, intermediate, and advanced levels of proficiency. Students will engage in oral and written grammar and vocabulary exercises, and develop Spanish language skills and tools required for their research projects. The socio-culture module helps students to develop a more refined understanding of Costa Rican culture and the various communities with which we work. Students participate in lectures, field exercises, and other activities including a homestay—all of which teach them strategies and skills for working with people in a community-based research context and help them to assist with community extension projects.

TURKS & CAICOS ISLANDS

BI/EE (NS) 373 TROPICAL MARINE ECOLOGY discusses the interactions that determine the distribution and abundance patterns of tropical marine organisms, with emphasis on the ecology of near-shore areas. Basic principles of ecology are integrated with an understanding of the sea as a habitat for life. Physical, chemical, and geological oceanography are discussed. Major groups of dominant marine organisms of the region are examined in the field. Major near-shore marine habitats are examined, along with their associated biotic communities. Coral reef ecosystems are emphasized to illustrate basic concepts. Applications to the management of indigenous marine resources are discussed and demonstrated.

EE (NS) 374 PRINCIPLES OF RESOURCE MANAGEMENT is designed to examine the connection between society and natural resources and how application of management tools can lead toward biodiversity conservation and sustainable livelihoods. This course introduces underlying concepts and practical tools used in addressing complex environmental problems, including protected area planning and management, guidelines for ecologically sustainable development, and environmental impact assessment. Local case studies will be examined using the theory and practice learned in this course.

EE (SS) 302 ENVIRONMENTAL POLICY & SOCIO-ECONOMIC VALUES provides insight into the broad social context surrounding natural resources to determine effective approaches to resource management. Objectives are to understand socio-cultural context, including hierarchies and power structures; formal and informal decision-making processes; value systems relevant to natural resources, including religious factors and environmental ethics; past and present uses of natural resources; economic factors (local, regional, external); ownership patterns; attitudes and other factors that affect change and their historical basis; and legal basis for enforcement of environmental policy. Introduction of major constituencies that affect conservation (NGO conservation groups, economic interests, etc.) and their underlying philosophies.

EE 491 (FALL) EE 492 (SPRING) DIRECTED RESEARCH prepares students to distinguish hidden assumptions in scientific approaches and separate fact from interpretation, cause from correlation, and advocacy from objectivity. Specific tools will include experimental design, field techniques, basic descriptive statistics, and parametric and non-parametric quantitative analysis. Succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations will be emphasized.

Summer Programs

SUMMER 2013 PROGRAM DATES

Session I:

June 3-July 1

Bhutan & Kenya (Public Health) TBD

Session II:

July 8-August 5



Overview

Our summer programs combine interdisciplinary lectures with field research exercises and expeditions. Students will engage with and learn how local communities approach natural resource management.

Each monthlong course carries four college-level credits in environmental studies, except for the Bhutan program, which carries six credits. Our Australia/New Zealand, Costa Rica, and East Africa summer programs can be taken back-to-back for a full eight credits. In some cases, the summer course may fulfill a university's field study requirement.

The majority of summer participants are college undergraduates, but gap-year students and recent college graduates also may participate. There are no prerequisites for summer courses.

Except for our Bhutan program, there are no application deadlines; however, students are urged to submit their applications early as programs fill quickly. Applications are reviewed on a first-come, first-served basis.

Please see our website for updated information or call 800.989.4418 to request a complete summer course catalog.

Summer Program Descriptions

AUSTRALIA AND NEW ZEALAND

Rainforest ecosystems are a "hot spot" for faunal and floral biodiversity. They also provide people with fresh air, water, food, and medicines, not to mention the spiritual and aesthetic value they possess. Yet thousands of acres of rainforest around the world disappear each day. Large areas of Northeastern Queensland in Australia were once covered in spectacular tropical rainforests, preserving millions of years of evolutionary history.

In recent history, agricultural and residential development have destroyed and degraded rainforest habitat, leaving only fragments of some forest types, which are too small or isolated to sustain many species of animals and plants. Similarly, only fragments of northern New Zealand's ancient forests remain to house the endemic fauna and flora.

This summer program offers two four-credit courses that may be taken individually or back-to-back to provide a thorough introduction to biodiversity conservation techniques and the socio-economic factors influencing land management in two unique rainforest areas.

SESSION I: RAINFOREST MANAGEMENT STUDIES IN AUSTRALIA AND NEW ZEALAND

Students compare and contrast the ecological, geographical, social, economic, and historical factors that have shaped natural resource management in northern New Zealand and Far North Queensland, Australia. These two countries share a similar Gondwanan history; however, indigenous and European settlement patterns and economic development significantly differ between the two countries. In New Zealand, students discover the critically endangered flora and fauna in the north and the factors that have led to their disjunct populations. In Australia, students take their New Zealand experiences and examine similarities and differences in political structure, land use patterns, and biogeography.

SESSION II: TECHNIQUES FOR RAINFOREST RESEARCH IN AUSTRALIA

Examining the effects of fragmentation in highly endangered rainforest systems, students explore Australia's Wet Tropics rainforests and develop effective field research skills while learning about forest conservation. Three modules are presented on different field techniques used in studies in ecology, forest management, and socio-economics.

BHUTAN

HIMALAYAN FORESTS, WATERSHEDS, AND RURAL LIVELIHOODS

Because the majority of the population in the Himalayan Kingdom of Bhutan resides in rural areas, sustainable management of natural resources is critical for achieving the dual goals of poverty alleviation and biodiversity conservation.

In this six-week interdisciplinary program, students travel across Bhutan learning about Bhutanese culture, Buddhist philosophy, and environmental issues. Trekking through valleys, overpasses, and through villages, students will gain an intimate knowledge of the local environments and rural livelihoods. They will contribute to advancing the research and conservation agenda of our Bhutanese program partner through conducting field research on Bhutan's priority environmental concerns and conservation strategies on community forestry, human-wildlife conflict in agricultural areas, and watershed assessment.

COSTA RICA

In the ongoing transition from an agriculture-based to a service economy, accelerated development threatens Costa Rica's biodiversity and local customs. Adaptation to climate change is a key element in today's conservation agenda in Costa Rica. The nation must urgently reorganize its resource use and waste management practices to maintain healthy and functioning ecosystems in Costa Rica.

This summer program offers two four-credit courses, which may be taken individually or back-to-back to provide a thorough introduction to the sustainability of tropical ecosystems and field research techniques for addressing conservation questions.

SESSION I: SUSTAINING TROPICAL ECOSYSTEMS: BIODIVERSITY, CONSERVATION, AND DEVELOPMENT

Students learn about historical and current aspects of sustainable development strategies in Costa Rica, tropical ecosystem function and connectivity, and the impacts of development on the environment and on society. Field exercises and lectures introduce students to models of economic development and biodiversity conservation in and around Costa Rica's protected areas, and provide a practical introduction to research design and methods for achieving conservation goals.



SESSION II: APPLIED RESEARCH TECHNIQUES AND STRATEGIES TOWARD SUSTAINABILITY IN COSTA RICA

Students learn about the ecological, resource management, and socio-economic factors impacting protected areas and surrounding regions in Costa Rica. We focus on developing relevant research questions that address these local issues related to sustainability. Students will be directly involved in designing and conducting field research on a topic of immediate relevance to local clients and proposing alternative approaches to sustainable development in an effort to help address challenges to conservation goals.

KENYA

SESSION II: FIELD PRACTICUM IN PUBLIC HEALTH AND ENVIRONMENT

This course introduces students to rural health issues in Kenya, emphasizing the links between health and environment, and community-based health care and modern medicine. Students gain experience in assessing and analyzing public health and environmental concerns in Maasai communities, in partnership with local community-based health organizations. This program is an undergraduate-level field course open to qualified students in all disciplines who are eager to begin exploring their interests in international public health. The program is particularly applicable to those considering a major or concentration in global or international health, public health, nursing, pre-med, or medical and health sciences programs.

This course may be taken independently or in combination with the Wildlife Management and Conservation course in Tanzania in Summer Session I.

TANZANIA

Northern Tanzania, home of world-famous national parks such as Tarangire, Lake Manyara, Kilimanjaro, Serengeti, and the Ngorongoro Conservation Area, offers a tightly packed hub of wildlife conservation. This magnificent setting on the Maasai steppe is our learning laboratory. Expeditions to the national parks are frequent. This is an extremely scenic area and is the center of nature tourism in East Africa. Students are exposed to a rich array of issues related to wildlife management and conservation, presented by SFS faculty and guests who have field experience and knowledge of the area.

SESSION I: WILDLIFE MANAGEMENT AND CONSERVATION

Students are exposed to wildlife management practices and the complex issues involving sustainable wildlife conservation in the Tarangire-Manyara ecosystem of Tanzania. The course combines concepts and principles of ecology, natural resource management, and socio-economics, which are central to effective and sustainable wildlife conservation. During the course, students develop skills to explore the ecology, social organization, and behavior of common African large mammals.

Central to the course is the understanding and evaluation of managed protected areas in the region, and students learn methods to examine the complexities of conserving wildlife in protected areas amidst a rapidly changing socio-economic and political environment. In addition, we attempt to understand the key constraints to the conservation of wildlife among resource-poor rural populations and identify key aspects of human-wildlife conflicts.

This course may be taken independently or in combination with the Techniques for Wildlife Field Research course (Tanzania) or the Field Practicum in Public Health and Environment (Kenya) in Summer Session II.

SESSION II: TECHNIQUES FOR WILDLIFE FIELD RESEARCH

Students are exposed to a suite of wildlife field techniques and methods routinely used to assess wildlife ecology and management policies and practices in East Africa, with specific application to the Tanzania Tarangire-Manyara ecosystem conservation areas. The focus is multi-disciplinary and reflects the complex realities of balancing ecological, economic, and socio-cultural factors in sustainable wildlife conservation and management studies.

Students learn foundational skills in observation and evaluation of wildlife, as well as interactive methods used for assessing local community attitudes and behaviors toward conservation efforts. They also apply these techniques to advance long-term research goals at our Center. Examples of techniques that are taught include effective identification, sampling, and data collection and analysis methods for flora and fauna;

remote and on-ground sensing, spatial mapping; survey design and interviewing skills; and communication skills (report writing and public presentation).

This course may be taken independently or in combination with the Wildlife Management and Conservation course in Summer Session I.

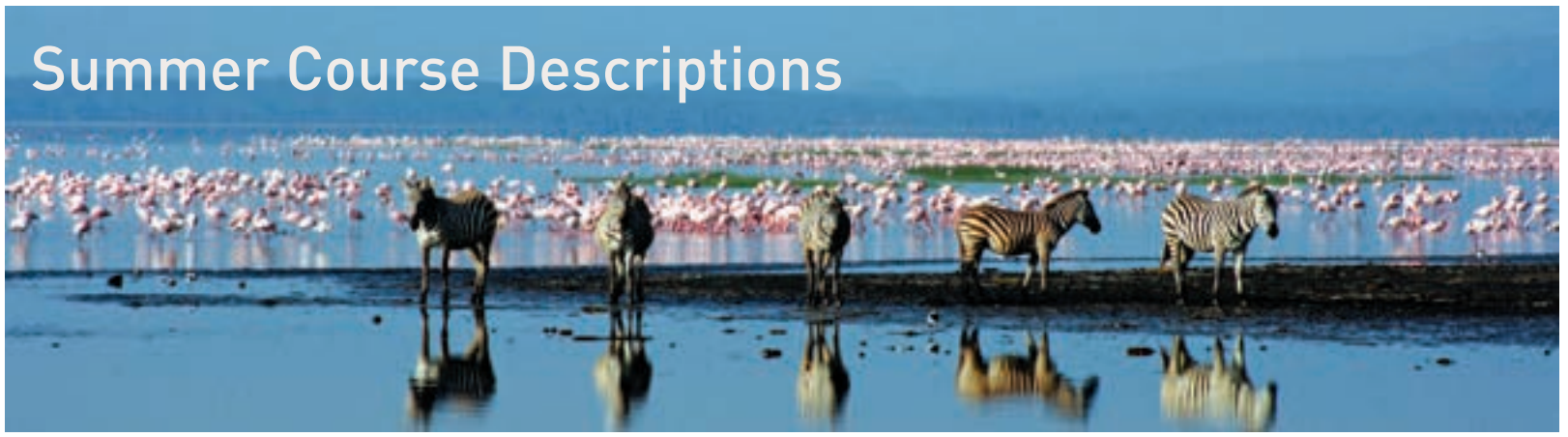
TURKS & CAICOS ISLANDS

SESSION I OR SESSION II: MARINE PROTECTED AREAS: MANAGEMENT TECHNIQUES AND POLICIES

The turquoise waters surrounding the TCI are abundant with marine life and are considered among the world's top 10 diving destinations. The reefs harbor an incredible array of marine life—resources that have proven critically important for this island community. The importance of these reefs has not guaranteed their survival, however, and this fragile habitat faces degradation from pollution, dredging, dumping, and damage from boats and divers. Students explore the effectiveness of marine protected areas in maintaining and restoring biodiversity and critical habitats for local fisheries, including conch and spiny lobster. Student research supports sustainable fisheries, which is essential for the resource-dependent community on South Caicos.

For semester and summer course numbers and descriptions, please visit our website at www.fieldstudies.org.

Summer Course Descriptions



AUSTRALIA AND NEW ZEALAND

These courses can be taken individually or back-to-back.

EE (NS) 354 RAINFOREST MANAGEMENT STUDIES IN AUSTRALIA & NEW ZEALAND (SESSION I)

Compares and contrasts the ecological, geographical, social, economic, and historical factors that have shaped natural resource management in Australia and New Zealand. Gain an understanding of the drivers of species extinctions and current conservation problems including management of endangered species. In both countries, students examine the influence of fragmentation on abiotic and biotic attributes of forest communities during field exercises and will be able to identify management techniques with regard to biological systems, national boundaries, and political structures.

EE (NS) 355 TECHNIQUES FOR RAINFOREST RESEARCH IN AUSTRALIA (SESSION II)

Includes a wide range of lectures and hands-on field activities that concentrate on developing management recommendations for reforestation practices on the Tablelands of Australia. We explore the ecological roles, environmental services, and economic benefits of tropical rainforests. Examine the structure and function of Australian tropical rainforests and the roles that humans have played, and are playing, in current forest dynamics. Examine reforestation applications on the Tablelands: the goals, techniques, successes, and the failures. Finally, we develop and maintain an actual rainforest restoration project.

BHUTAN

EE (NS) 358 HIMALAYAN FORESTS, WATERSHEDS, AND RURAL LIVELIHOODS

Is an interdisciplinary, field-based course where students get to know a country in a region that is recognized worldwide for its dramatic mountain landscapes and rich flora and fauna. We travel in Bhutan, learning about how environmental issues and rural development goals intersect. Trekking across valleys and ridges and through villages, students gain an intimate knowledge of the local environments and rural livelihoods. Students develop skills in assessing environmental problems, defining research questions, conducting field research, and communicating results. They gain an appreciation of the complexity of identifying and addressing conservation issues in a rapidly developing region.

COSTA RICA

These courses can be taken individually or back-to-back.

EE (NS) 352 SUSTAINING TROPICAL ECOSYSTEMS: BIODIVERSITY, CONSERVATION, AND DEVELOPMENT (SESSION I)

Provides students with practical field skills necessary to develop and participate in ongoing, long-term community and tropical ecosystem-based research projects. Students are introduced to the ecological, economic, and natural resource management issues that surround protected area and tourism management, parks and people relations, and biodiversity assessment and protection in national parks and surrounding areas with the intent of exploring sustainable development and management strategies.

EE (NS) 493E APPLIED RESEARCH TECHNIQUES AND STRATEGIES TOWARD SUSTAINABILITY IN COSTA RICA (SESSION II)

Applies the scientific process in a field research project that addresses a local environmental issue. Students help design a field research project: collect, manage, and analyze data; and communicate research results.

KENYA

This course can be taken individually or in combination with the Wildlife Management and Conservation course in Tanzania.

HS 407 FIELD PRACTICUM IN PUBLIC HEALTH AND ENVIRONMENT (SESSION II)

This course introduces students to rural health issues in Kenya, emphasizing the links between health and environment, and community-based health care and modern medicine. Students gain experience in assessing and analyzing public health and environmental concerns in Maasai communities in partnership with local community-based health organizations. This program is an undergraduate-level field course open to qualified students in all disciplines who are eager to begin exploring their interests in international public health. The program is particularly applicable to those considering a major or concentration in global or international health, public health, nursing, pre-med, or medical and health sciences programs.

TANZANIA

These courses can be taken individually or back-to-back. Wildlife Management and Conservation may also be taken in combination with the Field Practicum in Public Health and Environment course in Kenya.

EE (NS) 350 WILDLIFE MANAGEMENT AND CONSERVATION (SESSION I)

Students are exposed to wildlife management practices and the complex issues involving sustainable wildlife conservation in the Tarangire-Manyara ecosystem of

Tanzania. The course combines concepts and principles of ecology, natural resource management, and socio-economics, which are central to effective and sustainable wildlife conservation. During the course, students develop skills to explore the ecology, social organization, and behavior of common African large mammals. Central to the course is the understanding and evaluation of managed protected areas in the region, and students learn methods to examine the complexities of conserving wildlife in protected areas amidst a rapidly changing socio-economic and political environment. In addition, we attempt to understand the key constraints to the conservation of wildlife among resource-poor rural populations and identify key aspects of human-wildlife conflicts.

BI (EE) 357 TECHNIQUES FOR WILDLIFE FIELD RESEARCH (SESSION II)

Students are exposed to a suite of wildlife field techniques and methods routinely used to assess wildlife ecology and management policies and practices in East Africa, with specific application to the Tanzania Tarangire-Manyara ecosystem conservation areas. The focus is multi-disciplinary and reflects the complex realities of balancing ecological, economic, and socio-cultural factors in sustainable wildlife conservation and management studies. Students learn foundational skills in observation and evaluations of wildlife, as well as interactive methods used for assessing local community attitudes and behaviors toward conservation efforts and apply these techniques to advance long-term research goals at our center. Examples of techniques that are taught include effective identification, sampling, and data collection and analysis methods for flora and fauna; remote and on-ground sensing; spatial mapping; survey design and interviewing skills; and communication skills (report writing and public presentation).

TURKS & CAICOS ISLANDS

EE (NS) 351 MARINE PROTECTED AREAS: MANAGEMENT TECHNIQUES AND POLICIES (SESSION I OR SESSION II)

This course focuses on lectures, field exercises and other activities that enable us to understand how the Caicos Bank ecosystem works, its resource development potential, the threats facing these resources, and the role of marine parks in protecting and enhancing these resources and their critical habitats. Particular emphasis is given to commercially important resources such as conch and lobster stocks. Our project findings contribute toward developing marine parks policy, management plans, and innovation and technology transfer to assist in the management of marine protected areas.



THE SFS STORE



HATS GLOVES SHIRTS FOOTWEAR PACKS OUTERWEAR FLEECE UNIQUE ITEMS ACCESSORIES

Introducing The School for Field Studies Gear Store!

SFS is partnering with online outfitter New Headings so you can shop for gifts, SFS logo items, and the gear you need for your SFS program. The SFS Store makes it fun to browse and shop for just the right things and easily find all the items that will help you prepare for and enjoy your SFS adventure.

SFS classrooms are coral reefs, rainforests, and African savannas. We've selected products from such leading brands as Patagonia and Eagle Creek to offer a unique and interesting collection of sometimes hard-to-find items. You can be prepared for each day's extraordinary challenges with gear chosen especially for you. Be sure to check your SFS Field Preparation Guide or contact your Academic Counselor with any questions.

New Headings is generously donating 15 percent of all sales to SFS to support our programs. Check back often as our store continues to expand!

fieldstudies.newheadings.com



Alumni Profiles



Becky Halvorsen

East Africa Fall '10; Kenya Public Health Summer '12

When Becky Halvorsen chose SFS Kenya/Tanzania over other study abroad programs, she was hoping for close encounters with the beautiful and unique animals of the savanna—elephants, lions, wildebeest, hyenas, zebras, giraffes, hippos, and more.

But she was also seeking an experience that would go beyond any sort of typical safari tourist experience. “I wanted to be working and living with the local people,” she said. Her semester in Kenya and Tanzania provided her with opportunities to get to know some of the Maasai villagers, including a daylong home stay with a local family.

“I ended up falling in love with the people there,” said Becky. “It was one of the experiences that helped me make up my mind about pursuing a career in medicine.”

This July, Becky is returning to Kenya to participate in SFS’s new Field Practicum in Public Health and Environment program. She is looking forward to spending more time focusing on the environmental issues that affect the health of rural Kenyan communities, such as access to clean water and quality health services. After the program, she plans to spend six months volunteering with Nyumbani Village, a self-sustained community that pairs orphans and elders who have lost their families to the HIV pandemic.

Karma Yangzom

Bhutan Summer '11

“Working with people from different parts of the world is a rare chance that you can’t easily get in Bhutan,” said Karma Yangzom, a Bhutanese native from the district of Pemgatshel.

So it was a bit of a welcome surprise when she was offered a spot in a summer course to study alongside 14 American undergraduates with The School for Field Studies. “This was an opportunity to make friends and share ideas,” she said. Like many of her fellow American students, Karma likes cooking, listening to music, traveling, learning new things, and watching movies.

Over the course of the six-week SFS program, the group spent days engaging in field observation, completing coursework on the principles of rural development and environmental sustainability, and conducting practical research on Bhutan’s watersheds and forests. They trekked the mountain paths of the Himalayas, learned about Bhutanese and Buddhist culture, and observed nature in one of the world’s biodiversity hot spots.

“I have to say, the course significantly altered my perception of environment-related issues toward a more a global, holistic model,” Karma said. She has since accepted a position as an assistant lecturer at Sherubtse College in Bhutan, and she plans to pursue work at a humanitarian non-profit organization in the future.



Ellen George

Turks and Caicos Spring '09

The Detroit and St. Clair Rivers were originally full of fish, but in the last century, the stocks have been decimated by habitat destruction and overfishing. In her position as a fisheries research technician for the United States Geological Survey, based at the Great Lakes Science Center, Ellen George is on the water most of the year, driving a 28-foot research boat.

A typical day might include collecting tiny baby fish swimming at the surface, gathering eggs that fish are depositing on the riverbed, or building an artificial reef in the rivers for sturgeon, walleye, and whitefish spawning.

“My semester abroad in the Turks and Caicos Islands with SFS definitely helped me get where I am today. SFS offered me the best chance to do hands-on research during my study abroad, which is essential experience for a future field biologist!”

Justin Dohn and Andrew Tredennick

Australia Spring '08; and Kenya Fall '05

Two SFS alumni, Justin Dohn and Andrew Tredennick, received prestigious research grants to study the ecology of the West African savanna.

“Ever since attending SFS Kenya, I had a strong desire to return to Africa for graduate work in ecology,” said Tredennick. This became a reality when he headed to Mali as a graduate student at Colorado State University and NASA Earth and Space Science Fellow.

“SFS gave me the confidence to pursue research in Africa, but I think the most important thing I gained was a deep appreciation of the linkages between human societies and the environment,” he said.

In Mali, Andrew works with fellow SFS alumnus and CSU graduate student Justin Dohn, who has received a grant from the National Science Foundation for his research. “My field experience in Australia was the source of my passion and enthusiasm for ecological research,” said Dohn. “Our work at SFS demonstrated firsthand how increased knowledge of the processes and functions governing ecological systems can directly impact the livelihoods of surrounding populations as well as the integrity of the ecosystem.”





SFS Glossary of Terms

Case-based and problem-based learning: Through each Center's Five Year Research Plan, students are presented with actual local environmental situations or dilemmas and work toward defining potential solutions. SFS uses local case studies to give students an interdisciplinary and holistic understanding of the background, context, and relevance of local environmental issues. Using this inquiry-based learning approach, students learn the theoretical framework, background, and essential research tools necessary to understand local environmental issues and conduct relevant research.

Group living: Students live and learn within a small group (up to 34 students) alongside international staff. Students share a room with three to seven other students, share bathroom facilities, common areas, computer labs, and dining areas. Group living means everyone shares the responsibility for the upkeep and functionality of the station.

Community involvement: SFS centers are located in remote locations, making community involvement an important element of our programs. Students spend approximately 20 hours per semester involved in various community service activities, such as tutoring in local schools. Our close relationships with host communities is cultivated by our strong involvement and commitment to the well-being of the local people.

Cross-cultural awareness: Cross-cultural awareness is the ability of individuals and systems to acknowledge and work in a way that is respectful of other cultures. SFS helps students become culturally competent: aware and respectful of the values, beliefs, traditions, and customs of their host countries.

Cultural immersion: Our definition of cultural immersion strays from the common perception of the term. At SFS, this means: 1) We live in, conduct research in, and do our best to serve our host communities; 2) We work with local stakeholders to design and perform research projects that directly benefit the local community; 3) Students present their research findings to the community at the end of the semester; 4) Students explore the history and cultural practices of the community where they are studying (cultural field trips, weekend home stays, language instruction, participation in local festivals, etc.); 5) Students engage in community service projects with local community members and/or NGOs.

Directed Research: SFS semester students conduct Directed Research projects and report their results to community stakeholders. The broad research questions are defined by the Center's research agenda and local community needs. Each semester, students are presented with three or more possible Directed Research project options by the SFS faculty members. After selecting an option, students then research and develop specific aspects of the project into their individual papers (see course description for more details).

Experiential learning: Students learn by experiencing the topics firsthand, receiving some lectures in a classroom, but regularly venturing out into the field for lectures, to conduct research, and to take field trips. Lectures and classroom work support and enhance the work that students do in the field. Allowing students to process that information and apply it to field work and research is key to our model.

Faculty mentoring: SFS students are closely mentored by our faculty teams. Every SFS Center is staffed with a center director and two or three full-time faculty who are trained in ecology, natural resource management, socio-economics, and environmental policy.

Field exercises: Hands-on activities that reinforce the academic material presented in classroom lectures teach students field techniques, how to apply data analyses, and provide training required to prepare for Directed Research projects.

Field research: During field exercises and Directed Research, students learn the field research techniques necessary to design experiments and gather data in the field. In addition, students analyze data and write scientific reports/papers.

Field station: The field stations are remote, yet well-integrated into the community, fully operational laboratories. The living conditions are basic but have fully functional kitchens, running water, and electricity. The field stations are home to scientists and researchers devoted to the research topics of their respective stations. Students join these dedicated teams—living, eating, and researching with them to solve real-world environmental problems.

Five Year Research Plan: Each Center has a unique Five Year Research Plan. Each one is defined by SFS staff, a research advisory committee, local clients, and the community to develop research priorities and projects that address critical environmental problems. The purpose of the plan is to develop long-term research projects that utilize the expertise of SFS faculty while providing useful research to local stakeholders. The research direction also provides the community and students with a framework to focus student coursework and research projects and provide context to how courses and research fit into the bigger picture of natural resource conservation.

Interdisciplinary: SFS draws from many fields of study in its programs to give students the most well-rounded, comprehensive view of the environmental problem and natural resource use solutions they are studying. Ecology, biology, economics, environmental studies, anthropology, culture, and language all come into play when studying on an SFS program.

Community service: SFS works on environmental issues critical to our host communities, researching topics, providing results and recommendations to local stakeholders, and volunteering on projects that are beneficial to its members. Such an integration of curriculum and service helps students understand the local community from a different viewpoint—instead of an outsider examining the community, the students understand community issues firsthand. Examples of community service include planting trees, beach clean-ups, environmental education, tutoring students, and volunteering in local hospitals.

Sustainable living: Sustainable living at our field station locations means living the SFS mission. It often involves cold-water showers, composting, growing some portion of the food, air-drying clothing, gathering and using gray water, and using electronic PDFs for handouts and reports to class. Though each location offers particular opportunities and challenges, students work together at every site to identify creative ways they can minimize their footprint appropriately and model an environmentally aware lifestyle.

Academic Credit

SFS participants receive academic credit in one of two ways. Students from SFS Affiliate institutions usually receive credit directly from their home schools. Students from other schools are registered at and receive transcripts from Boston University, which accredits SFS programs.

SFS courses are approved and assigned course numbers by Boston University. Our semester programs in Australia and Turks & Caicos incorporate four courses and carry a total of 16 semester-hour credits in biology or environmental studies. Our semester programs in Costa Rica, Panama, and East Africa carry 18 semester-hour credits in biology, environmental studies, or language. Summer courses carry four semester-hour credits in environmental studies or public health, except for our Bhutan program, which carries six credits. Participants receive an official transcript from Boston University approximately eight weeks (four weeks for direct credit affiliates) after the conclusion of the program for delivery to the office responsible for credit transfer at their home institution.

Students come from more than 300 colleges to attend SFS programs each year and most are able to transfer credit for their participation. The final decision regarding credit and grade transfer rests with your home institution. Check with your advisor/registrar before applying to learn how your SFS course work will be applicable for credit in your degree program. If you have questions regarding credit transfer, please call the SFS admissions office at 800.989.4418.

The SFS Affiliate Program

Students from Affiliate institutions receive preferential admission and financial aid from SFS. Affiliate institutions typically provide direct academic credit for SFS participation and have pre-approved our courses for credit. Each Affiliate institution has at least one SFS representative who is available to provide on-campus advising on our programs. Applicants from Affiliate schools must obtain permission to participate from their campus Affiliate representative. The SFS Participation Approval Form is available on the SFS website: www.fieldstudies.org.



Current SFS Affiliate Member Schools

Please refer to the SFS website for an up-to-date listing of Affiliate Representatives at your school.

Albion College	Denison University	Oregon State University	University of Denver
Albright College	DePauw University	Pacific Lutheran University	University of Georgia
Alfred University	Dickinson College	Penn State University, State College	University of Massachusetts, Amherst
Allegheny College	Elizabethtown College	Purdue University	University of Miami
Amherst College	Elon University	Reed College	University of Minnesota, Twin Cities
Arizona State University	Emory University	Rochester Institute of Technology	University of New England
Austin College	Franklin & Marshall College	Saint Michael's College	University of North Carolina, Chapel Hill
Belmont Abbey College	Franklin College, Switzerland	Santa Clara University	University of Redlands
Bennington College	Gonzaga University	Scripps College	University of Richmond
Boston University	Grinnell College	Sewanee: The University of the South	University of San Diego
Brandeis University	Guildford College	Skidmore College	University of St. Thomas
Cedar Crest College	Hollins University	Smith College	University of Tennessee, Chattanooga
Clark University	Kenyon College	Southern Methodist University	University of Utah
Colby College	Lehigh University	SUNY/College of Env Science & Forestry	University of Wisconsin, Madison
Colby-Sawyer College	Lenoir-Rhyne College	Sweet Briar College	Washington & Lee University
College of Charleston	Meredith College	Texas A&M University, College Station	Wellesley College
College of the Holy Cross	Miami University	Texas Tech University	Wells College
Colorado College	Mount Holyoke College	The Ohio State University	Western Oregon University
Connecticut College	Mount Olive College	Transylvania University	Westminster College
Cornell University	Muhlenberg College	Trinity College	Whitman College
Davidson College	Northern Arizona University	University of Connecticut	Wright State University



EXPECTATIONS AND RESPONSIBILITIES

SFS provides adventurous programs that interact with extraordinary and unfamiliar cultural and natural environments to encourage personal growth and learning. Traveling and studying abroad in these new environments offers transformative rewards that one must earn through the associated challenge and risk, and this interaction presents physical and emotional hazards that are a vital element of an SFS experience. Our management of these risks is designed to balance the need to achieve our program and educational goals while preventing injury and illness, all the while understanding it is not possible to ensure absolute safety.

STUDENT CONDUCT

Students are expected to conduct themselves in a mature and responsible manner.

The School for Field Studies reserves the right to require any participant to withdraw from any program at any time if the field station staff deem the student's conduct to be detrimental to or incompatible with the interest, harmony,

comfort, safety, or welfare of the student, others at the field stations, or the program. Abuse of alcohol, use of drugs not authorized by a medical doctor, uncooperative or disruptive behavior, failure to abide by field station rules and policy, and disrespectful and/or unsafe behavior, as defined by SFS, may all be reasons for dismissal. Students who are expelled or depart early from the program will be withdrawn from all courses and will not receive credit.

RESPONSIBILITY

In organizing and managing these programs, SFS, its agents, employees, and staff shall not be liable, financially or otherwise, for, among other things, non-performance or unsatisfactory service; injury to persons including death, loss of, or damage to property; for accident or delay; and/or expenses arising from strikes, weather, quarantine, sickness, government regulations or political unrest; or from any act or omission of its agents, contractors, and/or airline, railroad, bus company, automobile rental agency, hotel, or other suppliers of service.

SFS is a charitable corporation located in Beverly, Massachusetts, U.S.A. All matters relating to, arising out of, or involving in any way your relationship with SFS shall

be governed by Massachusetts law and any legal dispute shall be determined by a Massachusetts court. SFS reserves the right to refuse any applicant admission to any program if s/he is deemed unsuited for the program for any reason and at any time during the admissions process. All courses, fees, and dates are tentative until verified and confirmed in writing by SFS.

PROGRAM CHANGES

SFS operates in a variety of environments. As a result, there are many factors that may have an effect on a program, such as tenuous weather conditions, access to highly regulated and sensitive environments, or changes in political conditions. SFS reserves the right to make changes before or during a program. Any and all changes will be made with the intention of maintaining a safe, quality, feasible program in the context of environmental, logistical, and political pressures and limitations. All prospective SFS students must recognize the ability to adapt to changing conditions and itineraries as realities of studying abroad.



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