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SEMESTER & SUMMER PROGRAMS

AUSTRALIA
BHUTAN
COSTA RICA
KENYA
MEXICO
TURKS & CAICOS

THE SCHOOL FOR FIELD STUDIES

Environmental Field Studies Abroad



A photograph of three people standing on a beach, looking out at the ocean. The person in the center is shirtless, while the two people on either side are wearing long-sleeved shirts. The ocean is calm, and a forested hill is visible in the background under a cloudy sky.

WHERE WE STAND

In the first few months of 2009, the global recession led many to struggle with the notion that some corporations were simply “too big to fail.” Proponents of corporate bailouts were certain that failure of those institutions would be too catastrophic. The entire US economy, our way of life, and the global economy itself could be at risk. And risk, as we’d all come to learn, was something that we really didn’t understand, despite the efforts of the best and brightest leaders – the politicians and their financial advisors. Better to preserve the lifeblood of the financial system and protect those institutions that are simply *too big to fail*.

Thousands of miles away from the centers of financial and political power, a very different sort of the best and brightest took a stand to protect something that, in their estimation, was “too big to fail.” In early 2009, Peru’s President unilaterally overturned congressional legislation and opened up the rights to log and drill 70% of Peru’s portion of the Amazon to international oil companies. The Amazon represents over half of the planet’s remaining rainforests, and it comprises the largest and most species-rich tract of tropical rainforest in the world. The logging would have initiated the release of carbon stored in the trees,

dealing another serious blow to the ecosystem that has been called “the lungs of the earth.” Instead, the indigenous peoples fought back, blockading roads, rivers and even seizing part of Peru’s sole natural gas pipeline in protest. They stood firm while Peru declared a state of emergency and unleashed the army against the protesters. By mid-year, the Peruvian congress repealed the president’s decision by a vote of 82 to 16.

The Amazon isn’t the only system to suffer from the drive toward bigness. Bees, especially those employed by big agribusiness, have suffered, too. The mysterious colony collapses of bees around the world seems, in many cases, to be a combination of an onslaught of viruses, environmental stress and exhaustion. Honey bees are the most important insect in the human food chain, pollinating about one-third of crops grown in the US. Each year, industrialized bees are packed into tractor trailers by the hundreds of thousands, fed artificial supplements and corn syrup, and shuttled from Maine to California, exposing them to pathogens and pesticides, stress and dislocation. Experts are still scrambling to stave off this massive, and potentially catastrophic, bee die off.



At a time when the threat of global climate change and biodiversity loss is often sidelined by talk of a global recession, it's important to draw inspiration from the instances where people take a stand for sustainability. The examples are out there, if we take the time to look. Even as we learn that our many fisheries are on the verge of being overfished and that climate change is happening *now*, there are stories that inspire us take action.

For example, urban beekeeping, especially in New York City, is on the rise as people seek a supply of local honey and the pure satisfaction of watching bees go about their work. Local beekeeping may not be enough to ensure food security, nor satisfy the enormous needs of agri-business, but it's a step toward feeling more connected to the vulnerabilities of the systems we depend upon.

The problems we face may seem stark, overwhelming and ultimately beyond our individual control. It's tempting to wonder if small acts can really make a difference in the face of such bigness. But small acts of sustainability reaffirm our desire and commitment to act — to participate, to be engaged

and to think practically about how to make a difference in the things that truly matter. More people *are* going green, or at least simply thinking about the impact of consuming so much more than we need. We vote for change — or the status quo — whenever we eat, drive our cars, use another disposable plastic bottle, or consume to excess. The power of thousands and thousands of small acts will have an impact: not just on our planet, but on our people.

SFS is working with community partners, scientists, and educators around the world to identify the challenges to sustainability. Our students and faculty provide vital information to local communities, governments and NGOs on environmental dynamics and linkages between natural and human systems.

Whether you join us in the field or work in your local community, we hope you'll take a stand for sustainability. Each of us *can* commit small acts that lighten the load of our patterns of consumption and generation of waste. Each of us *can* look up from our daily routine to appreciate and respect the limits to growth, and celebrate our own efforts, along with the dedication of others, working for change.

Program Overview



The School for Field Studies: A Legacy of Environmental Leadership

In the early 1980s, following the first Earth Day and the creation of environmental studies curricula at some of the nation's top universities, there came a growing acknowledgement of the urgent need to sustainably manage the world's remaining natural resources. To some, it was becoming increasingly clear that the ranks of conservationists charged with the future stewardship of our planet must include not only scientists but also informed and concerned individuals from all walks of life.

In the summer of 1981, SFS sent its first group of 75 students into the field. Today, with 29 years of environmental work behind us, SFS is widely known as the premiere environmental study abroad program. Through our network of field stations, we have been teaching students how to collaborate with local community partners to address critical environmental problems and create long-term conservation solutions.

Who Studies with SFS?

SFS is not just for biology majors. We encourage students from many disciplines — environmental science, biology, liberal arts, economics, pre-vet and pre-med, engineers, business administration, communications, and more — to join SFS. We welcome a diverse student body and promote an atmosphere open to different cultures and perspectives. Students come to us with a broad spectrum of backgrounds and experiences.

Academic Program

Our interdisciplinary, experiential approach to education is designed to train students to learn by doing. As students engage in directed field research, they learn the value of experiencing another culture, and of collaborating with their fellow students, and with the local community to develop workable solutions. They are also given the rare opportunity to work side-by-side with an international research team and learn state-of-the-art field research skills.

Objectives of the SFS Academic Program

Semesters 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 a conceptual foundation, and technical and analytical skills.

Research plans are designed in partnership with local stakeholders. The result is a Five Year Research Plan for each Center, which lays out a road map of priorities. Students will contribute to achieving the Center research goals by conducting first-rate field research on topics defined in the plan and designed by the faculty.

Admission

SFS has rolling admissions year-round, and completed applications are considered on a first-come, first-served basis. Programs fill quickly, so submit your completed application early to ensure admission into the program of your choice. For details on how to apply, please refer to page 30. You can apply on-line from our Web site: www.fieldstudies.org.

Curriculum and Academic Credit

SFS students are registered at and receive credit from Boston University, which accredits our programs. Most students from SFS Affiliate and Consortium schools receive credit directly from their home institutions. See page 32 for details.

Semester Program Structure

Semester programs run for approximately 95 days, including a 5-day midterm break. We compress a 16-week semester into 14 weeks, so be prepared for a very intensive but rewarding learning experience! Every semester program includes three topical courses (ecology, resource management, socioeconomics) delivered through classroom and field lectures and exercises, group projects, and other activities; and the Directed Research course, which includes field research, data analysis, write-up, and presentation. Students are enrolled in all 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.

Field Skills Taught in Our Programs

Students will learn a suite of field skills and analytical techniques. Potential skills include species identification, animal behavior observations, population census, mark and recapture, habitat assessment and mapping, water sampling, plant functional trait sampling, restoration techniques, and transect and patch sampling in a variety of ecosystems, including forests, coral reefs, and savannah. Students will learn social science field research methods, from structured questionnaires to informal interviews to participant observation. Students will use analytical tools to draw conclusions from their

research, including ecosystem valuation, cost-benefit analysis, and various statistical tests.

Summer Courses

Gain four credits in four intense weeks of field study with SFS. Summer programs include lectures, field exercises, research, and field trips. SFS does not have application deadlines, but students should apply early as programs fill quickly and applications are reviewed on a first-come, first served basis.

Financial Aid

Approximately one-third of our students receive SFS financial aid in the form of travel grants, scholarships, and loans. If you need financial assistance, please submit an SFS financial aid application (available on our Web site: www.fieldstudies.org) as soon as possible. Qualifying students may use a combination of federal financial aid (Stafford Loans, Pell Grants, and PLUS Loans), home school grants, and SFS financial aid and scholarships to participate in our programs. You must apply early to be considered for SFS financial aid and you should consult with your home school to determine whether you may use your institutional financial aid. For details regarding financial aid and program costs, please refer to page 31.

Language Preparation

All SFS courses are taught in English. However, your interaction with the local community will be greatly enhanced if you have local language conversation skills. Costa Rica, Kenya, and Mexico 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 to have completed at least one semester of college-level Spanish in order to participate in our Costa Rica semester program.

Requirements and Prerequisites

Applicants for semester programs must be at least 18 years of age, in good academic standing, have completed at least one college-level ecology or biology course, and completed at least one semester of college prior to the start of the program.

**Applicants for the semester program in Costa Rica must have completed a college-level course in ecology or environmental studies, and are encouraged to have taken coursework in international development, economics, or anthropology, and must have one college-level course in Spanish prior to participation.*

Faculty Profiles

KENYA

Center for Wildlife Management Studies

MOSES MAKONJIO OKELLO, CENTER DIRECTOR

Ph.D., Wildlife Ecology and Management, University of Alberta (Canada)

JOHN WARUI KIRINGE, ASSOCIATE PROFESSOR IN WILDLIFE ECOLOGY

Ph.D., Wildlife Ecology and Conservation Biology, University of Leicester (UK)

SALATON TOME, LECTURER IN ENVIRONMENTAL POLICY

M.Phil., Environmental Studies and Human Ecology, Moi University (Kenya)

AUSTRALIA

Center for Rainforest Studies

TIMOTHY CURRAN, LECTURER IN FOREST MANAGEMENT

Ph.D., Plant Ecology, The University of New England (Australia)

DAVID MANAHAN, LECTURER IN ENVIRONMENTAL POLICY

Ph.D., Geography, University of California, Davis (USA)

SIGRID HEISE-PAVLOV, LECTURER IN RAINFOREST ECOLOGY

Dr. rer. nat., Terrestrial Ecology, Martin Luther University (Germany)

COSTA RICA

Center for Sustainable Development Studies

GERARDO AVALOS, CENTER DIRECTOR

Ph.D., Biology, University of Missouri, St. Louis (USA)

EDGARDO ARÉVALO, LECTURER IN TROPICAL ECOLOGY

Ph.D., Ecology, University of Lausanne, (Switzerland)

ACHIM HÄGER, LECTURER IN RESOURCE MANAGEMENT

Ph.D., Forest Sciences, University of Göttingen (Germany)

SERGIO MOLINA, LECTURER IN ENVIRONMENTAL POLICY

Ph.D., Natural Resources Science and Management, University of Minnesota (USA)

MEXICO

Center for Coastal Studies

GUSTAVO HINOJOSA, CENTER DIRECTOR

Ph.D., Marine Ecology, Queen's University of Belfast (Northern Ireland)

VERÓNICA CASTAÑEDA, LECTURER IN RESOURCE MANAGEMENT

Ph.D., Marine Biology, Northwestern Center for Biological Research (CIBNOR) (Mexico)

RODOLFO RIOJA, LECTURER IN COASTAL ECOLOGY

Ph.D., Biological Sciences, University of Warwick (UK)

ANDREW SCHNELLER, LECTURER IN ENVIRONMENTAL POLICY

Ph.D., Education, University of Arizona, Tucson (USA)

TURKS & CAICOS ISLANDS

Center for Marine Resource Studies

JOHN A. B. CLAYDON, CENTER DIRECTOR

Ph.D., Marine Biology, James Cook University (Australia)

BEN HOLT, LECTURER IN MARINE ECOLOGY

Ph.D., Marine Biology, University of East Anglia (UK)

MEREDITH MARCHIONI, LECTURER IN ENVIRONMENTAL POLICY

Ph.D., Comparative Sociology, Florida International University (USA)

Safety is a Priority

Any educational experience, whether attending a college or university in the United States or studying abroad, carries with it inherent risks. These could include injury, illness, or even death.

SFS continually strives to create an outstanding safety strategy. We begin by surveying the hazard landscape based on where we operate and the activities in which our students engage. We have in house expertise with a full-time Safety Director and a full-time Safety Program Specialist whose primary responsibilities are to oversee the SFS Safety Program. We are one of the few study abroad organizations to provide all of our field staff with emergency medical training (minimally a 36 hour Wilderness Advanced First Aid course). Also, each Center has a Student Affairs Manager (SAM) whose primary responsibility is program safety, which includes oversight of all SFS safety systems, educating the students in risk management, facilitating the student community, and providing support for each student. Each SAM is required to have a current certification as a Wilderness First Responder (72 hours of medical training). We have Risk Assessment Management Plans in order to anticipate and prevent incidents. We have contingency plans in place to respond to incidents should they occur. We have excellent communications systems including a satellite phone at each of our Centers. We have excellent information acquisition and 24/7 phone coverage for the field. We conduct regular internal safety reviews. Besides our training requirements and staffed positions, we also have a Safety Advisory Group comprised of experienced professionals with medical, international, and risk management expertise.

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

- Safety Director: a full-time professional focusing on systems creation, training, and consulting.
- Safety Program Specialist: full-time professional focusing on the day to day coverage of the field.
- Student Affairs Manager (SAM): each field station's SAM is responsible for promoting safety in our programs through the ongoing presentation of a risk management and judgement curriculum. This includes an overview of all local risks and the review of a number of case studies. Part of their goal is to foster intercultural competence to assist our students in their navigation of an unfamiliar environment. The SAM also serves as the primary on-site medical person.
- Excellent information acquisition.
- Excellent communications systems including satellite phones at each Center.
- 24/7 phone coverage support for the field.
- Training: all field staff are provided with a Wilderness Advanced First Aid course (36 hours of emergency medicine); SAMs are required to have a minimum of a 72 hours Wilderness First Responder.
- Safety Advisory Committee: comprised of experienced professionals with medical, international, and outdoor program expertise.



KENYA

FOOTHILLS OF MT. KILIMANJARO

FIELD PRACTICUM IN PUBLIC HEALTH AND ENVIRONMENT
SUMMER 2010 PROGRAM

See SFS Web site for program details and dates:
www.fieldstudies.org

Program Highlight

In the early 1980s Kenya began a process of privatizing its open grazing land into group ranches. This significant land-use change has forced traditionally nomadic, pastoral peoples, including the Maasai, to adapt to more sedentary agro-pastoral lifestyles that confine them to smaller plots of land. The Maasai, a proud and historically self-sufficient society, are now facing many social, political, economic, and environmental challenges. The result has increased their vulnerability to disease and famine, and they frequently rely on relief food and scarce water resources to survive.

This major shift from nomadicism to pastoralism has brought about new health problems for the Maasai, including an escalation in sanitation-related and water-borne diseases, infant and childhood disease, and HIV/AIDS. Access to quality health care, both physically and culturally, poses a critical issue for this predominantly rural population. The fact that there are virtually no baseline data on Maasai health status in southern Kenya adds another dimension to this public health challenge.

In Kenya, nearly 80% of the population, including the Maasai, still depends on herbal medicine — it remains an important source of treatment, particularly for rural communities. The World Health Organization's global strategy includes popularizing and incorporating herbal medicine in the national health systems of member countries. Consequently, Kenya is developing a national policy that will incorporate herbal medicine in its health provision strategy. Students may provide a vital link between the needs of the Maasai and Kenya's national health strategy.

Research Focus

SFS has partnered with several leading universities including Boston University School of Public Health, Northern Arizona University Schools of Nursing and Health Sciences, and the Moi University (Kenya) Schools of Public Health and Medicine to respond to the environmental health issues extant among the Maasai.

Students will assess and analyze public health and environmental concerns in identified Maasai communities in partnership with local community-based health organizations. This program is a graduate-level field course open to both graduate and qualified undergraduates in public health, nursing, pre-med, medical and health sciences.

Field Expeditions and Exercises

- Visit Maasai villages and group ranches, local health clinics and dispensaries, HIV/AIDS clinics, and Amboseli National Park.
- Learn about the historical, socioeconomic, cultural, environmental, political, and health aspects of life in Kenya.
- Assess and analyze health issues and report findings and recommendations to key stakeholders and communities of interest.

Visit www.fieldstudies.org for a complete description of this program and to take a virtual tour of our field station.





BHUTAN

EASTERN HIMALAYAS

EASTERN HIMALAYAN FORESTS AND RURAL LIVELIHOODS
SUMMER 2010 PROGRAM

See SFS Web site for program details and dates:
www.fieldstudies.org

New Program Highlight

Many eastern classics and books of wisdom have referred to Bhutan as the abode of the gods and home to immortals. Nestled in the remote and rugged mountains of the eastern Himalayas, the culture and the traditional lifestyle of Bhutan is still richly intact and permeates all strands of modern day secular life.

The eastern Himalayan region is characterized by extensive and numerous mountains and valleys, hosting the world's highest peaks and a diversity of vegetation types ranging from subtropical broadleaf forests through subalpine conifer and alpine shrub and meadows. The country has also been identified as one of the 10 biodiversity hot spots in the world. Bhutan is home to an estimated 770 species of birds and an astonishing variety of medicinal plants and orchids. Takin, snow leopard, golden langur, blue sheep, tiger, water buffalo and elephant are among Bhutan's diverse wildlife.

In Bhutan, progress is not purely defined by economic achievements as in most countries, but also based on the level of cultural and environmental preservation and development. In the Buddhist kingdom of Bhutan, people have developed rich cultural traditions and social and political institutions that reflect Buddhist principles of The Middle Path, integrating people and nature, traditional knowledge and Western science. Sustainable management of natural resources, including soil, water, species and minerals, is critical for this country whose economy is largely based on these resources.

In early 2008, Bhutan's government shifted from a monarchy to a constitutional democracy, opening the door for devolution of authority over natural resources to regional governments and communities. Since the majority of the population resides in rural areas, sustainable management of natural resources is critical for achieving the dual goals of poverty alleviation and biodiversity conservation in this country where limited transportation routes and communication lines reduce access to markets.

Course Content

Students will travel across Bhutan learning about Bhutanese culture, Buddhist philosophy, and environmental issues. Trekking across valleys and ridges, and through villages, students will gain an intimate knowledge of the local environments and rural livelihoods, and conduct research on Bhutan's priority environmental concerns and conservation strategies.

Research Focus

SFS is partnering with the Ugyen Wangchuck Institute for Conservation and Environment, an international research and training facility in Bhutan. SFS students and faculty will help the Institute advance its research agenda in several priority areas, including community and private forest management, the role of non-timber forest products in rural livelihood, human-wildlife conflict in agricultural areas, and pollution of fields and waterways.

Field Expeditions

- Drive through four major vegetation zones on the journey from the capital city to the field station.
- Field visits to community forestry projects and agricultural areas.
- Multi-day expeditions to neighboring valleys, national parks, and along established eco-trails.
- Day hikes and multi-day treks to 4000m.

Visit www.fieldstudies.org for a complete description of this program.



KENYA

FOOTHILLS OF MT. KILIMANJARO

SEMESTER PROGRAM DATES

Spring 2010: February 1 - May 6

Fall 2010: September 6 - December 9



Wildlife Management Studies

ENVIRONMENTAL ISSUES

Current conservation and rural development practices in the southwestern region of Kenya are influenced by shifting land-use patterns and socio-economic changes occurring in the Maasai and other human populations. 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 national parks and community wildlife sanctuaries for wide ranging wildlife species such as elephant, giraffe, and zebra. That traditional lifestyle is dramatically changing to a more sedentary agro-pastoral lifestyle. Permanent homesteads, land sub-division, and extensive agriculture exerts more pressure on the region's natural resources, including water, productive grasslands, and wildlife. The competition for scarce resources has ecological 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 restriction, tourism, administrative decisions, and poaching are endangering biodiversity. We need to understand the socio-economic, political, and environmental drivers and implications of land reform for wildlife conservation and rural livelihood in a changing landscape. We will examine evaluation and management of wildlife 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.



LEARN FIELD RESEARCH SKILLS AT THE BASE OF MT. KILIMANJARO AND IN WORLD-FAMOUS NATIONAL PARKS

Live in close proximity to wildlife and local Maasai communities on an African savanna. Learn top-notch field research skills, how to speak Swahili, and learn East African tribal culture first hand from tribal members. Explore human-wildlife conflicts from the perspective of the Maasai and park managers. Investigate ways to preserve traditional Maasai culture and wildlife viability. Conduct research in three distinct geographical regions at various stages of development.



OUR FIELD STATIONS IN KENYA

The SFS Center for Wildlife Management Studies in Kenya has two sites, one located in the remote foothills of Mount Kilimanjaro, and the other bordering Nairobi National Park. SFS students live at our Kilimanjaro Bush Camp (KBC), which is near the town of Kimana, close to the Tanzanian border, Mt. Kilimanjaro, and the three Group Ranches of Kuku, Kimana, and Mbirikani. The location of our KBC camp makes it an excellent site for examining land use and conservation issues. The camp is located on 60 acres of land bordering a spring-fed river. Adjacent to the river is 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. Additional facilities include a *duka* (shop), bathrooms, and showers.



Kenya Program Description

OUR RESEARCH

Despite the seeming negative trends on availability and quality of habitat and resources for wildlife and livestock, there are opportunities for effective conservation, natural resource management, and rural development. The diverse habitat surrounding our Kilimanjaro Bush Camp (KBC) is used by wildlife as a migration corridor between Tsavo, Chyulu Hills, and Amboseli National Parks. The Maasai, and now other settlers, depend upon 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. Pollution and climate change also threaten the already strained water supply and the health of numerous species of birds and animals. Thus, the KBC research is framed by the needs of both human communities and dispersing and migrating wildlife in the region. Our curriculum and research agenda focus on determining how changes in land use and resource availability in the Amboseli ecosystem can be managed in such a way as to foster the well-being of local

communities whilst safeguarding and promoting biodiversity conservation.

The goal of conservation initiatives in the region is to re-integrate the local people into the conservation process, which offers hope for reducing human-wildlife conflict. Although the socio-economic fabric of the indigenous society is changing, the traditional attributes of Maasai culture (such as pastoralism and communal land management), encourage the sustainable use of natural resources and especially the abundant wildlife. Research questions center on how the Maasai and their neighbors are managing natural resources and wildlife, and specifically on issues related to water resources, land reform, wildlife populations, range conditions, and rural development. Students gather information on wildlife conservation among resource-constrained communities – a critical first step in developing integrated land-use strategies that will enable residents to derive optimal benefits from their land and forestall additional fragmentation of key wildlife areas.

Based on these issues, student research will include study of the demographics of human populations, land tenure and land-use changes, human and wildlife competition and conflict, and resource utilization linked to human activities. Research will also cover ecological conditions and trends of the savanna, habitat quality and fragmentation, spatial relations and corridors, ecotourism impacts on wildlife, vegetation changes, and wildlife population dynamics.

SFS students assist the Kenya Wildlife Service in the following areas: habitat and human infrastructure mapping, grazing and browsing impact assessments, large mammal population counts and distributions, tourist facility upgrades, and human impacts on parks.

Field Research, Lectures, Exercises, and Skills Development

Field expeditions might include:

- Lake Nakuru National Park: world-famous for its flamingos, also an important sanctuary for rare birds, black and white rhino, large herds of waterbuck, zebra, and buffalo, endangered Rothschild giraffe, prides of lion, and leopard. Examine ramifications of an enclosed ecosystem on wildlife biodiversity.
- Hellsgate National Park: Famous for its hot natural geysers, spectacular looming cliffs, and the Hells Gate Gorge – an important home for the rare lammergeyer eagles.
- Manyatta: rare opportunity to glimpse Maasai culture, including rural settlements not usually visited by tourists. Maasai women musical ceremonies, demonstrations in fire-making, dances by Maasai *morans* (warriors), and lessons in spear throwing.
- Amboseli and Tsavo 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.

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 Socioeconomic Values	04
EE 491 or 492	Directed Research	04
LE 205E	Introduction to Swahili Language and East African Tribal Communities*	02

See page 26 for course descriptions.



*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.

- 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.

Student Research Contributions

Above all, we strive to give back to our host communities around the world. Conducting applied field research to understand biophysical conditions, community views on wildlife, and management policies employed by park managers is central among our research goals. Outcomes of student research have included the following:

- 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 between the Amboseli Elephant Research Project and SFS on a project funded by the US Fish and Wildlife Service, entitled *Mitigating Human-Elephant Conflict in the Amboseli Ecosystem, Kenya*, resulting in an extensive dataset on elephant distribution and impacts of their activities on human communities.

- Feasibility study for the establishment of another Maasai-owned wildlife sanctuary in Kuku Group Ranch. Student research provided the basis for a funding proposal to establish a new sanctuary, and in 2005 the Kimana Wildlife Sanctuary was established.

Get Involved with the Local Community

Students have many opportunities for social interaction including:

- 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.
- Community service work in local schools, hospitals, orphanages, and with a local women's group.
- Visits to an elephant orphanage and a giraffe center.

Program Prerequisites

Applicants for semester programs must be at least 18 years of age, in good academic standing, and have completed at least one college-level ecology or biology course and at least one semester of college prior to the start of the program.



SFS AT WORK

Kimana Group Ranch, which encompasses more than 6,000 square km within the Tsavo-Amboseli ecosystem around Mt. Kilimanjaro, is a property communally owned by a group of Maasai families and used to graze their livestock. Non-Maasai migrants, however, have recently established permanent agricultural fields around the Ranch's important wetland areas. As a result, there have been increasing conflicts over water resources, not only between pastoralists and agriculturalists, but also between wildlife and livestock. There is a clear link between environmental degradation and poverty. Water scarcity and contamination lead to hunger and illness, resulting in a health care burden on a community.

Dr. John Kiringe and colleagues at SFS, who have strong relationships with local Maasai, collaborated with Noomayianat Community Development Organization in Kenya to secure funding from the European Union's Community Environment Facility. Funds will support the Kimana Community Water Resource Conservation Project, which includes rehabilitation of degraded water catchment areas to improve water quantity and quality through tree planting, soil erosion control, and protecting water springs by fencing; constructing new and rehabilitating existing water distribution canals; capacity-building for the community through outreach and education; and developing systems for domestic water harvesting through installation of earth dams and storage tanks.



COSTA RICA

ATENAS

SEMESTER PROGRAM DATES

Spring 2010: February 1 - May 6

Fall 2010: September 6 - December 9



Sustainable Development Studies

ENVIRONMENTAL ISSUES

Costa Rica is internationally recognized for its efforts to ensure biodiversity conservation and protect natural resources, yet the country has experienced significant resource degradation linked to population growth, industry, and development – all of which threaten this tropical paradise, as well as the economic opportunities afforded by nature. The country supports more than five percent of the world's biodiversity and boasts 230 protected areas (about 26 percent of the country). The cloud forests, rainforests, volcanoes, and the 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 butterfly and 883 bird species, such as quetzals, toucans, hummingbirds, and scarlet macaw 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.

While Costa Rica's recent transition from an agriculture-based to a service economy presents opportunities that could benefit the whole country, it also threatens biodiversity and the wellbeing of the human population. The country's marginal populations and landscapes are especially vulnerable. In addition to the changing economy, natural phenomena triggered by climate change and the infrastructural development for productive and recreational activities, present some of the most critical issues that make the re-organization of land-use practices an urgent imperative. The current threats to biodiversity protection are concentrated in the shift from agriculture to services, the rapid conversion of rural into urban areas, and the consequent loss and fragmentation of forest, inappropriate waste disposal, and the increased demand for water resources.



EXPLORE COSTA RICA'S INCREDIBLE BIODIVERSITY AND UNIQUE ECOSYSTEMS

Study tropical ecology, economics, and socio-cultural issues related to the natural resource management challenges in world-renowned protected areas. Learn field research skills and work with local Costa Rican park rangers, farmers, and top environmental officials to understand the challenges of maintaining the biodiversity of the country. Travel to Nicaragua on a field expedition. Become a member of the friendly community of Atenas and sharpen your Spanish conversation skills.



OUR FIELD STATION IN COSTA RICA

The Center for Sustainable Development Studies is a small farm on a hillside with spectacular views overlooking the Rio Grande River in the fertile Central Valley. The field station includes a central administration building, an outdoor classroom, an organic garden, a patio, and a swimming pool. Students live in a dormitory (up to four to a room) with bathrooms. There is a classroom, small laboratory, and a computer room with Internet access. The field station is part of the small neighborhood of La Presa/Los Angeles. The friendly town of Atenas is only three miles from our field station 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 biodiverse country continues along a path of rapid development, it is increasingly influenced by global policy such as the Central American Free Trade Agreement (CAFTA) and foreign markets. Costa Rica's economy has shifted from one based chiefly on agriculture to one driven by ecotourism and technology 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 study different development and resource management models that protect the biodiversity of Costa Rica's ecosystems while promoting socioeconomic 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. Students focus on evaluating the success of Costa Rica's world-renowned land and biodiversity management 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 plantations offer opportunities to examine management schemes, identify the benefits of protected areas, and determine which systems offer the best option for economic development, the maintenance of cultural norms, and the preservation of biodiversity. Understanding the forces driving Costa Rica's policies as well as those driving ecological changes will be key as students analyze potential solutions for Costa Rica and the Central American region.

Field Research, Lectures, Exercises, and Skills Development

The interdisciplinary curriculum informs students about the links among natural ecosystems and social and economic systems in Costa Rica. Field trips introduce students to a diversity of ecosystems and social conditions. Possible trips include:

- Nicaragua: extended field expedition to compare and contrast development and resource use issues between the two countries.
- Camping trips to explore rare and threatened tropical dry forest ecosystems in the national parks of the Guanacaste Province to study one of the most sustainable management models for protected areas in Latin America.
- Volcanoes: visit Poas and Arenal National Parks to investigate parks and people relations and 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 program and analyzing the impact of the road as a barrier and source of mortality for the park's fauna in Carara and Santa Rosa National Parks.
- Visit Monteverde Cloud Forest Reserve, a famous private reserve in Latin America initiated by donations, and examine the impacts of heavy tourism.
- Students develop field research skills in data collection and statistical analysis, ecological sampling, population sampling of 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

See page 26 for course descriptions.



"I am immersed in the issues, talking with real people, working on solutions for an ecologically, socially, and economically sustainable future. The more I learn, the more I realize that I need to learn more. For every question answered, I find several more waiting to be asked."

GARRETT MEIGS, CORNELL UNIVERSITY

Student Directed Research Project Examples

- Management practices of Carara National Park in response to increased tourism.
- Evaluation of the socioeconomic 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.

Student Research Contributions

- Presentation (in Spanish) of our research results and proposed model of development at a meeting of the Costa Rican Ministry of Energy and Environment.
- 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.

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

Prerequisites

Applicants for semester programs must be at least 18 years of age, in good academic standing and have completed at least one college level course in ecology or environmental studies, and are encouraged to have taken coursework in statistics, international development, economics, or anthropology. Students must have completed at least one college level course in Spanish prior to participating.

Applicants for summer programs must be at least 16 years of age, in good academic standing, and have completed at least their junior year of high school prior to the start of the program. See page xx for summer program information.

***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.



SFS AT WORK

SFS is working with the officials of Carara National Park and others to update visitor management plans. Students and faculty initiated a long-term bird monitoring program examining the distribution and abundance of bird species throughout the park, identifying those that could serve as bioindicators of habitat quality and/or of special interest to visitors. In addition, the impact of road noise on bird species is also being investigated in Carara and Santa Rosa National Parks.

SFS is also working with Costa Rica's Ministry of the Environment, Energy, and Technology (MINAET) and local stakeholders on the development of a management plan for the Cerro Atenas Protected Zone. SFS students are evaluating ecosystem services in fragmented agricultural landscapes in order to assess the potential for landowners to pay for environmental services. The ecosystem services include biodiversity conservation, carbon sequestration, as well as soil and watershed protection. The project is going to be extended to other protected zones to improve management strategies and analyze how effectively this protected area category is conserving natural resources.



MEXICO

BAHÍA MAGDALENA

SEMESTER PROGRAM DATES

Spring 2010: February 1 - May 6

Fall 2010: September 6 - December 9



Conserving Marine Resources & Coastal Ecosystems

ENVIRONMENTAL ISSUES

Bahía Magdalena, on the southern tip of the Baja peninsula, is considered one of the most productive coastal lagoons on the Pacific coast of Mexico. This “bay of plenty” has supported diverse marine life for millennia. Due to its high productivity and amazing biodiversity, the World Wildlife Fund has ranked Bahía Magdalena as one of the nine most important coastal habitats needing protection in all of Mexico. It is one of the world’s most important habitats for California gray whales and several species of endangered sea turtles. Extensive sea grass beds and mangrove stands, intertidal sand and mudflats, barrier islands, and large rocky shore areas make for outstanding richness of biodiversity. The area is home to pods of bottlenose dolphins and large groups of sea lions. Over 100 species of migratory and resident birds use the Bay at various times of the year. Given its complexity, Bahía Magdalena is also a delicately balanced ecosystem, sensitive to anthropogenic pressures, including climate change. Bahía Magdalena has also played a critical role in supporting its human residents for thousands of years, mainly by artisanal fisheries. A growing tourism industry, based on whale watching, provides income for many residents, and fishers ply the waters for commercially important species. Unfortunately, critically endangered sea turtles are caught as by-catch in some of these fishing operations, or they are fished illegally for human consumption as a delicacy.

This coastal lagoon is suffering the same fate as most coastal and marine environments the world over: declining fisheries and habitat degradation. Local inhabitants have noticed that once abundant fisheries including sea turtles have decreased drastically, creating a negative effect on local livelihoods. Drivers of these problems include overexploitation of resources, pollution, and urban development. The Bahía Magdalena region has undergone development as a tourist and retirement destination for people around the world. On the one hand, this development provides incentive to protect the attractive and productive ecosystems of the Bay. The result, however, is overexploitation of Bay resources and degradation of natural habitat. Students investigate real challenges in conservation and natural resource management, and provide the local community with valuable information for achieving goals of biodiversity conservation and sustainable development.



RESEARCH ISSUES CRITICAL TO ENDANGERED SEA TURTLES' SURVIVAL

Learn state-of-the-art field research techniques and coastal ecology. Help the local community protect marine mammals and conserve marine resources. Explore pristine natural habitats ranging from flowering deserts and mangrove-filled lagoons to species-rich marine ecosystems. Get involved with the local Bahía Magdalena community and learn about Mexican culture.



OUR FIELD STATION IN BAHÍA MAGDALENA

The Center for Coastal Studies looks out over beautiful Bahía Magdalena and lies on the outskirts of the fishing community of Puerto San Carlos on the west coast of the Baja peninsula. Bahía Magdalena stretches for 124 miles along the coast with spectacular sunsets draping the mountains of the off-shore islands in orange and purple shadows. Students share four-person cabins. Additional facilities include a computer room, lounge, classroom, laboratory, kitchen, dining and study areas, a bath/shower house, and faculty housing.



Mexico Program Description

OUR RESEARCH

While most local residents are economically dependent on Bahía Magdalena's marine resources, little research has been done on this ecosystem and sustainable resource use. There is consensus among researchers and U.S. and Mexican governments that protection of this unique ecosystem is vital, yet it suffers from industrial pollution, inadequate law enforcement, and lack of effective management of fisheries and tourism. Our research is focused on promoting sustainable development and use of resources in Bahía Magdalena through biodiversity conservation and natural resource management. Students gather information to develop management plans for habitats, species, artisanal fisheries, and community development.

Our unique location on the Pacific coast allows students in the spring semester to work directly on gray whale conservation, while intensive research is carried out on sea turtles all year long. Sea turtles have economic, cultural, and ecological importance in the region. Despite strong

regulations against their exploitation, green turtles are still frequently poached for their meat, and many become tangled in fishing lines and nets. A complex interaction of social and cultural factors, lack of protected status and sanctuaries, inadequate enforcement of existing regulations, and economic hardship in local communities has lead to the continued exploitation and the rapid decline of sea turtle populations throughout Mexico. Students gather data on the condition of Bay habitats that are critical to the turtles' lifecycle, monitor the demographic and behavioral characteristics of turtle populations, and gain more insight into the role of the turtle in the social, cultural, and economic lifestyle of the local community. Student research, in partnership with the local community, conservation groups and governmental agencies, is contributing to the development of a conservation and management plan for sea turtles.

Field Research, Lectures, Exercises, and Skills Development

- Magdalena Island: learn about the fascinating culture of a small, communal fishing cooperative, as well as to gather information on sea turtle mortality rates.
- Intertidal zones of Bahía Santa Maria to illustrate the incredible diversity of local marine life.
- Camping trips to explore the area's rich biodiversity, stark dunes, and pristine white beaches, day trips to various reefs, deserts, oases, and mangroves.
- Collecting GIS data for projects that in turn will help the local government and community to design community-supported marine protected areas.
- Visits to three different natural protected areas in the state of Baja California Sur to compare and contrast management approaches and economic opportunities.
- Mangrove restoration.
- Field research skills: population sampling, research design, data collection, statistics, habitat assessment and mapping, stock evaluation methods, photographic ID of whales, diversity assessments, species identification, environmental ethics exercises.
- Development of qualitative research skills through primary and secondary research that includes: observations, interviews, discussions, analysis of trace evidence, and questionnaires.

COURSES

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

Course No.	Name	Credits
BI/EE(NS) 379	Coastal Ecology	04
EE(NS) 374	Principles of Resource Management	04
EE(SS) 303	Economic & Ethical Issues in Sustainable Development	04
EE 491 or 492	Directed Research	04
LS 206E	Language, Culture, and Society of Mexico	02

See page 26 for course descriptions.

Sea Kayaking Skills Building

With our new fleet of sea kayaks, students will explore Magdalena Bay, gaining access to micro-habitats, including sea grass beds and mangrove forests. Kayaks provide a more sustainable way to study coastal and marine environments. All students will receive paddling techniques, rescue, and navigation instruction.



LANGUAGE, CULTURE, AND SOCIETY OF MEXICO (LS 205E)

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 develop a more refined understanding of Mexican culture and the communities with which we work. Lectures, field exercises, and other activities help students develop strategies and skills for working with people in a community-based research context, and further help them to assist with community extension projects.

Student Directed Research Project Examples

- Economic benefit and socioeconomic analysis of whale watching in Bahía Magdalena.
- Assessment of the implementation of a sea turtle protected area and monitoring turtle populations.
- Gray whale abundance, distribution, and behavior during breeding season in Bahía Magdalena.
- Statewide survey of communities to better understand interactions with environmental media and conservation groups.
- Analysis of the socioeconomic effects of proposed marine protected areas on the community.
- Development of tourist alternatives to conserve Puerto San Carlos and its environment.
- Creation of the diagnosis of the current status of the artisanal main fisheries in San Carlos.

Student Research Contributions

Our field station on the Bay has drawn many researchers from Mexico and abroad, involving SFS students in several important investigations and projects, including:

- Hosting a symposium of research organizations active in conserving the Bay to develop collaborations among Mexican and international researchers.
- Water quality analysis funded by The David and Lucile Packard Foundation, which resulted in the development a water quality and green sea turtle monitoring program and alternative disposal recommendations, including the installation of a waste water filtration system at a local cannery that had been seriously polluting the Bay.
- Gray whale population study, which has lead to a safe increase in whale watching permits and better adherence to regulations.
- Joint SFS, government, and local fishers' exploration of alternative shrimp net designs to reduce by-catch and destruction of the fragile Bay bottom.

- Socioeconomic analysis of blue crab fishery, providing valuable data to the Puerto San Carlos Office of Fisheries to assist in developing management strategies.
- Sea turtle research leading to increased awareness and stewardship.

Get Involved with the Local Community

- Participation in the Puerto San Carlos Gray Whale and Sea Turtle Festivals.
- Teaching English classes and environmental education for local school children.
- Participation in folkloric dance classes, Mexican holiday celebrations, short home stays, and hosting community events at our field station to deepen students' experience of a different culture and connection with the local community.
- Participate on the project "Cuidando Puerto San Carlos" that involves environmental education and the first recycling program in town.

Program Prerequisites

Applicants for semester programs must be at least 18 years of age, in good academic standing, and have completed at least one college-level ecology or biology course and at least one semester of college prior to the start of the program.

Applicants for summer programs must be at least 16 years of age, in good academic standing, and have completed at least their junior year of high school prior to the start of the program. See page 28 for summer program information.

Special note: Due to our community focus and extensive interaction with the people of Puerto San Carlos, applicants are strongly encouraged to develop their conversational Spanish skills in preparation for this program.



SFS AT WORK

Mexico has one of the lowest recycling rates in the world at less than one percent. In Bahía Magdalena, plastic bottles and other recyclables often end up in the sea where endangered sea turtles frequently mistake them for sea grass, one of their favorite foods. Globally, one billion marine mammals and birds die every year from eating plastics.

In August of 2008, SFS Student Affairs Manager, Brady Wheatley, fashioned a giant sea turtle out of 2,000 plastic bottles as a display at Puerto San Carlos' annual Sea Turtle Festival, created by SFS students and local community members to promote responsible fishing and turtle conservation. A small sign adjacent to the turtle read, "We used 2,000 plastic bottles to make this turtle, which is less than .001% the number of plastic bottles used in North America every five minutes."

Thanks to a festivalgoer who connected SFS with a distributor, the bottles were trucked to a recycling plant in Tijuana and a fledgling recycling program was soon born in town. SFS procured and fixed-up a warehouse the following semester that, by year's end, would house 3,500 kg of aluminum, plastic, and cardboard collected by SFS students. The program was awarded \$7,000 in grant money in the spring of 2009, which will be used to buy compactors, bags, and more bins for the town and its schools. To ensure sustainability, an outreach component has also been added to the program to bring recycling education into the town's secondary school system.



AUSTRALIA

ATHERTON TABLELANDS

SEMESTER PROGRAM DATES

Spring 2010: February 1 - May 6

Fall 2010: September 6 - December 9



Tropical Rainforest Studies

ENVIRONMENTAL ISSUES

Rainforests are among the Earth's most important and diverse ecosystems, yet thousands of acres disappear each day, mostly as a result of human activity. Along with the loss and fragmentation of rainforest areas due to practices such as intensive logging and land clearing for 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 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. A threat of this magnitude to such a diverse section of the continent places nearly half of all Australian bird species and endemic mammals at risk for extinction.

For thousands of years, the tropical rainforest of Queensland has been home to about 18 indigenous tribes, along with numerous primitive plant species, birds, and marsupials found nowhere else in the world. Giant strangler figs, abundant vines and epiphytes, large pythons, colorful parrots, 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 and the traditional land of Aboriginal people. 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, but the integrity and survival of these rainforests hinge upon developing solutions that consider larger-scale impacts, including global climate change, yet also provide economic benefits for the local community.



RESEARCH IN A TROPICAL RAINFOREST AMID AN AMAZING VARIETY OF UNIQUE PLANTS, BIRDS, AND OTHER WILDLIFE

Work with local tree-planting groups and research organizations, and learn from members of the Aboriginal community to manage forest resources. Study the current condition and dynamics of a tropical rainforest ecosystem, including the effects of global climate change. Gain field research skills and participate in community projects to restore tropical rainforests. Explore some of the most exciting natural wonders of Australia.



OUR FIELD STATION IN AUSTRALIA

The SFS Center for Rainforest Studies 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, tropical site. 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 furnished eight-person cabins with adjacent shower and bathroom facilities. The main building of the field station has a computer laboratory, Internet access, and a student common room. Our kitchen and cook provide nutritious, healthy menus to suit all tastes.



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.

The ecological and economic benefit 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 we should regenerate and restore the rainforest on the Atherton Tablelands. Students learn field research techniques as they collect data on potential responses 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 rainforest replanting or site maintenance with local land-care groups.

Field Research, Lectures, Exercises, and Skills Development

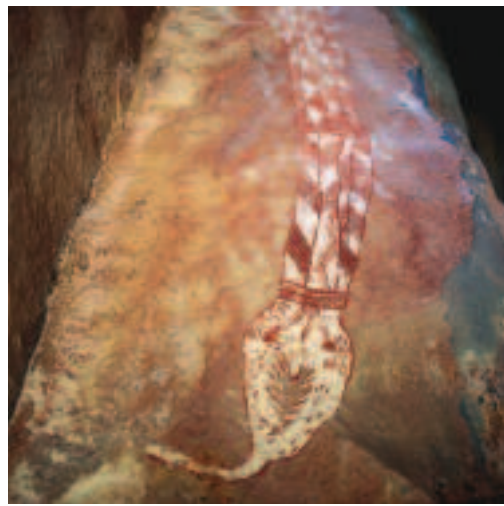
- Chillagoe: camp in the Outback and explore caves, rock formations, remnant dry rainforests, and eucalypt savannah. Learn firsthand about the history of the Barabaram people.
- Cape Tribulation: walk through lowland rainforests, giant sedges with peppermint stick insects, mangrove forests, and palm forests; traverse the Daintree River, notorious for its crocodiles; visit the canopy tower at the Daintree Discovery Centre; sample and examine an array of forest types across the landscape.
- Visit 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.
- Field research skills development includes: GIS, rainforest management strategies, seedling propagation, timber estimation, 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.

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 Socioeconomic Values	04
EE 491 or 492	Directed Research	04

See page 26 for course descriptions.



"These findings [tree frog, mudskipper fish, forest dragon lizard], smaller than the cassowary, yet just as noteworthy, served as reminder of what I consider to be one of SFS' central tenets: to the patient, appreciative observer, nature possesses allure and fascination at countless levels."

BEN GOLDFARB, AMHERST COLLEGE

Student Directed Research Project Examples

- Using plant functional traits to predict drought and cyclone resistance.
- Assessing the population status and habitat preferences of freshwater turtles.
- Micro bat use of rainforest fragments.
- 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 on-going 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.
- Assessment of tree seedling recruitment and growth working toward recommending best practices for achieving a successful restoration.
- Assisting community members with restoration of more than one mile of rainforest from grassland along the lower Peterson Creek.

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 involved in rainforest restoration and management. SFS students enjoy getting involved in community volunteer projects and social activities such as:

- 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.
- Community service trips to help local conservation groups and communities plant rainforest seedlings.
- Participating in annual community fauna surveys such as the crane count and spectacled flying-fox counts.
- 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.
- Learning how to make and play didgeridoos.

Program Prerequisites

Applicants for semester programs must be at least 18 years of age, in good academic standing, and have completed at least one college-level ecology or biology course and at least one semester of college prior to the start of the program.

Applicants for summer programs must be at least 16 years of age, in good academic standing, and have completed at least their junior year of high school prior to the start of the program. See page 28 for summer program information.



SFS AT WORK

One of the most crucial and endangered types of forest in the Atherton Tablelands is Mabi 5b rainforest, home to the highest densities of rare green ringtail possums and Lumholtz's tree kangaroos in the world. SFS students have been conducting research on existing Mabi 5b forest fragments and have been working closely with the Mabi Forest Recovery Team to implement forest conservation and restoration initiatives.

When Tropical Cyclone Larry swept across the southern Atherton Tablelands, many forest fragments experienced extensive tree fall and defoliation. Students and faculty alike immediately set out to research the impacts that this storm had on the forest and are using those results in collaboration with the Mabi Forest Recovery Team and the Queensland Parks and Wildlife Service to inform management and restoration plans. This research culminated in five scientific papers authored by SFS faculty and students in a special edition of *Austral Ecology*. Additionally, SFS students have continued to work with local landcare groups on rainforest restoration, contributing technical expertise, providing seedlings from the SFS nursery, and planting trees. Because of the extent of students' work on the ground, miles of the Peterson Creek have been revegetated, abandoned pasture has been restored, and previously isolated fragments of Mabi 5b forest are now buffered and connected, with green ringtail possums and Lumholtz's tree kangaroos starting to be seen utilizing the restored forest.



TURKS & CAICOS

SOUTH CAICOS ISLAND, BRITISH WEST INDIES

SEMESTER PROGRAM DATES

Spring 2010: February 1 - May 6

Fall 2010: September 6 - December 9



Marine Resource Management Studies

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. But beneath the turquoise waters, a delicate ecosystem is under assault. The clear waters of the TCI are considered to be 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 clear warm waters just steps from our field station. Nearby sea grass beds, mangrove forests, sandy shoals, and deep reefs lend a patchwork appearance to the miles of shallow blue waters that surround the Islands.

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 33 established protected areas to promote the sustainability of natural and historic resources, with four in close proximity to the SFS Center for Marine Resource Studies on South Caicos. However, lack of scientific knowledge, local understanding, and environmental stewardship hinders management of resources and the effectiveness of these protected areas. Demand, and therefore pressure on marine resources, is expected to increase with the onset of tourism. Without scientific quantification and environmental education, the existence of many of these resources is threatened. SFS has a critical role to play during the next five years by quantifying social and ecological baselines, conducting on-going monitoring, and helping to mitigate change to the marine environment through research and education.



RESEARCH IN ONE OF THE MOST SPECTACULAR MARINE HABITATS IN THE BRITISH WEST INDIES

Learn about tropical marine ecology and protected area management. Learn field research skills. Help find innovative approaches to fisheries management and economic development. Join the friendly South Caicos Island community known as "Belongers" and learn about Caribbean culture.



OUR FIELD STATION ON SOUTH CAICOS ISLAND

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



Turks & Caicos Program Description

OUR RESEARCH

SFS is working with the TCI government's Department of Environment and Coastal Resources (DECR) and the National Park Service to develop management strategies to help conserve marine biodiversity and provide economic opportunities for island residents. Student field research is helping to provide the local government, community, and tourism developers with recommendations that will help sustain the economic, social, and ecological stability of South Caicos.

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; and investigate the feasibility of recycling programs along with other issues related to marine natural resource management and local livelihood.

Reef fish stocks need protection

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 that they can be harvested in a sustainable manner to avoid total species collapse.

Field Research, Lectures, and Exercises

- SCUBA or snorkeling for field research and species identification exercises.
- Visual assessment of queen conch and coral reef fish populations.
- Fish, coral, sea grass, and mangrove identification.
- Zoning for multiple uses in marine protected areas.
- Ecosystem functioning and anthropogenic impacts.
- Habitat enhancement and restoration.
- Lecture from DECR on the TCI government fisheries regulations and enforcement.
- Lecture and site tour from local tourism developer on plans for constructing a resort.
- 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 id; 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 Socioeconomic Values	04
EE 491 or 492	Directed Research	04

See page 26 for course descriptions.



"I spent about 45 minutes each day floating along the bottom just looking at the most amazing fish in the world. Everyday I'd be down there thinking to myself, 'I can't believe this is school. This is the only way to learn.'"

CHRISTINE DODGE, SKIDMORE COLLEGE

Student Directed Research Project Examples

- Population size assessment of potentially commercial finfish species around South Caicos.
- Finfish dock landing.
- Coral reef ecology, including growth, survival, and recruitment.
- Baseline biodiversity surveys in critical habitats.
- Interactions between mangrove and sea grass 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 finfish stock assessments have provided important information for government agencies.
- 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.

Program Prerequisites

Applicants for semester programs must be at least 18 years of age, in good academic standing, and have completed at least one college-level ecology or biology course and at least one semester of college prior to the start the program. Many past students in this program have found one semester of statistics to be helpful.

Applicants for summer programs must be at least 16 years of age, in good academic standing, and have completed at least their junior year of high school prior to the start of the program. See page 28 for summer program information.

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.



SFS AT WORK

In the spring of 2008, SFS entered into an agreement with the Reef Ball Foundation (RBF) to restore marine reefs around South Caicos Island. With the help of RBF, SFS will create, deploy, and study underwater groupings of specially designed artificial reef structures that will provide new habitats for coral, fish, and other marine organisms. Reef Balls, which are dome-shaped concrete structures with a Swiss-cheese of holes, are designed to imitate natural reef formations, giving nature a jump-start by supplying what would take many years of biological growth to accomplish, and providing a medium to promote new growth. They provide ideal habitats for fish, lobsters, and other marine life, which move in soon after deployment.

South Caicos is fringed by one of the more pristine marine habitats in the Caribbean. These reef areas face die-off due to the effects of global warming, unsustainable and destructive fishing practices, and physical destruction due to storms and anthropogenic factors such as unregulated development. It takes thousands of years for a reef to form naturally, and the degradation or outright destruction of a reef can be devastating to ocean and coastal life, with entire ecosystems being wiped out.

"This has been a wonderful opportunity to combine state of the art technology with research opportunities for students," says SFS lecturer Catherine Jadot.

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

LS Spanish

SS Social Sciences

KENYA

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 interrelationships 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.

BI/EE (NS) 371 TECHNIQUES OF WILDLIFE

MANAGEMENT introduces students to the questions, principles, and tools used by resource managers in the Kenyan 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.

EE (SS) 302 ENVIRONMENTAL POLICY &

SOCIOECONOMIC VALUES provides insight into the broad social context surrounding natural resources to determine effective approaches to resource management. Objectives are to understand the socio-cultural context of wildlife management, rangeland conservation, and rural livelihood. Through an introduction to the various constituencies in conservation and their underlying philosophies, we examine governance issues, including hierarchies and power structures, formal and informal decision making processes, and value systems relevant to natural resources. Economic and cultural factors related to natural resource management are examined in the local context alongside environmental policies.

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 research 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.

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, designed to increase students' communication and comprehension skills. 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 understand the local cultural context in which they are living and working.

COSTA RICA

EE (NS) 377 TROPICAL ECOLOGY & SUSTAINABLE DEVELOPMENT examines the impact of human activities on ecosystems and ecological communities. We identify the main environmental problems threatening the conservation of tropical organisms and ecosystems, specifically focusing on those elements of the landscape and ecosystems that are important for human well-being and economic development. Topics covered include the origin of tropical diversity, mechanism of species extinction, the use of biodiversity, and forest dynamics and human-initiated disturbances. We study cases of both effective ecological management and negative impacts of development on ecosystems in diverse parts of Costa Rica and Nicaragua. Options for alternative resources use, land restoration, and preservation will be examined, and the factors that constrain or promote particular options are considered.

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 towards 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, environmental impact assessment, Local case studies and emerging environmental and challenges will be examined using the theory and practice learned in this course.

EE (SS) 303 ECONOMIC AND ETHICAL ISSUES IN SUSTAINABLE DEVELOPMENT addresses the principles and applications of ecological economics and the scientific and management aspects of sustainability.

Allocation, distribution, and scale will be presented as parameters to assess the sustainability of development models. 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 to and opportunities 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 research 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 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 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 home stay through which they learn strategies and skills for working with people in a community-based research context and help them to assist with community extension projects.

MEXICO

BI/EE (NS) 379 COASTAL ECOLOGY examines the ecological processes interface between land and sea in order to understand how human perturbations impact both marine and terrestrial systems. The watershed concept will be used to explore nutrient flow, energy cycling, coastal circulation, productivity, and biotic interactions. This course provides a basic understanding of how natural systems work to help guide resource managers toward ecologically sound and sustainable decisions. Fieldwork exposes students to techniques of surveying, monitoring, and the study of biotic interactions in a complex physical/chemical milieu.



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 towards 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, environmental impact assessment, Local case studies and emerging environmental and challenges will be examined using the theory and practice learned in this course.

EE (SS) 303 ECONOMIC AND ETHICAL ISSUES IN SUSTAINABLE DEVELOPMENT addresses the principles and applications of ecological economics and the scientific and management aspects of sustainability. Allocation, distribution, and scale will be presented as parameters to assess the sustainability of development models. 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 research 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 MEXICO 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 develop a more refined understanding of Mexican culture and the communities with which we work. Students participate in lectures, field exercises, and other activities through which they may develop strategies and skills for working with people in a community-based research context and help them to assist with community extension projects.

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 & SOCIOECONOMIC VALUES provides insight into the broad social context surrounding natural resources to determine effective approaches to resource management. Objectives are to understand the socio-cultural context of forest restoration, adaptation to climate change, and rural livelihoods. Through an introduction to the various constituencies in conservation and their underlying philosophies, we examine governance issues, including hierarchies and power structures, formal and informal decision making processes, and value systems relevant to natural resources. Economic and cultural factors related to natural resource management are examined in the local context alongside environmental policies.

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 research 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.

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 ecological concepts. Applications to the management of 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 towards 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, environmental impact assessment, Local case studies and emerging environmental and challenges will be examined using the theory and practice learned in this course.

EE (SS) 302 ENVIRONMENTAL POLICY & SOCIOECONOMIC VALUES provides insight into the broad social context surrounding natural resources to determine effective approaches to resource management. Objectives are to understand the socio-cultural context for protected area management, fisheries management and local economic development. Through an introduction to the various constituencies in conservation and their underlying philosophies, we examine governance issues, including hierarchies and power structures, formal and informal decision making processes, and value systems relevant to natural resources. Economic and cultural factors related to natural resource management are examined in the local context alongside environmental policies.

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 research 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 2010 PROGRAM DATES

Session I: June 7 – July 6

Session II: July 12 – August 10

There are no application deadlines. However, students are urged to submit their application early as programs fill quickly and applications are reviewed on a first come, first served basis, except for the Field Practicum in Public Health and Environment in Kenya, which has an early spring deadline, and the Eastern Himalayan Forests and Rural Livelihoods course, which has a fall 2009 deadline. Please see our Web site for updated information.



Overview

Our month-long, four-credit summer programs combine interdisciplinary lectures with field research exercises and expeditions.

Students in summer programs assist our faculty in conducting research designed to support local communities in natural resource management decision-making.

Each course carries four college-level credits in environmental studies. In some cases, the summer course may fulfill a university's field-study requirement. There are no pre-requisites for summer courses. The majority of summer participants are college undergraduates, but motivated high-school seniors, gap year students, and recent college graduates may also participate.

Please visit our Web site at www.fieldstudies.org or call 800.989.4418 to order a complete summer course catalog.

Summer Program Descriptions

AUSTRALIA/NEW ZEALAND

Rainforest ecosystems are a "hot spot" for faunal and floral biodiversity and provide humans with clean air, water, food, and medicines, yet thousands of acres disappear each day. Large areas of Northeastern Queensland in Australia were once covered in spectacular tropical rainforests, preserving millions of years of evolutionary history. Agricultural and residential development, however, have destroyed and disrupted rainforest habitat, leaving only fragments of some rainforest types, which are too small or isolated to sustain some species. 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, which can be taken individually or back-to-back to provide a thorough introduction to biodiversity conservation techniques and the socioeconomic factors influencing land management in two unique areas.

SESSION I: TROPICAL RAINFOREST MANAGEMENT STUDIES IN NEW ZEALAND & AUSTRALIA

Students compare and contrast the ecological, geographical, social, economic, and historical factors that have shaped natural resource management in far north Queensland and northern New Zealand. 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 of northern New Zealand 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 tropical rainforests and develop effective rainforest research skills while learning about rainforest conservation.

BHUTAN

EASTERN HIMALAYAN FORESTS AND RURAL LIVELIHOODS

Bhutan's government has recently shifted from a monarchy to a constitutional democracy, opening the door for devolution of authority over natural resources to regional governments and communities. Since the majority of the population resides in rural areas, sustainable management of natural resources is critical for achieving the dual goals of poverty alleviation and biodiversity conservation.

Students travel across Bhutan learning about Bhutanese culture, Buddhist philosophy, and environmental issues. Trekking across valleys and ridges and through villages students will gain an intimate knowledge of the local environments and rural livelihoods, and conduct research on Bhutan's priority environmental concerns and conservation strategies in several priority areas, including community and private forest management, human-wildlife conflict in agricultural areas, and pollution.

COSTA RICA

SUSTAINING TROPICAL ECOSYSTEMS: BIODIVERSITY, CONSERVATION, AND DEVELOPMENT

Costa Rica is known worldwide for its conservation which has attracted millions of tourists to Costa Rica's parks and reserves. Insufficient funding to accommodate increased park visitation, biodiversity protection, and conservation has created stress to the park system and surrounding communities. Biodiversity and the cultural heritage of communities in and near the parks are threatened by the extent and activities of tourism. Ironically, poverty is increasing in the communities around the parks pushing them to seek income from other activities, including illegal poaching of forest and non-forest products, as well as wildlife subsequently sold for commercial purposes.

Students will learn about the ecological, resource management, and socioeconomic factors impacting the parks and surrounding regions, and will be directly involved in designing and proposing recommendations to park managers in response to the challenges of heavy visitation and threats to conservation goals.

KENYA

COMMUNITY WILDLIFE MANAGEMENT

Land use changes in the Maasai group ranches in southern Kenya are driven by various socio-economic, cultural, and political factors. The integrity and quality of habitats for indigenous wildlife is also severely compromised and cannot sustain natural ecological processes necessary to maintain the high density and diversity of wildlife species.

Students will examine how land-use practices within Maasai group ranches can be sustainably managed to promote both local economic livelihoods and wildlife conservation. Students will gain a general overview of cultural perceptions, conservation issues, wildlife dispersal areas, and biodiversity conservation in Kenya while meeting and interviewing wildlife managers and members of the Maasai community.

FIELD PRACTICUM IN PUBLIC HEALTH AND ENVIRONMENT

Privatization of Kenya's open grazing land has forced traditionally nomadic, pastoral peoples, including the Maasai, to adapt to



more sedentary, restricted agro-pastoral lifestyles. Consequently, they are more vulnerable to disease and famine, and they frequently rely on relief food and scarce water to survive. This major shift from nomadicism to pastoralism has brought about new health problems for the Maasai, and access to quality health care, both physically and culturally, poses a critical issue for this predominantly rural population. Students may provide a vital link between the needs of the Maasai and Kenya's national health strategy.

This course will provide students with experience in assessing and analyzing public health and environmental concerns in identified Maasai communities. This program is a graduate-level field course open to both graduate and qualified undergraduates in public health, nursing, pre-med, medical and health sciences.

MEXICO

CONSERVATION OF COASTAL DIVERSITY AND THREATENED MARINE TURTLES IN BAHÍA MAGDALENA

Bahía Magdalena is among the largest remaining intact coastal wetland/lagoon systems along the Pacific coast of the Americas. But despite nearly two decades of conservation efforts, some species of sea turtle are sliding toward extinction worldwide. Despite strong regulations against their exploitation, sea turtles are still poached and caught as by-catch in fishing activities. A complex interaction of social and cultural factors, such as lack of protected areas in the region, lack of sufficient enforcement of existing regulations, and economic hardship in local communities, has led to the continued exploitation and the rapid decline of sea turtle populations. Students examine the ecological, societal, and economic issues surrounding sea turtles and other natural resources in Bahía Magdalena.

TURKS AND CAICOS ISLANDS

MARINE PROTECTED AREAS: MANAGEMENT TECHNIQUES AND POLICIES

The turquoise waters surrounding Turks and Caicos Islands are abundant with marine life and are considered to be among the world's top 10 diving destinations. The reefs harbor an incredible array of marine life — resources that have proven to be critically important for this island community. The importance of these reefs has not guaranteed their survival, however, and the reefs face pollution, dredging, dumping, and damage from boats and divers. Students assist in the creation and/or monitoring of artificial reefs using Reefball™ technology to enhance or restore reef habitats. Students explore the effectiveness of marine protected areas in defending biodiversity and critical habitats, and in effect the socioeconomic sustainability of the local community.

Summer Course Descriptions

KENYA

EE (NS) 350 COMMUNITY WILDLIFE MANAGEMENT introduces students to wildlife management concepts and field skills to investigate the human/wildlife conflict dynamic present in Kenya. This course explores the potential for re-thinking wildlife as a source of income generation, rather than as a competitor for space and water and/or as a threat to human endeavor — which may provide an alternative and sustainable form of human/wildlife co-existence and land-use option. We will explore possible commercial uses of wildlife such as game cropping, regulated sport hunting, and ecotourism. Compare the potential benefits of utilizing wildlife with alternative land-use options such as agriculture.

IH 707 FIELD PRACTICUM IN PUBLIC HEALTH AND ENVIRONMENT intensive 5-week field-based course is conducted in Kenya among the Maasai community. Participants get community based hands-on experience in designing and implementing a household health survey; in analyzing data and preparing a report. Participants present and discuss survey findings with community leaders to identify follow-up health discussion, and supervise and coordinate field visits in collaboration with an indigenous NGO with community-based health programs in Maasailand.

COSTA RICA

EE (NS) 352 SUSTAINING TROPICAL ECOSYSTEMS: BIODIVERSITY, CONSERVATION, AND DEVELOPMENT provides students with practical field skills necessary to develop and participate in on-going, long-term, community and tropical ecosystem-based research projects. Students will be 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.

MEXICO

EE (NS) 356 PRESERVING COASTAL DIVERSITY: SEA TURTLES AND BAY RESOURCES exposes students to the relationship between the decline in biodiversity and the health of the Magdalena Bay ecosystem. We will identify the most critically threatened areas in Bahía Magdalena to help design a strategy for protecting these resources. Lectures and field exercises: integrated coastal zone management, sea turtle protection, ecological economics, Mexican history and society,

coastal ecology, and fisheries management. The research component of the course will concentrate on the threatened green turtle.

NEW ZEALAND & AUSTRALIA

EE (NS) 354 TROPICAL RAINFOREST MANAGEMENT STUDIES compare and contrast 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 regards to biological systems, national boundaries, and political structures.

AUSTRALIA

EE (NS) 355 TECHNIQUES FOR RAINFOREST RESEARCH includes a wide range of lectures and hands-on field activities that will concentrate on developing management recommendations for reforestation practices on the Tablelands of Australia. We will 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 in current forest dynamics. Examine reforestation applications on the Tablelands: the goals, techniques, successes, and the failures. We will develop and maintain an actual rainforest restoration project.

TURKS & CAICOS ISLANDS

EE (NS) 351 MARINE PROTECTED AREAS: MANAGEMENT TECHNIQUES AND POLICIES will focus 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 will be given to commercially important resources such as conch and lobster stocks. Our project findings will contribute toward developing marine parks policy, management plans, and innovation and technology transfer to assist in the management of marine protected areas.

Admissions Requirements & Instructions

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, we encourage students to 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

The SFS program will likely be very different from your traditional academic experience and traditional study abroad program. 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 SFS programs. Be sure to check with your home school about their deadlines and requirements for study abroad.

Requirements and Policies

Applicants for semester programs:

- Must be at least 18 years of age, in good academic standing, have completed at least one college-level ecology or biology course, 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.
- Costa Rica applicants must have completed a college-level course in ecology or environmental studies. Students must have one college-level course in Spanish or otherwise demonstrate a working knowledge of conversational Spanish prior to participation.
- All applicants are encouraged to have taken coursework in international development, economics, statistics or anthropology.

Applicants for summer programs:

- Must be at least 16 years of age, in good academic standing, and have completed at least their junior year of high school prior to the start of the program.

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 in this catalog.
 - **NON-REFUNDABLE APPLICATION FEE OF \$45** (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.
 - **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.

Please return your application materials to:

The School for Field Studies
10 Federal Street, Ste. 24
Salem, MA 01970-3876
admissions@fieldstudies.org
Fax 978.741.3551

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 refer go to the SFS website to the "Application 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 two weeks of acceptance. Please refer to the SFS Web site (www.fieldstudies.org) 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 director. 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 the SFS safety director of physical disabilities and the SFS program dean of learning disabilities. Notification of disability must be made in writing and submitted within one week 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 academic handbook for more information, or call us at 800.989.4418 for further assistance.

Dietary Restrictions

If you have any special dietary restrictions, please contact the SFS safety director within one week of acceptance and document the restrictions on your online medical review form. Students with dietary preferences (vegetarian, vegan, etc.) should discuss these with their admissions counselor.

Non-discrimination Policy

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 and 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. SFS is an equal opportunity institution.

Tuition, Financial Aid, & Scholarships

Financial Aid

A key component of the SFS mission is to ensure that as many interested and eligible students as possible are able to participate in SFS programs. Since our founding in 1980, close to 13,000 students have participated in our programs in all corners of the world. For many students, program and travel costs can make participation out of reach. Therefore, SFS has developed a range of financial resources to support our students.

SCHOLARSHIPS

SFS General Scholarship Fund: awards are need-based. All SFS students are eligible to apply. Maximum \$5,000 for semester; \$2,000 for summer.

Andreas Family Foundation Scholarship: awards are need-based. Eligibility is limited to students attending US public institutions and is for semester programs only. Maximum award \$5,000. Andreas Family Fund Scholarship Application Deadlines: October 15 for spring programs; March 15 for fall programs.

SFS Travel Grants: need-based awards meant to help offset the cost of travel to SFS programs. Preference will be given to those students participating in Kenya and Australia programs, where the cost of airfare is significantly higher than other SFS programs.

Heather Jo Leibowitz Memorial Scholarship for Kenya - \$1,000

Awards are need-based and available only to students on the Kenya program. In remembrance of Heather, preference will be given to students who have a commitment to making a difference in the lives of resource dependent communities in Kenya.

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 SFS Alumna Heidi McKee. It is awarded on an annual basis to a financially deserving student attending any SFS summer or semester program.

Erin L. Bergstrom Memorial Scholarship

Preference will be given to students who have both a commitment to preservation of the environment, and have demonstrated leadership skills in their communities.

Fountain Scholarship

This scholarship provides tuition assistance to those SFS applicants who (a) have spent the substantial part of their childhood and teenage years growing up in an urban/city environment (whether in the US or internationally); (b) demonstrate financial need; and (c) demonstrate a commitment and concern for

environmental issues. This scholarship is made possible by the generosity of SFS alumnus and noted film director of *The Fountain* and *The Wrestler*, Darren Aronofsky.

For a complete list of SFS scholarships, please visit our website.

LOANS

Zero Interest Loans

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: A growing number of 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. Look into applying for federal financial aid funds, including loans, through your home school. 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 to assist your SFS participation. If you encounter difficulty in arranging to use federal financial aid funds for your SFS program, please contact the SFS admissions office at 800.989.4418 and we will do our best to assist you.

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.

Refund Policies

SEMESTER

If you withdraw by notifying SFS in writing, the following amounts will be refunded:

- Withdrawal 61 days or more prior to the first day of the program = 100% refund of total program cost (less deposit).
- Withdrawal 60-31 days prior to the first day of the program = 50% refund of total program cost (less deposit).
- Withdrawal 30 days prior to 14 days after the start of the program = 25% refund of total program cost (less deposit).
- Withdrawal 15 or more days after the start of the program, or if a student is asked to leave the program = NO REFUND.

Students may transfer the non-refundable deposit to an SFS course within the next 12 months subject to acceptance.

Financial aid candidates: deposits are refundable if withdrawal is less than 10 days following financial aid offer. (You must complete and return the financial aid application within 10 business days of acceptance to qualify for refund status on the deposit). Application fees are non-refundable.

SUMMER

If you withdraw by notifying SFS in writing, the following amounts will be refunded:

- Withdrawal prior to 60-22 days before the start of the program = 100% refund of total program cost (less deposit).
- Withdrawal 21-0 days prior to the start of the program = 50% refund of total program cost (less deposit).
- Withdrawal after the program starts = NO REFUND.

Students may transfer the non-refundable deposit to an SFS course within the next 12 months subject to acceptance.

Financial aid candidates: deposits are refundable only if withdrawal is less than 10 days following financial aid offer. You must complete and return the financial aid application within 10 business days of acceptance to qualify for refund status on the deposit. Application fees are non-refundable.

SEMESTER COSTS FALL 2009 – SPRING 2010

*Program Costs for Fall 2010 will be determined in March 2010

Program	Tuition	Program Fees	Total Program Cost
Kenya	\$11,550	\$5,390	\$16,940
Australia	\$11,550	\$5,250	\$16,800
Turks & Caicos	\$11,550	\$4,700	\$16,250
Costa Rica	\$11,550	\$4,700	\$16,250
Mexico	\$11,550	\$4,700	\$16,250

SUMMER COSTS 2010

Program	Tuition	Program Fees	Total Program Cost
Bhutan	TBD	TBD	TBD
Kenya	\$2,820	\$1,630	\$4,450
Kenya Public Health	\$4,050	\$1,975	\$6,025
Australia	\$2,820	\$1,590	\$4,410
New Zealand/Australia	\$2,820	\$2,170	\$4,990
Turks & Caicos	\$2,820	\$1,365	\$4,185
Costa Rica	\$2,820	\$1,150	\$3,970
Mexico	\$2,820	\$1,150	\$3,970

Academic Credit

SFS participants are registered at and receive transcripts from Boston University, which accredits SFS programs. The only exceptions are students from SFS Affiliate and Consortium schools who receive credit directly from their home institutions.

All SFS courses are approved and assigned course numbers by Boston University. SFS semester programs in Australia and The Turks and Caicos Islands incorporate four courses and carry a total of 16 semester-hour credits in biology or environmental studies. Our semester programs in Costa Rica, Kenya, and Mexico (starting spring 2010) programs carry 18 semester-hour credits in biology or environmental studies from Boston University. Summer courses carry four semester-hour credits in environmental studies. Participants receive an official transcript from Boston University approximately six to eight weeks 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. Therefore, you should check with your advisor/registrar when applying to our programs 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. In most instances, we can direct you to someone on your campus familiar with credit transfer for SFS programs.

The SFS Affiliate Program

The SFS Affiliate Program assists students in maximizing their experience by building better linkages to the academic community from which SFS students are drawn. Students from Affiliate institutions receive preferential admission and financial aid from SFS. Affiliate schools typically provide direct academic credit for SFS participation and have curricular input into our programs pre-approved the credits. Each Affiliate school 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 rRepresentative. The SFS Participation Approval Form is available on the SFS website: www.fieldstudies.org.

Current SFS Affiliate Member Schools

Albion College
Dr. Timothy Lincoln

Albright College
Dr. Stephen Klein
Dr. David Osgood

Alfred University
Ms. Petra Visscher
Ms. Michele Hlucky

Associated Colleges of the South
Dr. Wayne Anderson
Ms. Teresa Wise

Austin College
Ms. Valerie Roberts
Dr. George Diggs

Belmont Abbey College
Dr. Robert E. Jones
Dr. Sheila S. Reilly

Bennington College
Dr. Kerry Woods

Boston University
Mr. David Lamitie
Dr. Nathan Phillips

Brandeis University
Mr. J. Scott Van Der Meid
Dr. Dan Perlman

Cedar Crest College
Dr. John Cigliano
Dr. Amy Faivre

Clark University
Adriane Van Gils

Colby College
Dr. David Firmage
Juliette Monet

Colby-Sawyer College
Dr. Leon-C Malan
Dr. Elizabeth Crockford

College of Charleston
Ms. Sarah Simmonite
Dr. Andrew Sobiesuo

College of the Holy Cross
Dr. Brittain Smith

College of Santa Fe
Dr. Andrew Lovato

Connecticut College
Ms. Shirley Parson

Cornell University
Dr. Richard Gaulton
Dr. Kristen Grace

Davidson College
Dr. Michael Dorcas

Denison University
Dr. Jessica Rettig
Dr. Andrew Law

DePauw University
Ms. Kate Knaul

Dickinson College
Dr. Thomas Arnold
Mr. Brian Brubaker

Elon University
Mr. Paul Geis

Elizabethtown College
Dr. Thomas E. Murray
Dr. Amy Simes

Emory University
Ms. Kenya Casey
Dr. Philip Wainwright

Gonzaga University
Ms. Wanda Reynolds
Dr. Hugh Lefcort

Grinnell College
Dr. Richard Bright
Dr. Jonathan Brown

Guilford College
Dr. Lynn Moseley
Dr. Jim Hood

Hollins University
Ms. Kirsten McKinney
Dr. Renee Godard

Kenyon College
Dr. Ray Heithaus
Ms. Marne Ausec

Lehigh University
Ms. Katie Welsh
Mr. Neil McGurty

Lenoir-Rhyne College
Dr. Marsha Fanning
Ms. Lynda Kirby

Meredith College
Mr. Kevin Morrison
Dr. Larry Grimes

Miami University
Dr. David Keitges

Mount Holyoke College
Ms. Joanne Picard

Mt. Olive College
Dr. Angela Foster
Dr. Christopher Dyer

Muhlenburg College
Ms. Susan B. Norling
Dr. Richard Niesenbaum

Northern Arizona University
Dr. Karen A. Plager
Dr. Betty G. Brown

Oregon State University
Mr. J. Brock McLeod
Ms. Kristine Spikes

Purdue University
Ms. Glenda Caudill
Mr. Brian Harley

Pacific Lutheran University
Ms. Megan Murphy

Rochester Institute of Technology
Dr. Elizabeth Hane
Ms. Tynelle Stewart

Saint Michael's College
Dr. Valerie Banschbach
Ms. Peggy Imai

San Diego State University
DMr. David Carruthers
Mr. Robert Carolin

Santa Clara University
Ms. Barbara Colyar
Mr. Vidalino Raatior

Scripps College
Ms. Valerie Eastman

Southern Methodist University
Ms. Susan Kress
Dr. Bonnie F. Jacobs

Smith College
Ms. Lisa Chappell
Dr. Gregory White

SUNY/College of Environmental Sciences and Forestry
Ms. Carolyn Salter
Dr. Dudley Raynal

Sweet Briar College
Ms. Tiffany Cummings
Dr. Robert Alexander

Texas A&M University
Ms. Lisa Tauferner

Texas Tech University
Ms. Sandra Crosier
Ms. Lilly Kilcrease

The Ohio State University
Ms. Jenny Bickley

Trinity College
Dr. Daniel Blackburn
Ms. Lisa Sapolis

University of Denver
Ms. Carol Fairweather
Dr. Michael Keables

University of Georgia
Ms. Colleen Larson

University of Massachusetts
Ms. Carol LeBold
Ms. Sandra Barron

University of Miami
Dr. Dan DiResta

University of Minnesota/Twin Cities
Dr. Sophie Gladding
Ms. Mandi Miller

University of New England
Ms. Trisha Mason
Ms. Sandra Larned

University of North Carolina/Chapel Hill
Mr. Rodney Vargas
Dr. Seth Reice

University of Redlands
Ms. Sara Falkenstien

University of Richmond
Ms. Michele D. Cox
Dr. Christopher Stevenson

University of San Diego
Dr. James Bolender
Ms. Molly Parken

University of Southern California
Mr. Peter Hilton
Dr. Stephen Koletty

University of St. Thomas
Ms. Ann Hubbard

University of Texas/Austin
Dr. James Boggs

University of Utah
Dr.. Elizabeth Dudley-Murphy
Mr. Jesse Pugh

University of Wisconsin/Madison
Ms. Tammy Gibbs

Washington and Lee University
Dr. James Kahn

Wellesley College
Ms. Jennifer Thomas-Starck
Dr. Beth DeSombre

Wells College
Dr. Thomas Wawter
Mr. John Wells

Western Oregon University
Ms. Michele V. Price
Dr. Karen Haberman

Whitman College
Ms. Susan Holme Brick
Dr. Delbert Hutchison

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 understand local environmental issues and conduct relevant research.

Communal living: Students live and learn within a small group (20 to 35) alongside international staff. Students share a room with three to eight other students, share bathroom facilities, common areas, computer labs, and dining areas. Communal living means everyone shares the responsibility for the upkeep and functionality of the station.

Community involvement: SFS centers are located in small, remote villages, 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 competency: Cultural competence is defined as the ability of individuals and systems to work or respond effectively across cultures in a way that acknowledges and respects the culture of the person or organization being served. Culturally competent students are 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 give our time to helping 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 are guided, and in some cases take classes, on the history and cultural practices of the community where they are studying (such as 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 topics are defined by the centers' five-year research plans and are based upon the local communities needs. Each semester, students are presented with three or more possible Directed Research project options. 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 will learn by experiencing the topics firsthand. While you will receive some lectures in a classroom, you will also regularly venture out into the field for lectures, to conduct research, and to take field trips. On SFS programs, the field is your primary classroom. Lectures and classroom work support and enhance the work that you do in the field. Processing that information and applying it to your field work and research is key to our model.

Faculty mentoring: SFS students are closely mentored by our faculty teams. Every SFS field station is staffed with a center director and two or three full-time faculty who are trained in marine and terrestrial ecology, natural resource management, socioeconomics, and 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 receive training required to prepare them for their Directed Research projects.

Field research: During field exercises and Directed Research, students will learn field research techniques necessary to design experiments and gather data in the field. In addition, students will also be expected to analyze their data and write up their research into a scientific report/paper.

Field station: Home to dozens of scientists and researchers devoted to the research topics of their respective stations. Students join these dedicated teams — living, eating, and researching with them in pursuit of solving real-world environmental problems. Our 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 (including slow Internet connections).

Five-year research plan: 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 for the direction of student coursework and research projects and how such 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.

Service learning: SFS works on environmental issues critical to our host communities, researching topics, providing results, recommendations and volunteer work to local stakeholders. Such an integration of curriculum and service helps our students understand local community issues first hand. Examples of community service include planting trees, beach clean-ups, environmental education, tutoring students, and volunteering in local hospitals.

Sustainable living: At times, the constraints of operating in underdeveloped nations make living in a perfectly sustainable manner difficult and unreasonable. Sustainable living at our field station locations varies greatly from sustainable living in the U.S. Examples of how we live sustainably at some of our centers include students taking cold-water showers, composting, hanging clothes to dry, and using electronic PDFs for handouts and reports for classes.

EXPECTATIONS & RESPONSIBILITIES

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 program — including abuse of alcohol or use of drugs not authorized by a medical doctor, or uncooperative or disruptive behavior. 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 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 Salem, 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 anytime 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 various 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. Indeed, part of your challenge lies in adapting to changing conditions and overcoming the obstacles they may present.



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The School for
Field Studies

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