



THE SCHOOL FOR FIELD STUDIES

Environmental Field Studies Abroad

Kenya

Costa Rica

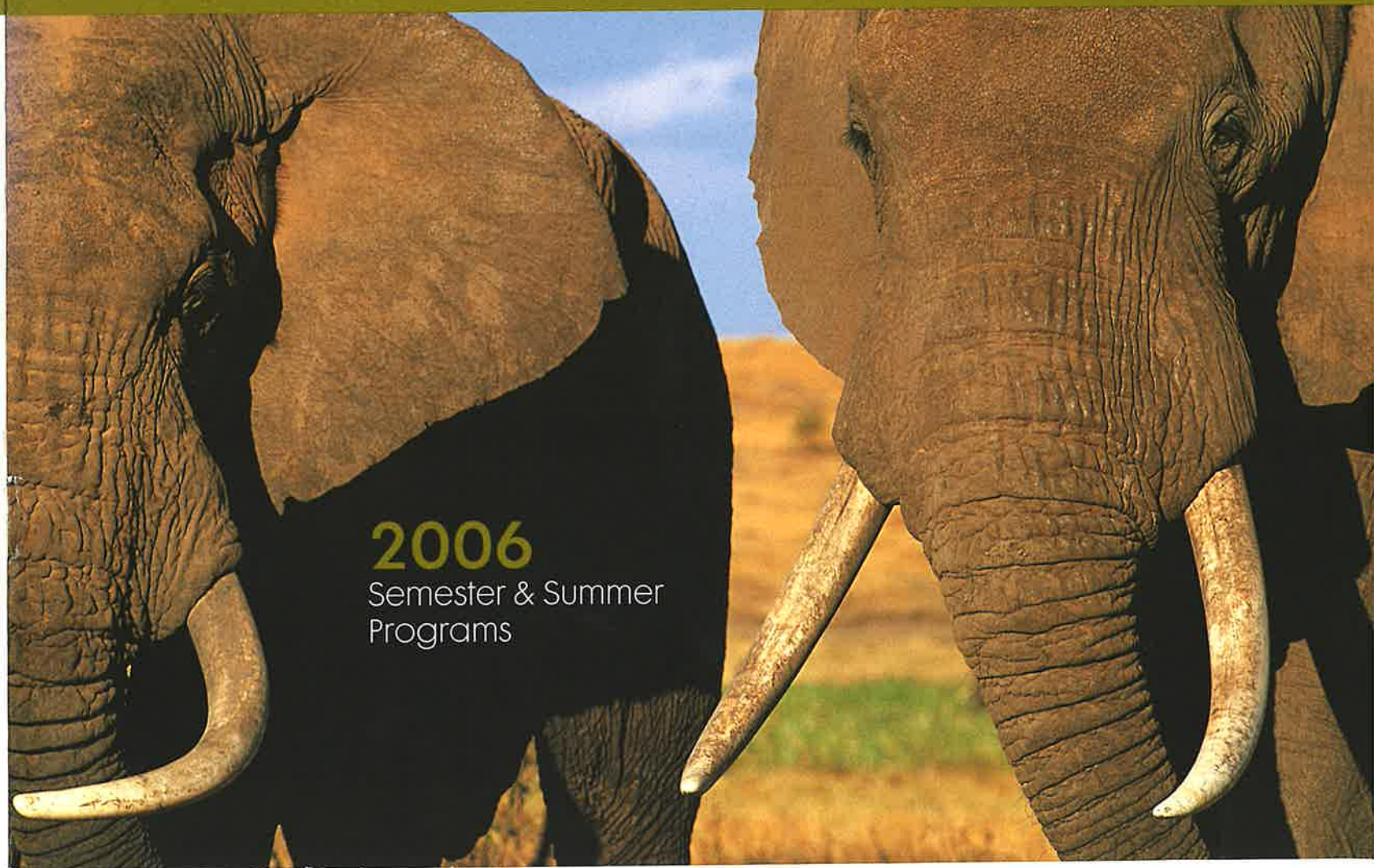
Australia

Mexico

Turks & Caicos

2006

Semester & Summer
Programs



Letter from the President

As SFS President I am often asked, *Why choose SFS? How does your program benefit students? What's new at SFS these days?*

With so many study abroad programs from which to choose, a student's final choice must come down to quality, reputation and results. For 25 years, SFS has been genuinely committed to providing our students with a top-notch academic and research experience in an international setting, all while working toward finding environmental solutions. Our hands-on, interdisciplinary, community-focused model really works for students. We take them into the field, teach them the complexity and interrelatedness of environmental issues and conduct research that resource-dependant communities want and need in order to make practical resource management decisions.



SFS students gain experiences and research skills that will enhance nearly any career goal. Each of our Centers has collaborated with local community leaders to develop long-term research plans that direct the academic and research work in which our students are trained. SFS staff and faculty are truly dedicated to the philosophy of experiential education and close mentoring in teaching both academic and life skills.

As we celebrate our twenty-fifth year of operation, more than 12,000 students have completed SFS programs. And so many SFS alumni who have enjoyed successful careers make it a point to let us know how important, and often pivotal, their SFS experience was in fashioning their subsequent academic and career choices. They are teachers, engineers, university professors, scientists, attorneys, veterinarians, medical doctors, public policy specialists, conservationists, and perhaps most importantly these days, they are global citizens.

It seems that nearly every day we are talking about *What's new at SFS*. From important new partnerships and grants to exciting research findings, and plans for new courses and locations - we continue to develop and introduce new ideas and resources at each of our five centers. Below are just a few new developments:

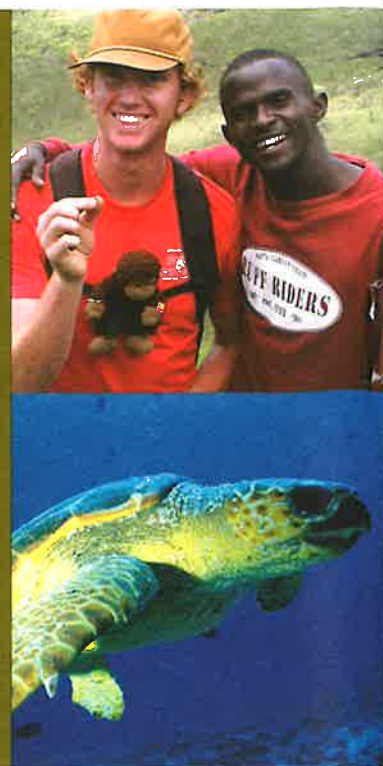
- a two-country semester as part of our Costa Rica program
- an accredited Swahili language and East African tribal culture course in our Kenya program
- an accredited West Indian culture course in our Turks and Caicos Islands program
- a Master in Forestry program co-sponsored with Northern Arizona University (2006)
- new grants and partnerships that support our 5 year research plans, and directly benefit the student experience.

SFS offers students an opportunity to learn technical and professional research skills at the heart of some of the world's environmental hotspots, a chance to learn from an international team of researchers, and the privilege of helping local communities by producing work valuable to *them*. I strongly encourage you to participate in an SFS program and become part of this legacy of environmental leadership.

Paul Houlihan
President

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Program Overview

The School for Field Studies – a legacy of environmental leadership

In the early 1980's, 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 worldwide.

On October 23, 1980 a small group of people met to establish an educational organization to address these needs. In the summer of 1981, SFS sent its first group of 75 students into the field. Today, with 24 years of environmental work behind us, SFS is known throughout the US as the premiere environmental study abroad program. Through our network of field stations, we have been teaching students how to work with local community partners to address critical environmental problems and create long-term conservation solutions.

Who studies with SFS?

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 our field research projects. 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 high-quality field research, they learn the value of experiencing another culture, 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.

Admission

SFS has rolling admissions year-round, and completed applications are considered on a first-come, first-served basis. Programs fill quickly, so we encourage you to submit your completed application early to ensure admission into the program of your choice. For details on How to Apply, please refer to page 28. You can now apply on-line from our website: 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 31 for details.

Semester Program Structure and Content

Semester programs run for approximately 95 days, including a 5 day midterm break (an opportunity to travel on your own). We compress a 16-week semester into 14 weeks, so be prepared for a very intensive but rewarding learning experience! The first half of the semester includes approximately fifteen 60-90 minute lectures a week plus 3-5 other academic activities (e.g., research/field exercise, group meetings, presentations and guest lecturers). Afternoons are often filled with field exercises and field trips. Academic activities occur 6 days a week with at least part of one weekday devoted to a community service activity.

Elements of the SFS Academic Program

SFS semesters are designed to train students to become competent field researchers. We identify the Directed Research projects for each student and then train them to carry out the projects through three courses delivered in a case study format.

Courses, Field Exercises, Directed Research Projects

Faculty provide the core lectures needed to understand the content areas pertinent to the case study and research questions (ecology, natural resource management, socio-economics and policy and directed research). Students are enrolled in 4 courses of 4 credits each, including the Directed Research project.

Examples of field skills taught in our programs

Animal behavior observations; census of populations; mark and recapture studies; radio tracking; habitat assessment and mapping; species identification; geology and soil identification; water sampling methods; research mapping; timber estimation; transect and patch sampling; reef monitoring; data recording/analysis; cost benefit analysis; valuation methods.

Summer courses: Condensed, month-long, 4-credit programs. Like our semester programs, they include lectures, field exercises, research and field trips. **Summer application deadlines:** Session I: April 1, 2006; Session II: May 1, 2006.

Financial Aid

Approximately one-third of our students receive SFS financial aid in the form of grants, scholarships and interest-free loans. If you need financial assistance, we encourage you to submit an SFS Financial Aid Application (available on our website: www.fieldstudies.org) as soon as possible.



Qualifying students may use a combination of federal financial aid (Stafford Loans, Pell Grant 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 29.

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 and Kenya semester students will now receive two additional credits (20 contact hours of language instruction; 20 hours of lecture, field and community activities) for our culture and language courses. Students in our Turks & Caicos program also receive an additional 2 credits with our new Caribbean Culture and Society course. We offer informal language instruction at our Mexico program. You will need to have completed at least one semester of college-level Spanish or otherwise demonstrate a level of proficiency 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 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 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. Students must have one college-level course in Spanish or otherwise demonstrate a working knowledge of conversational Spanish prior to participation.



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 has developed an extensive safety strategy over the past 25 years. It begins with conducting due diligence in our information gathering and in our ongoing risk analysis. We are one of the very few study abroad organizations to have a full time Safety Director whose sole responsibility is risk management, and one of the very few that require our staff to have emergency medical training. Each center has a Student Affairs Manager (SAM) whose primary responsibility is program safety, which includes 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 hour medical training). Other SAM training may include Wilderness EMT, Lifeguard, Emergency Water Safety, Rescue SCUBA Diver, British Canoe Union/American Canoe Association kayak training. We believe that educating students on safety issues is critical, both before and during the program. We have Risk Assessment Management Plans in order to anticipate and prevent incidents. We have contingency plans to respond to incidents should they occur. We conduct periodic 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.

SFS has a detailed plan in place designed to address safety concerns. Our plan includes providing students with safety information before they get to the field, minimizing risk while in the field and having contingency plans to effectively react to an emergency situation. Detailed predeparture information includes information on risks, safety, and health issues and a thorough on-site orientation to the country and community in which our students will be living.

HIGHLIGHTS TO THE SFS APPROACH TO PROGRAM SAFETY AND RISK MANAGEMENT INCLUDE:

- **Safety Director:** a full-time professional focusing on managing the risks in our programs by promoting a high awareness of safety through training and risk assessment.
- **Safety Advisory Committee:** comprised of experienced professionals with medical, international, and outdoor program expertise.
- **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.



SFS Faculty Profiles

SFS students are closely mentored by our faculty teams - this is key to the SFS educational model. 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, socio-economics and policy.

KENYA - Center for Wildlife Management Studies

SIMON K. OLE SENO, PH.D., CENTER DIRECTOR

Wildlife and Fisheries Science, Minor in Cultural Anthropology, University of Arizona

Seno went to school when most Maasai did not—he wasn't a good livestock herder, so his father directed him to school instead. Seno earned a B.S. in Range Science and an M.S. in wildlife ecology from New Mexico State University and his Ph.D. from the University of Arizona. He worked for the Kenyan government for over 7 years and taught at Moi University for more than 15 years. He has traveled extensively in Zambia, Zimbabwe, Botswana, Namibia and Uganda to study human related conservation problems. While most of Seno's training is in wildlife ecology and management, his recent focus is in human dimensions in natural resource conservation.

MOSES MAKONJO OKELLO, PH.D.

Wildlife Ecology and Management, University of Alberta (Canada); M.Sc., Wildlife Resources, University of Idaho; B.Sc., Wildlife Management, Moi University

Dr. Okello's research interests include wildlife conservation and ecology, human-wildlife interactions, the role of traditional institutions in resource conservation, spatial wildlife distributions and the influence of landuses on this distribution, and application of both GIS and biostatistical techniques in natural resource research.

JOHN WARUI KIRINGE, PH.D.

Wildlife Ecology and Conservation Biology, University of Leicester (UK) Kiringe's dissertation research work was conducted in Hell's Gate National Park and adjoining private ranches, where he looked at population dynamics and habitat preferences of large mammalian herbivores, as well as range primary productivity and the impact of livestock and wildlife on range condition. While a lecturer at the University of Nairobi he got involved in joint research activities on wildlife in some renowned conservation areas of Kenya. Since joining SFS his research work has focused on the value and conservation status of ethno-medicinal and other valuable tree and shrub species in a communally owned Maasai Group Ranch situated in the larger Amboseli Ecosystem.

SALATON TOME, M. PHIL.

Environmental Studies, Human Ecology, Moi University
Specializing in human/wildlife interaction, Tome has worked and carried out consultancies for international organizations such as the World Wide Fund for Nature and Pact/USAID on issues ranging from traditional mechanisms of managing natural resource conflict to sustainable development. Tome is a member of the Maasai community and hails from Narok district, which is home to the world famous Maasai Mara Game Reserve.

Australia - Center for Rainforest Management Studies

NIGEL BARTON, PH.D., CENTER DIRECTOR

Zoology, Glasgow University, UK

Prior to joining SFS, Nigel was Director of the Steppe Forward Programme, Zoological Society of London, living in Mongolia and coordinating a conservation program to provide local and professional Mongolians with skills necessary to design their own conservation initiatives. As a consultant for the Wildlife Conservation Society, Bronx Zoo, his work focused on defining management areas to help identify human-wildlife conflicts in the eastern steppes of Mongolia. Nigel's PhD research on raptor feeding ecology was followed by several years as a veterinary assistant and as director of a veterinary clinic specializing in raptor veterinary medicine. Nigel is keen to integrate research and communities in conservation bringing together NGOs, stakeholders, researchers and government to discuss environmental issues. As a professional zoologist, he has a wide interest and involvement in wildlife and habitat requirements.

AMANDA FREEMAN, PH.D.

Animal Ecology, Lincoln University (New Zealand); MSc Hons., Resource Management, University of Canterbury (New Zealand), BSc, Zoology, Auckland University (New Zealand)

Amanda's career has combined fisheries management, conservation policy, and ecological research roles in New Zealand and Australia. For her Ph.D. research, Amanda determined the degree of dependence of a New Zealand petrel species on a large-scale fishery, using Geographic Information Systems as a means to analyze and map seabird-fisheries interactions. Amanda's Masters research was on Maori involvement in National Park policy and planning. Her work with SFS now focuses on researching the ecological effectiveness of rainforest restoration and habitat requirements of upland bird species that may be detrimentally affected by climate change.

JASON CUMMINGS, PH.D.

Ecosystem Rehabilitation, University of New England (Australia), B.Sc., Hons., Animal Eco-physiology, University of Sydney (Australia)

After spending a winter radio-tracking freshwater turtles through the depths of night, Jason realized that animal ecology was not for him. By experimenting with a suite of options for the restoration of Lantana infested Eucalypt plantations Jason gained experience in the responses of plants, soils and animals to differing disturbance regimes. Jason now manages SFS's rainforest seedling nursery, conducts research into enhancing local restoration techniques, functional traits of rainforest seedlings and epiphyte distribution and abundance, and teaches forest management.

Costa Rica - Center for Sustainable Development Studies

NOLAN QUIROS, PH.D., CENTER DIRECTOR

Ph.D. in Agricultural Economics, Oklahoma State University, LL.M., International Environmental Law, American University; J.D., University of Costa Rica

Nolan started his professional career as a lawyer in Costa Rica with a great interest in international trade issues. He later worked as a researcher for the Center for International Environmental Law and as a visiting scholar for the Environmental Law Institute, focusing on the impact of trade in the environment, and he participated in the Costa Rica-Mexico Free trade agreement negotiation team. Nolan returned to the U.S. as a Research Associate at the Oklahoma State University Policy Center where he finished a Ph.D. in Agricultural Economics, focusing on the effect of US Agricultural Programs on the economy and the environment. He has collaborated with the US Department of Agriculture in a variety of US domestic projects and with the Organization of Economic Cooperation and Development in Paris on international environmental research.

JUAN AGUIRRE, PH.D.

Agricultural Economics & Economic Development, Cornell University. Juan has extensive experience in the area of agricultural and natural resource economics and has been a consultant to IDB, USAID, World Bank, IFAD, UNEP, FAO, OAS, IICA and CATIE where he was a former dean of the graduate school. He has been a visiting professor at Universidad Latina de Costa Rica where he taught Economics of Education and Economics of Outdoor Recreation and Ecotourism. His areas of specialization and interest include agricultural and forest policy, environmental and natural resource economics, and environmental accounting. His current research at SFS focuses on assisting local coffee growers in designing, developing and applying protocols at the farm level for organic agriculture certification. Juan is also an advisor to the Costa Rican Congressional Committee on Agriculture and Natural Resources.

GERARDO AVALOS, PH.D.

Biology, University of Missouri-St. Louis.

Gerardo was trained in the physiological ecology of tropical lianas and worked on the canopy crane set up at the Smithsonian Tropical Research Institute in Panama. His Ph.D. thesis examined light acclimation of lianas to temporal and spatial changes in light availability at the surface of the canopy. His current research interests include the response of tropical montane forests to global warming, the biomechanics of woody palms, the ecophysiology of tropical lianas, the effects of habitat fragmentation on the conservation of local and migratory bird species, the impact of illegal extraction on the population biology of tropical palms, and the population cycles of aquatic macroinvertebrates. He has taught at the University of Costa Rica, EARTH University, and ACM.

Mexico - Center for Coastal Studies

FRANCISCO OLLERVIDES, PH.D., CENTER DIRECTOR

Wildlife & Fisheries Science, Texas A & M University

Over the past ten years, Paco, as he is known, has been involved with SFS in various capacities—from sponsored student at the original Marine Mammals program in La Paz, to intern in Mexico and Costa Rica to faculty in Mexico. While conducting research for his Ph.D., Paco arrived with the whales every spring for the first four years of the Center for Coastal Studies programming in Puerto San Carlos. His doctoral studies involved assessing the impact of whale-watching activities on the bio-acoustic behavior of gray whales in Magdalena Bay. Just prior to re-joining SFS as Center Director in Mexico, Paco was coordinator of the Nature Guide Training Program within the Ecotourism and Community Development Program at the RARE Center for Tropical Conservation in Sian Ka'an Biosphere Reserve, Quintana Roo, Mexico.

CAMILA HENRIQUES, PH.D.

Deep-sea Fish Biology, The University of Aberdeen.

While studying for a B.S. in Zoology (Marine and Fisheries Biology) at the University of Aberdeen (Scotland) Camila participated in a coral reef conservation project in the Philippines, carrying out dive surveys to evaluate the level of natural vs anthropogenic damage to the coral, and worked on a revision of the family Stauroteuthidae, Octopoda for her final year project. Over the past four years Camila has participated in various research cruises to the Eastern Atlantic Ocean during which she learned diverse sampling techniques used to gather information on pelagic, benthic and infaunal organisms for her PhD project on the distribution and behavior of deep-sea fishes.

Turks & Caicos Islands - Center for Marine Resource Studies

DAVID WILSON, PH.D., CENTER DIRECTOR

Ph.D. in Marine Ecology, James Cook University & the Australian Institute of Marine Science

Dave's education and fieldwork research have focused on coral reef and reef species ecology. His thesis focused on the patterns and processes of coral reef fish larval supply to the San Blas Archipelago, Caribbean, Panama. Dave spent two years with the Smithsonian Tropical Research Institute in Panama City as a Pre-Doctoral Fellow. Before joining SFS, Dave worked as a project leader for the Department of Marine and Wildlife Resources in Pago Pago, American Samoa. His program, the 'Biology and Ecology of Key Reef Species,' was part of a territory-wide coral reef monitoring program that the department committed itself to developing.

CHARLOTTE DE FONTAUBERT, PH.D.

Marine Studies (Marine Policy), University of Delaware

Charlotte's experience in marine conservation spans 10 years and ranges from the Foreign Committee of the United States Senate to the establishment of marine parks in East Africa. She also ran the Greenpeace oceans campaign in the US for two years. Charlotte completed her Master's degree in Marine Policy at the London School of Economics and a Ph.D. in Marine Studies at the University of Delaware. She is now on her third stint teaching marine policy with SFS in TCI, having taught there in 1997 and 2000. She has also taught at the University of Delaware and American University in Washington, DC. Her current interests include marine park management and effectiveness and monitoring of coral reef health.

AARON C. HENDERSON, PH.D.

Zoology, National University of Ireland, Galway

Aaron's primary research interest is in the biology and ecology of the elasmobranch fishes – sharks, skates and rays. His Ph.D. investigated the reproductive biology, diet, parasitology, and age and growth of various shark species occurring in Irish waters, including the blue shark *Prionace glauca* and the spiny dogfish *Squalus acanthias*. He has subsequently worked with the Falkland Islands Fisheries Department and the Department of Marine Science and Fisheries at Sultan Qaboos University (Oman), where he lead a government project to establish the distribution and biology of sharks in Oman's coastal waters. Since arriving at SFS Aaron has initiated research into the role of South Caicos as a nursery ground for lemon sharks *Negaprion brevirostris*, and additional projects focusing on the shark and ray species that occur around South Caicos are being developed. In addition to shark-related research, Aaron is also investigating the role of finfish in the commercial fisheries around South Caicos and their ability to withstand fishing pressure.

Wildlife Management Studies

Kenya

ENVIRONMENTAL ISSUES

U

rban, industrial and agricultural expansion and Kenya's soaring population increasingly threaten the habitat required by Kenya's wildlife. Lion, elephant, giraffe, rhino, monkey, zebra and other indigenous wildlife are the country's most famous and economically valuable resource, the result of a well-developed global tourism industry. Nomadic peoples, such as the Maasai and the cattle herds they depend upon, are being confined to smaller plots of land, resulting in overgrazing and rangeland degradation. Such rangelands where wildlife and pastoralists previously interacted freely and peacefully are now places of rapidly increasing human-wildlife conflicts and resource competition. Land, water, pasture and space are diminishing every year, posing great challenges to wildlife and environmental conservation. The wildlife, which has co-existed for centuries with these non-hunting peoples, are now not only seen as competitors, but are themselves intensely persecuted through illegal practices such as snaring for bush meat trade. Threats to wildlife in dispersal areas outside protected areas are many, but even in protected areas where they seemed safe, negative impacts of tourism and administrative activities are causing another serious danger to biodiversity objectives.

The search for ecologically appropriate solutions to the conflict between human and industrial pressures, such as food production needed to support a growing population, and wildlife habitat is urgent. ■





"We've learned so much about the local culture...and the challenges caused by the current drought and over population of both humans and animals. We've interacted with the community, visited an orphanage, observed first-hand the impact of tourism in Amboseli National Park, and still we've had time to enjoy Kenya's wildlife to its fullest, including a lion taking a drink just a few feet from our Land Cruiser."

Jim Grieco

Paradise Valley Community College



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 to speak Swahili. Learn about East African tribal culture. Explore human-wildlife conflicts from the perspective of the Maasai and park managers. Research ways to preserve traditional Maasai culture and wildlife viability.

Semester Program in Wildlife Ecology and Management

Kenya



OUR RESEARCH IN KENYA

Our research focuses on exploring innovative ways in which Kenya's wildlife can be both conserved and utilized as an income source to benefit the local community. Identifying appropriate land-use practices that enable local Maasai and other residents to maximize and sustain production without degradation of the environment is equally important.

The diverse habitat surrounding our Kilimanjaro Bush Camp is used by wildlife as a migration corridor between Tsavo and Amboseli National Parks. The Maasai also depend upon this same area as a communal grazing zone for livestock as well as for growing food. As a result, they often face economic hardship due to crop damage and loss of livestock inflicted by migrating wildlife. Students interviews with local Maasai help us gather data and gain a perspective on the priorities and challenges of addressing wildlife conservation among resource-constrained communities. Students also learn about ecological and land-use characterization of the area. Student research is 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.



KENYA



While based at our National Park Camp, students focus on management strategies for Kenya's oldest and most profitable national park. Increased development around Nairobi National park threatens its biological integrity and has led to the decline of large mammal populations. Pollution threatens the water supply and plays a role in the mortality of numerous birds and animals. Increased human and livestock populations in areas surrounding the park are leading to intensified human-wildlife conflicts, including disease and destruction of crops by migrating wildlife. SFS students are assisting the Kenya Wildlife Service (KWS) and managers of the park through a suite of research projects including: vegetation mapping; grazing and browsing impact surveys; large mammal population counts and distributions; educational facility upgrades; and human impact in the park.



"The focus on specific ecological and environmental

concerns in order to directly benefit resource-dependent communities is indicative of the special value of these programs. Students are asked to place their interdisciplinary study experience within the larger concentric circle of the local population and those things that are really affecting their lives. Together, they search at discerning the practical, viable solutions to these problems that ultimately enhance the quality of life of these communities. This, to me, is 'Study Abroad, with a conscience.'"

Adrian Beaulieu, Associate Dean for International Study
Smith College



OUR FIELD STATION IN KENYA

Our Kilimanjaro Bush Camp is located southeast of Nairobi on 25 acres of fenced land at the foothills of Mt. Kilimanjaro, bordering a permanent river fed by natural springs. Adjacent to the river is a lush zone of yellow Acacia trees with clear undergrowth giving a perfect view of the magnificent vegetation mosaic. Across the river is Kimana High School, where SFS students enjoy a rare opportunity for cultural exchange with Kenyan youth and to visit nearby Maasai *bomas* (villages).

Semester students spend two weeks on expedition at our National Park Camp, which is located on 60 acres of the Athi-Kapiti plains, on the southern border of Nairobi National Park. The combination of rocky outcrops, riverine vegetation, bushland and open grassland support amazing biodiversity. From the plateau and ridge above the camp, one can look down into the park and spot giraffe, buffalo, rhino, zebra, cheetah, lion and even leopard. The Ngong Hills and the Mbagathi River, where wildlife commonly crosses between the park and the dispersal area, are also within view.

At both camps, students sleep in thatched-roof *bandas*, with a main building, or *chumba*, which houses a dining room, kitchen, classroom and library. Additional facilities include a *duka* (shop), bathrooms and open-air showers.

VISIT OUR WEBSITE FOR A PHOTO
TOUR OF OUR FIELD STATION:
WWW.FIELDSTUDIES.ORG

Field Research, Exercises and Lectures

Through our interdisciplinary approach and a combination of lectures, expeditions, field exercises and research, students learn techniques for wildlife management, wildlife ecology, environmental policy and socioeconomic values. Field expeditions enable students to observe the pros and cons of various management scheme alternatives. Field expeditions might include:

- Amboseli Elephant Research: students gain excellent experience learning elephant ecology and wildlife management techniques through recording elephant sightings, collecting census data, understanding ecological keystone as well as tourism flagship roles and examining human–elephant conflicts.
- Maasai Mara: multi-day field trip that frequently includes sightings of lion, leopard and buffalo and a visit to the hippo pools. Hyena cries can be heard at night; by day, students conduct vegetation analyses comparing fenced and open grazing areas.
- Manyatta: rare opportunity to glimpse Maasai culture, including rural settlements not usually visited by tourists. Recent trips have involved students in a musical ceremony by Maasai women, 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.

Student Directed Research Projects

- Population Dynamics, Distribution and Vegetation Preference of Specified Fauna Residing in Nairobi National Park.
- Rangeland and Grazing Capacity Assessment of the Grasslands of Nairobi National Park.
- Land-Use Patterns and Human-Wildlife Relations in the Southern Dispersal Corridor of Nairobi National Park.
- Large Mammal Dispersal Corridors and Dispersal Areas: human activities and structures causing contraction of wildlife dispersal area, and implications for neighbouring protected areas such as Amboseli.
- 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.
- Human population growth and structure, their distribution and use of resources, and implications of these on wildlife conservation in communal Maasai rangelands.

Center Contributions – Making a Difference through Research

SFS has been in Kenya for more than 20 years and many hours of student research have contributed to management plans for game ranches, several Maasai group ranches, and national protected areas, such as Nairobi National Park. A few recent contributions include:

- Collaboration between the Elephant Research Project and SFS on a proposal to US Fish and Wildlife(USFW), entitled “Mitigating Human-Elephant Conflict in the Amboseli Ecosystem, Kenya” resulting in the USFW funding the project for three years (with additional contributions from Born Free and the International Fund for Animal Welfare).



- Feasibility study for the establishment of another Maasai-owned wildlife sanctuary in Kuku Group Ranch. Student research has become the basis for a funding proposal to establish a new sanctuary, and this year (2005), the group ranch members voted to establish the wildlife sanctuary and seek funding.
- Socio-economic impacts assessment of the Kimana Wildlife Sanctuary, the first private reserve operated on a Maasai group ranch.
- Collaboration with local Maasai and the KWS to conduct the first assessment of water and grazing resources in the Ngong Hills. Decisions regarding stock rotation and use of pasturelands were based on student findings.
- Assistance in building a library in the town of Magadi and teaching the local schoolchildren about the environment.

Connecting with the Local Community

One of our primary goals is to understand community views on wildlife, the challenges faced and management policies employed by park managers. We maintain strong ties to community members, including park wardens, ranchers, farmers, pastoralists and others. Students have many opportunities for social interaction including:

- 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, and to conduct interviews for research work.
- Discussions on tribal culture with field station staff who come from various regions of Kenya and belong to several Kenyan tribal groups including Kamba, Maasai and Luo.
- 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.

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. For more information on our summer program in Kenya, please see page 26.

COURSES

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

- BI/EE (NS) 371 Techniques of Wildlife Management (4 credits)
- BI/EE (NS) 372 Wildlife Ecology (4 credits)
- EE (SS) 302 Environmental Policy and Socioeconomic Values (4 credits)
- EE 491 or 492 Directed Research (4 credits)
- LE 205E Introduction to Swahili Language and East African Tribal Communities (2 credits)

See page 24 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.

SEMESTER PROGRAM DATES

Spring 2006: January 30 – May 4

Fall 2006: September 11 - December 14

Costa Rica

Sustainable Development Studies

ENVIRONMENTAL ISSUES

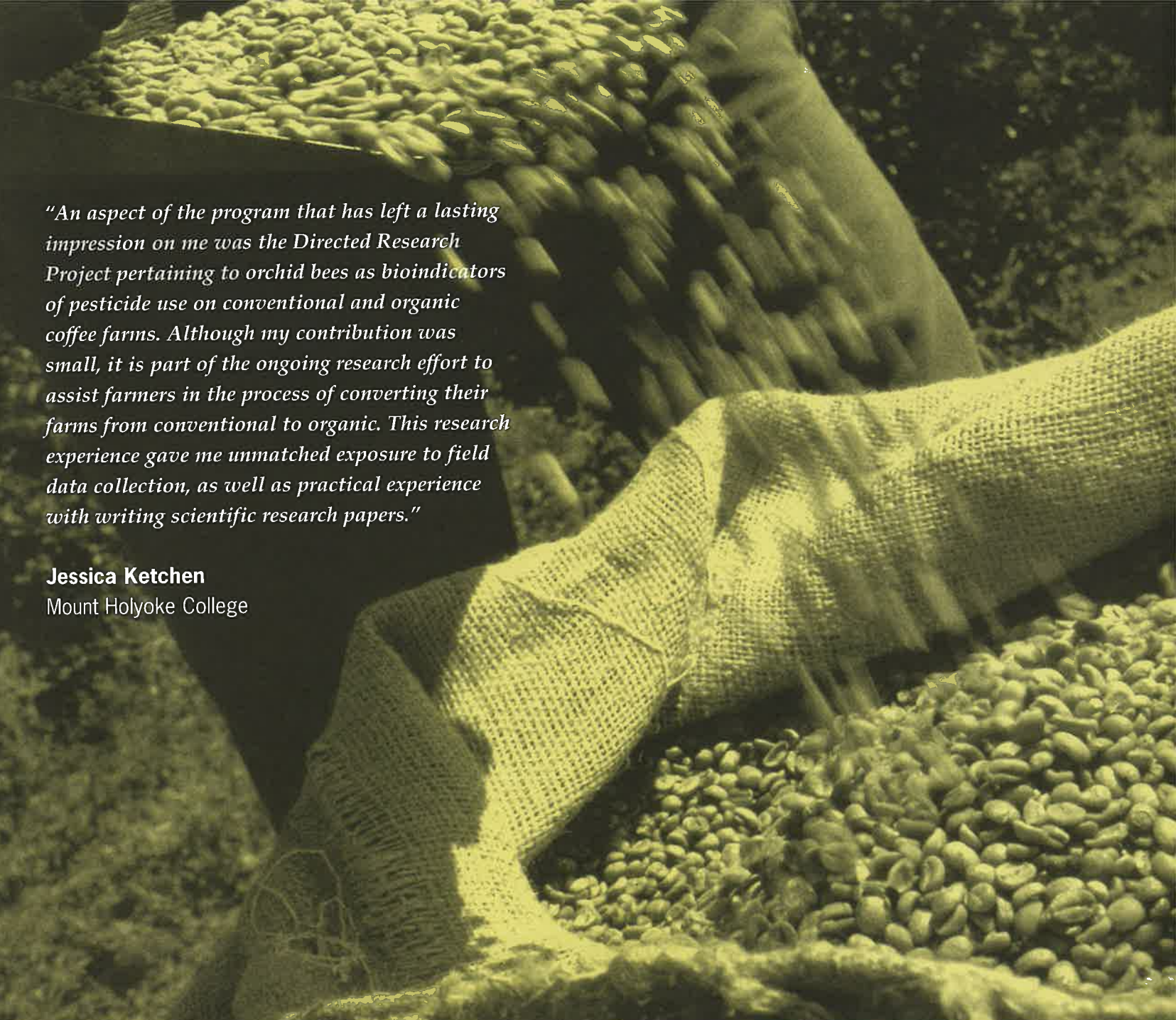
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iscovering ways to strike a balance between protecting precious ecosystems while helping communities use their resources wisely is of critical concern in the developing tropics. While

Costa Rica is internationally recognized for its efforts to ensure biodiversity and protect natural resources, the country has experienced significant resource degradation linked to population growth, industry and development—all of which threaten to ruin this tropical paradise. The country supports more than 5% of the world's biodiversity and boasts 230 different protected areas (about 25% of the country). The cloud forests, rainforests, volcanoes and mountain plains here shelter as many as 6,000 plant species, including at least 1,000 orchid varieties alone. More than 500 species of butterflies and over 800 bird species, such as quetzals, toucans, hummingbirds and scarlet macaws, are found in the wet and/or dry forests. The magnificent beaches bordering both coasts are among the world's largest-known nesting grounds for sea turtles.

Costa Rica now faces a struggle common to developing countries in a global economy: preserving beautiful (and economically valuable) natural resources while increasing prosperity and allowing for sustainable development. A particular challenge is maintaining biodiversity in the face of competing land use, such as urban growth, foreign investment in resorts and big hotels, agriculture driven by export products such as flowers and bananas, and ensuring that Costa Rica's world-famous parks benefit surrounding communities as well as ecotourism development. It is crucial that effective alternatives and strategies are developed to ensure long-term sustainability of the country's rich resources. ■





"An aspect of the program that has left a lasting impression on me was the Directed Research Project pertaining to orchid bees as bioindicators of pesticide use on conventional and organic coffee farms. Although my contribution was small, it is part of the ongoing research effort to assist farmers in the process of converting their farms from conventional to organic. This research experience gave me unmatched exposure to field data collection, as well as practical experience with writing scientific research papers."

Jessica Ketchen

Mount Holyoke College



EXPLORE COSTA RICA'S INCREDIBLE BIODIVERSITY AND UNIQUE ECOSYSTEMS.

Learn about tropical ecology, economics and understand the socio-cultural issues related to the natural resource management challenges in world-renowned protected areas. 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 research expedition. Become a member of the warm and welcoming community of Atenas and sharpen your Spanish conversation skills.

Costa Rica

Semester Program in Sustainable Development



ATENAS, COSTA RICA



OUR RESEARCH IN COSTA RICA

Costa Rica is currently undergoing a period of great economic and social change. As this resource-rich country continues along a path of rapid development, it is becoming increasingly influenced by global policy such as the Central American Free Trade Act (CAFTA) and foreign markets. Costa Rica's economy has shifted from an economy predominately based on agriculture to one driven by ecotourism and technology exports. At the same time, the population continues to rapidly increase, straining natural and developed resources. The country now faces a critical juncture as resource management decisions are being made in an effort to keep pace with competitive global markets. Our goal is to examine different sustainable management models that protect the biodiversity of Costa Rica's ecosystems while promoting socio-economic benefits for its people.

Students will examine the effects of globalization on classic sustainability issues such as agro-ecology, national park protection, economic development, urban sprawl, population growth, trash management, air quality, etc. Student research focuses on evaluating the success

of Costa Rica's world renowned management systems as well as developing alternative strategies, such as organic agriculture, that conserve biodiversity and protect natural resources. Visits to cloud forests, dry forests, volcanic parks, 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 that are driving Costa Rica's policies will be key as students develop natural resource solutions for Costa Rica, and hopefully, beyond.



"After collecting macroinvertebrates in the morning we had a tour of Braulio Carrillo rainforest. Right there in the middle of the rainforest we sat down and had a lecture - it was truly a unique experience... where else is your classroom the humming, vibrating rainforest?"

Emily Shellabarger
Whitman College

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 large house, an outdoor classroom, an organic garden, a patio and pool. Students live in a dormitory (up to 4 to a room) with bathrooms. There is a classroom, small laboratory and a library/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 a short walk from the field station while Costa Rica's tropical forests, beaches, mountains and volcanoes are within a day's travel.

NICARAGUA

Semester student research takes them on an expedition to Nicaragua to compare and contrast development directions, flora and fauna, as well as the differing political history and culture between the two countries.



VISIT OUR WEBSITE FOR A PHOTO
TOUR OF OUR FIELD STATION:
WWW.FIELDSTUDIES.ORG

Field Research, Lectures and Exercises

Field trips, lectures and exercises are interdisciplinary and teach students about tropical ecology, agro-ecology, socio-economics, sustainability, park management, natural resource management, ecological economics and Costa Rican history, culture and the Spanish language.

- Nicaragua: extended field expedition to compare and contrast development and resource use issues between the two countries.
- Santa Rosa National Park: camping trip to explore a rare and threatened tropical dry forest ecosystem, site of one of the largest forest restoration projects in Latin America.
- Volcan Poas National Park: investigate parks and people relations and park facility and visitor information needs and learn about cloud forest ecology.
- Braulio Carrillo National Park: learn about bio-indicators of ecosystem health and rainforest ecology.
- Carara National Park: see the reintroduction of bird species in the park and learn about forest dynamics and food webs.
- Volcan Arenal National Park: examine the pressures that eco-tourism places on small communities.
- Eternal Children's Rainforest Private Reserve: visit the largest private reserve in Latin America initiated by donations from elementary school students from around the world.
- Rincon de La Vieja National Park: camping trip to the cloud forest and volcanic mud piles.

Student Directed Research Projects

- Impact of illegal extraction of heart of palm on the population growth of *Euterpe precatoria* and development of sustainable use alternatives.
- Long-term monitoring program of the Avifauna of Braulio Carrillo National Park. Analysis of the impact of the highway as a fragmentation factor on bird diversity and distribution.
- The effects of international policies on agro-ecology systems.
- Impact of seasonal changes in the abundance and diversity of aquatic macroinvertebrates as indicators of water quality in two pristine streams of Braulio Carrillo National Park.
- Volcan Poas National Park visitor's satisfaction study.
- Seasonal changes in the colonization of tank bromeliads by canopy arthropods in the Cloud Forest.
- Evaluation of the socio-economic benefits between Guayabo National Park and its surrounding communities.

Center Contributions – Making a Difference through Research

- Presentation of our research results and proposed model of development at a meeting of the Costa Rican Ministry of Energy and Environment.
- Request by the President of Costa Rica to help design a national 15-year environmental strategy for Costa Rica.
- Visitor services and expectations for Mombacho National Park in Nicaragua.
- Environmental waste management and recycling education programs.
- Evaluating and making recommendations for an environmental education program piloted at an elementary school in a community surrounding Volcan Poas National Park.
- Developing and monitoring water quality indicators for Braulio Carrillo National Park.



Connecting with the Local Community

We spend significant time communicating with local residents, small business owners and farmers to better understand their perspectives and needs. Activities might include:

- Monitoring and maintaining trail infrastructure at the Municipal Forest with the local high school and Municipality.
- A full Spanish presentation of the results of the research conducted during the semester to government agencies.
- Long term community projects: US culture taught in the elementary school, fighting diseases in Atenas, trail management and construction in the Municipal Forest.
- 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 international development, economics or anthropology. Students must have completed at least one college level course in Spanish or otherwise demonstrate a working knowledge of conversational 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. For more information on our summer program in Costa Rica, please see page 26.

COURSES

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

- EE(NS) 377 Tropical Ecology and Sustainable Development (4 credits)
 - EE(SS) 303 Economic & Ethical Issues and Sustainable Development (4 credits)
 - EE(NS) 374 Principles of Resource Management (4 credits)
 - EE 491 or 492 Directed Research (4 credits)
 - (LS) 205E Language, Culture and Society of Costa Rica (2 credits)
- See page 24 for course descriptions.

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 research projects. The socio-culture module helps students develop a more refined understanding of Costa Rican culture.

SEMESTER PROGRAM DATES

- Spring 2006: January 30 - May 4
- Fall 2006: September 11 - December 14

Mexico

Conserving Marine Mammals & Coastal Ecosystems

ENVIRONMENTAL ISSUES

D

espite nearly two decades of conservation efforts, important sea turtle species are sliding towards extinction worldwide. Bahía Magdalena is an area of profound ecological significance and physical beauty. As one of the largest remaining and relatively intact coastal wetland/lagoon systems along the Pacific coast of the Americas, 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 rich biodiversity, though dependant upon a very delicate ecosystem.

The Bay is an important feeding ground and nursery area for East Pacific green turtles, Loggerheads, Olive Ridleys and rare Hawksbill turtles, and 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. Perhaps the most spectacular of the Bay's inhabitants are the California Gray whales. Bahía Magdalena is one of the three most important calving areas for the entire California Gray whale population, and hundreds of these animals can be found here between January and April.

Bahía Magdalena has also played a critical role in supporting its human residents. A growing tourism industry, based on whale watching, provides income for many residents, and fishermen ply the waters for commercially important species, including shrimp, blue crab, lobster, scallop and fish. Unfortunately, critically endangered sea turtles are caught as by-catch in these fishing operations.



"Collecting data about sea turtle mortality made us more aware of the social and natural problems that this organism encounters...This definitely encouraged us to give our best in order to help as much as we can in the conservation of sea turtles, as well as marine mammals and the great ecosystem in which we have the chance to be living."

Eglé Flores González

Universidad de las Americas Puebla



Most local residents are economically dependent on the Bay's marine resources, yet little research has been done on this ecosystem and the ways in which its resources may be sustainably used. 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. There is consensus among researchers and U.S. and Mexican governments that protection of this unique ecosystem is vital. The question remains—how can resource conservation and community economic development be balanced in a sustainable way, to the benefit of both? ■



RESEARCH ISSUES CRITICAL TO ENDANGERED SEA TURTLES' SURVIVAL.

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

Mexico

Semester Program in Marine Mammal Conservation & Coastal Ecosystems



BAHÍA MAGDALENA, MEXICO



OUR RESEARCH IN BAHÍA MAGDALENA

In addition to our year-round research in the management of critically important fisheries and water quality issues in Bahía Magdalena, our unique location allows students to concentrate on very different but equally fascinating species each semester. Students in the fall and summer semesters research conservation strategies to protect several marine turtle populations reduced to near-extinction. Despite strong regulations against their exploitation, green turtles are still frequently poached for their meat and eggs and are caught as by-catch in the harvesting of other marine resources. A complex interaction of community social and cultural factors, lack of protected area sanctuaries, lack of enforcement of existing regulations and economic hardship in local communities has led to the continued exploitation and the rapid decline of sea turtle populations throughout Mexico.

In Bahía Magdalena, which is a key nursery and feeding ground for the green turtle, there is no comprehensive recovery or protection plan for sea turtles. Students gather data to help understand the condition of the various habitats of the Bay 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 and conservation groups, and governmental agencies is contributing to the development of a conservation and management plan for the sea turtle.

Spring semester students, while continuing our research on turtle conservation, also focus on applied ecology of the gray whales and a socio-economic analysis of whale watching activities. Since commercial whaling was banned in 1946, the gray whale population is thought to have recovered to around 24,000 whales. Only four calving and mating grounds for this species are known to exist and Bahía Magdalena is the only one not currently protected. The recovered population now drives a growing whale watching industry, which creates new problems that require field research to understand and resolve them.

Our research also focuses on sustainable harvesting and management of important commercial marine resources. SFS students interview fisherman, explore changes in fishing technology, and collect and analyze catch data as part of our efforts to help regulators and harvesters develop more sustainable management strategies for the fisheries of Bahía Magdalena.



"Being in Baja let me know that I could do whatever I set my

mind to. I went without knowing Spanish and came home having friends who spoke no English - the real education comes from the people. Being in Baja opened my eyes to another culture - one with which I fell in love. It completely changed my world-view."

Meghan McGrath
Saint Anselm College

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 4-person cabins. Additional facilities include a computer room, library, classroom, laboratory, kitchen, dining and study areas and a bath/shower house serviced by our artificial wetland waste water treatment system. Faculty live in cabins on site.



Field Research, Lectures and Exercises

- Use of microbial mats in bioremediation, water quality sampling and testing, and environmental impact and economic importance of local industries in Bahía Magdalena.
- Visit to island village of Puerto Magdalena to learn about the fascinating culture of a small, communal fishing cooperative.
- Field trip to the Estero San Buto aquaculture farm to see an example of alternative fisheries.
- Expedition to intertidal zones of Bahía Santa Maria to illustrate the incredible diversity of local marine life.
- Camping and kayaking trips to offshore Islands to explore the area's rich biodiversity, stark dunes and pristine white beaches.
- Collecting GIS data for the local government, fishermen and tourism operators to help them design community-supported Marine Protected Areas.

Center Research – Making a Difference through Research

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 that have been 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 developing 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 led to a safe increase in whale watching permits and better adherence to regulations.
- Management plan for regional sustainable development created by a student-initiated, community-based conservation plan.
- Joint SFS, government and local fishers' exploration of alternative shrimp net designs to reduce by-catch and destruction of the fragile bay bottom.
- Socio-economic analysis of blue crab fishery, providing valuable data to the Puerto San Carlos Office of Fisheries to assist in developing management strategies for this critical resource.
- Sea turtle research leading to increased awareness and stewardship for this endangered species.

Student Directed Research Projects

- Economic benefit and socio-economic analysis of whale-watching in Bahía Magdalena.
- Assessment of the implementation of a sea turtle protected area and monitoring turtle populations.
- Monitoring anthropogenic impact on the water quality of Bahía Magdalena.
- Gray whale abundance, distribution and behavior during breeding season in Bahía Magdalena.
- Regional environmental education model: marine mammals and sea turtles as a tool for involving teachers in curriculum development.
- Analysis of the socio-economic effects of proposed marine protected areas on local fishers, tourism operators and the community.
- Biological and socio-economic analysis of aquaculture and active fisheries in Bahía Magdalena.



Connecting with the Local Community

Our program is oriented toward helping the community conserve its natural resources and develop sustainably. In addition to working with local clients and interviewing community leaders, SFS students enjoy getting involved in community volunteer projects and social activities such as:

- Participation in the Puerto San Carlos Grey Whale and Sea Turtle Festivals.
- Teaching English classes for local school children.
- Spanish lessons throughout the program, which help sharpen conversational and cross cultural skills.
- Participation in folkloric dance classes, Mexican holiday celebrations, short homestays and hosting community events at our field station to deepen students' experience of a different culture and connection with the local community.
- Local sports, community meetings, conservation activities and environmental education programs for local school children.

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. For more information on our summer program in Mexico, please see page 26.

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.

COURSES

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

BI/EE (NS) 379 Coastal Ecology (4 credits)

EE (NS) 374 Principles of Resource Management (4 credits)

EE (SS) 303 Economic & Ethical issues in Sustainable Development (4 credits)

EE 491 or 492 Directed Research (4 credits)

See page 24 for course descriptions.

SEMESTER PROGRAM DATES

Spring 2006: January 30 – May 4

Fall 2006: September 11 – December 14

Tropical Rainforest Management Studies

Australia

ENVIRONMENTAL ISSUES

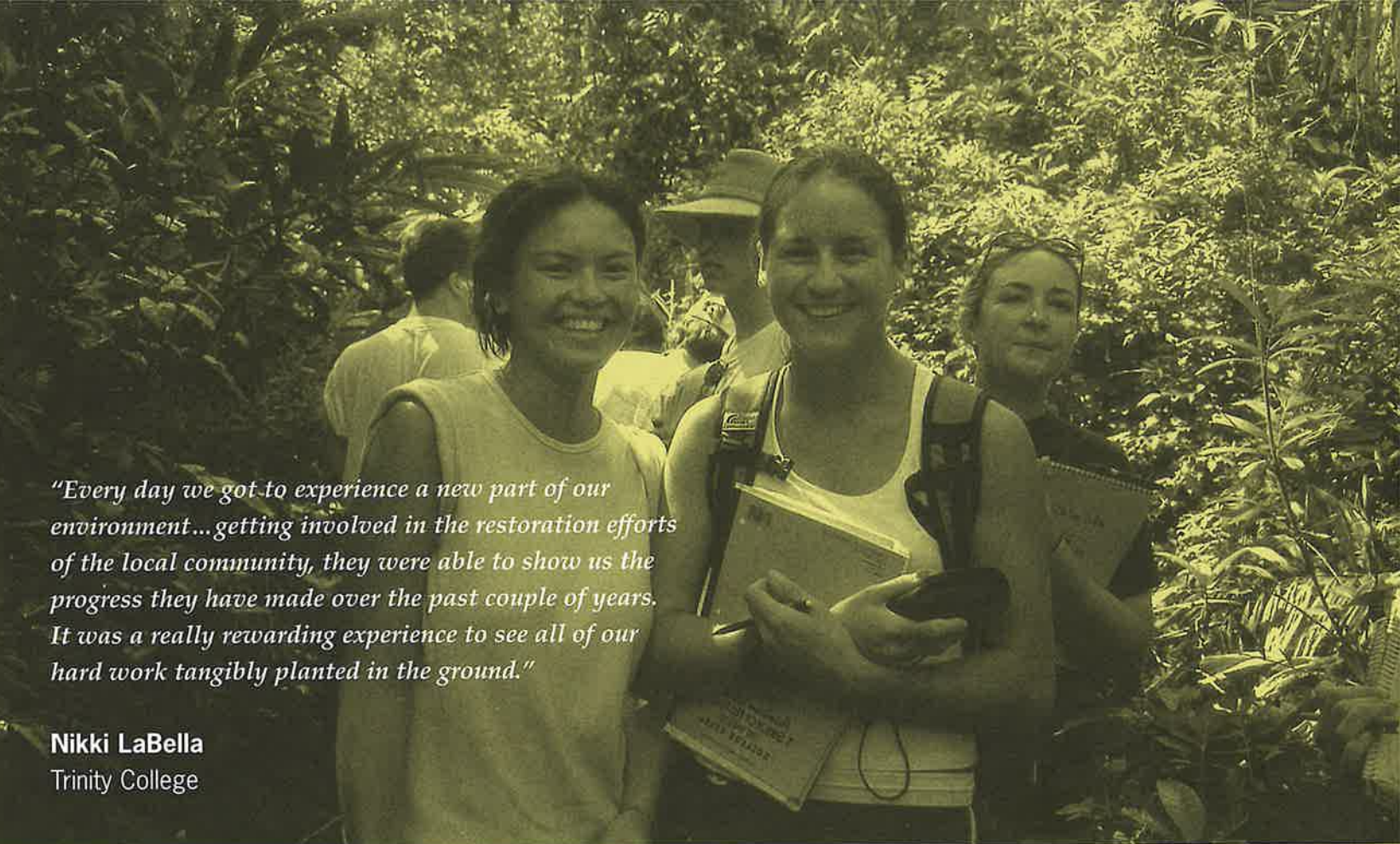
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ainforests are one of the world's most important and diverse ecosystems yet thousands of acres disappear each day. Along with the loss and fragmentation of rainforest areas, global climate change may be playing an important role in influencing the loss of plant and animal species.

Australia's spectacular tropical rainforests are home to numerous primitive plant species, birds and marsupials found nowhere else in the world. Giant strangler figs, Australian king parrots with their brilliant crimson and green plumage, sulphur-crested cockatoos, rainbow lorikeets, abundant epiphytes, 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 and fragmentation, and likely global climate change. Furthermore, for thousands of years the tropical rainforest of Queensland has been home to about 18 indigenous tribes. The eastern seaboard of northern Australia once supported extensive rainforests, but logging, mining and extensive agricultural production—primarily sugar cane and dairy—have destroyed and disrupted rainforest habitats and the traditional land of Aboriginal people. Today, only fragments of the original forests remain. It is also unclear to what extent climate change is affecting rainforest ecology and human communities, though predictions for many endemic species and some vital ecosystems are dire.

Australia confronted the threat of fragmentation much faster than most tropical countries, and the majority of its remaining North Queensland rainforests were protected under World





"Every day we got to experience a new part of our environment...getting involved in the restoration efforts of the local community, they were able to show us the progress they have made over the past couple of years. It was a really rewarding experience to see all of our hard work tangibly planted in the ground."

Nikki LaBella
Trinity College

Heritage designation in 1989. Many farmers wish to utilize environmentally sound measures, yet face the possibility of going out of business in the next decade due to economic pressures. Most recently the government has realized that Aboriginal interests and effective conservation are mutually supportive. The government benefits from indigenous knowledge and experience and in return provides access to employment, training and potential business development for indigenous communities. Rainforest restoration in Queensland hinges upon developing solutions that consider larger-scale impacts, including global climate change, and also provides economic benefits for the local community. ■



RESEARCH IN A TROPICAL RAINFOREST AMID AN AMAZING VARIETY OF UNIQUE BIRDS, PLANTS, WILDLIFE AND INDIGENOUS COMMUNITIES WITH ANCIENT HISTORY AND REMARKABLE CULTURE.

Work with local tree-planting groups, research organizations and members of the indigenous community to manage forest resources. Learn about the current condition and dynamics of a tropical rainforest ecosystem, including what might be happening to this system as a consequence of global climate change. Participate in research and community projects to restore tropical rainforests. Explore some of the most exciting natural wonders of Australia.

Australia



"We had an evening field lecture at Allumbah Pocket on

Peterson Creek about riparian vegetation and platypus habitat. We then got to look for platypus along the creek... many of us were lucky enough to get a quick glance of a platypus coming up for air and arching its back above the water's surface. Getting to add the platypus to the list of cool animals we have seen was worth the late dinner that we all gobbled down in seconds."

Jenna Morrison
Colby College

Semester Program in Tropical Rainforest Management

OUR RESEARCH IN AUSTRALIA

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. Conservation challenges and cutting-edge management strategies developed here will likely serve as a model for conserving the rest of the world's tropical rainforests.

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

Student research work addresses a critical local and regional environmental problem—loss and fragmentation of once extensive and mostly contiguous rainforests, and the environmental policies that are currently under consideration by the local and Commonwealth governments. SFS staff and students, in collaboration



ATHERTON TABLELANDS, AUSTRALIA



with local landholders and stakeholder organizations, focus on enhancing the condition of tropical rainforest, as well as determining how and why we should regenerate and restore rainforest on the Atherton Tablelands. Students collect data on potential responses to global climate change, habitat use and animal behaviors, land use, local resident involvement in restoration projects and cost effective and ecologically beneficial methods of restoration. Student work represents a vital contribution toward larger studies on global climate change, developing a restoration plan for selected sites within the Tablelands, and developing maintenance practices to maximize rates of tree growth. Students are also actively involved in either rainforest replanting or site maintenance with local landcare groups.



OUR FIELD STATION IN AUSTRALIA

The Center for Rainforest Studies lies at the end 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. A third of the property's 153 acres is mature rainforest within which the student cabins are nestled. 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 comfortably furnished eight person cabins with adjacent shower and bathroom facilities. The main building has a fully-equipped computer laboratory, 24-hour internet access, up-to-date scientific library and a student common room. Our kitchen and cook provide nutritious, healthy menus to suit all tastes.

Field Research, Lectures and Exercises

- Chillagoe: camp in the Outback and explore caves, rock formations, remnant dry rainforests and eucalypt savannah. Learn firsthand about the history of the Barbaram people at Petford, examine land management issues with members of the Barbaram community.
- Cape Tribulation: experience hikes through lowland rainforests, giant sedges with peppermint stick insects, mangrove forests and palm forests; traverse the Daintree River, notorious for its crocodiles; visit the Cassowary Care Restoration Project and the canopy tower at the Daintree Environment Centre; sample and examine an array of forest types across the landscape.
- Visit the TREAT and Wet Tropics Tree Planting Scheme nursery.
- Learn about the geology of the Atherton Tablelands.
- Field expedition to Tinaroo Dam and agricultural industries.
- Seedling recruitment of restored tropical rainforest at experimental site.
- Examine growth and mortality of rare and endangered tropical rainforest species.
- Bird territory and GIS mapping within a restoration site along the lower Peterson Creek.

Student Directed Research Projects

- Geographic Information System (GIS) mapping of the field station property.
- Examining the utility of epiphyte communities as indicators of climate change.
- Using plant functional traits to predict invasive weed species.
- Experimentally determining less expensive rainforest restoration techniques.
- Examining habitat requirements of Tooth-billed bowerbirds in relation to climate change.
- Investigating ecological processes in endangered Mabi 5b rainforest remnants.
- Use of restored and natural rainforests by rainforest birds.
- Patterns of colonization of restored rainforest by small- and medium-sized vertebrates.
- Determining a timber and carbon sequestration value for different age acacia regrowth.
- Conservation and restoration plan for the lower Peterson Creek.
- Evaluating policy instruments that are used to tackle environmental problems.
- Using economic valuation methods to find out economic value of ecosystems and individual species.

Center Contributions – Making a Difference through Research

One of our primary goals is to understand local views on the ecological and socio-economic challenges facing the community of North Queensland. Our ongoing research and close ties with community stakeholders allows students to make meaningful contributions including:

- Assisting community members with planting more than 15,000 trees over the last few years, most of which were grown from seed at our field station, to restore degraded forests and improve water quality through plantings around watersheds.
- Assessment of tree seedling recruitment and growth working towards recommending best practices for achieving a successful restoration.
- Restoration of more than one mile of rainforest from grassland along the lower Peterson Creek.



Connecting 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 on extension programs and create linkages between our staff and the stakeholders involved in rainforest restoration and management. SFS students enjoy getting involved in community volunteer projects and social activities such as:

- Learning how to make and play their own didgeridoos with a local Aboriginal family, who enjoy sharing their perspectives on Aboriginal culture with students.
- Community service trips to help local conservation groups and communities plant rainforest seedlings.
- Attending special lectures on tree kangaroos, spectacled flying fox, rock wallaby, cassowary and other local wildlife.
- Hosting community dinners and participating in short homestays.
- Meeting with Aboriginal elders of the Barbaram, Yidinji and Ngadjon Jii tribes to learn more about their culture and their effort to reclaim their role in land management.
- Bush dances, community festivals, visiting the Malanda theatre, socializing at the local pubs and sporting competitions, such as lawn bowling with Aussies.

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. For more information on our summer program in Australia, please see page 26.

COURSES

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

- BI/EE (NS) 369 Rainforest Ecology (4 credits)
- EE (NS) 370 Principles of Forest Management (4 credits)
- EE (SS) 302 Environmental Policy and Socioeconomic Values (4 credits)
- EE 491 or 492 Directed Research (4 credits)

See page 24 for course descriptions

SEMESTER PROGRAM DATES

Spring 2006: January 30 - May 4

Fall 2006: September 11 - December 14

Turks & Caicos

Marine Resource Management Studies

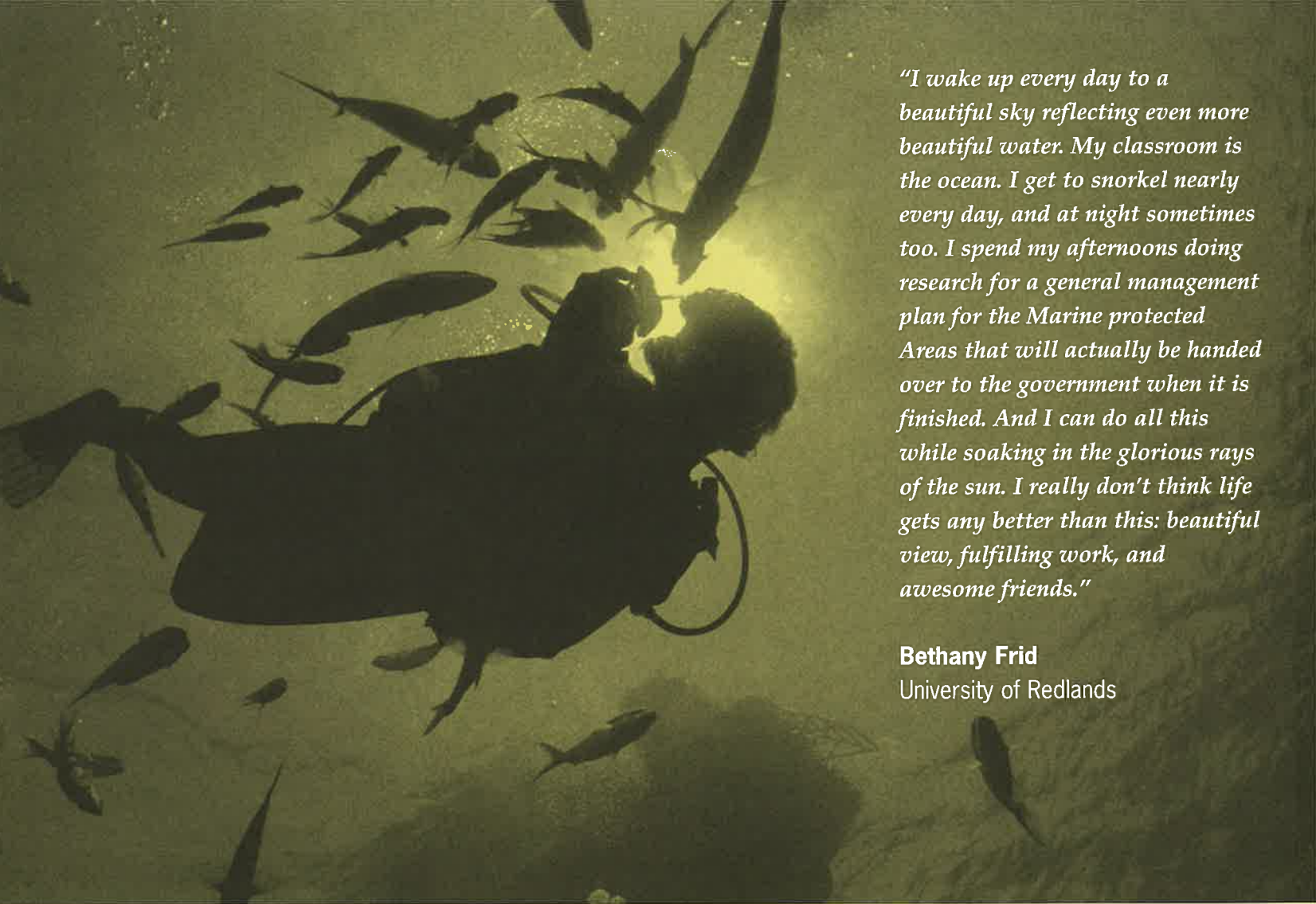
ENVIRONMENTAL ISSUES

The British-governed Turks and Caicos Islands lie at the southeastern end of the Bahamian archipelago. The turquoise waters surrounding the eight main and numerous small islands are considered to be among the world's top 10 diving locations. Nearly 50 species of corals and over 350 large fish species, including spotted eagle rays, sharks, groupers, snappers and dolphin fish, are easily spotted in the clear, warm waters just steps from our field station. Nearby sea grass beds, mangrove-studded woodlands, sandy shoals and deep reefs lend a patchwork appearance to the miles of shallow blue waters that surround the Islands.

This abundant and relatively intact and healthy ecosystem supports much of the community on South Caicos Island, with fisheries providing the primary source of livelihood. However, pollution and overharvesting of precious marine resources, coupled with unsustainable tourism and industrial development, may soon do irreparable damage to this delicate ecosystem. The Turks and Caicos Islands are a major international exporter of queen conch and spiny lobster. Depletion of these resources would have a dramatic impact on employment and social structure on South Caicos Island; therefore, developing sustainable fishery is essential if this resource-dependent community is to survive.

While many Caribbean communities have promoted economic diversification, particularly tourism, to improve economic and social stability, impending mass tourism threatens fragile





"I wake up every day to a beautiful sky reflecting even more beautiful water. My classroom is the ocean. I get to snorkel nearly every day, and at night sometimes too. I spend my afternoons doing research for a general management plan for the Marine protected Areas that will actually be handed over to the government when it is finished. And I can do all this while soaking in the glorious rays of the sun. I really don't think life gets any better than this: beautiful view, fulfilling work, and awesome friends."

Bethany Frid
University of Redlands

marine ecosystems and traditional Caribbean culture if it is not carefully managed. The spectacular marine environment that supports tourism can easily be degraded by uncontrolled and environmentally insensitive development. Other forms of economic diversification need to be explored to avoid overly stressing natural resources. ■



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

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

Marine Resource Management Studies

Turks & Caicos



"Every day I learn so many new things - even just the two

weeks we have spent down here have been life changing and have made us reconsider previous plans. Witnessing staff and faculty who are so passionate about what they do makes you realize that you only have one chance. Live life to its fullest and pursue what truly stimulates you."

Kristen Agura

College of William and Mary

OUR RESEARCH IN SOUTH CAICOS

Our Center is working with the TCI government's Department of Environment and Coastal Resources (DECR) and the National Park Service to develop management strategies that shield the TCI from the fate that has befallen other nearby areas in the Caribbean. Student field research is helping to provide the local government, community and tourism developers with advice that will help sustain the economic, societal and ecological stability of South Caicos and its island community.

With so many local residents dependent upon marine resources for their livelihood, and the likelihood of increasing tourism, there is an immediate need to find viable options for managing fisheries and conserving critical habitats, including coral reefs. Snorkeling and SCUBA diving in waters surrounding South Caicos, students learn to identify a wide range of marine organisms and habitats, and learn about marine ecology and coastal ecosystems. Students confront the challenges of 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 the social and economic implications of these options, brings students face to face with the real-life dilemmas faced by the governmental regulators and the residents of South Caicos.



SOUTH CAICOS ISLAND,
BRITISH WEST INDIES



Recent research indicates that conch and lobster nursery areas in dense sea grass beds need urgent protection in order to sustain these economically important resources. SFS students research the distribution and role of the seagrass habitats in the coastal environment of South Caicos. With the Admiral Cockburn Land and Sea National Park at their doorstep, students are able to evaluate the concept 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. Based on their field observations, students assess the validity of indicator species for reef health, the effects of diver tourism, marine species interactions, the impact of coral diseases and many other issues related to marine natural resource harvesting, conservation and monitoring.

OUR FIELD STATION ON SOUTH CAICOS ISLAND

The Center for Marine Resource Studies, located just steps from our crystal clear ocean laboratory, is adjacent to Cockburn Harbour, a town of about 1,100 residents. The 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, library/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.



VISIT OUR WEBSITE FOR A PHOTO
TOUR OF OUR FIELD STATION:
WWW.FIELDSTUDIES.ORG

Reef fish stocks unprotected

The growing tourism industry in the TCI as a whole is slowly increasing the demand for reef fish on restaurant menus. Local fishers on South Caicos are starting to recognize this market and commercial sale of certain reef fish species is rapidly increasing. Apart from having established a few "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.

Harvesting endangered marine turtles

The harvest of vulnerable and endangered marine turtles in the TCI has occurred as a traditional, subsistence fishery for decades, and to date this practice remains legal. There is currently no data on the numbers of turtles harvested around South Caicos, or the size of the populations of any species. The Hawksbill turtle is the most abundant turtle species around South Caicos and is frequently taken by local fishermen. As such, the harvest sustainability needs to be determined, as does the effectiveness of current regulations.

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, seagrass and mangrove identification.
- Zoning for multiple uses in marine protected areas.
- Ecosystem functioning and anthropogenic impacts.
- Lecture from DECR officials on TCI government fisheries regulations and enforcement.
- Lecture and site tour from local tourism developer on plans for constructing a resort.
- Interviewing local fishermen about historic fishing practices and attitudes towards tourism.

Student Directed Research Projects

- Herbivorous reef fish: a comprehensive evaluation of density and biomass.
- Population size assessment of potentially commercial finfish species around South Caicos.
- Best practices zonations and utilization of National Parks' resources in TCI.
- Queen conch dispersal from nursery grounds: implications for designing no-take fishing reserves.
- Bonefish protection on the Caicos Bank and Bell Sound Nature Reserve.
- Spiny lobster assessment within the Caicos Bank.
- Expectations of the South Caicos community for the expected increase in tourism.

Center Contributions – Making a Difference through Research

- Lobster, conch and finfish stock levels assessment, which have provided important information for government agencies.
- Natural resource workshop with the DECR and the National Park Service to provide TCI government workers with educational training about 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 to share data about queen conch distribution.
- Hosting or supporting public forums and activities attended by government officials and community members to facilitate communal problem solving.
- Applying baseline data to examine reef health trends, species interactions and impacts of coral diseases.

Connecting with the Local Community

Our program in TCI is oriented toward helping the community conserve its natural resources and develop sustainably. Students quickly become involved with the community, spending time with local residents, fishermen and resource managers, learning about the local Caribbean culture and the challenges they face. Some community activities include:

- Reading and tutoring project at the local library.
- School volunteer projects such as tutoring, reading, working with high school science and math clubs.
- Hosting SEA DAY twice a year at our field station to introduce elementary students to the marine environment.
- Basket weaving lessons from a local island weaver.

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. For more information on our summer program in TCI, please see page 26.

SCUBA Certification

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

COURSES

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

- BI/EE (NS) 373 Tropical Marine Ecology (4 credits)
 - EE (NS) 374 Principles of Resource Management (4 credits)
 - EE (SS) 302 Environmental Policy and Socioeconomic Values (4 credits)
 - EE 491 or 492 Directed Research (4 credits)
 - SS 205E British West Indies Culture and Society (2 credits)
- See page 24 for course descriptions.

SS 205E BRITISH WEST INDIES CULTURE AND SOCIETY

This course provides students with an understanding of the various Caribbean ethnic groups' history, societies, and cultures; "Belongers" roles in natural resource conservation; and the threats and opportunities related to economic development, primarily in relation to tourism. Particular emphasis will be given to the cultural history, norms, social and behavioral stratification issues, along with the impact of the SFS Center on the island region. The course will cover topics such as the slave trade and development of the Caribbean region, including past and current opportunities and constraints for economic growth for these communities. Other areas for study will include the cultural and ecological significance of conch and lobster harvesting, and coral reef protection. Field excursions include a six-day field trip to the islands of North, Middle and East Caicos, plus adjoining Cays; and a three-day excursion to Grand Turk to visit the TCI National Museum and speak with the director and staff of the museum about various topics discussed in lectures.

SEMESTER PROGRAM DATES

Spring 2006: January 30 - May 4
Fall 2006: September 11 - December 14

Semester Course Descriptions

KENYA

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.

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

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

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

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

COSTA RICA

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

EE (SS) 303 **ECONOMIC AND ETHICAL ISSUES IN SUSTAINABLE DEVELOPMENT** addresses the principles and applications of Ecological Economics, or the scientific and management aspects of sustainability. Allocation, distribution and scale will be presented as parameters to assess the sustainability of development models (at a macro and micro level). 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 (NS) 374 **PRINCIPLES OF RESOURCE MANAGEMENT** introduces practical tools used in addressing complex environmental problems including coastal zone planning, guidelines for ecologically sustainable development, environmental impact assessment, fisheries management and protected-area planning and management. We will review these tools in terms of their application to local issues and to Case Studies from the Caribbean, the United States, Central America and East Africa.

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

LS 205E **LANGUAGE, CULTURE AND SOCIETY OF 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 homestay - all of which teach them strategies and skills for working with people in a community-based research context and help them to assist with community extension projects.

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 in order 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** introduces practical tools used in addressing complex environmental problems including coastal zone planning, guidelines for ecologically sustainable development, environmental impact assessment, fisheries management and protected-area planning and management. We will review these tools in terms of their application to local issues and to Case Studies from the Caribbean, the United States, Central America and East Africa.

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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.

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. We will then compare the potential benefits of utilizing wildlife with alternative land-use options such as agriculture.

COSTA RICA

EE (NS) 352 SUSTAINING TROPICAL ECOSYSTEMS: BIODIVERSITY, CONSERVATION AND COMMUNITY 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. In this course, we will identify the most critically threatened areas in Bahia Magdalena as the essential first step in designing a strategy for protecting these resources. Lectures and field exercises will cover topics such as 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, which uses Bahia Magdalena for both breeding and feeding habitat.

AUSTRALIA

EE(NS) 355 TROPICAL RAINFORESTS: GLOBAL CLIMATE CHANGE, REFORESTATION AND HUMAN DYNAMICS includes a wide range of lectures and hands-on field activities which 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. We will also look at the structure and function of Australian tropical rainforests and the roles that humans have played and are playing in current forest dynamics. From this point, we will examine reforestation applications on the Tablelands: the goals, techniques, successes, and the failures. Finally 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 towards developing marine parks policy, management plans, and innovation and technology transfer to assist in the management of marine protected areas.

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 sociocultural context including hierarchies and power structures; formal and informal decision making processes; value systems relevant to natural resources including religious factors and environmental ethics; past and present uses of natural resources; economic factors (local, regional, external); ownership patterns; attitudes and other factors that affect change and their historical basis; and legal basis for enforcement of environmental policy. Introduction of major constituencies which effect conservation (NGO conservation groups, economic interests, etc.) and their underlying philosophies.

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TURKS & CAICOS ISLANDS

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

EE (NS) 374 PRINCIPLES OF RESOURCE MANAGEMENT introduces practical tools used in addressing complex environmental problems including coastal zone planning, guidelines for ecologically sustainable development, environmental impact assessment, fisheries management and protected-area planning and management. We will review these tools in terms of their application to local issues and to Case Studies from the Caribbean, the United States, Central America and East Africa.

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SS 205E BRITISH WEST INDIES CULTURE AND SOCIETY This course provides students with an understanding of the various Caribbean ethnic groups' history, societies, and cultures; "Belongers" roles in natural resource conservation; and the threats and opportunities related to economic development, primarily in relation to tourism. Particular emphasis will be given to the cultural history, norms, social and behavioral stratification issues, along with the impact of the SFS Center on the island region. The course will cover topics such as the slave trade and development of the Caribbean region, including past and current opportunities and constraints for economic growth for these communities. Other areas for study will include the cultural and ecological significance of conch and lobster harvesting, and coral reef protection. Field excursions include a six-day field trip to the islands of North, Middle and East Caicos, plus adjoining Cays; and a three-day excursion to Grand Turk to visit the TCI National Museum and speak with the director and staff of the museum about various topics discussed in lectures.



Summer Programs

Our month-long, four-credit summer programs are a great option for students who wish to spend part of their summer break learning field research and environmental problem-solving skills. SFS summer programs combine interdisciplinary lectures with field research exercises and expeditions. Our classrooms include coral reefs, rainforests and African savannas; our research ranges from sea turtle conservation to rainforest restoration.

Students in summer programs assist our faculty in conducting research designed to support local communities in natural resource management decision-making. The work conducted by SFS faculty and students is helping to make a positive difference in the lives of individuals in the areas in which we work. In return,

students can explore potential academic and career choices while developing problem assessment and data gathering skills.

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

Summer 2006 Program Dates:

Session I: June 12 - July 11; Session II: July 17 - August 15

Summer Application Deadlines:

Session I: April 1, 2006; Session II: May 1, 2006



Summer Programs

Following are brief description of SFS summer programs. To learn more about our summer programs, please visit our website at www.fieldstudies.org or call 800.989.4418 to order a complete Summer Course Catalog.

AUSTRALIA / NEW ZEALAND

SESSION I: TECHNIQUES FOR RAINFOREST RESEARCH: AN AUSTRALIAN PERSPECTIVE

SESSION II: UP NORTH, DOWN SOUTH: NATURAL RESOURCE MANAGEMENT IN AUSTRALIA AND NEW ZEALAND

Australia's spectacular tropical rainforests are home to primitive plant species, birds and marsupials found nowhere else in the world. Parts of Queensland were once covered in rainforests, preserving millions of years of evolutionary history, but agriculture, ranching, mining and logging have destroyed and disrupted rainforest habitat, with only a narrow, fragmented belt remaining along the eastern coast. The future survival of this precious rainforest is uncertain due to the potentially adverse effects of land-use and climate change. This summer program offers two new four-credit courses, which can be attended back to back to provide a thorough introduction to biodiversity conservation techniques and the socio-economic factors influencing land management in two unique areas.

SESSION I: TECHNIQUES FOR RAINFOREST RESEARCH: AN AUSTRALIAN PERSPECTIVE

Rainforest ecosystems are a "hot spot" for faunal and floral biodiversity and provide humans with clean air, water, food and medicines. An understanding of the processes maintaining these diverse systems is essential for their management and preservation. Effective sampling and data collection techniques are required if we are to understand and manage natural resources in a rapidly changing biotic, not to mention political, climate. Students explore Australia's tropical forests and develop effective rainforest research techniques.

SESSION II: UP NORTH DOWN SOUTH: NATURAL RESOURCE MANAGEMENT IN AUSTRALIA AND NEW ZEALAND

In this field-based course students compare and contrast the biogeography, natural resource management and socio-cultural elements of Queensland, Australia and Northern New Zealand in order to develop their own understanding of what works where and why. The course revolves around two central themes, each of which addresses a specific natural resource management challenge: biogeographic history and conservation of highly endangered and fragmented rainforest communities; and putting people into the matrix – developing natural resource management policies that work.

COSTA RICA

SUSTAINING TROPICAL ECOSYSTEMS: BIODIVERSITY, CONSERVATION AND DEVELOPMENT

Costa Rica's landscape is as varied as it is beautiful. The country has a long history of preservation and has developed an extensive national park system. However, with large-scale agriculture still playing a vital role in Costa Rica's economy, parks may not be enough to sustain this incredible biodiversity. Costa Rica struggles to balance environmental protection with the economic needs of its people. Students explore issues of applied tropical ecology, ecotourism, agro-ecology, marketing organic agriculture, sustainable development, and protected area management. Using data collected during field work, students examine the challenges and opportunities for maximizing effectiveness in protecting natural resources and conserving biodiversity within the protected and production areas of Costa Rica. Students will learn and

practice new field-based skills; better understand the effects of globalization; and be able to relate what they learn in Costa Rica back to policies and practice in the United States. Topics include: tropical ecology, agro-ecology, sustainability, park management, natural resource management and resource economics.

KENYA

COMMUNITY WILDLIFE MANAGEMENT

Urban, industrial and agricultural expansion and Kenya's soaring population increasingly threaten the habitat required by Kenya's wildlife. Nomadic peoples such as the Maasai, and the cattle herds they depend upon, are being confined to smaller plots of land, resulting in overgrazing and rangeland degradation. Such rangelands where wildlife and pastoralists previously interacted freely and peacefully are now places of rapidly increasing human-wildlife conflicts and resource competition. Wildlife are now not only seen as competitors, but are themselves intensely persecuted through illegal practices such as snaring for bush meat trade. Threats to wildlife in dispersal areas outside protected areas are many, but even in protected areas where they seemed safe, negative impacts of tourism and administrative activities are causing another serious danger to biodiversity objectives. Topics include: Maasai livelihood; interaction with wildlife; protected area issues such as management, ecotourism, conservation and large wildlife viability.

MEXICO

PRESERVING COASTAL DIVERSITY: SEA TURTLES AND BAY RESOURCES

Despite nearly two decades of conservation efforts, some species of sea turtle continue to disappear from Mexican waters and are sliding toward extinction worldwide. Bahía Magdalena has played an important role as a refuge (nursery and feeding ground) for several sea turtle populations, including Loggerheads, Olive Ridleys and the rare Hawksbill turtles. Despite strong regulations against their exploitation, green turtles are still frequently poached and caught as by-catch in the harvesting of other marine resources. A complex interaction of community social and cultural factors, lack of protected area sanctuaries, lack of enforcement of existing regulations and economic hardship in local communities has led to the continued exploitation and the rapid decline of sea turtle populations throughout Mexico. Students examine the ecological, societal and economic issues surrounding sea turtles in Bahía Magdalena. Students meet protected area managers, learn practical field skills, and gain insight into cultural perceptions by speaking with local fishers, tourism operators and government officials.

TURKS AND CAICOS ISLANDS

MARINE PROTECTED AREAS: MANAGEMENT TECHNIQUES AND POLICIES

The reefs of South Caicos harbor an incredible array of marine life—resources that have proven to be critically important for this island community. Increasingly, these reefs also attract tourists who come to view coral, spotted eagle rays, barracuda, sea turtles, grouper and sharks through water renowned for its outstanding clarity. The importance of these reefs has not guaranteed their survival, however, and the reefs face pollution, dredging, dumping, and damage from boats and divers. The spectacular reefs and waters of South Caicos serve as the laboratory for most of our field work. Students explore the effectiveness of the Government established marine parks in protecting biodiversity and critical habitats, enhancing stocks of commercially important species, and contributing effectively to the socio-economic sustainability of the local community. Topics include: marine ecology, conservation and sustainability of marine resources, potential impacts and preparedness for increased tourism. Students meet marine resource managers, learn practical field skills and gain insight into cultural perceptions by interacting with members of the South Caicos community.

Admission Requirements & Instructions

When to Apply

The School for Field Studies accepts and reviews complete applications for admission to all programs on a rolling basis. While there is no final admissions deadline for semester programs, we encourage you to apply early to ensure admission to the program of your choice. Semester students should check with their home institution regarding school-specific deadlines.

SUMMER PROGRAM DEADLINES:

Session I: April 1, Session II: May 1

Before You Apply

The SFS program will likely be very different from your traditional academic experience and different from a traditional study abroad program. We expect you to take a proactive role in all aspects of your experience including scheduling activities, choosing research projects, managing risk and facilitating the day-to-day operation of the field station. Before applying, be sure to read the program components and relevant information for the program to which you are applying.

Requirements and Policies

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 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. Students must have one college-level course in Spanish or otherwise demonstrate a working knowledge of conversational Spanish prior to participation.

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

Your complete application for admission includes:

SFS APPLICATION FOR ADMISSION FORM. You may apply online or use the enclosed paper application.

PARTICIPATION APPROVAL FORM to be completed by your study abroad advisor or academic dean. Students from Affiliate Schools should have their form completed by one of the designated Affiliate representatives at their school. Please refer to our website to find out if your school is an Affiliate Partner and who your representatives are:

http://www.fieldstudies.org/pages/73_affiliation_with_sfs.cfm

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.

TWO REFERENCES:

- SFS Academic Reference Form completed by a teacher, professor or academic advisor who is well acquainted with your current academic performance.
- SFS Character Reference Form 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 call the SFS Admissions Office if you have questions regarding your reference selection. You should request that each SFS Reference Form be completed and returned to you in a sealed envelope, signed across the back. Supplementary letters of recommendation are welcomed but, at minimum, both individuals providing references must complete the SFS Reference Form.

When can I expect to hear a decision on my application?

Once an application is received by SFS, an Admissions Counselor will contact you confirming the receipt of your application. If your application is incomplete, the Counselor will indicate which materials are needed. SFS only reviews those applications that are complete. Once complete, review takes 2 - 4 weeks. You will also be sent information on completing the confidential medical form and the financial aid application, if needed. All acceptances are contingent upon medical approval.

Steps to Apply

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.
3. Complete Participation Approval Form.
4. Select application method:
 - Paper application (enclosed)
 - Download a pdf of our application from www.fieldstudies.org
 - Complete our online application at www.fieldstudies.org

If you are submitting a paper application, please return your complete application materials in one envelope to:

The School for Field Studies
10 Federal Street Ste. 24
Salem, MA 01970-3876

Medical Approval and Disability Information

PHYSICAL EXAMINATION AND MEDICAL INSURANCE

All acceptances are contingent upon medical approval. You must present a completed SFS Confidential Medical Form signed by a qualified medical professional within two weeks of acceptance. Please refer to the SFS website (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 Medical Review Team. 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 and a signed medical release.

Disability Information

Students with disabilities are welcome on SFS programs. However, you must notify SFS of your disability and any special needs within one week of acceptance. Students with physical disabilities should direct their correspondence to the SFS Safety Director and students with learning disabilities should direct their correspondence to the SFS Academic Dean. Please be aware that the level of accessibility, services, and accommodations to which you may have access to 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 SFS medical form. Students with dietary preferences (vegetarian, vegan, etc.) should discuss these with your Admissions Counselor.

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 12,000 students have taken advantage of our semester or summer programs in all corners of the world. However, a significant challenge for a number of potential SFS students is the ability to meet our program and travel costs. For this reason, SFS has developed an array of financial resources to support our students. These resources include:

Andreas Family Fund Scholarships

Through the generosity of the Andreas family this fund will initially focus on providing financial aid to students in U.S. public colleges who are academically eligible but may not be able to afford to participate in an SFS program. The fund's goal is to reduce the financial barriers to participation and broaden the range of students who participate in SFS programs. Application deadlines are October 15 for Spring semester programs; March 15th for Fall semester programs.

Low Interest loans

The 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.

SFS Scholarships

This fund is supported by the generous contributions of alumni, donors and foundations and is designed to make the SFS experience available to students facing financial challenges. SFS Scholarship funds are awarded in conjunction with a zero interest loan.

Zero Interest Loans

Created through the generosity of the Merck Family Foundation, SFS offers this fund to supplement SFS Scholarship awards. Semester loans must be repaid within two years and summer loans within one year of program completion.

*SFS Financial Aid resources are subject to the availability of funds.

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 in order to participate we strongly encourage you to 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.

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. We encourage you to investigate 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 us and we will do our best to assist you.

*You must complete and return the financial aid application within 10 days of acceptance to qualify for refund status on the deposit.

Deposits and Tuition

Payment of a non-refundable deposit is due 10 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.

Refund Policies

SEMESTER: REFUND POLICY FOR SEMESTER PROGRAM COSTS

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 - 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 days of acceptance to qualify for refund status on the deposit). Application fees are non-refundable.

SUMMER: REFUND POLICY FOR SUMMER PROGRAM COSTS

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. Application fees are non-refundable.

SEMESTER COSTS FALL 2005 - SPRING 2006

*Program Costs for Fall 2006 will be determined in March 2006

Program	Tuition	Program Fees	Total Program Cost
Kenya	\$10,100	\$4525	\$14,625
Australia	\$10,100	\$4395	\$14,495
Turks & Caicos	\$10,100	\$3885	\$13,985
Costa Rica	\$10,100	\$3885	\$13,985
Mexico	\$10,100	\$3885	\$13,985

SUMMER COSTS 2006

Program	Tuition	Program Fees	Total Program Cost
Kenya	\$2610	\$1385	\$3,995
Australia	\$2610	\$1350	\$3,960
Turks & Caicos	\$2610	\$1150	\$3,760
Costa Rica	\$2610	\$ 950	\$3,560
Mexico	\$2610	\$ 770	\$3,380



Expectations & Responsibilities

STUDENT CONDUCT

You are expected to conduct yourself 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. Should such a decision be made, SFS will return you to the point of in-country arrival, at which time any and all responsibility on the part of SFS will cease. Students who are expelled or depart early from the program will be withdrawn from all courses and receive no 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.

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.

PROGRAM CHANGES

SFS operates in a variety of environments. As a result, there are various factors that may have an affect 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.

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 incorporate four courses and carry a total of 16 semester-hour credits (Costa Rica, Kenya and TCI programs carry 18 semester credit hours) in biology or environmental studies from Boston University. Summer courses carry 4 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 **1.800.989.4418**. 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 SFS 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. Each Affiliate school has at least one SFS liaison who is available to provide on-campus advising on our programs. All applicants must obtain permission from their study abroad office or academic dean to participate in our programs. Applicants from Affiliate schools must obtain permission to participate from their campus Affiliate Representative. *Please use the enclosed Participation Approval Form.*

Current SFS Affiliate Member Schools:

Adelphi University
Dr. Gayle Insler

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

Albion College
Ms. Lynn Del Cid-Neddo
Dr. Timothy Lincoln

Albright College
Dr. Stephen Klein
Dr. David Osgood

Austin College
Dr. Cynthia Manley
Dr. George Diggs

Belmont Abbey College
Dr. Robert Jones
Dr. Sheila Reilly

Bennington College
Dr. Kerry Woods

Boston University
Ms. Linda Reed

Brandeis University
Mr. J. Scott Van Der Meid

Cedar Crest College
Dr. John Cigliano
Dr. Amy Faivre

Clark University
Dr. Todd Livdahl

Colby College
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College of the Holy Cross
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Dr. Jane Van Doren

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Dr. Kristen Grace

Davidson College
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Denison University
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DePauw University
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Dickinson College
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Elon University
Ms. Emma Jones

Emory University
Ms. Cornelia Lindenau
Dr. Philip Wainwright

Gonzaga University
Ms. Wanda Reynolds

Grinnell College
Dr. Richard Bright
Dr. Jackie Brown

Guilford College
Dr. Lynn Moseley

Hollins University
Ms. Lorraine Fleck

Kenyon College
Dr. Ray Heithaus

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

Meredith College
Ms. Sara Milani
Dr. Betty Webb

Miami University
Dr. R. Hays Cummins

Mount Holyoke College
Ms. Joanne Picard

Mount Olive College
Dr. Angela Foster
Dr. Christopher Dyer

The Ohio State University
Ms. Jeannie Bonner

Saint Michael's College
Dr. Valerie Banschbach

Santa Clara University
Dr. Dennis Gordon

Scripps College
Ms. Valerie Eastman

Smith College
Dr. Adrian Beaulieu
Dr. Gregory White

**SUNY/College of Environmental
Sciences and Forestry**
Dr. Allan Drew

Texas Tech University
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Ms. Katherine Quinn

Trinity College
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NATHAN PELLETIER
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Alumni Profiles



KYLE SCHOTT
TURKS AND CAICOS 1999

Social Responsibility, McDonald's Corporation, B.S., Environmental Policy and Behavior, School of Natural Resources, University of Michigan

SFS' mission is, in part, to give students the skills and knowledge they need to become globally aware citizens. Kyle is taking her global awareness to a place that is recognizable to all of us – McDonald's Golden Arches. Kyle works with her colleagues within this large corporation, and with non-profits and outside experts to minimize McDonald's environmental footprint. These initiatives can have far reaching consequences given the size of her company.

Kyle explains, "If you look at McDonald's environmental footprint, a restaurant's largest impact comes in its energy consumption and waste product (i.e. packaging). McDonald's has a range of tools to help restaurants decrease that energy usage. In regards to packaging, the company works to incorporate recycled content, and ideally post-consumer, wherever possible. On the supply chain side of the equation, McDonald's has incorporated environmental standards that monitor water, air, energy and solid waste as part of the supplier audit – on which suppliers are evaluated."

Kyle credits her summer program with SFS in the Turks and Caicos as being part of the chain of events that led her to her current position. The greatest thing she gained through SFS was that it "allowed me to start my second year of college with a renewed sense of academic interest and energy." She also loves telling people about the summer course she took where a portion of class time was spent underwater.

Kyle summarizes her job by saying, "I debated on where the best position was in order to make the greatest change – and have, for the time being at least, decided that position is within a business. I find it interesting and challenging to look at environmental opportunities in the context of a business decision. Also, the impact from a change in McDonald's is quite far reaching. And I do feel like I'm helping to make change happen at McDonald's. Not only that, but I see so many possibilities in my job – it's fun to strategize and be a part of making those possibilities a reality. I feel like it's the best of both worlds – we partner with so many interesting NGOs and external organizations that I get to interact with."



KENT WERLIN
COSTA RICA, 1998

Habitat Biologist, Watershed Division of the Nez Perce Tribe Department of Fisheries Resource Management in Lapwai, Idaho, M.S. Wildlife and Fisheries Sciences, South Dakota State University, B.A. Environmental Studies, University of Colorado

Kent credits his experience with SFS with solidifying his personal beliefs and clarifying his career goals. His current position with the Nez Perce Tribe ensures that he is not compromising those beliefs while fulfilling his goals. "At some point toward the end of my undergraduate studies I made a pact with myself that I would never join the "rat race" of the environmentally apathetic business world. The environment means too much to me. I see way too much of the "out-of-sight, out-of-mind" phenomenon. This job allows me to not only rehabilitate and restore the environment but also to improve the livelihood of the Nez Perce people. At this point in my career, I don't think that I could ask for much more."

As Kent explains, "The Nez Perce Tribe has subsisted on the land and its bounty since time immemorial. Salmon, in particular, have played an integral role in the Nez Perce diet and way of life. To the Nez Perce people, Salmon are more than an animal species. They hold spiritual significance and are often referred to as "Brother" Salmon. The last decade, especially the last 50 years, has seen a rapid decline of Anadromous salmonid (i.e., salmon and steelhead) populations in the northwest. Many of these fish are now listed as threatened under the Endangered Species Act. Various anthropogenic impacts, such as dam construction and habitat degradation, have contributed to this drastic decline."

Kent is charged with using his biology skills to conduct noxious weed identification, mapping, and control, native vegetation planting, streambank bioengineering, design and implementation of "Best Management Practices" for livestock and agricultural operations, and assessing the state of natural resources on tribal property within the reservation boundaries. He adds that the cultural sensitivity he developed while in Costa Rica with SFS aids in his work with the Nez Perce culture.



KRISTA WENNING
KENYA, 1997

Wildlife Biologist, Airport Safety and Assistance Program, U.S. Department of Agriculture's Wildlife Services. M.S. in Fisheries and Wildlife from Utah State University 2001; B.S. in Biology from Denison University 1998

Did you know that since 1990 there have been over 53,000 wildlife collisions with airplanes? Sometimes these strikes, as they are called, can cause emergency landings and aborted take-offs. It is Krista's job to protect the wildlife and the airplanes from one another. Krista first gained an appreciation for the wildlife/human conflict while observing elephants and speaking with local farmers in Kenya.

Reflecting on her experience with SFS, Krista says she "gained a network of friends and colleagues scattered around the globe – a unique, challenging and intensely satisfying end to my junior year of college, and real world experience in the field of wildlife management. The experience also greatly influenced my decision to pursue a career working with wildlife."

Krista uses her wildlife biology skills to make sure the airport is unattractive to wildlife. She says, "I think the most exciting thing about my job is that it is different every day. I also like the fact that the program is mine to develop as I see fit so I am able to use my knowledge of wildlife behavior and policy to the fullest extent to ensure that wildlife does not compromise the safety of Arizona's flying public."



www.fieldstudies.org

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