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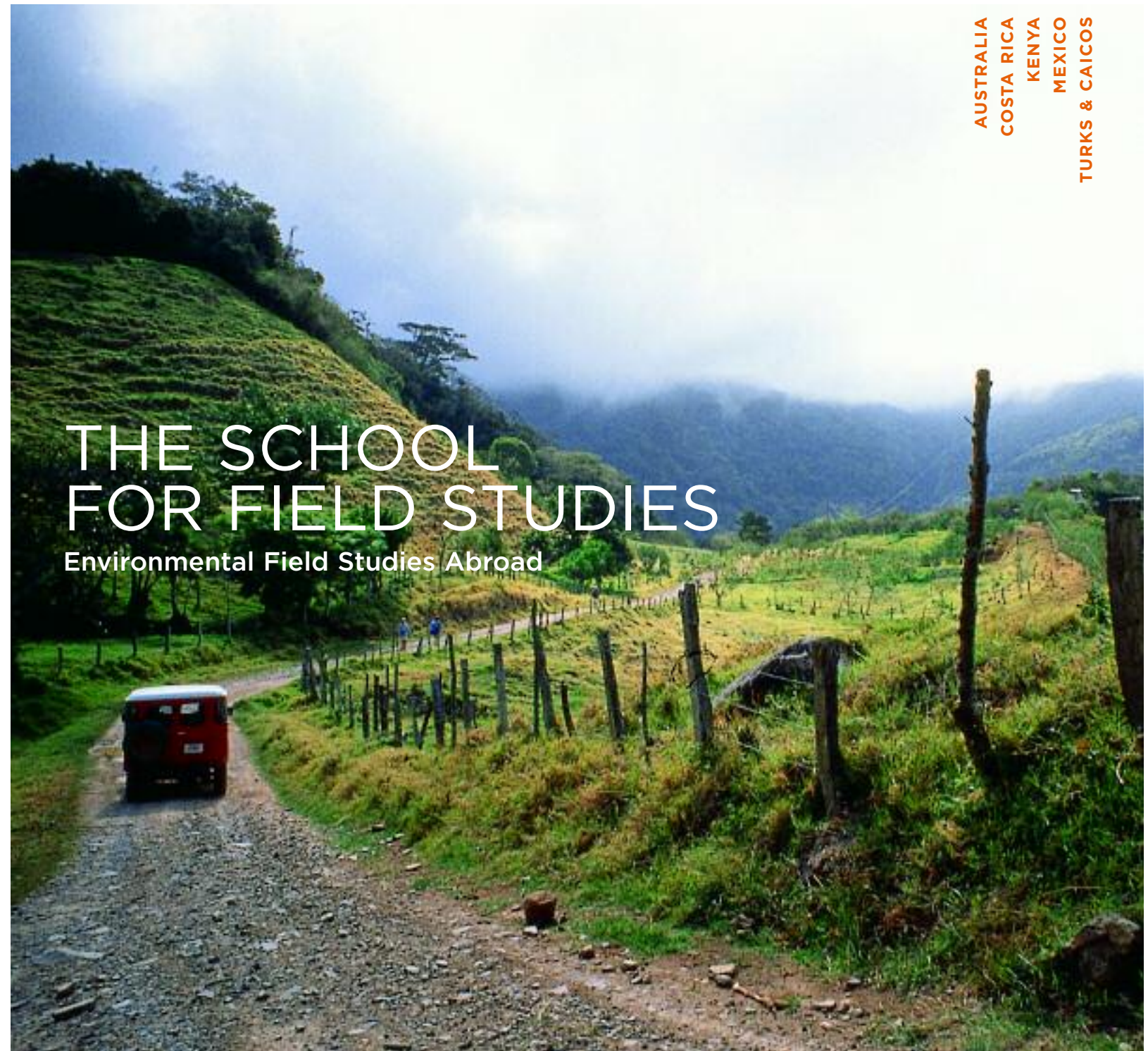
SEMESTER & SUMMER PROGRAMS

07

AUSTRALIA
COSTA RICA
KENYA
MEXICO
TURKS & CAICOS

THE SCHOOL FOR FIELD STUDIES

Environmental Field Studies Abroad



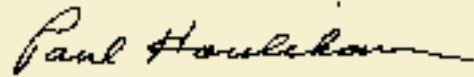
Letter from the President

This past spring, our program in Australia experienced a dramatic example of the realities of field research. After a category five cyclone moved through North Queensland, very close to our center, it was clear that major damage and change had occurred in the ecosystem in which we work. The rainforest experienced severe defoliation, which in turn poses serious threats to the rainforest’s animal life. The research projects planned for the semester had literally blown away overnight, were severely damaged, or dramatically altered. Yet within days our faculty and students were back out in the field, assessing the situation firsthand, examining the options, and creating a research agenda that initiated monitoring of these important changes in flora and fauna activity. The region’s scientific community and local government widely acknowledged that SFS staff and students were on the ground as ‘first responders’ to the fundamental ecological changes taking place.

The Center’s students not only had a first hand experience with dramatic environmental change resulting from the cyclone, but actively participated in the creation and initiation of baseline research that will continue for years as the rainforest responds and recovers. As a result of our work, we’ve been asked to collaborate on research with several major Australian universities. What an amazing opportunity for these students!

As in all our centers, the research students conduct in Australia takes place within the context of a five-year research plan. Initiated in 2002, these plans focus the academic and research activities of staff and students in clear response to local environmental and resource management needs. Training SFS students to produce quality research is critical to the commitments we have made to our client communities. Key to our unique model is being nimble and skilled enough to respond to significant and sudden change.

One of the hallmarks of the SFS experience is that we take students out of the classroom and into the field. While we hope to avoid the type of weather conditions that created this extraordinary opportunity at our Australia Center, we can guarantee that students will learn how to conduct research within real-world environments. They will be asked to produce academically rigorous work and research that is vital to the local community.



Paul Houlihan
President



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Program Overview

The School for Field Studies: a legacy of environmental leadership

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

In the summer of 1981, SFS sent its first group of 75 students into the field. Today, with 26 years of environmental work behind us, SFS is known 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 Web site: www.fieldstudies.org.

Curriculum and Academic Credit

SFS students are registered at and receive credit from Boston University, which accredits our programs. Most students from SFS Affiliate and Consortium schools receive credit directly from their home institutions. See page 30 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 three to five 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 six 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, socioeconomics and policy, and directed research). Students are enrolled in four courses of four 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, four-credit programs. Like our semester programs, they include lectures, field exercises, research, and field trips. SFS does not have application deadlines. However, we urge students to submit their application by March 15 for Summer Session I and April 15 for Summer Session II.

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 Web site: 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 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 two credits with our British West Indies Culture and Society course. We offer informal language instruction in 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, have completed at least one college-level ecology or biology course, and completed at least one semester of college prior to the start of the program.

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

EXPECTATIONS & RESPONSIBILITIES

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

The School for Field Studies reserves the right to require any participant to withdraw from any program at any time if the field station staff deem the student’s conduct to be detrimental to or incompatible with the interest, harmony, comfort, safety, or welfare of the program — including abuse of alcohol or use of drugs not authorized by a medical doctor, or uncooperative or disruptive behavior. Students who are expelled or depart early from the program will be withdrawn from all courses and will not receive credit.

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

SFS is a charitable corporation located in Salem, Massachusetts, U.S.A. All matters relating to, arising out of, or involving in any way your relationship with SFS shall be governed by Massachusetts law and any legal dispute shall be determined by a Massachusetts court. SFS reserves the right to refuse any applicant admission to any program if s/he is deemed unsuited for the program for any reason and at anytime during the admissions process. All courses, fees, and dates are tentative until verified and confirmed in writing by SFS.

PROGRAM CHANGES
SFS operates in a variety of environments. As a result, there are various factors that may have an effect on a program such as tenuous weather conditions, access to highly regulated and sensitive environments, or changes in political conditions. SFS reserves the right to make changes before or during a program. Indeed, part of your challenge lies in adapting to changing conditions and overcoming the obstacles they may present.

Faculty Profiles

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 was not a good livestock herder. Seno obtained a B.S. in Range Science and an M.S. in Wildlife Ecology at 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. Seno 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 on human dimensions in natural resource conservation.

MOSES MAKONJIO OKELLO, PH.D.
Wildlife Ecology and Management, University of Alberta (Canada); M.Sc., Wildlife Resources, University of Idaho B.Sc., Wildlife Management, Moi University
Okello’s research interests include wildlife conservation and ecology, human/wildlife interactions, the role of traditional institutions and roles in resource conservation, spatial wildlife distributions and 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 (U.K.)
Kiringe’s dissertation research work was conducted in Hell’s Gate National Park (Kenya) and adjoining private ranches, where he looked at population dynamics and habitat preferences of large mammalian herbivores. He also examined 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 in September 2000 his research work has mostly 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 Studies
AMANDA FREEMAN, PH.D., CENTER DIRECTOR
Animal Ecology, Lincoln University (New Zealand); M.Sc. Hons., Resource Management, University of Canterbury (New Zealand); B.Sc., Zoology, Auckland University (New Zealand)
Amanda’s career has combined the disciplines of resource management and ecology in her work for a number of government and community organizations. She has been employed in fisheries management, conservation policy, and ecological research roles in New Zealand and Australia and has been actively involved with community conservation organizations on the Atherton Tablelands since moving to the district in 1997. For her Ph.D. research, Amanda determined the degree of dependence of a New Zealand petrel species on a large-scale fishery, using GIS as a means to analyze and

map seabird fisheries interactions. Amanda’s Master’s research was on Maori involvement in National Park policy and planning.

TIMOTHY CURRAN, B.SC. HONS.,
Plant Ecology, The University of New South Wales; B.Sc., Environmental Science, The University of New South Wales
Tim recently submitted his Ph.D. thesis for examination at The University of New England, Australia. His thesis examined the biogeography and functional and evolutionary ecology of dry rainforest in New South Wales. Tim has wide experience in natural resource management, having served as the scientific representative on committees established to conserve vegetation in northern New South Wales and to manage koalas and their habitat at Port Stephens in New South Wales.

COLIN HUNT, PH.D.
Social Sciences, Flinders University (Australia); M.Ag.Sc. (Econs), Melbourne University (Australia); B.Sc. (Agric) Hons., Nottingham University (U.K.)
Colin has taught Ecological Economics at the graduate level at the Australian National University and has been a senior research fellow in economics at the Nation Research Institute of Papua New Guinea. He has undertaken assignments in Australia and the Pacific region for the World Bank, the Asian Development Bank, WWF, and the Papua New Guinea and Solomon Islands governments. His Ph.D. thesis investigated the economic, social, and spatial implications of the adoption of ecologically sustainable development (ESD).

COSTA RICA
Center for Sustainable Development Studies
NOLAN QUIROS, PH.D., CENTER DIRECTOR
Agricultural Economics, Oklahoma State University; LLM, 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 U.S. agricultural programs on the economy and the environment. He has collaborated with the U.S. Department of Agriculture in a variety of U.S. 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. His areas of specialization and interest include agricultural and forest policy, environmental and natural resource economics, and organic marketing. He is negotiating the publication of his recently completed book: MERCADOS ORGANICOS IN COSTA RICA with the Costa Rica Organic Program and Editorial de la Universidad de Costa Rica.

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 current research interests include the response of tropical montane forests to global warming, the biomechanics of

woody palms and the ecophysiology of tropical lianas, among many others. He has taught at the University of Costa Rica, EARTH University, and ACM.

JOSE EDGARDO AREVALO, PH.D.
University of Lausanne, Switzerland; M.Sc., Oxford University, (U.K.); B.Sc., Biology, University of Costa Rica, San Jose
After completing his Master’s degree, Jose returned to Costa Rica where he worked as the head of the research program at Monteverde Conservation League for seven years, coordinating sustainable development projects. In 2001, Jose Edgardo obtained a Ph.D. grant from the University of Lausanne to conduct research on the effect of habitat fragmentation on forest-dependent birds and landscape ecology in the Monteverde area.

MEXICO
Center for Coastal Studies
HÉCTOR PÉREZ-CORTÉS, PH.D., CENTER DIRECTOR
Marine Biology, Center for Marine Sciences of the National Polytechnical Institute (in progress)
Hector has worked on research and management projects for several species of marine mammals and migrating waterfowl. In addition, Hector has experience developing non-consumptive use alternatives for marine resources (such as whale watching and photographic tours). Most recently, Hector has worked for the Mexican government in a research position where he has developed natural resource policy, made management decisions, provided advice to political decision makers, and built links with research and conservation agencies in Mexico.

GUSTAVO HINOJOSA ARANGO, PH.D.
Marine Ecology, Queen’s University of Belfast, (Northern Ireland)
Gustavo has taught undergraduate (Vegetal Physiology and Introductory Biology) and postgraduate modules (Coastal Ecology and Coastal Management) both in Mexico and the United Kingdom. In addition, he demonstrated different undergraduate modules such as Introductory Biology, General Biology, Biodiversity, and Marine Ecology at the Queen’s University of Belfast. Gustavo has extensive research experience and he has participated in numerous projects that include research with marine mammals, marine plants, and invertebrate communities.

TURKS & CAICOS ISLANDS
Center for Marine Resource Studies
JOHN A. B. CLAYDON, PH.D.
James Cook University (Australia)
John conducted his Ph.D. work on spawning aggregations of coral reef fishes in Papua New Guinea. During his time in Papua New Guinea he found spawning aggregations of over 40 species, 12 of which had not been documented spawning in aggregations previously. He was also involved in a number of local conservation initiatives including the development of monitoring protocol for protected reefs, coral bleaching monitoring, and teaching a marine environmental education program to Papua New Guinean high-school students.

ALBERT SCHRAM, PH.D.
European University Institute
Albert has worked as an environmental economist in Latin America supporting the improvement of sustainable development strategies in the seven Central American countries as a consultant for the World Bank’s Economic Development Institute. He has also advised the Costa Rican Ministry of Environment on various issues, and contributed to the formulation of ground-breaking water pollution legislation. Albert has published on economic experiments with decision makers on environmental regulation for the coffee-milling sector.



KENYA

FOOTHILLS OF MT. KILIMANJARO

SEMESTER PROGRAM DATES
 Spring 2007: January 26 – May 3
 Fall 2007: September 7 – December 13



Wildlife Management Studies

ENVIRONMENTAL ISSUES

Urban, 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. The 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. 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. Further, 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 conservation 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.



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.



“The things I miss the most are not the people I’ve met, places I’ve seen, or things I’ve done, but rather the memories of specific moments when I was able to step back and appreciate what was around me. All of these memories and more have made my experience in Kenya unforgettable and opened my eyes to a whole new way of life.”

BECKY TIMBERS, ST. LAWRENCE UNIVERSITY



“It is amazing how much you can learn about your own culture and about yourself by experiencing a radically different way of life. More than classes and schoolwork, stepping out of my comfort zone has taught me the most about who I am.”

JENNI ZANGMEISTER, KENYON COLLEGE

Kenya Program Description

OUR RESEARCH

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, Chyulu, 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. Student 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.

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, predation, 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.

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, and 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, and 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 Project Examples

- 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 neighboring 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.
- Subdivision of the Maasai Group Ranches and their implication on land use and wildlife conservation.

Student Research Contributions

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 Amboseli Elephant Research Project and SFS on a proposal to U.S. Fish and Wildlife (USFW), entitled “Mitigating Human-Elephant Conflict in the Amboseli Ecosystem, Kenya” resulting in 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 in 2005, the group ranch members voted to establish the wildlife sanctuary and seek funding.
- Socioeconomic 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 school children about the environment.

Get Involved 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.

***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.



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.

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 Web site for a photo tour of our field station: www.fieldstudies.org



COSTA RICA

ATENAS

SEMESTER PROGRAM DATES

Spring 2007: January 29 – May 3

Fall 2007: September 10 – December 13

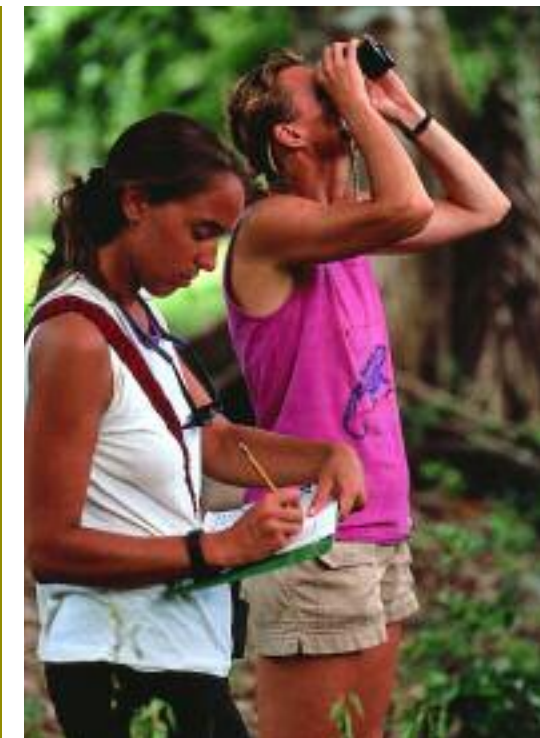


Sustainable Development Studies

ENVIRONMENTAL ISSUES

Striking 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, and ensuring that Costa Rica's world-famous parks benefit surrounding communities as well as ecotourism development.



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 expedition. Become a member of the friendly community of Atenas and sharpen your Spanish conversation skills.



"To be doing things for the sake of wildlife conservation and social change is enough to make a person feel very, very alive."

BRIAN ESTES, GONZAGA UNIVERSITY



“I learned there are people I can connect with for life over a cup of cafécito, to be more assertive in what I believe, and that to understand you must experience firsthand. I discovered a renewed curiosity about the rest of the world and a better way to learn about it. And I found an amazing group of people filled with presence, enthusiasm, and life.”
KRISTIE SURFUS, BOSTON UNIVERSITY

Costa Rica Program Description

OUR RESEARCH

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 Fair 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 socioeconomic 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.

Field Trips, Lectures, and Exercises

The interdisciplinary approach to our research teaches students about tropical ecology, agro-ecology, socioeconomics, sustainability, park management, natural resource management, ecological economics, and Costa Rican history, culture, and the Spanish language. Possible field trips, lectures, and exercises include:

- 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. 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 ecotourism 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 Project Examples

- 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 socioeconomic benefits between Guayabo National Park and its surrounding communities.

Student Research Contributions

- 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.

Get Involved 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: U.S. culture taught in the elementary school, fighting diseases in Atenas, and trail management and construction in the Municipal Forest.
- Soccer games, community festivals, and short home stays.

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.

***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.



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 four 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

The semester program takes students 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 Web site for a photo tour of our field station: www.fieldstudies.org



MEXICO

BAHÍA MAGDALENA

SEMESTER PROGRAM DATES

Spring 2007: January 31 – May 5

Fall 2007: September 10 – December 13



Conserving Marine Mammals & Coastal Ecosystems

ENVIRONMENTAL ISSUES

Despite 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.

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. Get involved with the local Bahía Magdalena community and learn about Mexican culture.



“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 AMÉRICAS PUEBLA



“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

Mexico Program Description

OUR RESEARCH

In addition to our year-round research on 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 by fishermen. 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 socioeconomic 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. 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 fishermen, 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.

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.
- Puerto Magdalena Island to learn about the fascinating culture of a small, communal fishing cooperative.
- Estero San Buto aquaculture farm to see an example of alternative fisheries.
- 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.

Student Research Contributions

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

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

Student Directed Research Project Examples

- Economic benefit and socioeconomic analysis of whale watching in Bahía Magdalena.
- Assessment of the implementation of a sea turtle protected area and monitoring turtle populations.
- 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 socioeconomic effects of proposed marine protected areas on local fishers, tourism operators, and the community.
- Biological and socioeconomic analysis of aquaculture and active fisheries in Bahía Magdalena.

Get Involved 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 Gray 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 home stays, 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.



OUR FIELD STATION IN BAHÍA MAGDALENA

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

Visit our Web site for a photo tour of our field station: www.fieldstudies.org



AUSTRALIA

ATHERTON TABLELANDS

SEMESTER PROGRAM DATES

Spring 2007: January 29 – May 3

Fall 2007: September 10 – December 13



Tropical Rainforest Studies

ENVIRONMENTAL ISSUES

Rainforests 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. Predictions for many endemic species and some vital ecosystems are indeed quite bleak.

For thousands of years the tropical rainforest of Queensland has been home to about 18 indigenous tribes, along with numerous primitive plant species, birds, and marsupials found nowhere else in the world. Giant strangler figs, Australian king parrots, 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, fragmentation, and climate change. The eastern seaboard of northern Australia once supported extensive rainforests, but logging, mining, and extensive agricultural production have destroyed and disrupted rainforest habitats and the traditional land of Aboriginal people. Today, only fragments of the original forests remain.

Australia confronted the threat of rainforest loss much faster than most tropical countries, but the integrity and survival of these rainforests hinge upon developing solutions that consider larger-scale impacts, including global climate change, yet also provide economic benefits for the local community.



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

Work with local tree-planting groups and research organizations and learn from 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.



“I came away with a deep knowledge of a serious environmental problem along with the tools to help solve it. Never before have I felt so connected to something so positive.”

CLAIRE NELSON, WELLESLEY COLLEGE



“After four intensive weeks of pushing my physical and mental capabilities to the limit, I feel as though I am ready for just about anything!”

ASHLEY CAMHI, VASSAR COLLEGE

Australia Program Description

OUR RESEARCH

While representing only a small percentage of the world’s rainforest, the astonishing biodiversity of Australia’s rainforest and the country’s dynamic conservation efforts make Queensland an extraordinary laboratory for studying rainforest management and restoration. Recent cyclones have further disturbed the remaining rainforest fragments, raising questions on how to manage these hyper-disturbed areas. 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 that benefit both ecosystems and human communities.

Student research work addresses a critical local and regional environmental problem – loss and fragmentation of once extensive rainforests, and the environmental policies that are currently under consideration by the local and Commonwealth governments. SFS staff and students, in collaboration with local landholders and stakeholder organizations, focus on enhancing the condition of tropical rainforests, as well as determining how and why we should regenerate and restore the rainforest on the Atherton Tablelands. Students collect data on potential responses to global climate change, habitat use and animal behaviors, resilience to cyclonic events, land use, local resident involvement in restoration projects, and cost effective and ecologically beneficial methods of restoration. Student work represents a vital contribution toward larger studies on global climate change, biological integrity of rainforest fragments, and developing restoration practices to maximize rates of plant growth and decolonization by fauna. Students are actively involved in either rainforest replanting or site maintenance with local landcare groups.

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.
- Cape Tribulation: hike through lowland rainforests, giant sedges with peppermint stick insects, mangrove forests, and palm forests; traverse the Daintree River, notorious for its crocodiles; visit the canopy tower at the Daintree Environment Centre; sample and examine an array of forest types across the landscape.
- Visit the TREAT nursery.
- Learn about the geology of the Atherton Tablelands.
- Field expeditions to Tinaroo Dam and agricultural industries.
- Seedling recruitment of restored tropical rainforest at revegetation sites.
- Examine growth and mortality of tropical rainforest species.
- Sample plant functional traits and their effect on drought and cyclone resistance.
- Examine fauna in endangered plant communities.

Student Directed Research Project Examples

- 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.
- Use of restored and natural rainforests by rainforest birds.
- Patterns of colonization of restored rainforest by vertebrates.

- Determining a timber and carbon sequestration value for different age acacia regrowth.
- Monitoring the Peterson Creek revegetation project.
- Evaluating policy instruments that are used to tackle environmental problems.
- Using economic valuation methods to find out economic value of ecosystems and individual species.

Student Research Contributions

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

- Assisting community members with planting more than 15,000 trees over the last few years, some of which were grown from seed at our field station, to restore degraded forests 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.
- Assisting community members with restoration of more than one mile of rainforest from grassland along the lower Peterson Creek.

Get Involved with the Local Community

Conservation, resource use, and rainforest restoration are extremely important to local farmers, resource managers, and concerned community groups. With the results of our research, we offer advice to local decision-makers 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 share their perspectives on Aboriginal culture with students.
- Community service trips to help local conservation groups and communities plant rainforest seedlings.
- Participating in annual community fauna surveys such as the crane count (October) and spectacled flying-fox counts (November).
- Attending special lectures on tree kangaroos, spectacled flying fox, rock wallaby, cassowary, and other local wildlife.
- Hosting community dinners and participating in short home stays.
- 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.



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.

Visit our Web site for a photo tour of our field station: www.fieldstudies.org



TURKS & CAICOS

SOUTH CAICOS ISLAND, BRITISH WEST INDIES

SEMESTER PROGRAM DATES

Spring 2007: January 29 – May 3

Fall 2007: September 10 – December 13



Marine Resource Management Studies

ENVIRONMENTAL ISSUES

The British-governed Turks and Caicos Islands (TCI) lie at the southeastern end of the Bahamian archipelago. The turquoise waters of the TCI are considered to be among the world’s top 10 diving locations. Nearly 50 species of coral 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 TCI 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 a 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 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. Study 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.



“Though we did more work than any of us imagined possible, we leave with a true appreciation for the marine environment, indebted to the program that has given us undoubtedly the most memorable weeks of our lives.”

MARK GENTRY, UNIVERSITY OF NORTH CAROLINA – CHAPEL HILL



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

CHRISTINE DODGE, SKIDMORE COLLEGE

Turks & Caicos Program Description

OUR RESEARCH

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, finding viable options for managing fisheries and conserving critical habitats, including coral reefs, is crucial. Snorkeling and SCUBA diving in waters surrounding South Caicos, students learn 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. Recent research indicates that conch and lobster nursery areas in dense seagrass 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.

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 the TCI government fisheries regulations and enforcement.
- Lecture and site tour from local tourism developer on plans for constructing a resort.

Student Directed Research Project Examples

- Population size assessment of potentially commercial finfish species around South Caicos.
- Finfish dock landing.
- Water quality monitoring.

Student Research Contributions

- 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 the 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.

Get Involved with the Local Community

Our program in the 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 may include:

- Reading, tutoring, and volunteer projects at the local library and grade school.
- 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 the program. Many past students in this program have found one semester of statistics to be helpful. Applicants for summer programs must be at least 16 years of age, in good academic standing, and have completed at least their junior year of high school prior to the start of the program. For more information on our summer program in the 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.

***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 on 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 day trip to Middleton and Long Cays (former Lucayan Indian sites) and to the island of Middle Caicos for three days.



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, seagrass 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 Web site for a photo tour of our field station: www.fieldstudies.org

Semester Course Descriptions

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

KENYA

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

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

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 home stay — 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, United States, Central America, and East Africa.

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.

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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.

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 socio-cultural context including hierarchies and power structures; formal and informal decision making processes; value systems relevant to natural resources including religious factors and environmental ethics; past and present uses of natural resources; economic factors (local, regional, external); ownership patterns; attitudes and other factors that affect change and their historical basis; and legal basis for enforcement of environmental policy. Introduction of major constituencies 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, United States, Central America, and East Africa.

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 socio-cultural context including hierarchies and power structures; formal and informal decision making processes; value systems relevant to natural resources including religious factors and environmental ethics; past and present uses of natural resources; economic factors (local, regional, external); ownership patterns; attitudes and other factors that affect change and their historical basis; and legal basis for enforcement of environmental policy. Introduction of major constituencies 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.

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 day trip to Middleton and Long Cays (former Lucayan Indian sites) and to the island of Middle Caicos.

Summer Programs

SUMMER 2007 PROGRAM DATES
Session I: June 6 – July 5 (Kenya June 2 – July 1)
Session II: July 11 – August 9

There are no application deadlines.
However, students are urged to submit
their application by March 15 for Summer
Session I and April 15 for Summer Session II.



Overview

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 where we work. In return, students can explore potential academic and career choices while developing problem assessment and data gathering skills.

Each course carries four college-level credits in environmental studies. In some cases, the summer course may fulfill a university's field-study requirement. There are no 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.

Following are brief descriptions of SFS summer programs. To learn more about our summer programs, please visit our Web site at www.fieldstudies.org or call 800.989.4418 to order a complete summer course catalog.

Summer Program Descriptions

AUSTRALIA/ NEW ZEALAND

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's east coast 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 fragmented belt remaining. The future survival of this precious rainforest is uncertain due to the potentially adverse affects 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 socioeconomic factors influencing land management in two unique areas.

SESSION 1: 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
In recent years, there has been a steady shift in land use from purely pastoral to mixed agropastoral systems in the Maasai group ranches that occupy the land between Amboseli and Tsavo West National Parks in southern Kenya. This land use change is driven by a variety of socioeconomic, cultural, and political factors and is compromising the integrity and quality of dispersal habitats for a wide variety of wildlife species that historically have dispersed across the group ranches while migrating between the parks. Such dispersal hindrances are turning protected areas like Amboseli National Park into ecological islands that cannot sustain natural ecological processes nor maintain the high density and diversity of wildlife species using it for dry season grazing.

MEXICO

PRESERVING COASTAL DIVERSITY: SEA TURTLES AND BAY RESOURCES
Despite nearly two decades of conservation efforts, some species of sea turtles continue to decrease in 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 black turtles, olive ridleys, and the rare loggerheads and hawksbill turtles. Despite strong regulations against their exploitation, black 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 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 fishermen and 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 socioeconomic sustainability of the local community. Topics include: marine ecology, conservation and sustainability of marine resources, and 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.

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

MEXICO

EE (NS) 356 PRESERVING COASTAL DIVERSITY: SEA TURTLES AND BAY RESOURCES exposes students to the relationship between the decline in biodiversity and the health of the Magdalena Bay ecosystem. In this course, we will identify the most critically threatened areas in Bahía 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 Bahía 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 that will concentrate on developing management recommendations for reforestation practices on the Tablelands of Australia. We will explore the ecological roles, environmental services, and economic benefits of tropical rainforests. 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 toward developing marine parks policy, management plans, and innovation and technology transfer to assist in the management of marine protected areas.

Admissions Requirements & Instructions

When to Apply

The School for Field Studies 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.

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, have completed at least one college-level ecology or biology course, and completed at least one semester of college prior to the start of the program.

*Applicants for the semester program in Costa Rica must have completed a college-level course in ecology or environmental studies, and are encouraged to have taken coursework in international development, economics, or anthropology. 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 Web site 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 a minimum, both individuals providing references must complete the SFS reference forms.

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**

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

Once an application is received by SFS, you will be contacted with information about any missing materials as well as instructions on how to track the status of these materials online. If your application is incomplete, you should continue to check the status of your application online to ensure that all of the required materials are received. SFS is unable to begin the application review process until all necessary materials are received. To expedite the completion of your application, we suggest that you submit all of your application materials together. From the date when an application becomes complete, an admissions decision is

generally available within two to four weeks. As such, you should plan ahead and apply early to allow sufficient time for your application to be processed. Please note that final acceptance to all programs is contingent upon medical approval.

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 Web site (www.fieldstudies.org) for information about the medical approval process. Students with late medical forms may forfeit their space on a program. All medical forms will be reviewed by the SFS 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 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 their admissions counselor.

Non-discrimination Policy

SFS admits students of any sex, religion, race, color, national or ethnic origin, sexual orientation, or economic status to all the rights, privileges, programs, and activities generally accorded or made available to students of SFS and does not discriminate on the basis of sex, religion, race, color, sexual orientation, national or ethnic origin, physical or mental disability, or other protected status in the administration of its educational policies, admissions policies, scholarship loan programs, and other School-administered programs. SFS is an equal opportunity institution.

Tuition, Financial Aid, & Scholarships

Financial Aid

A key component of the SFS mission is to ensure that as many interested and eligible students as possible are able to participate in SFS programs. Since our founding in 1980, close to 13,000 students have 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 or visit www.fieldstudies.org.

SEMESTER STUDENTS: A growing number of schools allow students to take institutional financial aid off-campus. Check with your financial aid office to see what aid you can apply to your SFS program. 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 Admissions at 800.989.4418 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

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

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

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

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

SUMMER

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

- Withdrawal prior to 60-22 days before the start of the program = 100% refund of total program cost (less deposit).
- Withdrawal 21-0 days prior to the start of the program = 50% refund of total program cost (less deposit).
- Withdrawal after the program starts = NO REFUND. Students may transfer the non-refundable deposit to an SFS course within the next 12 months subject to acceptance.

Financial aid candidates: deposits are refundable only if withdrawal is less than 10 days following financial aid offer. Application fees are non-refundable.

SEMESTER COSTS FALL 2006 – SPRING 2007			
*Program Costs for Fall 2007 will be determined in March 2007			
Program	Tuition	Program Fees	Total Program Cost
Kenya	\$10,100	\$4,965	\$15,065
Australia	\$10,100	\$4,830	\$14,930
Turks & Caicos	\$10,100	\$4,305	\$14,405
Costa Rica	\$10,100	\$4,305	\$14,405
Mexico	\$10,100	\$4,305	\$14,405

SUMMER COSTS 2007			
*Program Costs for Fall 2007 will be determined in March 2007			
Program	Tuition	Program Fees	Total Program Cost
Kenya	\$2,610	\$1,505	\$4,115
Australia	\$2,610	\$1,470	\$4,080
Turks & Caicos	\$2,610	\$1,260	\$3,870
Costa Rica	\$2,610	\$1,055	\$3,665
Mexico	\$2,610	\$ 870	\$3,480

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, Turks and Caicos Islands, and Kenya programs carry 18 semester-hour credits) in biology or environmental studies from Boston University. Summer courses carry four semester-hour credits in environmental studies. Participants receive an official transcript from Boston University approximately six to eight weeks after the conclusion of the program for delivery to the office responsible for credit transfer at their home institution.

Students come from more than 300 colleges to attend SFS programs each year and most are able to transfer credit for their participation. The final decision regarding credit and grade transfer rests with your home institution. Therefore, you should check with your advisor/registrar when applying to our programs to learn how your SFS course work will be applicable for credit in your degree program. If you have questions regarding credit transfer, please call the SFS admissions office at 800.989.4418. In most instances, we can direct you to someone on your campus familiar with credit transfer for SFS programs.

The SFS Affiliate Program

The SFS Affiliate Program assists students in maximizing their 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

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

Albright College
Dr. Stephen Klein
Dr. David Osgood

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

Austin College
Ms. Valerie Roberts
Dr. George Diggs

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

Bennington College
Dr. Kerry Woods

Boston University
Mr. David Lamitie

Brandeis University
Mr. J. Scott Van Der Meid

Cedar Crest College
Dr. John Cigliano
Dr. Amy Faivre

Clark University
Dr. Todd Livdahl

Colby College
Dr. David Firmage

College of Charleston
Ms. Sarah Simmonite
Dr. Andrew Sobiesuo

College of the Holy Cross
Mr. Brittain Smith
Dr. Jane Van Doren

College of Santa Fe
Dr. Andrew Lovato

Connecticut College
Ms. Shirley Parson

Cornell University
Dr. Richard Gaulton
Dr. Kristen Grace

Davidson College
Dr. Michael Dorcas

Denison University
Dr. Jessica Rettig

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
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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. Lynda Kirby

Meredith College
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Dr. Larry Grimes

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Mount Holyoke College
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Mt. Olive College
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Mr. Brian Harley

Rochester Institute of Technology
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Dr. Catherine Hutchinson
Winnie

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

Sweet Briar College
Ms. Tiffany Cummings

Texas A&M University
Ms. Lisa Tauferner

Texas Tech University
Ms. Sandra Crosier
Ms. Katherine Quinn

Trinity College
Dr. Daniel Blackburn
Ms. Nancy Birch Wagner

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Ms. Betsy Arrington-Tsao

University of Massachusetts
Ms. Carol LeBold
Ms. Sandra Barron

University of Miami
Dr. Dan DiResta

University of North Carolina/Chapel Hill
Ms. Susan Pratt
Dr. Seth Reice

University of Redlands
Ms. Sara Falkenstien

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

University of San Diego
Dr. Michel Boudrias
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University of Southern California
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University of St. Thomas
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Wells College
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Whitman College
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Alumni Profiles



HEATHER MCMONAGLE
AUSTRALIA, 2001
Peace Corp Volunteer, Malawi
Dickinson College, B.A. in Psychology, minor Biology

THE MCMONAGLE SISTERS, Heather, Meaghan, and Sharon, all enrolled in SFS programs at various points in their college careers and all in different programs. Heather first became interested in SFS after a presentation was given at Dickinson College where she was a psychology major and biology minor. Drawn to the month-long summer program in a country that had always intrigued her, Australia, rather than a language-based program in Europe, Heather knew SFS would be the perfect fit for her schedule and interests.

Unlike her sister, Meaghan was fairly unfamiliar with SFS as a student at Siena College. After three years of in-class lectures and infrequent laboratories, she was looking for something other than the average study abroad experience. She wanted to be immersed in another culture and didn't want to travel to a foreign country just to attend more lectures about different societies, and so she applied to the summer program in Kenya (relocated to South Africa in 2003) and embarked on her own adventure.

The last of the McMonagle sisters to enroll in an SFS program was Sharon, a Colby College biology and

MEAGHAN MCMONAGLE
SOUTH AFRICA, 2003
Veterinary student
Siena College, B.S. in Biology
Oklahoma State University, D.V.M. in progress

environmental studies major. Upon the return of her two sisters from South Africa and Australia, she listened to countless stories of cultural experiences and amazing field research, deciding that the SFS experience might be just right for her. Sharon enrolled in the Marine Resource Studies semester program in the Turks and Caicos Islands in the fall of 2004.

Today, the McMonagle sisters are utilizing skills that they learned on their respective SFS programs in different ways. Heather joined the Peace Corps in Malawi after graduation as a secondary school teacher and was extensively involved with community projects in farming and water sanitation. She is hiking the Appalachian Trail this summer and planning to work with a therapeutic outdoor program in the fall. Following in the line of service work, Sharon has been accepted to Teach for America and will be departing for the Mississippi Delta to teach secondary biology for two years. Meaghan is currently in her second year of veterinary studies at Oklahoma State University.

SHARON MCMONAGLE
TURKS & CAICOS, 2004
Secondary biology teacher, Teach for America, Mississippi Delta
Colby College, B.S. in Biology, Environmental Science Concentration and Environmental Studies: Policy Concentration

BRUNO ANDREAS WALTHER
AUSTRALIA, 1992
Post-doctoral researcher working on the ecology and behavior of birds
Amherst College, B.S. in Biology 1993
Oxford University, Ph.D. in Zoology 1998

A SEMESTER WITH SFS IN AUSTRALIA in 1992 was enough to convince Bruno that his career would have to involve both the tropics and birds. Bruno chose SFS because he felt he needed the “field experience, perspective on what works and what doesn't in the tropics, a very good overview of the conservation problems and management solutions concerning tropical rainforests, and a great adventure.”

What he gained was an appreciation of the complexity of both of ecological system of the rainforest as well as the conservation problems facing the rainforests. He found enough inspiration in this complexity to mold his career path. He is currently a post-doctoral researcher working on the ecology and behavior of birds at the Department of Zoology, University of Cambridge in England. His research involves the behavior, ecology, and conservation of neotropical and palearctic migrant birds; modeling bird distributions using GIS techniques; statistical models for species richness estimation; and host-parasite and predator-prey interactions. The upshot of his job is that he can offer the data and information that organizations like BirdLife International and the Royal Society for the Protection of Birds need to make tropical conservation happen.

situations where military training and T&E species can't coexist, but I think most people would be surprised to know just how well T&E species are doing on Camp Lejeune and military installations around the country.”

SFS helped reinforce Craig's desire to work in this field (wildlife biology). The semester he spent in Baja, Mexico with SFS made him realize that he wanted to spend the rest of his life working in a field that he's passionate about. It also proved to be great exposure to people who were doing the kinds of things he wanted to do.

“In addition to incredible memories of spending days at sea, looking for marine mammals, camping under the stars on uninhabited islands, and the friendships I made, the SFS experience helped instill me with a sense of confidence by putting me in situations I had never been in before, from conducting research to navigating around a city where you barely speak the language or swimming across a stretch of open water.”

SFS Glossary of Terms

Case study: Case studies provide an analysis of an actual local environmental situation or dilemma requiring both a decision and action. SFS uses local case studies to give students an interdisciplinary and holistic understanding of the background, context, and relevance of environmental issues surrounding the community. The center director and faculty develop two or three case study questions each semester. Within the case study format, the lecture courses provide the theoretical framework, background, and essential tools necessary for students to carry out their Directed Research projects. Faculty work with students so that students understand the case study problem and can identify potential solutions and alternatives.

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

Community involvement: SFS centers are located in small, remote villages, making community involvement an important element of our programs. Students spend approximately 20 hours per semester involved in various community service activities, such as tutoring in local schools. Our close relationship with the communities where we work were cultivated and continue to be strengthened by our strong involvement and commitment to the well-being of the local people.

Cross cultural competency: Cultural competence is defined as the ability of individuals and systems to work or respond effectively across cultures in a way that acknowledges and respects the culture of the person or organization being served. Culturally competent SFS students are aware and respectful of the values, beliefs, traditions, and customs of the countries where they are a guest.

Cultural immersion: Our definition of cultural immersion strays from the common perception of the term. At SFS, this means: 1) We live in, conduct research in, and give our time to bettering the communities where we are located; 2) We work with local stakeholders to design and perform research projects that directly benefits the local community; 3) Students present their research findings to the community at the end of the semester; 4) Students are guided, and in some cases take classes, on the

history and cultural practices of the community where they are studying (such as cultural field trips, weekend home stays, language instruction, participation in local festivals, etc.); 5) Students engage in community service projects with local community members and/or NGOs.

Directed research: SFS semester students conduct Directed Research projects and report their results to community stakeholders. The topics are defined by the centers' five-year research plans and are based upon the local communities needs. Each semester, students are presented with three or more possible Directed Research project options. After selecting an option, students then research and develop specific aspects of the project into their individual papers (see course description for more details).

Experiential learning: Students will learn by experiencing the topics firsthand. While you will receive some lectures in a classroom, you will also regularly venture out into the field for lectures, to conduct research and to take field trips. On SFS programs, the field is your primary classroom. Lectures and classroom work support and enhance the work that you do in the field. Processing that information and applying it to your field work and research is key to our model.

Faculty mentoring: SFS students are closely mentored by our faculty teams — 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, socioeconomics, and policy.

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

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

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

stations are remote, yet well-integrated into the community, fully operational laboratories. The living conditions are basic but have fully functional kitchens, running water, and electricity (including slow Internet connections).

Five-year research plan: Defined by SFS staff, a research advisory committee, local clients, and the community to develop research priorities and projects that address critical environmental problems. The purpose of the plan is to develop long-term research projects that utilize the expertise of SFS faculty while providing useful research to local stakeholders. The research direction also provides the community and students with a framework for the direction of student coursework and research projects and how such courses and research fit into the bigger picture of natural resource conservation.

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

Service learning: SFS is committed to identifying environmental issues critical to the communities where we work, researching these topics, providing results and recommendations to these community stakeholders, and also volunteering within the community on projects that are beneficial to its members. Such an integration of curriculum and service help our students understand the local community from a different viewpoint — instead of an outsider examining the community, the students are volunteering for the community and understanding community issues first hand. Examples of community service completed in past SFS programs include planting trees; beach clean-ups; sponsoring community festivals for local children; tutoring students in English, math, and science; and volunteering in local hospitals.

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

