



01

02

03

04



THE SCHOOL FOR FIELD STUDIES

ENVIRONMENTAL STUDY ABROAD

SEMESTER & SUMMER PROGRAMS

18

YEAR

AUSTRALIA

BHUTAN

CAMBODIA

COSTA RICA

PANAMA

PERU

TANZANIA

TURKS & CAICOS ISLANDS



CRITICAL ENVIRONMENTAL ISSUES STUDIED AT SFS



**BIODIVERSITY
CONSERVATION**



CLIMATE CHANGE



**COMMUNITY RESOURCE
MANAGEMENT**



**ENVIRONMENTAL
ETHICS & JUSTICE**



ENVIRONMENTAL POLICY



FISHERIES MANAGEMENT



LAND USE CHANGE



**NATURAL RESOURCE &
WATER MANAGEMENT**



**POLLUTION & WASTE
MANAGEMENT**



SUSTAINABLE LIVELIHOODS



TOURISM IMPACTS

BHUTAN

Center for Himalayan Environment
and Development Studies



See page 10 for more information

CAMBODIA

Center for Conservation and
Development Studies



See page 16 for more information

AUSTRALIA

Center for Rainforest Studies



See page 6 for more information

TANZANIA

Center for Wildlife
Management Studies



See page 32 for more information

STUDY ENVIRONMENTAL ISSUES AROUND THE WORLD

Today's environmental challenges demand collective action. The School for Field Studies was founded on the belief that stewardship of our planet hinges on the engagement of a global community of informed and committed individuals from diverse professions. For more than 35 years, SFS has focused on interdisciplinary, collaborative environmental education. We believe that SFS programs are now more critical than ever to inspire and educate environmental leaders.

Join us. Step out of the classroom and into the world's most dynamic landscapes. Living in Australia's ancient rainforests, tracking elephants through the Serengeti, or diving among the coral reefs of the Turks and Caicos Islands, you will find yourself immersed in and captivated by the world's most incredible and complex ecosystems. These globally important places, and the species and communities that depend on them—these are what have motivated SFS to become the premier institution for environmental study abroad.

TABLE OF CONTENTS

- 1 *Environmental Issues around the World*
- 2 *Why Study with SFS*
- 6 **AUSTRALIA**
Rainforest Studies
- 10 **BHUTAN**
Himalayan Environment and Development Studies
- 15 *Article:*
There is Work to be Done
Riley Knoedler | Williams College
| SFS Australia Spring '17
- 16 **CAMBODIA**
Conservation and Development Studies
- 19 *Article:*
The Realities of Climate Change
Georgina Lloyd, Ph.D. | Cambodia
| Center Director
- 20 **COSTA RICA**
Sustainable Development Studies
- 24 **PANAMA**
Tropical Island Biodiversity Studies
- 28 **PERU**
Amazon Studies
- 31 *Meet our Alumni*
- 32 **TANZANIA**
Wildlife Management Studies
- 36 **TURKS AND CAICOS ISLANDS**
Marine Resource Studies
- 40 Course Descriptions
- 44 Admissions
- 45 Tuition and Financial Aid

WHY SFS?



THE SFS MODEL

SFS establishes its Centers in locations and ecosystems grappling with critical environmental issues. Our programs are intense, invigorating, and fulfilling. With a global network of dedicated faculty, students, staff, alumni, and friends from communities across the globe, we examine complex environmental issues faced by our host communities on four continents. SFS has a long history of user-inspired environmental research and a commitment to the local communities where we live, study, and work. Founded in 1980 to improve environmental literacy among young people and to prepare the next generation of environmental leaders, SFS has focused exclusively on environmental education for more than 35 years.

01

02

03

04

DIRECTED RESEARCH

BE PART OF SOMETHING GREATER

Through Directed Research (DR)—as opposed to independent research—students conduct research on a specific topic that is part of the SFS Center's long-term strategic research plan, which has been developed in partnership with local community stakeholders and clients.

The DR course, taught by resident SFS faculty and offered in all of our semester programs, provides students with the opportunity to apply the scientific process in a mentored field research project that addresses a local environmental issue. Through the DR project, students contribute to a growing body of scientific research that informs local conservation and resource management decisions.



WHO WE ARE

AN INTERDISCIPLINARY TEAM

Our full-time faculty are skilled teachers, field researchers, and mentors, and are experts in many different fields including ecology, policy, resource management, and socioeconomics.

A COLLABORATIVE COMMUNITY

We are active members of the communities around our Centers and we nurture long-term, collaborative relationships. Through community-minded research development, students both contribute to a growing body of knowledge about local critical environmental issues and also become part of the community.

AN EXTENSIVE ALUMNI NETWORK

Alumni frequently present their findings at professional meetings and build on their research for senior theses. Some publish articles in peer-reviewed academic journals in collaboration with SFS faculty advisors. All become members of our network of more than 17,000 alumni who share a passion for the environment in careers that span the private sector, government, academia, and leading NGOs in the fields of conservation and the environment.

WHAT WE DO

SFS STUDENTS *DO* SCIENCE

Our programs are hands-on learning reimaged. Students step out of the classroom and actively engage in the ecosystems they study. Beyond reading an article about critical issues facing African elephants, our students observe them from meters away while collecting data on their resilience to climate change. Rather than lecturing about the impacts of coffee farming, we visit Monteverde's cloud forests to learn from farmers how agriculture can support biodiversity. SFS students engage in rigorous research about critical, local issues.

SFS RESEARCHES COMPLEX ENVIRONMENTAL ISSUES

With eight Centers around the world, our research covers a spectrum of environmental issues. SFS programs provide the foundation for students to critically examine complex environmental issues in an international setting and articulate questions that reflect that complexity. The academics and research at each Center are designed around that Center's particular theme – such as marine resource management in the Turks and Caicos Islands – and each Center explores a variety of issues and perspectives within that theme.

WHERE WE WORK

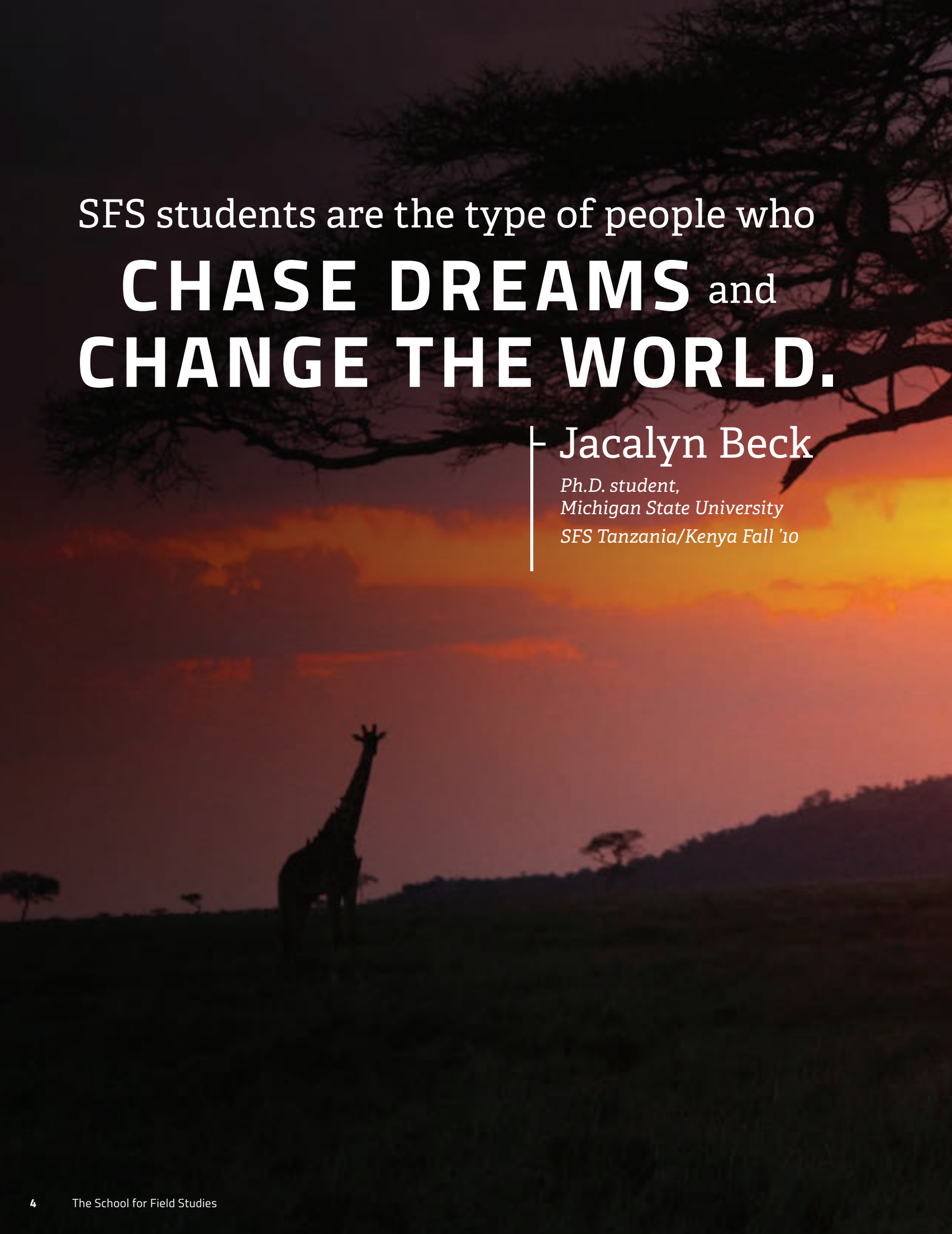
LIVING OFF THE BEATEN PATH

SFS students, faculty, and staff live and work together in our eight fully-outfitted Centers around the world. Ranging from deep in the heart of the Australian rainforest to the breezy, tropical coastline of Panama, each Center has its own distinct flavor and research focus. Regardless of where you go, you'll discover a community and lifestyle unlike anything you've experienced before.

SAFETY IN REMOTE CORNERS OF THE WORLD

When we send a group of students out into the field to conduct research in remote locations, their safety is our top priority. The SFS Safety and Student Life team is dedicated to providing comprehensive safety and risk management plans in all aspects of our programs, working around the clock to minimize hazard without sacrificing the rugged and awe-inspiring nature of the SFS study abroad experience.

For more information, visit:
fieldstudies.org/about



SFS students are the type of people who
CHASE DREAMS and
CHANGE THE WORLD.

— Jacalyn Beck

*Ph.D. student,
Michigan State University
SFS Tanzania/Kenya Fall '10*



The Center for Rainforest Studies

AUSTRALIA

LOCATION

Yungaburra

TERMS OFFERED

Semester, Summer I, Summer II

01 02 03 04

WHY WE ARE HERE

For more than 25 years, the Atherton Tablelands and Wet Tropics in Northeastern Queensland have been home to our Center. This region's ancient rainforests preserve millions of years of evolutionary history and are home to an astounding number of plants, birds, and marsupials found nowhere else in the world. Unfortunately, though, the Wet Tropics rainforests are threatened by a legacy of habitat loss and fragmentation, and climate change.

Past degradation of upland rainforests and widespread clearing of vegetation along waterways has led to harmful runoff on the iconic Great Barrier Reef, directly connecting the fragmentation of rainforests with the loss of critical reef species. Additionally, scientists view the Wet Tropics as a "canary in the coal mine" in observing the effects of climate change. Climate models predict a significant rise in local temperatures over the next century, causing serious ecological and economic impacts across the region.

Student research focuses on this confluence of variables, particularly the upland remnant forests threatened by climate change and the riparian forests that play such an important role in the health of downstream ecosystems like the Great Barrier Reef. As students participate in restoration projects alongside citizen volunteers, they come to understand rainforest management from the perspective of those who call this important ecosystem home.



Environmental Issues



Biodiversity
Conservation



Climate Change



Land Use
Change



Community Resource
Management



Sustainable
Livelihoods



Natural Resource &
Water Management



“It feels like a dream to walk through these ancient forests full of giant trees, curling vines, lush tree ferns, and swaying palms. When you stand still, you hear hundreds of birds singing and flitting about in the canopy, you see the rustling of ground cover and glimpse small mammals darting about, and you feel your lungs filling with the cleanest and most refreshing air you will ever breathe.”

- Lindsey Schad
Miami University, Australia Summer '16

Our Team

The Center, composed of a team of scholars and support staff passionate about the landscape of Australia, focuses its research on questions related to the Wet Tropics rainforests and the human communities that surround them. Faculty interests at the Center span from understanding the interactions between human and ecological systems to rainforest microclimates. Dr. Amanda Freeman, research scientist and Center Director, has studied the ecological values of restoration in the Wet Tropics since moving to Australia from New Zealand in 1997.

Each semester, the Center hosts a research symposium where students present their research findings to community members and stakeholders in the area. Many of the projects focus on applied research to support land management, and aim to provide data and information which may help address community concerns.

Community Collaboration

SFS is an active partner in the community, providing scientific data and policy analysis for local decision makers. Our students forge strong connections with residents who are passionate and knowledgeable about environmental stewardship and participate in local restoration projects.

Throughout the program, students attend special lectures, workshops, and celebration days in conjunction with regional and national conservation groups such as TREAT (Trees for the Evelyn and Atherton Tablelands Inc.) whose nursery and reforestation sites students visit to learn about and participate in the most contemporary methods in rainforest restoration.

In addition to a weekend-long homestay with a local family (semester only), students also enjoy hosting community dinners at the Center, attending festivals, visiting the Malanda theatre, and socializing at the local pubs and sporting competitions.

Life at the Center

The Center lies on the edge of the Atherton Tablelands and is a 20-minute drive from the small town of Yungaburra. Protected World Heritage forests and farmland surround the 153-acre property. Student cabins are nestled within the rainforest and the site is alive with the sounds of the forest.

What You'll Practice

We emphasize a suite of research skills in our Australia programs. The skills listed vary depending on the program. See our website or contact an Admissions Counselor for more information.

- | | |
|--|---------------------------------------|
| — Research design and implementation | — Land use assessment |
| — GIS use and applications | — Interview and survey methods |
| — Terrestrial species identification and population monitoring | — Scientific writing and presentation |
| — Quantitative & qualitative data collection and analysis | — Forest survey methods |



AUSTRALIA SEMESTER

TROPICAL RAINFOREST STUDIES



Spend a semester in the heart of an ancient rainforest. This program addresses the regeneration and restoration of the once extensive tropical rainforests of the Atherton Tablelands, particularly the upland remnant forests threatened by climate change, as well as riparian forests that play an important role in the health of downstream ecosystems like the Great Barrier Reef. Students work with local stakeholders and indigenous groups to understand livelihood and natural resource management strategies, and the connection of these communities to the surrounding environments.



What You'll Study

— Rainforest ecology and conservation

— Community landscape management

Restoration ecology

EX. I

Discover the matrix of remnant rainforests in North Queensland and learn how scientists and community members are linking living corridors to connect fauna and flora and stabilize further habitat loss of fragile places.

— Climate change

— Indigenous knowledge and histories

Threatened species conservation

EX. II

Observe the behavior of endangered and threatened wildlife, especially the charismatic marsupials of the Wet Tropics (gliders, tree kangaroos, wallabies), and learn how habitat fragmentation affects species diversity and distribution.

— Sustainable tourism practices

Visit fieldstudies.org/australia-semester to learn more and apply.

01

02

03

04

2018 DATES

SPRING: JANUARY 29–MAY 3

FALL: AUGUST 27–NOVEMBER 29



Courses

SFS 3690	Rainforest Ecology	4 credits
SFS 3700	Principles of Forest Management	4 credits
SFS 3020	Environmental Policy and Socioeconomic Values	4 credits
SFS 4910	Directed Research	4 credits

Please see page 40 for course descriptions.



Student Research Projects

Recent investigations have explored the following topics:

- > Improvement of species' resilience potential through climate modeling, rainforest corridor plantings, and assessment of forest restoration efforts
- > Collaboration with indigenous people to help determine opportunities and challenges associated with the development of ecocultural tourism
- > Tree kangaroo colonization of restored rainforests
- > Plant functional traits as a predictor of drought and cyclone resistance
- > Long-term effects of selective logging and forest recovery patterns



Field Experiences

- > Visit World Heritage listed rainforests to learn about the ecology, geology, and historical biogeography of Queensland's Wet Tropics
- > Explore the traditional lands of local Aboriginal groups, gaining an understanding of indigenous peoples' use and management of natural resources
- > Study the threat that climate change poses to tropical rainforests and use modeling tools to predict its impact in the Wet Tropics
- > Use spatial tools, such as GPS and GIS, to assess land-use change and habitat use by different species
- > Work alongside citizen volunteers to regenerate rainforest in critical riparian and high elevation sites

AUSTRALIA SUMMER

RAINFOREST MANAGEMENT STUDIES Session I

TECHNIQUES FOR RAINFOREST RESEARCH Session II



Spend the summer immersed in the forests of Australia and New Zealand. These summer courses can be taken individually (4 credits each) or in combination for a total of 8 credits. The combined summer program provides the opportunity to compare ecosystems and approaches to natural resource management, and to practice techniques for field research. Students participating in both sessions receive a \$1,000 discount.

Both sessions include a multi-day excursion to Daintree National Park. Only Session I includes a trip to New Zealand, while only Session II includes a field trip on the Great Barrier Reef.

Session I

Rainforest Management Studies

Compare conservation histories between two countries once home to vast and spectacular rainforests. In New Zealand, students discover critically endangered flora and fauna and the impacts that have led to their decline. In Australia, students use their New Zealand experiences to critically compare political structures, co-management arrangements, land-use patterns, and biogeography.

Visit fieldstudies.org/australia-summer1 to learn more and apply.

01 02 03 04

Session II

Techniques for Rainforest Research

Explore the verdant rainforests of Australia, which are threatened by development, climate change, and invasive species, leaving fragments that are often too small or isolated to sustain certain species. During this session, develop field research skills across multiple disciplines used to research forest ecology, restoration, and conservation.

Visit fieldstudies.org/australia-summer2 to learn more and apply.

01 02 03 04

2018 DATES

SESSION I: JUNE 4-JULY 4

SESSION II: JULY 9-AUGUST 8

Courses

SESSION I

SFS 3540 Rainforest Management Studies 4 credits

SESSION II

SFS 3550 Techniques for Rainforest Research 4 credits

Please see page 40 for course descriptions.

Field Experiences

Visit our website for additional session-specific information.

- > Examine the influence of fragmentation and other pressures on abiotic and biotic elements of forest communities in Australia and New Zealand
- > Visit the ancient rainforest refugia at Daintree National Park
- > Explore the ancient podocarp and Kauri forests of northern New Zealand
- > Learn sampling design, plant identification, forest survey techniques, animal survey methods, and social science research techniques
- > Experience largely intact lowland rainforest and contrast these with the fragmentation effects impacting the rainforests of the Atherton Tablelands
- > Visit a Great Barrier Reef island and learn about the links between riparian restoration and water quality on the reef

*The Center for Himalayan Environment
and Development Studies*

BHUTAN

LOCATION

Paro

TERMS OFFERED

Semester, Summer I

01

02

03

04

WHY WE ARE HERE

The Kingdom of Bhutan, a small landlocked country nestled in the eastern Himalayas, sits between two of Asia's geopolitical giants, India and China. The incredibly mountainous northern reaches of Bhutan have permanent glaciers that feed rivers vital to its economy and ecology and it is also home to high levels of species diversity and endemism including the takin, snow leopard, golden langur, and black-necked crane. More than seventy percent of the country is covered in forest that is becoming increasingly threatened due to population growth and rapid economic development.

The country's rich cultural traditions and sociopolitical institutions reflect the Buddhist principle of The Middle Path, which integrates people, nature, traditional knowledge, and modern science. Bhutan is perhaps best known for its philosophy of Gross National Happiness (GNH), an approach to development and good governance that measures prosperity through the physical, spiritual, social, and environmental health of citizens and their surroundings.

Sustainable management of natural resources is therefore critical to achieving Bhutan's broader development goals under the principles of GNH, and also to maintaining the integrity of its mountain ecosystems. Our research addresses issues related to sustainable management and the support of rural livelihoods in the face of modernization.



Environmental Issues



Biodiversity
Conservation



Climate Change



Tourism Impacts



Pollution and
Waste Management



Natural Resource &
Water Management



Sustainable
Livelihoods



“This program changed my perception of conservation, development, and national parks. Most importantly, it changed my perception of Bhutan...Everything feels and is more complex than I thought.”

- Annabel Li
University of Redlands, Bhutan Spring '17

Our Team

The Bhutan team has a unique blend of talent made up of international and national governmental experts as well as professionals from civil society organizations. The team collaborates to address the joint research priorities of the Ugyen Wangchuck Institute for Conservation and Environmental Research (UWICER), Bhutan Ecological Society (BES), and SFS, focusing on conservation, development, watershed management, rural-urban migration, and sustainable forestry among other topics.

Each semester, the Center hosts a research symposium where students present their research findings to local community members and stakeholders including government ministries such as the Ministry of Agriculture and Forests. Many of our projects directly touch on issues of concern to the Bhutanese government, and we aim to provide data and information to help address these issues.

Community Collaboration

With the results of our research, we offer data and recommendations that inform policy makers and planners and build relationships between SFS and local stakeholders involved in biodiversity conservation and resource management. As at our other Centers throughout the world, SFS is a part of the social fabric of the community. SFS students get involved in community volunteer projects and social activities such as cleaning of streams, promoting environmental awareness in local schools and playing sports with Bhutanese students and Buddhist monks and nuns. Our students also get to participate in a short homestay to experience Bhutanese culture and lifestyles. During their research projects, students work closely with rural communities, sometimes living with local families for short periods of time.

Life at the Center

SFS students live and study at the Center for Himalayan Environment and Development Studies, located in the town of Paro in western Bhutan. From the Center's verandas, students can enjoy the views of the flowing *Pachhu* (main Paro River) and the beautiful valley. Our location in Paro provides us with access to a variety of field sites in several districts, all within a 3-hour drive.

What You'll Practice

We emphasize a suite of research skills in our Bhutan programs. The skills listed vary depending on the program. See our website or contact an Admissions Counselor for more information.

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|--|--|
| <ul style="list-style-type: none"> — GIS use and applications — Remote sensing — Biodiversity surveys — Species identification and distribution mapping — Quantitative & qualitative data collection and analysis | <ul style="list-style-type: none"> — Survey design and interviewing techniques — Environmental impact and protected-areas assessment — Scientific writing and oral presentation |
|--|--|



BHUTAN SEMESTER

HIMALAYAN ENVIRONMENT
AND SOCIETY IN TRANSITION



Nestled in the remote and rugged eastern Himalayas, Bhutan is characterized by extensive mountain ranges and valleys and is modernizing rapidly. Learn about how Bhutan strives to secure its rich culture and biodiversity in the face of change. Examine Bhutanese culture and environments, and rapid development in the midst of rural-urban transition. Trek through villages to experience culture, Buddhist philosophy, and environmental issues, while getting first-hand knowledge of local ecosystems and rural livelihoods. Develop skills in assessing environmental issues, defining research questions, conducting field research, and communicating results.



What You'll Study

Forest ecology and conservation

Community forest management

EX. I

Learn how the Bhutanese manage forested areas to preserve the spaces for spiritual and ceremonial purposes as well as for economic gain. Trek through forested regions and learn local conservation and extraction practices and policies from forest rangers and community leaders.

Land tenure and land-use changes

Valuation of natural resources

Geology and hydrology of mountain regions

EX. II

Discover how Bhutan utilizes its river systems to help drive the economic engine of a small nation. Visit dam projects and learn how Bhutan and its neighbor India balance hydropower production/distribution and environmental sustainability and habitat protection.

Influence of Buddhist philosophy in conservation practices

Small nation environmental governance

Drivers of rural to urban migration



Visit fieldstudies.org/bhutan-semester
to learn more and apply.

01

02

03

04

2018 DATES

SPRING: JANUARY 29-MAY 9

FALL: AUGUST 27-DECEMBER 5



Courses

SFS 3040	Political and Socioeconomic Dimensions of Environment	4 credits
SFS 3060	Mountain Ecology	4 credits
SFS 3050	Land Use, Natural Resources, and Conservation	4 credits
SFS 4910	Directed Research	4 credits
SFS 2010	Religion and Culture of Bhutan	2 credits

Please see page 40 for course descriptions.



Student Research Projects

Recent investigations have explored the following topics:

- > Comparison of timber productivity in community forests and private forests
- > Connections between land use and water quality
- > Abundance and status of key economic species including baseline biodiversity analyses
- > Impact of roads on community forest and agrarian livelihoods
- > Impacts of rural-to-urban migration on food security and nutrition across the country
- > Interest in and potential for payment for ecosystem services



Field Experiences

- > Explore Phobjikha Valley, an important wetland for the globally threatened black-necked crane
- > Study traditional agricultural systems, and assess how development affects the agroecosystem and rural household economies
- > Explore unique flora and fauna within lower-elevation subtropical Himalayan broadleaf forests
- > Pursue socioeconomic research to assess how development in the Kingdom has influenced diverse livelihoods
- > Visit monasteries to learn about the role of Buddhism in Bhutanese society and culture, especially as it relates to the environment and national happiness

BHUTAN SUMMER

EASTERN HIMALAYAN FORESTS
AND RURAL LIVELIHOODS
Session I



"With such a vast mountain landscape spread before us, it was easy to assume we were totally and undeniably off the grid. However, through careful observation, we were able to see that even this "untouched wilderness" was, in fact, a hybrid of pristine nature and human culture. Barely within view of our campsite classroom were the ruins of a *dzong*, or Bhutanese fortress."

- Zachary Hellman
Purdue University, Bhutan Summer '16

Session I

Eastern Himalayan Forests and Rural Livelihoods

Bhutan is your classroom in this six-week program exploring culture, environmental issues, and rural livelihoods. Participate in SFS' joint research with the Ugyen Wangchuck Institute for Conservation and Environmental Research (UWICER) and the Bhutan Ecological Society (BES) on topics including biodiversity conservation, sustainable forestry, watershed management, and rural development. Trek across valleys and ridges and through villages to learn about culture, Buddhist philosophy, and environmental issues, and gain an intimate knowledge of the local ecosystems and rural livelihoods.

This is a six-week program.

Visit fieldstudies.org/bhutan-summer1
to learn more and apply.

01

02

03

04

2018 DATES

SESSION I: JUNE 4-JULY 12



Courses

SESSION I

SFS 3580	Eastern Himalayan Forests and Rural Livelihoods	6 credits
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Please see page 40 for course descriptions.



Student Research Projects

Recent investigations have explored the following topics:

- > Effects of market integration on decision making and participation levels in community forests
- > Influence of environmental policies on wild fungi foraging practices
- > Changes in water quality in relation to elevation change and land use



Field Experiences

- > Conduct interviews with Bhutanese citizens who have resource-based livelihoods, exploring the relationship between human well-being and natural resources
- > Learn important features of local forest species, including species composition and community dynamics; practice forest survey field techniques
- > Consider how culture and religion influence interactions with the surrounding environment
- > Take a multiday trek through cultural and natural landscapes
- > Visit the stunning Punakha Dzong and Taksang Dzong



THERE IS WORK TO BE DONE

RILEY KNOEDLER

Williams College

SFS Australia Spring '17

We've been living in the rainforest for three weeks now, and already we call it home.

Situated as we are in a seemingly vast rainforest, it is easy to forget how little of Australia is covered with this amazing ecosystem. The short drive to town is punctuated by the swift change in scenery. Dairy farms, sugar cane fields, and tiny towns fill the valley, along with small sections of rainforest called fragments. Long ago, the whole area was rainforest, but European settlers cleared most of the land for agricultural use.

A focus of our studies so far has been on the effects of fragmentation, which generally decreases the biodiversity and resilience of the forest within. For example, the Lumholtz's Tree-Kangaroo, an endangered endemic species, needs more area for its habitat than most fragments can provide. We've visited different sections of rainforest sprinkled across the tablelands and observed firsthand the negative effects of wind, small area, and pollution.

More importantly, however, we have witnessed the community response to this problem. In the three weeks we have been here, we have worked with various restoration-oriented organizations four times. These groups are comprised mostly of local volunteers, and membership can number in the hundreds. Many hands make light work, and we've helped plant thousands of trees in the span of a few hours. The trees are planted strategically to expand fragments and connect them with large rainforest corridors.

One tree planting took place on a farm. The owners of the land were spearheading the move to create the corridor, generously donating their land to the effort. At a tree nursery, volunteers come in every Friday to re-pot, weed, and care for seedlings. At a restoration site along a river, the volunteers (mostly local retirees) enter neck-deep water to cut out invasive species. The people I've interacted with seem optimistic as they speak of the trees that will live for hundreds of years, but they're acutely aware that the battle is only uphill.

I think the political climate can make one feel a bit hopeless when it comes to tackling environmental issues. But witnessing the commitment and vision the people here share for their home and the rainforest has made me hopeful again. There is a genuine spirit of camaraderie. There is work to be done, here and back home, and there are people who want to do that work. A few days ago, I saw a tree kangaroo at a young restoration site. It's not much, but it's a small token of evidence that all the work counts.

READ MORE: [FIELDSTUDIES.ORG/BLOG](https://fieldstudies.org/blog)

*The Center for Conservation and
Development Studies in the Lower Mekong*

CAMBODIA

LOCATION

Siem Reap

TERMS OFFERED

Semester

01

02

03

04

WHY WE ARE HERE

Cambodia's Lower Mekong Basin is home to the Irrawaddy dolphin, Asian Elephant, Greater Adjutant Stork and other threatened species. Its diverse ecosystems include lowland evergreen forests, dry dipterocarp forests, seasonally flooded gallery forests, and estuarine mangroves.

Despite high levels of biodiversity, conservation efforts and the implementation of environmental policies are still in the formative stages. Cambodia, a post-conflict nation, is engaged in rapid economic development and is experiencing dramatic environmental change. Growing threats to biodiversity include hydropower dam projects on the Mekong River and its tributaries, illegal logging, economic land concessions, overfishing, and the privatization of communal resources.

Rural livelihoods in Cambodia, which have traditionally combined farming, fishing, and foraging for forest and aquatic resources, remain dependent upon natural resources. Yet, research indicates that natural resources are declining, leaving many rural livelihoods in transition.

At the Center for Conservation and Development Studies in the Lower Mekong, we focus on examining the drivers of environmental change in Cambodia, including unsustainable development, habitat degradation, and climate change, and we analyze strategies which seek to find a sustainable balance between human needs and biodiversity conservation. Through coursework, field excursions, and research, students examine the interface between livelihoods and the environment, assess biodiversity, and gain an understanding of ethical natural resource use and good governance.



Environmental Issues



Biodiversity
Conservation



Climate Change



Community Resource
Management



Environmental
Policy



Environmental Ethics
and Justice



Sustainable
Livelihoods



“How uniquely valuable this intimate opportunity is, to work with and learn from passionate ecologists, biologists, and sociologists from drastically different backgrounds. For all our diversity, these differences make us strong. We’re able to spend tuk tuk rides and bus trips intoxicated by spirited debates about ethics and orientalism, compassionate ecology and ubiquitous spirituality. I’ve never felt anything like this before.”

- Taylor Walker
Hollins University, Cambodia Spring '16

Our Team

The Center, composed of multidisciplinary scholars with deep connections to the natural and human landscape, focuses its research on questions related to environmental governance and natural resource management, biodiversity conservation and ecology, the human-environment nexus, and sustainable tourism development. Dr. Georgina Lloyd, Center Director, has been living and conducting research in Siem Reap, Cambodia since 2007. She has collaborated with the Cambodian government on policy development for the Angkor World Heritage Site, completed a Ph.D. in Environmental Law at the University of Sydney, and worked with community members to improve tourism social enterprises that provide benefits for local people.

The Center is uniquely situated to undertake high-quality field research in areas where baseline environmental studies have yet to be conducted, and frequently partners with local NGOs, government agencies, universities, and other institutions to address these areas of need.

Community Collaboration

Our students immerse themselves in the community of Siem Reap, engaging with Cambodia’s rich cultural heritage and becoming part of the city’s vibrant social fabric. As part of the curriculum, students meet and interview a wide variety of villagers and the members of various local and international conservation and development organizations. SFS’ connections with NGOs, our partnership with local Paññāsāstra University of Cambodia (PUC), and relationships with other institutions in the area enable faculty and students to collaborate on a range of environmental issues in the community.

Our urban location in Siem Reap offers students the opportunity to participate in community cleanup days, take traditional dance classes, and attend festivals and performances. Homestays and frequent visits to bustling markets give students a chance to practice their Khmer language skills and get a taste of Cambodian cuisine.

Life at the Center

Students live at a private compound situated close to the vibrant city of Siem Reap. The Center provides an ideal base camp for excursions to sites throughout the region, including the World Heritage Site of Angkor, the diverse riverine and terrestrial ecosystems of the Lower Mekong Basin, and the fishing villages and wildlife reserves of the Tonlé Sap Lake.

What You’ll Practice

We emphasize a suite of research skills in our Cambodia program. See our website or contact an Admissions Counselor for more information.

Research design and presentation

Species identification techniques

Biodiversity assessment methods

Interviewing and qualitative research methods

Statistical analysis and scientific writing

Language (Khmer)



CAMBODIA SEMESTER

CONSERVATION AND DEVELOPMENT
IN THE LOWER MEKONG



Students in this program examine the interface between livelihoods and the environment in Cambodia, assessing biodiversity and ecology, and exploring ethical issues around natural resource use and environmental governance. Through extensive travel across Cambodia and Vietnam, students explore regional development and conservation challenges and community-based solutions. Students visit key conservation sites along the Mekong River, explore the biodiverse forests of Mondulkiri, gain appreciation for Cambodia's recent history in Phnom Penh, and discover coastal ecosystems in Kampot prior to heading to Can Tho and Ho Chi Minh in Vietnam.



What You'll Study

Aquatic ecology and conservation

Terrestrial ecology and conservation

EX. I

Students practice a range of field techniques including camera trapping, water bird and bat monitoring, mammal trapping and transects. These techniques are used in multiple ecosystems (flooded forest, riverine, wetland, evergreen forest, and dry deciduous forest) to provide students with a broad exposure to their application.

Traditional livelihoods

Sustainable tourism development

Community-based conservation strategies

Environmental ethics and justice

EX. II

Students learn about environmental justice principles such as public participation, the precautionary principle, and intergenerational equity which draw upon customary environmental law principles and evolving international norms. Throughout the program students apply these principles in the critical analysis of environmental management and governance.

Good governance of natural resources



Visit fieldstudies.org/cambodia-semester
to learn more and apply.

01

02

03

04

2018 DATES

SPRING: JANUARY 29-MAY 9

FALL: AUGUST 27-DECEMBER 5



Courses

SFS 3810 Ecosystems and Livelihoods 4 credits

SFS 3820 Environmental Ethics and Development 4 credits

SFS 3800 Conservation Science and Practice 4 credits

SFS 4910 Directed Research 4 credits

SFS 2080 Language and Culture of Cambodia 2 credits

Please see page 41 for course descriptions.



Student Research Projects

Recent investigations have explored the following topics:

- > Economic viability of fish and crocodile aquaculture on the Tonlé Sap Lake
- > Connections between traditional monks and sacred forests in Phnom Kulen
- > Range of medicinal plant usage in rural communities
- > Governance of common pool resources
- > Assessment of environmental education initiatives in Prek Toal
- > Reproductive strategies of tropical catfish in the Tonlé Sap Lake



Field Experiences

- > Hear from experts about the challenges of conservation of endangered Asian Elephants in Keav Seima Wildlife Sanctuary
- > Complete qualitative research on community-based ecotourism initiatives in Phnom Kulen National Park
- > Attend field lectures on conservation efforts for the endangered Irrawaddy dolphin and Cantor's giant softshell turtle along the Mekong River in Kratie Province
- > Meet indigenous communities to explore challenges for access to natural resources and environmental governance in Mondulkiri
- > Conduct interviews with coastal fishers and fishing families on the Tonlé Sap Lake about challenges of and adaptation strategies to declining natural resources
- > Explore climate change vulnerability and displacement in the Mekong Delta



GEORGINA LLOYD, PH.D.

Center Director and Lecturer in Environmental Ethics and Development

SFS Center for Conservation and Development Studies in the Lower Mekong

Dr. Georgina Lloyd completed her Ph.D. in Environmental Law and has been living and conducting research in Siem Reap, Cambodia since 2007. She has collaborated with the Cambodian government on policy development for the Angkor World Heritage Site and has worked with community members to improve tourism social enterprises that provide benefits for local people. Her research focuses on international environmental and heritage law, sustainable tourism, and governance.

THE REALITIES OF CLIMATE CHANGE

The impacts of climate change are already leading to the displacement of people and will continue to increasingly lead to the movement of peoples both internally and across international borders.

Students are learning about and witnessing the impacts of climate change in the Vietnamese Mekong Delta. They are learning from expert collaborators at Can Tho University that scientific models are accurately forecasting impacts including increasing storm frequency and intensity, rising temperatures, changing hydrological cycles, increasing saline intrusion, rising sea levels and land subsidence. However, changes are occurring, in some cases, faster than previous models predicted. Last year a combination of upstream hydrological changes, drought and agricultural impacts led to previously unknown levels of saline intrusion to the degree that had not been expected to occur for another 20 years. These changes are having immediate impacts on ecosystems and communities and pose severe future consequences for those who live in the Delta.

It has been estimated that up to 200 million persons will become displaced in the context of climate change over the next 50 years with 10 million being displaced in the Mekong Delta. Climate change displacement is a topic that is increasingly gaining international attention. The question of those displaced as a result of climate change is complex raising issues of social justice, global inequality, responsibility and uneven distribution of impacts. These issues are being explored by students through the lenses of environmental ethics and governance.

In the field we have traversed the canal network near Can Tho to understand the vulnerability of communities to climate change impacts. As we observe the canalside families raising the height of their floors to combat the rise in water levels and adding layers of sandbags to minimize the ongoing erosion of banks and house foundations as a result of increased storm intensities, we wonder: how long before they must move away? How long before the increasing temperatures and saline intrusion lead to crop failure? How long before the wells no longer hold fresh water?

For the peoples of the Mekong Delta, some of whom are highly exposed and highly sensitive to such changes and have a low adaptive capacity – climate change displacement is a looming reality.

READ ADDITIONAL STORIES ABOUT SFS STAFF AND STUDENTS IN THE FIELD AT [FIELDSTUDIES.ORG/BLOG](https://fieldstudies.org/blog)

The Center for Sustainable Development Studies

COSTA RICA

LOCATION

Atenas

TERMS OFFERED

Semester, Summer I, Summer II

01

02

03

04

WHY WE ARE HERE

Costa Rica is recognized worldwide for its conservation efforts, which have attracted millions of tourists to the country's parks and reserves. Costa Rica protects 5 percent of the world's biodiversity, with 26 percent of its territory being part of the national system of conservation areas. By 2015, nearly all of the country's electricity came from clean sources. Despite these efforts, Costa Rica faces daunting challenges. The ongoing transition from an agricultural to a service economy, combined with climate change, globalization, and the expansion of monocrop plantations, is threatening Costa Rica's biodiversity and human livelihoods. As rural areas give way to urban development, already scarce resources, such as drinking water and energy, are stretched to the limit. Climate change amplifies these pressures, necessitating the development of land-use practices that support the richness of Costa Rica's natural resources.

The Center for Sustainable Development Studies has a long tradition of working to improve the management and protection of natural resources which are essential to securing the future well-being of the country. Research generated by SFS students and faculty is used by key decision makers, NGOs, and local community members to guide the implementation of sound management decisions. As part of this process, we examine different development models that Costa Rica uses to balance biodiversity conservation with socioeconomic benefit.



Environmental Issues



Biodiversity
Conservation



Climate Change



Land Use
Change



Tourism Impacts



Pollution and
Waste Management



Natural Resource &
Water Management



“It is the out-of-classroom experiences that make SFS unique. Experiencing the environmental problems we learn about in the context of the world around us makes them feel pertinent and tangible, while allowing us to feel like we have the power to be part of the solution.”

- Carrie Gotwals
Kenyon College, Costa Rica Fall '16

Our Team

The Center, composed of a well-rounded team of scholars with deep connections to the natural and human landscapes, focuses its research on questions related to biodiversity, sustainable development, tourism impacts and management, adaptive strategies to address climate change, and socioeconomic equity in Costa Rica. Dr. Gerardo Avalos, Center Director, has studied tropical ecology and conservation since his undergraduate days at the University of Costa Rica. He received his Ph.D. from the University of Missouri at St. Louis and became Center Director in 2007. He collaborates with a variety of local and international groups through the exchange of research findings, establishment of native tree nurseries, and reforestation and watershed conservation projects.

Each semester, the Center hosts a research symposium where students present their research findings to local community members and stakeholders in the area. Many of these projects focus on problems at the interface of biodiversity conservation and human livelihoods.

Community Collaboration

Since the Center's inception in 1993, community service and engagement has been a cornerstone of the student experience. Locally, students designed and maintain a recycling program, and family visits in Atenas are reciprocated through SFS-hosted community dinners. Students teach environmental topics and English at local schools, present their research to government officials and other stakeholders, and get to know members of the community through soccer games, festivals, and cultural performances.

More broadly, we work with local organizations on forest restoration plantings, and support farms and national parks in research and community work. The Center hires primarily Costa Rican faculty and staff, and provides jobs for local technicians and support staff. We have maintained a collaboration agreement with the National System of Conservation Areas for the last 15 years, and keep similar agreements with local universities, NGOs, and small farms.

Life at the Center

The Center comprises a campus facility integrated with a small Rainforest Alliance Certified™ mango and orange farm. Practicing sustainability is part of the student learning and living experience. The Center overlooks the lush Central Valley, and Costa Rica's tropical forests, beaches, mountains, and volcanoes are within a day's travel.

What You'll Practice

We emphasize a suite of research skills in our Costa Rica programs. The skills listed vary depending on the program. See our website or contact an Admissions Counselor for more information.

- | | |
|---|---|
| — GIS use and applications | — Songbird mist-netting |
| — Habitat and biodiversity assessment | — Quantitative & qualitative data collection and analysis |
| — Research design, implementation, and presentation | — Tourism impact assessment methods |
| | — Language skills (Spanish) |



COSTA RICA SEMESTER

SUSTAINABLE DEVELOPMENT STUDIES



Experience a semester of sustainability in Costa Rica, known worldwide for its innovative conservation and economic development strategies. This program examines the different models that Costa Rica uses to balance biodiversity conservation with socioeconomic benefits, especially in rural communities. Students examine the effects of globalization on development issues such as agriculture, urban sprawl, population growth, waste management, and water quality. Students visit cloud forests, dry forests, volcanoes, lowland rainforests, farms, and plantations as they explore environmental policies and sustainable solutions in the context of the environmental changes facing Costa Rica.



What You'll Study

- Climate change and tropical ecosystems
- Land use practices congruent with conservation

Tourism sustainability

EX. I

In the small community of Santa Teresa, examine the consequences of increased tourism on water use and waste production. Discuss methods to decrease water pollution, manage increased waste generated by tourism, and find sustainable alternatives to protect natural attractions all while maintaining economic livelihoods.

- Sustainable agriculture and climate change mitigation
- Carbon sequestration strategies

Socioeconomic and environmental impacts of tourism

EX. II

Examine the consequences of traffic noise on diversity, distribution, and patterns of acoustic communication among birds in Carara National Park. Discuss approaches to mitigate road impacts with park managers, tourist guides, and park visitors.

- Environmental justice and environmental ethics

Visit fieldstudies.org/costarica-semester to learn more and apply.

01

02

03

04

2018 DATES

SPRING: JANUARY 29-MAY 9

FALL: AUGUST 27-DECEMBER 5



Courses

SFS 3770	Tropical Ecology and Sustainable Development	4 credits
SFS 3740	Principles of Resource Management	4 credits
SFS 3820	Environmental Ethics and Development	4 credits
SFS 4910	Directed Research	4 credits
SFS 2050	Language, Culture, and Society of Costa Rica	2 credits

Please see page 41 for course descriptions.



Student Research Projects

Recent investigations have explored the following topics:

- > Carbon sequestration and biodiversity impacts of agroforestry systems such as shade-grown coffee farms
- > Impacts of artificial feeders on hummingbird ecology and behavior in the cloud forests of Villa Blanca
- > Changes in management practices and policies in Costa Rica's national parks in response to increased tourism
- > The effects of road noise on chestnut-backed antbird communication
- > Ecotourism: The challenges of implementing sustainable practices while traveling



Field Experiences

- > Take an expedition to Nicaragua to hike the volcanoes of Ometepe Island and examine tourism and development in a neighboring country
- > Visit Monteverde Cloud Forest reserve to study hummingbird ecology and tour a shade-grown coffee farm
- > Take an overnight camping trip to the dry forest of Santa Rosa National Park
- > Complete an assessment of park management strategies and tourism capacity in Carara National Park

COSTA RICA SUMMER

**SUSTAINING TROPICAL ECOSYSTEMS:
BIODIVERSITY, CONSERVATION, AND DEVELOPMENT**
Session I

**APPLIED RESEARCH TECHNIQUES
AND STRATEGIES TOWARD SUSTAINABILITY**
Session II



Spend the summer on an organic farm, surrounded by incredible biodiversity and the unforgettable national parks and wildlife reserves of Costa Rica. These summer courses can be taken individually (4 credits each) or in combination for a total of 8 credits. The combined summer program provides a comprehensive look into the sustainability of tropical ecosystems, as well as field research techniques for addressing conservation questions. Students participating in both sessions receive a \$1,000 discount.

Session I

Sustaining Tropical Ecosystems: Biodiversity, Conservation, and Development

In this interdisciplinary session, students immerse themselves in Costa Rica's tropical ecosystems, learning how they are connected to the country's sustainable development strategies. The session culminates in a short research practicum examining the impact of tourism on rural communities and conservation areas, as well as the role of coffee farms in carbon sequestration.

Visit fieldstudies.org/costarica-summer1
to learn more and apply.

01

02

03

04

Session II

Applied Research Techniques and Strategies Toward Sustainability

In this second summer session, the emphasis is on field research techniques. Students design and conduct field research on a topic of immediate relevance to local clients, proposing alternative approaches to development in an effort to address the many challenges of conservation.

Visit fieldstudies.org/costarica-summer2
to learn more and apply.

01

02

03

04

2018 DATES

SESSION I: JUNE 4-JULY 4

SESSION II: JULY 9-AUGUST 8



Courses

SESSION I

SFS 3520 Sustaining Tropical Ecosystems: Biodiversity, Conservation, and Development 4 credits

SESSION II

SFS 4930 Applied Research Techniques and Strategies Toward Sustainability 4 credits

Please see page 41 for course descriptions.



Field Experiences

Visit our website for additional session-specific information.

- > Explore the biological diversity of the rainforests of Braulio Carrillo National Park in the Volcanic Cordillera Conservation Area
- > Compare and contrast biodiversity protection in examples of conventional and organic agriculture
- > Evaluate tourism services and park management practices in Poás Volcano National Park
- > Explore protected areas as natural laboratories in which to practice field observation and hypothesis testing
- > Hike the oak forest and páramo ecosystems of the Cerro de La Muerte highlands
- > Visit national parks to evaluate the consequences of increased tourism in an effort to inform park managers about opportunities to foster better relationships with surrounding communities

AUSTRALIA

BHUTAN

CAMBODIA

COSTA RICA

PANAMA

PERU

TANZANIA

TURKS & CAICOS

The Center for Tropical Island Biodiversity Studies

PANAMA

LOCATION

Bocas del Toro

TERMS OFFERED

Semester, Summer I

01

02

03

04

WHY WE ARE HERE

The Bocas del Toro Archipelago, located on Panama's Caribbean coast, is a biologically diverse grouping of islands encompassing mangrove forests, coral reefs, lowland humid tropical rainforests, and seagrass meadows. It supports a great density of ecosystems—from secondary forests to world-class beaches—that provide habitats for an abundance of birds, monkeys, turtles, sloths, butterflies, arachnids, and the distinctive poison dart frog.

Bocas del Toro is at a critical juncture. Increasing tourism has resulted in biodiversity loss and has greatly impacted the management and use of natural resources in the region. Poor infrastructure and enforcement of development regulations are degrading the very habitats and natural resources that draw tourists to Bocas. A burgeoning service economy has forced a shift toward tourism-based livelihoods and this, along with commercial overfishing, is compromising ways of life, especially for indigenous Bocatoreños who are the most economically vulnerable. Unregulated tourism is also impacting how people connect with their environment, thereby affecting the stewardship of critical habitats and key natural resources.

Our research in Bocas del Toro has already revealed patterns and processes at the nexus of biodiversity, conservation, and human welfare that merit ongoing study. Through field observations and research, students identify and understand the pressures, both direct and indirect, on the environment and social systems.



Environmental Issues



Biodiversity
Conservation



Climate Change



Land Use
Change



Tourism Impacts



Environmental
Policy



Fisheries Management



“The trip to beautiful Isla Zapatillas incorporated three of our five classes in the field. One group followed a boardwalk through the rainforest, while the other group explored the coral reef in snorkel gear. Then we conducted interviews to learn about tourism on this small island, surrounded by a marine protected area.”

- Mikkell McGowan

University of Minnesota, Twin Cities, Panama Spring '17

Our Team

The team in Panama is made up of individuals who have dedicated their lives to the study of ecological and social systems and to the complex nature of conservation. Research questions at the Center focus on the interconnectedness of the environmental and social challenges in Bocas del Toro. Dr. Cinda Scott, Center Director, has been studying tropical marine ecosystems in Central America since 1998, and earned her Ph.D. from the University of Miami in 2009. Her research interests range from marine molecular evolutionary genetics to the improvement of undergraduate STEM learning. She believes that addressing the needs of any community requires a deep understanding of how ecosystems and humans interact. Thus, approaches to learning at the Center are inquiry-based, tangible and relevant, and our dedicated faculty ensure that all students move from being passive to active participants in all aspects of the program there.

Community Collaboration

The Center works with a wide array of partners to achieve our collaborative research goals. As part of their curriculum, students interview local fishers, farmers, business owners, and government officials, as well as tourists, to understand the social, economic, and policy context for tourism impacts and environmental management in the region. With the results of our research, we are able to provide data and recommendations to community stakeholders, contributing to the development of sound policies for conservation and development.

Students also build relationships through meaningful engagement opportunities that focus on the needs of the community. Some of these activities include organizing a snorkel and swim club for children and hosting urban birding festivals and educational talks. During down time, students compete in soccer matches in Bahia Roja and frequent shops, markets, and restaurants in Bocas Town.

Life at the Center

The Center is located on a quiet waterfront a short distance from Bocas Town. Calm Caribbean waters allow for plenty of activities for students including snorkeling, paddle boarding, and swimming. With such close proximity to the coral reefs, rainforests, and beaches of Bocas, it is common to hear the sounds of frogs, birds, and howler monkeys.

What You'll Practice

We emphasize a suite of research skills in our Panama programs. The skills listed vary depending on the program. See our website or contact an Admissions Counselor for more information.

Terrestrial, marine, and coastal species identification

Insect and amphibian trapping for population monitoring

Quantitative & qualitative data collection and analysis

Environmental impact and protected-areas assessment

Research design, implementation, and communication

Tourism impact assessment methods

Language (Spanish)



PANAMA SEMESTER

TROPICAL ISLAND BIODIVERSITY STUDIES



Understanding key island systems, both natural and human, and how they interface is the focus of this dynamic marine and terrestrial semester program. Through field observations and research, students identify the pressures on the environment and social systems, and evaluate the responses by local stakeholders and policymakers. Students critically consider the interdependence of island residents' livelihood strategies and key species' population structures and habitats, and then apply sustainability principles to identify potential management strategies. Lectures by Panamanian and international researchers, government officials, and community stakeholders provide additional depth and context.



What You'll Study

EX. I

- Marine and terrestrial species identification
- Impacts of tourism on humans and the natural environment**
In Bocas del Toro, the tourism industry is outpacing the ability of local government to manage and assess its impacts on natural and human communities. Learn about positive and negative outcomes of tourism. Meet with community members to examine the delicate balance between development and conservation.

EX. II

- Assessment of ecosystem health
- Marine Protected Areas (MPAs)**
Home to the first MPA and one of the most beautiful islands in Panama, the Isla Bastimentos National Marine Park is economically important for tourism in the region. Learn about the complexities of managing this 13,664-hectare park via snorkeling, forest hikes, and stakeholder interviews.
- Impact of policy enforcement on local communities and environment
- Resource management
- Ecology of terrestrial and marine species important to tourism
- Conservation and management strategies

Visit fieldstudies.org/panama-semester to learn more and apply.

01

02

03

04

2018 DATES

SPRING: JANUARY 29-MAY 9

FALL: AUGUST 27-DECEMBER 5



Courses

SFS 3790	Tropical Coastal Ecology	4 credits
SFS 3740	Principles of Resource Management	4 credits
SFS 3020	Environmental Policy and Socioeconomic Values	4 credits
SFS 4910	Directed Research	4 credits
SFS 2070	Language, Culture, and Society of Panama	2 credits

Please see page 42 for course descriptions.



Student Research Projects

Recent investigations have explored the following topics:

- > Impacts of habitat and biodiversity loss due to human activities
- > Changes in marine species abundance and diversity in proximity to Bocas Town and the Bastimentos Marine Protected Area
- > Viability of poison dart frogs in fragile ecosystems affected by anthropogenic factors such as habitat loss, land cover changes, and a warming climate
- > Knowledge about the tourism sector in Bocas del Toro and how it is supported and actively managed by local stakeholders
- > Livelihood strategies of residents, such as fisheries, ecotourism, agriculture, ranching, and forestry, and decision-making processes of families who extract natural products for subsistence and income generation



Field Experiences

- > Snorkel to identify marine species and research human impacts on coral reefs, mangroves, seagrass beds, and other marine habitats
- > Attend field lectures in the rainforest to learn about canopies, competition for space, biodiversity, and soil composition
- > Visit with indigenous communities to learn about livelihood strategies as well as the challenges of adapting to a rapidly changing economic environment
- > Tour cacao farms and banana plantations to understand the impact of diverse forms of agriculture on local economies and coastal environments

PANAMA SUMMER

**TOURISM AND ISLAND SYSTEMS:
ASSESSMENT OF SUSTAINABLE PRACTICES**
Session I



This summer, immerse yourself in the incredible tropical ecosystems of the Bocas del Toro Archipelago. Explore both marine and terrestrial environments, and study the impacts of tourism and development on natural and human communities. Students on this program earn 4 academic credits.

Combine this program with the Summer II session in Costa Rica to gain a comparative perspective on environmental management techniques, tourism impacts, and sustainable development strategies in two countries. Students participating in both sessions earn 8 credits and receive a \$1,000 discount.

Learn more about the Costa Rica Summer II session on page 23.

Session I

Tourism and Island Systems: Assessment of Sustainable Practices

Examine the human dimensions and challenges of tourism in Bocas del Toro. Students explore tropical habitats—coral reefs, mangroves, lowland rainforest—and examine tourism's impacts on the natural and human environment.

Visit fieldstudies.org/panama-summer1 to learn more and apply.

01 02 03 04

2018 DATES

SESSION I: JUNE 4-JULY 4



Courses

SESSION I

SFS 3000

Tourism and Island
Systems: Assess-
ment of Sustainable
Practices

4 credits

Please see page 42 for course descriptions.



Field Experiences

- > Interview local stakeholders regarding their perceptions of tourism and its role in Bocas del Toro
- > Practice environmental assessment techniques to identify drivers of human-induced stress in natural systems (dependent on snorkeling and swimming skill level)
- > Visit the Isla Bastimentos National Marine Park Marine Protected Area (MPA) in the archipelago to determine how tourism can support protected areas
- > Compare ecotourism lodges with large-scale resort hotels, assessing their impacts on social, economic, and environmental systems
- > Perform cost-benefit analyses on tourist activities and identify the positive and negative effects on natural systems and livelihoods in the archipelago
- > Study the impacts and policies related to tourism centered on watching wild animals in their natural habitats (e.g., dolphin watching)
- > Draft model plans and proposals for optimizing sustainable tourism in Bocas del Toro

AUSTRALIA

BHUTAN

CAMBODIA

COSTA RICA

PANAMA

PERU

TANZANIA

TURKS & CAICOS

The Center for Amazon Studies

PERU

LOCATION

Iquitos

TERMS OFFERED

Semester

01

02

03

04

WHY WE ARE HERE

From the high-elevation cloud forests of the upper Amazon watershed to the glacial lakes and tropical montane forests of the Andes, Peru's dramatic elevation gradient easily earns it a place among the five most biodiverse countries in the world. Peru holds the second largest tract of Amazon rainforest within its boundaries, and the rich natural resources of the northern Peruvian Amazon region have supported human populations for millennia, including indigenous groups who still live in these forests. This combination of social and ecological diversity has made Peru a leading destination for biodiversity enthusiasts, anthropologists, scientists, educators, and students from around the world. The region is critically important for researching the origin and fate of the Amazon as well as its relationships with the communities living beneath its great canopy.

Today, the Amazon lowlands draw people looking to engage in both extractive and productive activities, many of which pose a grave threat to the unique ecosystems and organisms they support. The effects of climate change and loss of traditional knowledge additionally impact resource availability and use. Within this context, Peruvian authorities and NGOs are currently identifying conservation efforts in the region that allow sustainable extractive practices and protect the local landscape.



Environmental Issues



Biodiversity
Conservation



Climate Change



Environmental
Policy



Environmental Ethics
and Justice



Natural Resource &
Water Management



Sustainable
Livelihoods



"You can learn about the layers of the rainforest, watch nature documentaries, or look at pictures all you want, but nothing I've ever done can compare to the feeling of looking out over the green sea of tree canopy, or standing under 100 foot tall trees while monkeys leap from branch to branch over your head."

- Lexi Donahue
Franklin & Marshall College, Peru Fall '16



Our Team

The Peru center is run by a multinational, interdisciplinary team with a wide range of expertise and international experience on several continents. The curriculum offers a comprehensive panorama of topics, from how biotic and abiotic processes regulate biological diversity in the Amazon to how the melting pot of global and indigenous cultures and world views interact with nature. We examine how Peruvians and others have addressed, and could address, the struggle between human development and environmental health in the most biodiverse place on Earth.

Community Collaboration

Collaborating with those who live and work in the greater Iquitos region is imperative to the success of this program. One of our greatest strengths lies in offering students the opportunity to interact with local people, researchers gathering baseline data, and conservation organizations with projects on the ground. It is widely known that the Amazon is facing various threats, but it is not until we have a more complete understanding of the reality on the ground that we can begin to develop successful conservation initiatives.

Outside of academics, relationships with communities are strengthened through various interactions such as soccer games, visits to nearby schools, and offering environmental education programs for local students.

Life at the Center

At the Center, we can wander out the back door and into the immense biodiversity of the Amazon. The open-air buildings let in the sounds and smells of the forest and the campus' distance from the city lights allows for incredible star gazing.

What You'll Practice

We emphasize a suite of research skills in our Peru program. See our website or contact an Admissions Counselor for more information.

- | | |
|---|--|
| Species identification | Quantitative & qualitative data collection and analysis |
| Setting up research plots and transects | Scientific writing and communicating science to the public |
| Bird call playback | Language (Spanish) |
| Primate behavior observation | |



PERU SEMESTER

BIODIVERSITY AND
DEVELOPMENT IN THE AMAZON



Investigate the conflicts and synergies of conservation and development in the northern Peruvian Amazon region. Learn firsthand about the ecological patterns and processes that underpin the extraordinary biodiversity along the catchment of the western Amazon River and tributaries. Explore biological diversity and conservation, ecological interactions, and the value of ecosystem services, as well as the effects of climate change and land use on regional and global biodiversity and human well-being.



What You'll Study

Assessment of biodiversity

EX. I

No place on the planet affords students the chance to encounter as many species as this part of the Amazon. Not only will we count the diversity of species and the frequency of individuals but we will also understand the connectedness of living systems along the river, in the deep forests, and in the edges surrounding developed areas.

— Landscape ecology and habitat fragmentation

— Climate change

— Conservation practice

— Sustainability of rural livelihoods

— Biogeography

Indigenous knowledge and histories

EX. II

The ability to manage resources and thrive in the Amazon inspires our inquiry of local people, who have strong connections to the natural landscape. We will ask them to share stories about their lives so we can better understand how a changing region affects them and the river and forest on which they rely.

— Ecosystem services and carbon markets

Visit fieldstudies.org/peru-semester
to learn more and apply.

01

02

03

04

2018 DATES

SPRING: JANUARY 29–MAY 9

FALL: AUGUST 27–DECEMBER 5



Courses

SFS 3830 Tropical Ecology of the Amazon 4 credits

SFS 3840 Political Ecology of Developing Landscapes 4 credits

SFS 3800 Conservation Science and Practice 4 credits

SFS 4910 Directed Research 4 credits

SFS 2090 Language, Culture, and Society of Peru 2 credits

Please see page 42 for course descriptions.



Student Research Projects

Recent investigations have explored the following topics:

- > Evaluation of community attitudes towards waste management
- > Ecological niche modeling and conservation assessment of black-headed night monkeys (*Aotus nigriceps*)
- > Antimicrobial properties of tree ferns used commercially for combating human skin bacteria *Staphylococcus*
- > Community solutions for restoring water quality
- > Population dynamics of tree ferns in the Peruvian Eastern Andes



Field Experiences

- > Attend field lectures on the overwhelming biodiversity of the Amazon rainforest and its causes at several key sites including Alpahuayo-Mishana and Pacaya Samiria
- > Research monkey behavior and ecology
- > Observe the impacts of extractive industries, such as logging and fishing in the conservation of Amazonian natural resources
- > Collaborate with local Bora indigenous groups on ways to address environmental concerns in their communities
- > Study highland tropical rainforests during a multi-day excursion to Cusco and the Sacred Valley
- > Compare the effects of climate change at different elevations during a multi-day excursion to cloud forests and lowland rainforests

MEET OUR ALUMNI

THEY'RE BUSY
CHANGING
THE WORLD



Claudia Polsky

SFS NY State Summer '83;
SFS Italy Summer '84
*Director of the Environmental Law
Clinic at UC Berkeley School of Law*



I not only learned an enormous amount of science, but I found that I really retained it, because it was so grounded in direct, multi-sensory experiences.

Bronwyn Llewellyn

SFS Kenya Spring '03
*Foreign Service Officer with the
United States Agency for International
Development (USAID)*



The SFS program will challenge you and shape you, and you will never be the same again... but you will never look back!



Carrie Jenks

SFS Mexico Fall '94;
SFS TCI Spring '95
*Senior Vice President at environmental
consulting firm M.J. Bradley & Associates*



I learned how to approach complex problems and appreciate all aspects of the debate. A semester with SFS will transform the way you think and the way you view global environmental issues.

Darren Aronofsky

SFS Kenya Summer '85;
SFS Alaska Summer '86
Filmmaker



My two summers with The School for Field Studies completely changed my life. There were so many amazing individual experiences that had a huge impact on me, and it's easy for me to draw from them.



The Center for Wildlife Management Studies

TANZANIA

LOCATION

Rhotia

TERMS OFFERED

Semester, Summer I, Summer II

01

02

03

04



WHY WE ARE HERE

Renowned for its abundance and diversity of large mammals, northern Tanzania is home to one of the world's most important ecosystems. However, increasing competition for land and other scarce resources has ecological, social, and economic costs, including the fragmentation of critical wildlife dispersal areas, blockage of migratory routes, changes in land-use practices and land ownership, and human-wildlife conflict.

Changing land-use practices along with shifts from pastoralism to sedentary agro-pastoralism livelihoods cause a huge challenge for the conservation of wildlife and other natural resources in the Maasai steppe of northern Tanzania. Burgeoning human population, land subdivision, and extensive agriculture exert great pressure on the region's natural resources, including water, rangelands, and wildlife. Climate change is causing hydrological shifts in habitats and protected areas—such as national parks and wildlife sanctuaries—which may no longer provide safe havens for animals. Habitat destruction and poaching endanger biodiversity and threaten ecotourism activities, which are an important source of revenue for the government and local communities.

Through our long-term research done in collaboration with stakeholders, students participate in evaluating and promoting the management of wildlife and other natural resources, which contributes to longstanding conservation efforts, promotes community livelihoods, and helps to reduce conflict between humans and wildlife.



Environmental Issues



Biodiversity
Conservation



Climate Change



Community Resource
Management



Environmental
Policy



Land Use
Change



Natural Resource &
Water Management



“While we’ve had several opportunities to learn, understand, and adjust to the cultures and livelihoods around us, the day stay provided an immersive experience and glimpse into the daily lives of local community members.”

- Emily Strahan
University of Georgia, Tanzania Spring '17



Our Team

The Center, composed of multidisciplinary scholars with deep connections to the natural and human landscape, focuses its research on questions related to biodiversity, wildlife conservation and management, adaptive strategies to address climate change, and the changes in the socio-ecological structure of the Tarangire-Manyara ecosystem. Dr. Bernard Kissui, Center Director, has studied the region’s lion populations since before earning his Ph.D. in 2008 from the University of Minnesota. He collaborates with regional and international actors and organizations and leads some of the most ambitious research on carnivore dynamics in the Old World.

Each semester, the Center hosts a research symposium where students present their research findings to local community members and stakeholders in the area. Many of the projects directly touch on problems at the interface of wildlife conservation and human livelihoods, and aim to provide data and information which may help address some of these issues.

Community Collaboration

Students work with local communities including the Maasai, Hadzabe, and Waarusha to learn about their livelihoods and contributions to community conservation initiatives and human-wildlife conflict mitigation strategies. We collaborate with Lake Manyara, Serengeti, and Tarangire National Parks, and Ngorongoro Conservation Area and Manyara Ranch to develop and implement research that supports their conservation priorities. In partnership with the World Wildlife Fund (WWF), we contribute to the Climate Crowd project, a citizen science initiative in which our students and members of the community monitor climate change in their area.

Through visits to cultural bomas and a day stay with a local family, students gain a deeper understanding of the day-to-day lives and cultures of the community members. During down time, students compete in village soccer matches, initiate community projects such as town and stream clean ups, and frequent shops, markets and restaurants in nearby Karatu, Mto wa Mbu, and Arusha.

Life at the Center

Students live at Moyo Hill Camp in Tanzania’s Tarangire-Manyara ecosystem between Lake Manyara National Park and the famous Ngorongoro Conservation Area. Nestled among maize plantations and other crop fields, the Center is part of the small community of Rhotia. Students enjoy daily interaction with neighbors, as well as walking, jogging, soccer, and socializing.

What You’ll Practice

We emphasize a suite of research skills in our Tanzania programs. The skills listed vary depending on the program. See website or contact an Admissions Counselor for more information.

- | | |
|--------------------------------|---|
| — Natural resource valuation | — Quantitative & qualitative data collection and analysis |
| — Wildlife census techniques | — Research design and implementation |
| — Interview and survey methods | — Scientific writing and presentation |
| — Language (Swahili) | |



TANZANIA SEMESTER

WILDLIFE MANAGEMENT STUDIES



In this dynamic semester program, examine complex, real-world environmental issues on the ground in Tanzania. Critically consider how wildlife management, behavioral ecology, climate change adaptation, human-wildlife conflict, and community-based conservation play out across this culturally rich and biodiverse region. Connect theory with practice through field exercises, community collaborations, and multiday excursions, and apply what you learn to a faculty-mentored Directed Research project. Present and discuss research findings with local community members, and contribute to long-term understanding and management of the Tarangire-Manyara ecosystem.



What You'll Study

Human-wildlife conflict

EX. I

In the Tarangire-Manyara ecosystem, learn about human-wildlife conflicts between agro-pastoral communities and lion, elephant, and baboon populations. Meet with and interview community members to understand forms of conflict and mitigation strategies. Estimate economic losses and assess community attitudes toward wildlife.

Wildlife identification

Rangeland assessment

Field ornithology

Community governance of protected areas

EX. II

Take a day trip to Burunge Wildlife Management Area (WMA) to learn the role of community-based management of wildlife in Tanzania and understand the relationships between conservation, protected areas, and the surrounding communities. Students will receive a lecture from the management of the WMA, take a game drive, and interact with the community members.

Natural resource management

Diverse conservation strategies



Visit fieldstudies.org/tanzania-semester to learn more and apply.

01

02

03

04

2018 DATES

SPRING: JANUARY 29–MAY 9

FALL: AUGUST 27–DECEMBER 5



Courses

SFS 3710	Techniques in Wildlife Management	4 credits
SFS 3720	Wildlife Ecology	4 credits
SFS 3020	Environmental Policy and Socioeconomic Values	4 credits
SFS 4910	Directed Research	4 credits
SFS 2060	Introduction to Swahili Language and East African Tribal Communities	2 credits

Please see page 43 for course descriptions.



Student Research Projects

Recent investigations have explored the following topics:

- > Impacts of climate change on biodiversity and human adaptation strategies among rural communities
- > Iraqw and Maasai community perceptions of and participation in wildlife conservation
- > Social dynamics of elephant groupings
- > Mitigation strategies in human-wildlife conflict



Field Experiences

- > Attend field lectures on large mammal migratory patterns during a multi-day camping expedition to Serengeti National Park
- > Research lion and elephant ecology in Tarangire National Park
- > Observe tourism impacts on the wetlands of Lake Manyara National Park
- > Collaborate with Maasai, Iraqw, and Hadzabe tribal communities on community conservation, climate change adaptation, and livestock predation mitigation strategies

TANZANIA SUMMER

WILDLIFE MANAGEMENT AND CONSERVATION
Session I

TECHNIQUES FOR WILDLIFE FIELD RESEARCH
Session II



Spend the summer surrounded by the incredible wildlife, vibrant culture, and world-famous national parks of Tanzania. These summer courses can be taken individually (4 credits each) or in combination for a total of 8 credits. The combined summer program provides a thorough introduction to wildlife management strategies and the research methods routinely used in wildlife ecology and management. Students participating in both sessions receive a \$1,000 discount.

Both sessions include field lectures in Serengeti, Tarangire, and Lake Manyara National Parks, and the Ngorongoro Conservation Area. The sessions integrate community interactions and relationships through studying the role of community-based natural resource management.

Session I

Wildlife Management and Conservation

Learn about sustainable wildlife conservation in the world-famous national parks and protected areas of northern Tanzania. With a combination of hands-on field exercises and expeditions throughout the region, the course covers management of protected areas and conservation of wildlife both inside and outside these areas.

Visit fieldstudies.org/tanzania-summer1
to learn more and apply.

01 02 03 04

Session II

Techniques for Wildlife Field Research

Learn a suite of field research techniques and methods for studying wildlife ecology. Through a series of expeditions throughout Tanzania's Tarangire-Manyara ecosystem, gain an understanding of management policies and community conservation practices.

Visit fieldstudies.org/tanzania-summer2
to learn more and apply.

01 02 03 04

2018 DATES

SUMMER I: JUNE 4–JULY 4

SUMMER II: JULY 9–AUGUST 8



Courses

SESSION I

SFS 3500 Wildlife Management and Conservation 4 credits

SESSION II

SFS 3570 Techniques for Wildlife Field Research 4 credits

Please see page 43 for course descriptions.



Field Experiences

Visit our website for additional session-specific information.

- > Learn methods of conserving wildlife both inside and outside protected areas amid a rapidly changing socioeconomic and political environment
- > Examine constraints to the conservation of wildlife among resource-poor rural populations and identify key aspects of human-wildlife conflicts
- > Practice field techniques in national parks, community wildlife management areas, and in communal land outside protected areas
- > Learn field skills including species identification, sampling and data analysis methods for flora and fauna, large mammal behavioral study methods, remote and on-ground sensing and spatial analysis

AUSTRALIA

BHUTAN

CAMBODIA

COSTA RICA

PANAMA

PERU

TANZANIA

TURKS & CAICOS

The Center for Marine Resource Studies

TURKS & CAICOS ISLANDS

LOCATION

South Caicos Island

TERMS OFFERED

Semester, Summer I, Summer II

01

02

03

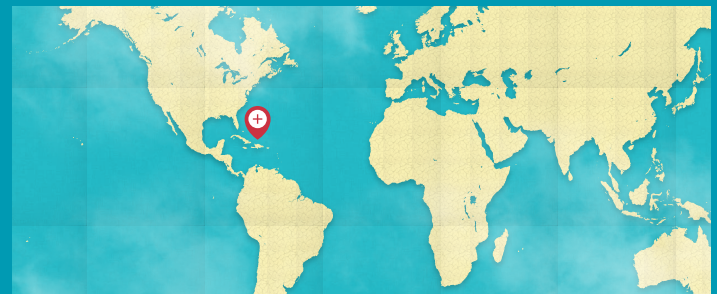
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WHY WE ARE HERE

The clear waters of the Turks and Caicos Islands (TCI) are home to vibrant coral reefs, dramatic sea walls, and a deep ocean trench, which together sustain a stunning diversity of sea life. Spotted eagle rays, lemon sharks, sea turtles, humpback whales, and dozens of fish species thrive among the sandy shoals, mangroves, seagrass beds, and fringing reefs that surround the islands. But beneath these turquoise waters, the delicate ecosystems are threatened.

These coastal and ocean habitats are critical for supporting a TCI economy that is driven by fisheries and a burgeoning tourism industry. The country has an extensive network of 34 established protected areas that promote the sustainability of natural and historic resources. However, increasing demand for seafood and coastal development and the impacts of climate change put enormous pressures on these island ecosystems and resources. Without scientific assessments, effective community management, and collaborative environmental education, the existence of many of these ecosystems and livelihoods become threatened.

SFS plays a critical role in supporting the TCI fishers, island residents, and environmental authorities through collaborative research and knowledge exchange. Together we are working to implement positive change in the social, cultural, and economic spheres, as well as to support and mitigate impacts on the coastal and marine ecosystems.



Environmental Issues



Biodiversity Conservation



Climate Change



Fisheries Management



Environmental Policy



Community Resource Management



Tourism Impacts

PADI SCUBA Certification

Scuba diving is a valuable skill for students who are interested in pursuing a career or future studies in field research of marine ecosystems. SFS offers PADI certifications during semester and summer programs. Certification takes place during the first two weeks of the program.

Note: It is not necessary to use SCUBA to participate in the program; many students choose to snorkel only. Divers and snorkelers must bring their own SCUBA and snorkeling equipment, and the certification courses are offered at an additional cost. Weights and tanks are provided on-site at no cost. Please contact the SFS Admissions Office or visit our website for more information.



“While diving 70 to 80 feet below the water, I was really reminded why Turks and Caicos has the motto “Beautiful by Nature”. The coral reef formations were so incredible and the fish so colorful. I came within arm’s reach of a giant Southern stingray as he glided slowly right past me. It was a peaceful yet exciting reminder why I’m so passionate about saving marine environments.”

- Allison Dawson
Ohio Wesleyan University, TCI Fall '16

Our Team

The Center, made up of scholars with expertise across the marine disciplines, focuses its research on questions related to marine species and ecosystems, drivers of change to these ecosystems, monitoring and management of marine resources, and the maintenance of traditional livelihoods in the Turks and Caicos Islands. Dr. Heidi Hertler, Center Director, is an SFS alumna and a well-established marine researcher. Heidi joined the Center in 2011 and regularly collaborates with NGOs, government agencies, and other stakeholders on South Caicos to develop environmental strategies and policies for the conservation of biodiversity and coastal resources.

Each semester, the Center hosts a symposium where students present their research findings from projects focused on problems at the interface of marine resource conservation and human livelihoods to local community members and stakeholders in the area.

Community Collaboration

South Caicos has hosted SFS for more than 25 years. During that time, staff and students have integrated into the small community on multiple levels. We are dedicated to helping the community conserve its natural resources and develop sustainably, and enjoy being a part of the Caribbean culture and island lifestyle of South Caicos. Students tutor and mentor local children, provide swimming and snorkeling lessons, and lead a “research club” to teach marine biology. Collaborative efforts with local NGOs have led to beach cleanups and other service projects, and open research presentations provide an opportunity for the Center to share its findings with members of the community.

Life at the Center

The Center is located just steps from a crystal clear ocean laboratory, adjacent to Cockburn Harbour and the island’s 1,200 residents. Our field station sits about 40 feet above the water, looking directly out to sea. Within a three-mile radius are coral reefs, mangrove islands, sea grass beds, and carbonate platform flats offering abundant snorkel and dive sites.

What You’ll Practice

We emphasize a suite of research skills in our Turks & Caicos programs. The skills listed vary depending on the program. See our website or contact an Admissions Counselor for more information.

- Marine species identification and population monitoring

- Biodiversity assessment and estimation

- Quantitative & qualitative data collection and analysis

- Research design and implementation

- Scientific writing and oral presentation

- Snorkel and scuba skills
PADI Open Water Diver Certification available at an additional cost, upon request



TURKS & CAICOS SEMESTER

MARINE RESOURCE STUDIES



Snorkeling and scuba diving in the waters surrounding South Caicos, students learn field research and monitoring techniques to identify and assess the health of a wide range of marine organisms and habitats. Students observe the behavior of marine species, assess coastal and marine habitats, quantify fisheries resources, and analyze implications of fishery policies. In the community, students consider the challenges of assessing the rights and needs of local stakeholders and reconciling those with conservation goals—real-life dilemmas faced by governmental regulators and the residents of South Caicos.



What You'll Study

Marine ecology and conservation

EX. I

Learn to identify dozens of marine organisms and understand their functions in island ecosystems by wading through mangrove stands and sea grass beds and snorkeling or diving on coral reefs.

Environmental impact assessment and monitoring

Traditional livelihoods

Marine Protected Areas assessment and management strategies

EX. II

Identify size and age structure of queen conch (*Lobatus gigas*) population according to habitat type around South Caicos and compare populations inside and outside a Marine Protected Area. Communicate results to local stakeholders to inform them on extraction practices.

Sustainable tourism practices

Sustainable fishery practices

Small-nation governance of resources

Valuation of natural resources

Visit fieldstudies.org/tci-semester to learn more and apply.

01

02

03

04

2018 DATES

SPRING: JANUARY 29–MAY 9

FALL: AUGUST 27–DECEMBER 5



Courses

SFS 3730	Tropical Marine Ecology	4 credits
SFS 3740	Principles of Resource Management	4 credits
SFS 3020	Environmental Policy and Socioeconomic Values	4 credits
SFS 4910	Directed Research	4 credits

Please see page 43 for course descriptions.



Student Research Projects

Recent investigations have explored the following topics:

- > Coral resilience in South Caicos reefs
- > Size changes over time in commercial finfish species
- > Habitat utilization by local shark populations
- > Importance of the environment to youth in South Caicos
- > Impacts of increased tourism on island habitats



Field Experiences

- > Go scuba diving and snorkeling for fish, coral, seagrass, and mangrove identification exercises
- > Explore caves and bat colonies, and absorb local ecological knowledge of bush medicines and foods during an excursion to neighboring Providenciales, Middle Caicos, and North Caicos
- > Tag sharks and sea turtles to collect morphological data and gain an understanding of population dynamics
- > Attend lectures by officials from the Department of the Environment and Maritime Affairs (DEMA) on the government's fisheries regulations and enforcement
- > Participate in an in-water coral bleaching exercise to collect data on coral health

TURKS & CAICOS SUMMER

TROPICAL MARINE ECOSYSTEMS: MONITORING AND MANAGEMENT
Session I

APPLIED MARINE RESEARCH TECHNIQUES
Session II



Spend the summer immersed in the clear waters and diverse marine ecosystems of the Turks and Caicos Islands. These summer courses can be taken individually (4 credits each) or in combination for a total of 8 credits. The combined summer program provides a comprehensive introduction to tropical marine ecology and resource management, as well as field research techniques for addressing conservation questions. Students participating in both sessions receive a \$1,000 discount.

Both sessions include the opportunity for snorkeling and diving (for students who are certified) experiences around the island. Session II includes the opportunity to conduct field research.

Session I

Tropical Marine Ecosystems: Monitoring and Management

In this summer session, students explore the conservation of tropical marine ecosystems in the Turks and Caicos Islands, the impacts of climate change and ocean acidification on these ecosystems, and the importance of ensuring that environmental management objectives take into account community livelihood goals. Students come away prepared to conduct marine research in collaboration with community stakeholders.

Visit fieldstudies.org/tci-summer1
to learn more and apply.

01 02 03 04

Session II

Applied Marine Research Techniques

The spectacular reefs and turquoise waters of South Caicos serve as laboratories for research and field work in this summer session. Students apply the scientific process to a local environmental issue related to the management of tropical marine ecosystems—identifying a problem, collecting data in the field, and presenting results.

Visit fieldstudies.org/tci-summer2
to learn more and apply.

01 02 03 04

2018 DATES

SESSION I: JUNE 4-JULY 4

SESSION II: JULY 9-AUGUST 8



Courses

SESSION I

SFS 3530	Tropical Marine Ecosystems: Monitoring and Management	4 credits
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SESSION II

SFS 3560	Applied Marine Research Techniques	4 credits
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Please see page 43 for course descriptions.



Field Experiences

Visit our website for additional session-specific information.

- > Explore coral reefs, mangrove ecosystems, and extensive seagrass meadows
- > Tour current coastal development projects and seafood processing plants
- > Attend skills workshops on topics such as stakeholder engagement and science communication
- > Examine anthropogenic impacts on nearshore ecosystems
- > Conduct ecosystem valuations for use in coastal planning decisions

COURSE CATALOG

AUSTRALIA

Center for Rainforest Studies

SEMESTER

SFS 3690 RAINFOREST ECOLOGY introduces structure and function of tropical rainforests including floral and faunal components. In this course, students explore the ecological processes that maintain biodiversity and the evolutionary processes that generate that biodiversity. We examine the dynamic relationships between plants and animals and how those processes have influenced or are influenced by the current landscape. On a larger scale, we investigate tropical vegetation patterns along climatic gradients and discuss mechanisms for preserving and restoring tropical ecosystems.

SFS 3700 PRINCIPLES OF FOREST MANAGEMENT presents the ecological and analytical tools used in the management of terrestrial, living resources. Students use examples from the tropics to learn the theories that are the foundation for land management, and in particular forest management, worldwide. Students are also introduced to field methods in forest mensuration, and these skills are used to monitor forest health as a case study in natural resource management performance. Students apply their knowledge by participating in long-term research projects that assess the environmental impacts of resource development and monitor the progress and success of restoration and rehabilitation efforts in areas suffering from chronic human-induced disturbances.

SFS 3020 ENVIRONMENTAL POLICY AND SOCIOECONOMIC VALUES provides insight into the broad social context surrounding natural resources to determine effective approaches to resource management. Students explore the sociocultural context of resource management 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 effect change and their historical basis; and legal basis for enforcement of environmental policy. Students are also introduced to major constituencies that effect conservation (NGO conservation groups, economic interests, etc.) and their underlying philosophies.

SFS 4910 DIRECTED RESEARCH prepares students to distinguish hidden assumptions in scientific approaches and separate fact from interpretation, cause from correlation, and advocacy from objectivity. Students learn specific tools including: experimental design; field techniques; basic descriptive statistics; and parametric and non-parametric quantitative analysis. Emphasis is placed on succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations.

SUMMER

SFS 3540 RAINFOREST MANAGEMENT STUDIES (SESSION I) compares and contrasts the ecological, geographic, social, economic, and historical factors that have shaped natural resource management in Australia and New Zealand. Students gain an understanding of the drivers of species extinctions and current conservation problems including management of endangered species. In both countries, students examine the influence of fragmentation on abiotic and biotic attributes of forest communities during field exercises, and identify management techniques with regard to biological systems, national boundaries, and political structures.

SFS 3550 TECHNIQUES FOR RAINFOREST RESEARCH (SESSION II) includes a wide range of hands-on field activities and lectures that concentrate on developing management recommendations for reforestation practices on the Tablelands of Australia. We explore the ecological roles, environmental services, and economic benefits of tropical rainforests, including their role in the health of downstream ecosystems like the Great Barrier Reef. Students examine the structure and function of Australian tropical rainforests and the roles that humans have played, and are playing, in current forest dynamics. We examine reforestation applications on the Tablelands: the goals, techniques, successes, and failures. Finally, we develop and maintain an actual rainforest restoration project.

BHUTAN

Center for Himalayan Environment and Development Studies

SEMESTER

SFS 3040 POLITICAL AND SOCIOECONOMIC DIMENSIONS OF ENVIRONMENT focuses on the dynamics among people, society, and environment. We explore this dynamic through the interdisciplinary lens of political ecology, examining the political, economic, and social factors of environmental issues and changes. The course provides a conceptual framework for understanding how nature-society interactions—such as agriculture, natural resource management, biodiversity conservation, and rural development—shape both the natural landscape and the social and economic conditions in Bhutan. Students also gain the practical skills and tools to critically examine and assess the human-environment nexus in the field.

SFS 3060 MOUNTAIN ECOLOGY provides a theoretical and practical understanding of the ecology of the Eastern Himalaya region. Students explore the physical features influencing mountain ecosystems, including the geology and hydrology, elevation, climate, and weather. The course highlights the unique characteristics of the flora and fauna found in these ecosystems, and the threats to these species. Students are exposed to an array of ecosystems—some in natural states, some heavily modified by people. Rivers, forests, and farmland are examined in various locations and along different altitude gradients, showcasing the ecological diversity within this small mountain state.

SFS 3050 LAND USE, NATURAL RESOURCES, AND CONSERVATION considers the suite of natural resources that are tied to both local livelihoods and the national economy—including arable soils, water, timber, non-timber forest products, and grasslands. Students study the livestock and agriculture systems of Bhutan, both historical and current, and understand why and how these are changing, and what the implications are for household economies, the environment, and national issues. Students consider the important topic of food security, at both the household and national levels. By integrating field and classroom approaches, students explore the science behind current local and global issues in natural resource management, food production, biodiversity, and climate change.

SFS 2010 RELIGION AND CULTURE OF BHUTAN allows students to develop a conceptual and practical understanding of religious principles that underlie Bhutanese attitudes and approaches to environment. Students learn the basic principles of Buddhism and other religions practiced in the region and look for religion in the landscape and in society. Students look at religion and environment, culture and environment, and Bhutanese attitudes toward environment, and get some language training in Dzongkha.

SFS 4910 DIRECTED RESEARCH prepares students to distinguish hidden assumptions in scientific approaches and separate fact from interpretation, cause from correlation, and advocacy from objectivity. Students learn specific tools including: experimental design; field techniques; basic descriptive statistics; and parametric and non-parametric quantitative analysis. Emphasis is placed on succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations.

SUMMER

SFS 3580 EASTERN HIMALAYAN FORESTS AND RURAL LIVELIHOODS is an interdisciplinary, field-based course where students get to know a country in a region that is recognized worldwide for its dramatic mountain landscapes and rich flora and fauna. We travel in Bhutan, learning about how environmental issues and rural development goals intersect. Trekking across valleys and ridges and through villages, students gain an intimate knowledge of the local environments and rural livelihoods. Students develop skills in assessing environmental problems, defining research questions, conducting field research, and communicating results. They gain an appreciation of the complexity of identifying and addressing conservation issues in a rapidly developing region.

YOUR SUMMER WITH SFS

Any Session I course (Bhutan excluded) can be paired with any Session II course. Participating in two summer sessions (either single country or multi-country) will broaden and enhance your learning experience. Please contact SFS Admissions with questions about pairing summer sessions in different countries

Students participating in two summer sessions receive a \$1,000 discount.

CAMBODIA

Center for Conservation and Development Studies in the Lower Mekong

SEMESTER

SFS 3810 ECOSYSTEMS AND LIVELIHOODS focuses on the human landscape that envelops the natural ecosystems of the Lower Mekong Basin. We examine the intersection of natural and physical systems with the livelihood strategies employed by fishers, farmers, and merchants in the Mekong Basin. Students investigate the high levels of dependence upon natural resources by local populations and the critical threats to the ecology of the region. Students discover the primary drivers of change in local livelihood strategies and analyze attempts by international and national actors to find a sustainable balance between human needs and preserving biodiversity.

SFS 3820 ENVIRONMENTAL ETHICS AND DEVELOPMENT takes a pragmatic approach to environmental ethics, looking, through a variety of thematic scenarios, at how decisions relating to the environment can be made through an applied ethical lens. Following an introduction to the foundations of environmental ethics and the cultural context of Cambodia, we explore ethical problems that are pertinent to environmental studies. In particular, students in this course examine contemporary environmental dilemmas and topics as they affect Cambodia and Vietnam and the rapid development of these countries. Students study environmental ethics in relation to economic growth and development, and consider the purpose of nature and humans' role in managing it while still encouraging responsible development.

SFS 3800 CONSERVATION SCIENCE AND PRACTICE introduces the concepts, tools, and incentives to effect conservation of the environment and natural resources. The field of conservation is focused on protecting biological diversity—including ecosystems, species, and genetic diversity—by promoting processes, both ecological and social, that support biodiversity. The course focuses on five core themes: what biodiversity is; why biodiversity is important; threats to biodiversity; strategies for conservation; and the concept of sustainability. We explore the practical aspects of conservation using local case studies, considering the array of conservation strategies in the region, and using this lens to evaluate global concerns on a local scale.

SFS 2080 LANGUAGE AND CULTURE OF CAMBODIA contains two distinct but related modules: society and culture of Cambodia, and Khmer language. This course provides a basic introduction to spoken and written Khmer as well as the history and culture of Southeast Asia. The Khmer language module offers listening, oral, and limited written practice of the Khmer language at a beginner/basic level of proficiency to increase students' communication and comprehension skills. The sociocultural model helps students develop a more refined understanding of Cambodian and Vietnamese cultures while learning about the rich history of the region. Both modules are designed to help students immerse into regional culture and work more effectively in their Directed Research efforts.

SFS 4910 DIRECTED RESEARCH prepares students to distinguish hidden assumptions in scientific approaches and separate fact from interpretation, cause from correlation, and advocacy from objectivity. Students learn specific tools including: experimental design; field techniques; basic descriptive statistics; and parametric and non-parametric quantitative analysis. Emphasis is placed on succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations.

COSTA RICA

Center for Sustainable Development Studies

SEMESTER

SFS 3770 TROPICAL ECOLOGY AND SUSTAINABLE DEVELOPMENT examines the ecological impact of human activity, especially agriculture, in a tropical country. Students study the agroecology of important crops, with emphasis on biodiversity as the source of production means and materials. Students identify renewable and nonrenewable resources and examine their historical use. We 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). Students examine options for alternative resources use, land restoration, and preservation from ecological, sociopolitical, and economic viewpoints, and use basic field techniques and measurements to examine the efficacy of different options.

SFS 3740 PRINCIPLES OF RESOURCE MANAGEMENT is designed to examine the connection between society and natural resources, and how application of management tools can lead to biodiversity conservation and sustainable livelihoods. This course introduces underlying concepts and practical tools used in addressing complex environmental problems, including protected area planning and management, guidelines for ecologically sustainable development, and environmental impact assessment. Students examine local case studies using the theory and practice learned in this course.

SFS 3820 ENVIRONMENTAL ETHICS AND DEVELOPMENT addresses the intersection of the human and environmental sides of sustainable development in Costa Rica. Linking human rights to sustainability is an emerging field that combines the important dimensions of economic and social rights with the environmental underpinnings of sustainability. We use a multidisciplinary methodology to cover themes of local and global social and environmental policies, valuing of and access to ecosystem services, development aid, agrarian reform, indigenous rights and local livelihoods, and climate change. Students examine the roles of local people, government, and local and international non-governmental actors in the implementation of sustainable development models. Students also review specific local case studies to explore the empowerment of local people and their reaction to local and non-local proposals for sustainable development.

SFS 2050 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 engage in oral and written grammar and vocabulary exercises, and develop Spanish language skills and tools required for their research projects. The sociocultural module helps students to develop a more refined understanding of Costa Rican culture and the various communities with which we work. Students participate in lectures, field exercises, and other activities including a homestay—all of which teach them strategies and skills for working with people in a community-based research context and help them to assist with community extension projects.

SFS 4910 DIRECTED RESEARCH prepares students to distinguish hidden assumptions in scientific approaches and separate fact from interpretation, cause from correlation, and advocacy from objectivity. Students learn specific tools including: experimental design; field techniques; basic descriptive statistics; and parametric and non-parametric quantitative analysis. Emphasis is placed on succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations.

SUMMER

SFS 3520 SUSTAINING TROPICAL ECOSYSTEMS: BIODIVERSITY, CONSERVATION, AND DEVELOPMENT (SESSION I) provides students with an introduction to the practical field skills and topical knowledge necessary to understand, develop, and participate in community and tropical ecosystem-based research projects. Students examine the ecological, economic, and natural resource management issues that surround protected areas and tourism management, parks and people relations, and biodiversity assessment and protection, with the intent of exploring sustainable development and management strategies.

SFS 4930 APPLIED RESEARCH TECHNIQUES AND STRATEGIES TOWARD SUSTAINABILITY (SESSION II) provides students the opportunity to apply the scientific process in a field research project that addresses a local environmental issue. Students' exposure to several parks and protected areas helps them design a field research project related to sustainable development and tourism that contributes to the strategic research plan of the Center. Participants collect, manage, and analyze data, and communicate research results to our local stakeholders.

PANAMA

Center for Tropical Island Biodiversity Studies

SEMESTER

SFS 3790 TROPICAL COASTAL ECOLOGY introduces students to the ecology of coastal and marine ecosystems. Students learn to identify the major groups of dominant species in these habitats and understand the complexity of ecosystem functions in a delicate island-based marine context. The concept of island biogeography helps to frame the examination of the status of tropical island systems, especially those prone to perturbations related to climate change. Students conduct field exercises in many coastal habitats including reefs, mangroves, intertidal zones, grass beds, and estuaries.

SFS 3740 PRINCIPLES OF RESOURCE MANAGEMENT examines terrestrial ecology and land-management principles and practices including timber and non-timber forest products. Students examine land use and land cover change—especially in regard to increasing pastureland and plantation land under cultivation (mostly banana) in close proximity to the ocean and important watershed habitats. Students also investigate how climate change is affecting natural resources and livelihoods on land, sea, and in forests.

SFS 3020 ENVIRONMENTAL POLICY AND SOCIOECONOMIC VALUES provides a critical look at the livelihood strategies of island residents, the land use and environmental regulations in place, and actual or recommended responses by society (including government, civil society, and individuals) aimed at mitigating pressures and restoring balance in the environment. Students gain an understanding of the local perceptions of conservation of natural resources and the pressure points between development and preservation. Students measure and examine the economic importance of tourism along with the habitat degradation due to tourism. Gauging environmental awareness and literacy of tourists helps students to understand their impact on the future of endangered island ecosystems that will be put under continuous pressure with the climbing number of visitors.

SFS 2070 LANGUAGE, CULTURE, AND SOCIETY OF PANAMA contains two distinct but integrated modules. The Spanish language module offers listening, oral, and written practice of the Spanish language at beginner, intermediate, and advanced levels of proficiency. Students engage in oral and written grammar and vocabulary exercises, and develop Spanish language skills and tools required for their research projects. The sociocultural module helps students to develop a more refined understanding of Panamanian culture and the various communities with which we work. Students participate in lectures, field exercises, and other activities—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.

SFS 4910 DIRECTED RESEARCH prepares students to distinguish hidden assumptions in scientific approaches and separate fact from interpretation, cause from correlation, and advocacy from objectivity. Students learn specific tools including: experimental design; field techniques; basic descriptive statistics; and parametric and non-parametric quantitative analysis. Emphasis is placed on succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations.

SUMMER

SFS 3000 TOURISM AND ISLAND SYSTEMS: ASSESSMENT OF SUSTAINABLE PRACTICES (SESSION I) introduces students to the marine and terrestrial ecosystems of Bocas del Toro and the challenges presented by a growing reliance on tourism for economic development in this part of the Caribbean. Students evaluate the impact of tourism on the natural environment and engage with local stakeholders to determine how the tourist industry affects—positively or negatively—social, cultural, and political dynamics within the archipelago. Sustainable practice is a major lens of inquiry during this course. Students will assess the balance between the conservation of the region's natural resources and economic opportunities for local communities.



PERU

Center for Amazon Studies

SEMESTER

SFS 3830 TROPICAL ECOLOGY OF THE AMAZON examines biodiversity from multiple scales, including region, landscape, ecosystem, community, species, and genes. Students learn to: identify and characterize a variety of the diverse flora and fauna in the Amazon region, understand the patterns and processes that support this diversity, and appreciate the importance of biodiversity to people. Students examine the fundamental principles of tropical ecology through the study of a diverse mosaic of ecosystems, habitats, and species along elevational gradients, successional gradients, and geomorphic patterns.

SFS 3840 POLITICAL ECOLOGY OF DEVELOPING LANDSCAPES focuses on human interactions with and impacts on local natural systems, and vice versa. We consider these interactions through the interdisciplinary lens of political ecology, examining the political, economic, social, and historical factors of environmental issues and changes. The course provides the conceptual and practical skills and tools to critically examine and assess the human-environment nexus by exploring distinct cultures and socioeconomic systems from the upper Andes to the Amazon basin. We also consider the theories and ethics of sustainable and unsustainable development, and the need to view these issues in ways that are inclusive and just.

SFS 3800 CONSERVATION SCIENCE AND PRACTICE introduces the concepts, tools, and incentives to effect conservation of the environment and natural resources. The field of conservation is focused on protecting biological diversity—including ecosystems, species, and genetic diversity—by promoting processes, both ecological and social, that support biodiversity. The course focuses on five core themes: what biodiversity is; why biodiversity is important; threats to biodiversity; strategies for conservation; and the concept of sustainability. We explore the practical aspects of conservation using local case studies, considering the array of conservation strategies in the region and using this lens to evaluate global concerns on a local scale.

SFS 2090 LANGUAGE, CULTURE, AND SOCIETY OF PERU provides two integrated modules: Spanish language instruction, and Peruvian society and culture. The language module offers listening, oral, and written practice of Spanish to increase students' communication and comprehension skills. The sociocultural module is designed to help students gain experience in the culture and therefore become more adept at working effectively in their community-based Directed Research efforts. Both modules emphasize the understanding of, and direct interaction with, the local communities with which the Center works. This exposure to culture and language is reviewed and processed through lectures, field exercises, community outreach, and classroom discussion.

SFS 4910 DIRECTED RESEARCH prepares students to distinguish hidden assumptions in scientific approaches and separate fact from interpretation, cause from correlation, and advocacy from objectivity. Students learn specific tools including: experimental design; field techniques; basic descriptive statistics; and parametric and non-parametric quantitative analysis. Emphasis is placed on succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations.



TANZANIA

Center for Wildlife Management Studies

SEMESTER

SFS 3710 TECHNIQUES IN WILDLIFE MANAGEMENT introduces students to the questions, principles, and tools used by resource managers in Tanzania's savanna ecosystem. Students study habitat assessment, plant and animal identification, associations and distributions, and other approaches to evaluating ecosystems. Students examine the behavioral, physiological, and social responses of animals to a changing environment. The course introduces field and laboratory techniques for monitoring ungulate populations and optimizing management practices, as well as addressing decision-making processes on which wildlife management programs are based.

SFS 3720 WILDLIFE ECOLOGY presents students with the information and conceptual background necessary to understand the underlying ecological principles of Tanzania's savanna ecosystem. We focus on the fundamental processes and interrelationships between the biotic and abiotic environment. We begin with basic ecological principles, setting them against the background of Tanzania. Students examine the factors underlying distributions, population biology, and behavioral ecology, along with competition and predation, using African examples. Students discuss theoretical models of different basic ecological principles and then debate their applicability or constraints based on observations made in the field.

SFS 3020 ENVIRONMENTAL POLICY AND SOCIOECONOMIC VALUES provides insight into the broad social context surrounding natural resources to determine effective approaches to resource management. Students explore the sociocultural context of resource management 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 effect change and their historical basis; and legal basis for enforcement of environmental policy. Students are also introduced to major constituencies that effect conservation (NGO conservation groups, economic interests, etc.) and their underlying philosophies.

SFS 2060 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 Tanzania; this phenomenon will be explained in the second course module. The sociocultural aspects of Tanzanian 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 is reviewed and processed through lectures, field exercises, and classroom discussion. The sociocultural module is designed to help students engage in the culture and be therefore more adept at working effectively in their Directed Research efforts.

SFS 4910 DIRECTED RESEARCH prepares students to distinguish hidden assumptions in scientific approaches and separate fact from interpretation, cause from correlation, and advocacy from objectivity. Students learn specific tools including: experimental design; field techniques; basic descriptive statistics; and parametric and non-parametric quantitative analysis. Emphasis is placed on succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations.

SUMMER

SFS 3500 WILDLIFE MANAGEMENT AND CONSERVATION (SESSION I) exposes students to wildlife management practices and the complex issues surrounding sustainable wildlife conservation in the Tarangire-Manyara ecosystem of Tanzania. Students explore a vast array of concepts and principles in ecology, natural resource management, and socioeconomics, which are central to effective and sustainable wildlife conservation.

SFS 3570 TECHNIQUES FOR WILDLIFE FIELD RESEARCH (SESSION II) exposes students to a suite of wildlife field techniques and methods routinely used to assess wildlife ecology and management policies and practices in Tanzania, with specific application to the Tarangire-Manyara ecosystem conservation areas. The focus of the course is multidisciplinary and reflects the complex realities of balancing ecological, economic, and sociocultural factors in sustainable wildlife conservation and management studies. Students learn foundational skills in observation and evaluation of wildlife, as well as interactive methods used for assessing local community attitudes and behaviors toward conservation efforts, and they apply these techniques to advance long-term research goals at the Center.

TURKS & CAICOS ISLANDS

Center for Marine Resource Studies

SEMESTER

SFS 3730 TROPICAL MARINE ECOLOGY discusses the interactions that determine the distribution and abundance patterns of tropical marine organisms, with emphasis on the ecology of nearshore areas. Students explore basic principles of ecology and gain an understanding of the sea as a habitat for life. We discuss physical, chemical, and geological oceanography. Students examine major groups of dominant marine organisms of the region, and major nearshore marine habitats—along with their associated biotic communities—are observed in the field. We emphasize coral reef ecosystems to illustrate basic concepts. Students also discuss applications to the management of indigenous marine resources.

SFS 3740 PRINCIPLES OF RESOURCE MANAGEMENT is designed to examine the connection between society and natural resources, and how application of management tools can lead to biodiversity conservation and sustainable livelihoods. This course introduces underlying concepts and practical tools used in addressing complex environmental problems, including protected area planning and management, guidelines for ecologically sustainable development, and environmental impact assessment. Students examine local case studies using the theory and practice learned in this course.

SFS 3020 ENVIRONMENTAL POLICY AND SOCIOECONOMIC VALUES provides insight into the broad social context surrounding natural resources to determine effective approaches to resource management. Students explore the sociocultural context of resource management 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 effect change and their historical basis; and legal basis for enforcement of environmental policy. Students are also introduced to major constituencies that effect conservation (NGO conservation groups, economic interests, etc.) and their underlying philosophies.

SFS 4910 DIRECTED RESEARCH prepares students to distinguish hidden assumptions in scientific approaches and separate fact from interpretation, cause from correlation, and advocacy from objectivity. Students learn specific tools including: experimental design; field techniques; basic descriptive statistics; and parametric and non-parametric quantitative analysis. Emphasis is placed on succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations.

SUMMER

SFS 3530 TROPICAL MARINE ECOSYSTEMS: MONITORING AND MANAGEMENT (SESSION I) is an interdisciplinary course that highlights key aspects of environmental assessment and management of tropical marine ecosystems. In addition, students explore sustainable development strategies for the Turks and Caicos Islands that are successful on a local and global scale. Students gain knowledge of subtropical marine ecosystem function and connectivity, and begin to understand the most pressing challenges at the intersection of marine conservation and economic development. Students learn how to engage in management of local fisheries and coastal development and how to respond to the global phenomena of climate change and ocean acidification.

SFS 3560 APPLIED MARINE RESEARCH TECHNIQUES (SESSION II) provides students with the opportunity to apply the scientific process in a field research project addressing a local issue related to the management of tropical marine environments. This course prepares students to develop scientific approaches to identify key problems affecting the health of coral reefs, seagrass beds, and mangrove forests that surround the island. Students learn to implement the scientific research process while contributing to a growing body of research that informs local marine conservation and resource management decisions.



ADMISSIONS: GETTING STARTED



When to Apply

The School for Field Studies (SFS) reviews applications on a rolling basis and students may apply up to one year in advance. While there is no application deadline, students should apply early to ensure admission to their first choice program and check with their home institutions regarding school specific study abroad application deadlines.

Academic Credit

Students come from more than 175 colleges and universities to attend SFS programs each year and most are able to transfer credit for their participation. The final decision regarding credit and grade transfer rests with your home institution. Check with your academic or study abroad advisor and/or registrar's office before applying to learn how your SFS coursework will be applicable for credit in your degree program.

All students will complete a Transcript Request Form (the third page of the Participation Approval Form) as part of the application. This form allows SFS to process an official transcript for students after program completion. SFS students receive academic credit in one of two ways: (1) Students receive transcripts from the University of Minnesota, the School of Record for SFS programs; (2) Students receive credit directly from their home schools. Participants receive official transcripts approximately four weeks after the conclusion of the program.

Important Things to Know

- > You must be at least 18 years of age to participate in an SFS program.
- > You must be in good academic and disciplinary standing on your home campus.
- > We recommend that students complete one semester of college prior to the start of the program, but gap-year students are welcome to apply, provided they fulfill the prerequisites.
- > Recent college graduates are welcome to apply.

Course Prerequisites

- > Semester: One college-level ecology, biology, or environmental studies/science course (or related coursework, as assessed by SFS) with a grade of C or better must be completed prior to the start of an SFS semester program.
- > Summer: No course prerequisites.

HOW TO APPLY

Application items can be submitted in any order and do not need to be submitted at the same time.

- **SFS APPLICATION FOR ADMISSION** to be completed online.
- **NON-REFUNDABLE APPLICATION FEE OF \$50** to be paid by credit card.
- **SFS ACADEMIC REFERENCE FORM** to be completed by a teacher, professor, or academic advisor who is well acquainted with your current academic performance.
- **SFS CHARACTER REFERENCE FORM** to be completed by someone who knows you well, such as another academic advisor, job supervisor, volunteer advisor, athletic coach, etc.
- **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.
- **PARTICIPATION APPROVAL FORM (including Transcript Request Form)** to be completed by your study abroad advisor or appropriate authority on campus.
- **FINANCIAL AID APPLICATION** to be completed and submitted along with the program application if you would like to be considered for SFS need-based financial aid.

After You Apply

Once we receive your application, you may check the status of your application materials by logging in to your SFS account to view your Admissions Checklist. If your application is incomplete, it is your responsibility to send any remaining materials as we cannot begin the application review process until all materials are received. Once all application materials have been received, we will contact qualified candidates to schedule a short phone interview. Admissions decisions are generally available within one week of your scheduled phone interview.

Medical Approval

To ensure that you will be able to meet the physical challenges of SFS programs without undue risk to yourself or others, your ability to participate is contingent upon receiving medical approval from the SFS Safety and Student Life Department. You may be disqualified from participating on medical grounds.

Dietary Restrictions

SFS is able to accommodate most dietary needs (e.g. vegetarian, vegan, gluten free, etc.), but the variety of food may be limited due to local availability, cultural practice, and cost. Students requesting medically-necessary dietary restrictions should contact the SFS Safety and Student Life Department.

Learning or Physical Accommodations

If you are requesting accommodations, please notify SFS in writing within 10 business days of acceptance. For physical accommodations, please contact the SFS Safety and Student Life Department. For learning accommodations, please contact the SFS Office of Academic Affairs. Because of the limitations inherent in international field stations, the level of accessibility, services, and accommodations to which you may have access at your home campus may not be available.

Non-discrimination Policy

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

Questions?

Admissions:

admissions@fieldstudies.org

Safety and Student Life Department:

safety@fieldstudies.org

Office of Academic Affairs:

academics@fieldstudies.org

Call us at 800-989-4418

Chat with us at [fieldstudies.org](https://www.fieldstudies.org)

Connect with SFS



TUITION, FINANCIAL AID, AND SCHOLARSHIPS

The benefits of an SFS program will last a lifetime, but paying for it—much like paying for college—may seem daunting, confusing, or just plain impossible at first. This is why SFS works closely with you and your home school to understand and meet your financial needs. SFS awards nearly \$500,000 in financial aid each year, and you are automatically considered for more than 12 scholarships, grants, and loans when you submit an SFS Financial Aid Application. SFS awards need-based aid to 90% of students who apply. Don't let finances deter you from applying to an SFS program!

SFS Aid and Home School Aid

Many applicants receive aid through their home institutions or other outside sources, so check with your financial aid office to see what aid may apply to an SFS program. You may also look into applying for additional funds, including loans, through your home school prior to applying for SFS aid. In addition to the possibility of transferring institutional aid from your home school, your school should be able to process a Stafford Loan or other federal sources of support to help pay for your SFS program. You may qualify for SFS assistance even if you are not receiving aid from your home school.

HOW TO APPLY FOR FINANCIAL AID

All students accepted to SFS are eligible for and encouraged to apply for financial aid.

If you would like to apply for SFS aid, you must submit your aid application with your SFS program application.

To download the SFS Financial Aid Application and learn more about the aid review process, visit: fieldstudies.org/admissions-aid

Scholarships, Grants, and Loans

Visit our website for complete descriptions of SFS need-based scholarships.

SFS General Scholarship

SFS strives to eliminate or reduce the gap between what a student pays on their home campus and the cost of studying abroad.

Pell Grant Match Award

SFS matches Federal Pell Grant funding for semester students who use their Pell Grant to help pay for an SFS program.

Trailblazer Grant

Available to students who are the first from their home institutions to attend an SFS program.

Andreas Family Scholarship

Available to students attending U.S. public colleges and universities.

Diversity Scholarship*

To broaden participation of minorities, first-generation college students, and underrepresented groups in study abroad.

Heritage Scholarship*

Available for students with a cultural and/or ancestral connection to the country in which they plan to study abroad with SFS.

Stephen F. Lee Memorial Scholarship

Supports students attending SFS marine programs.

Heather Jo Leibowitz Memorial Scholarship

Supports students attending SFS' Tanzania program. Preference is given to students who demonstrate a commitment, as Heather Jo did, to making a difference in the lives of resource-dependent communities in Tanzania.

McKee Scholarship

Awarded to students with financial need.

Tozer Scholarship

Awarded to students with financial need.

Fountain Scholarship

Awarded to students who grew up in an urban environment.

Roy A. Hunt Foundation Scholarship

Awarded to students with financial need.

Travel Grant

Designed to help students offset the cost of travel.

Zero-Interest Loan

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

Low-Interest Loan

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

**An additional personal statement is required to be considered for this scholarship.*

SEMESTER COSTS FALL 2017 and SPRING 2018

Program	Tuition	Room & Board	Total Program Cost
Australia	\$17,675	\$5,280	\$22,955
Bhutan	\$18,000	\$6,995	\$24,995
Cambodia	\$16,950	\$5,000	\$21,950
Costa Rica	\$16,950	\$5,000	\$21,950
Panama	\$16,950	\$5,000	\$21,950
Peru	\$16,950	\$5,000	\$21,950
Tanzania	\$18,000	\$5,250	\$23,250
Turks & Caicos Islands	\$18,270	\$5,580	\$23,850

SUMMER COSTS 2018

Program	Tuition	Room & Board	Total Program Cost
Australia/New Zealand	\$ 4,650	\$ 2,300	\$ 6,950
Australia	\$ 4,550	\$ 1,800	\$ 6,350
Bhutan	\$ 6,280	\$ 3,715	\$ 9,995
Costa Rica	\$ 4,500	\$ 1,450	\$ 5,950
Panama	\$ 4,500	\$ 1,450	\$ 5,950
Tanzania	\$ 5,090	\$ 2,395	\$ 7,485
Turks & Caicos Islands	\$ 4,850	\$ 1,500	\$ 6,350

What's Included:

- > Pre-departure advising services from an SFS Admissions Counselor
- > Visa and travel coordination
- > Accommodations at the field station
- > Meals and snacks
- > On-site orientation
- > Field excursions and expeditions, including park entrance and research fees, and program-related ground transportation
- > 24-hour support and emergency assistance from on-site residential staff
- > Emergency medical evacuation insurance
- > Official transcript with 16–18 credits for semester programs, or 4–8 credits for summer programs

For complete course budgets, including out-of-pocket expenses, please visit fieldstudies.org.

Deposits and Tuition

When students are accepted to an SFS program, they are required to submit a nonrefundable Program Commitment Deposit of \$250 for summer programs or \$500 for semester programs within 10 business days of acceptance. The Program Commitment Deposit payment is nonrefundable. This payment goes toward tuition and is not an additional fee. Please see our website for complete information about our billing deadlines and tuition refund policies.



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