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THE SCHOOL FOR FIELD STUDIES

*The mission of
The School for Field Studies
is to provide highly motivated
young people from the U.S.
and abroad with an excellent
practical education in
environmental studies, in order
that they may become more
environmentally literate and
aware, as well as make
immediate and future
contributions towards the
sustainable management of the
world's natural resources.*

A practical education, as referred to in the School's mission, is defined as an education that is action-oriented, experience-based, capable of being put to good use, manifested in practice, and concerned with voluntary actions and ethical decisions.



CONTENTS

Chair/President's Letter	1
Curriculum	3
The SFS Mission	4
Case Studies	5
Field Projects	6
Research Publications	8
Faculty	8
Physical Plant	10
SFS Student Body	10
Affiliate Programs/Schools	12
Finances	14
Development	16
SFS Organization	18
Administration/Staff	19
Satellite Faculty	20

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



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GOALS OF THE SFS PROGRAM: THE "PROMISE"

- It is our hope that each student involved in an SFS course will:*
- make a meaningful personal contribution toward improving the condition and/or sustainable management of the natural resources of the local community in which he/she is studying;
 - acquire an approach to problem-solving and decision-making that involves identification and comparison of alternative courses of action and consideration of the social, ethical, political, and biological implications of each;
 - develop an integrated understanding of conservation issues that emanates from a case-based study of:
 - ecology;
 - applied science and research techniques;
 - resource management;
 - the role and implications of the cultural context (including the political and economic implications); and
 - the inter-relationships of the above;
 - experience opportunities for personal growth and achievement, including:
 - the opportunity to function productively as a part of a group;
 - the challenge to achieve at his/her maximum personal potential;
 - the opportunity to pursue and realize extraordinary achievement;
 - the opportunity to accept responsibility for his/her personal learning and growth.

1992-1993 CURRICULUM

THE CENTER FOR MARINE MAMMAL STUDIES
Site: Baja, Mexico
Fall and Spring Semester Programs:
Marine Mammal Conservation
Summer Course:
Sea Lion and Dolphin Conservation

THE CENTER FOR MARINE RESOURCE STUDIES
Site: Turks and Caicos Islands, Caribbean
Fall and Spring Semester Programs:
Marine Resource Management
Summer Course:
Marine Parks Management

THE CENTER FOR RAINFOREST STUDIES
Site: Australia
Fall and Spring Semester Programs:
Tropical Rainforest Management
Summer Course:
Tropical Reforestation

THE CENTER FOR SUSTAINABLE DEVELOPMENT STUDIES
Site: Costa Rica
Fall and Spring Semester Programs:
Studies in Sustainable Development

THE CENTER FOR WILDLIFE MANAGEMENT STUDIES
Site: Kenya
Fall and Spring Semester Programs:
Wildlife Ecology and Management
Summer Course:
Wildlife Management

SUMMER SATELLITE COURSES

Session I: June 16-July 15
Session II: July 22-August 20

Ecology of Killer Whales
Puget Sound, Washington

Landscape Ecology
Colorado Rockies

Tropical River Ecology
Belize

Primate Ecology and Conservation
Barbados

Ecology of Endangered Sea Turtles
Costa Rica

Tropical Forest Ecology
Costa Rica

Raptor Ecology and Conservation
Montana

There are three critical reasons why we founded The School for Field Studies thirteen years ago:

LETTER FROM THE PRESIDENT AND CHAIR

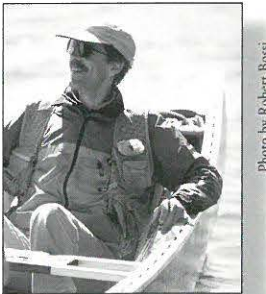
One Environmental problems are not really environmental problems at all - they are really people problems. In other words, it's clear that the global environment will still be around long after we wipe humanity off the face of the earth. (After all, most of us know from painful experience that the cockroaches alone will survive the worst devastation we can devise!)

Two The environmental crisis in large part represents a failure of education. Had humankind in past decades understood how much damage our actions and decisions would have on those natural systems upon which we depend for life, different choices presumably would have been made. Instead, traditional education to date has emphasized domination and exploitation of the earth. This has been based on, among other things, an (erroneous) assumption of limitless resources, as well as an almost spiritual belief that all on earth is here to serve humankind. Educational institutions thus offer a major and largely ignored leverage point within our society to move us all towards sustainability — that being the point at which the use of natural resources for economic growth can be sustained over the long term.

Three Conservation and economic development are flip sides of the same coin; one cannot be achieved without the other over the long term. The often adversarial relationship between environmentalists and business in the past has been shortsighted on the part of both parties. An economist named Herman Daly put it another way: "There is something fundamentally wrong in treating the earth as if it were a business in liquidation". This statement refers to a short-term point of view which is one of the most fundamental barriers to sustaining our environment and natural resources — along with unsustainable population growth and a consumer culture which we in the West have so successfully developed and exported.

The good news is, as a very effective educator from the 1940s and 50s named Kurt Hahn said: "Your disability is your opportunity". The truly unique opportunity in the environmental crisis is that it has the potential power to reunite us all to work for the common good - the health and well being of our planet and our children. This is, by definition, a long-term point of view. Our best hope is that it will eventually win out over short-term thinking.

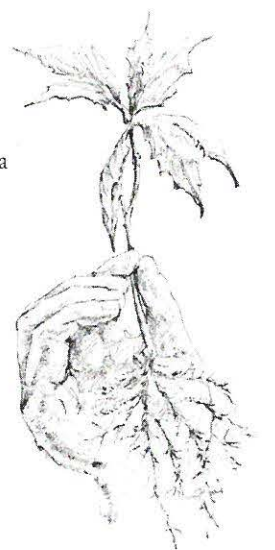
Thus our most important job as a society is to give young people the tools and support they need to effect change which will positively impact the relationship between conservation of our natural resources and economic development. And this is precisely what SFS is designed to do.



James Elder
President



Terry Andreas
Chair



With SFS, we have sought to reach key young people with leadership potential at an age where they are making career decisions, forming a well defined view of the world, and discovering their place and role in life. And we have chosen to offer them an intensive, relatively long program, believing that anything less would not do justice to the complexities of environment/development issues.

The past year has seen our budget grow for the thirteenth year in a row, this year by 7%. Great effort was invested in refining and standardizing our program, which we believe is showing results in more consistent student satisfaction. As a student from our Sustainable Development Studies program in Costa Rica recently wrote,

"Sitting in a classroom, garnering information from lectures and textbooks, is a far cry from true learning by experience. In the SFS Costa Rica program, we were immersed in the very subjects we were studying. We hiked through forests, examining the ecological interactions all around us. We toured cattle pastures, coffee patches, rice paddies, and fruit plantations, exploring firsthand the conditions of the land and the workers, and enabling us to form our own opinions about the true costs and benefits of each form of production. We studied a landfill and a hydroelectric power plant, gaining an understanding of some of the costs of development. In short, it was the most intense and productive learning experience of my entire life."

The School's financial picture remains strong, with little debt, a small but positive Operating Fund balance, and the bulk of our assets invested in our growing physical plant. Our student body remains first rate. The average grade point average of our entering students is 3.2 (B+); even more importantly, these students continue to exhibit the high level of motivation and commitment which distinguishes our program from many others. And we welcomed Mount Holyoke College to our distinguished list of 17 affiliated colleges and universities.

This steady and consistent progress has been made possible only by the remarkably dedicated efforts of the School's staff and hundreds of supporters - donors and volunteers both here in the U.S. and abroad. SFS thus demonstrates first hand how the environmental crisis can pull people together for the common good, often putting aside short-term interests to make a contribution towards the long-term sustainability of humanity. We thank you all for your vision and commitment.

Sincerely,

James L. Elder, Jr.
President

Terry L. Andreas
Chair

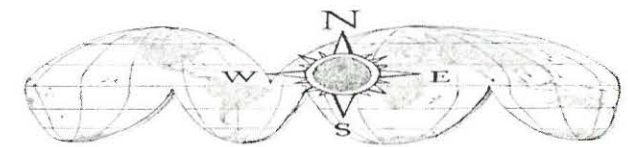


The School for Field Studies—SFS—is the country's first and largest educational institution devoted exclusively to environmental field studies. A nonprofit corporation founded in 1980, SFS is governed by a Board of Trustees and Members of the SFS Corporation. Funding is provided by tuition, fees, and tax deductible contributions from individuals, foundations, and corporations.

SFS enrolls approximately 750 college undergraduates in either semester-long or one month summer programs (*which are also open to high school seniors*) at our five overseas Centers. Semester programs are designed for 32 students and taught by four full-time faculty in each program; summer courses are designed for 16 students and taught by two faculty in each course. Summer courses are offered at seven temporary Satellite sites as well as our five Centers.

Each SFS program combines academic study with a field project directed by our faculty. Our academic work encompasses all the traditional academic elements (*lectures, readings, practicum, papers, and exams*) but presented in an interdisciplinary "case study" format. The field research project applies the theory learned through the case studies to solving real environmental problems.

SFS programs are academically accredited by Northeastern University for all students who enroll in SFS, as well as by 17 Affiliated colleges and universities for their own students. In addition, a special Consortium of five colleges and universities supports and sponsors the SFS Center for Sustainable Development Studies in Costa Rica.



OUR FIVE CENTERS AND SEVEN SATELLITE SITES

The Center for Sustainable Development Studies
Costa Rica

The Center for Wildlife Management Studies
Kenya

The Center for Marine Resource Studies
Turks and Caicos Islands, BWI

The Center for Marine Mammal Studies
Baja California, Mexico

The Center for Rainforest Studies
Queensland, Australia

SATELLITE PROGRAMS

Raptor Ecology and Conservation — *Montana*

Tropical River Ecology — *Belize*

Landscape Ecology — *Colorado Rockies*

Ecology of Killer Whales — *Puget Sound, Washington*

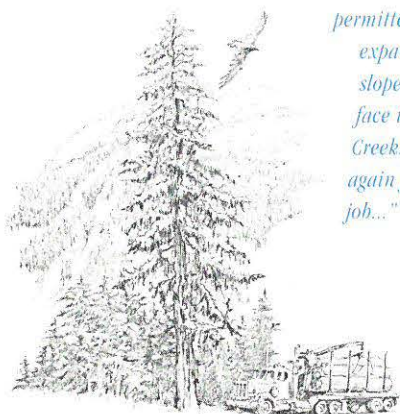
Ecology of Endangered Sea Turtles — *Costa Rica*

Primate Ecology and Conservation — *Barbados*

Tropical Forest Ecology — *Costa Rica*

One SFS partner is the United States Forest Service, which works with our Raptor Ecology Course in Montana to collect data on the impact of clear cutting on forest raptors. William Hicks, the District Ranger, wrote, "I would like to thank you for your efforts this past summer conducting raptor studies at and around Maverick Mountain Ski Area. As you know, detailed information on raptor nest sites and habitat is limited for this area... (we) often do not have the time to completely survey an area for wildlife before projects are planned... and your work will help considerably when projects are planned for this area. Your discovery of the gosawk nest was instrumental in the reroute of the Maverick/Grasshopper Snowmobile Trail. This type of

information is extremely valuable in light of the permittee's wishes to expand the ski slope to the north face in Blue Creek. Thanks again for the great job..."



One SFS client last summer was the Barbados Primate Research Center, which directly benefited from the work we did in our Primate Ecology Course (the National Tourism Department was our partner in this course). This course studied whether the green monkey, a non-native pest species, could become a tourist attraction. Eco-tourism had never before been considered as an option in Barbados; and the work of our students with tourist surveys has provided the National Trust with recommendations for new directions. The Primate Center Director, Jean Ballau, helped our faculty to design student field projects. Two young Bajan professionals working with the Center attended classes and assisted students define their research projects based on local need. Ballau was thrilled to report at the end of the course: "I have been to professional conferences around the world, and the quality of the SFS student research (in comparison) was excellent." Student project results changed several of the operating assumptions about monkey breeding and trapping patterns at the Barbados Wildlife Preserve. This new information will result in modifications in the preserve's management plan.



IMPLEMENTING THE MISSION

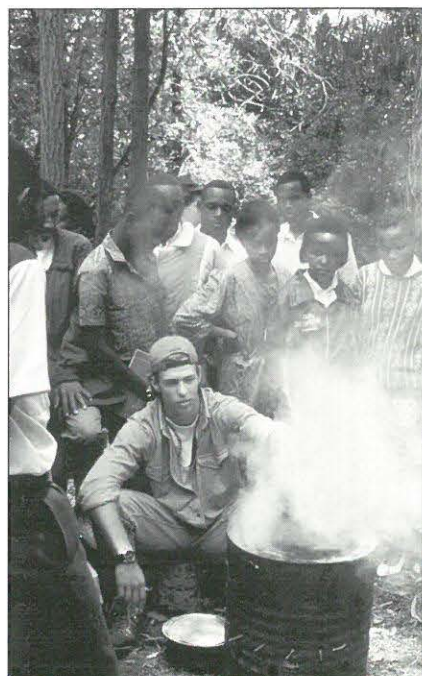
SFS's mission calls for the School to provide our students with not only an excellent practical education in environmental studies but also, as an integral part of that education, to offer students a chance to participate in a meaningful way in making a contribution towards solving environmental problems. Thus, our intent has been to develop a focus at each SFS Center which provides solutions to local and regional environmental problems, especially those problems which exist in many other contexts across the globe. By involving students in case studies, environmental field work, and community projects, SFS programs emphasize both the value of a practical education focused on problem solving and the importance of making a contribution to a local community. Recognizing the importance of this approach, a recent report from The American Institute of Biological Sciences cited SFS as "particularly valuable" for its teaching methodology.

The case studies and conservation field work in our curricula can only be successful to the extent to which we develop partnerships and client relationships with local individuals, organizations, and agencies interested in conservation. Case studies, field work, and community projects should be designed with partner and/or client input to insure coverage of the necessary theory as well as relevance to client needs. These joint ventures increase the likelihood that our case studies address real issues and that our field projects will be successfully implemented.

A program partner is a collaborating organization, such as a university, government agency, non-governmental organization, or private group/individual. Our partners are working on

environmental issues which we feel are important and will provide suitable material for an applied education - and most importantly, they are interested in SFS's help.

SFS clients are usually the stakeholders in an environmental issue: those individuals who are directly impacted by the work of SFS and our partners. By building our academic program to meet client needs, our students have the opportunity to see the value of their education as well as actually helping to impact a local problem.



The dung burning stove, designed and constructed by students as a research project, could help reduce consumption of fuelwood, a major source of deforestation in Kenya.

CASE STUDIES

In FY93, we completed a long transition from a course-based to a case studies-based curriculum. The case study model of instruction is one of several cornerstones to SFS's educational methodology. Unlike the case studies approach used in many graduate professional schools which are often either hypothetical in nature or studies of past situations, an SFS case study analyzes an actual environmental situation or dilemma which requires making a decision. Faculty lectures and readings provide necessary theoretical background material to understand the problems raised by the cases. Guest lectures by individuals who are often intimately involved in the issue of the case provide students with the rich (and often conflicting and confusing) context which is typical of major social problems.

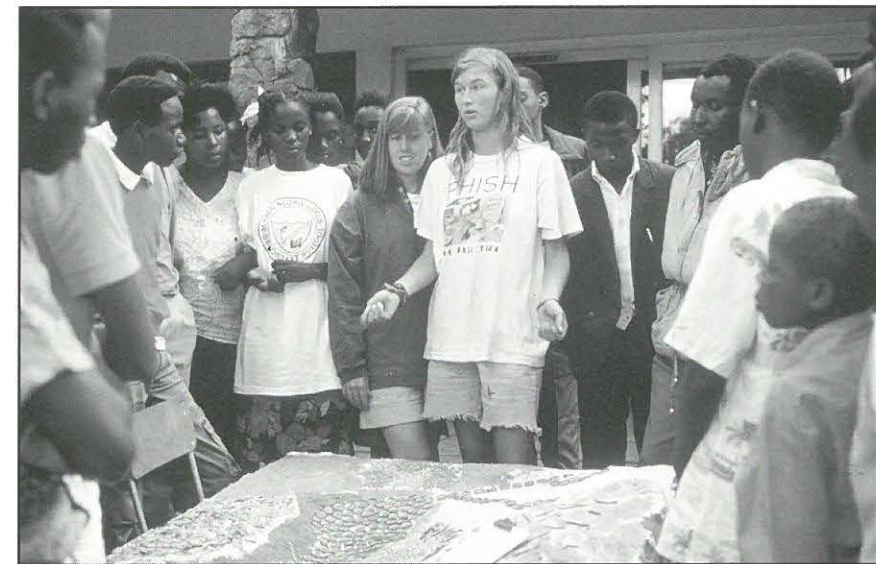
Practical, interdisciplinary activities give students hands-on experience in addressing these issues. The case studies usually lead to several plausible or compelling decision possibilities. Students are faced with the need to make the decision, usually in the face of less than full data and less than perfect solutions. Debates, policy statements, or management plans often serve as a concluding and evaluative stage to the program.

We spent significant effort this year to introduce several new case studies. In Australia, we created a case study which explored issues around cassowary management, a large flightless bird which is the "flagship" species for conservation of rainforest habitat in Queensland. We are working to help create a conservation and management plan for cassowaries with CAFNEC (Cairns and Far North Environment Center) and CSIRO (Central Scientific and Industrial Research Organization). The objective of this plan is to help promote tourism through improved cassowary conservation and management.

In Baja, we created a new case study to explore how to manage islands for ecosystem diversity and stability in the Bay of La Paz. The fieldwork component of this study is conducted in conjunction with SEDESOL, the Mexican Ministry of Natural Resources. These bay islands have no fresh water; human impacts, to date, primarily have been from plants and animals introduced from the mainland and from camping by fishermen. However, major hotels may be developed on these islands in the near future. This case study seeks to determine the appropriate management and development choices for each of several islands.

In Kenya, the elephant problem has become perhaps the defining international image of wildlife management. The politics of international conservation have run headlong into issues over national sovereignty. Our new case study on the effectiveness of the ivory ban as a way to manage the elephant population challenges the students to reconcile a local economic need with local and international conservation interests.

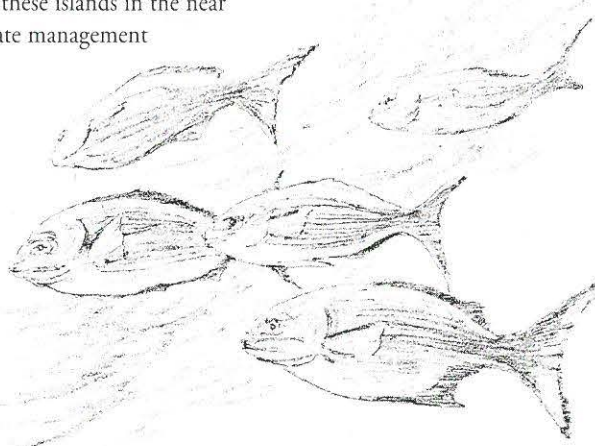
One student described our case study learning experience in the following way: "I have never taken an environmental policy course at school and I was not planning to do so. But since I came to this program, I love the environmental policy classes. I guess I was expecting a more biologically oriented course. Instead, it's more of a 'Whatever-you-need-to-know-to-solve-a-problem' course."



Working with the Wildlife Clubs of Kenya, SFS students helped stage a nationwide wildlife conference for Kenyan high school students.

Sometimes our case studies may be grappling with similar problems in different locations. Both our South Caicos and Baja Centers share a similar case study on the local small-scale fisheries. In South Caicos, students and faculty study the fishery's social and economic impacts on the local community as well as its ecological impacts on the coral reef resources. In Baja, students focus on the impacts of the fishery on the local community and the marine mammal resources. Conservation concerns may lead students to recommend that specific management and enforcement actions be enacted. But, while these steps may preserve the resources, they may also negatively impact the community's economy and social well-being by reducing the income of local fishermen.

Collaborative efforts with local management, development, and community agencies may lead to a better compromise - but the important point is that there is no easy, "correct" solution.



FIELD AND COMMUNITY SERVICE PROJECTS



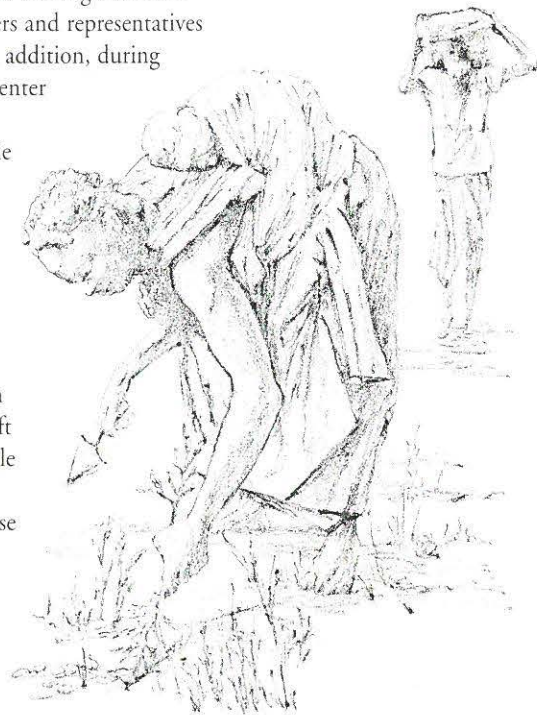
Heather Eves is an alumna of the first Kenya semester program in 1985, who also recently finished a year's internship with SFS before embarking upon a Fulbright Grant. She wrote us as she was leaving to say, "I write to thank you for all the opportunities which SFS has provided me. As a result of that first Kenya semester program, I decided to pursue a career in wildlife management. I returned to Kenya as a Peace Corps volunteer, and then continued working for a local NGO. Since I began my research for my Masters degree, SFS has been very helpful and encouraging. Now, the Fulbright grant will hopefully enable me to contribute something to the process of developing wildlife management in Kenya. There is much I have to thank you for — no event in our lives occurs in isolation. The support for my project and the process involved to develop it began through being a student here. SFS is a brilliant concept and I wish you the greatest of continued success with its development."

In every program, each SFS student must design and carry out a field project related to the current conservation goals of the Center. These projects usually last for the bulk of the semester, culminating in presentations to both the Center community and the larger outside community of scientists, researchers and representatives from SFS partners and clients. In addition, during each semester, students at every Center engage in conservation related community service projects outside the formal academic curriculum.

In Kenya last spring, our students helped stage a nationwide wildlife conference for Kenyan high school students with the Wildlife Clubs of Kenya. Summer course participants began creating a woodlot on the Hopcraft ranch, both to provide a sustainable source of fire wood for the local Kenyan population, and to decrease the deforestation which was causing soil erosion in a flood prone area of the ranch. Finally, we have begun to get out into the nearby communities to assess the effectiveness of community wildlife management. We began last summer by surveying attitudes toward wildlife of adults and children in nearby Kitengela. Kitengela Town has extended to the production of a handbook for teachers on human/wildlife interaction as well as an illustrated vernacular dictionary of larger Kenyan mammals. It is likely that the Kenya Wildlife Service, the African Wildlife Foundation, and the National Museum of Kenya will collaborate on an element of each project.

In Australia, a major focus of the Center is to help support reforestation efforts of the Atherton Tableland. Our partners in this are the Queensland Forestry Department, Queensland National Parks, and TREAT (*Trees for the Atherton Tableland*). Student field projects continued to monitor experimental reforestation plots using native planting and companion plantings; we hope this work will support the development of policies and data to promote creation and protection of forest corridors. As a result of some of the Center's community service projects, our students and faculty planted over 2,000 trees; 5,000 seedlings are now growing in our shade house for planting next year, with an ultimate objective of producing and planting 20,000 trees per year.

In Costa Rica, students and faculty took on the municipality of Ciudad Colon as their client, and began monitoring the quality of their municipal water supply for the first time in history. This activity evolved from an earlier student research project which studied how the watershed was being managed. Some students worked with local high school teachers to design an environmental education program for the school, as well as provided environmental education programs for their students at our center.



In the Turks and Caicos Islands, our fieldwork's most important finding supported the need for greater enforcement of laws prohibiting the harvesting of undersized lobsters. We are working with the Fisheries Department to determine how this can be implemented. For a community service project, SFS students, led by a faculty member, started a science club at the High School. Club members in turn helped our students stage a "SEA DAY" at the Center, when all the island children come to the Center to learn more about their surrounding ocean environment. The local head of government, District Commissioner James Mills, recently noted, "Since SFS has been on South Caicos, high school grades on science exams have gone from last in the country to first, and I believe that SFS's presence in the community and work in the high school is primarily responsible."

In Baja, our studies revealed that the risk to sea lions of entanglement in fish nets may be outweighed by the increased available food supply in the nets relative to the health of the overall population. The government agencies responsible for the management of fisheries, tourism, and natural resources all are very interested in these results. On one hand, tourists are appalled by seeing injured sea lions while on the other hand fishermen are upset by having their fish taken and nets damaged. SFS is providing basic information which these managers have requested to better manage the situation.

Satellite courses provide students with a broad range of course topics while offering SFS the opportunity to mount shorter-term research efforts at environmental "hot-spots" worldwide. Each satellite course has two 30-day sessions of 16 students each. In the summer of 1993, 196 students participated in the satellite program at seven sites around the world.

Summer satellite courses made great progress in both identifying new clients and partners and designing field activities to meet their needs. Some additional highlights from this program:

In Puget Sound, SFS worked with the Whale Museum on San Juan Island to study the impact of boat traffic on killer whale behavior. Our research is crucial for their educational program called Soundwatch. This program is aimed at boater education in the areas of whale watching from the water, haul-outs with the marine mammals and pollution control (disposal of waste water and trash from boats). The major policy recommendation to NOAA from students and faculty was to create "quiet zones" when the whales pass. We expect this will be implemented next summer.

This was the third and final year working with the Government of Belize on their watershed management program. This summer, three species of fish were found that were not on the Belizean species keys. They are either new species or species that have not previously been found in Belize. Definitive studies were also conducted on the impact of varying levels of phosphates and nitrates on algae in the Sittee River, which resulted in recommendations to the national government for fertilizer control on the new plantations being built along the watershed.

Our turtles program in Ostional, Costa Rica, worked with both the University of Costa Rica Sea Turtles Program and the Ostional Development Association on studies of the impact of parasites in nests as well as the impact of nesting density on the beach to hatchling survival rates. These studies will have management implications for the community's egg harvest program. If survival rates are low due to overcrowding of nests, the harvesting levels can be increased - adding significant income to a poor village.

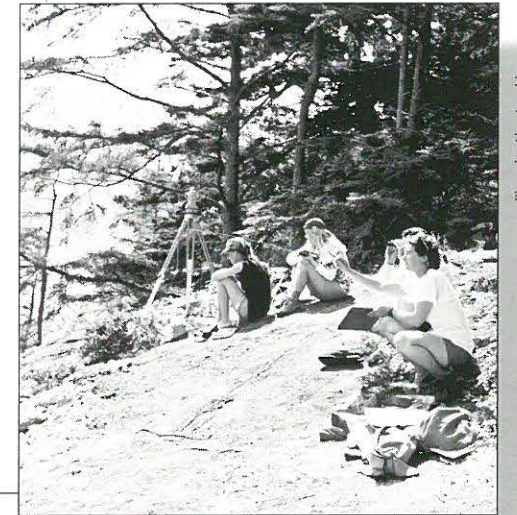


Photo by Alex Arnold

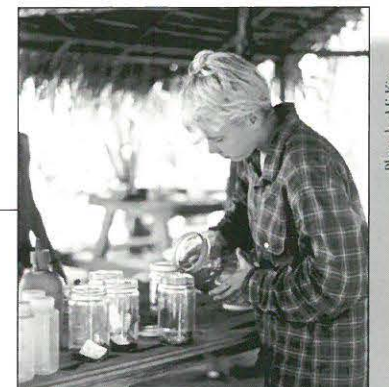


Photo by Mi Kim

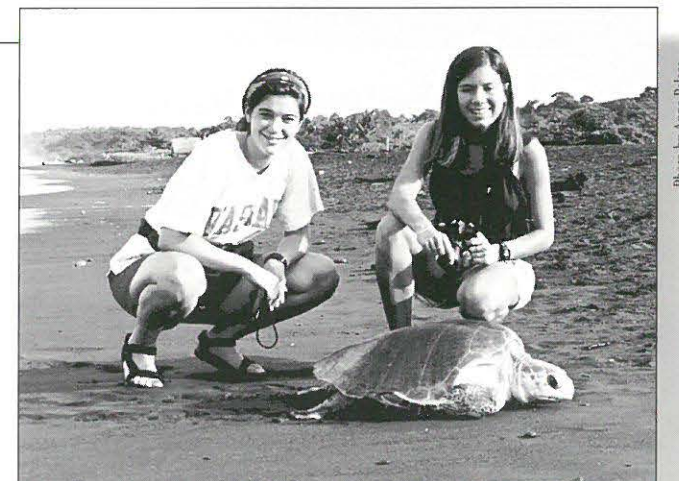


Photo by Anne Palace

While the bulk of SFS student and faculty field work is directed towards addressing immediate local issues, this work can also at times be publishable in nature and quality. The following are several of the papers published or presentations made by faculty and students over the past year:

MADDEN, D. and YOUNG, T.P. 1992. Symbiotic ants as an alternative defense against giraffe herbivory in spinescent *Acacia drepanolobium*. *Oecologia* 91:235-238.

POVILITIS, TONY. 1993. Applying the biosphere reserve concept to a greater ecosystem: the San Juan mountain area of Colorado and New Mexico. *Natural Areas Journal*: Vol. 13, #1: 18-28.

LAURANCE, W.F. and YENSEN, E. 1991. Predicting the impacts of edge effects in fragmented habitats. *Biological Conservation* 55:77-92.

EDMUNDS, P.J. 1991. Extent and effect of Black Band Disease on a Caribbean reef. *Coral Reefs* 10:161-165.

KOHLER, S.T. and KOHLER, C.C. 1992. Dead bleached coral provides new surfaces for dinoflagellates implicated in ciguatera fish poisoning. *Environmental Biology of Fishes* 35: 413-416.

In addition, a number of our students were granted Andreas Awards for presenting their SFS fieldwork at a professional meeting. These were:

BARNES, J., BOOHER, J., GRANTHAM, H., and WEYLMAN, B. 1992. Fish species off the shores of Espiritu Santo, La Partida and Los Islotes Islands, and their relative importance to the California sea lion (*Zalophus californianus*) and the fishermen of La Paz, 1991. Presented at the 17th International Meeting of Marine Mammal Studies, Mexico.

COLLIER, C., FRANKLIN, J. SCHULMAN, A., SORENSEN, V. and FLORES, L. 1992. The effect of tidal state on the number of haul-out individuals and activity budget of the California sea lion (*Zalophus californianus*) at Los Islotes in the Bay of La Paz, 1991. Presented at the 17th International Meeting of Marine Mammal Studies, Mexico.

ADOLF, S.L., HARPER, E.K., KAWAI, S. MATTSON, T.A., SEPLOWITZ, E.B., and STOCKRAHM, D.M. 1992. Observations on population structure and space utilization by Gunnison's Prairie Dogs in Colorado. *North Dakota Academy of Science Proceedings* 46:57.

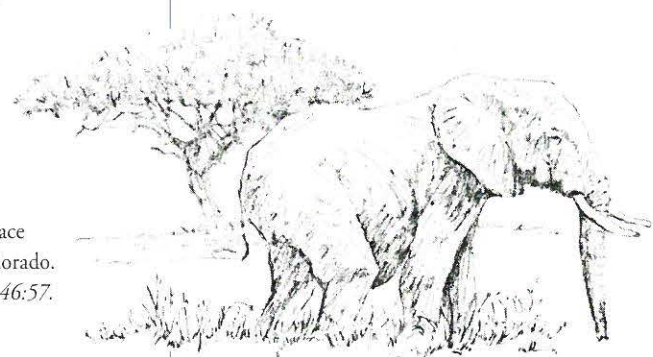
CARTER, S.C., HALPERIN, S., PETERSON, J., and STERN, A. 1993. Characteristics of Gunnison's Prairie Dog burrows in Colorado. *North Dakota Academy of Science Proceedings* 47:77.

MEZEY, J. and CALKINS, J. 1993. The effects of offroad driving on the vegetation of tropical rangeland: a study of inadvertent road formation. Presented at the 1993 National Conference for Undergraduate Research, March 24-25.

LESLIE, V. C. and SCHMITT, E. 1993. A comparison of video versus visual sampling techniques to assess the abundance of snappers (*Family Lutjanidae*) and groupers (*Family Serranidae*) on shallow water reefs. Presented at The 54th Annual Meeting of the Association of Southeastern Biologists, April 14-17.

FACULTY

Our twenty full-time and sixteen part-time faculty members have a unique blend of academic achievement as well as hands-on practical experience. In order for our programs to be successful, it is critical that our faculty be skilled in the actual problems of managing change necessary for sustaining natural resources. Committed educators and conservation professionals are attracted to SFS as an opportunity to truly make a difference in the lives of students.



A student recently described our faculty in this way:

"The most fascinating thing about the SFS Kenya faculty is that they are not just ecology teachers or economics teachers but they are also teachers about Kenya ... all aspects of Kenya. They are teachers about life and the people, and that is a wonderful quality. It shows me that in life I cannot limit myself to learning one subject — that finding a solution can be an all-encompassing search."

New Full-time Faculty Appointments

Liana Babbar (*Costa Rica*) has a Ph.D. in Natural Resources from University of Michigan's School of Natural Resources. A Costa Rican citizen, Liana conducted her thesis research on environmental impacts of the technological transformation in Costa Rican coffee production that has taken place in the past few decades. She is an applied ecologist with hands-on experience in forestry, agroforestry and agricultural ecology. She taught natural resources and sustainable development at the Institute for Central American Development Studies (ICADS). Liana has experience as a coordinator and educator for various field based programs such as OTS and CATIE.

Bernardo Aguilar (*Costa Rica*) has a Masters of Science in Agricultural and Applied Economics as well as a professional law degree (Esp. Univ. of Costa Rica). He has worked as an Agrarian Lawyer, and as a statistics professor at Latin American University of Science and Technology (University of Costa Rica). Bernardo has research experience in international trade and development issues. His skills also include work in land reform and labor management models. Prior to joining SFS, Bernardo was a First Instance Judge, on the Supreme Court of Justice, San Jose, Costa Rica.

Don Croll (*Baja*) has a Ph.D. from Scripps Institution of Oceanography (University of California/San Diego). Don has worked for the National Marine Fisheries Service, the National Marine Mammal Laboratory, and the Pacific Marine Fisheries Commission, focusing on the ecology, physiology, and conservation of marine mammals and birds. His conservation interests focus on fisheries interactions, habitat modification, introduced predators on seabird colonies and toxicological effects on reproduction.

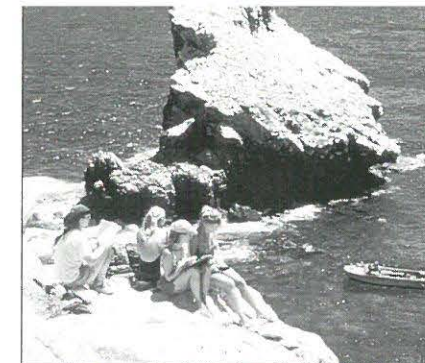
Janet Rasmussen (*Kenya*) has received her Ph.D. in Ecology from Purdue University. Prior to entering graduate school, she conducted research on Tenebrionid beetles and desert plants in the Namib Desert in Namibia, and several studies on American bison and captive wolves in Oklahoma. Janet conducted her doctoral research on the behavioral ecology of scarab beetles at the Welder Wildlife Refuge in Texas. Her teaching experience includes two years as a high school science teacher with the United States Peace Corps in Lesotho (southern Africa) and five semesters as an ecology/biology laboratory instructor, where she developed new ecology labs, and revised other labs involving quantitative sampling methods and computer simulations of basic ecological principles.

Richard Hatfield (*Kenya*) is a native of Kenya who has worked on a variety of ranches and farms in Kenya, New Zealand, Dominican Republic, and the U. S. He subsequently earned a Master's degree in International Management from Thunderbird, then spent five years in international trade management involving Australia, U.S.A, South America and Europe. More recently, he received a Master of Science from Cornell University in Agricultural Economics, specializing in natural resource economics, where his research concerned the economic and ecological aspects of rangeland overgrazing in Kenya. His most recent work concerned the planning and implementation of an integrated land use plan for rangeland in northern New Mexico.

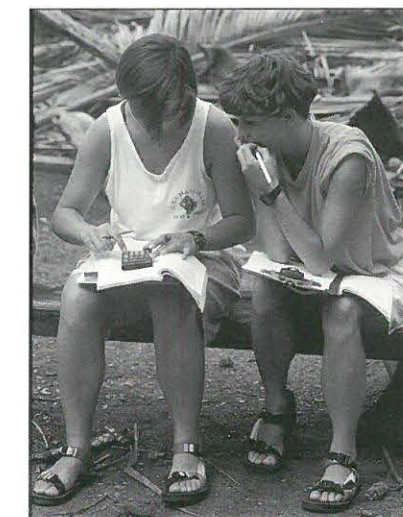
Bruce Neill (*Turks and Caicos*) is a Ph.D. candidate in Biology from Montana State University. He joined SFS after being an Instructor at Central Oregon Community College. He worked as the coordinator of problem-solving skills for the General Education Program at Hawaii Loa College for a year and a half where he helped create an interdisciplinary curriculum designed to teach students how to approach and solve quantitative problems. He lectured at Hawaii Loa College for several years in the Department of Biology teaching marine-related courses. Bruce received his Master's degree in Biology in 1986 from the University of Guam. His research has focused on coastal and island environments.

Edmund Green (*Turks and Caicos*) received his Ph.D. in Marine Ecology from London University. He held a post-doctoral position at the Louisiana Universities Marine Consortium, where he divided his time between research projects and education. Prior to this, Edmund worked aboard the training ship T.S. Astrid (a square-rigged brig), where he taught marine biology as well as SCUBA for undergraduates participating in four-month voyages around England and two trans-Atlantic crossings from the U.K to the Caribbean.

Amy Jansen (*Australia*) a former SFS intern, received her Ph.D. in Zoology from James Cook University in Queensland. Amy has conducted research on the social behaviors of rainforest birds as well as other rainforest fauna. She has worked as a demonstrator for Magnetic Island Field Camp (associated with James Cook University) and as a contract zoologist for various Australian organizations.



Ann Weaver, a faculty member at the Baja Center, wrote to us as she was leaving SFS to pursue her Ph.D. at the end of the summer to remind us that SFS impacts not only its students but also its faculty in profound ways: "As I end my tenure with The School for Field Studies, I want to tell you, rather I want to emphasize what the superlative opportunity to work for SFS has meant to me. As an SFS faculty member, I was exposed to some of the most profound experiences I've enjoyed to date, both through affiliation with professionals and students as well as exposure to natural phenomena. The SFS program goals are unique and operational. I willingly join the ranks of those committed to the School's continued campaign to provide exposure and education to the natural world through the conservation techniques striving to preserve it for tomorrow."



Two former SFS summer faculty (Reed Noss, 1988 Landscape Ecology/Colorado, and Stuart Pimm, 1992 Conservation of Endangered Species/Hawaii) have been selected as Pew Conservation Scholars. This prestigious three-year, \$150,000 award, made annually to about ten individuals whose careers reflect both scholarship and environmental action, provides unrestricted support for recipients to pursue their environmental interests as they see fit.

SFS has begun to better “practice what we preach” by using our campuses as laboratories for sustainable living. We have the chance to demonstrate to over 500 students each year that living in a more sustainable manner is not only usually easier than most imagine but also can be more fulfilling. Towards this end, we have taken new steps this past year towards the “greening” (*minimizing our environmental impact*) of our facilities and operations.

This multiyear GREENING PROJECT took the next step with a big leap forward at our South Caicos Center. Since the day the Center opened, water conservation on this small island which has no ground water has been a high priority. An average of 40 people live reasonably comfortably on solely the water collected from our roof/catchment system. This amounts to an average of 8 gallons of freshwater per person per day for all water needs, compared to the average daily domestic use of over 100 gallons/person/day in the US.

Thanks to a grant from the **William Anderson Foundation**, we have completed a study of ways in which our energy use and environmental impacts can be reduced, with the help of the Rocky Mountain Institute. Plans are now being developed to install a solar electric system, with the hope that we may be able to get off the grid in South Caicos as well. In addition, many of the RMI recommendations are general and have immediate applicability to other Centers. With the additional support of the **Curtis and Edith Munson Foundation**, we constructed new library facilities and renovations to our waterfront and electrical system.

The faculty and student housing at our Center for Rainforest

Studies in Australia is now totally solar powered. Our heating needs are all met by wood (*downfall from our surrounding forest*) and may soon be converted to solar as well. Our main building, which houses the computer room, library and offices, does operate “on the grid” (*uses the local power line*) - but the total electric bill for an average of nearly 40 people per day is less than \$800 per year. Recycling of all paper and metal products is in place; food waste is composted. Composting toilets are under consideration. Many of these improvements have been made possible by the continuing and generous support of the **Archer-Daniels-Midland Company**.

Our leased compound on a private ranch in Kenya for the Center for Wildlife Management is completely “off the grid”, though we do still find it necessary to employ a small generator for computers and kerosene for lighting, cooking, and refrigeration. Hot water here is wood as well as solar generated; small solar panels help run computers in faculty housing. (*Heating needs are virtually nonexistent.*) Last spring, students began composting all vegetable food waste. We are in some cases ahead of Kenya national norms or other private initiatives in this respect. The field station also recycles metal, paper, plastic and glass.

We do not own our Center facilities in Costa Rica, Baja, or Kenya, so these sites have more limited greening opportunities at the moment. Yet these Centers are nonetheless recycling, composting, conserving water and energy. As we acquire additional centers, our opportunities for greening will increase, and we will be applying what we learn in Australia and South Caicos to the environmental design and management of future centers.

OVERVIEW OF THE 1992-93 STUDENT BODY

Represented in the SFS 1993 student body are some of the brightest, most environmentally aware and committed members of the current collegiate generation. Through their collective efforts, they have made immediate contributions toward addressing critical issues at the eleven SFS program locations in 1993. But it is as environmentally literate members of society that each of these young people may make the greatest difference. Armed with an understanding of complex environmental issues and familiar with technical and problem solving skills, these young people have experienced first hand through SFS that a group of individuals, coming together with a common purpose, can effect positive change.



Photo by R. Ruggiero

The 697 students who participated in SFS programs in 1992/93 collectively represent the most geographically and ethnically diverse enrollment in the School's history. Three quarters of all participants enrolled in semester and summer programs based at the five SFS centers, the remaining quarter in our summer satellite programs. Semester enrollment continued to increase (up 7% over last year) and now accounts for 42% of our total enrollment base.

- SFS students came from over 290 public and private colleges, universities and secondary schools across the country;

- 22 international students from 15 countries attended SFS programs. Home countries included Canada (4), England (2), British West Indies (2), China (2), Mexico (2), Japan, Bulgaria, Taiwan, Thailand, Saudi Arabia, The Netherlands, Bermuda, Brazil, Malaysia and Belize. In addition, students from 48 of the United States and Puerto Rico participated in SFS programs;

- Six percent of participants identified themselves as minority students;

- Seventy-one percent of participants were female; 29% male;

- The average participant age was 19 years old (a college junior);

- The average G.P.A. (grade point average) of entering semester students was a 3.2 (B+); the average G.P.A. while enrolled in SFS was also 3.2;

- Seventy-six percent of SFS participants are majoring or plan to major in the natural sciences;

- Ten percent of all summer participants had just completed either their high school junior or senior year, 84% were college undergraduates;

- Twenty-five percent of all participants received SFS financial aid to enable their participation in an SFS program. Through the generosity of a growing number of scholarship donors, SFS was able to provide scholarship assistance totaling over \$170,000 to 175 students. The **Merck Family Revolving Student Loan Fund** was the principal source of SFS loans to 180 students, totaling \$165,000. In the case of most semester participants, this financial aid was supplemented with assistance from their home schools or from government sources;

- Home schools with the highest number of SFS participants in 1992-93 were: Davidson, Colby, Colorado, Trinity, Connecticut, and Middlebury Colleges, Tufts and Duke Universities, and the Universities of Colorado, Michigan and Vermont.

The individual members of the Class of 1993 came to SFS seeking to fulfill a wide variety of personal goals:

Ezra Milchman (*Montclair, NJ*), a junior at Tufts University majoring in biology participated in the Tropical Rainforest Management semester with the goal of comparing rainforests in Australia to those in Costa Rica where he had done previous research with the Smithsonian Institute;

Julie Grossman (*Galesburg, IL*), a junior Biology major at Simmons College in Boston enrolled in the Marine Resource Management semester to gain field research and resource management experience not available in the strongly pre-med focussed curriculum at her home school;

Antonia Buck (*Lancashire, England*), having received a degree from the University of Warwick, went to Costa Rican cloud forest to engage in research that will serve as the basis for her dissertation for a master's degree in environmental studies;

Richard Vargas (*New York, NY*), a freshman at Skidmore College, wrote in his application for admission, “I grew up in New York City, surrounded by buildings, sidewalks and pollution. My only contact with nature came through the Discovery Channel on TV. I dreamed of experiencing and helping to save the places the television introduced me to. SFS can continue the journey that started in my inner-city living room.”

Jessica Lorek (*West Chester, PA*), a business logistics major, was interested in learning more about the human and economic implications of resource management in the Turks and Caicos Islands;

Michael Mauro (*Blauvelt, NY*), a 24 year old landscaper, applied to the Landscape Ecology program in Colorado as the first step to returning to college for a bachelor's degree in wildlife biology;

Kelly Zalewski (*Marquette, MI*), a senior biology major at Northern Michigan University was looking forward to a career in wildlife management but was apprehensive about initiating a job search without actual field research experience;

Laura Branch (*Knoxville, TN*), a biology major minoring in fisheries and wildlife, wrote in her application essay, “I was tired of lugging my 20 pound textbooks to classes every Monday through Friday and then studying for endless hours about relativity, chemistry of dienes, and western civilization over 200 years ago. I craved to experience in mind and body, not just from a book. My quest to participate in the SFS program in Kenya for a hands-on experience began the day after my chemistry professor informed us our next test would cover 150 reactions.”

Three participants came to SFS as winners in special academic competitions. **Livia Wei**, a high school student from Queens, New York, was named the second annual recipient of a joint scholarship supported by **The Explorers' Club** and SFS. Livia participated in the Primate Ecology and Conservation course in Barbados. **Sonia Szytk**, a high school junior from Rutland, Massachusetts, was a first prize winner in the 1993 **Massachusetts State Science Fair**, entitling her to an SFS sponsored scholarship to attend the Raptor Ecology and Conservation course in Montana. Also participating in the Montana Raptor program this summer was **Elijah Goodwin** of Greenfield, Massachusetts. (Elijah, also a first place winner in the **Massachusetts State Science Fair** in 1992, deferred his SFS scholarship to 1993.)

We continued our efforts to include students from the host countries in which SFS operates. **Araceli Olguin**, a student at The Universidad Autonoma de Baja California Sur, our Baja Center's sponsoring institution in Mexico, was selected by the University to attend the Fall semester at the Center for Marine Mammal Studies. Araceli, whose participation was supported by a grant from the **Homeland Foundation**, added an invaluable local perspective to the program. **Wesley Clerveaux**, an employee of the Department of Fisheries in South Caicos, received a scholarship sponsored by local residents **Walter and Hope Smith** to participate in the summer Marine Parks Management course. Wesley has lived on South Caicos for most of his life and is looking forward to starting work on a college degree in fisheries management. Many of Wesley's teammates at the Center for Marine Resource Studies were able to participate in this SFS program thanks to scholarship assistance provided by the **Curtis and Edith Munson Foundation**. Students in the Tropical River Ecology program benefited from the insights of a local resident, **John Pinelo**, who joined our program in Belize this summer. John has been working for the Conservation Division of the Ministry of Natural Resources.

While students come to SFS from different places and backgrounds with a range of goals and expectations, these young people leave SFS with many shared experiences. As a result of their SFS involvement, most of them now have, in the words of Kenya Field Director, Dick Garstang, “*mehlo madahla*” in swahili, or “old eyes”. They have seen a great deal, and they achieved a special level of understanding. We look forward to their future leadership and achievements.



Photo by Donna Stockrahm

Now that I have returned to my home, to Iowa, I find that it is only now that I realize what the summer of 1993 really meant to me. For many Iowans, this time will be remembered for the disastrous floods, but I was able to escape, if only for a short period of time. I have found that I now harbor memories not only of the powerful floodwater, but of a new life, new friends, and a new perspective. The course I took through The School for Field Studies, to Pagosa Springs, Colorado, this past summer taught me a special lesson: I learned how to cope with life in a new way.

Mary Catherine Peters
(University of Iowa)
Landscape Ecology
Summer '93

The number of SFS Affiliate Schools grew to 17 as the membership welcomed Mount Holyoke College in 1993. Students from Affiliate Schools accounted for 11% of the total enrollment in SFS programs, spurred by a record 24 participants from Davidson College. Enrollment of affiliate students was up from most member schools with the average number of participants at five per member. SFS Headquarters hosted another successful and productive Annual Affiliates Meeting which coincided with the Spring visit of the Center Directors in early June. Representatives from Brandeis, Clark and Denison Universities, and Colby and Dickinson Colleges travelled to Beverly to lend their constructive ideas and support to the meeting.

We would like to take this opportunity to acknowledge and thank the Affiliate Representatives whose time, advice, commitment and energy are critical to the increasing success of the Affiliate Program and to ensuring that their students are able to maximize the SFS experience in and out of the classroom.

Dr. Kerry Woods, Bennington College

Dr. Attila Klein, Brandeis University

Dr. Joseph Koonce, Case Western Reserve University

Dr. Todd Livdahl, Clark University

Dr. David Firmage, Colby College

Dr. Verna Miller Case, Davidson College

Dr. Juliana Mulroy, Denison University

Dr. Janet Wright, Dickinson College

Dr. Matt Hils, Hiram College

Dr. Ray Heithaus, Kenyon College

Dr. Don Kaufman, Miami University

Ms. Joanne Picard, Mount Holyoke College

Ms. Valerie Eastman, Scripps College

Dr. Neil Ringler, SUNY College of Environmental Sciences and Forestry

Dr. Dan DiResta, University of Miami

Dr. Tom Vawter, Wells College

AFFILIATED COLLEGES
AND UNIVERSITIES

Bennington College

Brandeis University

Case Western Reserve University

Clark University

Colby College

Davidson College

Denison University

Dickinson College

Hiram College

Kenyon College

Lang College,
New School for Social Research

Miami University

Mount Holyoke College

Scripps College

S.U.N.Y. College of Environmental
Sciences and Forestry

University of Miami

Wells College

SFS SUSTAINABLE
DEVELOPMENT STUDIES
CONSORTIUM

Allegheny College

Colby College

Dickinson College

Middlebury College

University of Michigan

HOME SCHOOLS OF SFS PARTICIPANTS

The following is a partial list of the home schools of SFS participants. Many of these schools have accepted or awarded credit for SFS programs. Because each school has its own procedures which can change, past credit does not guarantee future credit.

Albion College

Allegheny College*

American University

Amherst College

Barnard College

Barry University

Bates College

Baylor University

Bennington College**

Berea College

Boston College

Boston University

Bowdoin College

Brandeis University**

Brown University

Brigham Young University

Bryn Mawr College

Bucknell University

Carnegie Mellon University

Case Western Reserve University**

Claremont-McKenna College

Clark University**

Colby College***

College of Charleston

College of William and Mary

College of the Atlantic

Colorado College

Colorado School of Mines

Connecticut College

Cornell University

Dartmouth College

Davidson College**

Denison University**

Dickinson College***

Drake University

Drew University

Duke University

Emory University

Evergreen State College

Framingham State College

Franklin and Marshall College

Franklin Pierce College

Georgetown University

George Washington University

Gettysburg College

Goddard College

Guilford College

Hamilton College

Hampshire College

Harvard College

Hiram College**

Holy Cross College

Humboldt State University

Ithaca College

Kenyon College**

Knox College

Lang College, New School for
Social Research**

Lehigh University

Lewis and Clark College

Macalester College

Marlboro College

McGill University

Miami University**

Middlebury College*

Mills College

Mount Holyoke College**

Mount Union College

New York University

Northeastern University

Northwestern University

Oberlin College

Occidental College

Ohio State University

Ohio University

Ohio Wesleyan University

Oregon State University

Pennsylvania State University

Pitzer College

Pomona College

Prescott College

Providence College

Purdue University

Randolph Macon College

Rutgers University

Saint John's College

The communities of the Atherton Tableland, site of our Center for Rainforest Studies, are small and residents get to know us quickly. Neighbors often join students and staff for Friday night "barbys."



Saint Lawrence University

Saint Michael's College

Saint Olaf College

Salem College

Scripps College**

Shimer College

Simon's Rock of Bard College

Skidmore College

Smith College

Stanford University

Stockton State College

S.U.N.Y. College of Environmental
Sciences and Forestry**

Swarthmore College

Trenton State College

Trinity College

Trinity University

Tufts University

Tulane University

Union College

University of Alberta

University of California/Berkeley

University of California/Los Angeles

University of California/Santa Cruz

University of California/San Diego

University of Cincinnati

University of Colorado

University of Connecticut

University of Iowa

University of Kansas

University of Maryland

University of Massachusetts

University of Miami**

University of Michigan*

University of Minnesota

University of New Hampshire

University of North Carolina

University of Pennsylvania

University of Pittsburgh

University of Puerto Rico

University of Puget Sound

University of Rhode Island

University of Tennessee

University of Utah

University of Vermont

University of Victoria

University of Virginia

University of Wisconsin

Vanderbilt University

Vassar College

Villanova University

Virginia Polytechnic Institute
and State University

Warren Wilson College

Washington University

Washington and Lee University

Wellesley College

Wells College**

Wesleyan University

Whitman College

William Smith College

Williams College

Wittenberg University

Xavier College

Yale College

* Sustainable Development
Studies Consortium

** SFS Affiliate Schools

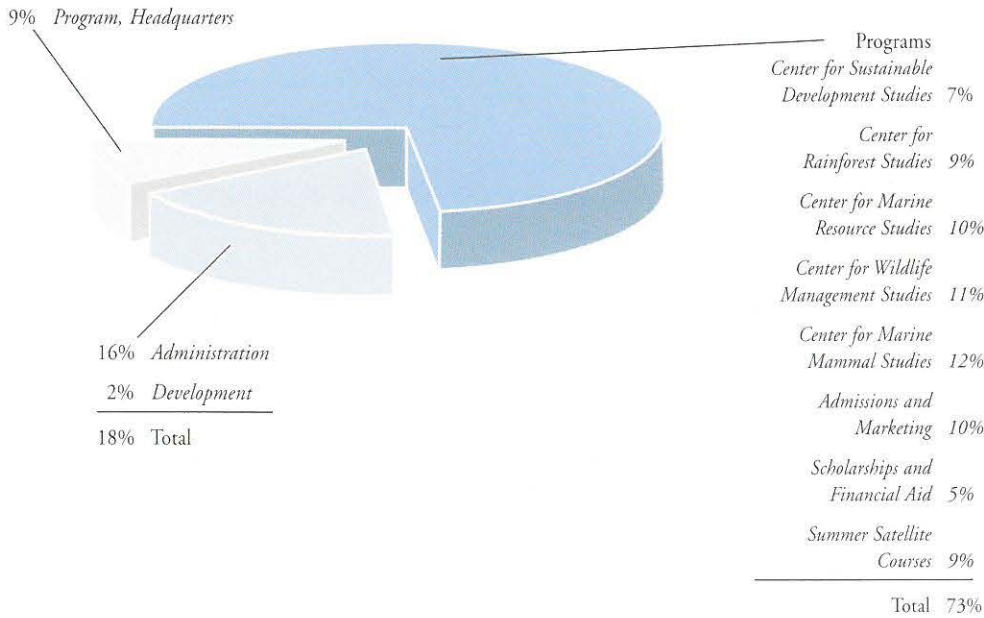
*** Member of both

For the first time in the School's thirteen year history, all of the School's funds ended the fiscal year with a positive balance. This was achieved by an increase in the fund balances of \$665,897, representing growth of 58% over the prior year-end balances. This marks the third straight year that the School has experienced fund balance increases in excess of 50%. Fiscal year 1993 saw a consistent growth in revenues of 8%. Expenditure controls initiated during the prior fiscal year maintained spending on a level basis resulting in only a 1% increase in expenses. The School continues to search for permanent Center sites in order to replace costly leased facilities. Contributions received to-date for this purpose are reflected in the Plant fund. FY93 Plant Fund expenditures were limited to debt reduction on the Australian Center mortgage and equipment repairs and replacement to maintain productivity and program quality.

BALANCE SHEET — AUGUST 31, 1993

	Current Unrestricted Fund	Current Restricted Fund	Loan Fund	Plant Fund	Total 1993	Total 1992
ASSETS						
Cash & Short Term Investments at Cost Which Approximates Market	\$ 1,419,682	94,773	30,319	557,965	2,102,739	1,398,143
Investments	1				1	1
Tuition Receivable	125,438				125,438	52,308
Loans Receivable			215,410		215,410	183,697
Advances to Course Sites and Other Assets	212,636				212,636	260,782
School Plant, Net				1,028,770	1,028,770	1,066,232
TOTAL ASSETS	\$ 1,757,757	94,773	245,729	1,586,735	3,684,994	2,961,163
LIABILITIES						
Accounts Payable and Accrued Liabilities	\$ 168,806	29,120			197,926	212,232
Student Deposits and Deferred Tuition	1,494,350				1,494,350	1,386,210
Notes Payable				189,758	189,758	225,658
TOTAL LIABILITIES	\$ 1,663,156	29,120	0	189,758	1,882,034	1,824,100
FUND BALANCES						
Unrestricted	\$ 94,601		117,329	557,965	769,895	155,963
Restricted		65,653	128,400		194,053	138,126
Net Investment in Plant				839,012	839,012	842,974
TOTAL FUND BALANCES (DEFICIT)	\$ 94,601	65,653	245,729	1,396,977	1,802,960	1,137,063
TOTAL LIABILITIES & FUND BALANCES	\$ 1,757,757	94,773	245,729	1,586,735	3,684,994	2,961,163

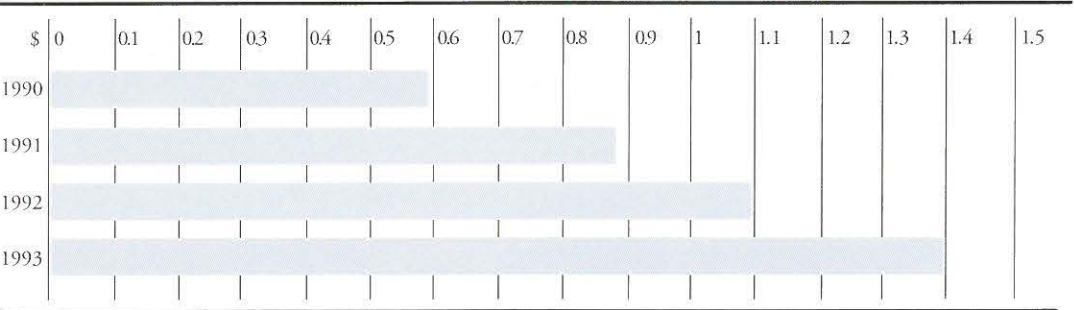
EXPENSES — OPERATING FUND



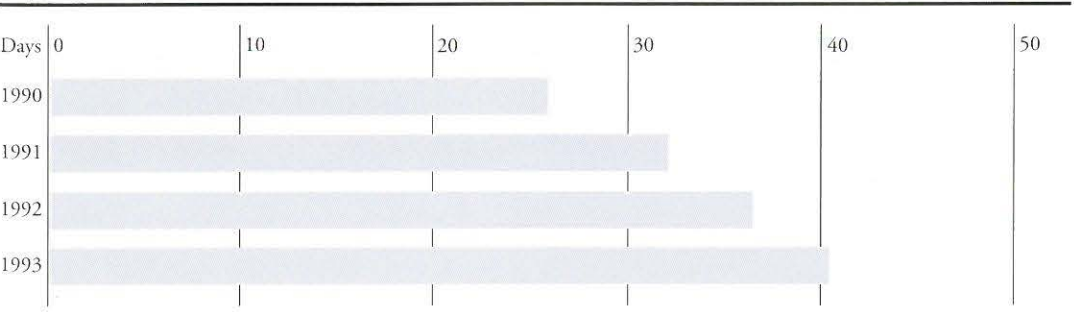
STATEMENT OF CHANGES IN FUND BALANCES — AS OF AUGUST 31, 1993

	Current Unrestricted Fund	Current Restricted Fund	Loan Fund	Plant Fund	Total 1993	Total 1992
REVENUES & OTHER ADDITIONS						
Educational and General Revenues	\$ 3,905,640				3,905,640	3,548,154
Private Gifts, Grants, and Contracts	93,010	89,324	137	252,123	434,594	443,570
Expended for Plant Facilities				99,222	99,222	178,460
Retirement of Indebtedness				24,196	24,196	18,936
Net Proceeds from Sale of Plant Facilities				24,052	24,052	1,263
Other	78,095			11,504	89,599	115,130
TOTAL REVENUES & OTHER ADDITIONS	\$ 4,076,745	89,324	137	411,097	4,577,303	4,305,513
EXPENDITURES & OTHER DEDUCTIONS						
Educational and General Expenditures	\$ 3,590,483	29,575			3,620,058	3,541,642
Expended for Plant Facilities				99,222	99,222	178,460
Interest on Indebtedness				21,346	21,346	30,763
Retirement of Indebtedness				24,196	24,196	18,936
Net Cost of Plant Facilities Sold				26,577	26,577	
Depreciation				110,007	110,007	98,726
Allowance for Doubtful Loans			10,000		10,000	4,000
TOTAL EXPENDITURES & OTHER DEDUCTIONS	\$ 3,590,483	29,575	10,000	281,348	3,911,406	3,872,527
TRANSFERS AMONG FUNDS — ADDITIONS (DEDUCTIONS)						
Mandatory Debt Transfer	\$ (45,542)			45,542		
Net Additions to Plant Assets		(3,822)		3,822		
Transfer to Fund Depreciation	(110,007)			110,007		
Total Transfers	(155,549)	(3,822)	0	159,371	0	0
NET INCREASE (DECREASE) for the Year	\$ 330,713	55,927	(9,863)	289,120	665,897	432,986
FUND BALANCE (DEFICIT) at Beginning of Year	(236,112)	9,726	225,592	1,107,857	1,137,063	704,077
FUND BALANCE (DEFICIT) at End of Year	\$ 94,601	65,653	245,729	1,396,977	1,802,960	1,137,063

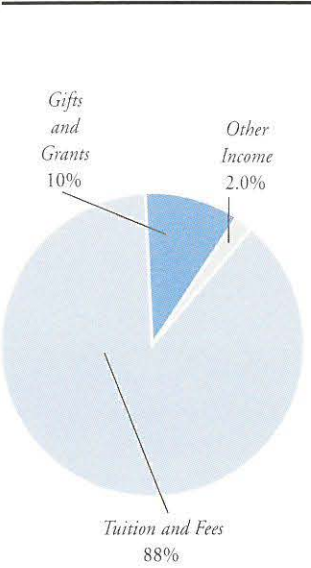
PLANT FUND BALANCE — (IN MILLIONS OF DOLLARS)



STUDENT FIELD DAYS — (IN THOUSANDS OF DAYS)



TOTAL REVENUES



TOTAL REVENUES — (IN MILLIONS OF DOLLARS)

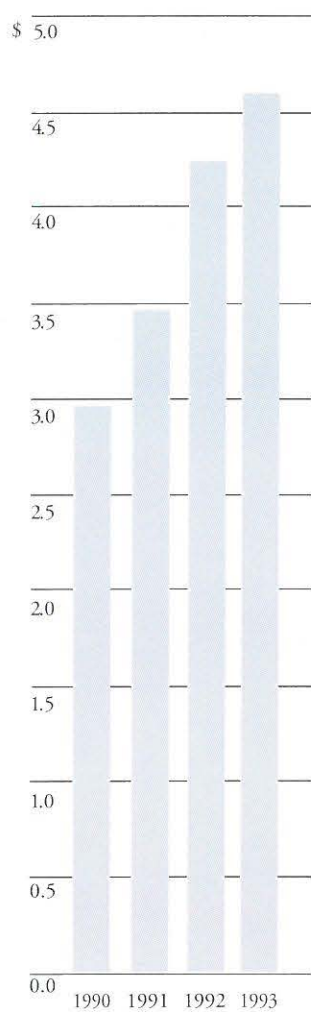




Photo by William McComas

My experience in Australia with the other students and the instructors was the best educational experience I have had. Not only was I able to learn from very caring and committed instructors, but to top it off, everything we learned about was all around us.

Lori Schiraga
(University of California at Santa Barbara)

Center for Rainforest Studies Summer '93

This has been another exhilarating year for SFS fund-raising. In Fiscal Year 1993, we were fortunate to have received a total of \$434,594 in contributions; \$182,471 for the Annual Fund and \$252,123 for the Capital Fund. We sincerely thank the people, corporations and foundations who made contributions this year and helped the School reach some of our goals.

For over thirteen years, SFS has received sizeable donations from the **Andreas Foundation** for capital improvements. They deserve much of the credit for the School's improving physical plant. This year, the Foundation and the *Andreas family* continued their remarkable pace-setting leadership giving by supporting plans for the acquisition of a new campus during the coming year.

General operating support was provided by a substantial grant from the **Charles Engelhard Foundation**, whose ongoing commitment to SFS has contributed significantly to the development and expansion of SFS programs. The **Archer-Daniels-Midland Company**, the **Homeland Foundation** and the **Curtis and Edith Munson Foundation** also provided vital support for which we are extremely grateful. And as always, the **Merck Family Fund** has enabled many students to attend our programs through their gifts to the Merck Family Student Loan Fund.

The School also offers special thanks to several individuals for their continuing and substantial contributions in 1993. Thanks to *Herbert Allen, Jr., Mr. and Mrs. David Ayer, Astra Davis, Evan Davis, Mr. and Mrs. Whitney Hatch, George Hatch, Laurance Rockefeller, Dorothy Wilson*, the **Hunt Foundation**, and the individuals listed below, SFS was able to provide its students with a curriculum that addresses the key environmental issues of our time.

1992-1993 DONORS

FOUNDING DONORS
(\$25,000 OR MORE
SINCE SFS' FOUNDING)

Ms. Terry L. Andreas
Ms. Astra Davis
Mr. F. Whitney Hatch, III
Margarette and Marlen Johnson

Andreas Foundation
Archer-Daniels-Midland Foundation
Boston Globe Foundation
Cabot Family Charitable Trust
Digital Equipment Corporation
The Charles Engelhard Foundation

Arnold D. Frese Foundation
The George Gund Foundation
Homeland Foundation

The Hunt Foundation
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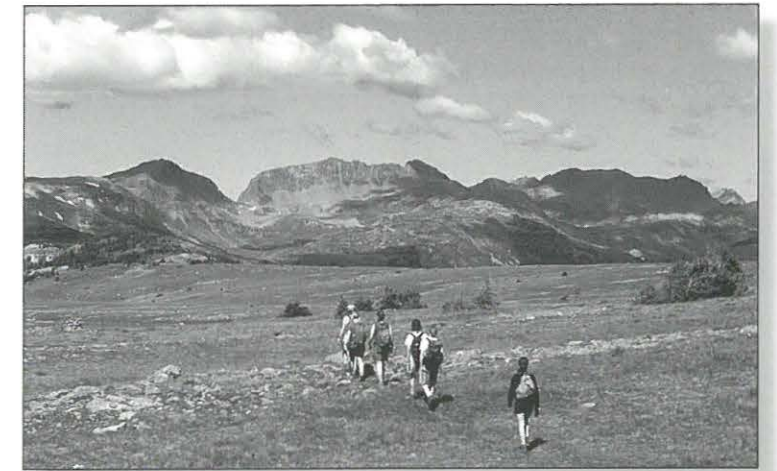
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Much of our field work is carried out in spectacular places - pristine coral reefs, rainforests teeming with diversity or fragile mountain ecosystems such as the San Juan Mountains pictured below - that provide dramatic illustrations of the issues under investigation and renew our motivation to protect our natural resources.



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I would like to personally thank you for providing me with financial support for my School for Field Studies summer course — I am deeply grateful. Because of your generosity, I was able to participate in something that has literally changed my life. I feel extremely fortunate that I was able to experience such a unique, enlightening and intense program.

Amy K. Hannon
(Clark University)
Marine Parks Management
Summer '93

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Photo by Chris Neffus

My directed research project dealt with comparing the behavior of hatchery-reared and wild queen conch, and assessing their survival in the wild. It was my mission to find an ideal size and age for hatchery reared conch (cultured in places like the Caicos Conch Farm), so that they can be released into the wild and grow to be of harvestable size."

Kristie Twining
(Long Island
University)

Center For Marine
Resource Studies
Spring '93

SUMMER SATELLITE FACULTY



Photo by Bill McComas

In Costa Rica, we were immersed in the very subjects we were studying. We hiked through forests, examining the ecological interactions all around us. We toured cattle pastures, coffee patches, rice paddies, and fruit plantations, seeing first hand the conditions of the land and the workers, and enabling us to form our own opinions about true costs and benefits of each form of production. We visited a landfill and a hydroelectric power plant, viewing some of the costs of 'development'. In short, it was the most intense learning experience of my entire life."

Frederick Werner
(University of Michigan)
Center for Sustainable
Development Studies
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SFS has made me realize
that the appropriate career to pursue
is in conservation and field research.
I have a greater sense of
independence and an ability to
adapt to unfamiliar situations. It
has become apparent that personal
limitations are only psychological,
and that I am capable of achieving
anything that I set my mind to.
Thank you once again for making
my dreams a reality.

Kolleen Kolbert
(*Buffalo State University*)
Center for Rainforest Studies
Summer '93

Photo by David Bathgate