ABSTRACT

AN INTERNSHIP WITH THE SCHOOL FOR FIELD STUDIES, CENTER FOR RAINFOREST STUDIES, YUNGABURRA, QUEENSLAND, AUSTRALIA

by Tom Rottler

In fulfilling the internship option requirement for the Master of Environmental Science (M.En.) at Miami University, Ohio, I served as the Student Affairs Manager with the School of Field Studies, at the Center for Rainforest Studies, in Yungaburra, Queensland from August 2003 to June 2004. As the Student Affairs Manager, I was responsible for facilitating the study abroad experience of American students living in a scientific field station studying rainforest ecology and restoration in northeast Australia. Primary responsibilities included risk management and student safety, creating a positive small group living experience in an isolated field station, cultural exchange and home stay coordination and logistical support of the academic staff.
AN INTERNSHIP WITH THE SCHOOL FOR FIELD STUDIES, CENTER FOR RAINFOREST STUDIES, YUNGABURRA, QUEENSLAND, AUSTRALIA

An Internship Report

Submitted to the
Faculty of Miami University
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Introduction

IES requirements

In addition to general requirements listed in the Miami University Graduate Student Handbook, students seeking a Masters of Environmental Science degree are required to complete a six-hour research requirement. To meet this requirement students must complete and defend a thesis, internship, or practicum.

Internship selection

I selected the internship to complete my IES research requirement. The internship experience involves a commitment of at least six months full time work with a sponsoring agency involved in interdisciplinary environmental activities. At the internship’s completion, a final report, summarizes work done and key accomplishments and deliverables for the sponsoring agency. The report is filed with the Institute of Environmental Sciences at Miami University.

I interned with the School for Field Studies (SFS) from August 2003 through June 2004. I was stationed at the Center for Rainforest Studies field station and worked as the Student Affairs Manager for SFS. An important factor in my decision to intern at SFS was because the organization’s interdisciplinary approach to addressing environmental problems closely matched the IES interdisciplinary approach. I feel strongly that addressing and finding solutions to environmental problems cannot be done solely through research, swaying social opinion or resource management, but relies on interactions in each area. With my background in experiential and environmental education and field science, I felt I could offer a meaningful contribution to the SFS. I felt that exposure to the SFS curriculum and work within the organization might help me outline a future career path combining my primary professional interests in experiential education, environmental issues and field science.
School for Field Studies (SFS)

Started in 1980, SFS is the nation’s oldest and largest environmental study abroad program, combining hands-on environmental studies with scientific research to develop sustainable solutions to critical environmental problems. SFS students work with communities to discover practical ways to manage their natural resources. SFS offers semester and summer programs at five field centers; Baja California, Mexico, Costa Rica, Turks and Caicos, Kenya and Tanzania and Australia. SFS is a 501(C)(3) non-profit educational institution and is governed by a board of trustees. SFS finance and administration, marketing and admissions are headquartered in Salem, Massachusetts. Each field center is staffed by a director, three resident faculty members, a student affairs manager, and a host of support staff.

SFS Field Centers and Primary Academic Focus

- Kenya & Tanzania: Wildlife Management Studies
- Costa Rica: Sustainable Development Studies
- Mexico: Conserving Marine Resources and Coastal Ecosystems
- Australia: Tropical Rainforest Studies
- Turks and Caicos: Marine Resource Management Studies

SFS students go beyond simply learning about an environmental problem in the abstract, they become part of a research team working to solve it with local partners. The SFS program includes traditional classroom based lectures, but students are able to immediately apply or observe what was learned in the classroom at the field station and surrounding natural areas. Student research and work makes an impact on a local community and makes a positive contribution toward the sustainable use of the world's natural resources. SFS offers a rigorous academic learning experience and research experiences that help address community identified natural resource problems. The isolation from everyday distractions allows students to fully immerse themselves in a learning community with shared intellectual and philosophical interests. Through the field experience, students learn transferable skills in research design, data analysis, scientific writing, workgroup and project management and cross-cultural communication. Students from over 300 colleges and universities have participated in SFS semester and summer programs. To reflect the interdisciplinary approach to environmental issues, SFS strives to build student teams each semester and summer that represent a cross-section of the student body, including liberal arts, science and economics majors. There are more than 14,000 SFS alumni in the US. (fieldstudies.org)

SFS Mission Statement

SFS creates transformative study abroad experiences through field based learning and research. Our educational programs explore the human and ecological dimensions of the complex environmental problems faced by our local partners, contributing to sustainable solutions in the places where we live and work.
“The SFS community is part of a growing network of individuals and institutions committed to environmental stewardship.” (fieldstudies.org)

Figure 1: SFS Organization Chart - 2004

Academic Structure

SFS semester and summer programs are accredited by Boston University, they offer and emphasize interdisciplinary academics at the undergraduate-level. SFS faculty provide core lectures needed to understand the content areas pertinent to case study and research questions. Field exercises complement classroom lectures and help students to develop skills needed for Directed Research projects. Semester programs run for approximately 95 days, including a five-day midterm break. A 16-week semester is compressed into 14 weeks. The semester academic core consists of four courses of four credits each: ecology, natural resource management, environmental policy and socioeconomics and Directed Research. Field stations typically offer two semester programs per year. Summer programs run for approximately one month and count for four credits. The summer four credit course is determined by each field stations specific
academic and research agenda. Field stations typically offer two summer programs. The academic and research agenda at each center is driven by a Five Year Research Plan, established by SFS staff and local community leaders.

![Figure 2: Australia Map – SFS facility near Cairns/arrow](image)

Program Structure and Core Elements

**Five Year Research Plan**

Each field station develops a Five Year Research Plan (5YRP). The plan is developed collaboratively by SFS staff, external research advisory committee, local clients and community stakeholders. The 5YRP serves as the field station mission. The 5YRP help SFS develop research priorities and projects that address critical environmental problems. The 5YRP provides the community and students with a framework for the program curriculum, defining how SFS courses, research and outreach activities fit into the bigger picture of environmental conservation and development. The 5YRP serves as the basis for each stations teaching and research program, which includes Directed Research projects, case studies, field exercises and courses. My time at CRS was covered by the 5YRP spanning 2002-2007, SFS is now in its second round of 5YRP, spanning 2008-2013.

**Courses**

Courses are led by individual faculty members and provide the core lectures and information needed to understand the content areas (natural resource management, socio-economics and ecology) most pertinent to answering case study questions. Students participate in academic activities relevant to case studies, with lectures, field exercises, assignments, tests and other material being related to a particular course. The capstone of the semester, the Directed Research course, is the fourth course. Each of the four courses is worth four academic credits. Guided by the 5YRP, each faculty develops a case study question for each course to give the students a comprehensive understanding of the background, context, and relevance of local environmental issues. Case studies provide an analysis of an actual local environmental situation.
or dilemma. Faculty work with students so that students understand the case study problem and can research potential solutions and alternatives. At the end of the case study, students will identify what they know and do not know and what they can and cannot manage regarding the particular issue raised by the case study.

**Directed Research**
During the last month of semester courses, students complete a Directed Research (DR) project. Students have a choice of DR projects from each of three core academic disciplines or more interdisciplinary research questions. Faculty then lead small teams of students in conducting research that addresses key research questions defined in the 5YRP and supports the local community with environmental planning and action. Each team completes the research, conducts data analysis and communicates results. Data collection is with the team, but individual students develop specific aspects of the project into individual papers. The core skills students learn through the DR experience are field skills, analytical skills, communication skills and critical thinking, as well as team work and time management. Students present their findings from their directed research to classmates, key stakeholders, and other community members.

**Field Exercises**
An important component of the SFS learning model is hands-on field experience. Field lectures, exercises and research are hands-on activities in the field that reinforce concepts and help students to comprehend the academic material presented in the case study. Through these exercises, students will also learn field research techniques, collect and analyze field data and develop critical thinking skills.

**Group Living**
At SFS field centers students live and work with other students and SFS staff. Residential life provides opportunities for students to develop and demonstrate leadership, good communication, teamwork, and other group-dynamics skills. Each person in the field center community brings certain traits, skills and talents to the group. In return, each student accepts responsibility for his/her own personal and academic growth and contributes uniquely to the success of the program.

**Local Community Interaction**
Opportunities are provided for students to participate in cultural and social activities and engage in a variety of community service projects. Each center’s Student Affairs Manager (SAM) works closely with community groups and students to identify and select opportunities that will help students understand the local context of the issues they are researching and studying, as well as learn from each other and the community.
Center for Rainforest Studies

The School for Field Studies, Center Rainforest Studies (CRS) is named Warrawee, which comes from the language of the Yidinji, the indigenous owners of the centers lands. The name means “you are welcome here”. About one third of the CRS property is mature rainforest with stands of primary and secondary rainforest, including an endangered ecosystem type. The rest of the property is rolling farmland. Pademelons, lace monitors, cockatoos, bandicoots, primitive musky rat kangaroo and amethystine pythons are commonly found on the CRS property. The property offers students a field laboratory and experimental site. The primary focus of the CRS program is tropical rainforest management and restoration.

![Figure 3: Entrance to the field station](image)

Facilities and Research Equipment

Four eight-person student cabins which house up to 32 students in dorm-style bunk beds are situated around the center throughout the forest. The cabins are a short walking distance away from restroom blocks with shower and toilet facilities. Some faculty and the center director typically live in on-site cabins and a few live off site. The SAM and interns all live on site. The Center has an accredited seedling nursery for propagating rainforest tree seedlings to supply Center initiated restoration sites and contribute to other local restoration efforts.
Figure 4: Rainforest seedling nursery on the station property

Figure 5: Student cabins
The Center's main building includes:

- A lecture classroom with desks to store materials
- A small library with books, reprints and student Directed Research papers
- A computer room with laptops for students
- Staff offices
- Kitchen and outdoor dining facilities
- Indoor and outdoor common space for socializing with a ping-pong table and a dartboard
- Laundry facilities

Figure 6: Main classroom and Dr. Oatham
The Center maintains an inventory of dissecting microscopes and a variety of sampling and measuring equipment appropriate for use in the field and the classroom. The Center has a small laboratory, but most research is done in the field.

**Local Ecology and Environmental Issues**

The Center is in the northeastern corner of the state of Queensland about 40 miles from the Pacific Ocean and the region’s largest city, Cairns. The Center is situated on a 153 acre former grazing farm adjacent to a World Heritage site, near the town of Yungaburra on the Atherton Tablelands. At an elevation of 2624 feet, the Center is located in the foothills of the Gillies Mountain range on the eastern edge of the Atherton Tablelands. The Atherton Tablelands are relatively flat and are rich in resources. With its fertile soil and moderate rainfall, the Tablelands were well suited to European settlement and agriculture development. This development resulted in extensive rainforest clearing and habitat fragmentation.
Even with the extensive development, The Tablelands continues to have the highest number of vertebrate endemics in the region. The region also has the largest remaining stands of rare and endangered Mabi 5b tropical rainforest. The largest remaining remnant, Curtain Fig, is directly adjacent to the CRS property. This forest type is categorized by the presence of certain species including the Tree Kangaroo (*Dendrolagus lumholtzi*). Mabi comes from the Dyirbal and Yidiny language, local indigenous peoples and means tree kangaroo. The Mabi forest is distinct in its structure which is characterized by large canopy trees with extensive vines and a dense shrub layer. It has a very limited range and is found on fertile but well drained volcanic soils in areas with a distinct wet season followed by a very dry season. (Irvine)
There is less than two percent of the original Mabi 5b rainforest remaining. Several plants and animals of the Australian rainforest have very limited range and remain on very few sites and are vulnerable to extinction. The recognition of this led to a 1988 World Heritage listing of substantial areas of Australian rainforests in Tasmania, Eastern New South Wales, and Queensland’s Wet Tropics, including lands immediately adjacent to the CRS property.

Many of the forests that were cleared for pastures have now been abandoned. This provides a unique opportunity to implement restoration efforts and research their effectiveness. Rainforest restoration provides many local benefits, especially in riparian areas, including stabilization of riverbanks and minimizing erosion and runoff. This results in protection of drinking water. The watersheds of the Tablelands eventually drain into the Pacific Ocean and effect another World Heritage site, the Great Barrier Reef. Restoration can also influence the distribution and abundance of animal species which are important for both ecological and economic reasons. The Tree Kangaroo and platypus generate local economic activity through wildlife tourism.

**CRS Restoration Efforts and Research**

Many locations that are prime sites for restoration efforts to reconnect forest fragments and protect watersheds are found on private land. To be viable in the long term and receive increased landholder support, restoration projects must be cost-effective and document ecological benefits or otherwise demonstrate restoration success. Unfortunately, little information exists that is specific to riparian areas and related to the actual benefits and costs of restoration. The CRS five year plan spanning 2002-2007 includes determining to what extent restoration results in overall biodiversity and economic benefits, how site maintenance can maximize conditions for tree growth while considering the cost of that maintenance, and how to plan for restoration on both local and regional levels.

This area provides an experiment in rainforest restoration for other areas of the world that more recently experienced their initial deforestation and may look to restoration in the future. The ecological and economic benefit of rainforests are increasingly well-understood, but much less is
known about rainforest ecosystem dynamics and the ability to restore a rainforest once it has been cleared. Included in the 5 year plan goals are to help understand the dynamics of rainforest ecosystems, including potential impacts of global climate change, and in turn develop rainforest restoration strategies that benefit both ecosystems and human communities. It is hoped that management strategies developed at CRS may serve as a model for conserving other rainforests.

Academic Courses and Schedule

Each of the semester programs offers four courses of four credits each: Rainforest Ecology, Principles of Forest Management, Environmental Policy and Socioeconomic Values, and Directed Research. Summer programs run for approximately one month long and counts for 4 credits in Rainforest Ecology or Rainforest Research Techniques.

Semester Week to Week Schedule

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Orientation, course introductions, field exercises and community service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 2</td>
<td>Lectures, field lectures, field exercise 1- socio-economic, research methods, intro DR options, community service</td>
</tr>
<tr>
<td>Week 3</td>
<td>Lectures, field lectures, intro DR options, community service, field exercise 1 due</td>
</tr>
<tr>
<td>Week 4</td>
<td>Lectures, field lectures, Chillagoe Field trip</td>
</tr>
<tr>
<td>Week 5</td>
<td>Lectures, field lectures, Exam 1, case study 1 due, one-on-one checkins, homestay weekend</td>
</tr>
<tr>
<td>Week 6</td>
<td>Lectures, field lectures, field exercise 2 - ecology due</td>
</tr>
</tbody>
</table>

Figure 10: Rainforest fragments and areas of CRS restoration work
Week 7- Break
Week 8- Lectures, field lectures, field exercise 2 - management due
Week 9- Lectures, field lectures, DR planning, GIS exercise due
Week 10- Daintree Field Trip
Week 11- Exams, case study 2 due, DR work
Week 12- DR data collection
Week 13- DR data analysis and writing
Week 14- DR community presentation, community service, disorientation, closing, evaluations

**Typical Weekly Schedule**

**Monday-**
AM- Lecture and field exercises  
PM- Lecture, field lectures and field exercises  
RAP- All group meeting

**Tuesday-**
AM- Lecture and field exercises  
PM- Lecture, field lectures and field exercises  
RAP- All group meeting  
Eve- Student only meeting

**Wednesday-**
AM- Warrawork (site cleanup) and study  
PM- Lecture, field lectures and field exercises  
RAP- All group meeting

**Thursday-**
AM- Lecture and field exercises  
PM- Lecture, field lectures and field exercises  
RAP- All group meeting

**Friday-**
AM- Service projects-TREAT, Landcare, Jungle Farms, Nursery  
PM- Afternoon off-Atherton  
RAP- All group meeting

**Saturday-**
AM- Lecture and field exercises  
PM- Lecture, field lectures and field exercises  
RAP- All group meeting

**Sunday-**
OFF/Free day
**Internship Duties and Responsibilities - Student Affairs Manager (SAM)**

The purpose of this residential position is to provide program support for students and faculty. Using skills in group facilitation, team-building, and conflict resolution, the SAM fosters in students a sense of community and group responsibility, a proactive attitude toward program safety, a respect for local culture and an appreciation of the logistically complex nature of being an active participant in a field-based program. The SAM reports to the Center Director. See Appendix A for a complete position description.

**Figure 11: Centre for Rainforest Studies - Table of Organization**

**Student Affairs**

**Pre-arrival student contact:** Prior to student’s arrival, I contacted them by email to share details about how they should prepare for their upcoming program, help them develop their
expectations of the study abroad experience, and share expectations that SFS and CRS had for them (Appendix B). I was also available by email to respond to any concerns or questions incoming student might have had. My hope was that the letter would in part, help the students understand the small community living situation they were about enter.

Though the students get most of their pre-program information from the admissions office at SFS headquarters, I felt that some direct contact with someone who was living on site would be welcome, I initiated this letter and a pre-arrival welcome letter from the SAM and Center Director became standard.

**Arrival and Orientation:** At the start of each semester and summer program I worked with the center director and faculty to create an orientation program. The primary emphasis of the CRS orientation was on community living, schedules, center facilities, group and individual tasks, safety and risk management and program policies. The bulk of the CRS orientation was delivered by me while the center director and faculty prepared an orientation to the academic program. I was the student affairs manager at CRS for two semester programs and two summer programs.

The orientation offered a chance to create expectations related to community living, safety and policies very early. The safety orientation provided an overview of the environmental, biological and social hazards of northeastern Australia. The policy briefing provided an overview of the CRS/SFS polices and rationale for their existence. During the first semester program, I did not do a policy briefing as part of orientation. Though the policies were presented in print by SFS as part of the pre-program material, I found that the students weren’t aware of them. For the second semester and summer session, I included the policy PowerPoint in my orientation (Appendix C). This helped get the students and staff on the same page related to policies. Later, at times when limits of policy were being pushed it was helpful to refer back to our initial orientation.

Another important part of the orientation was to start building community. Living, studying and working in one place with 20 others provides a great opportunity to immerse oneself in an experience and create close relationships, but it can also be very challenging and quickly affect the quality of experience. With my background leading wilderness programs, I incorporated name games, group games to build camaraderie and group energy and team building activities that helped the student and staff to start building relationships. Energy and time invested in these types of activities, while not directly related to the academic core, paid off later in the quarter when the newness had worn off and the personal and academic stresses were increased.

**Student One-on-One Meeting:** Another component of the first two weeks of the semester was a one-on-one meeting between me and each student. The center director sat in as well if she was available. This personal check-in gave me a chance to counsel each student on his or her program-related and personal needs. The meeting created an opportunity to for the student to voice any concerns, for me to share insights and answer questions and to get a snap shot view of how the student was adjusting early in the quarter. We focused the discussion on academics, group living, medical and general issues.
Another one-on-one meeting was held with each student about halfway through the quarter. By this meeting, typically there was much more that needed to be discussed as the group was more fully developed, academic rigors were building and more time had been spent away from the student’s support structures. The meetings also gave me an opportunity to provide positive and constructive feedback to the student related to their role in the group, inappropriate language or behavior and understand personal challenges that they may be going through but not willing to share with the faculty.

In addition to these formal meetings, as SAM, I was always available to counsel individual students on group living, academic or personal issues. In a typical week, I met with 1-2 students to discuss issues and share strategies on how to address whatever situation they were challenged with.

Highlights and red flags (items to be monitored or immediately addressed) from the formal and informal meetings were reported to the Center Director, relevant headquarters staff and SAMs at other field stations. If needed, disciplinary action was initiated and documented by me in consultation with the Center Director and other staff if there were policy infractions. If there were academic infraction, faculty and the Center Director handled that directly.

**Daily Group Meetings:** Each evening, just before the meal we had a brief community meeting. The goal of this meeting was for staff and students to make announcements, share the schedule and plan for the following day and take a moment to do a short community building activity. These meetings were facilitated by me and I chose to use the acronym, RAP, as my meeting structure. R was for reflection, A for activity and P for plan. Each day a different individual ran the reflection portion of the meeting. Each person brought their own creativity to the reflection. The reflection might be as simple as them reading a short nature poem, to asking each person to share one word that described their day’s field exercise or have a short visualization exercise. The activity typically got people moving or interacting. Sample activities were playing a short group game like Mafia, doing a group stretch or writing a group thank you note to a local friend of the program. The plan portion of the meeting was important for sharing the following day’s schedule, reminders about deadlines/assignments, briefing on logistics or risk issues, or sharing evening recreational activities that individual or groups were planning.

**Student Large Group Meetings:** On occasion, I organized a large group meeting with the interns, myself, the students and possibly the faculty and director. The need for these meetings was to address issues that were affecting the entire group and needed to be resolved or discussed with the group. In my time, we held large group meetings to discuss challenges with everyone doing their cleaning duties, misuse of the CRS kitchen and ingredients, groups returning late from break or from days off, and unresolved group conflicts. Though we rarely had need for these meetings, my group facilitation and meeting mediator skills were put to use. Large group meetings were also held to plan events or recreational activities outside the normal planned schedule.
Re-Entry/Disorientation: At the close of each program, an important task of the SAM is to help the students make the transition from life and learning at the Center to a return to their home and home campus. We called this re-entry or disorientation. The last two weeks of the semester programs are extremely busy with data collection, analysis and Directed Research project write-ups and presentation. If the students had the traditional campus model of study, final and immediate departure, they would miss an opportunity to breathe and take in the unique and once in a lifetime experience they had just shared. To close the semester, we had two major activities. The first was a group visit to Nandroya Falls, an amazing waterfall on the Atherton Tablelands. While at the falls, I asked them to hike the trail to the falls individually to have some dedicated time to enjoy the rainforest and reflect on their experience. At the end, they each opened a letter they had written to themselves at the very start of the quarter. I then asked them to write a new letter to themselves to reflect on their semester, their academic achievements, and their group experience. That letter would be sent to them in six months time and hopefully give them a time capsule into their experience in the Australian rainforest (Appendix D).

Our final celebration and send off for each semester’s class was a Bush Dance at a pub in the nearby town of Malanda. A Bush Dance is a like a contra dance in the US. A folk band plays traditional Australian and English songs while a caller directs the dancers. Though this was certainly not the music type of choice for the students back home, without fail they jumped in and fully enjoyed dancing.

Safety and Risk Management

One of the primary roles of the SAM is to be in charge of safety and risk management for the Center. In addition to reporting to the Center Director, the SAM reports to the Safety Director at the SFS Headquarters for all safety and risk management related issues. In this role I worked closely with the CRS Site Manager, SFS Safety Director and Center Director to reduce hazards, educate students and staff about safety and address safety concerns.

Safety Orientation: As part of the program and site orientation described earlier in this report, I gave each incoming student and new staff a safety orientation. This PowerPoint orientation provided an overview of the environmental, biological and social hazards of northeastern Australia and a briefing on how to manage most common injuries from these hazards. (Appendix E).

The most likely and common hazards at CRS:

Environmental

- *Sun exposure and sunburn* – this region has some of the highest sun cancer rates anywhere in local populations.
- *Wound management in a humid field environment* – small wounds can easily get infected and worse if not cared for properly.
• **Cyclones** – January-May semester was during cyclone/hurricane season. Cyclones had hit CRS in the past.

• **Getting lost** – with the dense shrub layer and lack of highpoints, getting lost in the Mabi forest was a real possibility.

**Biological**

• **Dengue Fever** - uncommon but debilitating mosquito borne viral illness.

• **Leptospirosis** – Bacterial infection whose vector is animal urine and delivery is absorption through cuts and skin via animal urine and/or infected soil.

• **Ross River Virus** – common mosquito borne viral illness

• **Stinging Trees** – Nettle like silica hairs that can cause reaction for months.

• **Terrestrial leeches** – create small, very itchy wound prone to infection.

• **Invertebrates** – spiders, ticks and scrub itch

• **Snakes** – some of most poisonous in world, but bite is uncommon

**Social:** not a significant source of concern, but study abroad students can get complacent and are far from normal support structures and restrictions. Behaviors exhibited while on study abroad programs can differ from a student’s typical behavior so heightened awareness is an orientation piece.

• Theft, Assault & Sexual Assault

• STDs

• Drugs

• Drunk drivers

• Hitchhiking

**Safety Briefing and Field RAMPs:** For each field trip outside of the Atherton Tablelands, I prepared at Risk Assessment and Management Plan (RAMP) for that activity or field location (Appendix F). Before the field trip, the entire group was briefed on the RAMP. A copy of the completed RAMP was also submitted the SFS Risk Manager and emergency contacts at SFS at least one week prior to each trip. Included in the RAMP were the following items:

• Trip detailed itinerary

• Trip roster

• Contact info for emergency medical services and SFS staff

• Listing of staff’s first aid training

• Inventory of first aid kit and emergency equipment

• Drivers, vehicles and vehicle last date of service

• Evacuation plans for major and minor incidents

• Hazard identification and plans for prevention method

Students performing independent Directed Research also completed an abbreviated RAMP prior to the start of their field time. This RAMP helped them understand the need to identify hazards,
ways to prevent injury and illness, basic first aid treatment for common injuries and a small first aid kit. Though reduced injury during the program was an important reason for this, we also hoped that the students might incorporate similar risk assessment and awareness in field work in their future careers.

**CRS RAMP Update and Policy Update:** On a regular basis, the Safety Director directs each SAM and Center Director to review and update the center’s Risk Assessment and Management Plan, Emergency Procedures and Evacuation plans. During my time at SFS, I had the opportunity to travel to the SFS field station in Baja California for the annual SAM meeting. This meeting was an opportunity for SAMs from each of the centers around the world to come together with the SFS Safety Director and VP for Operations to discuss risk management, SFS polices, center specific policies, emerging student issues and managing student behavior. Around the same time as this meeting the SFS was moving from a rules based safety model to a safety matrix based model incorporation SFS policies, center specific policies and safety education for students. The hope was to be a bit less paternalistic and restrictive of student behavior, while at the same time protecting the students, staff and organization from harm.

At the close of the meeting, we were tasked with updating our center’s RAMP and relevant center policies, initiating the Safety Matrix the next semester, briefing center staff about the changes and incorporating new safety education into the curriculum. I have included the SAM meeting agenda in Appendix G and a section of the RAMP and safety curriculum that I revised in Appendix H and a list of policies that I help craft in Appendix I.

**Emergency Response and First Aid:** The SAM was primarily responsible for being on call throughout the semester and summer sessions for emergency response and to provide first aid treatment to staff and students when on duty and during non-program hours. During my time at CRS, we worked to more evenly distribute on call duties through creation of a “Staff on Duty” program. This person would be responsible for:

Staff on Duty Responsibilities: to be shared among staff living on site

- Ensure Staff on Duty name is on student sign out board and curfew time
- Call pre-RAP staff meeting
- At RAP, announce how students can contact you in evening
- Cover CRS phone after office hours
- At RAP, get list and itineraries of students going off-site
- Set curfew and ensure that all students have returned by curfew
- Forward phone to your extension
- Administer first aid
- Complete incident report if necessary
- Report incidents to SAM and CD

Schedule and Availability
• Coverage lasts from breakfast to following breakfast unless otherwise arranged
• Staff on Duty must be readily available for student emergencies
• Staff on Duty must have access to vehicle in case of emergency

Response to this new Staff of Day structure was tepid at best. Traditionally, these tasks had fallen on the SAM and intern and the load was not shared by other center staff.

Though fellow staff members were certified in First Aid and CPR, the SAM was the primary point of contact for any medical needs of students and staff at the center and during field trips. The SAM was required to have a 72-hour Wilderness First Responder training. This training is meant for individuals and professionals who commonly do work or supervise others in places that are 2 or more hours from medical care. Though our center was only 30 minutes from a local clinic, to leave the center you had to travel on a ¾ mile narrow, bumpy road through the rainforest. In the event of cyclonic winds or heavy roads, this road could become impassable and quickly cut staff and students off from quick access to medical care.

Additionally, I oversaw the medical certifications of other center staff and arranged scheduling and logistics for their certification and recertification.

I provided first response to several medical issues during my time as SAM. Here is a listing of some of the health incidents, response and resolution:

• Male student with a suspected snake bite while doing DR project. Applied compression bandage and transported to hospital. Per hospital protocol, after two hours the bandage was removed and it was found that the student had two thorns in his hand.
• Male staff member had invertebrate bite when putting on work gloves. Provided first aid and transported to medical care. Exhibited tissue damage for several weeks

Figure 12: Invertebrate bite on a faculty member that I treated.
• Female student woke in the night with extreme abdominal pain. Provided quick transport to hospital and then to larger regional hospital. Had emergency surgery for ovarian cysts. Stayed with student throughout and provided communication with parents in USA.
• Male student bitten by amethystine pythons (non-venomous constrictor) after catching snake during free time. Provided first aid and monitored for infection.
• Male student with impaled object and visible tendons in foot while playing Frisbee/catch during free time. Provided first aid and transported to hospital.
• Provided education and treatment related to scrub itch bites and localized and mild systemic infections due to scratching.
• Provided treatment and medical referral for staff member diagnosed with Ross River Virus
• Provided treatment and transport to medical provider for multiple unspecified gastrointestinal ailments.
• Provided treatment and education to multiple students and staff for exposure to the stinging tree and subsequent discomfort.
• Provided first response to electrical contractor after he received mild current from the pipes he was working on when center building was struck by lightning. Recommended visit to a health professional.

Incident Reporting: The SAM was responsible for all incident reporting related to injuries, accidents and near misses happening at CRS. Completed incident reports were given to the Center Director and sent to SFS headquarters (Appendix J).

Community Outreach

In traditional study abroad programs, US students are fully immersed in a new culture and often a new language. While they may take classes in English or at a university, they still have near constant opportunity to interact with the local community. At some SFS field centers, the center community is in close proximity to and has ample opportunity for cultural interaction. The CRS site was immersed into rainforest, ~25 miles from the nearest town, down a forest road and without public transportation options. Additionally, only one staff member was Australia born. While this created an unparalleled opportunity to experience the Australian rainforest and gave easy access to research sites, it limited the vital cultural interaction that many students desired. Another important component of the SAMs responsibilities was to create opportunities for students to enjoy Australian culture and interact with the local community.

Community Service: Community service consisted of volunteer work at Landcare, TREAT and the Wet Tropics Tree Planting Service (WTTPS). On six Fridays throughout each semester, I split the group into smaller groups. The groups rotated between the above organizations, our on-site rainforest tree nursery and the CRS’s Jungle Farms rainforest restoration site.
Landcare is a local restoration organization that places most of its energy into restoring the riparian habitat along a several mile stretch of Peterson Creek in Yungaburra. The creek supports several pair of platypus and tree kangaroo and is an important tourist draw for the community as it is one of the more accessible platypus viewing areas on the Tablelands. Students primarily did irrigating, weeding, mulching and tree pruning when working with Landcare. Additionally, Dr. Richardson’s DR groups were focused on valuing a proposed expansion to the Lower Peterson Creek restoration and their findings were very appreciated by David Leech, the driving force behind Landcare. The work with Landcare provides important community service and gives the students interaction with community residents who are passionate about their conservation efforts. Many of the students were inspired at the dedication shown by Landcare volunteers.

Each student had an opportunity to volunteer with Trees for the Evelyn Atherton Tablelands (TREAT). TREAT represents a highly successful partnership between government and a community based tree planting organization. The nursery facilities at Lake Eacham National Park are provided by government funding, but the many thousands of hours necessary to grow rainforest seedlings are provided by committed volunteers. While at TREAT the students spent their time organizing seedling trees, processing seeds, repotting plants and closely interacting with dedicated community members.

Lastly, the entire group visited the Wet Tropics Tree Planting Service and learned how local shires and the Wet Tropics are contributing to restoration efforts. They participated in general nursery work. This was a new connection for SFS and one that will be quite mutually beneficial in the future.

**Homestay Weekend:** Each semester, I arranged for students to stay with local residents for a 2 night homestay. Host families were identified that had some previous interaction with the CRS through research partnerships, community service, personal connections of staff or newly developed connections. Host families were quite varied in their lifestyle and occupations; members of the now modern, but traditional aboriginal people of the CRS property, farmers, local environmental non-profit organizers, local artisans and musicians, physicians, and school teachers. Country of origin of the families was varied as well since 50% of Australian citizens were born in a country other than Australia. Taking into account each student’s personality and feedback from previous homestay students with each family, I assigned 2 students to stay with each family.

Prior to their departure, I briefed students on expectations for them and the families for the weekend and emergency contacts and procedures. Attached in Appendix K is a welcome letter for host families. Attached in Appendix L is a briefing for students attending homestays.

After the homestays, I asked each student to write up a description of their activities, the family they stayed with, a profile of a ideal student for future homestays and whether they recommended SFS students staying with the family again. This information was compiled in the SAM manual to create successful future homestay experiences.
Community Appreciation Dinner: A few weeks after the homestay, we invited host families, guest lecturers, CRS traditional landowners and people interviewed by Directed Research groups to come to the CRS for an appreciation dinner of redclaw (oversized freshwater crayfish), oysters and student prepared treats (Appendix M). This was a great opportunity for local residents to get to know the program at CRS and for students to show their appreciation for these community members. The CRS site is quite isolated from town and has sort of a “compound mystique” with locals, so it was nice for them to see where the students live and learn. As the SAM, I worked with other CRS staff to create an invitation list, invited community members to the event, worked with the CRS chef to determine the menu, organized the complete cleaning of the facilities and briefed the students on best to represent SFS and show appreciation for our guests.

Environmental Education and Outreach: Each year the small town of Yungaburra multiplies its population for the annual Yungaburra Folk Festival. This is a festival of folk music and art and takes place over several days. Thousands of people attend the festival and the community really makes an effort to highlight Yungaburra, local culture and natural areas. In an effort to do outreach for the SFS/CRS program and share conservation information with my direction, our students hosted an information table and environmental activities for festival goers.

All of the students had the opportunity to staff our inaugural Community Promotion booth hosted at the Yungaburra Folk Festival. We set up the booth early in the morning and students rotated staffing the booth throughout the day. Visitors to the monthly markets and the Folk Festival stopped by the booth to stick their head through our cassowary and tree kangaroo mural to have their picture taken. The students also shared how to propagate and grow rainforest seedlings, explained bird banding equipment, re-enacted the Lorax, organized tree kangaroo pouch races (potato sack races) and painted rainforest plants and animals on children’s faces. The day was quite successful and the tradition has continued since the Fall 2003 semester.

Gillies Cup: Lawn bowling is a very popular sport in Australia and can be likened to a combination of 10 pin bowling and bocce ball. Each town often has one or more lawn bowling clubs, like many small towns in the US having a public golf course. Lawn bowling clubs have members, leagues and typically have an attached lounge and eating area. For many years, CRS students had been partnering with lawn bowling club members to vie for the Gillies Cup. The Gillies Cup was a light hearted competition and fun opportunity for students to get to know locals and learn a new sport. Each semester’s students thoroughly enjoyed the event and some went back on free days to try their hand at lawn bowling on their own.

Didgeridoo Making: A highlight for many students of the non-academic part of their SFS experience was making their own didgeridoo. The didgeridoo is the traditional instrument of Australia’s aboriginal people. I organized an opportunity for students to visit Gundoii Didgeridoo’s near Eacham on the Atherton Tablelands. Phil Barlow and his family make didgeridoo’s for sale for Australian residents and the tourist market in Cairns and other parts of north Queensland. Didgeridoos or didges for short, are made from eucalyptus tree trunks naturally hollowed out by termites. A didge maker then bores out the hollow center of the tree trunk to further, removes material from the outside of the trunk, repair any holes in the instrument and and finishes the instrument with a sealer and beewax mouth hole. SFS students
had the chance to visit his workshop, choose their own precut tree trunk, hollow it out and plane it down. Phil and his family completed the finish work and delivered the instruments to the CRS. It was a day long experience and providing not only an interesting activity, it gave the students an opportunity to ask Phil much about aboriginal culture, beliefs and interaction with the majority European population.

**Community Lectures:** Anytime we learned of local lectures or speakers who were presenting topics related to rainforest conservation and restoration, we made our best efforts to attend. As SAM, I worked with the faculty and local contacts to schedule our attendance and perform logistics. During my tenure we attended several special lectures including tree kangaroo conservation and possum conservation. At each of these, students had an opportunity to hold injured animals that had been rescued by local organizations.

**Program Support**

**Jungle Farms Restoration Site:** This 35 acre property is located next to Peterson Creek just downstream from the town on Yungaburra. It is a privately owned property and the landowner was interested in developing it as an eco-tourism location. Peterson Creek has resident platypus and many visitors come to the area to view platypus. The SFS partnered with the property owner to establish a rainforest restoration plot in March 2002. About 25% of the property had native vegetation while the balance was open pasture previously used to graze cattle ([http://www.treat.net.au/](http://www.treat.net.au/)). The pastured area was the site of the restoration and was extensively covered in invasive vegetation. Since 2002 the CRS has been working to re-establish native tree species and fight back invasive species.

![Figure 13: Jungle Farms restoration site with few weeds after dry season](image)
The rainforest restoration requires high levels of physical labor, primarily to manually control invasive vegetation to prevent it from overtaking the site. Managing the labor involved in the restoration efforts was another responsibility area of the SAM. Several Saturdays during the semester, I and the faculty organized our students to spend the day clearing the site of Mexican Poppy, Tobacco Bush and pasture grasses. By the end of the Dry semester (September – December), our efforts had cleared nearly all the non-native vegetation. We finished the semester by planting 1400 tree seedlings sourced from the CRS nursery and the TREAT nursery. Students felt quite an accomplishment at this.

The rains of the wet season arrived in December and early January, when the school was between student groups. Upon our return to Jungle Farms with our group of semester students, we were amazed to see a majority of the weeds had grown 6-9 feet during the previous month. In the Wet Semester (January – April) we spent many Saturdays doing similar work controlling invasive weeds, but this time often in wet rainy conditions. Small groups of students also conducted research at the restoration site as part of their end of semester Directed Research projects.

**Directed Research Presentations:** At the end of the semester, local community members are invited to attend a Directed Research Projects presentation evening at the historic Eacham Hotel in Yungaburra. As SAM, I was responsible for logistics of the event, gathering the invitation list and sending out invitations. Five students from the group are selected by their faculty to present their group’s work and answer questions from community members. Talks during my two semesters included seasonal fluctuations of food sources for obligate frugivores, design of a computer based weed identification key for the Eastern Atherton Tablelands, economic value of the carbon sequestration potential of rainforest, economic value of riparian revegetation efforts on water quality, and the optimization of timber and carbon sequestration value of different aged rainforest. The findings of the research ranged from having significant local value to those with more global implications. Community members are always impressed at the depth of knowledge and research findings that SFS students are able to possess after only three months in the area.

**Extended Field Trips:** Each semester program takes two multi-day field trips to areas outside of the Atherton Tablelands; during my stay these were to Chillagoe and Cape Tribulation. The itineraries were developed and revised by me and the faculty based on academic goals, local contacts and opportunities and available time. As SAM, I was responsible for organizing all logistics for these trips including lodging, guest lecturers, visits to Aboriginal communities, food planning and purchase, risk management planning and oversight, travel planning and group management during the trip. The faculty were responsible for delivering the academic content of the trip.

**Chillagoe Field Trip:** Chillagoe is a small town in the Australian Outback. It is about three hours east of the CRS. The trip to Chillagoe helps demonstrate the contrast between the rainforest that surrounds the CRS and hugs of coast of eastern Queensland and the dry outback that encompasses the vast majority of Australia. Rainfall averages drop dramatically as you
move east from the Center and the habitat quickly changes to savannah woodlands. The Chillagoe area was a thriving mining town early in the 1900s that created a large demand for timber and agricultural products. This demand, in part, resulted in the deforestation and land clearing in the areas closer to the Center.

Highlights of the trip include spending time with the Bar-barrum people to learn about the Native Title Act and the work that Aboriginal people are undertaking to regain title and access to their land. The Bar-barrum graciously offer to have their school age children perform traditional dances and music at the end of our visit. Another highlight was the opportunity to take a guided tour through some spectacular limestone caves and exploring the history and impacts of the mining industry in the Australian outback. For many students, this is their first opportunity to see large kangaroos and wallabies.

**Cape Tribulation and the Daintree:** For many CRS students, the field trip to the Daintree is a highlight of their time in Australia. This area boasts some of the oldest living rainforests in the world and one of the only places where the rainforest meets the reef. At Cape Tribulation, the World Heritage listed Great Barrier Reef is closest to shore and World Heritage listed rainforest goes right to the shore. It is the only place in the world where two World Heritage sites come together. On the drive to the Daintree, we visited the Mossman Gorge and for a hike led by a Kuku Yalanji tribal member to share traditional uses of the forest. The Daintree Environmental Center has an extensive elevated boardwalk system that gives the students one of their first opportunities view the rainforest from the canopy level. Once entering the Daintree area, the group is on watch for the elusive and endangered Cassowary. The Southern Cassowary is a large flightless bird endemic to the rainforests of north Queensland. On my trips to the area, we were not lucky enough to sight the bird.

Once in the Daintree, the group enjoyed a visit to a bush tucker “farm” and exotic fruit tasting. Bush tucker is wild edible food gathered from the rainforest. Many students chose to take advantage of the proximity to the Great Barrier Reef to go on a scuba dive or snorkel on the reef.

**Program Reports and Marketing**

Every two weeks during the semester program and twice during the summer program, I submitted a SAM report to SFS headquarters about the activities of the previous two weeks. There were several sections to each report; highlights, student group dynamics, health/safety, community activities (internal and external), academic update and student reflections. I recruited 2-3 students every two weeks to write a short essay and provide photos of highlights of the previous two weeks. The Center Director also completed a biweekly report that focused on academics and other Center issues.

The SAM report helped headquarters staff stay current with the development of each group, provided an opportunity for HQ staff to respond to inquiries from parents and put issues on the radar that might need to be addressed. The report also helped HQ staff connect their work in the HQ office to programs being delivered in the exotic locations. The SAM reports were also shared
with SAMs at other centers in hopes that we would learn from each others successes and challenges. Sections of the SAM report, director report and student reflections were used in the SFS published News from the Field. This online publication was intended for friends and families of current student to see what was happening at each center. The News also helped market the program to prospective students. A sample “News from the Field” from Spring 2004 semester is included in Appendix N. Additionally, SFS published a quarterly publication called Field Notes. Highlights from the SAM reports and student reflections were included in each issue.

At the close of each semester and summer program, I also completed a Final SAM report that gave an overview of Group Dynamics, Safety and Risk Management, Community Service, and Alumni contact recommendations (Appendix O). These reports provided a synopsis of the semester so that they could work to improve programs, identify trends and connect future alumni to the experience they had while on program.

Reflections on Internship and Conclusion

My internship as Student Affairs Manager was a very rewarding yet challenging experience. Living abroad and working at a field station fulfilled a goal that I’d had for many years. In my undergraduate education, I had the opportunity to participate in field-based, experiential biology and geology courses in the upper Midwest. While in graduate school, I participated in and helped as teaching assistant for Dr. Hays Cummins’ Tropical Marine Ecology course in Florida and the Bahamas and Tropical Rainforest Ecology course in Costa Rica. These courses gave me my first opportunity to participate in a field course outside of the USA. I count these courses as the most academically rich and influential experiences I had during my career as a student. Working at SFS offered the opportunity to contribute to similar experiences for the undergraduate participants. The SFS program had the same profound impact on the students as my field courses had on me. They had a level of intellectual curiosity and engagement that, in my experience, is rarely achieved in a traditional campus based course.

I was drawn to the School for Field Studies because it takes an interdisciplinary approach to addressing environmental challenges much like the IES does. As with IES’s public service projects, SFS seeks to find local partners to develop research questions and projects that can have immediate applied results and contribute positively to the community. The field-based nature of the program and the way the research portion of the curriculum was structured and taught, allowed the student’s time to delve deeper into their research question, generate data and analyze results. I appreciated the SFS development of a 5 Year Research Plan. With new students every semester and relatively high faculty and center director turnover rate, the directed research projects have a high potential to lose practical application and fail provide any meaningful answers to research questions. The 5 year plan provided for a longer term research vision beyond an individual faculties interests and gave consistent structure for developing research priorities at the center level that tied in with the schools overall mission.
The School of Field studies has a well defined organizational structure that allowed for generally effective communication for an international non-profit with wide ranging stations. Since my time at SFS, I’ve met several other people who have worked for a US based study abroad program, field stations affiliated with a US univeristy or at international company. SFS’s organizational structure, accountability and the support that it provides surpasses anything that I have come across since. Many of the individuals that I’ve met who worked abroad said that they often felt isolated from the home institution or program. While they appreciated the autonomy, they felt that quality of program happening locally was very dependent on the individuals currently working and wasn’t really a model that could sustain high quality programs that reached their intended outcomes.

A high rate of staff and faculty turnover is a challenge that the School for Field studies has and I’m sure that this is shared by other study abroad programs. There are a variety of reasons for this. Field courses and field research demand a high level of time commitment from faculty. This allows for extremely limited time for faculty to conduct and publish their research. Though the faculty that I worked with was primarily focused on teaching and providing a high quality undergraduate education, they still felt the pressure to publish to advance in academia. Also, unless the staff member was local and the position was considered a well paying job by local standards, as was the case at the Kenya program, staff’s viewed their time at SFS as an opportunity to experience the adventure of living abroad or at a field station and a way to gain curriculum vitae experience that would help them achieve a future position. Another factor is the time intensive work day and weekly schedule, especially as compared to traditional campus-based classes. The faculty and staff I knew had little time for personal life and personal endeavors. This led to a high energy drain especially near the end of the semester. Lastly, living on site in an isolated field location, helped contribute to turnover as well. Though the center offered amazing opportunity to live in a small community of like minded people and be immersed in the rainforest, the isolated nature of the site and demanding schedule limited our ability to have a life outside of center life. For the students, this provides an rare opportunity get immersed in the coursework away from life’s distractions, but for staff it could seem like life was on hold while we were working at the school.

With the isolated nature of the field station and the small tight knit community, personal conflicts and differences can play a major role in both staff and student morale and satisfaction. For me and other staff and faculty, this played a large role in our relatively short tenure at the school. When I departed for Australia, my partner and I sold many of our belongings and our car expecting to be gone for 3+ years. In the end, I was there for 11 months. Though there were several factors for this, the major factor was challenges I experienced with the local Centre Director, her management style and interpersonal skills. Some of the differences were cultural; she was familiar and comfortable in the British/commonwealth education system and did not relate well with American students, their expectations or their backgrounds. Others were more personal.

Due to the remoteness of the center and demanding schedule, the students had very little opportunity to experience Australian culture and social life. This was one of my key job
responsibilities, and I took it as a priority to create experiences and get the students off site as much as reasonably possible so they could have a full Australian experience. The Centre Director did not fully support or understand this goal. A fair part of my job became advocating for the students interests and sharing their concerns about center life with her, while maintaining diplomacy and not sharing my frustration with the students so they didn’t sour to the overall program. The strength of the program and organizational structure and otherwise excellent faculty and staff led to high student satisfaction. Unfortunately, it was not a working situation that I felt would be professionally or personally fulfilling longer than my tenure there. Soon after my departure, two out of three faculty left for similar reasons. Within 6 months, the last remaining faculty member took over as Centre Director and I’m sure that she made great strides in improving center life and integration with the local community.

Since leaving the School for Field Studies, I have maintained contact with many students from my time there. Many of these students have shared that their time with SFS was the keystone experience of their undergraduate career. Each group has stayed in close contact with each other and the semester groups arrange reunions to get together and share memories from the rainforest. I feel a sense of pride and gratification knowing that my work as Student Affairs Manager facilitated such fellowship and helped make a lasting impact on the students. A large percentage of them have decided to work in the environmental field as biologists, alternative energy specialists, land managers, educators and more. I feel like the mission of the school was truly achieved with these students.
Bibliography


Appendix A: Student Affairs Manager Position Announcement

The purpose of this residential position is to provide program support for students and faculty. Using skills in group facilitation, team-building, and conflict resolution, the SAM fosters in students a sense of community and group responsibility, a proactive attitude toward program safety, a respect for local culture and an appreciation of the logistically complex nature of being an active participant in a field-based program. The SAM reports to the Center Director.

Requirements for position:

- Bachelor’s degree in a relevant field, Masters preferred
- Professional outdoor, experiential, and/or field education experience
- Significant experience managing student groups in a residential setting
- Demonstrated skills in: group facilitation, team-building, conflict resolution, outdoor leadership, risk management
- Demonstrated community outreach experience
- Wilderness First Responder and CPR Certifications
- Experience living or working in host country or region with appropriate language skills
- Clean driving record and ability to operate a manual transmission vehicle.

Duties and Responsibilities:

Student Affairs

- Provide training to students, within the context of the Five-year Research Plan, in the areas of community-building, leadership, management, problem-solving, critical thinking, cross-cultural issues, conflict resolution, team-building, self-awareness and group skills
- Counsel students on their program-related and personal needs
- Facilitate communication within the student group and between staff and students
- Monitor and address individual student and group attitudes and behavior
- Keep Center Director informed of potential problems
- Participate in resolving group management issues and student discipline problems
- Facilitate establishment and support of student committees and provide appropriate training
- Assist in the creation of special student events

Safety & Risk Management Under the oversight of the Center Director the SAM will:

- Take responsibility, as an individual and as a member of the Center faculty/staff team, for the safety of all program participants.
- Coordinate incident reporting system and safety audits.
- Coordinate the review and revision of Center Risk Assessment and Management Plans.
• Coordinate the emergency procedures plan for the Center, including an evacuation plan.
• Recommend and review policies and procedures needed to manage risks.
• Coordinate the safety portions of the on-site orientation and conduct safety briefings for students and/or staff.
• Comply with, actively model, and enforce all SFS and Center policies and procedures.
• Ensure that first aid certifications are kept up to date via periodic courses offered by SFS between program sessions.

Community Outreach
• Work with Center Director and faculty to develop and implement community service/activities that advance the Center's Five Year Research Plan.
• Lead cultural understanding workshop for incoming students.
• Organize student community outreach projects and special events.
• Arrange recreational programming for students with local community.
• Organize homestay program for the Center.
• Serve as a liaison between the Center and the community.
• Participate as representative of the Center in the community association.
• Coordinate restoration site activities at the center and coordinate their integration with the academic program.

Program Support
• Coordinate and communicate scheduling of program to students as needed.
• Participate in and lead parts of the orientation and re-entry components of the program presented to students at the beginning and end of each program period.
• Participate in training activities for new Center staff prior to and during the program.
• Provide periodic reports, marketing materials, and student input to HQ and SFS Web site.
• Participate in the preparation of final reports, Center field preparation guide revisions, and other required reports.
• In cooperation with other Center staff, provide day-to-day coordination of interns as delegated by the Center Director.
• Participate in planning activities prior to the program start and in review/analysis following students' departure.
• As requested by the Center Director, assist with other logistical, group management, and administrative tasks.

Daily Center Life
• Live on-site for the duration of each program period and take meals with the students.
• On a rotating basis, take responsibility for Center-specific "staff of the day" duties.
• Take part in, and occasionally lead, Center upkeep projects, social, and field activities.
• At the request of the Center Director, serve as caretaker for Center during program breaks and center rentals.
• Drive standard transmission vehicles as needed.
• Adhere to, actively model, and enforce all SFS and Center policies and procedures.
• At all times, work to ensure good relations between the Center and local community.

Reports To: Center Director

Appendix B: Pre-Arrival Letter to Incoming Students

Greetings from Down Under! It is only a few short weeks until you board the plane for the Sunburned Country. I wanted to introduce myself since I will be one of the staff members you first see at the airport in Cairns (which by the way is pronounced ‘Cans’).

My name is Tom Rottler and I am the SAM (Student Affairs Manager) at the Centre for Rainforest Studies. My job is quite mixed here, but revolves mainly around generating a close community among the staff and students ensuring health and safety, organizing logistics, and helping foster strong relations with the local Australian community.

At the Centre we have our Centre Director, Dr. Robyn Wilson, three faculty, three interns, a site manager, a chef, a bookkeeper and myself. I and the other staff most certainly look forward wishing you a Gidday on February 2nd. All of the staff will be travelling for the next month or so relaxing after our last group and getting ready for your arrival.

I hope your fall semester ended well. Our last group of 21 students finished their Directed Research projects, gave final presentations to community members and flew to various parts of the globe last week. It was an incredible semester. The group was energetic, positive and truly enjoyed living and working together 24/7. We call the September-December semester ‘The Dry’ and it lived up to its name! It was only in the last few weeks that we actually got a bit of rain. It came just in time to quench the thirst of the 1400-rainforest trees the group planted. As you might have guessed you will coming for “The Wet”. We have had an extreme drought the past few years so we are hoping for some serious downpours the next few months. While living in the rain can make life ‘interesting’, the wildlife is more active so be prepared for some great Irwin-esque encounters.

I’m sure you have received a heap of information from our head office in Salem on what it will be like down under. If you haven’t already, I highly encourage you to contact an SFS alumni, especially one who was down under to ask any questions you might have. I will be checking my email periodically over the next few weeks so if you have questions please feel free to write. Since I am on holiday, it may take me a while to get back to you, but I will do my best.

Some helpful hints:

• The road from the airport to the Centre is very, very curvy. If you get carsick I recommend taking some motion sickness meds as you near Cairns.
• We live about 35 minutes from Atherton and it has all the consumer items that you might expect to find in a town of 8000 people in North America. We will visit there during the first week of the semester and about once a week throughout.
• Last semester’s students said that the recommended two pairs of pants on the packing list wasn’t enough. You may want to bring extra.
• Bring leather work gloves! You will spend some time weeding our restoration site and the Mexican poppy has annoying thistles.
• We spend a heap of time at the Centre, games or ideas for group activities will be very helpful.
• At the request of previous students, we will be creating a bound course book that will include the required readings for each course. Individual copies of the articles will still be available for checkout. If you think you would prefer to purchase one of these bound course books, please budget about $30AUD/$20USD per course.
• Ants will eat holes in some of your clothes here. Bring clothes for the day-to-day that you don’t mind throwing out at the end. Also something a bit nicer for break, going out, etc. There are a few thrift shops in Atherton too.
• Bringing your own laptop is highly recommended. Be sure to have the right voltage converter or plug adapters for your electronics. Radio Shack sells both.
• I have found a small, packable umbrella to be quite useful during rainstorms.
• As you pack your stuff, be sure to scrub your hiking boots or other items which might have soil or seeds on them. Customs can be very strict about this.

You are embarking on what we hope will be an absolutely amazing semester of learning, laughs, friendships and growth. Staff and previous students agree that the key to a successful semester is that we form a strong team. We hope that each of you bring a willingness to listen to and learn from others and an eagerness to share of yourself. Lastly, we hope you have the desire to learn how to generate solutions to tough environmental challenges.

Looking forward to meeting you,

Tom Rottler
Student Affairs Manager
Centre for Rainforest Studies

"Never doubt that a small group of thoughtful citizens can change the world, indeed, it’s the only thing that ever has" --Margaret Mead
Appendix C: Policy Briefing

**Why have policies?**

Fulfilling our mission  
Keeping you safe  
Keeping SFS in business

**Mission:** The School for Field Studies provides environmental education and conducts research through its field-based programs. SFS is committed to providing hands-on, interdisciplinary education and environmental research in partnership with natural resource dependent communities.

**Our goals are to:**
- Provide students with a unique and challenging educational and life experience that assists them in successfully advancing their careers as skilled professionals and globally aware citizens.
- Work with local community stakeholders to develop models for the sustainable management of their natural resources.

---

**Operational Objectives**

- Safety and security
- Academics
- Local Community Relations
- Legality
- Liability
- Foreign Environment for students
- Ability of CRS to conduct business
- Ability of SFS to conduct business

**School Wide Policies**

- Alcohol absolutely none allowed on site, in SFS vehicles or during program activities
- Drugs—immediate expulsion
- Abuse/Destruction—no abuse toward self, others, or property
- Mutual Safety/Security—cannot jeopardize others’ safety
More School wide...

- Early Departure—must sign a waiver of responsibility
- Motor Vehicles—students cannot drive SFS vehicles
- Local Laws—if you break them, you deal with consequences
- Sexual Harassment—zero tolerance policy

CRS policies

- Sign out—if leaving the Centre on free time
  - Inform Staff on Duty
  - Leave detailed itinerary with Staff on Duty
  - sign-out board
  - Check in at before curfew
  - If exploring centres:
- Curfew
  - Monday to Friday night
  - set by Staff on Duty—probably 10:00-11:00
  - Check in required

Day Off—one day scheduled per week

- Free from completion of academic day prior until start of academic day after
- All RP duties must be completed
- All school-wide policies in effect no matter where you are
- Sign out required if leaving site
- If staying on site, all CRS policies in effect
- Optional activities—same as program time
  - All CRS and school-wide policies in effect

Security

- Visitors and vehicles only with prior Robyn authorization
- No rental vehicles on site or parked at end of access road—special circumstances? check with Robyn
- If you choose to ride in private vehicles, do so at your risk. Must be picked up and dropped off at end of access road

Alcohol

- Weekly visits to Atherton for personal errands
- Discontinued if not used for intended purposes
• Smoking
  - only use site on CRs
  - Not within 50 meters of vehicles
  - Downwind from group on field trips
• Gilleys Highway
  - no running, biking, walking, hitching, rollerblading
• Exploring the Site
  - Access road and Bear Pocket Road
  - Six walks with group 1st 3 times, sign out
  - Swims - groups of three, register hiking plan
  - Must carry compression bandages

• Swimming
  - Always at your own risk, always optional
  - Program time swimming
  - Swim into 100 meters, any stroke
  - Only with staff supervision
  - Only within boundaries set by staff
• Kitchen
  - Only Chris uses meat slicer/slicer
  - Close toad shoes only in kitchen
  - Personal dishes must be washed, sterilized, dried and put away
• Toilets
  - Only after training by Alan
  - Motorized only at discretion of Alan

Consequences
• Verbal warning
• Written warnings
• Probation
• Expulsion from the program or site

Operational Objectives
Behaviour can still have consequences even without explicit policy forbidding them if they compromise any of our operational objectives.

Staff have lives too...
• We operate under many of the same policies
• School does not have same responsibilities for us, so different rules apply
• Staff allowed alcohol on site and visitors
• May not be at every meal when on KP
• We love our jobs and living in community, but please respect our privacy and living space
• Office hours and locking up
• Staff vehicles for their own use, not available for rides to and from town, etc.
• Your presence in community—we will live here long after you leave.
**Academic Expectations**
- Full attendance and participation in all areas
- Sleeping is easy to spot
- Know the schedule
  - Only official schedule is by computer room
- Timeliness—we will leave without you
- Plagiarism
- Staff accessibility for questions, 1-on-1s
- Respect others study space—noise, etc.

**Group expectations**
- Residential living—intense, but often a highlight of the semester
- Be flexible and accommodating, but make sure you get what you need.
- If you don’t like what someone does, give respectful feedback
- Weekly student meetings used for bringing up group, centre issues, provide us feedback

**First Aid & Emergencies**
- Tom is health/safety officer
- Living in a small community—hygiene is key
- Need 1st aid? Tom if around, if not, staff on duty
- Please report even minor 1st aid incidents
- Always carry compression bandages and other first aid kit if you have

**Now for the fun stuff**
Appendix D: Reflection Letter

Welcome to Nandroya Falls

I hope you enjoyed your walk in. I would like for you to think about some things as you sit here totally immersed in the rainforest.

First, take out your letter and read it. Think back to those first couple days you were here – what were you thinking, how did you feel? What did you want to accomplish while you were here? Did you have any expectations?

Next, I want you to take out the blank paper and pen. Take this time to write another letter for yourself. Think about where you are now and how you feel. What were your goals in the first letter? Did you reach them? If not, what have you done with your time here? In what ways have you grown? Academically? Socially? Will people at home see any difference in you? What will you take home with you from this experience? Six months from now, when you are back in your routine at home, what do you want to remember about this place?

When you finish your letter, put both letters back into the envelope, seal it, put your name on the front and hand it back in to Tom.
Appendix E: Safety Power Point

What is going to hurt you.

- Environmental Hazards
- Biological Hazards
- Social Hazards

Cyclones

- Tropical storms and cyclones are monitored, December to April
- Several day warning
- Stay on site
- Buildings are cyclone proof
- Flooding-creek crossing, roads

Environmental Hazards

- Sun Exposure
  - Highest cancer rate
  - Tanahlols
  - Clothing
  - Dehydration

- Humidity
  - Easy to get overheated
  - Wounds heal slowly
  - Wound management
    - Cleanse/scrub with soap & water
    - Leave dry until
    - Rinse
    - Sandage
    - Change bandage
    - Warm water soak

Find your way, mate

- Before you go... get your bearings, have a map, compass, food and water, sign out.
- If you get lost. Stay in area where you realized you were disoriented. If you try to get un-lost, look back and mark your way.
- Signal for help—bright objects, noise, smoke, yelloooooo!
- Wander out a little and place arrows pointing to you location.
### Bloody Dengue Fever
- Mosquito-borne viral illness
- Two types
  - Classic bone fever
    - Sudden onset, high fever
    - Joint pain, weakness, rash
  - Hemorrhagic-shock
    - Most common in <15 year olds
    - Same set but cardio-vascular collapse
- Occasional outbreaks in PNG, 100 in '93, 0 in '99
- Unlikely to contract it
- Not likely to spread to human
- Prevention
  - Insect repellent
  - Insecticide nets
  - Long sleeve clothing
  - Tightly
  - Empty still HDH containers

### Lepto cont.
- TX includes antibiotics
- Understand where you are at risk
- Muddy areas, cleaning mammal shell
- Prevention=Cover, Wash and Clean Up
  - Wash
    - Wash, especially before smoking and eating
    - Shower after work
    - Wash self and clothing after handling animals
  - Clean Up
    - Control rodents
    - Keep place clean
    - Clean food areas thoroughly before and after meals

### Giardia

### Bloody Leptospirosis
- Bacterial infection spread through urine of mammals
- Enters through cuts & permeable skin
- Symptoms
  - Sudden onset
  - Fever, headache, chills, severe muscle pain, vomiting, bloodshot eyes, others...killing bucket
  - Ranges from mild to lethal
- Can last from days to months
- % of OZ cases in Queensland: 137 in 2000
- Most common in people who work with contaminated soil/water with mammal urine
- Outdoorsy people at risk
- Rarely passed human to human
  
### Bloody Ross River Virus
- Spread by infected mosquitoes
- Symptoms
  - Pampering in joints
  - Rash/fever in some people
  - Tingling in pains and soles in some people
  - Fall recovery in all people in 4-7 months
  - Very, very common illness ~2500 cases each year in Qld
- Spread through mosquito, not human-human
- No treatment for disease, only the symptoms
- Precautions
  - Don’t get bit
  - Long pulse clothing
  - Insect repellent
  - Emots water containers
**Bloody Stinging trees**
- Tree covered with tiny silica hairs
- Painful sting can last months
- Prevention:
  - Know what it look like
  - Long pants/sleeves
- No Tx: Deplitary hair removal strips
- Don’t touch sting area

**Invertebrates**
- Bloody Red backed Spiders
- White-tailed Spiders
- Many unidentified species
- Many may be poisonous, but unknown effects
- Keep hairs where you can see them
- Ice bite area & monitor

**Bloody Leeches**
- Do not carry disease
- Can cause itching and swelling
- Expose bodily fluids so normal precautions
  - Clean area
  - Properly dispose of cleaning supplies
  - Disinfect anything that came in contact
- Bug repellent does help deter them

**Bloody Paralysis Ticks**
- Discomfort, illness, paralysis, even death in humans
- No SFS students have had reaction
- Simple removal with fingers/tweezers. Make sure whole body is removed
- Monitor bite area
**Bloody Scrub Itch**

- Trombiculid larva
- Very rarely causes scrub typhus
- Produces very itchy red welts
- Anti itch cream pusses it off
- Benzemul/Tea Tree only effective
- Anti-histamine if very bad itching

**Prevention**

- Learn your snakes
- Wear clothed-toe shoes in snake areas
- Walk 1st or 2nd in a group, not 3rd
- Don’t put hands or feet in places you can’t see them

**Bloody Snakes**

- Several species here- small-eyed (m), eastern brown (h), red-bellied black (h, c), coastal taipan (h)
- Snake Risk = aggressiveness X toxicity X dose X length X encounter rate
- 1% as likely to die from snakebite in C2 as USA, 0.0003% as likely
- Most likely in Br Lkanka, ~45 million people
- Most likely in Br Lkanka, ~45 million people
- 80% of bites to people trying to catch them
- 1990-2000 at Cairns Base Hospital
  - 29 people treated
  - 8% positive for venom, 1% with symptoms
  - 7 patients got antivenom
  - 1 patient died (eastern brown)
  - BRIT PARENTS GOT CORRECT FIRST HELP
- Expert treatment readily available in Atlantic/Cairns

**Crikey, I’ve been bit!**

- Do try to relax, you are not going to CTD instantly.
- Don’t try to catch it
- Don’t apply tourniquet or cut’n’suck
- Do not wash the wound
- Wrap affected limb, from base/feet toward trunk, split limb
- Do not remove bandages
- Call 000, walk very calmly slowly to help
Social

- Theft/Assault
- Sexual Assault
- STDs
- Drugs
- Drunk drivers
- Hitchhiking
## Risk Management Plan

Submit copies to Center Director and Support Center one week prior to departure. Review with all trip participants prior to departure. Post at Center and carry with group.

### I. Trip Details

<table>
<thead>
<tr>
<th>Trip Title</th>
<th>Cape Tribulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trip Destination</td>
<td>Cape Tribulation</td>
</tr>
<tr>
<td>Trip Date</td>
<td>April 5-8</td>
</tr>
<tr>
<td>Time of Departure from Center</td>
<td>7:15 AM April 5</td>
</tr>
<tr>
<td>Travel Time to Destination</td>
<td>4 Hours</td>
</tr>
<tr>
<td>Time of Return to Center</td>
<td>2:00 PM April 8</td>
</tr>
<tr>
<td>Call-In Dates &amp; Times</td>
<td>NA</td>
</tr>
<tr>
<td>Group Contact Number</td>
<td>FKs Jumble Village 617 4098 0040, 1800 232 333</td>
</tr>
<tr>
<td>Staff in Attendance</td>
<td>Tom Rootler, Amanda Freeman, Robby Richardson, Paul Quinlan, Sara Hart</td>
</tr>
<tr>
<td>Students in Attendance</td>
<td>All</td>
</tr>
</tbody>
</table>

### II. Transportation

- **Trip Route & Itinerary:** Drive to Mareeba and continue north towards Cooktown, just after Mt Molloy you take a right turn and down the hill to Mossman and north to Cape Trib. On return trip, leave Cape Trib south, turn east on Captain Cook Highway and follow coast past Port Douglas to Smithfield. Turn right on Kuranda Range Road. Turn north at Mareeba and continue to CRS.

#### Monday 5 April
- 7:15 AM: Depart CRS
- 10:30-12:30 AM: Mossman Gorge
- 12:30-1:00 PM: Lunch
- 1:30-3:30 PM: Travel to Cape Trib
- 3:30-4:30 PM: Ice-creamsery
- 4:30-5:00 PM: Set-up camp
- 5:00-5:30 PM: RAP
- 5:30-6:30 PM: Dinner

#### Tuesday 6 April
- 7:30-8:30 AM: Breakfast
- 8:25 AM-4:30 PM: Free-day-23 students using RunRanger
- 5:00-5:30 PM: RAP
- 5:30-6:00 PM: Dinner

#### Wednesday 7 April
- 6:30-7:30 AM: Bird Walk at Daintree & Peppermint Insects
- 7:30-8:15 AM: Breakfast
- 8:15-9:15 AM: Depart for Environment Centre
- 9:15-12:00 PM: Environment Centre
- 12:00-2:30 PM: Jintaiba Boardwalk and Lunch
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00-5:00 PM</td>
<td>Casowary Care Group – viewing restoration sites &amp; nursery &amp; meeting volunteers; FL Lowland Rainforest tourism</td>
</tr>
<tr>
<td>6:30 PM</td>
<td>Dinner</td>
</tr>
</tbody>
</table>

**Thursday 8 April**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00-8:00 AM</td>
<td>Breakfast &amp; pack</td>
</tr>
<tr>
<td>8:00-9:00 AM</td>
<td>Depart for Marrdja</td>
</tr>
<tr>
<td>9:00-10:00 AM</td>
<td>FL Lowland Rainforest</td>
</tr>
<tr>
<td>10:00-11:30 AM</td>
<td>Depart Daintree, Via Kuranda lunch</td>
</tr>
<tr>
<td>3:30-4:00 PM</td>
<td>Warrawook &amp; unpack;</td>
</tr>
<tr>
<td>4:00-5:00 PM</td>
<td>CRS Staff meeting</td>
</tr>
<tr>
<td>5:00-5:15 PM</td>
<td>RAP</td>
</tr>
<tr>
<td>5:30 PM</td>
<td>Dinner</td>
</tr>
<tr>
<td>7:00 PM</td>
<td>Student Meeting</td>
</tr>
</tbody>
</table>

**Vehicles to be Used**

Vehicles to be used: FED, FZB, GYU 1 trailer

**Date of Last Service**


**Date of Last Inspection**

Last inspection – inspected on a weekly basis by Alan

**Drivers**

Drivers = Tom Rottler, Amanda Freeman, Sara Hart, Mike Oatham, Robby Richardson, Paul Quinlans

### III. HAZARD ID. & PREVENTION

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Hazard Details</th>
<th>Preventive Measures</th>
<th>Briefing Done?</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Transit</td>
<td>Vehicle accidents and flat tires.</td>
<td>Wear seatbelts, meet up with all vehicles on stops, carry a spare tire and drive carefully</td>
<td></td>
</tr>
<tr>
<td>Physical or Environmental</td>
<td>Sunburn/Heat Stroke/Dehydration</td>
<td>Drink lots of water, wear lots of sunscreen, wear a hat/long sleeve shirts/stay in shade</td>
<td></td>
</tr>
<tr>
<td>Biological</td>
<td>Snakes</td>
<td>Watch where you are walking, use a torch at night, do not touch or surround a snake</td>
<td></td>
</tr>
<tr>
<td>Social or Criminal</td>
<td>Drowning</td>
<td>Students have taken swim test. Those who did not pass it are not allowed to swim. Spotter on duty.</td>
<td></td>
</tr>
<tr>
<td>Weather Forecast</td>
<td>No stinger nets at Cape Trib and there are crocs in estuary waters, so swimming is these areas.</td>
<td>On optional reef trip, safety protocols are in place by dive company.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Be respectful of people, never walk alone at night in town, remember we are in a foreign country.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weather forecast will be checked before trip.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### IV. EMERGENCY RESPONSE

<table>
<thead>
<tr>
<th>Staff First Aid Training</th>
<th>Level of Training</th>
<th>Certifying Organization</th>
<th>Expiration Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tom Rottler</td>
<td>WFR, CPR</td>
<td>WMA, Amer Red Cross</td>
<td>June 2005, June 2004</td>
</tr>
<tr>
<td>Mike Oatham</td>
<td>Senior First Aid/CPR</td>
<td></td>
<td>Feb 2007</td>
</tr>
<tr>
<td>Amanda Freeman</td>
<td>Senior First Aid</td>
<td>OZ Red Cross</td>
<td>Feb 2006</td>
</tr>
<tr>
<td>Paul Quinlan</td>
<td>CPR, First Aid Basics</td>
<td>Amer Heart, Amer Red Cross</td>
<td>1/05, 8/04</td>
</tr>
</tbody>
</table>

### Emergency Equipment to be Carried
- 3 Van first aid kits with Epi pen
- 1 hiking first aid kit with Epi pen
- 1 extra Water
- Makita Torches
- Satellite Phone

### Nearest Medical Facilities
<table>
<thead>
<tr>
<th>Facility</th>
<th>Location</th>
<th>Level of Care</th>
<th>Contact Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cow Bay Med Clinic</td>
<td>Cow Bay</td>
<td>Medical Clinic</td>
<td></td>
</tr>
<tr>
<td>Mossman Hospital</td>
<td>Mossman</td>
<td>Hospital</td>
<td></td>
</tr>
<tr>
<td>Royal Flying Doctors</td>
<td></td>
<td>Doctor</td>
<td>4053 5419</td>
</tr>
<tr>
<td>Cape Tribulation</td>
<td>Nurse</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Emergency Resources

#### Organization
- SFS Support Center: Salem, Besper
- Robyn Wilson: Smithfield, CRS
- Bill Frederick: Home
- Alan Hopper: Home
- Chris Gibbons: Home
- Emergency: Fire, Ambulance, Police

### Evacuation Plans for Major & Minor Injuries
- Transport: Will use SFS vehicles for minor emergencies. Major emergencies dial 000 or the Royal Flying Doctor Service.

#### Group Management & Leadership
- Tom has his Wilderness First Responder, CPR and will be in charge of any emergency situations.

### Communication
- Ring 000, and the Center ASAP by phone
- Nearest Public Phone: on site
- Center Phone Number: 4095 3656
Appendix G: SAM Meeting Agenda

**MEETING OBJECTIVES**

- To gear up for the roll out of the new Safety Matrix for Spring ’04
- To complete operational RAMPs for each center
  - Translation of Operational Objectives into center specific presentations for orientations
  - Look at center specific rules and protocols
  - Look at hazard id and overall mitigating strategies

- To review education strategy for Safety Matrix

- To look at center Crisis Management Plans

- To focus on specific issues, i.e., muggings, sexual assault, eating disorders, etc.

- To look at “free time”

- To focus on the SAM’s role in the alumnae recruitment process

- To share strategies for managing student behavior

- To troubleshoot emergent issues and identify what needs to be in place for Spring ‘04

- To share strategies for local community building and interaction.

- Brief for spring crisis simulation.
Appendix H: Safety Curriculum

D. Operational Objectives

These are the common-sense agendas designed to support our SFS teams’ functioning safely and accomplishing our work.

1. Safety and Security
2. Academics
3. Local Community Relations
4. Legality
5. Liability
6. Foreign Environment for Students
7. Ability of Centers to Conduct Business
8. Ability of SFS Headquarters to Conduct Business

1. **Safety and Security**- Here at CRS we have to maintain an emotionally, physically, and personally safe environment for all staff and students. We want to acknowledge the risks we take in our programs, educate ourselves and modify our behaviour to limit our risk. If a student’s behavior is endangering the safety of others, we may take disciplinary action. For example, if a student strays from the group on a hike during a field trip and gets lost, s/he is endangering both him/herself and his/her fellow students.

2. **Academics**- The fundamental aim of SFS is to deliver top-notch academic programs and create a respectful space for academic exploration. Learning the intricacies of rainforest restoration is what this semester is all about. We pride ourselves on the strong academic program we deliver and the success of our students. All students must be able to participate actively and safely in classes and field exercises, which includes being awake and well-rested for each activity. Students must also bring all appropriate equipment and safety gear on all academic exercises.

3. **Local Community Relations**- Without the strong relations our staff and previous students have built, we would not be able to function on the Tablelands. All of our actions have the ability to expand or limit opportunities for future SFS students. In addition, staff will be living in these communities long after you leave and your behaviour can positively or negatively their ability to live in this community.

4. **Legality**- The Center cannot operate if its participants partake in illegal activities. For this reason, students are not allowed to do anything that is illegal under all pertinent Australian,
international, and local laws. For example, if students are caught using illicit drugs, they will be expelled from the School.

5. **Liability**- We operate in a sue-happy society. If the school were found liable for a serious accident or death, we would most likely have to close our doors and would fail in our mission. We strive to treat you as the adult that you are and let you take responsibility for your own actions. BUT, we may be liable for some of the consequences of your actions while you are a student at SFS. You expect more from SFS than you do from your home university, and we ask more of you than your home school might.

6. **Foreign Environment for Students**- Welcome to OZ, we ain’t in Kansas anymore. There are obviously environmental differences between the US and OZ. Cultural differences, though more subtle, do exist. We want to help you have a positive experience in OZ that allows you to be culturally appropriate in your actions and make informed decisions.

7. **Ability of Centres to Conduct Business**- The Centre for Rainforest studies has hundreds of alumni and we hope to have hundreds more. All of our actions have the ability to continue the success of the centre or lead to its demise. For example, if a student were to habitually return back to the Center late after curfew and staff/faculty members were staying up late searching for missing students, this would interfere with the Center’s ability to conduct its normal business.

8. **Ability of SFS Headquarters to Conduct Business**- SFS has over 11,000 alumni and hopes to have thousands more. Our actions can positively or negatively affect the ability of the School to continue operation. SFS must have extensive insurance policies in place in order to operate its Centers in remote parts of the world. If anything happened that compromised the ability of headquarters to secure affordable insurance policies, it would no longer be able to conduct business. For example, if students were allowed to drink on campus, the School’s insurance policy would skyrocket and reduce the school’s ability to conduct business.

E. Safety Educational Outlines and Lesson Plans

**First Night**

- Use your torch when hiking in the dark at CRS so that you can see the snakes and spiders. Very good idea to wear shoes when walking to and from the Cabins to the Centre.
- Drink a lot of water to help minimize the effects of jet lag. Water is potable from all taps, except the spigots outside the cabins. Water at the Centre building is filtered three times.
- Try to stay up until at least 8:00 PM the first night to adjust to Aussie time schedule.
- Sign in/Sign out board under the Veranda by the SAM’s office. Sign out any time going for a run/hike or going off site. If you want to run right tonight or tomorrow, access road is the best first run.
- If you have problems tonight, use the intercom phone to call the Dongas or other staff member.
Policies Presentation

- Why have policies? To fulfill mission statement of school, keep us all safe, keep SFS in business
- Staff members discuss operational objectives
- CD presents schoolwide policies
- SAM presents centre specific policies
- CD outlines progression of consequences- verbal, written, probation, expulsion
- SAM stresses that although there may be no policy prohibiting a behavior, there may be consequences if the behaviour compromises an operation objective.
- Different expectation for staff
- We operate under many of the same policies
- School does not have same responsibilities for us, so different rules apply
  - Staff allowed alcohol on site and visitors
  - May not be at every meal when on KP
  - We love our jobs and living in community, but please respect our privacy and living space
  - Office hours and locking up
  - Staff vehicles-for their own use, not available for rides to and from town, etc.
  - Your presence in community-we will live here long after you leave
- Academic Expectations
  - Full attendance and participation-in all areas
  - Sleeping is easy to spot
  - Know the schedule
  - only official schedule is by computer room
  - Timeliness-we will leave without you
  - Plagiarism
  - Staff accessibility for questions, 1-on-1s
  - Respect others study space-noise etc
- Group expectations
  - Residential living-intense, but often a highlight of the semester
  - Be flexible and accommodating, but make sure you get what you need
  - If you don’t like what someone does, give respectful feedback
  - Weekly student meetings-use for bringing up group, centre issues, provide us feedback
- First Aid & Emergencies
  - SAM is health/safety goto person
  - Living in small community, hygiene is key
  - Need 1st aid? SAM if around, if not, staff on duty
  - Please report even minor 1st aid incidents
  - Always carry compression bandages and other first aid kit if you have

Risk Education Session
- Introduction
In field-based science, risk is inherent in the job. Part of our job as field scientists is dealing with safety and planning for risks. We must plan for risks in order to reach our academic, personal, and programmatic goals.

Preparation for safety minimizes injury/illness and lost program time – we want to focus on prevention of risks.

Our approach to risk management: we give you the best information we have so that you can make safe decisions – this is a team effort. We are all working together – both staff and students must take responsibility to make this program the best experience it can be for all involved.

A large part of the SFS experience is the dynamic of the group. Sometimes personal issues will interfere with group living, but we want everyone to be in the mentality of putting the safety and happiness of the group first. We want you to look out for each other and to work together to foster a strong sense of community in this group.

A Reading About Risk in the Outdoors—this excerpt comes from the *Outward Bound Wilderness First-aid Handbook*, which nicely introduces the importance of awareness of where you are with respect to your personal and your group’s safety:

... we all understand that in many worthwhile activities there are real dangers. In outdoor courses, we strive to balance these dangers against the joys and benefits of intimate experience with wild country and natural forces. This is the sensitive balance known as “acceptable risk.” Hazards are not sought for their own sake, but neither are they completely avoided. For backcountry travelers, a critical part of striking the balance is the ability to handle dangerous situations when they occur. This includes a logical, commonsense approach to injury and illness that takes into account the unique aspects of the wilderness setting.

In our “civilized” settings we delegate this responsibility to trained professionals. It is the business of paramedics, nurses, physician assistants, and medical doctors to recognize medical emergencies and know what to do about them. This system allows everyone else to get by with knowing very little and yet still keep the risk of daily living within the range of “acceptable.” But once one leaves the civilized world behind, the situation changes dramatically. Techniques and equipment developed for the emergency room or ambulance are often inappropriate or unavailable outside the hospital. In many wilderness scenarios a team of sled dogs would be more useful than a team of surgeons.

Brainstorm: What risks are present here that are not present in daily lives back home? Students come up with a list of risks

**Specific Briefings**

**SUN EXPOSURE**

Queensland has the highest skin cancer rate in the world and most students are likely to get burnt at some point during the semester. Students and staff are advised to use
waterproof sunscreen with an SPF of at least 15 and to cover up when out in the sun by wearing a hat with a brim, sunglasses, and lightweight, long-sleeved, light colored clothing. Sunscreen should be reapplied every 2 hours or more.

**How the Sun Burns us**- Ultraviolet radiation is broken into three types of wavelengths:
- UV-A: This is the longest wavelength and is not absorbed by the ozone. It penetrates the skin deeper than UV-B.
- UV-B: Responsible for sunburns. It is partially blocked by the ozone layer.
- UV-C: This is totally absorbed by the earth's atmosphere; we encounter it only from artificial radiation sources.

The Queensland Bureau of Meteorology publishes a UV index as part of its daily weather report. Forecasting the intensity of UV at ground level takes into account information on the time of day, date, latitude, altitude, presence of haze and ozone concentrations. The forecast radiation intensity is converted to an index that estimates the maximum UV intensity for midday - assuming cloud-free skies. A reduction factor can then be applied to account for cloud cover.

Cloudy days deceive many people into thinking the danger of UV radiation is minimal. Cloud affects the strength of radiation reaching the ground in complex ways. Most clouds block some UV radiation, but the degree of protection depends on the type and amount of cloud. Some clouds can actually increase the UV intensity on the ground by reflecting and refracting the sun's rays. People can also be caught unawares when a small break in an overcast deck of clouds allows a brief burst of intense radiation to reach the ground.

### UV Index and Danger Category

<table>
<thead>
<tr>
<th>UV INDEX</th>
<th>DANGER CATEGORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 2</td>
<td>Low</td>
</tr>
<tr>
<td>3 to 5</td>
<td>Moderate</td>
</tr>
<tr>
<td>6 to 7</td>
<td>High</td>
</tr>
<tr>
<td>8 to 10</td>
<td>Very High</td>
</tr>
<tr>
<td>11+</td>
<td>Extreme</td>
</tr>
</tbody>
</table>

The UV index for Cairns is 17 on a clear day, 12 on a day with broken cloud cover and 7 on an overcast, all of which are considered high danger or above.

**How Sunscreen Works**-
Sunscreen works by combining organic and inorganic active ingredients. Inorganic ingredients like zinc oxide or titanium oxide reflect or scatter ultraviolet (UV)
radiation. Organic ingredients like octyl methoxycinnamate (OMC) or oxybenzone absorb UV radiation, dissipating it as heat. Some sunscreen contains paraminobenzoic acid (PABA) or a similar compound that forms a layer over the skin to reflect UV rays.

- Some sunscreens protect us from the two types of damaging UV radiation: UV-A and UV-B. Both UV-A and UV-B cause sunburns and damaging effects such as skin cancer.

- Sun Protection Best Practices
  - Always bring along an extra longsleeve t-shirt and long pants for sun protection on outdoor trips
  - Apply sunscreen well before going out in the sun (30 minutes to an hour) so the active ingredients have time to bond to your skin
  - Clouds do not block UV rays
  - Insect repellent applied over sunscreen will reduce effectiveness by 1/3 because it will dissolve part of it.
  - Salt water makes skin even more susceptible to burning
  - Reapply sunscreen frequently, especially when in the water.

Purchasing Sunscreen-

- The Sun Protection Factor or SPF measures how effectively the sunscreen formula limits skin exposure to UV-B rays that burn the skin.
- The higher the SPF the more protection the sunscreen will provide against UV-B rays. SPF does not measure UV-A.
- If you are looking for UV-A protection, the experts recommend that you purchase a product that has broad-spectrum protection.

DEHYDRATION, HEAT EXHAUSTION AND HEAT STROKE

These are three additional problems related to exposure to the sun. Students and staff are encouraged to make a conscious effort to replace fluids lost through perspiration. This includes bringing two one-liter water bottles each on field trips and hikes and carefully monitoring their exposure to the sun. You can lose up to 2-3 L water per hour – drink lots of water! You should drink at least 1 liter of water per 50 lbs of body weight per day.

- Monitor the color and frequency of urination
- Weather can be variable – be prepared with layers and rain gear at all times.
- Alcohol and caffeinated drinks (coffee, tea, coke) increase your potential for dehydration.
- People who drink only when thirsty are usually only replacing about 2/3 of the water they lose
- Soldiers in the Arabian desert during the Gulf War were made to drink 11-19 liters of water per day!!
- The body can absorb only about 1.2 Liters of water per hour, so drink slowly (3L is nausea threshold)
Keep eating while drinking to avoid hyponatremia (not enough nutrients).
Symptoms of heat exhaustion: dark yellow urine, infrequent urination, flushed skin, elevated pulse, mildly altered mental status (dic-head syndrome, dizzy, irritable, clumsy).
Symptoms of heat stroke: slow cooker. core temp rises above 105F. severe changes in mental status.

HUMIDITY
High humidity in the rainforests decreases rate of evaporative transfer of heat from the body so contributes to heat illness. Additionally, humid environments cause wounds to heal slowly, contribute to infections. Dust mites thrive in humidity and damp houses increase the risk for mold, which can exacerbate asthma and allergies. Proper wound management is important in the tropics.
- Clean/scrub wound with soap & water
- Apply Betadine and let site until dry
- Rinse wound to remove Betadine, otherwise it causes excessive drying.
- Bandage wound and protect from water in shower and during field exercises.
- Change bandage daily
- As wound heals, expose to fresh air to assist wound drying and clotting.
- Warm water soaks/compresses prevent infection and draw out existing infection

CYCLONES
Each year from December to April it is possible one or more Cyclone's will occur in North Queensland. The last Cyclone to create a bit of excitement was Rona in 1999, she knocked down a few trees on the access road and many trees in the Lake Eacham area. Our main concern is destructive winds and flying debris that cause injuries and damage buildings. If we plan carefully and act suitably, these concerns can be minimized.

Cyclones are monitored by the Queensland Department of Meteorology and we monitor tropical depression and cyclone activity through their website. Cyclones and tropical storms are identified when they are well off-shore and we will have a several day window from when we learn of a a cyclone to when it hits the coast. During a Cyclone we remain on site and move down to the main Centre building as it is the safest building on site. We have a detailed Cyclone Action plan and in the event of a cyclone everyone will be briefed on the protocols.

GETTING LOST
There is a significant risk in any semester that a student or staff member may become lost while working or walking in the thick rainforest surrounding CRS or at various field sites. Because much of the rainforest at the Centre is second growth, it is very dense. People have wandered just several meters off a track and not been able to find their way back unassisted. The consequences of wandering off trail and getting lost in the forest surrounding the Centre are significant. Depending on the direction you were to walk, you could trek for days without finding a road or landmark to find your way. There are many old logging tracks that look like hiking trails. The only marked tracks near the Centre are the site walk, the Cathedral Fig and the Gillies Overlook.
If you want to do any bushwacking off track, then you must go with at least three people and must give detailed information on your plans to the staff of the day. You must also be adequately prepared with compression bandages, water, food, flashlight, adequate clothing, a compass, a map (if available) and most importantly, someone who knows how to use a map and compass.

If you do get lost…

1) Stay in the vicinity of where you first realized you were disoriented. If you do explore possible routes back to camp (trail, etc.) look back a lot and mark your trail so you can backtrack to your last point.
2) Conserve energy by relaxing when you can
3) Look for ways to signal help including hanging up bright objects, making noise, building smoky fires. Three of anything means SOS (We use cooeees at The Centre for Rainforest Studies).
4) Wander out a little and place arrows pointing to your spot. Use rocks, broken branches, dirt, or anything you can arrange into a geometric pattern. Geometric patterns are easier for searchers to notice than most other attraction devices.

DENGUE FEVER
Dengue fever is endemic with periodic epidemics in parts of northern Queensland. Reported cases in North Queensland range from almost 700 in 1993 to 62 in 1999. Dengue viruses are transmitted by mosquitoes, which are most active during the day. These vector mosquitoes are found near human habitations and are often present indoors. Epidemic transmission is usually seasonal, during and shortly after the rainy season.

Dengue fever is characterized by sudden onset, high fever, severe headaches, joint and muscle pain, nausea/vomiting, and rash. The rash may appear 3–4 days after the onset of fever. Infection is diagnosed by a blood test that detects the presence of the virus or antibodies. The illness may last up to 10 days, but complete recovery can take 2–4 weeks. In addition to the classic Dengue form, children under 15 and some adults could develop life threatening Dengue Haemorrhagic Fever. Dengue is commonly confused with other infectious illnesses such as influenza, measles, malaria, typhoid, leptospirosis, and scarlet fever. Dengue cannot be passed from human to human.

The symptoms of dengue can be treated with bed rest, fluids, and medications to reduce fever, such as acetaminophen; aspirin should be avoided. Travelers should alert their physician of any fever illnesses occurring within 3 weeks after leaving an endemic area. There is no vaccine for dengue fever; therefore, students should avoid mosquito bites by wearing long loose fitting clothing, remaining in well screened areas and using mosquito repellents on skin and clothing.

LEPTOSPIROSIS
Leptospirosis was first recognised in Queensland in 1934 among cane cutters of Ingham. It is an acute febrile disease occurring in humans and animals worldwide. The disease is caused by
different types of one bacteria and is spread through the urine of mammals. Leptospirosis occurs in all parts of Australia with half of the cases occurring in Queensland. There were 137 reported cases in 2000 and there was one death of a 20 year old banana picker in 2004. The disease usually affects farm workers and outdoor people.

The disease is potentially lethal with involvement of the hepatic, renal and central nervous systems. Symptoms of leptospirosis can include fever, malaise, jaundice, skin rashes, muscle aches, vomiting, abdominal pain and joint stiffness. In very rare cases, it can be fatal. Antibiotics are helpful in the treatment of the disease. About half of those who seek treatment require hospitalization. The illness can last from several days to weeks with treatment and months without.

Leptospirosis is contracted through the urine of mammals, via direct contact with the animal or through urine-contaminated vegetation, soil or water. Infection is through cuts or abrasions or permeable skin i.e. eye linings. The disease is almost never passed from person to person. The best prevention is to COVER, WASH AND CLEAN UP. Students are warned to stay away from both types of mammals or areas in which they may have urinated. All cuts and bites should be properly dressed, and gloves should be worn when handling dead or live mammals. Proper foot protection should also be worn in suspect areas. After exposure to possible infection, students should do a thorough washing of skin and cuts with warm soapy water.

ROSS RIVER VIRUS
Ross River virus disease is caused by the bite of an infected mosquito. It occurs widely across Australia. In Queensland there are an average of 2600 cases reported each year, with many more unreported. Most cases in FNQ occur in February through May due to increased mosquito breeding during this time. No students have been diagnosed with Ross River, but CRS faculty have in the past.

Symptoms of Ross River include joint pain and swelling, red rash on trunk and limbs, fever, tingling in palms of hands and feet. The joint pain can be severe and can last two to four weeks. Because it is a virus, there is no cure but symptoms can be treated with rest, and pain/anti-inflammatory medication. Recovery from Ross River is assured but full recover may be prolonged in some people. People who are infected with Ross River virus develop life-long immunity. The virus cannot be passed from human to human. Students should avoid mosquito bites by wearing light colored, long loose fitting clothing, remaining in well screened areas and using mosquito repellents on skin and clothing.

GIARDIA

Giardiasis is a form of gastroenteritis (gastro) caused by a parasite called *Giardia lamblia* which lives in the bowel. Giardiasis can affect anyone but is more common in infants, children and adults aged 20 to 40 years. *Giardia* parasites are also found in wild, pet and farm animals. Untreated water that comes directly from lakes and rivers may also contain *Giardia* parasites.
Symptoms usually take an average of seven to 10 days to develop, but may take as long as three weeks or occasionally longer. Symptoms may include, acute or chronic diarrhea, weight loss, fatigue, abdominal cramps. Most people who become infected with Giardia parasites do not develop symptoms but can still spread the infection to others.

People with Giardia parasites in their faeces can infect others if they do not wash their hands properly after going to the toilet. Contaminated hands can then spread the parasites to food that may be eaten by other people or to surfaces that may be touched by other people. Giardiasis can also be spread by drinking contaminated water.

The spread of giardiasis can be reduced by having the illness diagnosed and treated by a doctor. Common treatment is with metronidazole. All staff and students should wash hands thoroughly after going to the toilet or handling animals. Additionally, all bathrooms and toilets should be cleaned thoroughly on a regular basis. Students should not drink untreated water at any time, no matter the source.

CRYPTOSPIROSIS

Cryptosporidiosis is a type of gastroenteritis (gastro) caused by the parasite Cryptosporidium. Symptoms can take between one and 12 days to develop after infection. Anyone can become infected with Cryptosporidium parasites. Cryptosporidiosis occurs when the parasites are taken in by mouth. This can happen directly through eating contaminated food and water or, more commonly, from person to person or animal to person.

Cryptosporidium parasites live in the bowels of humans and in wild, pet and farm animals. People with cryptosporidiosis have the parasite in their feces. The infection spreads when:

- Infected people do not wash their hands properly after going to the toilet. Contaminated hands can then spread the parasites to food that may be eaten by others and surfaces that may be touched by others.
- Hands become contaminated while handling infected animals or changing the nappy of an infected infant.
- People drink contaminated water, unpasteurised milk or swallow contaminated swimming pool water.

Cryptosporidiosis symptoms may last several weeks and can include watery diarrhea and stomach cramps. Cryptosporidiosis usually causes mild symptoms. It can, however, be a serious infection for people whose immune systems are already weakened by disease.

Treatment usually involves rest and antibiotics. In severe cases, patients may need fluid and electrolyte replacement therapy and anti-diarrhea agents.
To prevent the spread of the infection it is important to wash hands properly, especially after using the toilet and handling animals. Use paper towels when drying hands, especially if you will be handling food. It is also important to clean bathrooms and other surfaces regularly.

STINGING TREES
The leaves of stinging tree, *Dendrocnide moroides*, are covered with tiny silica hairs which inflict a painful sting that lasts from several days to several months. Stinging trees and nettles and other noxious plants do exist on site and in surrounding forest and riparian areas. The large heart shaped leaves have toothed margins and are covered in tiny needle-like hairs. Any contact with the leaves of this plant will result in an extremely painful sting wherever the needle-like leaf hairs penetrate the skin. The pain associated with such a sting may persist for months as the needle-like hairs slowly release the toxin they contain. There is no effective treatment for the sting except time. Students are warned not to touch affected areas or hairs can spread to over a larger area. Students are taught to identify the most dangerous plants in their first few days at the centre and are advised (but not forced) to wear long-sleeved shirts and pants when walking in areas likely to have stinging trees. Though local chemists disagree, some outdoors people advise using masking tape, instant leg wax strips or hair removal wax to remove hairs. Each hiking first aid kit contains wax strips. Evacuation to a local hospital may be necessary for severe cases.

LEECHES
We will frequently encounter leeches in the field, particularly during the wet season and near rivers. Although they carry no diseases, some people experience persistent local itching and swelling if bitten. Typically, leeches feed by making a series of small cuts on the skin and then ingesting the blood. An anticoagulant in the mouth of the leech prevents the blood from clotting. If they did not have anti-coagulant in their saliva, the wound would clot before they could finish their meal. Without the anticoagulant, their blood meal would clot inside their digestive systems they would turn into little sausages. To further aid feeding, leeches inject histamine into the host's blood vessels to dilate capillaries and encourage blood flow.

Leeches on the skin should be removed with the fingers and disposed of. Be sure that the leech is not hiding on your hand, or it may reattach elsewhere. Leeches on the eyes should be left until they have finished their meal and disengage themselves. Pulling leeches from the eye can result in damage to the eye surface. Because of the anti-coagulant they inject, leech bites can bleed long after they have been removed. Leech bites should be treated like any other wound as blood can potentially transmit Hepatitis or other infectious diseases. Clean up split blood with bleach, and don’t pick up a full leech unless it is yours or you have rubber gloves on.

PARALYSIS TICKS
Ticks are fairly common during the dry season. Most are harmless and can simply be removed with tweezers. **Paralysis or Shell backed ticks** at CRS can carry a paralytic fever, which can kill small mammals and also cause local discomfort, illness, paralysis, and rarely, death in humans. No serious problems with these ticks have been experienced by SFS students. Under normal
circumstances and health, victims suffer only mild discomfort. Twenty human deaths in Australia have been attributed to the tick. The anti-toxin is available in Atherton.

The natural hosts of *Ixodes holocyclus* include bandicoots, wallabies, kangaroos, and other marsupials. Generally these native hosts are not affected by the tick’s toxin. It will also attach to humans, cattle, sheep, horses, dogs, cats, poultry, and other animals. *Ixodes* is a three-host tick, meaning that each tick goes through the three stages of LARVA, NYMPH, and ADULT, attaching to and feeding on one host during each stage, then falling off and moulting before re-attaching to the same or more often a different host for the next stage.

The ADULT FEMALE tick, when fully fed, drops to the ground and lays from 2000 to 3000 EGGS before she dies. The eggs hatch into LARVAE. Unfed LARVAE will attach to an available host and once attached they feed (suck blood) for 4 to 6 days before dropping to the ground, to moult into nymphs. A week after moulting the NYMPHS reattach to a host, feed for 4 to 7 days during which the body engorges, the nymphs then fall off. The nymph moults into an ADULT attaches to a passing host. The FEMALE ADULT feeds and drops to the ground to lay eggs, thus beginning the cycle again. The adult female is the only life stage that injects toxins and she does not inject detectable amounts of toxin until the 3rd day of attachment to the host, with peak amounts being injected on days 5 and 6. The engorging adult female tick injects a holocyclotoxin (and possibly other toxins) into the host animal. This toxin can cause paralysis by inhibiting the release of acetylcholine in neurons.

The ADULT MALE after crawling on to the host does not attach or suck blood, but spends its time wandering around on the host looking for a female with which it can mate. The adult male is yellowish-brown, flat, oval, and smaller than the female.

To actually remove a live or dead tick, if it is too small to grasp with your finger and thumb, use a pair of fine tweezers or Allis forceps. If by any chance the head of the tick stays in the skin scratch it out with your fingernail. The head will not inject any more poison once the body is removed, but it may cause a foreign body reaction similar to a splinter. The spot where you remove a well attached tick is likely to leave a "crater" or small hole in the skin. This will heal
eventually. The local effects of a tick attachment are uncomfortable, but fairly insignificant compared with the potential fatal systemic effects caused by the tick toxin throughout the body.

SPIDERS
North Queensland has some of the highest diversity of spiders in the world. Several Queensland spiders are known to cause mild to severe local and systemic reactions. Additionally, many spiders have not been named nor their bite effects studied. Local spiders causing the strongest reactions are listed below are some of the effects of the worst spiders in the area.

The best prevention for avoiding spider bites is to shake out footwear before putting on, stomping on gloves before putting on and avoiding placing hands or feet in where they cannot be seen. For most Queensland spiders the best first aid it to stay calm to slow the blood flow through the body, ice the bite area to reduce swelling and limit toxin travel.

Despite the availability of an effective antivenom, correct and immediate first aid is an essential requirement for funnel-web spider (and mouse spider) envenomation. The recommended first aid technique is pressure/immobilisation (as for snake bite) and this must be done as quickly as possible.

To be transported to susceptible tissues and organs, venom injected by the fangs into the sub-surface tissue fluid space must first get into the blood stream. It does this via the lymphatic system, a tenuous network of drainage vessels whose valves allow fluid to travel forward only, propelled by the intermittent squashing effect of muscle movement. The vessels progressively coalesce and eventually empty into the bloodstream. Because the toxic funnel-web venom molecules are quite small, they can pass relatively quickly through the lymphatics. The main job of first aid is to prevent this from happening. The pressure/immobilisation technique (as for snake bite) does this by compressing surface tissues and reducing muscle movement, so greatly slowing the lymphatic flow.

Spider bites usually take place on a limb. A pressure bandage should be applied as soon as possible after a bite has occurred. This should be applied as tightly as for a sprained ankle, starting from the bitten area and binding the entire limb above the bite. A rigid splint should be bound onto the limb to prevent limb movement. The patient should be kept as quiet as possible and medical attention sought. If possible, keep the spider for positive identification.

Due to the number of unknown species and effects, all victims of spider bite should seek medical attention. Local medical clinics and hospitals have anti-venom for the most toxic spiders.

<table>
<thead>
<tr>
<th>Spider Name</th>
<th>Effects</th>
</tr>
</thead>
</table>

61
<table>
<thead>
<tr>
<th>Spider</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Black house</strong></td>
<td>possible systemic involvement and tissue damage</td>
</tr>
<tr>
<td><strong>Brown widow</strong></td>
<td>mild to severe local and generalized pain</td>
</tr>
<tr>
<td><strong>Funnel-web</strong></td>
<td>strikes vertically like snakes, severe effects, possibly death without antivenom. Muscular trembling is a symptom of bite. Apply crepe bandage (pressure wrap).</td>
</tr>
<tr>
<td><strong>Mouse</strong></td>
<td>does not let go, severe reactions rare, systemic symptoms require funnel web antivenom</td>
</tr>
<tr>
<td><strong>Redback</strong></td>
<td>more common in dry areas, effects variable-mild to death without antivenom</td>
</tr>
</tbody>
</table>
SCRUB ITCH
Scrub itch is the irritation caused by the bite of a small orange-red mite called a Trombiculid larva. This animal is the same animal order as other mites and ticks (Acarina). Various species are found around the world and are known under various names as Harvest Mite, Chiggers or Velvet Mites. The mite is active in the summer months in all rainforest areas, particularly above the 300 metre altitude, where rain is more frequent during this period. North of Cairns and into New Guinea, the parasite carries Scrub Typhus. Scrub typhus is a rickettsial disease caused by the bacteria Orientia tsutsugamushi and is a potentially life threatening complication of the bite. Between 1991 and 2001, there were 9 reported cases and 1 death in the Northern Territory.

Eggs are laid in the soil and, on hatching, the larvae, which are 0.2mm long and scarcely visible to the human eye, climb up grass or other low vegetation. When an animal, including humans, brushes past the plant the larvae drop and, if successful, land on fur or clothing whence they scramble to secluded areas or high perspiration zones.

Typically, humans are bitten at sites where the mite can get entry: the collar line, belt line and tops of the socks. The favoured sites are the armpits, pelvic region and calves of the legs. The mite secretes a saliva which dissolves the upper layers of skin - the resulting fluid being sucked up. This process rapidly produces a very itchy, angry, red lump with the mite continuing the process for several days. Itching, or abrasion, can cause secondary infection, or possibly it causes the mite to relocate to another site and the process recommences. After a few days of feeding, the larva drops off and for the rest of its life cycle is no longer parasitic on warm-blooded animals.

Prevention is the best recourse and DEET-containing, Citronella Oil or Tea Tree Oil insect are effective. The liquids must be applied to the skin at places where the mite can gain access. Putting these fluids on clothing seems to be ineffective.

If you have been bitten, an over-the-counter lotion/insecticide will kill the mite. If the itching is really severe, then medical advice might be necessary and the best relief will be to take some
antihistamine orally. Rubbing anti-itch creams on the lumps is more likely to aggravate the skin reaction. Symptoms of scrub typhus usually occur within 1-2 weeks of being bitten. They may include fever chills, sweating, headache, cough, swollen glands and dull red skin rash. The bite may ulcerate and become red with a black scab. Diagnosis is made by a blood test. Treatment with antibiotics is very effective and infected persons often require hospitalization.

OTHER STINGING INSECTS
Bees and wasps exist in low numbers and are most commonly seen in the eves of Centre buildings. Students who know they are allergic are instructed to always carry their epi-kits. CRS also keeps van first aid kits in the centre building, donga equipped with an epinephrine syringe and three hiking kits equipped the same way.

SNAKES
Several species of venomous snakes inhabit Queensland and some of these may be found on our property and most field sites. In reality the snakes we do have are very timid and will avoid humans whenever possible. The risk of snakebite is extremely low and expert treatment is readily available. There are approximately 3000 cases of snakebite reported in OZ each year, with 10% deemed serious. You are ½ as likely to die from snakebite in OZ as USA, approximately 0.5/million people die in OZ each year from serpents. A person would be most likely to die from snakebite in Sri Lanka where the death rate from envenomation is ~45/million people.

The risk involved in each of the venomous snakes involves several factors;

- Aggressiveness- if disturbed, how likely it is to attack
- Toxicity- used based on how many rats a standard envenomation could kill
- Dose- the actual amount of venom the snake injects when it strikes
- Fang Length- the longer the fang, the more likely the venom is to reach larger blood vessels
- Encounter rate- how often do humans normally encounter the species

There have been sightings potentially dangerous snakes at both the CRS property and many of our field sites. Here are a few of the species, their preferred habitat, effects and photo.

Neurotoxins affect the peripheral nervous system, causing drowsiness, paralysis and difficulty in breathing.
Mytotoxings destroy muscle tissues, resulting in weakness and kidney malfunction.
Haemotoxins affect the blood by increasing clotting (coagulant) or bleeding (anticoagulant) or destroying blood cells (haemolysis).

Students are briefed on the appropriate response to snakes when they are encountered and shown the appropriate first-aid techniques to use if snakebite is suspected. Common poisonous varieties include: Brown snakes & Red-bellied Black snakes. Toxic varieties include: small-eyed black snakes, brown tree snakes, and Yellow-face Whipsnakes, which are not considered dangerous.
Highly aggressive and deadly Taipans have been identified on the CRS site. Considerable time is spent in student orientation stressing the danger of snakes, appropriate ways of avoiding and responding to snakes and the correct method for treating and preventing snakebite.

Several species here- eastern brown (h,n), red-bellied black (h, c), coastal taipan (n)

Snake Risk = aggressiveness X toxicity X dose X fang length X encounter rate

- Most likely in Sri Lanka, ~45/million people
- 80% of bites to people trying to catch them
- 1996-2000 at Cairns Base Hospital
- 264 people treated
- 61% positive for venom, 10% with symptoms
- 7.6 patients got antivenom
- 1 patient died (eastern brown)
- ONLY 2 PATIENTS GOT CORRECT FIRST AID!!!

Expert treatment readily available in Atherton/Cairns

Snake bite prevention:

Never put your hands or feet where you cannot see them.
1. If you find a snake in your cabin contact Amanda immediately
2. Don’t handle snakes or poke them with sticks.
3. Wear boots during all fieldwork and field trips and around the CRS site.
4. If encountered give snakes time to get out of your way.
5. Always use a flashlight when walking at night.

What to Do if bitten by a venomous snake:
1. Apply pressure bandage as tightly as for a sprained ankle, over the bite site and on as much of the affected limb as possible.
2. immobilise the affected limb, using a splint if possible.
3. reassure patient and arrange transport to nearest hospital, phone hospital.

What NOT to Do if bitten by a venomous snake:
1. DO NOT try to kill or catch the snake for identification. Venom detection kits are available at Australian hospitals.
2. DO NOT wash the bite site as venom residues can be used in venom detection kits.
3. DO NOT incise [cut] the bitten area.
4. DO NOT release a pressure bandage. Hospital staff will decide when this is appropriate.
5. DO NOT apply cold / ice packs.
6. DO NOT use alcohol, drink or eat any food.
7. DO NOT use any medication without medical clearance.
Appendix I: Center Rules and Protocols – CRS Policies

Curfew-
- On Academic days, if a student chooses to go off site in the evening, they must inform the Staff on Duty and sign out on the board under the veranda.
- The student must return to the centre by the curfew set by the Staff on Duty (normally 11:00PM) and check in upon return to the Centre.

Day off-
- One day off is scheduled each week. Unless informed otherwise, students are free between the completion of the academic day prior to the day off and until the first scheduled activity the morning after the day off. All KP responsibilities must be completed.
- All schoolwide policies must be adhered to during free time.
- If leaving the CRS property, they must inform the Staff on Duty, sign out under the veranda, and leave an itinerary with the Staff on Duty.
- Students must check in upon return to the Centre, normally via a phone call to the Staff on Duty.
- If a student chooses to stay at CRS for the day off, all policies must be adhered to.
- If an SFS staff member organizes an optional activity on the day off, all school wide and CRS policies will be in effect.

Security-
- Vehicles not authorized by the Centre Director, including student rental vehicles, are strictly prohibited from CRS property, including the access road.
- If a student chooses to ride in a private vehicle they must be picked up and dropped off at the end of the access road.
- There is no parking of vehicles at the end of the access road or at the CRS access on Boar Pocket Road. Visitors are prohibited from CRS property without prior Centre Director permission.

Alcohol-
- There may be some free time on field trips during which students may drink if they wish as long as it does not compromise their ability to participate in program activities or the Operational Objectives.
- Relevant local laws: Open containers in public areas are prohibited and the legal drinking age is 18.
- weekly visits to town are provided to allow students to do personal errands; they are not scheduled pub visits. Staff may choose to cancel Atherton visits if they feel it is being abused.

Gillies Highway- running, walking, cycling or hitchhiking on the Gillies is strictly prohibited at all times.

Exploring CRS property-
- Students are allowed to hike/run alone on the access road and trail to Boar Pocket Road.
- Students must buddy up during the first 2-3 trips on the site walk and then can explore the site walk alone.
- For off trail hiking longer than 2 minutes, students must travel in groups of three and register a hiking plan with the Staff on Duty. All students must carry compression bandages when exploring the site walk or hiking off trail.
Kitchen-
- Only the CRS cook is allowed to use the deep fryer or meat slicer.
- Closed toe shoes must be worn at all times in the kitchen.
- Kitchen, food prep, and eating area must be kept tidy at all times. After use, all dishes must be washed, sterilized, dried and stored.

Tools-tools are only to be used after training by SFS staff. Use of motorized tools is allowed only at the discretion of the Site Manager.

Swimming-CRS Policies for swimming during program time or program activities:
1. Students wanting to swim during program time must pass a 100-meter swim test and tread water for 2 minutes.
2. Swimming conditions and area must be OK’d by a staff member beforehand. Students must swim within view of the staff member.
3. Safe swimming areas are decided by the staff member present based on the local conditions and risks.
4. Wading (feet on ground/waist high) is permitted except where the staff determines the conditions to be unsafe.
5. Any time students are swimming during program time, a staff member will be present (not swimming) with a flotation device available.
Appendix J: Incident Report

SFS INCIDENT REPORT

A. Complete all Fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center Name</td>
<td>CRS</td>
</tr>
<tr>
<td>Incident Date and Time</td>
<td>27-11-03</td>
</tr>
<tr>
<td>Reporting Staff Member</td>
<td>Tom Rottler</td>
</tr>
</tbody>
</table>

B. Complete all Applicable Fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victim(s) Name(s)</td>
<td>Male Student</td>
</tr>
<tr>
<td>Where event occurred</td>
<td>On property</td>
</tr>
<tr>
<td>Injury Description</td>
<td>Possible snake bite</td>
</tr>
<tr>
<td>Illness Description</td>
<td></td>
</tr>
</tbody>
</table>

C. Nature of Incident (check all that apply)

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injury</td>
<td></td>
</tr>
<tr>
<td>Illness</td>
<td></td>
</tr>
<tr>
<td>Physical Assault</td>
<td></td>
</tr>
<tr>
<td>Property Damage</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Equipment Failure</td>
<td></td>
</tr>
<tr>
<td>Missing/ Separated Person</td>
<td></td>
</tr>
<tr>
<td>Natural Disaster</td>
<td></td>
</tr>
<tr>
<td>Sexual Assault</td>
<td></td>
</tr>
<tr>
<td>Sexual Harassment</td>
<td></td>
</tr>
<tr>
<td>Theft</td>
<td></td>
</tr>
<tr>
<td>Fatality</td>
<td></td>
</tr>
</tbody>
</table>

D. Activity at Time of Incident (check all that apply)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFS Class Time</td>
<td></td>
</tr>
<tr>
<td>Free Time (not work related)</td>
<td></td>
</tr>
<tr>
<td>SFS Directed Research</td>
<td></td>
</tr>
<tr>
<td>Hike/ Log/ Walk</td>
<td></td>
</tr>
<tr>
<td>SCUBA</td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td></td>
</tr>
<tr>
<td>Traveling</td>
<td></td>
</tr>
<tr>
<td>Mid Semester Break</td>
<td></td>
</tr>
<tr>
<td>SFS Field Trip</td>
<td></td>
</tr>
<tr>
<td>Snorkeling</td>
<td></td>
</tr>
</tbody>
</table>

E. Action Taken

<table>
<thead>
<tr>
<th>Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Aid</td>
<td>Describe treatment: Amanda Freeman wrapped bite area in compression bandage, immobilized arm with triangular bandage</td>
</tr>
<tr>
<td>Emergency Evacuation</td>
<td>Describe: Amanda Freeman walked student from research site to Centre building. Amanda Freeman and Tom Rottler drove directly to Atherton Hospital for advanced treatment.</td>
</tr>
<tr>
<td>Visit Medical Facility</td>
<td>Name of Facility, Doctor/PA/Nurse and details of visit: Atherton Hospital. Dr. Liz Hawkins Hospital followed standard local procedures for snakebites including leaving bite area in place, monitoring heartbeat, and assessing symptoms. They treated wound as an environmental bite and took blood tests/swabbed bite area to run tests for toxins. During swabbing of bite area, two thorns were removed, blood test were negative.</td>
</tr>
<tr>
<td>Emergency Contact Notified</td>
<td>Contacted student's father at 9:30 AM, student contacted him again at 1:00PM and informed him that he was fine.</td>
</tr>
<tr>
<td>Contacted Headquarters</td>
<td>How, when, and who? Called Bill Frederick at home and left message with partner, also left</td>
</tr>
</tbody>
</table>

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F. Factors Involved (Check all that apply)

- Not disclosed in MedForm
- Pre-Existing Condition
- Pre-Course Info
- Politics/Cultural/Language
- Sports/Recreation
- Alcohol/Drug/Medication
- Orientation/Training
- Weather/Terrain
- Animal/Insect/Plant
- Cars/Tracks

G. Narrative (The story/What happened) At approximately 7:20 AM during directed research projects, student was sitting on the ground completing bird surveys. He placed his hand on the ground behind him and felt a sharp pain in his right hand on the fleshy part of the thumb. He pulled his hand away from the ground and scanned the area for snakes/spiders. There were two puncture wounds in his hand approximately .75 inches apart. He finished the bird survey, and 10 minutes after the puncture, informed Amanda Freeman of the incident. She immediately followed procedures for possible snakebite envenomation by wrapping his hand and forearm in a compression bandage and immobilizing his arm with a triangular bandage. Amanda, student and the other two students walked out from the research site to the Centre and arrived at the Centre at 8:10. Amanda and Tom Rottler (SAM) drove student directly to Atherton Hospital (approximately 35 minutes). At the hospital, the staff treated the punctures as possible snake envenomations. They assessed his initial vitals/symptoms and began ongoing monitoring of these. Student did not have any of the symptoms associated with envenomation. Hospital staff told student that though they were doubtful there was an envenomation, but that they recommended treating the injury as one. Student agreed to this and he was admitted to the hospital. They took a blood sample and swabbed the puncture area to assess whether toxins were present. Upon swabbing the area they discovered that the punctures were made by 2 cm plant thorns. This was the first time that medical staff had exposed the puncture site. After removing the thorns and disinfecting the site, student was released from the hospital. Student paid the $220 AUD medical charges himself and the hospital will fax a copy of his charts for insurance reimbursement.

H. Analysis (Why did this happen? Could this have been prevented? What might we do to prevent it in the future?) During time spent in the field students are likely to encounter animals and insects that bite. Throughout the semesters we remind students the best methods to avoid bites; etc. These include using a headlight at all times at night, putting hands and feet only in places that you can see, and carrying compression bandages in case of bites. Had student looked before placing his hand in the leaf litter, he may have avoided the thorns.
In this instance, it did not turn out to be a bite, but I believe and other staff agree that overreacting is better than underreacting. Though I might have eliminated the possibility of snakebite by removing the compression bandage and examining the punctures, this would have helped the toxin spread though the system if it had been a bite. Hospital protocol is not to remove bandages until they get a negative result from a toxin blood and swab test.
Appendix K: Welcome letter to homestay families

From: trottler [trottler@fieldstudies.org]
Sent: Sunday, February 29, 2004 8:37 PM
To: Homestay family
Subject: School for Field Studies Homestay Weekend

Hello Dermot and Christina,

Thank you for participating in our homestay program this semester! The students are very excited about it and the letter below tells you a little about what we are doing and where you come in.

What is the homestay?
The School for Field Studies has been in existence for 20 years and has 5 sites around the world including Costa Rica, Turks and Caicos Islands, Mexico, Kenya and Australia. The Centre for Rainforest Studies in Australia encourages students to explore the rainforests and research diverse ecosystems, apply this knowledge working with local community groups, and examine economic and ecological issues affecting surrounding areas. We also strive to expose students to as much Australian culture as possible and get them involved with the local community which has lead us to initiate a homestay program. Our 3-month semester is an intensive academic and group living experience with one 5-day break for the students. We hope the homestays will allow students to develop relationships with local community members, participate in Australian life and get a change of pace from the day-to-day activities at the centre.

The students come from all over the United States and have diverse backgrounds. They are excited and enthusiastic to be in Australia and learn everything they can but sometimes like to just relax. We hope the weekend will be a mutual learning and fun experience for both you and the student.

Here are the names, course of study and university of the students you will have this weekend.

Student Name, Comparative Literature, University of Southern California
Student Name, Biology, Whitman College

What are you supposed to do with the students?

-We do not expect you to go out of your way for the students. Please continue your weekend as would normally. The students are expected to participate or help out in watching or playing sports, going to town, relaxing, family functions, weekend day trips, chores, etc.

-We do not view students as “free labour” to mow lawns or paint houses, but to participate with
you and your family in your weekend activities.

*Because SFS cannot provide supervision or be responsible for activities that our students may engage in while guests in your home, we ask them not to participate in activities which you or they feel may present a risk to the student's health or safety during their Homestay experience.

**What if there is an emergency?**
We will have staff on call 24 hours/day while the students are away. Centre Director-**Robyn Wilson 4095-2677**, Student Affairs Manager-**Thomas Rottler 4095-3656**. Other staff members may also answer the phone. Do not hesitate to call at any time if there are any questions or emergencies. As always, in life-threatening emergencies, call 000.

**Where do I pick up and drop off the students?**
Pick up will be on Friday evening 5 March from 5:30-6:30. We will provide all the fixing’s for sausage sizzle during that time at Maude Kehoe Park in Yungaburra across from the pub. Please join us for dinner, or collect your students and head off for a dinner of your own! Drop off will be at the same spot on Sunday, 7 March at 4:00 PM.

Thank You,

Tom Rottler  
Student Affairs Manager - Centre for Rainforest Studies

School for Field Studies  
PO Box 141  
Yungaburra QLD 4884  
(07) 4095 3656  
(07) 4095 3633 (fax)

trottler@fieldstudies.org
Appendix L: Homestay briefing

Giving students their assignment

At the same time you send the letter out to the families, it is a good idea to let the students know who their families are. Let the students know as much information about their families as you have. Who they are, kids, pets, jobs, etc. Also, I include activities that past students have done with this family to give them an idea of what their weekend may be like. A week or two ahead of time allows the students time to come up with a thank you gift idea to bring to the family. This is a nice gesture and can be anything from flowers and candy to baked goods, toys for the kids (anything ‘American’ is really good – i.e. rice crispy treats, etc.). I also encourage the students to bring along pictures from home to the homestays because the families like to see them.

Homestay briefing – at the student meeting before the homestay weekend brief the students on homestays.

- show them the letter you sent out to the families, so the students know what the families are told about the homestays.
- Make sure students take emergency numbers with them for both the centre and the CD’s home, and that they know the emergency # 000. If there is an emergency, have the students ring you. If the students feel uncomfortable at ANY time during the weekend, have them ring you.
- What to pack – bring along closed toe shoes for any hiking and also bathing suits. The students never know what the families have planned so they don’t want to be restricted just because they didn’t bring something.
- Pick up and drop off times. Make sure the students know the drop-off time in case their families forget.
Hello Homestay family,

Hope all is well with you. Thanks so much again for hosting a couple of our American during the recent homestay weekend. I hope you enjoyed it as much as the students did. They returned to the Centre with many stories of their weekend. Some very much enjoyed a weekend of relaxation while others were excited to see new areas of the Tablelands and beyond.

To show you our appreciation we want to invite you to dinner at the Centre for Rainforest Studies on Saturday, April 24. Instead of the students visiting your home, you get a chance to see the students’ home away from home this semester. If you could please RSVP by phone @ 4095 3656 or via mail or email that would be great!

Cheers,

Tom Rottler
Student Affairs Manager

Saturday, April 24th @ the Centre for Rainforest Studies

4:30 Pickup at Maude Kehoe Park, Yungaburra
5:00 Students and staff give a tour of the Centre
5:45 Dinner- all food provided by the Centre and prepared by the students and our chef. Food will include meat and vegetarian options, salads, fruit, soft drinks and dessert.
7:00 Buses leave the Centre for Yungaburra
7:30 Drop off families at Maude Kehoe Park, Yungaburra

The road to the Centre is quite rough. It is driveable with passenger cars, but at times they do scrape bottom. For those families who prefer, we will provide transportation in 14-passenger vans to and from Maude Kehoe park in Yungaburra with pickup at 4:30 and drop off at 7:30.
If you prefer to drive your own vehicle, please arrive around 5:00. It takes about 30 minutes to drive from Yungaburra. To get to the Centre from Yungaburra, take the Gillies Highway past the top gate. Watch the numbers on the signposts along the road and turn left at the gravel track at signpost 33 at rural number 2710. We will leave the gate closed, but unlocked. Please close the gate behind you. Follow the track for approximately 2 KM and when road forks, turn right, directly into the Centre.

RSVP

Centre for Rainforest Studies

Community Appreciation Dinner, Saturday, April 24, 5:00 PM

_____ We will not be able to attend the dinner.

If you will be attending,

_____ Number of people who will be attending

_____ Number of people who prefer to eat vegetarian

_____ Number of people who prefer to eat meat

Would you prefer to meet the van at Maude Kehoe at 4:30 or drive yourself to the Centre?

Please call Tom at 4095 3656, e-mail trottler@fieldstudies.org, or mail to PO Box 141, Yungaburra 4872
Group Dynamics- Though not great for budgetary reasons, the group size of 21 students worked very well this semester. It was large enough that the students could develop relations with different types of people and escape those who might be frustrating them. It was also small enough that group activities could be coordinated and every student could participate. Every student could make a contribution to group functioning without getting lost in the crowd. This group got along quite well and it was evident that they genuinely cared for one another and enjoyed spending time together. The many nights making and watching videos, baking in the kitchen, playing cards, having dance parties, cabin nights out and creative cabin parties were evidence of this. Though nearly all of the students came from similar cultural and socio-economic backgrounds, they were diverse in personality and interests. They managed these differences quite well.

Initially, I and other staff were quite concerned about the inappropriate behaviors of one student, especially in regards to intimidating and derogatory comments and actions. I sat this student down and gave him direct one-on-one feedback and surprisingly he was able to modify his behavior and function in the group. Others students were also able to develop methods for giving him feedback and taking his occasionally off the wall comments with a grain of salt.

There were two other students that were more isolated from the group as the course came to a close. One male student was habitually late for activities, and others resented the fact they had to take up some of his slack. He and the other male student in his DR were not on speaking terms at the end of the semester. Additionally, this student struggled with the assessment areas of the courses and consistently turned work in late. Lastly, this student’s romantic interests in another student were not reciprocated, leading to a bit of a bruised ego. In discussions with him late in the course, he said that he enjoyed the overall experience, but had high expectations of himself and was disappointed in both his course marks and how his role in the group developed. The academic faculty made many, many accommodations and I spoke with this student several times in an effort to help him overcome some of his difficulties.

A female student struggled with aspects of the semester. This student felt different from others in the group in that she generally didn’t like to travel and do adventurous activities. She did not deal well with bugs and other annoyances and would obsess over them. At times she seemed quite happy, but when she was feeling down she would completely isolate herself from the group. Her behavior was a bit polar. Most other students had patience with her, while others could be quite direct and honest with her, which she perceived as dislike from them. The other staff and I listened to this student on many occasions and tried help her create strategies for staying happy and comfortable through the semester.

This group did have several subgroups, and though I was worried that they might become exclusive, they did not. One reason for this is that members of the different subgroups were in different cabins. One of the cabins formed an especially strong bond, so individual student were able to relate to both their social group and their cabin group. One subgroup was made up of the party girls. They were fun, loud, friendly, outgoing, and liked to go to the pubs. Another group
was the ‘positive fun ‘group. They like to go to the bars, but also had fun playing cards, singing together and just hanging out. There were a few students who didn’t like to party, but organized group activities like spotlighting and bible study. There were 6 guys in the group and to our surprise; they got on quite well, though they had dramatically different personalities.

Academically, these students surpassed the expectations of the staff. They were all academically motivated. There was a fair amount of procrastination, but they all took their work quite seriously. Additionally, staff noted that the students while not always interactive or inquisitive, were eager learners and obviously enjoyed both the lectures and field aspects of the program. The faculty had difficulty making decisions on which students would present at the community DR presentations because a number of them were nearly equal in high quality.

Committees- Committees were not a great success this semester. We gave the students high expectations of the committees but the realities of the extremely tight schedule made it difficult to find time for committee work, especially during the second half of the semester. There were several positive contributions in the little committee time that we had. One student created a new CRS three fold brochure while another student developed a new CRS specific logo. The environmental education committee, with the help of everyone else, had a successful SFS information and promotion booth at the Yungaburra Community Folk Festival. Lastly, our site committee helped reroute part of our site walk. The nursery contributed needed hands in our reforestation efforts.

I feel my orientation exercises brought the group very close. Right away they started creating memories and having good times, and started to come together as a smoothly functioning team. Though I think it is difficult in the first few days due to jet lag, I would like to incorporate more risk management and cultural training into the orientation. One challenge at our Centre is that we have almost no native born Australians on staff and we are physically isolated from the community. Though we invited the native owners of the centre property to opening, they were not able to attend. In the next semester I would like to incorporate more cultural competence training into the first half of the semester. This should come more easily now that I have more familiarity with Australian culture now that I have been here a few months.

Community Service- Our community service consisted of our volunteer work at Landcare, TREAT and the Wet Tropics Tree Planting Service (WTTPS). On 6 Fridays throughout the semester we split the group into smaller groups and rotated between the above organizations and our nursery and Jungle Farms restoration site. Landcare is a local restoration organization that places most of energy into restoring the riparian habitat along a several mile stretch of Peterson Creek in Yungaburra. The creek supports several pair of platypus and tree kangaroo and is an important tourist draw for the community as it is one of the more accessible platypus viewing areas on the Tablelands. Students primarily did irrigating, weeding, mulching and tree pruning when working with Landcare. Additionally, Dr. Richardson’s DR groups were focused on valuing a proposed expansion to the Lower Peterson Creek restoration and their findings were very appreciated by David Leech, the driving force behind Landcare. The work with Landcare
provides important community service and gives the students interaction with community residents who are passionate about their conservation efforts. Many of the students were inspired at the dedication shown by Landcare volunteers.

Each student had an opportunity to volunteer with Trees for the Evelyn Atherton Tablelands (TREAT). TREAT represents a highly successful partnership between government and a community based tree planting organization. The nursery facilities at Lake Eacham National Park are provided by government funding, but the many thousands of hours necessary to grow rainforest seedlings are provided by committed volunteers. While at TREAT the students spend their time organizing seedling trees, processing seeds, repotting plants and closely interacting with dedicated community members. Lastly, the entire group visited the WTTPS and learned how local shires and the Wet Tropics are contributing to restoration efforts. They participated in general nursery work. This was a new connection for SFS and one that will be quite mutually beneficial in the future.

All of the students also had the opportunity to staff our inaugural Community Promotion booth hosted at the Yungaburra Folk Festival. We set up the booth early in the morning and students rotated staffing the booth throughout the day. Visitors to the monthly markets and the Folk Festival stopped by the booth to stick their head through our cassowary and tree kangaroo mural to have their picture taken. The students also shared how to propagate and grow rainforest seedlings, explained bird banding equipment, re-enacted the Lorax, organized tree kangaroo pouch races (potato sack races) and painted rainforest plants and animals on children’s faces. The day was quite successful, and with knowledge gain from this year and in future years be even more so.

**Safety and Risk Management**- We had no major events this semester but did have several minor incidents. Overall it was a very successful semester in the risk management area. Several students had minor gastrointestinal problems and one in particular had chronic stomach cramps and gas. He visited the doctor two times and on both occasions was diagnosed and treated for Giardia. His symptoms did not improve and he is planning to visit a GI specialist upon returning home.

There were a few minor injuries resulting from slipping on Centre trails. The trails were undergoing some construction and were quite slippery for about a week. One student sat up too quickly in bed and lacerated her head. She visited the hospital and had the wound glued shut.

During a hike up Mt. Bartle Frere one student overexerted himself and was quite nauseous and weak during the hike down. I split his pack contents among the other group members and he was able to walk out under his own power, albeit at a slow pace. We had a very successful hike, though I would take additional staff and exert tighter control over hikers on future. One thing that did concern me was that the satellite phone could not make a connection when I attempted to check in with the Centre to let them know we were going to be delayed.

During DRs we had a student who thought they were bitten by a snake when they rested their weight on their hands while sitting down. We took the most conservative approach and
evacuated the student to the hospital. After monitoring they removed the pressure bandages and found two long thorns were the culprits, not fangs. Dr. Freeman and the other students in the DR handled the situation with the utmost caution and professionalism.

Lastly, during our Chillagoe field trip we visit a popular local swimming hole. There is a rope swing there and both students and staff enjoyed swinging on it. Though the chances are low, it is possible for a student to let go of the swing at the wrong time and land on land or in shallow water. A visit to the swimming hole is much needed as the Chillagoe area is quite hot, but in the future, swinging in the presence of staff will prohibited on future trips.

There wasn’t a single serious breach in policy or rules this semester. To our knowledge there was no drinking by students on-site and they were always very responsible with curfew. I feel one reason for this was that we stated rules and policies in a straightforward and direct manner and then treated the students as responsible adults the rest of the semester. Additionally, the staff, especially the interns and I, generated close relationships with the students. I think that they felt that if they had broken policy they would be compromising our relationships.

The admissions team did an outstanding job screening this group of students. They were academically, physically, and emotionally (for the most part) up to the challenges and opportunities of a semester down under. The medically screening was complete and accurate. Additionally, I received all necessary paperwork in a timely manner. I was impressed with the organization. One thing that I would like in the future is a summary of relevant issues that the staff might have if this could be done confidentially.

To be quite honest, I did not actively involve the students in risk management as much as I would have liked this semester. I briefed them on our field trips, weekend excursions and stressed the relevant issues when appropriate, but I feel they could take more ownership for their own safety rather than expecting I will. In particular, I did not realize that students were to develop their RMP for DR research until I read about it in another SAM’s final report. With a semester under by belt, a much-increased familiarity with the issues and how SFS approaches them and the new safety matrix, I think I will be much better able to include the students in the upcoming semester.

Over the next several weeks and during the SAM meeting I will be developing a detailed RAMP that will reflect the new safety matrix. This plan will be in place prior to arrival of next semester’s students.
APPENDIX O: News from the Field example

AUSTRALIA
News from the Center for Rainforest Studies

If you've ever wondered about life at a research field station, we hope you will enjoy receiving news from students currently on our Australia program - it's the best snapshot of what an SFS program is really like. To learn more about our programs, please call us at 1.800.989.4418 or visit www.fieldstudies.org.

Sign up to receive News from the Field!

March 12, 2004
The heavy rain has abated and we are now enjoying glorious weather. The days are warm and the nights very pleasant.

Field Exercise & Excursions
This week, our students are working on the field exercise for their course in the Principles of Forest Management. The aim of this field exercise is to determine the effect of soil type, basalt and granite, on the community structure of rainforest plants. To determine this they are measuring, mapping and identifying trees around the field station. We had a field excursion to Pelican Point, an isthmus that juts into Lake Tinaroo which was cleared in the 1920's for agricultural purposes. In 1990, the Queensland Water Resource Commission took over the property and along with several local, state and federal agencies as well as the community tree planting group, have re-vegetated the area. To maximize diversity at the site, it was planted so as to create five different habitat types. Our excursion to this site was to examine the success of this project. The area is used for both nature conservation and environmental education to demonstrate a successful “Community Participatory Project.”

Tree Kangaroo and Mammal Meeting
Staff and students attended the monthly meeting of the Tree Kangaroo and Mammal Group in the local township of Malanda. They were given talks on the Mareeba Rock Wallaby, Spectacled Flying Fox and the False Water-Rat. Students had previously viewed a large colony of Spectacled Flying-Fox during a field excursion to Tolga Scrub.

Homestay and Field Trip
The highlight of the past two weeks for most of the students was having the opportunity spend a few days with local community members during our homestay
weekend. Often, students and other visitors are surprised that 50% of the people living in Australia weren't actually born in Oz. Spending the weekend with "real Aussies" might have meant a weekend with someone who came from Ireland, the U.S. or England, or they could have been with 3rd generation Aussies. The students had diverse experiences. Two spent the weekend on a ranch, learning about tropical cattle farming. Others spent their time visiting a local wind-generating farm and attended a bush dance. A few were able to take in a rugby match between rivals Atherton and Mareeba. Everyone enjoyed the opportunity to take a breather after the first exams. The students also got a taste of the outback during our three-day field trip to Chillagoe, which is normally dry country, but this time of year it was lush and green and as always, very hot. The trip to Chillagoe provided many of the students with their first sighting of a large marsupial, the Agile Wallaby. The group is now up to their ears in vegetation samples from the rainforest at the Center. Over the next few days, they will be identifying more than 50 species of trees and analyzing whether the community composition is influenced more by climate or soil type. They have their work cut out for them, but that's what doing field work is all about.

Student Reflections

“We've had a crazy last couple of weeks, with all kinds of exciting adventures. We visited Chillagoe, once a booming mining town, for a few days and learned all about the limestone caves, the woodland savannahs, and the economic and cultural history of the area. It was so hot during the day that we were so happy to go hang out at the Chillagoe Hotel in the evening, where we had a lovely barbeque. Upon our return, we crammed for exams. Hopefully, the intense studying paid off and we all did well. The evening after our exams, we attended a community wildlife meeting in Malanda. Everyone is really starting to gel together and learning to be themselves—we all get along so much better after a few weeks together. We all went on homestays for the weekend. It was sort of hard watching everyone depart with their families, but once we were welcomed into authentic Australian homes, we felt at ease and some wanted to stay longer than just the weekend. We were finally able to relax without worrying about studies. It was truly an unforgettable weekend that I'm sure most of us will cherish. After we returned, it was back to work. We began our data collection for Mike's field exercise in the rainforest on site the very next day. It was nice to be out of the classroom all day, but once we got back to the Center itself, it was nice to be away from the scrub-itch. Now we're just finishing up the plant identification and soon we'll have the exercise written up and we'll be off on break. Time definitely flies here, but when you look back on the very first day, it seems so long ago.”

-Emese Schloegl, University of Southern California

“The adventure never ends here at the Center for Rainforest Studies - the past two weeks have been super jazzy, but very busy at the same time. We took a trip to
Chillagoe, in the drier country, which was quite a change of pace for us. We explored limestone caves, ran with wallabies in the savannah, learned about the old smelting industry and of course paid a visit to the historic Chillagoe Hotel. Three days at Chillagoe however was enough to make us all homesick for our little bit of paradise here in the rainforest. After Chillagoe, it was time to start cramming for our first exams. Although they added a touch of anxiety to the atmosphere here, it turned out they weren't that bad. We were happy to have them all behind us - yahoo! After exams, we attended a local community meeting, where we heard some very interesting talks about issues affecting the surrounding areas. A few days later, we were split up into pairs for our weekend home-stays, and although there were varying experiences throughout the group, most of us agree it was nice to add a little local flavor to our experience of Australia. We've spent the last couple of days out in the bush collecting data for our next field exercise, and although it's been strenuous and required getting a little dirty, it's also exciting to know that we're actually going out there and doing real field work. It's hard to believe that our time here is almost half-over. Sometimes I take all of this for granted, but it's important to take a step back and appreciate the fact that I am living in one of the most beautiful places in the world.”
-Margot Mercer, Ithaca College