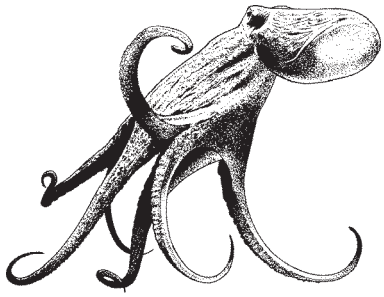
CHAPTER EIGHT

ENVIRONMENTAL EDUCATION CAMPS



Many Americans fondly remember summer camp as a week or more of outdoor activities where they hiked, canoed, swam, made craft items and sat around campfires with friends and sang songs. Perhaps they attended an outdoor school that involved challenging physical activities, or a work camp where they built trails. More recent camps may have included computer, math or science camps where young people more fully develop knowledge and skills in an area of interest. Camps may have been residential or day camps.

Environmental education camps usually involve bringing people together in an outdoor setting for several days to a week of activities related to nature. Camps can take many forms depending on the goals and financial resources of the sponsoring organization or participants.

There is a cultural component to camps. Communities may see camps as pure recreation, as relaxation for health, as educational, as a time to pass on cultural values and skills, a coming of age experience or a combination of some of these. Camps have been used to reinforce political philosophy as well. In some places, camping experiences are available only to certain segments of the population.

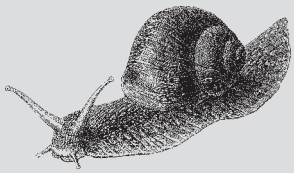
Before moving forward with planning a camp, research the camp culture, and ideas and stigmas of camps in your community/country:

- What kinds of camps are there? (Themes, residential or day, for what age groups?)
- Are there any particular cultural taboos that would limit attendance, for example, young women not being able to travel or stay away from home overnight?
- What happens at these camps? (Are they highly structured with group "lessons" or activities, or are they basically just recreational where participants determine their own schedules? If camps are considered highly unstructured, might you need to call what you want to do a workshop or a conference?)
- Who staffs the camps? (Are they run by teachers or adults associated with specific clubs—e.g., scouts, boys and girls clubs? Is staff paid or volunteer?)
- Who pays the attendance fees for the camps? (If participants pay, does this limit who can attend? Are there patterns of fund-raising to help people go to camp?)

If you determine that an environmental camp is feasible, this chapter will help you. It is about planning and implementing a camp and it is organized chronologically the way a camp is planned. Many ideas are drawn from *Camp GLOW (Girls Leading Our World) Handbook for Volunteers*, Peace Corps, Washington, DC [ICE No. M0056].

ADVANCE PLANNING

SIX TO NINE MONTHS IN ADVANCE



- ☐ Identify partner organizations and individuals
- ☐ Together, do a needs assessment
- ☐ Research past camp reports
- ☐ Determine type of camp that addresses needs and wants
- ☐ Establish planning committee
- ☐ Discuss goals and themes for camp
- ☐ Develop a timeline
- ☐ Investigate possible funding sources and begin grant application process, if necessary

IDENTIFY PARTNER ORGANIZATIONS AND INDIVIDUALS

Creating and running an environmental camp should not be solely a Volunteer activity. If there is merit to doing a camp, others in the community should be willing and able to assist. From the outset, you should be working with others.

Partners may offer their support in a variety of ways. They may be people who know the local environment and can help determine what is needed and appropriate to the community. They may be organizations such as local businesses, entrepreneurs, or ecology groups that can help fund a camp or provide transportation, food, medical help or a campsite. They may have skills that they are willing to teach the campers. Partners help make culturally appropriate plansand contribute to sustainability.

Partners may include:

- Teachers or other school staff
- Doctors, nurses, or community health workers
- Community organizations with an interest in environmental education or in supporting youth programs
- Local, national and international organizations interested in environmental education or youth, such as World Wildlife Fund, Girl/Boy Scouts, or 4-H
- Local government offices or other political entities

INVOLVING THE COMMUNITY

Explore how you can make use of community expertise, such as farmers who use soil conservation techniques or environmentally benign pest control measures. Elders in the community have a profound understanding of local ecology, and know how to sustainably use local resources. Involving these local experts also helps to foster a sense of cultural pride.

- NGOs that address community needs
- Businesses wanting to support community programs
- Skilled crafts people, storytellers, naturalists or outdoor enthusiasts
- Parks or protected-area personnel

DO A NEEDS ASSESSMENT

A camp should respond to the needs and desires of the community. Partners may have some reason for wanting to develop a camping experience, such as providing youth with an engaging learning experience, furthering the school curriculum in science or environmental education, or addressing a critical environmental issue. For example, if An environmental NGO wants to sponsor a summer camp for local middle school students to make them aware of the local reef ecology, then it is important to find out which middle school students would be interested/able to attend, what their level of understanding is, and what type of camping experience would be appropriate in the culture. Exploring the needs and desires of both participants and sponsors should lead to identifying potential resources and support, and possible follow-up for the campers, such as a community or school project.

RESEARCH PAST CAMP REPORTS

Often camp reports exist that can give you an idea of what camps have been conducted in the past along with recommendations for the future. Past camp reports may also indicate local expectations for camp that can help you plan appropriately.

IDENTIFYING COMMUNITY STRENGTHS

A program that builds on and uses the existing strengths and skills of the audience, specifically, and the larger community, more generally, is more likely to produce positive change than a program that blames participants for detrimental environmental practices. When developing curricula for the camp, use an approach that recognizes and appreciates positive local environmental beliefs and practices. This creates a base from which participants can develop environmental strategies that are appropriate to the community. The Peace Corps' publication *Learning Local Environmental Knowledge* [ICE No. M0071] may help you to discover some of these practices.

DETERMINE THE TYPE OF CAMP

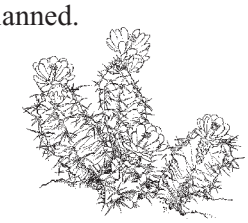
The needs assessment and research should provide the information you and your partners require to determine the type of camp to run. Generally, camps are either residential (campers and staff stay full-time for a week or so), or day camps (campers and staff gather each day for their program and go home in the evening). Day camps must be close to where staff and campers live. Residential camps may be located outside of the immediate community and must offer housing and meals in a safe environment. Most camps are held during the summer when young people are out of school, but camping experiences can be held any time of year.

Day camps generally last a few days to a week and typically feature hands-on activities such as nature walks, arts and crafts, short field trips or environmental games. They are easier to organize and less

expensive to operate than overnight camps. Costs can be kept down or eliminated by having the campsite and field trips within walking distance for the campers and asking campers to bring their own lunches and supplies for crafts (if they are able). Alternatively, having campers (or donors) make a small contribution for cooking out can be an excellent learning and bonding activity for the group. Day camps may be a summer activity for a school, and may help organize campers for environmental clubs during the following school year. Disadvantages of day camps include unpredictable attendance and a more limited scope of activities.

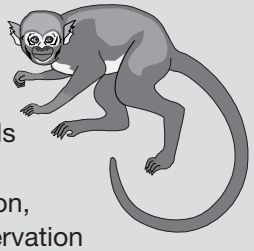
Overnight camps offer more complex and richer experiences for the campers. Because you will be spending 24 hours a day with the campers, you have the opportunity for more in-depth activities. It means planning for all the waking hours of the campers, even if those activities include quiet times. Overnight camp activities include all the activities possible at a day camp plus opportunities for extended field trips, and early morning and evening activities. These camps may bring campers from different areas, enabling them to form friendships with people from other places. For some campers, an overnight camp may be the first time they have ever slept outdoors or slept away from home. In some cultures, girls are not permitted to attend these types of camps.

Overnight camps require arrangements for meals and sleeping quarters for campers and staff. They may require transportation, and more extensive health and safety considerations must be anticipated. Camp staff must include a nurse or adults with first-aid training, and arrangements for a nearby medical person or facility who can respond to emergencies. Not all campsites will have electricity or plumbing, so water and waste disposal must also be planned.



CAMP WALIYAH
— NIGER —

GOALS:



Camp Waliyah was designed as a conservation education camp for 11-16 year olds to teach youth about environmental degradation, the importance of conservation and protection of the environment. The goals of the camp included collaborating with local service agents, creating a forum for service agents to begin working with youth, and creating a theater group.

LOGISTICS:

Each month, several children participated in a five-day field trip by boat along 100 kilometers of park boundary. They interacted with forest agents about particular issues facing the environment. Activities included talks by the forest agents, games, and drawings, and follow-up activities included review and extension of concepts, skill development, participation workshops and skits. Badges were awarded to campers, each representing a different topical area explored during camp.

LESSONS:

Be flexible! Youth are not always easy to work with, nor are government agents, especially when the latter work with youth for the first time. Be patient—this will be an extremely rewarding experience, but it takes a lot of preparation, and the messages are sometimes difficult for youth or community members to accept. The environmental messages you are trying to convey may seem to run counter to a community's belief that their own actions do not influence the environment; therefore, change may come slowly.

Overnight camps that involve traveling away from the site have additional considerations. Food and shelter (and even water) may have to be brought along, or purchased locally. A plan for medical emergencies will need to be developed. Consider the time in transit: will you need to plan observation activities while campers are in a boat, or songs or games for a bus ride?

At any type of camp, day or overnight, the Peace Corps or an individual Volunteer cannot be held responsible for potential accidents and/or injures related to the activity. Therefore, other adults, such as representatives of teachers' or parent associations or sponsoring organizations, must accept responsibility, especially if there are minors in the group.

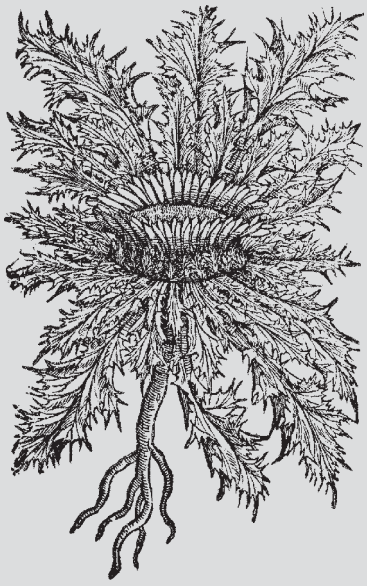
ADAPTATIONS OF CAMPS

Environmental education camps can be adapted to special situations or to focus on a combination of topics and skills. If your camp has developed from a school or university program, or a forestry, agricultural, fisheries, natural resources or water sanitation program, it will already have an environmental education focus. If your environmental education camp has developed from a Teaching English as a Foreign Language (TEFL) program, a small business development, or health program, you will need to think about where your program intersects with environmental education. Likewise, if you want your environmental education camp to focus on cultural issues or on building democracy, you will need to think about how to adapt your camp to achieve these ends. One way of approaching these situations is to involve partners and Volunteers from other sectors in planning and running the camp.

Some examples of camps with combined goals are:

Health Focus: Environmental factors that affect health include topics such as water quality and treatment, agricultural practices and nutrition, nutritional value of wild foods, wilderness safety and first aid, and living well in the wilderness. A health/EE camp could also focus on achieving and maintaining general physical health, or on a particular group of clients whose physical and mental health might benefit from an outdoor experience.

Small Business Development Focus: Business and EE intersect in the areas of using resources in a sustainable and economically profitable way and developing value-added products from environmental resources, including tourism. Tourism camps could focus on developing interpreters and guides, nature programs and signs, and developing trails and campsites for tourists.



Cultural Focus: If you are working in a situation where different ethnic, religious or cultural groups are living, and you want to work toward increased positive interaction among these groups, you can bring them together in an environmental education camp that fosters positive interactions between the groups. Using principles of cooperative learning, and requiring the use of a common language can foster increased communication and mutual understanding. Some good activity suggestions for this type

(continued)

of camp can be found in *Camp GLOW (Girls Leading Our World) Handbook for Volunteers*, Peace Corps, Washington, DC [ICE No. M0056].

TEFL Focus: In a TEFL /EE camp, the focus is on teaching and practicing English through the content area of environmental education. "Green English" camps usually require that all campers speak English throughout camp. The activities are similar to an environmental education camp, except for the emphasis on language. Learning environmental vocabulary and activities which require campers to read, write, listen and speak about the environment in English are the goals of the activities. The selection of campers should include an assessment of their English proficiency. In this type of camp it is possible to bring together campers who speak different languages, but who will function in English throughout the camping experience. This kind of multilingual camp can help campers cross ethnic and linguistic barriers to discover their common ground. Some examples of language lessons related to environmental topics can be found in the *Community Content-Based Instruction* publications, Peace Corps, Washington, DC [ICE No. T0112 and ICE No. M0073].

ESTABLISH PLANNING COMMITTEE

Once you and your partners have decided to conduct a camp, you will need to create a planning committee. It might include counselors and teachers for content or members of any sponsoring organizations. It could also include nurses or medical people, representatives of the place where camp will be held (e.g., national park rangers), camper representatives, or other interested parties. The responsibilities of the planning committee include:

- establishing goals and objectives
- making a budget
- choosing a campsite
- looking for partners or sponsors
- seeking funding (if necessary)
- determining selection of camp staff and campers
- motivating/educating parents about the benefits of the camps
- planning for sustainability

TEAMWORK IN THAILAND

One Volunteer, based at a wildlife sanctuary in the northeastern region of Thailand, had organized many environmental education activities for teachers and students in her area before she realized something very important. While conducting these camps, she noticed that though co-workers had good potential to be excellent environmental educators, they had no experience working on a team. Through discussion with her program manager and approval from the director of the sanctuary, the Volunteer created an in-house workshop for 5-8 staff on team building, vision creation, and leadership development using an environmental education theme. The success of this workshop was shown when, for the first time, people started to work together and help each other conduct environmental activities.

Roles that members of the organizing committee need to take include:

- **director/administrator/coordinator** – central organizer and contact person
- **scribe** – keeps records
- **fundraiser** – seeks funding, keeps track of requests, organizes events and makes sure donors get reports and thank you letters
- **campsite coordinator** – researches and visits campsites and acts as liaison between the director and the camp owner; ensures health and safety measures are in place
- **supply and transportation person**

- **promoter** – educates the parents, teachers and community members about the camp; registers campers
- **curriculum developer** – ensures camp activities are developed; identifies appropriate teachers, rangers, other staff

One person can assume more than one role. What is important is that all the tasks are clearly assigned and someone is responsible for them. There may be other tasks that need to be done in your particular situation as well.

DISCUSS GOALS AND THEMES FOR CAMP

The goals and purposes of your camp will depend on the needs of the community and your partners. Goals may include:

- Teaching children about the local ecology
- Building environmental maintenance skills, such as water quality assessment, or trail building
- Building environmental awareness, comfort in the natural environment, and empathy for the environment
- Teaching traditional knowledge and skills to young people
- Teaching environmentally friendly practices for agriculture, fisheries or forestry
- Involving a target group (e.g., women who use the forest) in environmental work
- Implementing environmental service projects such as building parks, trails, or interpretive signs
- Increasing responsible participation in environmental projects and practices
- Building positive attitudes towards the environment
- Building capacity and self-esteem

- Helping campers understand the linkage between the environment and other fields

Goals determine a theme or themes for the camp. Themes are helpful for planning, and focusing campers. For example, if your goal is teaching children about local ecology, a theme might be "Forest Mysteries" or "Savanna Ecology." If it is building awareness, comfort and empathy, a theme might be "Mountain Magic" or "Wonderful Rivers." Other possibilities include: "Understanding Water Quality," "Productive Fish Farms," "Forest Resources for You," or "Making *Almatinsky Zapavednik* a More User-Friendly Park."

The theme(s) will guide planning and can be used for publicity to attract and inform campers and supporters.

DEVELOP A TIMELINE

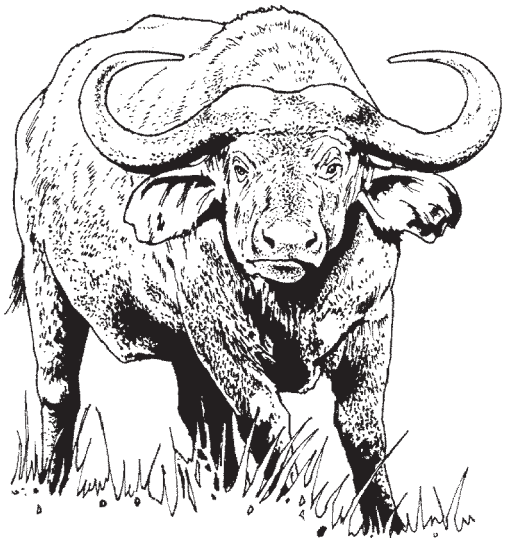
When planning a camp, give your organizing committee plenty of time to plan funding, personnel, logistics, content and schedule, and recruiting campers and staff. It will take several months to coordinate all the people, logistics, funding and materials. Everything will probably take longer than you think! Together, develop a timeline that has set dates to complete tasks yet leaves time for the unforeseeable.

INVESTIGATE POSSIBLE FUNDING SOURCES AND BEGIN GRANT APPLICATION PROCESS

Camps vary in cost depending on many factors. Local day camps may be very inexpensive. Residential camps will be more, but can vary depending on distance, length of camp, services provided, and so on. Costs include: use of the campsite, food, electricity, water, transportation, materials, and staff (cooks, teachers, nurse, chaperones, security people, etc.).

As soon as possible, develop at least a general budget, determine any needs for seeking funds, and have your fund-raising person on the organizing committee get started.

- Some costs may be defrayed by in-kind donations, such as the use of the site, food, supplies, staff.
- Donations of money may come from local government, organizations, businesses.
- Grants may be available from large multinational organizations or local businesses.
- Fundraisers, like benefit concerts, sporting events, dinners, art sales, and bake sales may be culturally appropriate ways to generate money.
- You can also pass the costs of camp on to the campers in the form of a fee for all or part of the cost of camp. In order to for some campers to be able to attend, scholarships may be necessary.



Fund-raising is an area where Volunteers should not be working on their own. With your planning committee or partners, develop a plan for others to be involved. There is helpful information in ***Camp GLOW (Girls Leading Our World) Handbook for Volunteers***, Peace Corps, Washington, DC [ICE No. M0056].

PREPARATION

Four to Five Months in Advance

- ☐ Determine size of the camp and decide on approximate dates
- ☐ Investigate possible camp locations; select and reserve a site
- ☐ Build a detailed budget and system for handling money
- ☐ Determine camper selection process
- ☐ Develop a daily schedule for camp
- ☐ Consider sustainability

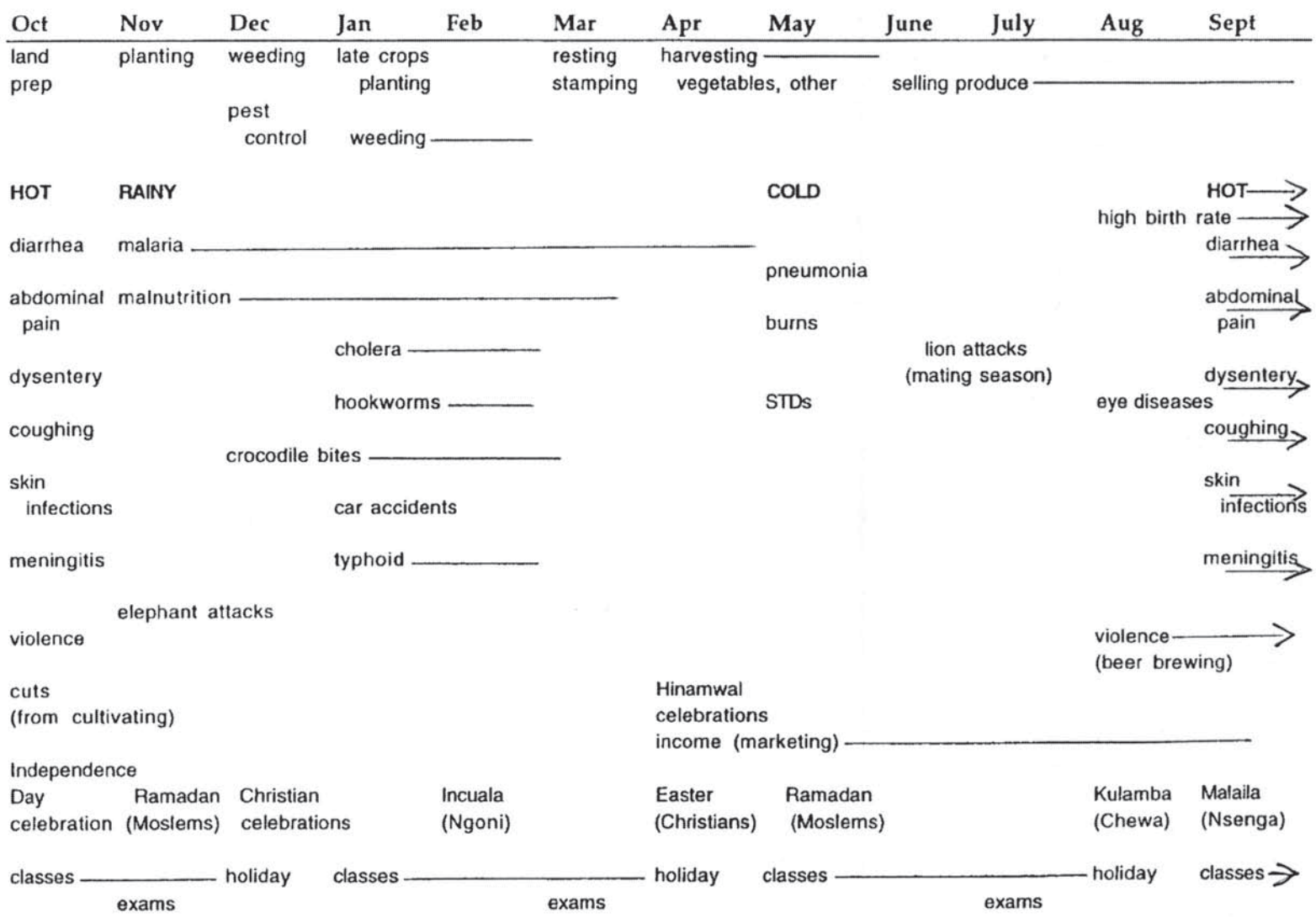
Determine size of the camp and decide on approximate dates

Decide how many campers you want to serve. Considerations:

- What kinds of activities or classes will you have? What is the best group size for them? How many class or activity leaders will you have, and how many campers can they handle?
- Consider the age of the campers – younger campers require more supervision than older campers.
- Consider safety and "crowd control." How many people do you have on staff and how experienced they are in dealing with campers?
- Male/female ratios and numbers: if counselors will stay with campers, how many male and females do you need?
- Are there other cultural considerations or community expectations?

When deciding dates for camp, consider other schedules, such as school schedules and holidays, and special seasonal demands on the time of adults or young people. Consider seasonal environmental constraints such as heat, rain, insects or road conditions. A good way to look at all of these factors together is to create a seasonal calendar. With a group that represents all the necessary perspectives to consider (teachers, parents, bus drivers, park service agents, medical people, sponsors, etc.) create a calendar together. Locate the best time of year, based on the goal of your camp. The calendar on the following page is an example of many factors considered, including illness and dangers from animals. See the *PACA Idea Book,* Peace Corps, Washington, DC [ICE No. M0086], for details on how to create a calendar.

SEASONAL CALENDAR



Investigate possible camp locations

When you are choosing a campsite, consider the facilities and services as well as the cost and location. One or two persons on the planning committee may scout out a number of sites, and then the planning committee should visit the best one or two for your purposes.

Things to consider:

- **Goals for camp:** Is there an appropriate environment to involve campers in the purpose of your camp during the time of year you want to be there (streams, forests, grasslands; animal migration, blooming or fruiting of plants, snow or rain, soil conditions or ease of getting around, and so on)?

- **Safety:** Check out the water supply, hiking trails, sports fields, access roads, campfire area and kitchen. How would you handle sick, injured, or lost campers? Usually, there is a greater chance of injury at camp than at home simply because the campers are outdoors and more active than usual. Ask if the camp has a doctor or nurse available. Locate the nearest medical facility.

- **Sanitary facilities:** Are there sufficient toilets and bathing facilities? If you will be wilderness camping, how will you manage water, bathing, and toilets?

- **Campsite services:** Are there prepared meals or cooking facilities?

- **Lodging:** How many per room? Campers and counselors together? Bedding provided?

- **Phone:** On site or where is nearest? Do cell phones work at the camp? Are there sports facilities such as playing fields?

- **Campsite schedules and rules:** Are there existing schedules at the campsite, such as meal or lights out times? Are there activities at the campsite in which you will be required to participate? Does the campsite have rules, including rules about smoking and drinking? How does the campsite handle discipline?

- **Access and transportation:** Often camps, by their very nature, are off the beaten track. Can a vehicle navigate the road to deliver campers and supplies or in case of emergency? If you are in a park or preserve, are there hours when the park is closed or gated? How close are the nearest stores?

- **Indoor and outdoor facilities:** Are there sufficient and appropriate meeting rooms if weather pushes you indoors and an all-weather eating area?

- **Other campers:** Will there be other groups at the camp at the same time as yours? Will you share facilities? Will the campers be older or younger than your campers? Are the other campers male or female?

- **Wilderness camps:** While you are checking out the campsite, make a list of camping gear you will need to bring or ask campers to bring: tents, sleeping bags, water, firewood? How will you cook? Will you need to prepare for excessive rain, sun, wind, snow, or insects? Are there dangerous animals or places? What will you do for light in the evening?

When you have agreed on a site, develop a written campsite contract, if the camp does not have its own. The agreement with the owner or administrator of the camp should clearly state what the camp will provide and what you will need to provide, the dates, and total cost for the use of the camp.

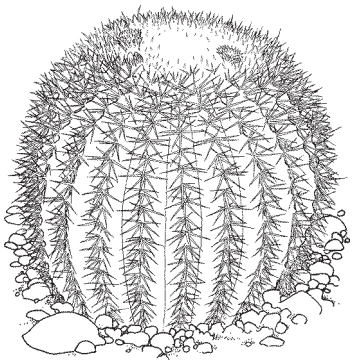
Build a detailed budget and system for handling money

Create a very detailed budget; consider every expense that will arise. The budget will tell your fund-raisers exactly what they need to look for (in-kind donations, funds, and grants) and what fund-raising activities might be needed. Important expenses to consider include:

- any staff salaries
- expenses for guest speakers such as transportation, food, lodging or honoraria
- food including water, meals, and snacks
- transportation for staff and campers
- campsite rental
- lodging, if different from above
- insurance
- materials and supplies for all activities
- costs of photocopying, film development, publicity or computer use
- translation services
- activity fees if you are taking campers to places that charge admission
- communication to advertise camp, enroll campers, and while at camp (phone, computer, copying, mailing, and so on)

Devise a system for handling the money. Volunteers are encouraged not to be responsible for money. A checking account that requires several signatures, or a money box that has multiple keys, makes several people accountable for money. Handling money can become quite delicate; it is worth the effort to set up a reliable and credible system.

Determine camper selection process



Your organizing committee will have decided who its target audience is. The next task is to decide how individuals will be selected and notified. Some camps require an interview to assess camper language skills, or determine suitability of campers. Other camps have a task that is required, like an essay or school project or teacher nomination. When you decide what criteria you will use to judge who is accepted and who is not, plan for how you will notify those accepted, those on a waiting list and those not accepted.

Develop an application process. Applications for campers may include:

- Camper name, address, phone, age, sex, as appropriate
- Names and contact information for each camper's parents or guardians
- Emergency contact information
- Any medical information that should be considered (dietary or medication concerns, etc.)
- Description of camp including dates, location, and facilities
- Any costs, fees, or deposits
- Camper drop-off and pick-up information
- Any special rules (bring a water bottle, no smoking, no electronic devices, etc.)
- Packing list
- Date the application is due
- Date the camper will be informed of acceptance
- Your contact information

Develop a daily schedule for camp

A typical camp schedule combines class time with outdoor activities and recreational events as well as rest periods or free time. A balanced schedule is essential to a smooth, productive camping experience. Allow time for transitions between activities. For example, it can take some time for campers to go from breakfast to their morning activity. It is also important to schedule downtime for counselors and daily staff meetings. Counselors work very hard and need some time to relax. Counselors also need time to share ideas, help each other, plan for the next day, and troubleshoot. Post the schedule in a frequently traveled area so everyone can refer to it easily.

SAMPLE CAMP ACTIVITIES

ENVIRONMENTAL EDUCATION CLASSES AND ACTIVITIES

- Local ecology
- Field ecology
- Ecological principles and concepts
- Environmental issues
- Ecology games and adaptations of games to ecology themes
- Recognizing the environment: simple identification of plants, insects, birds, etc.
- Connecting with the environment: quiet activity for self-reflection

OUTDOOR SKILLS

- Camping skills
- Nature walks
- Boating skills and safety
- Orienteering
- Team-building activities
- Hikes
- Stargazing
- Ropes courses or trust building activities
- Survival skills
- First aid
- Outdoor recreational activities, (e.g., rock climbing, swimming, boating, games)
- Field research skills (transects, making accurate and precise observations, etc.)

SERVICE ACTIVITIES

- Trail building
- Interpretive signs
- Naturalist training
- Camp building or maintenance
- Trail maintenance
- Docent training
- Clean up of parks and preserves

OTHER CLASSES

- Cooking with wild foods
- Arts and crafts using nature as a theme or using natural materials
- Drama and disco
- Music

LIFE SKILLS

- Democracy building[1]
- Confidence building or self-esteem building activities
- Leadership development
- Team-building

[1] For a description of this activity, see Peace Corps' *Camp GLOW (Girls Leading Our World) Handbook for Volunteers*, Peace Corps, Washington, DC [ICE No. M0056], page 36.

MANAGEMENT ACTIVITIES

- Making nametags
- Developing rules
- Tent or camper group activities (clean up or other duties; can be competitive)
- Daily annoucements and open discussion time

SOCIAL EVENTS

- Skits
- Songs
- Games
- Campfires (with songs, storytelling)
- Getting to know you activities (introductions)

SPECIAL EVENTS

- Opening ceremonies including ice breakers and name games
- Closing ceremonies including awards and skits
- All day hike
- Excursions
- Last night staying up late
- Wilderness overnight camp-out
- Last day time for exchange of addresses and good byes

There are several things to consider when making a schedule:

- **Goals and objectives:** Start by identifying the key activities that will meet the goals of the camp. That may sound obvious, but it is tempting to schedule activities that you know will work, or are fun, but may not meet objectives of camp. In order to meet objectives, it may be necessary to create activities that are designed for the objectives.

- **Time of day:** Generally campers have more energy and are better able to focus in the morning. Afternoons are good for active pursuits, and evenings for relaxation and fun. This implies that teaching and discussion will be more fruitful in the morning. However, sometimes other considerations affect scheduling. Wildlife viewing is best near sunrise or sunset, so hikes for this purpose may be in the morning with discussion or classroom activities in the afternoon.

- **Scheduling campers:** If you have large numbers of campers, think through a system that will easily allow you to rotate activities or give campers a choice of activities. See *Camp Glow Handbook* for ideas.

- **Camper/counselor ratio:** Overall, a ratio of one counselor for every six or seven campers is desirable. You may make adjustments if you have very young counselors, or very experienced campers. Some types of activities require a lower camper/counselor ratio, usually due to safety concerns. For activities that have any potential for injury, there should be at least two counselors.

- **Activity leaders:** If activity leaders are different from the counselors, such as a park ranger, a member of the camp staff needs to be present as well to act as moderator, as well as to be responsible for campers.

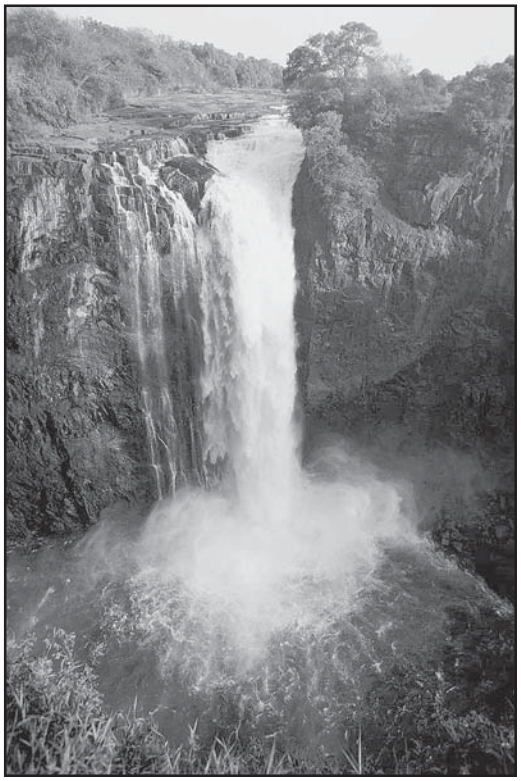
- **Quiet time:** Often, quiet time for reading, writing or even napping is scheduled after lunch, which is a low energy time for many people.

- **Scheduling transitions:** Allow sufficient time for meals, for moving between activities, and for sleep. This is especially true if there are large numbers of campers, long distances to walk or times when campers have to change clothes (e.g., swimming).

- **Back up plans:** No matter how much planning happens, things can go wrong. Disruptions are often caused by bad weather or unexpected delays in the arrival of supplies or people. It is a good idea to have several activities in reserve, just in case.

- **Logistics:** Consider the locations of activities and materials required for each activity. Do the campers have a long walk to the activity site? Will materials have to be transported to a distant site? Do you need to have a water source for a particular activity? Is there enough space for the activity?

Consider sustainability



If you are helping to create a camp that may be repeated in the future, consider sustainability throughout the planning and operation stages of the camp. By working with partners from the very beginning, the details of the planning process will be clear to everyone. If the planning committee carries out many of the roles outlined, that part of the process will also be shared and skills will be built.

If the camp truly reflects the needs and wants of the community, it is much more likely to be continued. This gets back to the initial assessment of community needs and desires that you carried out with your partners, or what you will learn during the camping experience about community desires.

As in the Thailand example, another step might be to train staff…either in specific duties or in teamwork. That will require assessing the staff to ascertain their training needs, and then trying to meet those needs.

The community must also have the resources to implement camp after you leave. If you use some of your personal resources such as expensive binoculars or your own computer as an integral part of the camping experience, and you take them with you, the community cannot continue the program. Likewise, if you applied for a grant that required college-level English skills to write, it may not be possible for the community to duplicate the application. All aspects of the camp project must be immediately accessible to community members, not only equipment and money, but leadership, planning, implementation and maintenance skills as well. To put this another way, the only parts of the camp that will be sustainable are the ones that community members can and will do themselves. Sometimes that means you will have to leave out the high-tech binoculars, or make them a small, unnecessary part of the camp.

Two to Three Months in Advance

- Choose counselors and staff
- Develop counselor and staff training
- Design publicity for recruiting campers and publicizing camp
- Decide rules and policies for camp
- Plan logistics (transportation, food, lodging, supplies, health and safety)
- Develop an emergency plan

Choose counselors and staff

Begin by identifying the needed skills: activity leaders, counselors, cooks, drivers, and so on.

Define their jobs: Skills, time needed per day, responsibilities for supervision and discipline of campers.

Consider where counselors and staff can be located. Are any provided by the campsite? Will any work for free if their expenses (transport, room and board) are covered? Look to the following groups as potential pools for finding staff:

- The partner organization
- Other local organizations
- Parents
- Teachers
- University students
- The community
- Past campers (Older campers can often serve as junior counselors)
- Other Peace Corps Volunteers

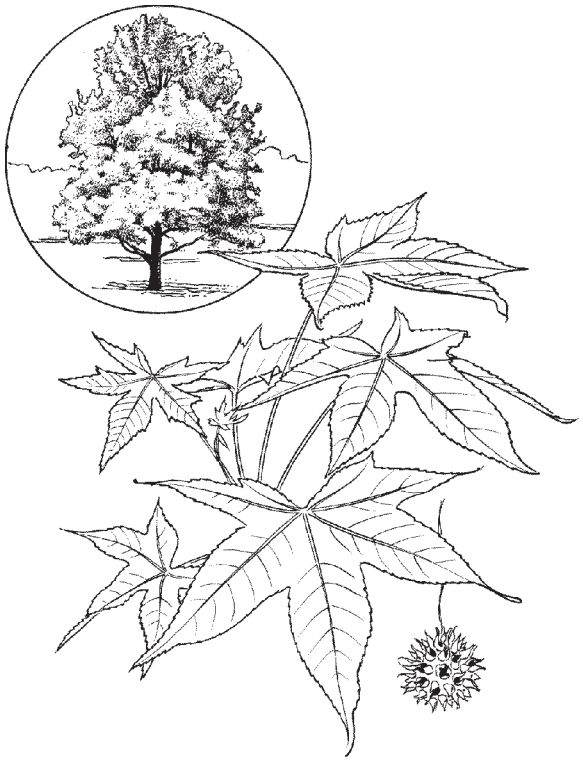
Develop counselor and staff training

Prior to camp, schedule a training and planning workshop for counselors to serve several purposes:

- Clarify the goal(s) of the camp
- Clarify camp policies and procedures
- Skills training
- Planning and scheduling
- Matching skills and talents to camp goals
- Introduction to campsite
- Clarify roles and responsibilities of the various staff members
- Clarify mutual expectations of campers and staff

Training topics may include:

- Team building
- Staff expectations, joys, and fears
- Clarifying the camp schedule (practice all activities)
- Assigning roles and responsibilities; perhaps including a duty roster
- Reviewing environmental topics, as needed
- Teaching and group leadership techniques
- Rules for camp and disciplinary roles of staff; discipline in an outdoor setting
- Planning time for counselors
- Evaluation methods
- Small group dynamics
- Safety and first aid



Design publicity for recruiting campers and publicizing camp

Designing a publicity campaign depends on how your target audience and interested community members get information. Depending on your situation, you may post flyers, or you may use TV or radio spots. You want to make sure all interested or influential parties—including potential campers and staff, parents, and teachers—know how, when, and where to apply for camp. Design your publicity strategy well in advance of your camp dates.

Decide rules and policies for camp

Ideally, there should be a few clear rules. Rules usually deal with participation in and timing of activities; health and safety; and camper responsibilities. While you may choose to draw up the rules ahead of time, campers are more likely to respect rules if they had some responsibility in creating them. It takes some time to conduct a camper session, but usually the campers come up with the same rules the staff would have drawn up. Before meeting with the campers, discuss with staff any rules that must be on the list, especially safety rules. If the campers do not mention these, then you can add them at the end of the session and tell the campers your reasons for having them.

SAMPLE CAMP RULES AND POLICIES

- Obey all safety procedures! NEVER swim, hike or participate in other activities without a counselor on duty.
- No leaving the campsite.
- Wear name tags during all activities.
- Go to all scheduled activities and BE ON TIME.
- Respect each other.
- Obey counselors.
- Be in your cabin at lights out. Do not leave your cabin after lights out.
- Do not open your door after lights out for anybody except camp staff.
- No boys in girls' area; no girls in boys' area.
- Shoes must be worn outside at all times.
- Sports shoes must be worn for sports events.
- All campers must help at clean up and kitchen duty.
- Try to speak English at all times.
- Return all camp property to supply area.
- All campers must be in their cabins or in the cabin area at rest time and must be quiet.
- No fighting, bad language, alcohol, smoking or drugs.
- Drink a minimum of two bottles of water per day.
- Have fun. Tell counselors if you are not having fun.

From "Summer Camp Manual: Guidelines for a Community Organizing a Safe and Fun Summer Camp" Peace Corps Kazakhstan, 2004.

Plan logistics

Logistical concerns include transportation, communication, food, supplies and health. Allow plenty of time to locate or purchase materials needed for camp and make sure to keep all receipts. Set up a record keeping system early on in the process because it may be difficult to recall purchases, contacts, contracts or agreements during or after the camp. A checklist follows of possible logistical considerations.

Transportation:

- Who will provide transportation for staff? For supplies? For campers?
- What emergency transportation will be available?
- Do transportation providers have insurance?

- How will you contract service with transportation providers?
- Will you have transportation throughout camp? If not, what are the alternatives?

Communication:

- Will you have telephones or other means of communication available during camp?
- How will you handle emergencies?
- How will you communicate with staff? Campers?
- How will you communicate with the sponsoring organization or other participating organizations?

Food:

- How many meals per day will you have? Will you have snacks?
- What foods will offer the best nutritional balance?
- Are there any special dietary accommodations to consider?
- How much liquid per person per day will be required?
- Are there adequate food storage facilities? Refrigeration?

- Will it be possible to deliver all the food at the beginning of camp, or will other deliveries be necessary?
- Will you have hired food service providers? If so, what services will you contract?

Supplies:

- What supplies will be needed for camp activities? For health purposes? For lodging? For the kitchen?
- How will those supplies be purchased or collected?
- How will supplies be transported?
- How will supplies be safely stored at camp?
- Supply needs vary considerably from place to place and camp to camp.

Health and Safety:

- How will you handle emergencies?
- How will you handle camper and staff illness and injuries?
- How will you contact medical help, should it be needed?
- Who will be liable in case of accident?
- Are there first-aid supplies available to counselors?

- Who will be in charge of treating campers and staff for injury or illness?
- How will you deal with lost campers?

Develop an emergency plan

Camp emergencies can range from illness of an individual to natural disasters that require a complete evacuation. The most common types of medical situations at camp are cuts, bruises, sprains, strains, colds and flu. In your particular area, you may have to take into account certain dangerous animals (e.g., insects, snakes, or other animals) or sicknesses endemic to the region, such as intestinal infections or certain skin rashes. You may also need to plan for treatment of weather or altitude related injuries, such as sunburn, dehydration, hypothermia or mountain sickness.

As part of the camp planning process, an emergency camp evacuation plan should be devised, along with a plan for evacuating individuals. When creating the plan, consider the most likely situation for your particular circumstances and plan accordingly. Be sure to consider relevant precautionary measures, ways to assemble campers and staff, and escape methods and routes. Your plan should consider:

- How will you learn of the emergency? Will the park ranger notify you? The police? The military? If you will be dealing with these officials, do they have a plan in place that you will need to train your counselors and campers to use?
- Devise a way to signal all campers and staff in case of an emergency, and train them to gather at a central meeting point.
- Devise a way to make sure you have accounted for all campers and staff both initially and during the evacuation.
- Plan a variety of escape routes in case one is closed off. For example, what would you do if the only access road washed out?
- Make sure you have supplies and personnel to treat injured people.
- Assign responsibilities to the staff. Who will drive, who will treat injuries, who will count heads, and so on.
- Plan for the types of likely emergencies. For example, fires move uphill and downwind, so that needs to be considered in making an evacuation plan; during earthquakes, people should leave buildings and meet in open places; floods are likely to contaminate water supplies, so you will need a reserve and a way to purify water.

FINAL PREPARATION

One Month in Advance

- Implement publicity strategy
- Hold training for counselors and staff
- Select and orient campers and parents

Implement publicity strategy

Now is the time to tell the community about camp. Put the flyers up. Run the announcements. Hand out applications. Interview or screen potential campers. Whatever your plan for recruitment and publicity was, now is the time to implement that plan.

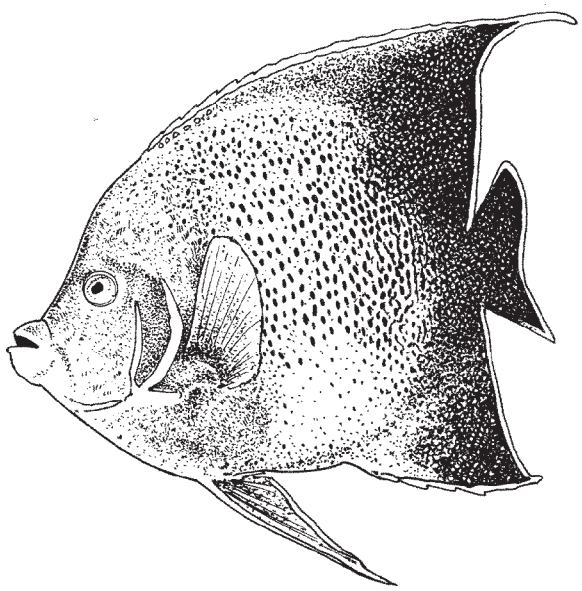
Hold training for counselors and staff

Implement the training you developed—see pages 98 and 99 of this chapter.

Select and orient campers and parents

During recruitment, give campers all the information they will need in advance, including:

- What to bring
- Application dates
- Selection dates
- Date/time/place of travel to camp
- Camp contact information for families
- Camp schedule and curriculum



LAST MINUTE ADJUSTMENTS

One Week in Advance

- Reconfirm all camp plans (staffing, food, lodging, transportation, supplies)
- Try to get some sleep
- Send a few counselors to the camp early to prepare

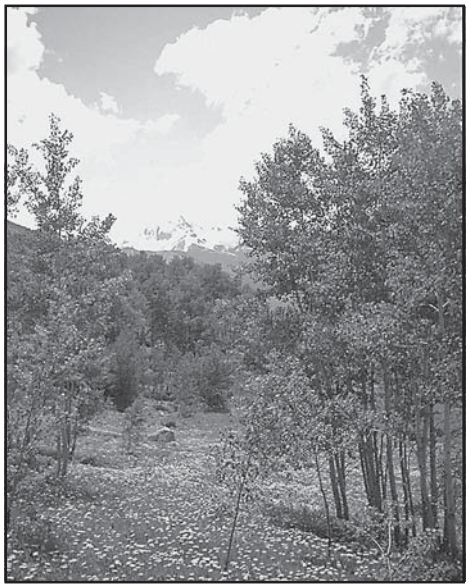
CONDUCTING CAMP

The First Day of Camp

- Greet and orient campers to set the tone of camp
- Conduct first day activities
- Confirm that all campers are present and settled in
- Relax and have fun
- Meet with counselors to process the day and troubleshoot

Greet and orient campers to set the tone of camp

As campers arrive, welcome them and help them to feel at home. Introduce yourself and other staff to campers, and explain how campers will be organized, the layout of the camp, and the schedule. Setting a cheerful and organized tone on the first day is necessary for the camp to be fun and well-run. Campers need to know where they will live, the rules, staff roles and responsibilities, the schedule and their responsibilities.



As campers arrive, they will need to be shown where to put their gear and given a tour of the campsite. One of the first activities you may do as a group is to convene with campers, and ask them to choose a camp name and/or place them in teams for activities. The names and teams are usually chosen from the nature of the region and the theme of the camp. Nametags with this information can be made from all sorts of natural materials.

Conduct first day activities

Plan time for explaining the schedule and discussing the expectations of campers and staff. The first day is usually used for introductions and orientation, often through the use of skits performed by counselors. Orientation should include some discussion of how to behave in the outdoors. Campers, especially if they are from an urban environment, need to think about how to minimize the impact they will have on the area around the campsite. Below is an example of behaviors expected in the field.

DO'S AND DON'TS OF FIELD WORK

- Do make sure you have all the materials you need before you head to the study site.
- Do be a careful observer.
- Do take careful notes about what you find, including information about locations and characteristics of plants and animals.
- Do handle animals with care and handle them as little as possible.
- Do return animals you find to the places where you found them.
- Do replace logs and rocks to the position you found them.
- Do stay within the boundaries of your study area.
- Do try to identify unknown species while you are in the field.
- Do look for animal signs as well as actual animals.
- Do wash your hands carefully as soon as you return to the classroom.
- Don't damage trees or other plants by digging them up, ripping off leaves, or tearing at the bark. Be careful when collecting specimens.
- Don't put anything you find—such as berries, leaves, mushrooms and bark—in your mouth. Also, don't put your fingers in your mouth until after you have returned to the classroom and washed your hands thoroughly.
- Don't chase after, yell at, or throw things at animals.
- Don't touch or collect animal droppings, dead animals, mushrooms, or human refuse such as bandages, rusty cans, broken glass or needles.
- Don't reach under logs, rocks or crevices, or other spaces if you can't see into them.

Confirm that all campers are present and settled in

Make sure that all campers that signed up are present. Double check that all campers have settled in and are comfortable in their assigned quarters.

Relax and have fun!

Enjoy the day. Enjoy the campers. Often a campfire is held the first night (and maybe every other night), with songs and snacks, or perhaps skits or stories.

Meet with counselors to process the day and troubleshoot

After camp is settled in for the night, meet with counselors to review the day and troubleshoot any problems or questions. Make sure all the counselors are clear about their tasks.

RUNNING AN EFFECTIVE CAMP

During the Camp

- Check in with campers and staff daily
- Follow schedule as planned
- Take pictures and/or videotape
- Seek feedback

Check in with campers and staff daily

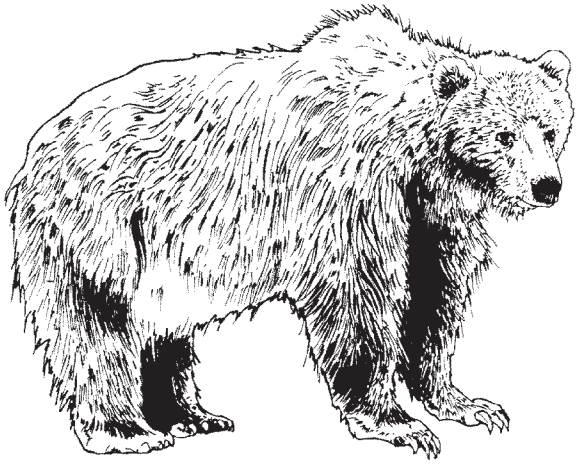
It is a good idea to have a regular check-in time for announcements, questions, or any issues that may come up. Many camps have a check-in time at the morning meal because everyone is there. The first day or two of camp may have lengthy check-in times as the campers get used to the schedule and find out how everything works.

Follow schedule as planned

You have spent a lot of time preparing a schedule that will work, and training counselors and campers to use it. Sticking to the schedule will prevent headaches and frustration because people will know what is expected. If something unavoidable or unexpected occurs that forces you to change the schedule, try to keep change to a minimum, which will limit confusion.

Take pictures and/or videotape

Pictures and videotape can be used as a visual record, and can help the planning process for the next camp. A visual record will also allow you to show supporters what you did, and to gather new supporters for the next venture.



Seek feedback

Hold daily or weekly check-in meetings with counselors to review highlights, revise agendas and troubleshoot. Spend some time every day troubleshooting with campers and staff. Ask them for feedback on how they are doing, and what they are enjoying. Give them the opportunity to ask questions and talk about difficulties, as appropriate. This will give you a sense of what is going on at camp, and it will also send the message that you really care about the experience they are having. Make any modifications campers suggest that are feasible. Keep track of the feedback for future planning and for reporting.

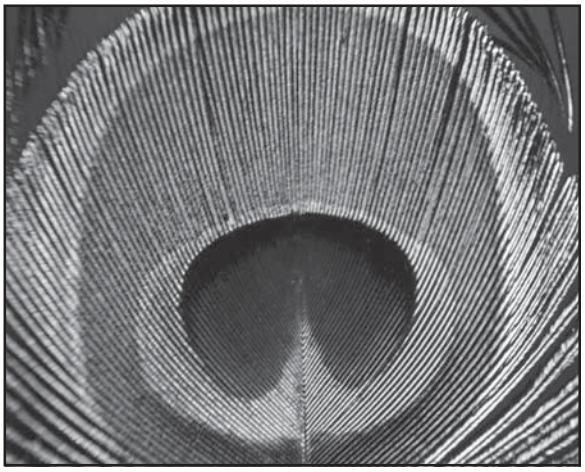
ENDING THE CAMP

Evaluate and celebrate

- Evaluate the camp
- Plan follow-up activities with the campers, counselors, parents and/or staff
- Celebrate! Conduct an end of camp ceremony

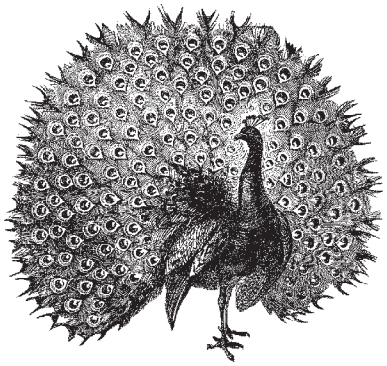
Evaluate the camp

At the end of camp, ask campers and staff for an evaluation of camp. When creating the evaluation, consider what kind of information will be useful to you and to future efforts. The evaluations should tell you if you achieved your goals, and give feedback on how camp went. Campers and staff can say what they liked about camp and what they would change for next time. Ask the staff to make recommendations for the next camp including descriptions of what were the good features of camp and what they would change for next time. Add that to camper evaluations, and write up recommendations to be included with the report. Discuss evaluations with staff and record lessons learned and recommendations for the future.



Plan follow-up activities with the campers, counselors, parents and/or staff

Sometimes directors or counselors get together with staff and campers after camp to share photos and videos, and socialize. Some camps are part of a larger program and have built in follow-up activities, such as improving school performance, increasing volunteerism, service projects, or ongoing environmental clubs. Camp planners may have a set of follow-up activities to maintain the relationships that were formed at camp, or to work with campers on a long term basis of continuing environmental education, personal growth or community service.



Celebrate! Conduct an end of camp ceremony

Traditionally camps end with a celebration that includes awards and other recognition, singing and skits, exchange of souvenirs and addresses and goodbyes. On the last day, there is usually a "graduation" where all campers and staff assemble to recognize achievements.

AFTER THE CAMP

Reporting and Documenting

- Compile camp evaluations
- Write reports
- Send thank-you notes to donors and all others who helped

Compile camp evaluations

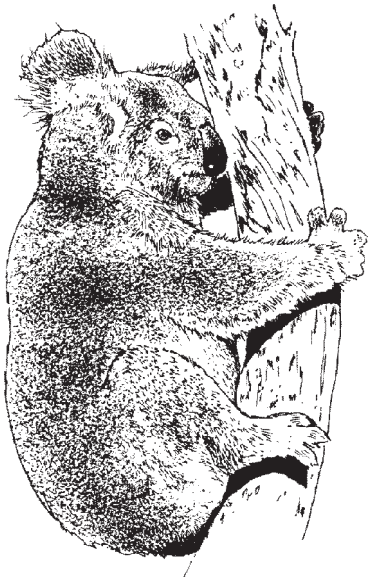
Compile both camper and staff evaluations. Summarize them for the report, below.

Write reports

A good report will leave a record of the camp for future planners, share evaluations, and inform camp sponsors. Include a narrative that summarizes the camp experience and has the statistics. A budget should also be included for sponsors and future planners. It should contain the planning budget as well as actual expenses and income. Photos and videos add interest to the final report.

Camp reports may include:

- Overview and description
- Camp goals and objectives
- Logistics - dates, transportation, meals, lodging, etc.
- Camper application, selection, and demographics (how many, who, ages, etc.)
- Staffing patterns, roles and responsibilities
- Budget versus actual cost
- Funding sources
- Daily schedule of activities
- Publicity strategies and materials
- Evaluation and recommendations for the next camp
- Supply list
- Resource list – people, information and supplies
- All forms, flyers, applications, etc.



Send thank-you notes to donors and all others who helped

Make sure to thank everyone who helped. Camps are group efforts and people should be recognized for their work. Thank-you notes are investments in the future of camps. It is important to remember to do this. At the end of camp, people are often tired, so it may take an effort to get the end of camp work done.

RESOURCES

Peace Corps' camp reports are useful sources of information. Check the local Peace Corps offices for these reports. There may be camp reports from other countries available at your local office as well.

Print

Environmental Education in the Schools. Washington, DC: Peace Corps. [ICE No. M0044]

Adapting Environmental Education Materials. Washington, DC: Peace Corps. [ICE No. M0059]

Camp GLOW (Girls Leading Our World) Handbook for Volunteers. Washington, DC: Peace Corps. [ICE No. M0056]

Community Content-Based Instruction (CCBI) Manual. Washington, DC: Peace Corps. [ICE No. T0112]

Working with CCBI: Volunteer Workbook. Washington, DC: Peace Corps. [ICE No. M0073]

Environmental Education Curricula

Windows on the Wild: Biodiversity Basics—An Educator's Guide to Exploring the Web of Life. Tustin, CA: Acorn Publishing, 1999. [ICE No. FC258]

This guide is a complete course book for teaching young people about the environment, the variety of life on earth and the importance of protecting the web of life. It includes unit plans, resources, games, charts and other activities for teachers and their students in grades 6-8.

Windows on the Wild: Biodiversity Basics—Student Book. Tustin, CA: Acorn Publishing, 1999. [ICE No. FC259]

The student's guide is a companion piece to FC 258 *Windows on the Wild: Biodiversity Basics—An Educator's Guide to Exploring the Web of Life*.

Project W.E.T. (Water Education for Teachers): K-12 Curriculum and Activity Guide. The Watercourse and the Council for Environmental Education, 1995. [ICE No. E0333d]

***Project Learning Tree*: *Environmental Education Pre K-8 Activity Guide*.** American Forest Foundation, 1995. [ICE No. E0330]

These two curricula have many useful activities for all age levels and subject areas. They are all available by training; often Volunteers have the training or can receive training in- country. They also all have curriculum frameworks that can be used for curriculum planning. Many Peace Corps' In-Country Resource Centers have these books.

Web

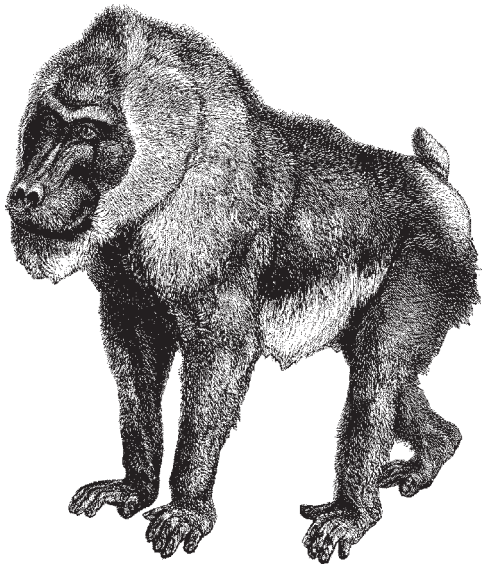
Campfire USA has information about camping.
http://www.campfire.org/default.asp

Campfire Chaos has songs, skits and other activities
http://freespace.virgin.net/mre.davis/campfire.html

Campfire Sing-along Index has lyrics to favorite camp songs
http://www3.sympatico.ca/cottagecountry/dir-cam.htm

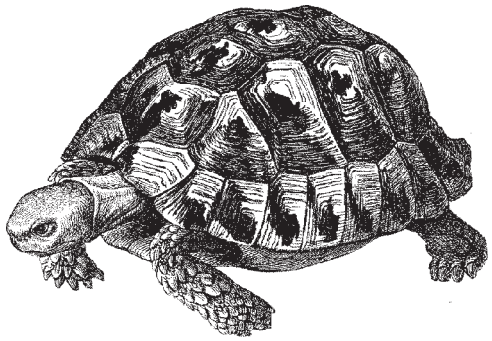
Becky's Campfire Songbook has songs, skits, and other activities for camp.
http://www.geocities.com/EnchantedForest/Glade/8851/

EE-Link has resources for EE professionals including publications, grant resources, general information and professional development opportunities. It also has classroom materials, activities and programs.
http://www.nceet.snre.um



CHAPTER NINE

ENVIRONMENTAL EDUCATION CENTERS



Very few environment Volunteers will have the luxury of starting up and/or running a center dedicated solely to environmental education. More likely, environmental education will take place in conjunction with other community activities related to such things as health or community development. Therefore, this chapter is devoted to providing suggestions and ideas for Volunteers who would like to integrate environmental education and awareness along with a broader set of activities. For example, in a health center, the agenda may include environmental health in addition to vaccination or prenatal care programs.

In an EE center, the staff may have more flexibility in choosing the target audience and content of the program. Therefore, the first section of this chapter deals with centers specifically designed for EE programs; while the second part offers suggestions on how to integrate EE activities into other areas. In schools and in community centers, environmental programs are often broadly defined, and focus on a particular target audience, such as children or women. In parks, preserves, agricultural extension centers, small business development centers, or health centers, the environmental education program is typically more narrowly focused on parks, agriculture, business, or health.

ENVIRONMENTAL EDUCATION CENTERS

Environmental education centers are buildings and outdoor areas planned around the local environment and conduct programs that focus on local ecosystems and environmental issues. These centers may be associated with parks, reserves, or other protected or reserved lands. In an EE center, all activities deal directly with environmental education. Many of the activities held in an EE center can be held in other venues as well. The possibilities for environmental education are limitless and should be based on the circumstances specific to the community. The following section can help to generate ideas about what might be effective (and fun!) in your community.

Indoor facilities

Ideally, an environmental education center blends well with its surroundings. The architecture or decorations on the outside and inside of the building reflect the surrounding natural and cultural environment. Themes and motifs that bring attention to the ecosystem can attract visitors to the center. Signs can help to orient visitors.

EE centers often devote space to interpretive displays or exhibits to capture a viewer's interest and make a point about the environment or an environmental issue. Environmental concepts are interpreted in a way that resonates with a particular audience and usually reflects the surrounding ecosystem. Exhibits can be visual, auditory, interactive, or multimedia, and they are often held in open areas where visitors can browse without a guide. Exhibits may be permanent or temporary, and may include live plants or animals. They may be on a wall or a partition; they may be on a counter or in a display case. For a more detailed description of creating exhibits and caring for animals see Chapter Ten.

EE centers often offer classes and presentations, so there may be classrooms, or large open areas for giving presentations. Classrooms may include laboratory or workspace, sinks, chalkboards, bulletin boards, tables and chairs or desks, and storage space. Presentation rooms are used for larger audiences for presentations, meetings, and conferences. Presentation rooms may include podiums, display tables, seating, and screens for slide shows, films, videos and other visual presentations. These activities may also take place in any open space where people gather. Sheets of cloth or paper may serve as screens; walls as bulletin boards; and boxes as storage space.

If your EE center wishes to house research activities, space is needed for the researchers to work in controlled conditions, and to store their equipment and materials. This type of laboratory or workspace can be used for a variety of activities, including housing animals or plants, making materials or equipment for the center, looking at field trip collections, or any other messy activity that requires space.

EE centers usually have office space for staff, resource rooms or libraries, and storage space for equipment and supplies. Equipment may include communication equipment: phones, faxes, computers or typewriters. It may include lab equipment such as microscopes, glassware, cages, terraria or aquaria. It may include audio-visual equipment including slide projectors, video players, film projectors or overhead projectors.

There are often local adaptations that will serve the purpose of your organization. Community members will know what local resources may be available to obtain equipment or skilled workers who can build facilities for the center. Another alternative is to contact large corporations in the area who might be interested in donating (or providing funds to purchase) equipment and supplies.

Outdoor Facilities

Outdoor facilities usually include natural areas and areas for conducting demonstrations and projects. Natural areas include nature trails, ponds and wetlands, forests or coastlines. Demonstration areas are places where people learn about agricultural practices, soil conservation, water use, forest practices, fish farming, gardening, food processing, crop storage, composting or other activities. Project areas are places where center projects are conducted and might include forests, farms, a recycling center, compost piles, a greenhouse or garden, beehives, or alternative energy sources. Outdoor areas may be landscaped to reflect local ecosystems or goals of the organization. Parking areas, latrines, and picnic areas may also be included.

Possibilities may include:

Natural areas:

- Ponds for fish, turtles, frogs or water plants
- Trails with plants labeled (medicinal, alpine, forest, etc.)
- Trails demonstrating different ecosystems or plant communities (wetland, coniferous forest, tropical forest, etc.)
- Wildlife viewing areas
- Trails highlighting human impact
- Trails showing animal signs
- Trails giving a historical perspective
- Trails showing geological features and change
- Bird-feeding areas
- Soil profile
- Rock collection
- Forests with forest practices highlighted

(See page 194 in Chapter Ten for a more detailed description of nature trails.)

Demonstration areas:

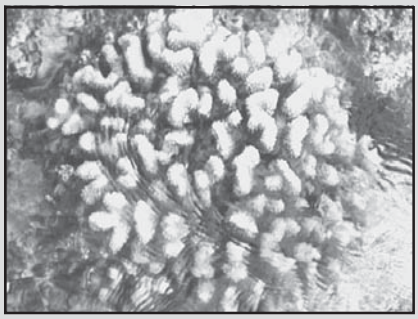
- Crafts with natural materials
- Planting or improving crops
- Water well construction
- Storing crops
- Water treatment
- Reducing/reusing/recycling methods
- Solid waste disposal
- Animal identification
- Smoking, drying or canning food
- Building solar or wind energy sources
- Marketing local products
- Gardening
- Soil conservation or erosion control
- Habitat restoration and maintenance

Project areas:

- Gardens
- Wind, hydro, solar or methane power
- Forests or orchards
- Beehives
- Animal husbandry or wildlife rehabilitation
- Water wells and/or treatment

- Greenhouses
- Zoo
- Soil conservation practices
- Botanical gardens
- Protected areas for wild animals or plants
- Research projects

ENVIRONMENTAL EDUCATION
— BELIZE —



A marine biologist assigned to Green Reef/Belize in San Pedro, Ambergris Caye, focused her work on environmental education, research and sustainable resource development for the benefit of the community. As an environmental education Volunteer, she was very interested in the conservation awareness of the community. To raise local environmental awareness, she wrote a weekly column called "Reef Brief" in the *San Pedro Sun*, which is devoted to topics relevant to marine conservation.

The Volunteer presented environmental education programs in San Pedro schools and to other visitors. She featured topics that pertain to the marine environment of Ambergris Caye. Children received an introduction to marine biology by taking a glass-bottom boat tour of the local reef.

Along with her colleagues at Green Reef, the Volunteer worked with the citizens of San Pedro to set up additional mooring buoys for boats, sought ways to improve and modify the sewage system, and trained tour guides, all of which helps to stave off damage to the delicate coral reef located just offshore.

ACTIVITIES IN AN ENVIRONMENTAL EDUCATION CENTER

The content of environmental education programs will depend on the goals of the organization or group visiting the center. The list below presents some possible options for achieving the goals of the center.

- **Classes and informational presentations:** Classes or workshops can take many forms. School or university teachers may bring their students to a center for a special class topic. Classes may be used to inform community members about methods, techniques, or practices they can use. Informational presentations enhance knowledge in the community, as well as increase the center's visibility in the community. Regular presentations on a variety of topics bring people in to the center. The presentations might cover topics like farming practices, wildlife biology, ecotourism, gardening or geology. If the presentations are regular, the community may think of the center as a comfortable place that offers pleasant experiences and a forum for ideas. A positive community image can go a long way to supporting the work of the center. Classes at the center may include trainings for volunteers at the center, or for community environmental educators, including teachers.

- **Research:** Your organization may or may not be involved in research. If it is, then the research will be by, and in support of, the goals of the organization. If not, it is worth encouraging researchers who are doing work in related fields to use the center for research and share information with the center. For example, the center manager in a waterfowl refuge in Fairbanks, Alaska, encouraged a migratory songbird research project to use the refuge land. The songbird research project has brought in many community members and given the refuge data to use in making management decisions. Forming alliances with researchers can benefit both the researcher and the center.

- **Children's activities:** Besides classes, there are several types of children's activities that can be done at EE centers. Summer day camps offer opportunities for environmental education. Special events put on by or for children, like Family Science Nights, Forest Fun Day or Recycled Inventions, bring families to the center. Some aquariums, zoos or farms allow children to stay overnight in the facility near the animals with their teachers or group leaders.

- **Special events:** An organization's mission can often be well-served by organizing special environmental education events. Some examples are: Arbor Day tree planting, litter clean up days, environmental street theater, game days using all environmental games, art displays (natural fibers, recycled materials, ceramics, wood carving, or other art using local natural materials).

- **Fund-raisers:** Many EE centers must raise funds, and there are many ways to do this. Most cultures have preferred methods, so be sure to discuss appropriate plans with your counterpart. There are many creative ways to raise funds: auctions and raffles raise money by asking for donations of goods or services to be sold; musical or artistic performances raise money by asking performers to donate their time and talents and selling tickets; an organization can host an arts and crafts sale. Organizing and selling tickets for a special ethnic dinner, or a dessert and music evening not only brings in money, but also increase the organization's visibility.

- **Interactive displays:** Most EE centers have informational displays. If displays can be made to be interactive, they will draw community members for the fun. Interactive displays involve the audience directly; the audience actually does something (makes guesses, gives input or makes something). Some examples are: guessing what an artifact (bone, feather, pine cone) is by touch only, using the sense of smell or hearing as a way to identify elements of the environment, placing pictures of animals in the correct habitat on a bulletin board display. Interactive displays are particularly effective with children. Using recycled items to make imaginative

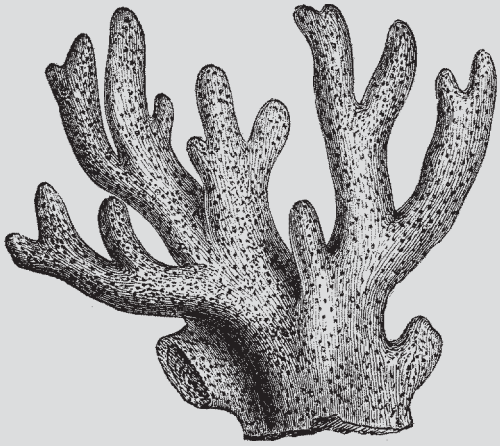
animals, or walking through an imaginary habitat and finding all the birds, are the kinds of activities that appeal to children.

- **Temporary thematic displays:** Most EE centers have some permanent displays that highlight elements of the local environment. Temporary displays add both flexibility and interest to the program at the center, and can highlight seasonal events, timely themes or local talent. An example of a seasonal event might be a harvest display, or a display about migratory animals. A timely theme such as Arbor Day, a conference, or a current issue in the news can be used in a display. Anniversaries of events important in environmental work can be highlighted in displays. Such anniversaries may include the Tbilisi Declaration, the earth summits, or the work of Rachel Carson, John Muir, Aldo Leopold or a local environmental figure. Local artists and photographers who depict environmental subjects may warrant a display. Displays of recycled materials, natural fibers or ceramics, or art with environmental subject matter demonstrate the impact of environment on art. The work of a particular scientist or environmental organization can be highlighted.

- **Theme weeks:** A theme week is devoted to the multidisciplinary study of a topic such as wildlife populations, food from the sea, or insects. During that week, many activities for all age groups are organized for community members to participate. Sometimes theme weeks coincide with fund-raisers or promotional activities. Involving local schools in theme weeks can be an effective educational tool.

- **Meetings or conferences:** Conferences are often an opportunity to share information and to network. Sponsoring a conference can bring together interested parties to work on community projects.

DARWIN RESEARCH STATION
— ECUADOR —



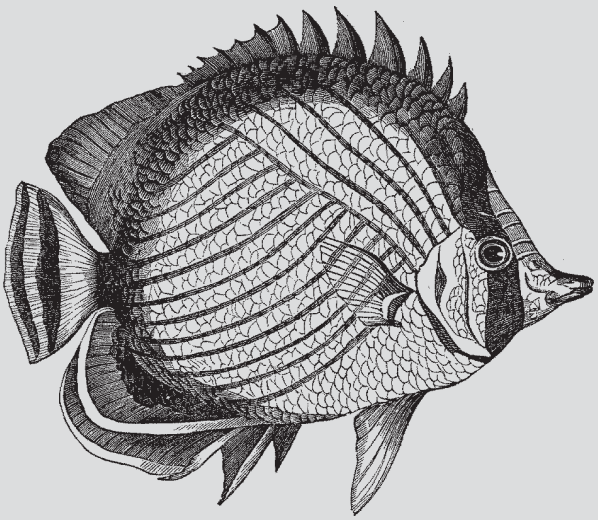
A married Volunteer couple was assigned to be environmental educators at the Charles Darwin Research Station on San Cristóbal Island, Galápagos. They provided formal and nonformal environmental education for children, youth, and adult audiences.

The Volunteers had the dual task of working with children as well as inspiring and training teachers to do environmental education. With the development of inexpensive didactic materials and the use of several different teaching techniques, the Volunteers sparked interest in teachers and students in various environmental subjects.

They also brought teachers and students to the Center for Environmental Education (CEE) that the Charles Darwin Research Station runs in San Cristóbal. Here, the Volunteers developed numerous materials and activities. Those materials, along with audiovisuals and the consistent quality of the services provided, gained the center an excellent reputation among the students, teachers and the general public of the Galápagos Islands.

Small groups of children toured around their own island by boat with an educator to learn about and appreciate their own fascinating island. This gave the children a unique opportunity to experience the wonders of Galápagos while applying the knowledge they learned in the CEE.

Some other effective strategies that have been used to attract interested participants are vacation environment courses and ecology clubs. Part of the success of these strategies is due to field activities in which the participants engage.



In order to reach a larger audience, the Volunteers do a radio presentation once a week to make people aware of news from the CEE and give small ecological messages to those listening. There is only one radio station on the island and the Volunteers have used this means of communication to encourage the people to learn about Galápagos, giving various quizzes and motivational spots.

In addition to work with the CEE and teachers' and students' environmental education, both Volunteers have worked with women's groups in hands-on activities. She has conducted a course and workshop on making recycled paper. He has begun work with wives of fishermen, the largest economic generator on the island. Currently he is collaborating in the design, analysis, and implementation of a socioeconomic study of the fishing sector. This study will be the basis for strengthening and educating of the sector through training.

Taking Stock

- What is the focus of the center you are working in?
- What are environmental issues in your community?
- If you do not work in an EE center, what ideas can you borrow from EE centers?
- What kinds of spaces does your center have available for public displays, offices, storage or resource rooms?
- What outdoor spaces are available and how can they be used to further the work of your organization?
- Are there ways that the available spaces can be used to enhance the program?
- With the staff, brainstorm a list of activities that the center could host. Discuss and prioritize them.

COMBINING ENVIRONMENTAL EDUCATION WITH OTHER ACTIVITIES

Environmental Education in Schools

Class projects can teach a number of environmental principles at one time. For example, asking older students to create a nature trail for younger students will increase observation skills, focus attention on the immediate environment, teach about the skills and knowledge required to make a nature trail, and practice critical thinking about what components to include. Other class projects may include gardens, weather stations, newsletters, clean up days, or making videos. Scientific investigations of the environment are powerful ways to teach and motivate students.

There are several ways to add interest to your curriculum. For example, because students generally enjoy being outside, activities that take place outdoors may increase student motivation. Many activities can be adapted to an outdoor classroom and the local environment. Refer to *Adapting Environmental Education Materials*, ICE No. M0059.

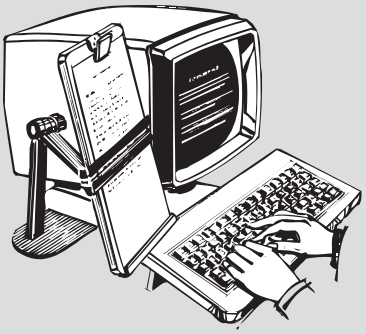
There are many excellent volumes on environmental education in schools, including the companion volume to this manual, *Environmental Education in the Schools*, ICE No. M0044. Also, be sure and look in the resource section for more ideas.

EARTH SPORT PROJECT

— UKRAINE —

The Earth Sport Project was developed and administered by three Volunteers as a national environmental awareness campaign for secondary school students of their community in Kyiv oblast, Ukraine. It used Ukrainian and American knowledge, skill, and teamwork in an effort to help Ukrainian children and prospective teachers explore how ecology is valued and what it means to society. Through a series of 45-minute lessons, students explored the local and global implications of air and water pollution, solid waste and recycling. They also developed a public awareness campaign with the Ministry for Environmental Protection and worked with eight prospective English teachers in developing school curriculums that use content-based instruction to convey environmental themes.

A CYBER CENTER
— JAMAICA —



A third-year Volunteer worked with her supervisor to apply for grants from several environmental education sources, including the Canadian Green Fund, the Environmental Foundation of Jamaica and the UNDP to establish the Cyber Center, the profit from which would be used to support environmental projects.

The Volunteer designed the physical layout of the Center. The programs included educational courses, walk-in Internet use, business publication services, basic computer literacy and training of trainers workshops. She developed all the training materials for the educational programs. She also provided instruction for the initial training course, which covered introduction to computers, basic keyboarding and Internet use. She trained more than 200 people including coworkers, teachers, high school students, government workers, local business persons, nongovernmental organizations and the disabled.

Environmental Education in Community Centers

Clubs, professional societies, or nonprofit organizations often operate "centers" that serve as gathering places in small communities or for particular groups of people (e.g., youth, women, or senior citizens). Peace Corps Volunteers may find opportunities to conduct environmental education activities in these types of centers, which include orphanages, centers for displaced people, women's centers, youth centers, urban recreational centers or other community centers.

It is often possible to develop environmental education activities around the main goals of a center. For example, a program at a women's center and a program at an urban youth center will differ considerably based on the varying ages, needs, and interests of the audience. Therefore, direct your initial efforts toward listening to and observing staff and the target audience, as well as assessing the environment.

A center might serve no other purpose beyond that of a meeting or gathering place. In that case, find out what kinds of environmental education programs may be of interest to the staff or governing board. People from other area organizations may also be able to offer advice as to what an environmental education program should address. Agricultural extension workers, health workers, foresters, teachers, soil conservationists, wildlife managers, nutritionists or others may have useful ideas about programs important to the community.

A community center may benefit by working with other organizations to develop programs. Community gardens bring together agricultural and health organizations. Business and agricultural organizations can work together to create markets or bazaars. Civic organizations may want to become involved and support children's programs or community economic development projects such as summer camps, scholarship programs, or the development of small economic enterprises using local natural resources.

NGO DEVELOPMENT CENTER

— BULGARIA —

A Volunteer in Bulgaria began working with the NGO Development Center in Bourgas to provide management and technical assistance for environmental and other NGOs dealing with local and regional issues in the greater Bourgas area. Her main activities included the organization and start up of the resource center; creation of a monthly bulletin for the Plovdiv and Bourgas NGO Development Centers; researching on the Internet to find useful technical and financial resources for Bulgarian NGOs; and assisting the Single Mothers NGO of Bourgas in developing a Bulgarian Cookbook in English to be sold to raise funds to support their activities. She and a nearby environmental education Volunteer worked with the National Parks and Bulgarian Scouts to develop a project for a ropes course in Bulgaria intended for youth development and environmental education.

This Volunteer also worked closely with the Youth Initiative Alliance, helping the young people organize seminars in peer counseling, set up a crisis hotline and promotional campaigns, organize office structure and place youth in responsible leadership and decision-making roles.

She and a nearby business Volunteer also helped the Bourgas Youth Business Center to develop a survey to identify the interests and service needs of small merchants in the central Bourgas NGO Development Center and also helped to organize a two-part customer service seminar.

Community center environmental education programs may vary in scope from very small, focused projects, such as planting a small vegetable garden on the site, to large, sophisticated projects with associations, by-laws, logos, and regular meetings. Projects may occur as one-time events (tree planting), or short-term projects (adult education classes), or long-term projects (ongoing park docent programs).

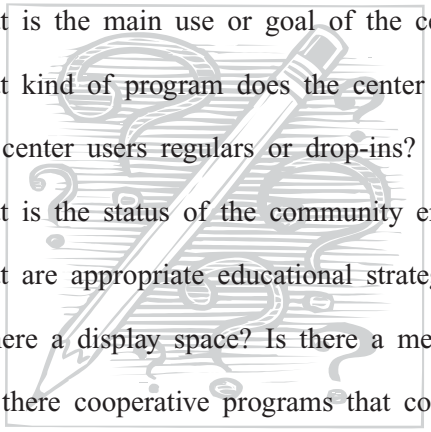
A strength of community center programs is that participants are usually there voluntarily because they want to support the program. There are often influential people involved in these projects who can help move the projects forward and gain support from other organizations.

Environmental education activities appropriate to community centers may include:

- Presentations on agriculture, soils, community forestry, health care, sanitation, gardening, environmental science or related topics
- Community gardens
- Community beautification projects such as parks or rest areas
- Community clean up or recycling projects
- Native plant gardens
- Tree planting

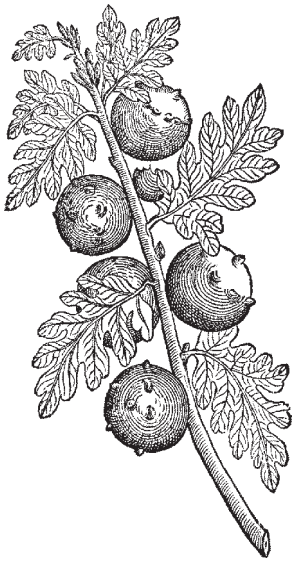
- Community litter cans or other solid waste disposal projects
- Events that celebrate environmental ideas like Arbor Day, solstice, biodiversity, water, forests, wildlife, or Earth Day
- Special topic field trips such as birds of the forest or fish farms
- Studies of local environments leading to recommendations for care and maintenance, or the development of special areas like city parks or protected forests
- Lobbying for responsible environmental legislation
- Educating the general public about local and global environmental issues
- Fund-raising or planning for natural resource management projects
- Clubs formed around environmental interests, like birding clubs or native plant societies; children's clubs like Boy Scouts, Girl Scouts, or 4-H, or wildlife clubs

Taking Stock



- What is the main use or goal of the center you are working in?
- What kind of program does the center staff want?
- Are center users regulars or drop-ins?
- What is the status of the community environment?
- What are appropriate educational strategies for the center?
- Is there a display space? Is there a meeting space?
- Are there cooperative programs that could be done at the center?

Environmental Education in Parks and Preserves



Environmental education in parks usually centers on the ecosystem of the park, or the special species or landforms for which the park was created. There can be displays and presentations, as well as guided and unguided nature tours and camping. Some of these may be operated by park personnel or by private businesses. Some parks may have interpretive centers where classes and other activities are conducted.

In addition to conducting educational outreach activities, Volunteers may also help the park devise environmental policies, which can become political. For example, there may be contentious feelings around issues such as hunting, foraging, and protected species. Poaching is a serious issue, and can sometimes result in dangerous confrontations and violence. Although Volunteers should not become involved in enforcement practices, there may be opportunities to conduct environmental education with poachers.

It is important to discover how the park is used, relevant issues and constraints, and the hopes and goals of park staff. The park may have multiple uses, some of which may be different than you expect. Learn the rules of the park and how they are enforced. It is not the job of a Volunteer to become involved in enforcement, but it is important to know the level of enforcement and the people in charge of it, as well as their expectations of you.

Buffer Zones:

Often there are communities located in buffer zones or protected areas that are in close proximity to the park, and Volunteers may work with these communities to link them more closely with the park. Volunteers may work in community centers to implement environmental education programs related to the park, or help with income-generation projects, such as nature tourism or value-added activities.

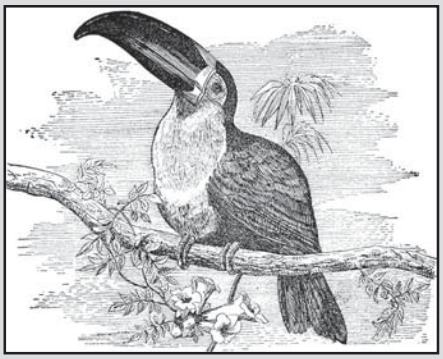
Buffer-zone communities may be dealing with several issues related to the park:

- Buffer-zone communities may want to take advantage of economic opportunities offered by proximity to the park, such as tourism.
- Buffer-zone communities may have lost access to resources as a result of the formation of the park, and therefore may need to develop alternatives.
- Communities may need to develop infrastructure (lodges, restaurants, public facilities, communication facilities, roads, etc.) as a result of the increased numbers of people visiting their town.
- Increased visitation could also mean a desire to limit impact and use by visitors.

AMBORO NATIONAL PARK
— BOLIVIA —

A Volunteer worked in Bolivia's Amboro National Park and the surrounding tropical communities promoting ecotourism and environmental education. As part of his effort to increase environmental awareness and augment local income, he implemented a program to train eight community members as park guides. The eight young men selected to participate in this program received training over a six-month period in bird watching and nature interpretation. In conjunction with this work, the Volunteer also instituted an educational exchange program. The trained local guides invited school children from the urban Santa Cruz area to visit the national park and participate in environmental activities related to park preservation and appreciation.

The goals of these projects were twofold. First, by training local residents as park guides, the project helps buffer-zone communities realize the value of the park and surrounding natural resources, and work to further protect and conserve them. Second, by providing a structured program where students can visit the park, the project promotes urban environmental awareness in the region, and provides a future locally based tourist resource. Through the completion of these two goals, this project will have lasting impact on both local and regional communities.



- These communities may find themselves competing with large tourism companies, or needing to develop skills in dealing with large tourism companies. Community members may be concerned about protecting the interests of local people.

Planning Environmental Programs:

Planning an environmental education program requires the input of all stakeholders. Stakeholders in buffer zone communities may include community members and local businesses, park officials, tour operators from outside the community, or environmental organizations interested in the park. In planning the program, you may need to interact and communicate with all or some of these groups.

When planning an environmental education program, consider park staffing. Parks may not have sufficient funds to provide year-round consistent staff. Find out the history of staffing and plan the program to adapt to the park's staffing pattern and capability. If, for example, there is more staff during the summer season, plan on conducting an ambitious summer program and a limited winter program. If there is high staff turnover, the program should be easy to learn and implement. If acquiring enough staff is a problem, consider developing a volunteer group. University students, secondary students, or other community members may be able and interested in helping with the development of exhibits, leading tours, or office tasks.

Activities:

Environmental education activities in parks and preserves may include:

- Development of displays and exhibits that highlight the features of the park and its ecosystems. (For more information on creating displays, see Chapter Nine.)
- Development of displays and exhibits that teach appropriate, responsible behavior in the park. (See Chapter Nine.)
- Development of nature trails with interpretive signs. (See Chapter Nine.)
- Summer camps for children or adults. (See Chapter Eight.)
- Programs or exhibits for resorts and sanitariums (health and relaxation facilities).
- Camping and picnicking areas with interpretive materials or interpreters who give nature talks. (See Chapter Nine.)
- Explanation and interpretation of scientific research taking place in the park.
- Environmental education aimed at specific groups of park users, such as fishermen, hunters, and gatherers.
- Environmental education in buffer-zone communities.
- Guided wildlife watching.
- Orientation for backcountry hikers, boaters, or other outdoor enthusiasts, as well as for guides for these groups.

The term "***stakeholder"*** refers to the individuals and groups who are affected by the program, and who should have input into its creation.

- Education for income generation projects such as beekeeping, grazing, wildlife tour operators, backcountry adventure operators, use of products of the park as value-added products (berries or other food items, handicrafts, medicinal plants, etc.).

IT'S NOT EASY BEING GREEN
— SLOVAK REPUBLIC —

In the past four years, a national park in central Slovakia has been dealing with a very serious loss of amphibian populations in the southern part of the park. Every year during the spring migration, vehicles kill thousands of frogs as they migrate across roads that were built in the migration route. To minimize this hazard, the national park began conducting environmental education programs for local communities and schools. They also began setting up migration barriers along busy roads to restrict the amphibians from entering the roadways. These amphibians were then manually transported from one side of the road to the other by school children and community volunteers.

With the help of a Peace Corps Volunteer, it was possible to enlarge this project to include eight communities in the northern part of the park. The Volunteer assisted in acquiring the necessary funding for supplies (partially funded by a SPA grant), helped to develop new educational materials, and helped with the biological aspect of the project. Together with his counterparts at the national park, they issued leaflets to children and teachers in the communities, conducted interpretative programs in schools, held public meetings, instituted photo and art contests, recruited students, children, and adults to help manually move the migrating amphibians across the road in buckets, organized data collection for the types of species existing in the area, and coordinated development of new wetlands.

The project was very successful, particularly in the interest it generated in the communities involved, its promotion of local leadership skill development, the data generated by school children and volunteers, and the development of new wetlands within the national park. As a follow up, the project team also developed an environmental education program to generate research data on amphibians, and the mapping of wetland areas located close to high volume roadways, especially those close to communities. The plan is to sustain the project with government and private funding, and to include all communities within and around the park.

Nature tours:

A common activity that park visitor centers can offer is a nature tour. Nature tours show off the natural resources and increase appreciation for the park. Environmental educators can develop nature tours and train tour guides for the park.

Nature tours:

- Are a preplanned sequence of narrated stops along a nature trail
- Are an opportunity to increase awareness of the park ecosystem
- Are a chance to highlight aspects of the ecosystem that people might overlook, or do not have the training to observe
- Can feature information about plants, animals, geology, history, ecology, weather or water
- Should be interesting, entertaining, informative, humorous or even mysterious

- Have several parts to the presentation, including:

  (1) Staging:

  – As people arrive, welcome them and assure them they are in the right place.

  – Greet as many individuals as possible, and establish a friendly relationship.

  – Ask about any special interests such as birding or plants or geology, so you can customize your tour.

  – Inform them about the length, duration, and difficulty of the tour.

  – Remind them about any special clothing, water, bug repellant, etc., that they will need.

  – Hand out any equipment such as binoculars, head nets, or trail guides.

  (2) Introduction:

  – Create an interest in the theme of the tour.

  – Orient the audience to the theme.

  – Present an example of what they will see.

  – Repeat information about length and duration of tour, and show a map to orient them.

  (3) During the tour:

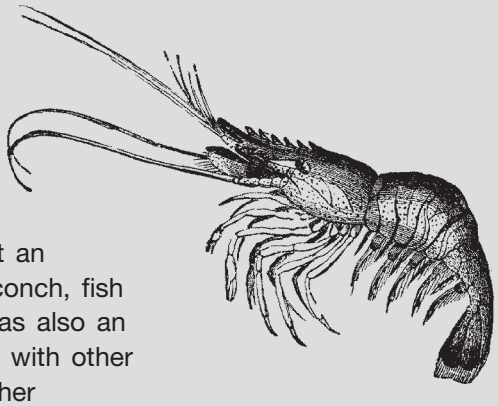
  – Show and describe to your audience interesting and pertinent sites that relate to the theme.

  – Use a storytelling style rather than a lecture style.

  – Encourage questions from the audience.

HOL CHAN MARINE RESERVE VISITOR CENTER
— BELIZE —

Working as an environmental educator with the Hol Chan Marine Reserve on the Island of San Pedro, a Volunteer conducted environmental monitoring and education programs, and assisted with the management of the reserve.



The Volunteer and his counterpart successfully carried out an environmental monitoring program that surveyed lobster, conch, fish and coral populations. The upkeep of the visitor center was also an essential part of the Volunteer's work and he collaborated with other members of the staff to ensure that the brochures and other materials produced by the agency were relevant, current, and in good supply. The Volunteer and his colleagues maintained visitation records to determine the reserve's visitor capacity.

– Respond to their interests along the way.

– Ask questions of the audience and use humor.

(4) Conclusion:

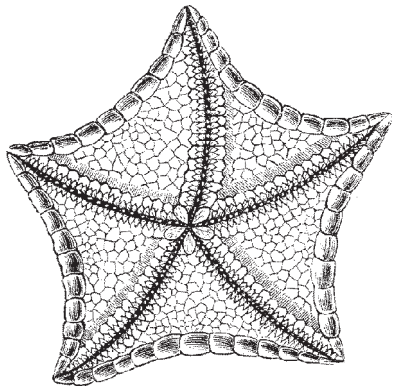
– Collect any loaned equipment.

– Summarize the tour, the sites you visited, and their relation to the theme.

– Answer any remaining questions.

– Ask for evaluations of the tour.

– Thank your audience for coming.



Tour guides should:

- Be interested in the ecosystem of the park.
- Be enthusiastic and friendly.
- Be trained in the natural history and interesting features of the park.
- Be trained how to design and implement tours based on themes relevant to the overall mission of the park.
- Practice taking tours by observing more experienced guides, or practicing with each other.
- Deliver dynamic, interesting, and enjoyable tours.
- Have safety and first-aid training.

Taking Stock

- Why was the park you are working with created? What is being protected?
- Do a biophysical assessment. What are the environmental features of the park and what are its issues?
- What are all the uses of the park? Are there conflicts?
- Are there areas within the park that have special uses? Are there features that can be highlighted?
- Are there buffer-zone communities that would benefit from environmental education programs?
- What is the focus of the environmental education program?
- What are the facilities for environmental education? Will your education program be at the park center, in the field, or both?
- Are there currently environmental education programs in place? What kind of environmental education programs might be created?

- What are the interests of the staff? The visitors? The government? Any private businesses concerned?
- How are the rules for the park enforced? Is there a need for public education about the rules and regulations? Do park users understand the reasons behind the rules?

Environmental Education and Community Economic Development

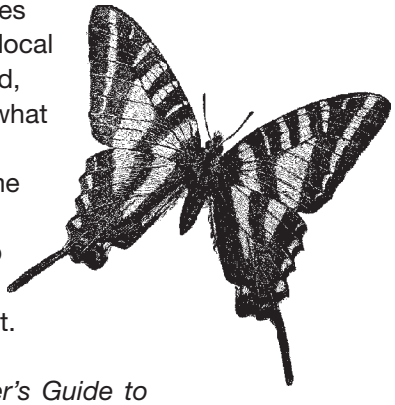
Community economic development (CED) programs focus on enhancing the quality of life in communities by creating opportunities for income generation. CED focuses on building the capacity of the community, and in this way is different from traditional economic development programs, which focus more on providing capital.

CED is closely linked with environmental education because people are often forced to make decisions that negatively affect the environment, but ensure survival from one day to the next. In park or forest buffer-zone communities, for example, there may be issues with sustainable resource use, such as collecting wood for fuel. The community economic development approach seeks to help people use their natural resources in ways that are both economically and environmentally sustainable. Environmental educators may find themselves in situations that require a blending of environmental education and economic development. Here are two examples:

CASE STUDY: KUBEASE AND THE BOBIRI BUTTERFLY RESERVE

Kubease is a small village in Ghana, located about two and a half miles from the Bobiri Butterfly Reserve, a busy tourist destination. Although the road to Bobiri passes right through the village, residents gained very little economic benefit from the tourists and scientists that visited the reserve.

A business Volunteer in collaboration with a committee of nine community members explored a number of ideas to boost the economy using the principles of community economic development. An impressive entrance to Kubease with a welcome sign was erected, and a tourism information center and toilet facilities were built. Houses were replastered and a village artist painted murals depicting local life on some of the houses. Sidewalks were built, trees planted, and an open pavilion constructed. Village merchants learned what goods and services visitors like and how to provide customer service. A bicycle rental shop opened to serve those that came by bus and wanted to ride rather than walk to the butterfly reserve. Kubease became a pleasant place for visitors to stop and spend some of their money, and as a result, citizens enjoy new prosperity and an improved community environment.

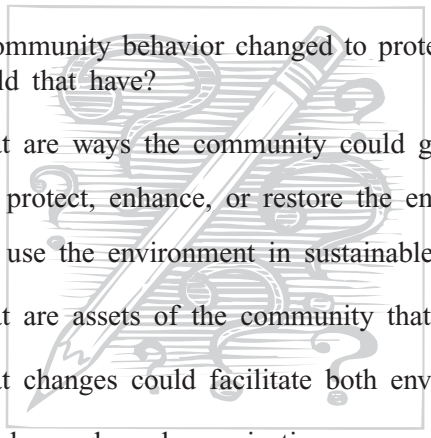


For a more complete discussion, see *A Peace Corps Volunteer's Guide to Community Economic Development (CED)*, Washington, DC: Peace Corps. [ICE No. M0069]

CASE STUDY: WOOD IN THE HIMALAYAS

People in many parts of the Himalayas cook and heat water with wood. Teahouses, which cater largely to tourists, burn large amounts of wood to cook and to heat water for showers. As a result, deforestation has accelerated. Initially, efforts to reduce deforestation were frustrated because there were few viable alternatives to wood fuel. From a CED perspective, the task of the community developer is to work with the community to find ways to cook and make a living without further deforesting the mountains. Volunteers in Himalayan communities have helped residents find alternative ways of heating water (solar), and facilitated local decisions about forest management. As a result, some teahouses have actually been able to expand their businesses without increasing their use of wood fuel.

Taking Stock



- What are the environmental issues in your community that have an economic impact?
- If community behavior changed to protect or enhance the environment, what economic impacts would that have?
- What are ways the community could generate income that would:
  - protect, enhance, or restore the environment, and
  - use the environment in sustainable ways?
- What are assets of the community that could support an environmentally-friendly economy?
- What changes could facilitate both environmental and economic sustainability?
- Which people and organizations are, or could be, the most likely implementers of these ideas?

Environmental Education in a Small Business Development Center

Sometimes business development and environmental interests are perceived to be at odds with each other. But as ecologist Gretchen Daily of Stanford University says: "I see ecosystems as a kind of capital. If managed properly, they will provide a steady stream of benefits. These include not only obvious goods like food and timber, but also life supporting services such as water purification, flood control, stabilization of climate and pollination of crops. Right now we have unprecedented demand for such ecosystem services and a decreasing supply, which increases their value."[2]

The international community, governments, businesses, and large corporations increasingly take into account the environmental impact of their practices. Some of that is from regulatory pressure, some

[2] "Ecologist Gretchen Daily: A Green Who Understands the Power of Greenbacks." *Discover Magazine*, Vol. 23, No. 9, Sept. 2002, page 15.

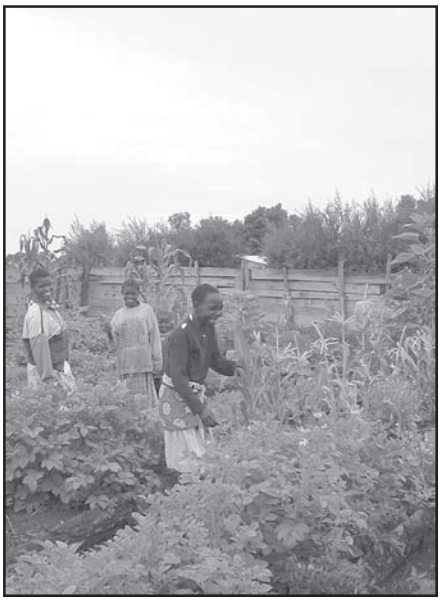
from the cost of clean up, the prevention of pollution or the depletion of resources, and some is from the pressure of public opinion.

Because business Volunteers usually work with small communities and organizations, they are often in advantageous positions to facilitate discussion, design and implement locally meaningful business development initiatives that employ environmentally-friendly practices.

Environmental education programs in a small business development center may take several approaches. If you work with small business owners or on cottage industry development, you might be able to help your clients understand how environmental concepts can affect their businesses, analyze their own practices, and look for alternatives. As an example, a Volunteer could help clients identify market niches that desire traditionally made and environmentally-friendly crafts which may be locally perceived as old-fashioned. Existing community assets, such as the natural landscape or craft-making expertise, may provide untapped opportunities to boost the local economy and protect the environment.

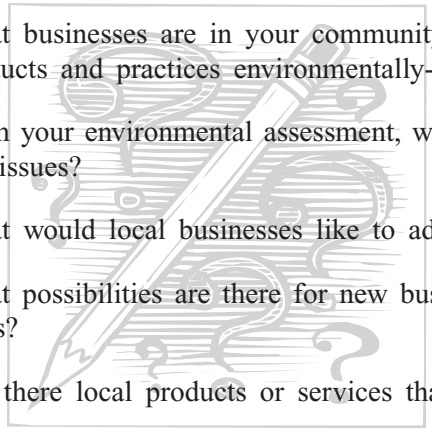
Environmental business topics may include:

- Producing environmentally-friendly products
- Developing and using environmentally-friendly materials
- Making and selling traditional arts and crafts using local materials (e.g., wool, hemp, or nettle fiber)
- Buying and selling local materials and products
- Marketing locally made, traditional, environmentally-friendly products ("locally grown or made," "this product supports...," "traditional, natural product of...," "made from all natural materials" etc.)
- Low cost production using appropriate technology and materials
- How using environmentally-friendly practices can save money and promote products
- Environmental effects of manufacturing practices
- Turning traditional products and practices into money-making businesses (e.g., weaving, knitting, spinning, wood carving, ceramics, sewing, raising free-range chickens)



- Ecotourism possibilities (e.g., living in a yurt, helping on a farm, birds of Indonesia, medicinal plants of Panama, river rafting, hiking the Romanian mountains, fishing in Zambia, experiencing rural Barbados)
- Developing a business plan

Taking Stock



- What businesses are in your community? How and what do they make and/or sell? Are their products and practices environmentally-friendly and sustainable?
- From your environmental assessment, what resources are available and what are some resource-use issues?
- What would local businesses like to add or change in the community?
- What possibilities are there for new business ventures that use natural resources in sustainable ways?
- Are there local products or services that could be built into income generators?

ENVIRONMENTAL EDUCATION IN A HEALTH CENTER

In many parts of the world, the major health problems are also environmental problems. Malnutrition is often due to poor agricultural practices that damage the environment, outdated food storage methods, and insufficient nutritional awareness. An environment that supports disease-carrying insects, such as malaria-carrying mosquitoes and sleeping sickness-carrying tsetse flies, may result from the presence of an out-of-balance habitat that favors the growth of these insects, but is unfavorable to their natural predators. Diseases such as cholera may result from environmental catastrophes, and may be perpetuated by circumstances that often exist in communities with limited infrastructure, such as safe waste disposal systems.

If they understand the problem and learn what steps to take, people can change the environment to improve the soil, agricultural production, and nutrition; to break the lifecycle of disease vectors; or to slow the growth and spread of bacteria.

In addition to providing medical care, a health center can also provide health education that demonstrates the relationship between health and the local environment. Programs to educate the community in some aspect of environmental health should be based on the specific circumstances of the surrounding area. Rather than disease or nutrition, a community's concern might be mental health; community members may be suffering from the stress of a crowded and competitive urban environment. Perhaps air pollution is severe enough to cause lung or skin damage, and needs to be explained. Many health fields have an environmental component, and health Volunteers have opportunities to introduce environmental topics and explore the connections between the environment and health with co-workers, patients, clients, and students.

ENVIRONMENTAL THREATS TO CHILDREN

"The biggest threats to children's health lurk in the very places that should be safest—home, school and community. It is a little known but devastating fact that every year over 5 million children ages 0 to 14 die, mainly in the developing world, from diseases related to their environments—the places where they live, learn and play."

General Dr. Gro Harlem Brundtland, World Health Organization Director. Delivered during a speech to launch the 2003 World Health Day in New Delhi, India.

http://www.who.int/world-health-day/2003/infomaterials/brochure1/en

Environmental health topics may include:

- Clean water
- Nutrition and diet
- Effect of heavy metals, pesticides, and fertilizers on food or water quality
- Food preparation and storage
- Vector-borne diseases (diseases carried by animals or insects)
- Sanitation practices at home
- Pollution and disease
- Sanitary waste disposal
- Health effects of sun, altitude, temperature, or moisture/dryness

The information from the environmental assessment (Chapter Two) will help you to determine levels of knowledge, interest, and priorities as they apply to environmental health. Where you carry out environmental education activities depends on the schedule and existing activities at the health center. If you work in a clinic or hospital, the waiting room can be an effective place for environmental education activities. Posters, informational brochures, or videos can occupy the patients while they are waiting. If your center offers classes to its audience, it may be possible to integrate environmental education concepts into those classes or to conduct presentations on appropriate topics such as: recipes for local foods high in vitamin A or protein; housekeeping to prevent infection; or care of farm animals to prevent disease. It may be appropriate to launch community information campaigns with posters or brochures or through local radio and television stations.

HUMAN RIGHTS AND THE ENVIRONMENT

"Human rights cannot be secured in a degraded or polluted environment. The fundamental right to life is threatened by soil degradation and deforestation and by exposures to toxic chemicals, hazardous waste and contaminated drinking water… Environmental conditions clearly help to determine the extent to which people enjoy their basic rights to life, health, adequate food and housing, and traditional livelihood and culture. It is time to recognize that those who pollute or destroy the natural environment are not just committing a crime against nature, but are violating human rights as well."

Klaus Toepfer, Executive Director of the United Nations Environment Programme. Delivered at the 57th Session of the Commission on Human Rights, Geneva, 2001.

http://www.who.int/peh/ceh/taskforce.htm

Some health Volunteers may work primarily with women and children. If so, educational efforts will need to be directed to this audience. Sometimes it may be possible to work with groups of children while the mothers are being treated or vice versa.

Nutrition

Nutrition education can be supported through the schools where children can learn the basic principles of good nutrition. They could grow fresh vegetables or fruits in a school demonstration garden, and take the vegetables home to eat. A government-sponsored food program might be available to provide school children with a nutritionally balanced meal each day.

If floods or erosion are a frequent cause of crop loss in your area, encourage efforts in flood and erosion control by farmers, with help from agricultural agents, which improve and secure the local food supply.

In urban areas, nutritional problems are intensified by the fact that consumer goods compete for whatever money is earned, and often the family diet suffers as a result. An approach to this problem could be to conduct interventions that demonstrate how a balanced diet improves weight, muscular strength, endurance, and capacity to work, as well as resistance to disease. There may also be opportunities to organize urban gardens.

The World Health Organization (WHO) believes that protein calorie deficiency is one of the greatest public health problems in the world today. A health center project developed in cooperation with an agricultural agency could demonstrate how to develop better soil, how to choose an acceptable protein-rich plant food to grow, and how to prepare it for eating. If diet deficiencies of any kind are an important problem in your area, a demonstration garden could experiment in growing fruits and vegetables that could contribute to a more complete diet. Work with the agricultural agent to identify the plants that are compatible with the environment and local culture. For example, if the climate is suitable, papaya trees might be introduced to provide an easily grown source of vitamins A and C.

Sanitation

Sanitation is the planning and application of measures to maintain a healthy environment. These measures should apply to water supply, sewage and garbage disposal, and control of disease-carrying insects and animals.

Water supply:

A community's water supply may come from a ground water well, a spring, a stream, a river, or a lake. Unless there is a community-wide water purification system, whatever water there is should be considered to be a potential source of infection and parasites. Therefore, each user should disinfect water. The most effective method of preventing waterborne infection and parasites is to boil the water for at least 10 minutes to kill bacteria and parasite eggs in the water. Water purification can be done on a community-wide basis by adding chlorine or iodine to a water storage area.

Health centers are concerned with educating a community to develop a clean water source. This would involve educating people to:

1. build and use latrines, not the river or lake;
2. put garbage in compost piles, not in or near the water supply;
3. not bathe in the water supply;
4. keep domestic animals out of the water supply; and
5. use erosion control techniques to keep topsoil from washing into the water supply.

Other local sources of water contamination should be studied and remedied.

Sewage:

Sewage is the term used for human waste. Sewage can be disposed of properly through the use of latrines. Latrines can be built for each family, or one or several can be built for the community as a whole. Family latrines are usually more effective in dealing with sewage since a family is likely to use the latrine and keep it clean. Community latrines are often neglected since no one feels personal responsibility for keeping it clean or in good repair. Where possible, encourage people to build family rather than community latrines.

Pit Latrines:

A pit latrine is basically a hand-dug hole in the ground, covered with a slab, preferably of concrete, either for squatting or with a seat. A shelter is built around it. Human waste is isolated and stored in the pit latrine, so that no harmful bacteria or parasites can be passed on from the waste to new hosts. In the pit, the waste decomposes, first into odorous ammonia products, then into nitrites and nitrates. This decomposition process generally kills the majority of harmful organisms.

A health center should provide help and information about latrine building. See the list of resources at the end of the chapter for resources on this topic. You can also ask the health APCD in your country, or health Volunteers.

There are different cultural taboos about the collection and disposal of human waste, which should be considered when developing sewage disposal solutions. Privacy and the separation of the sexes may be important considerations.

Garbage:

Garbage is largely composed of food waste, but can also contain other unwanted materials such as paper, cans and bottles. From a conservation standpoint, food waste should be returned to the soil as a compost material. This adds both nutrients and organic materials to the soil, which will increase its fertility. A compost pile can be a family or a community project. If there is space available outside a health center, a demonstration compost pile can be built with organic waste from the community members. When the compost is ready for garden use, it can form the basis for a demonstration garden, or can be divided among the community members for their own garden use. (For directions on making a compost pile, see Chapter Ten.)

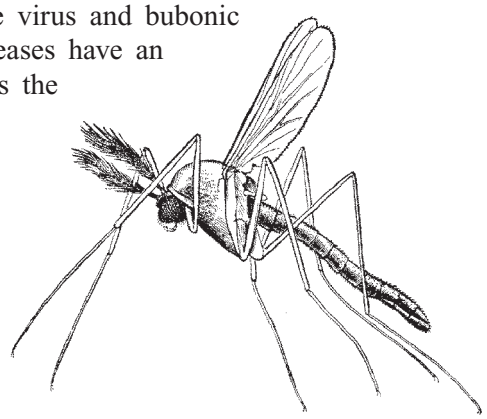
If people are not reusing items such as jars, bottles, cans or other containers, try to find ways to encourage recycling. Plastic bags, batteries and other toxic waste should be disposed of properly. If there is not an appropriate disposal site for toxic materials, help the community designate a site that is away from water sources and inaccessible to animals or children. A single community site (e.g., a large pit) can keep the community clean and free from litter. If possible, the disposal area should be visually separated from the community, either by distance or by a screen of plants.

Hygiene

Health centers are also concerned with the personal hygiene of its community members. Because many hygiene problems occur as the result of invisible bacteria, it is up to educators to come up with creative ways to convey hygiene information. The health center can develop an education program that teaches the relationship of cleanliness to health. The washing of hands with soap and water before handling food; bathing to keep the body free from harmful bacteria; wearing sandals or shoes to prevent penetration of parasites through the soles of the feet; keeping the home swept and aired to discourage insect or bacteria breeding places; and keeping farm animals out of the home should all be part of a program to upgrade the health of the community.

Vector-borne Disease

Vector-borne diseases such as malaria, encephalitis, West Nile virus and bubonic plague are transmitted by insects or other animals. These diseases have an environmental component since, often, the habitat that permits the survival and reproduction of vectors results from some environmental imbalance.



Health centers help people understand the causes of these diseases and the measures they can take to prevent them. For example, mosquitoes, which breed in stagnant water, are the vectors for several diseases. Where possible, efforts should be made to eliminate standing water. Old tires, discarded plastic containers, plugged up gutters and drains, water troughs, open latrines, etc., are all potential mosquito breeding grounds.

Rodents not only destroy food crops and stored grain; they also carry fleas, which carry diseases. Certain rat fleas carry typhus and bubonic plague, and fleas also transmit several species of tapeworm. Although there are chemical methods to control rodents such as rats and mice, their environment can be altered in ways that will discourage or reduce their population. Keep the community free from trash, litter and debris where rodents can hide and nest. Make the grain storage rodent-proof as illustrated in the Peace Corps manual, *Small Farm Grain Storage* [ICE No. M0002]. Most especially, encourage the protection of the predators of rats and mice, such as hawks, owls, and snakes, many of which are nonpoisonous. The health center might display pictures of birds and snakes that help eliminate rodents, or you might be able to keep a harmless, helpful snake as an education aid (see Chapter Ten on keeping live animals).

Parasites

A parasite is an organism that lives off of another organism (host). The host will lose vitality, and could eventually die. Humans can be hosts to a wide variety of intestinal worms and protozoan that may cause disease. If people know how parasites live and how they are transmitted, they can prevent the introduction of parasites into their body. Most parasites enter through ingestion of food or water, or burrow through the skin.

An effective method of demonstrating these types of health problems might be to illustrate the cycle on a flannel board or flipchart. Two suggestions follow:

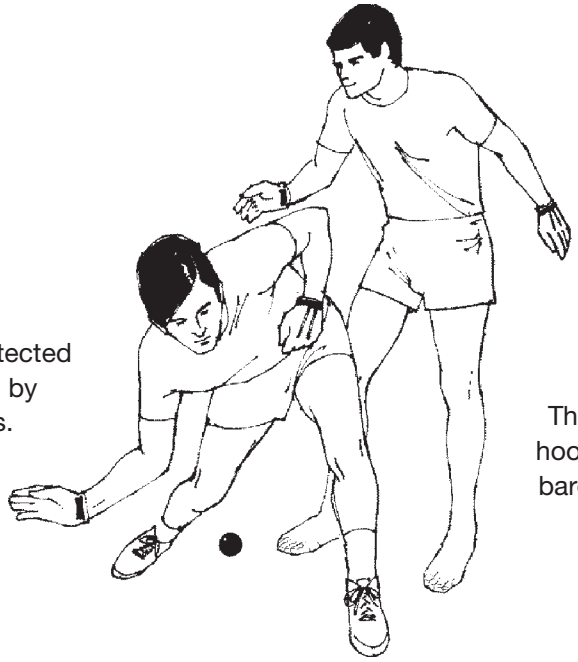
Hookworm:

The hookworm is one of a number of nematodes found in tropical and subtropical climates that lives as a bloodsucking parasite in the intestines of humans.

1. The larvae of the hookworm live in moist soil, which is contaminated by human feces.
2. They penetrate exposed skin, usually the soles of bare feet, and are carried by the blood stream.
3. They travel to the lungs, where they cause coughing.
4. They are raised into the mouth with bloody mucous and are then swallowed. (They can also be swallowed in polluted water.)
5. They then travel to the intestine where they attach themselves with "hooks" and feed on the body's blood supply.
6. A female hookworm can discharge 30,000 eggs a day into the human feces, which will then further contaminate the soil and more people.

As a result of the loss of blood to an infestation of hookworm, people will suffer anemia, abdominal pain, diarrhea, and weakness that will make them susceptible to other diseases.

In explaining this cycle of the hookworm, you can show that if a latrine is used, the soil will not be contaminated with hookworm eggs; if shoes or sandals are worn, the larvae cannot enter the soles of the foot; if water is boiled, live hookworm larvae will not be swallowed. If a person has bloody mucous, he should go to the health center to be treated with drugs that will kill the hookworms. Each of these actions will break the hookworm's life cycle, and will help to destroy it.



This person is protected from hookworm by wearing shoes.

This person may get hookworm through the bare soles of the feet.

HIV/AIDS

Millions of people worldwide are infected with human immunodeficiency virus (HIV). HIV can cause acquired immune deficiency syndrome (AIDS), a fatal disease. When substantial portions of the population are infected, there is a loss in the labor force, because fewer people are able to work full time. In towns, this can lead to loss of services. In farming communities, it can mean that farmers are unable to plant as much and care for the crops as well. It may mean a switch to less labor-intensive crops or subsistence crops, less land under tillage, poor pest control, decline in yield, loss of livestock, all of which add up to decreased food security. It may mean population changes, where only the elderly and very young are left in an area.

Health centers are concerned with the multiple effects of the HIV/AIDS epidemic. In addition to educating community members about prevention, Volunteers can help people with lifestyle changes brought about by decreased ability to work or care for children. Farming practices may have to change, which may change nutrition. Environmental education may focus on changed farming practices, or alternative sources of nutrition in the local environment.

PERMACULTURE AND HIV/AIDS

— MALAWI —

Two Volunteers, one an HIV/AIDS educator and the other a nutritionist, have developed a unique cross-sector and collaborative approach to their projects. They teamed up with the various extension workers that serve the local geographical area. Six project areas are currently represented: health, nutrition, agriculture, environment, forestry, and agroforestry. As a result, this group approaches their development work as a team.

These Volunteers have also incorporated a philosophy known as permaculture (permanent agriculture) into their project. Permaculture is an agricultural-based school of thought, rooted in the fact that no single problem or solution stands on its own. The health of an individual with an immune-related disease like AIDS can be linked to a healthful (or a nutrient-deficient) diet. Nutrition levels can be improved with increased soil fertility and proper environmental practices. The ability to make educated, healthy decisions is directly related to all of these sectors.

Permaculture is composed of four basic principles:

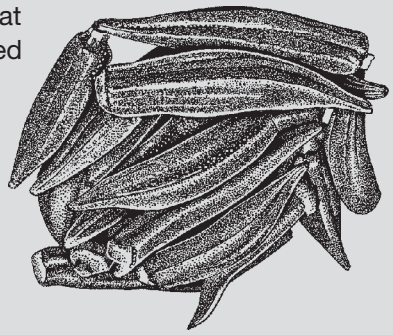
1. Working with nature rather than against it.
2. Thoughtful observation rather than thoughtless labor.
3. Each element of the system should perform many functions, rather than one.
4. Everything is connected to everything else.

Since the beginning of this "team" approach, more than 3,000 trees have been planted. Health education has been given in the areas of HIV/AIDS, diarrhea prevention, and nutrition. Composting, mulching, and alternatives to synthetic fertilizers have been introduced, and community members and Volunteers are exploring the possibility of seed exchanges for indigenous plants, and alternative fuel sources. All solutions come from the community, which helps to provide the self-confidence and ownership that it will take to address future problems in a sustainable way.

From *HIV/AIDS: Integrating Prevention and Care into Your Sector*. Washington, DC: Peace Corps. [ICE No. M0081]

NUTRITIONAL PLANTS AND STRENGTHENED IMMUNITY

— MALAWI —



A Volunteer conducted research into the indigenous food plants that are presently used by communities, as well as those that were used in the past, but have now been displaced as a result of current environmental and agricultural practices. The Volunteer identified 600 edible plants that could be incorporated into the Malawian diet, and which can supplement current diets and add nutritive value to food that is normally derived from agricultural systems. Proper nutrition, in turn, can help boost and support the immune systems of those infected by HIV. Because these plants are indigenous, they are well adapted to the local environment and require less maintenance (and less energy expenditure) than agricultural systems. Volunteers conducted trainings with counterparts, extension workers, and representatives from village outreach programs and encouraged them to implement nutrition education based on indigenous plants in their respective communities.

From *HIV/AIDS: Integrating Prevention and Care into Your Sector*. Washington, DC: Peace Corps. [ICE No. M0081]

Air and Water Pollution

Water pollution may result from contamination with toxic chemicals such as heavy metals, or from biological agents that cause disease, such as *giardia*, bacteria, or amoebas. Air pollution may be the result of airborne automotive exhaust, industrial waste, dust, or other particulate matter. Chemical air and water pollutants can poison and damage body organs. Biological water pollutants can cause intestinal disease. Air pollutants can cause respiratory irritation and disease.

A health center is concerned with identifying and treating the resulting conditions and then preventing and eliminating the causes of these conditions. Environmental education programs can focus on preventative measures such as boiling, filtering or distilling water, or wearing protective masks. Programs may also focus on identifying sources of pollution and mobilizing the community to eliminate them.

Taking Stock

- What are the environmental issues in your community? What is the level of awareness of the connection between environment and health?
- Which environmental issues might be addressed by your organization? Which issues does the staff want to address? Who is the audience for these issues? How and when can these issues be addressed?
- Which educational strategies are most effective for your circumstances? Considering how you could reach your target audience, what strategies will work under those circumstances?
- Are there environmental issues you would like to address with the staff? What educational strategies would be most useful for those purposes?

RESOURCES

Print

Adapting Environmental Education Materials. Washington, DC: Peace Corps. [ICE No. M0059]

Environmental Education in the Schools. Washington, DC: Peace Corps. [ICE No. M0044]

Ham, Sam H., ***Environmental Interpretation: A Practical Guide for People with Big Ideas and Small Budgets.*** Golden, Colorado: Fulcrum Publishing, 1992. [ICE No. FC190]

HIV/AIDS: Integrating Prevention and Care into Your Sector. Washington, DC: Peace Corps. [ICE No. M0081]

Mitchell, Mark K., William Stapp, and Kevin Bixby, ***Field Manual for Water Quality Monitoring.*** Dubuque, Iowa: Kendall/Hunt Publishing, 1996. [ICE No. C0800]

Nonformal Education Manual. Washington, DC: Peace Corps. [ICE No. M0042]

Project Learning Tree: Environmental Education Pre K-8 Activity Guide. American Forest Foundation, 1995. [ICE No. E0330]

Promoting Powerful People. Washington, DC: Peace Corps. [ICE No. T0104]

Rural Water/Sanitation Projects: Selected Technical Fact Sheets. Washington, DC: USAID, 1982, from the "Water for the World" series. [ICE No. C0103]

Small Farm Grain Storage. Washington, DC: Peace Corps. [ICE No. M0002]

Winblad, Uno and Wen Kilama, ***Sanitation Without Water.*** Oxford, United Kingdom: Macmillan Education, LTD., 1985. [ICE No. C1003]

Windows on the Wild: An Educator's Guide to Exploring the Web of Life. Washington, DC: World Wildlife Fund, 1999. [ICE No. E0320]

Web

4-H. Environmental education resources.
www.4-H.org

Audubon Society. Information on birds as well as educational information.
www.audubon.org

Food and Agriculture Organization of the United Nations (FAO). Information on agriculture, nutrition. fisheries, forestry and sustainable development.
www.fao.org

Global Learning and Observations to Benefit the Environment (GLOBE). Science and education program for schools to collect global environmental data for scientific research.
www.globe.gov

National Wildlife Federation. Wildlife education information.
www.nwf.org

National Park Service. Nature Net plus information for teachers and students.
www.nps.gov

Pit Latrines Listserv. This site connects you to the Pit Latrines Listserve Network. This site allows you to communicate with other practitioners and it may help answer questions you have about different pit latrine construction techniques.
www.jiscmail.ac.uk/lists/pitnet.html

SanPlat. This link takes you to the SanPlat latrine slab construction system website. It offers information on how to construct SanPlat latrine slabs and provides the information you need to purchase SanPlat mold kits.
www.sanplat.com/

U.S. Department of Agriculture (USDA). Wide variety of information including biotechnology, drought, rice, food safety, gardening, soil conservation and sustainable development.
www.usda.gov

U.S. Forest Service. Information on forestry and recreation, as well as a kids' section.
www.fs.fed.us

Volunteers in Technical Assistance (VITA). Information on agriculture, communication, construction, crafts and village industry, energy, food processing, health and sanitation, home improvement, recycling, solar power and water supply.
www.vita.org

WELL Resources. This link provides you with technical briefs that were originally published individually in the journal *Waterlines*. The technical briefs cover a wide range of technologies like hand pump maintenance, desalination, small earth dam construction, the use of Moringa Oleifera seeds as a coagulant, and many more. This site also offers you access to the whole collection of briefs in PDF from the publication, *Running Water.*
www.lboro.ac.uk/well/resources/technical-briefs/technical-briefs/technical-briefs.htm

World Health Organization (WHO). Environmental health criteria series as well as a publication list from 1950 to the present.
www.who.org

World Neighbors. Educational programs for community development.
www.wn.org

World Wildlife Federation. Wildlife education information by country.
www.wwf.org