



EVERGLADES NATIONAL PARK



**The
National Environmental Education Development
Program**

Mike Watson
Environmental Education Coordinator



ENVIRONMENTAL EDUCATION PROGRAM



The

National Environmental Education Program

Program

U.S. Department of the Interior
National Park Service

Dedication

Q. How are you and your children affected by the NEED Program?

- A. I was overwhelmed by the change of attitude between teacher and pupil. People were seen as people without the specific roles which are noticeable at school.
- A. They have a greater love and respect for the out-of-doors and nature.
- A. I'm not sure how the children's feelings changed. I am sure my feeling about the children changed, seeing them in a different setting.
- A. The first evening of the trip I was very disappointed in the children's behavior. I felt they lacked cooperation, sportsmanship, etc. But by the time the trip was over, we noticed remarkable improvements in these areas. We worked on several projects--cleaning up litter on school grounds, writing TV stations regarding ecology.
- A. For many, the concept of working and living together in a new and strange environment develops rather rapidly and produces some very interesting results; being able to see the sky and stars at night opens up a new area the kids weren't aware of.
- A. I feel there is so much there we are missing even though we seem to be doing a lot with the children. The experience for all has been invaluable in so many ways and I think that returning teachers especially would like to expand their own knowledge, in their own way, to their individual students.

This NEED Guide is dedicated to all the fine people who make the Everglades NEED Program what it is: students, teachers and school administrators (who are quoted above), and park rangers. A special thanks to the following park rangers in the Environmental Education Office who helped put the guide together:

Jack deGolia, Editing and Typing
Mandy Muller, Graphics and Design
Bill Laitner, Organization and Writing

Use this Guide as a guide. Innovate and adapt. When an idea pops into your head, use it, jot it down, and let us hear about it. It will probably show up in a future edition.

Michael D. Watson
Environmental Education Coordinator
January 1978

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I. Goal

The goal of the program is to:

(1) ACQUAINT THE STUDENTS OF SOUTH
FLORIDA WITH THE EVERGLADES

through a pleasant and memorable
experience, in order to help them

(2) DEVELOP AN APPRECIATION FOR THE
EVERGLADES AND THE TOTAL ENVIRONMENT

which is a prerequisite educators
must achieve in order for students
to effectively

(3) DEVELOP AN UNDERSTANDING OF THE
VALUE OF THE EVERGLADES TO THE TOTAL
WEB OF LIFE

which must be accomplished in order to

(4) MOTIVATE THE POPULATION MOST
CLOSELY DEPENDENT ON THE EVERGLADES
(THE STUDENTS) TO ACT POSITIVELY
AND PARTICIPATE ACTIVELY IN THE
SOLVING OF THE ENVIRONMENTAL PROBLEMS
FACED BY SOUTH FLORIDA IN GENERAL
AND THE EVERGLADES IN PARTICULAR.

II. The National Environmental Education Development (NEED)
Program in the Everglades

What do the following items have in common?

- (1) In 1977 at Flamingo, Drew Middle School students camped during the coldest day ever recorded in Florida. It snowed in the Everglades.
- (2) Dr. Von Beebe and his students from Caribbean Elementary slogged at Shark Valley and were mud-caked to their arm pits.
- (3) A ranger at Elliot Key threw a pile of seaweed onto a picnic table occupied by students from West Little River Elementary. Immediately, hundreds of springtails popped out, scattering students in all directions.
- (4) Students from Bright Elementary rigged a snook on the shore at Flamingo with fishing line so that its mouth would move up and down. Concealing the line under seaweed, they convinced one of their teachers that the fish could really talk.
- (5) Everyone on the canoe trip from Cypress Elementary saw a bald eagle circle overhead. No one talked as it flew away.
- (6) Florida City Elementary students painted a mural of the Everglades the length of one hallway on their return from the park campout.
- (7) Raccoons and mosquitoes nearly destroyed a teacher workshop on Elliot Key. Nonetheless, teachers and rangers alike rose before the sun to see it appear on the ocean. Some were seen to be smiling.
- (8) Blind students from Arcola Lake Elementary examined a live alligator at Shark Valley.
- (9) Students, teachers, and rangers returned home dirty, tired, and friends of the Everglades.
- (10) Vicky of Springview Elementary wrote to us, "I had a good time there. I wished we could have stayed there for a hole week. The best thing I like there, was when we went slough slogging. It was fun. I enjoyed it alot. And it was a great experience, holding the snakes. I never holded a snake in my hole life. Thank you for everything."

The common thread in these items and hundreds more not listed, is they are reflections of the National Environmental Education Development (NEED) Program at Everglades National Park.

Schools began participating in this program in 1972. What started with a handful of schools from Dade County has grown to include schools from Monroe, Collier, Lee, and Dade Counties, as well as one private school. Five different park areas are being utilized for NEED camps. But, why bother?

Everglades National Park is the last remnant of a unique wilderness which once extended from Lake Okeechobee to Florida Bay. Probably no other place in the United States is more suited for environmental education than the Everglades. The environmental movement of the late 60's and early 70's practically launched itself by focusing on the jetport controversy. The proposal to create an enormous aviation complex in the heart of the Everglades, only a few miles from the park boundary, stirred millions of people. The public outcry which resulted, halted further development of the jetport and spurred public examination of countless other environmental issues, many of which are still with us today.

The Everglades drew national attention earlier in this century, too. Around 1900, Congress and the country could no longer ignore nor condone the mass slaughter of wading birds in the Everglades. The hunting of birds to obtain feathers to attach to women's hats and clothing practically exterminated several wading bird species. The Federal government eventually passed laws to protect the plume-bearing wading birds, and in 1947 created Everglades National Park. Within the park are many animals that are rare and threatened with extinction. Probably because of the park and the attention it focused on these animals, there is now national protection for the Everglade kite, the American crocodile, the bald eagle, and others listed as "rare and endangered".

Numerous other environmental problems of grave importance have affected or now affect the Everglades. And all of them somehow involve the adverse effects of man changing a biologically delicate area. A decade ago, the pressures of a reduced fresh water supply, together with illegal hunting, nearly pushed the American alligator to extinction. Channelization--the digging of canals and draining of the Everglades--for flood control, has depressed the fresh water table several feet below historic levels. In a land where inches make vast differences, the reduction of several feet of water has meant that some species' populations have been reduced by 95%. Ask anybody who was here for the Christmas bird count in 1945.

A rapidly-growing urban area--Miami and metropolitan Dade County--is approaching the park boundary from several directions and will influence the character of the park in the very near future. It wasn't all that long ago that the only way to get around Kendall and Dadeland was by airboat.

South Florida has changed drastically and rapidly in the last fifty years. Consequently, the Everglades is an ideal laboratory for environmental education. Today's students will be tomorrow's parents, voters, home buyers, office holders, and even toilet flushers. It is vital to the survival of the untouched character of the Everglades National Park that today's students be tomorrow's informed and concerned citizens, a part of and not apart from the Everglades.

Administrators, principals, teachers, parents, students, and park rangers must work together to produce a successful environmental education program. To be successful, we must define what we are and what we hope to accomplish.

Just what is Environmental Education (EE)? William Stapp of the University of Michigan, defines the goal of EE as the production of a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution. He further states that the major objectives of EE are to help individuals acquire:

- (1) A clear understanding that man is an inseparable part of a system, consisting of man, culture, and the biophysical environment, and that man has the ability to alter the relationships of this system.
- (2) A broad understanding of the biophysical environment, both natural and man-made, and its role in contemporary society.
- (3) A fundamental understanding of the biophysical environmental problems confronting man, how these problems can be solved, and the responsibility of citizens and government to work toward their solution.
- (4) Attitudes of concern for the quality of the biophysical environment which will motivate citizens to participate in biophysical environmental problem solving.

Please reread the goal and objectives of environmental education as

defined by Stapp. Let's apply them to the Everglades. The goals then of the Everglades NEED Program are to:

- (1) Acquaint the students of South Florida with the Everglades through a pleasant and memorable experience, in order to help them
- (2) Develop an appreciation for the Everglades and the total environment which is a prerequisite educators must achieve in order for students to effectively
- (3) Develop an understanding of the value of the Everglades to the total web of life which must be accomplished in order to
- (4) Motivate the population most closely dependent on the Everglades (the students) to act positively and participate actively in the solving of the environmental problems faced by South Florida in general and the Everglades in particular.

In short, then, the goal is to help students develop a personal environmental ethic toward the South Florida environment, especially the Everglades.

Using Strapp's framework, what are our objectives? Students who participate in the Everglades NEED Program will be able to:

- (1) Demonstrate an understanding of man's inseparability from the Everglades environment and man's ability to alter the Everglades ecosystems.
- (2) Compare and contrast the natural Everglades with the urban and school environment from which they came.
- (3) List problems which both man and the Everglades face, offer possible solutions to these problems, and assume personal responsibility for working toward those solutions.
- (4) Display behavior which indicates an attitude of concern for the Everglades and South Florida, and which indicates a desire to help reverse the environmental deterioration of these places.

Can this goal and these objectives be met in a three- or five-day Everglades camping experience? No. The camping program is the experiential aspect of the total program. It reinforces what goes on at the school before the students visit the park, and it stimulates their future study and activity. The Everglades NEED Program must be an integral part of the school's overall curriculum. Otherwise, the camping experience becomes a glorified field trip and the goal and objectives will never be achieved.

Does this mean that a camp is all work and no play? Certainly not. But, learning and having fun, woven together carefully, are complementary. It is imperative that the program be structured to include both.

Facts and information have a place in the program, but they are not as important as concepts and relationships, awakening the senses, and the expression of emotions. When students deal with these things, "having fun" comes naturally and improves their learning.

Numerous approaches to environmental education exist. The NEED Program inherits its name from the National Park Service curriculum materials for grades K-8. The materials utilize the "strands" approach, described in the Appendix. Besides the Park Service approach, the Everglades and participating schools have adapted other strategies as well, such as Acclimatization, Martin County (Florida) Environmental Education Materials, New Games, Values Clarification, Environmental Awareness. No one of these approaches or others is necessarily the only one to follow. All, however, can help achieve our common goal and objectives for the program.

Rachel Carson, a great scientist, was also a great environmental educator. She wrote something important for all of us in the Everglades NEED Program.

"I sincerely believe that for the students, and for the teacher seeking to guide him, it is not half so important to know as to feel. If facts are the seeds that later produce knowledge and wisdom, then the emotions and the impressions of the senses are the fertile soil in which the seeds must grow. The years of early childhood are the time to prepare the soil. Once the emotions have been aroused--a sense of the beautiful, the excitement of the new and the unknown, a feeling of sympathy, pity, admiration, or love--then we wish for knowledge about the object of our emotional response. Once found, it has lasting meaning. It is more important to pave the way for the student to want to know than to put him on a diet of facts he is not ready to assimilate."

From this point a series of all-out efforts was made to
test, train, and develop the young people available.
The organization is in operation and the program is continuing
in various ways.

From and throughout the past a great deal of progress has been made
and is continuing to progress and development, including the
growth and the expansion of the program. When students deal with
these things, they are naturally and properly their
interests.

From the beginning of the organization, the program has been
designed to give the young people the best possible education
available for the future. The program is designed to give the
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III 1

III. Environmental Education Program at Everglades National Park

The Environmental Education Program at Everglades consists of three different programs:

- (1) Students Toward Environmental Participation, or the STEP Program;
- (2) National Environmental Study Area, or NESAs Program;
- (3) National Environmental Education Development, or NEED Program.

Following is a brief description of each of these programs.

(1) In the STEP Program, high-school students participate in an intense two-day environmental awareness workshop. They learn more about themselves, establish a personal relationship with nature, and learn to communicate their new-found environmental awareness and sensitivity. By creating EE programs in their own school or in neighboring elementary schools, these students continue the program and help others sensitize to the environment. Any interested high school group is eligible to participate in a STEP workshop.

(2) The NESA Program is designed to give elementary students a chance to study and experience Everglades National Park. Teachers prepare their students for a one-day trip to the park by integrating EE into the normal curriculum. The trip to the park permits the students to apply their classroom knowledge to the Everglades on a first-hand basis. Participation in a one-day workshop every other year qualifies a teacher for the program. Five NESA areas exist in the park and are utilized by schools from the five-county area surrounding the park.

(3) The NEED Program, for which this guide is written, is directed toward small groups of elementary students, normally sixth-graders. As in the NESAs Program, a school integrates EE into its curriculum, using the Everglades environment as its focus. The field trip to the park is a three-to-five-day campout at one of several areas. Each camp includes twenty-five students and five teachers/chaperones. During the campout, a full schedule of activities is conducted under the supervision of the NEED Coordinator from the school and the assisting Park Ranger. The schedule is designed to meet the goal and objectives as previously outlined.

A school often enters the NEED Program by participating initially in the NESAs Program. Teachers find they can provide their students with a much more intensive experience through NEED. Only a relatively few school groups can camp each year, and selection for the NEED Program is necessarily limited. Teachers who demonstrate a superior commitment for teaching their students about

the Everglades and helping students find a personal environmental ethic are invited to enter the program.

Each year, a two-day, overnight camping workshop is held for NEED teachers. The NEED Workshop provides teachers with the experience and knowledge to conduct a NEED Program in their school and at the park. Any school new to the NEED Program or camping in a new area is required to send their designated NEED Coordinator and one other teacher to the workshop. Any other teachers or chaperones who will camp with the students are encouraged to attend as well.

Thereafter, schools returning to the same NEED camping area are advised to attend the workshop. Attendance is mandatory for returning schools if they change camping areas or NEED Coordinators, if they had problems with their previous camp, or if the NEED Program changes its emphasis. Review sessions on a collective or individual basis may be required for returning schools. The workshops are designed to introduce new ideas and techniques into the NEED Program, to make teachers more comfortable with the Everglades environment, and to reinforce relations between school and park staffs.

The remainder of this manual reviews many of the ideas that have come from past workshops, as well as from the camps themselves, and from a cadre of dedicated students, educators, and rangers.

IV. The Role and Responsibility of Key Personnel

Many people are involved in making a NEED Program successful. Three such people are (1) the School Principal, (2) the School Coordinator, and (3) the Park EE Coordinator. The following is a description of the role and responsibility of each of these people in the NEED Program.

(1) Often, the School Principal first learns of the NEED Program through a teacher on the staff who has participated in the NESA Program. Other times, the park staff contacts the principal directly. In either case, it is the school principal who decides if his school is to become part of the NEED Program. By examining the school's curriculum and by assessing the goals and objectives of the school curriculum, the principal decides to commit himself and the school to the philosophy of the NEED Program.

The next step is to designate a school coordinator. Sometimes, the principal decides to do it herself; other times she appoints the interested teacher who first brought the program to her attention. With the coordinator, the principal selects a staff of teachers who will prepare and instruct the students and who will participate in the actual campout.

The principal and school coordinator decide which of them will be responsible for certain details, but the principal is normally concerned with the following:

- (A) Proper goal and objective-setting for the special needs of the school.
- (B) Development of a program for the students participating in the NEED Camp.
- (C) Selection of students in a manner that benefits the school and school community. There should also be opportunity for selection of minority and exceptional students.
- (D) Proper adherence of school system regulations such as parental permission slips, travel out-of-county authorization, and field trip regulations.
- (E) Follow-up programs for the students which reinforce the experience of the campout.
- (F) Evaluation and improvement of the total program.

(2) The School Coordinator is a jack-of-all-trades who attends to large and small detail. She works closely with the principal and park EE coordinator to orchestrate the overall program for the school. The school coordinator is in charge of the camp. She also delegates responsibility to the other teachers and chaperones involved. And above all, the school coordinator is thoroughly committed to the NEED philosophy and passes on her

enthusiasm for it to the other teachers and to the students.

Some of the many tasks which a school coordinator shoulders himself or delegates to others include:

- (A) Preparation of an agenda for the campout at the park.
- (B) Informing the park coordinator well ahead of time (four weeks) of the agenda so that conflicts can be resolved.
- (C) Arranging a date and place for the campout.
- (D) Coordination of a pre- and post-site program at the school.
- (E) Preparation of a menu and buying of necessary food through cafeteria or other outlets.
- (F) Arranging transportation to and from the park as well as within the park during the campout.
- (G) Student check to see that all have necessary clothes and personal gear.
- (H) Gathering necessary equipment for campout, and being responsible for keeping it in good working order.
- (I) Decision-making throughout the entire campout.
- (J) Arrangements for parent and student meeting before or after the campout.
- (K) Delegation of responsibility to teachers and chaperones during the campout.

(3) The Park EE Coordinator is the liason between Everglades National Park and the schools in the NEED Program. He assists the schools by arranging workshops, proving park camping areas, giving suggestions and advice, and providing assistance during the school camp.

It is important that the school coordinator and the park coordinator maintain close and frequent communication. The park coordinator assists the schools in becoming proficient in conducting a NEED Program. As a school becomes more experienced, the park coordinator will spend less time with those schools and more time with newer schools.

Some of the responsibilities of the park EE coordinator include:

- (A) Communication of the NEED Program and its philosophy to local schools and administrators.
- (B) Providing physical camping sites at the park.
- (C) Assisting school coordinators in the preparation of a camp agenda.
- (D) Providing assistance during a camp for special programs like snake handling, wet hikes, and canoeing.
- (E) Coordination of camping dates and sites for all participating schools.
- (F) Holding NEED Workshops each year that introduce new

ideas and techniques to teachers in the program.

- (G) Constructive evaluation of each camp so that future ones might be improved.
- (H) Attending parent and student meetings at the schools before or after the camp.
- (I) Checking for safety hazards during the school camp.

It is worthy to note that some school systems or administrative areas have curriculum specialists who assist NEED schools under their jurisdiction. In Dade County, the North and North Central Areas have such an arrangement. In fact, each of these Dade County areas have camping equipment for schools to use. In Lee County, a curriculum team of environmental education specialists conduct the entire program for the schools.

Principals, school coordinators, and others involved in the NEED Program are advised to utilize these resource people. Also, veteran school coordinators and teachers are invaluable sources of ideas and advice, and are more than willing to assist when called upon.

V. A Six-Week Countdown for School Principals and Coordinators

A very useful checklist for the NEED Program was developed for the North Central Area of Dade County in their Everglades Environmental Study Units. The version we have printed here has been modified with the hope that it will prove useful to all schools in the Everglades NEED Program.

SIX-WEEK COUNTDOWN, A Principal's and Coordinator's Checklist

<u>Date of Action</u>	<u>Principal's & Coordinator's Task</u>
6 Weeks before camp	<ol style="list-style-type: none"> 1. Write memorandum to appropriate office requesting permission for out-of-county travel. 2. Confirm date for camping, use of equipment and park with assigned park coordinator. 3. Select goal statements and desired student behaviors. 4. Select staff, provide orientation and assign responsibilities. Select 5 for camp. 5. Send selected staff members to first-aid training and canoe training.
5 Weeks before	<ol style="list-style-type: none"> 1. Select chaperons (if 5 teachers are not available). 2. Initiate student selection process. 3. Arrange for transportation carrier, if used. 4. Arrange for private cars for travel within park and car to carry equipment. 5. Supervise selected staff in planning responsibilities.
4 Weeks before	<ol style="list-style-type: none"> 1. Finalize student selection (25 students). 2. Initiate menu planning, order from Food Services. 3. Make arrangements for additional resource personnel at camping site, if needed. 4. Order instructional supplies for on-site activities, if needed. 5. Send proposed schedule of activities to Everglades National Park EE Coordinator, detailing camp's activities from "dawn-to-dusk".

3 Weeks before camp

1. Begin pre-site activities (emotional/social, conceptual) with selected students.
2. Initiate student orientation of specific campsite behaviors.
3. Train chaperons in day-by-day activities, precautions for safety and well-being.
4. Submit temporary duty leave forms for selected staff members to appropriate office.
5. Obtain signature on Assurances and Release of Liability form if transportation carrier is used.
6. Arrange for coverage of classes for staff attending the Everglades NEED Camp.

2 Weeks before

1. Hold pre-site campout or cookout for selected students, teachers, and chaperons. Practice tent set-up and canoeing techniques.
2. Orient parents of students.
3. Insist that all permission forms be on file this week.
4. Conduct joint staff-chaperon final planning session.
5. Continue pre-site activities for students.

1 Week before

1. Collect all money.
2. Assign assigned staff member in checking camping equipment and in repairing defects.
3. Call final staff meeting to check on procedures, items needed, and emergency contact system.
4. Continue pre-site activities for students.
5. Hold evening meeting with students and their parents. Invite Park EE Coordinator to attend.

VI. The NEED Camping Areas

Presently, four areas are used for NEED camps, two within Everglades National Park, one in Biscayne National Monument, and another in Big Cypress National Preserve. All the campsites are representative samples of the native South Florida environment. All afford a multitude of opportunities for environmental education activities. And yet, each area is unique and offers unique situations for students to learn about and to appreciate the South Florida natural environment.

Following is a map showing the four NEED campsites. The map also shows the NESAs (National Environmental Study Areas), which are often utilized by NEED camps. Most NEED camps are held either at Flamingo or in the Big Cypress. We have fewer camps at Elliott Key in Biscayne National Monument and Camp Everglades (owned by South Florida Scouting), but we anticipate that these two areas will be used more in the future.

Traditionally, new NEED schools camp in the Big Cypress, while experienced schools camp at Flamingo. This arrangement generally will continue, but exceptions can be accommodated. All requests for camping in particular areas will be honored as closely as possible, but not every school will be able to camp where it wishes. When possible, schools should rotate to new campsites to keep the program fresh for the teachers involved. But, it must be remembered that no matter where a school camps, the experience is brand new for the students. They will not be disappointed if they camp at Elliott Key rather than Flamingo. Any place will be fresh, new, and exciting for them.

Geographically, Lee and Collier Counties are closest to the Big Cypress NEED campsite. NEED schools from these counties will receive first priority for camping dates at the Big Cypress site. Likewise, Dade, Broward, and Monroe schools will receive first consideration at Flamingo, Camp Everglades, and Elliott Key. The park EE coordinator will consider requests to camp at more distant campsites (such as Lee County camping at Flamingo).

Some considerations apply to all four NEED campsites:

- (1) Students and teachers will be camping in a National Park, and all park regulations apply. Collecting specimens and the feeding of animals is never permitted. A good rule for students to learn ahead of time is, "Take only memories, leave only footprints."
- (2) Groups are limited in size to twenty-five students and five

adults. The ratio of one adult to five children must be maintained for the duration of the camp.

- (3) The school coordinator is responsible at all times for the conduct of the entire group--students, teachers, and other adult chaperons.

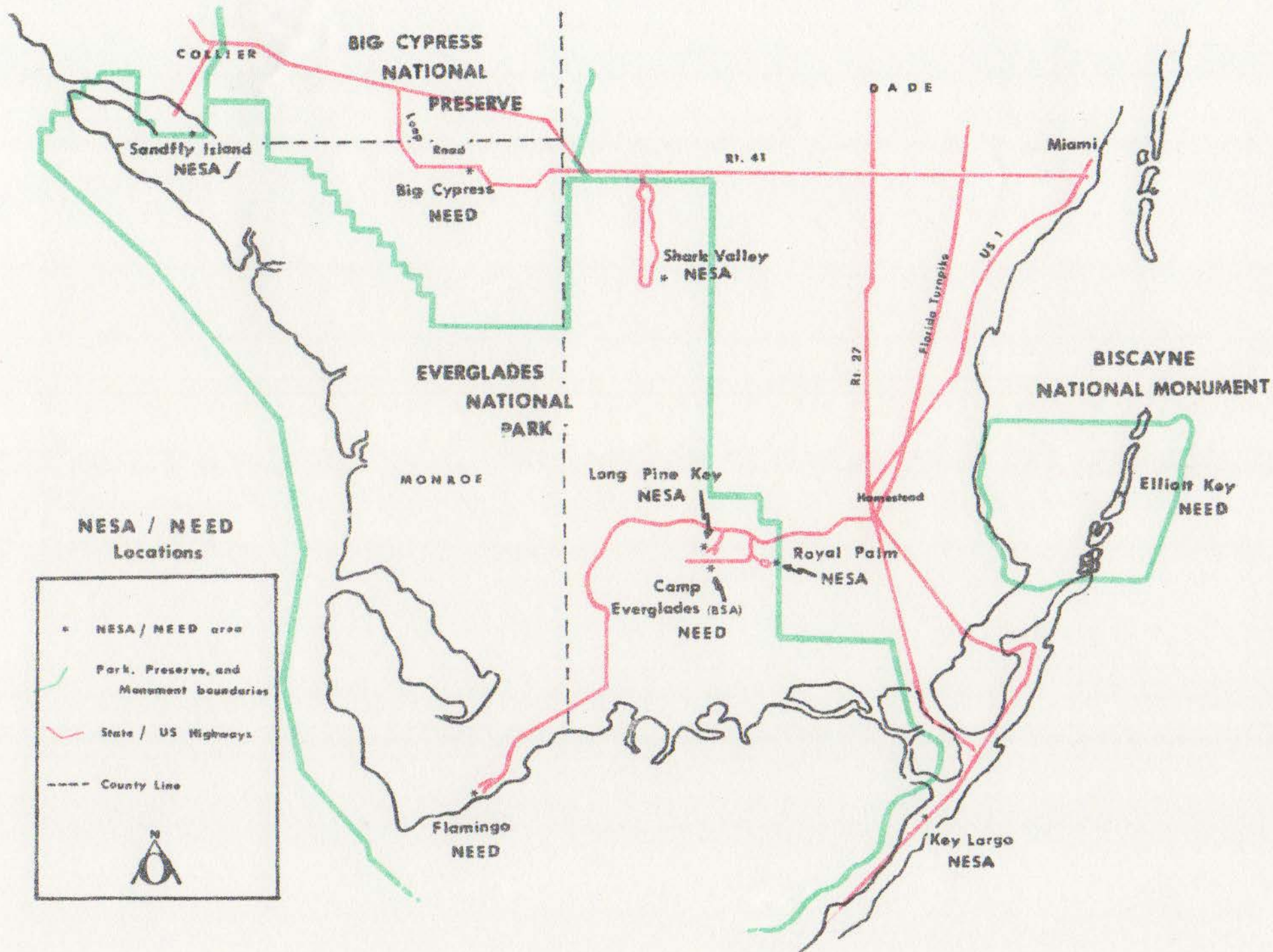
Here are brief descriptions of the four NEED campsites and their individual considerations:

(A) Flamingo

The NEED camping area at Flamingo, in Monroe County, is in the easternmost part of the walk-in section of the campground. Normally, group sites number 3 and number 4 are reserved for NEED camps. The campsite is within fifty meters of Florida Bay and a few hundred meters of the hotel, restaurant, and marina complex. Nearby are hiking trails, canoe trails, slogging areas, and guided boat trips.

Tips for camping at Flamingo:

- (1) Wind is definitely a factor at Flamingo. Warm clothing should always be brought.
- (2) Cold water showers are located in Loop A of the drive-in section of the campground.
- (3) Evening programs for the public are held nightly next to the NEED campsite. Check the posted schedule to see if the program is appropriate for students. Adults must accompany students to the program.
- (4) Snake demonstrations are given by the Flamingo park rangers. The park EE coordinator will arrange a date and time for each camp.
- (5) There are no refrigeration facilities at Flamingo. Ice is available before and after working hours at the Park Service's Flamingo Maintenance Yard. For safety reasons, students are not permitted in the maintenance yard. If the ice machine breaks down, ice can be purchased at the marina.
- (6) Washing clothes or dishes in restrooms is not permitted.
- (7) In addition to the Bear Lake Canoe Trail, which we normally use, there are other canoe trails near Flamingo. The school coordinator must canoe these trails before taking students on them.
- (8) The concession usually gives discounts to school groups for sight-seeing boat tours. Rental bicycles are also available from the concession.
- (9) Transportation is needed throughout the camp in order for students to canoe, slog, and do other activities.
- (10) EMERGENCY PROCEDURES: A ranger is on duty late each night at the campground kiosk. A pay phone is also located there. If the kiosk is closed, check the ranger residence next



to the kiosk. A ranger is on patrol most of the night as well. If no one can be found, go beyond the maintenance yard to the Flamingo residential area. If you really need emergency help, don't be shy--knock on doors.

(B) Big Cypress

In 1974 Congress created the Big Cypress National Preserve. It is located just north of Everglades National Park and administered by Everglades' superintendent. The creation of the Big Cypress National Preserve was essential for the protection of the Everglades watershed and the Big Cypress Swamp itself.

Before the addition of the Big Cypress NEED campsite in Monroe County, a limited number of NEED camps were held at Shark Valley which is in Dade County and in the northern section of Everglades National Park. The Big Cypress site, however, is more appropriate for camping and more schools can be accommodated there.

The Big Cypress NEED campsite was a church camp, but most of the buildings there have been damaged and are unusable. Schools will continue camping in tents at the Big Cypress site. Restrooms and water are available, as is a sheltered cooking area. A classroom can be used in rainy weather. The Shark Valley area in Everglades National Park will still be used by NEED schools. Shark Valley affords some of the best wildlife viewing in the South Florida area.

Tips for camping at Big Cypress:

- (1) No showers are available, but there is water for rinsing off after slogging.
- (2) The campsite is in a very remote part of the Big Cypress, but there is electricity and telephones at the campsite.
- (3) Transportation for students should be available during the camp, especially if the camp lasts more than three days. Canoeing, slogging, and other activities will be held away from the campsite.
- (4) Limited refrigeration is available at the campsite. No ice is available on the site, but ice may be obtained at Shark Valley or purchased from local establishments within driving distance of the camp.
- (5) EMERGENCY PROCEDURE: A park ranger resides on the campsite, and another lives in a private residence next to the camp. The campsite has a phone and park-wide radio communication facilities.

(C) Elliott Key

Elliott Key is the largest of several islands in Biscayne National Monument, thirteen kilometers east of Homestead in southern Biscayne Bay. The island, located in Dade County, is ten kilometers long and one kilometer wide. Although the monument is under separate administration from Everglades National Park, the two Park Service areas work closely together to coordinate the camping program.

NEED students and teachers are transported to and from Elliott Key in a large National Park Service work boat. NEED camping is permitted on either side of the island. A visitor center, marina, and ranger station are located on the west side near a group camping site. Salt water showers and toilets are also on the west side. Another group camping area is on the east side of the island.

Tips for camping at Elliott Key:

- (1) There is no fresh water on the island. Each student and adult must bring two gallons of fresh water, one gallon for personal use and one for community use, in addition to the water normally brought to camps.
- (2) Fresh water conservation is a concept to be stressed throughout the camp. Records of water consumption should be kept.
- (3) Each student and adult is assigned a life jacket throughout the camp. It must be worn whenever a camper is in a boat or wading in the ocean.
- (4) Weather is fairly reliable during the winter camps. Nonetheless, hot, cold, or wet days are possible and should be planned for.
- (5) No refrigeration is available. Ice can sometimes be purchased from the concession, but enough should be brought for the entire camp.
- (6) EMERGENCY PROCEDURE: A park ranger is with Elliott Key NEED groups during the campout. Also, several rangers reside on Elliott Key. Radio communication and ship-to-shore telephones are available at all times.

(D) Camp Everglades (The Boy Scout Camp)

Camp Everglades, owned and managed by South Florida Scouting, is located in Everglades National Park near Royal Palm. The campsite is in Dade County, in an area where intensive agriculture occurred until 1975, when the National Park Service acquired use of the land. The area, called the Hole in the Donut, affords many opportunities for students to examine man's impact on South Florida.

The Scouts are permitting NEED camps in Camp Everglades

since Scout groups use the camp only on weekends in the winter. The camp then provides an alternative to the Flamingo and Elliott Key campsites, and an entirely different camping experience.

Of the four NEED campsites, Camp Everglades is the least developed and most nearly provides a wilderness setting. Located in a mature pinewoods stand, the camp is near a developed Park Service campground at Long Pine Key and near Royal Palm and numerous hiking trails.

Tips for camping at Camp Everglades:

- (1) The camp is within walking distance of the Long Pine Key amphitheatre where public campfire programs are held nightly. Check the schedule to see if the program is appropriate for students. Adults must accompany students to the campfire programs.
- (2) Although water pumps are in the camp, they sit idle for long periods of time. Water containers should be brought and filled periodically at the Long Pine Key campground.
- (3) No refrigeration is available. Ice can be obtained by driving to the Pine Island Maintenance Yard before or after working hours. Students are not permitted in the yard for safety reasons.
- (4) Each camper must learn to recognize poisonwood at the beginning of camp. It is native to the pinelands, and must be avoided.
- (5) Numerous fire roads are near the camp. The roads can be used for bicycling as well as hiking. If the logistics of transporting bikes can be worked out, biking would be a welcomed addition to the NEED program.
- (6) There is no electricity at the campsite. Students will need their own individual flashlights; schools should bring adequate lanterns for the camp.
- (7) A pavillion for dining is at the campsite, as is a large campfire ring. Wood should be brought for campfires.
- (8) The park will provide chemical toilets during NEED camps. The existing pit toilets are inadequate.
- (9) **EMERGENCY PROCEDURE:** Drive to the main entrance station where a park ranger is on duty twenty-four hours a day.

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VII. Preparing the Camp Schedule

(A) Set the stage

NEED camps are most successful when a school comes to the park prepared with an agenda that has every minute of the week planned. Yet, this does not mean that every minute from dawn to dusk is filled with activity. It does mean that periods of activity, meal preparation, clean-up, and rest are all mapped out for the camp prior to the beginning of the camp. The schedule is carefully balanced to include active, fun, quiet, and educational activities. Of course, the schedule can be altered when an opportunity like a bald eagle flies by. But when everyone knows what is to be done and when, both teachers and students benefit.

The school coordinator begins to prepare a camp schedule one to two months before the camp date. The first step in preparing the schedule is to set the objectives for the camp. The overall goal and objectives of the NEED Program have been outlined in Section II of this guide. They serve as a framework for setting specific, individualized objectives for a particular school. Once these objectives are formulated, the actual schedule can be planned.

Sample NEED Camp schedules are included later. First-time schools often find themselves using the suggested schedules fairly closely. But experienced schools are encouraged and often do individualize their schedules to better meet their school's particular needs.

Each planned activity should have its own specific objectives. If, for instance, one activity is poetry writing, one objective for it might read, "At the end of this activity each student will write one poem which compares and contrasts the Everglades with their school and community environments." Or, if the planned activity is a wet hike, the objective might be, "At the end of the wet hike, each student will be able to describe a hammock, a sawgrass plain, and the differences between each. Each student will also be able to draw a web of life using animals and plants seen on the hike."

One month before the camp, submit the schedule to the park EE coordinator. She consults with the school coordinator and checks to see that the schedule is realistic and meets the objectives of the NEED Program. She also decides, with the school coordinator, where she provides ranger assistance. Conflicts are ironed out, and the school coordinator finalizes the schedule for presentation to the students and their parents.

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New NEED schools can depend on more ranger assistance than experienced ones. Experienced schools should be able to generate new ideas and activities on their own, and incorporate them into their camp schedule. An experienced school is considered to be one which retains the same school coordinator and most of the teachers who camped with students from one year to the next. If an experienced school changes its coordinator and most of its staff, the school is presumed to be a "new" school, even though it has been in the camping program before. Ranger assistance is given to all schools for activities like wet hikes, canoeing, and snake handling.

(B) Ideas

Following is a list of ideas that can be used before, during, and after a NEED camp. They have been gathered from past workshop agendas, camp schedules, and ideas sent to the park by school coordinators. The ideas are listed here without explanation--we want to jog your memory and stimulate your thinking. Pick and choose from these suggestions to develop your own camp schedule. Contact the park EE coordinator or an experienced teacher for further explanation.

Before the camp

- view films on the Everglades
- create an Everglades section in the school library
- hold parent and student meetings before the camp
- touch bags with objects from the Everglades
- practice setting up tents
- hold a one-night campout on school grounds before going to the park
- on the way to the park, have students gather vegetables for camp at "U-Pic" fields
- do "web of life" activities
- students create their own rules and regulations for camp
- students are assigned to tents and to teacher; each tent group picks a name and makes an appropriate sign for the tent
- practice canoeing techniques
- study ecological problems in the Everglades
- Everglades vocabulary studies
- create words for songs about the Everglades
- do map studies of South Florida
- make bulletin board of wildlife and plants found in the Everglades
- do an historical study of the school area--find out what it used to look like before 1900.

During the camp

- students keep diaries
- sensitivity activities such as Rock Friend, Natural Scavenger Hunt, Trust Walks, Build a Nest
- reading of stories like The Giving Tree (Shel Silverstein) or The Lorax (Dr. Seuss)
- bird watching
- plankton net construction; seining; water testing
- energy education and conservation in the Everglades
- canoeing and wet hikes (slogs)
- sunrise and sunset watches
- Martin County (Florida) curriculum materials for marine studies
- hula-hoop study areas

- sketching, poetry writing about the Everglades
- evening skits at camp
- photo sessions--each student allowed a set number of pictures at camp
- puppeteering
- snake programs
- New Games
- zonation studies of plant communities
- environmental awareness cards
- skins and skulls
- evaluate each camper and give awards
- personal water budget records
- orienteering activities with compass
- star gazing, night sounds activities
- environmental art; trash plaques
- Seton Watch
- sing-a-thon using environmental awareness and Everglades songs
- Haiku and cinquain poetry
- Outdoor Biology Instructional Strategy (OBIS)
- historic presentations
- Miccosukee pumpkin bread baking
- Van Matre's Acclimatization activities such as Angles, Identifying with a natural object, Sensory Wheels
- Energy Egg Hunt, Magic Talking Stick
- Camp energy budget keeping--what comes in?, what goes out?

After camp

- poster displays
- make presentation to PTA meetings about trip
- student evaluation of camp
- games constructed and used for instruction in wildlife identification; threatened Florida wildlife
- write songs and poetry about Everglades
- hold a contest to see who can list the most ways to conserve water
- oral reports to other teachers and students
- prepare and present assembly to entire student body, complete with photographs made by students and teachers
- student essays beginning with, "To me, the Everglades means . . ."
- students edit teacher slides and write script for slide show on the camp
- draw pictures of animals, plants, and scenery, and display in school.
- communicate with action organizations like National Wildlife Federation, National Audubon Society, or Defenders of Wildlife
- skits for other classes
- write letters to government agencies and elected officials in favor of a better South Florida environment
- create a mural of the Everglades
- organize an environmental action club

(C) Create Activities

During the 1977 NEED Workshop at Flamingo, participants were asked to create activities using one of the "strands" used in environmental education. (See appendix for complete description of the "strands".) In less than an hour, some marvelous ideas emerged from the teachers. These ideas may give you new and refreshing ideas of your own for creating activities suited to your particular NEED Camp.

Activities Created by Participants of the
1977 Flamingo NEED Workshop

- (1) See how many different colors of leaves and branches you can find. The purpose is to become aware of the different colors and shapes that are in the park. Most children think all parks and forests are only green.
- (2) Pick out a branch of a tree and tell what it reminds you of.
- (3) A guessing game. One child picks out something and describes it while the other children try to guess what it is. Discuss why the object is important.
- (4) Have the children look around and write down all the things that are different or unusual.
- (5) Sit in a circle and have the children feel behind them. Ask them to describe what it feels like and what they think it is.
- (6) Sit in a circle. The leader takes an object and places it in the center of the circle and says, "I am going into the Everglades and I might just see a (name the object--for example, a rock) rock being rained on." Each child must continue the story explaining what then happens to the object. For example: "I am going into the Everglades and might just see a rock being rained on." First child repeats the first part and adds "which soon becomes dirt", the second child repeats what the leader and the first child have said, and adds something of his own, like "in which a seed is planted", and so on until each child has contributed to the story.
- (7) Pick an object from the woods and make up a short story about its life. Do the story as a first person autobiography telling what kind of weather conditions it had to endure, what his/her neighbors are like and how they affected its life, and what man might have done to help or harm it. Include things it had seen, heard, smelled, felt, and tasted. Each child does this activity.

(8) The objective of this activity is to improve awareness of racial and cultural differences and similarities. Find in nature different tree trunks, different leaves, noises, plants, textures, and colors. Discuss the differences between each and then the similarities. Then discuss the differences in appearances of the races and the differences in cultures and life styles. Discuss the role of differences in nature and in man's communities.

(9) Find things that may not be natural here (rock piles, orange trees, beer bottles, paths, roads, and clearings). Would these things be found in a true wilderness? Discuss.

(10) List the sounds you hear. How are they different from the sounds at your home? How are they similar?

(11) Sit on the ground. How does your body feel compared to sitting at home?

(12) Find a place where you feel comfortable---comfortable not just physically but also emotionally--a place where you could stay a while and just relax. You may have to move from several spots until you find a comfortable one. Or, you may be able to stay in the first place you pick. After you have found a place, stay a while. Then answer these questions: What is there about this place that makes it comfortable for you? How does this place fit your idea of safety, physical comfort, interests, lack of annoyances, and so on. If you were "selling" your place to a friend, what selling points would you use? What is there about yourself that blends in with this place to adapt and feel comfortable?

(13) Look under things (leaves, rocks, sticks, soil, almost anything) to see what the differences are and why the tops are different from the bottoms. Feel the tops and bottoms of leaves to see if there is a difference. A hand lens would be useful.

(14) Find an object in the forest that you can identify with and tell why you can relate to it. Then begin to be that element within a forest (dramatic). Become your object--a bass, a snake, a fern, a morning glory, a palm, reflections in the water, the winding twig--and act that part out. Become a forest within a forest or part of the forest.

The wind blew gently through the leaves
leaving to the eyes a pattern of slow movement
through the air
how majestic they grow
some in clusters, others quietly alone
An understatement you say, amongst

the tall strong trees of the forest?
 Perhaps in size, surely not in importance
 Look closer to the ground
 There, yes, there underneath your feet!

(15) Examine under a microscope samples of mosses, molds, lichens--determine similarities and differences. Discuss why and how these plants grow where they do. Compare them with the air plants. Blind children can feel these different kinds of plants.

(16) Have a collection of objects taken from the immediate area and have the kids go out and see if they can duplicate the collection. Keep a tally sheet. Identify the collection by feel and smell. Trace an outline of objects as the sunlight filters through them. Have kids go in pairs and try to find the smallest living object they can. The smallest and most insignificant of things still contributes to the formation of the Everglades. No matter how small or insignificant students may feel, they still contribute greatly to life.

(D) Sample Schedules

The following are sample camp schedules for a five-day camp at Flamingo, a three-day camp at Big Cypress/Shark Valley, a three-day camp at Elliott Key, and a five-day camp at the Boy Scout Camp. These schedules should help you individualize your own school's camp schedule.

Sample Daily Schedule for a Five-Day NEED Camp at FlamingoDay One

9:00 am	Depart school
10:00 am	Pick vegetables for camp at U-Pic field on Krome Avenue
11:00 am	Arrive at Main Visitor Center
11:15 am	View Park Orientation Program
11:45 am	Depart for Long Pine Key Picnic Area
12:00 noon	Bag Lunch
12:30 pm	Explore Long Pine Key Trail using sensitizing activities
1:30 pm	Arrive at Royal Palm. Walk Anhinga and Gumbo Limbo Trails exploring web of life and plant community concepts.
2:30 pm	Depart for Flamingo Car or bus activities looking for changes along the road.
3:30 pm	Arrive at Flamingo. Set up camp.
5:00 pm	Dinner
6:00 pm	Rest
6:30 pm	Log entries. Tent meetings
7:00 pm	*Special evening program by Park Ranger for campers
8:00 pm	Travel to West Lake
8:30 pm	Seton Watch at West Lake
9:30 pm	Snack and ready for bed
10:00 pm	Bedtime

Day Two

7:30 am	Rise and shine
8:00 am	Breakfast
9:00 am	*Hike along Coastal Prairie Trail Sensitizing activities Coastal exploration
12:00 noon	Lunch
1:00 pm	Rest
1:30 pm	*Orienteering
3:30 pm	Canoeing Review
4:30 pm	Log entries
5:00 pm	Dinner
6:00 pm	Sunset Watch

7:00 pm	Tent meetings
	Skit practice
8:00 pm	Evening program by Flamingo ranger at amphitheatre
9:00 pm	Star watch
9:30 pm	Snack
10:00 pm	Bedtime

Day Three

7:30 am	Rise and shine
8:00 am	Breakfast
9:00 am	*Canoeing on Bear Lake Canal
1:00 pm	Lunch
1:30 pm	Rest
2:00 pm	Art lesson at West Lake
4:00 pm	New Games
4:30 pm	Log entries
5:00 pm	Dinner
6:00 pm	Rest
6:30 pm	Night sounds activity
8:00 pm	Evening Program at amphitheatre
9:00 pm	Skit practice
9:30 pm	Snack
10:00 pm	Bedtime

Day Four

7:00 am	Rise and shine
7:30 am	Bird watching at Eco-Pond or Mrazek Pond
8:30 am	Breakfast
9:30 am	*Slogging at Paurotis Pond
11:30 am	Clean-up
12:00 noon	Lunch
1:00 pm	*Snakes Alive Program
2:00 pm	Rest
2:30 pm	Energy activities
3:30 pm	Poetry writing
4:30 pm	New Games
5:00 pm	Dinner
6:00 pm	Final skit practice
7:00 pm	Tent skits
8:00 pm	Evening program at amphitheatre
9:00 pm	Story reading and telling
9:30 pm	Snack
10:00 pm	Bedtime

Day Five

6:30 am	Sunrise Watch
7:30 am	Camp clean-up

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8:00 am	Breakfast	7:00 pm
9:00 am	*Environmental Awareness cards	
10:00 am	*Seton Watch along shore	8:00 pm
	Final log entries	
11:00 am	Break camp	9:00 pm
12:00 noon	Lunch	9:30 pm
12:30 pm	Depart for home	10:00 pm
2:30 pm	Arrive at school	

Day Three

*Schools will receive ranger assistance for these activities. Assistance for other activities provided when arranged in advance. Experienced schools are expected to handle most other activities.

Day Four

7:00 am	Rise and shine	7:00 pm
7:30 am	Bird watching at Eco-Tour at Hagerman Forest	7:30 pm
8:30 am	Breakfast	8:30 pm
9:30 am	*Hiking at Hagerman Forest	9:30 pm
11:30 am	Clean-up	11:30 pm
12:00 noon	Lunch	12:00 pm
1:00 pm	*Shades Alive program	1:00 pm
1:30 pm	Rest	1:30 pm
2:30 pm	Energy activities	2:30 pm
3:30 pm	Forest writing	3:30 pm
4:30 pm	How Games	4:30 pm
5:00 pm	Dinner	5:00 pm
6:00 pm	Final field practice	6:00 pm
7:00 pm	Team talks	7:00 pm
8:00 pm	Evening program at Hagerman Forest	8:00 pm
9:00 pm	Story in dining and telling	9:00 pm
9:30 pm	Snack	9:30 pm
10:00 pm	Bedtime	10:00 pm

Day Five

6:30 am	Shades Alive
7:30 am	Camp clean-up

Sample Daily Schedule for a Three-Day NEED Camp at Big Cypress/
Shark Valley

Day One

11:30 am	Arrive at Shark Valley Leave for campsite via Miccosukee Indian Reservation
12:30 pm	Lunch at campsite in the Big Cypress
1:15 pm	Set up camp
2:30 pm	Hammock hike, alligator search or tree snail game
4:30 pm	Hunting Traps Demonstration
5:15 pm	Dinner and Clean up
6:15 pm	Night Sounds activity
6:45 pm	Rest
7:00 pm	Campfire program (teacher)
8:00 pm	Pass the Good Word (poetry activity)
9:00 pm	Bathroom Brigade
10:00 pm	Lights out . . . bedtime

Day Two

6:00 am	Sunrise Ceremony
7:00 am	Breakfast
8:30 am	Hike into Big Cypress (carry lunch)
12:30 pm	Clean up and rest
1:30 pm	Acclimatizing activities
3:00 pm	Art, Snake Demonstration, and creative writing
5:00 pm	Dinner and clean up
6:00 pm	Rest
6:15 pm	Story Time (ranger)
7:15 pm	Campfire Program/Songs (ranger)
8:30 pm	Bathroom Brigade and Bedtime

Day Three

7:00 am	Breakfast
8:00 am	Water Project (working in teams)
9:30 am	Break camp . . . take down tents
11:00 am	Load bus
11:30 am	Leave campsite for Shark Valley
12:00 noon	Shark Valley tram trip
2:00 pm	Bus ride back to school
4:00 pm	Arrive at school---It's all over . . .

Sample Daily Schedule for a Three-Day NEED Camp at Elliott Key
(Biscayne National Monument)

Day One

9:00 am	Leave school
10:00 am	Arrive at Biscayne National Monument Headquarters at Homestead's Bayfront Harbor
10:05 am	*Welcome by Park Ranger
	Safety rules
	Issuance of life jackets
10:30 am	Load onto boat
10:45 am	Depart for Elliott Key
11:00 am	*Orientation from middle of Biscayne Bay
11:30 am	Arrive at Elliott Key
	Unload boat
12:00 noon	Bag lunch
12:30 pm	Set up camp
1:30 pm	*Explore Elliott Key
	Sensitizing activities
3:30 pm	Energy activities; the ocean
4:30 pm	Log entries; water budget calculations
5:00 pm	Dinner
6:00 pm	Rest
7:00 pm	*Talk by ranger
8:00 pm	Star Watch
	Campfire
9:30 pm	Snack
10:00 pm	Bedtime

Day Two

7:30 am	Rise and shine
8:00 am	Breakfast
9:00 am	*Coastal study (low tide)
	Zonation study
11:00 am	Flotsam art
12:00 noon	Lunch
1:00 pm	Rest
1:30 pm	*Water activities--seining and plankton nets; glass-bottomed buckets; specimen gathering.
3:30 pm	Poetry writing
4:30 pm	Log entries; water budget calculations
5:00 pm	Dinner
6:00 pm	Sunset Watch on west side
7:00 pm	*Night barge
	Night sounds activity
	Evening stories
8:00 pm	Campfire
	Songs
9:00 pm	Snack
9:30 pm	Bedtime

Day Three

6:00 am	Rise and shine
	*Sunrise watch on east side
7:30 am	Breakfast
8:30 am	*Orienteering
10:00 am	Final water budget calculations
10:30 am	*Seton Watch on west side
11:00 am	Break camp
12:00 noon	Lunch
12:30 pm	Load boat
1:00 pm	Return to mainland
1:30 pm	Leave for home and school
2:30 pm	Arrive at school

*Schools will receive ranger assistance for these activities. Assistance for other activities provided when arranged in advance. Experienced schools are expected to handle most other activities.

Sample Daily Schedule for a Five-Day NEED Camp at the Boy Scout Camp (Camp Everglades)

Day One

9:00 am	Depart school
10:00 am	Pick vegetables for camp at U-Pic field on Krome Avenue
11:00 am	Arrive at Main Visitor Center
11:15 am	View Park Orientation Program
11:30 am	Depart for Boy Scout Camp
12:00 noon	Bag lunch at camp
12:30 pm	Set up camp
2:00 pm	Camp meeting
	Rules
	Poisonwood identification activity
2:30 pm	Drive to Royal Palm
2:45 pm	*Walk Anhinga and Gumbo Limbo Trails exploring web of life and plant community concepts
4:15 pm	Return to camp
4:30 pm	Log entries
	Dinner preparation
5:00 pm	Dinner
6:00 pm	Rest
6:30 pm	Night Sounds activity
7:00 pm	*Campfire program by Ranger
8:00 pm	Travel to Royal Palm
8:30 pm	Seton Watch on Anhinga Trail

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9:00 pm	Return to camp
9:30 pm	Snack
10:00 pm	Bedtime

Day Two

7:30 am	Rise and shine
8:00 am	Breakfast
	Clean-up
9:00 am	*Hike fire road through pinelands sensitizing activities
11:30 am	New Games
12:00 noon	Lunch
12:30 pm	Rest
1:00 pm	*Snakes Alive Program
2:30 pm	Energy Activities
4:00 pm	Art lesson Natural art activity
5:00 pm	Dinner
6:00 pm	Sunset watch
6:30 pm	Log entries
7:00 pm	Tent meetings Skit practice
8:00 pm	Evening Program at Long Pine Key Campground Amphitheatre.
9:00 pm	Star Watch
9:30 pm	Snack
10:00 pm	Bedtime

Day Three

7:30 am	Rise and shine
8:00 am	Breakfast
9:00 am	*Wet hike to Buzzard's Roost
11:30 am	Clean up
12:00 noon	Lunch
1:00 pm	*Orienteering
3:30 pm	Poetry writing
4:30 pm	Hike to Long Pine Key Picnic Area
5:30 pm	Picnic dinner
6:00 pm	Evening activities on Long Pine Key Trail
8:00 pm	Evening program at campground
8:45 pm	Night walk back to camp
9:30 pm	Snack
10:00 pm	Bedtime

Day Four

7:00 am	Rise and shine
7:30 am	Breakfast
8:00 am	Leave for Flamingo

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8:30 am	Explore Pa-hay-okee Teacher-led activity
9:45 am	Explore Mahagony Hammock Teacher-led activity
10:30 am	Explore Flamingo Seton Watch along campground shore
11:30 am	Bag lunch
12:00 noon	Leave for Bear Lake Canal
12:30 pm	*Canoeing
3:30 pm	Return to Boy Scout Camp
4:30 pm	Rest Log entries
5:30 pm	Dinner
6:30 pm	Final skit practice
7:00 pm	Tent skits
8:00 pm	Star Watch
9:00 pm	Snack
9:30 pm	Bedtime

Day Five

6:30 am	Rise and shine Travel to Royal Palm
7:00 am	Sunrise watch on Anhinga Trail
8:00 am	Breakfast
9:00 am	*Environmental Awareness cards
10:00 am	*Seton Watch in woods
11:00 am	Break camp
12:00 noon	Lunch
12:30 pm	Depart for home
2:30 pm	Arrive at school

*Schools will receive ranger assistance for these activities. Assistance for other activities provided when arranged in advance. Experienced schools are expected to handle most other activities.

VIII. Helpful Hints

Below is a potpourri of hints for a NEED camp. You will think of some we have forgotten as you scan the list. Write your suggestions down, send them to us, and we will add them in the future.

(A) Transportation-- it is best to transport students to and from the park in a bus. Insurance is not a worry then, and loads of camp gear can easily be stowed. Some schools, however, have had difficulty paying for a bus. They have transported students and gear in private cars or rental vans. Some teachers have received compensation for their private vehicle use, some have not. Whatever method you use, make sure it meets school board regulations.

It is very important to provide for transportation during the campout (except on Elliott Key). Students are not permitted to ride in park vehicles except in emergencies.

(B) Personal Gear-- each student will want to bring most of the following items. Students should carry their gear in a pillow slip or cloth sack. Students' names should be on as many of their things as possible.

A pillow case or duffle bag	facial tissues
sleeping bag or 2 blankets	towel (one)
sheet (to be inserted in sleeping bag)	washcloth (one)
*pillow	comb or hair brush
toothbrush	*hiking shoes (hard shoes)
toothpaste	1 pair
face soap	sneakers (2 pairs)
plastic drinking cup	underwear (3-4 changes)
mess kit	long pants (2 pairs)
fork and spoon	2 long sleeve shirts
deodorant	*2-3 T-shirts
<u>approved</u> medication (with name on it--an adult will control all medicine)	sweater
*cotton gloves - 1 pair	jacket (weather-proof wind-breaker type)
handkerchief	raincoat or poncho
*canteen	*stocking cap
2 plastic laundry bags (for wet items)	flashlight
1 12x18 sketch pad	liquid insect repellent (<u>no</u> aerosols)
4 pairs of socks	*clipboard
	2 pencils
	3 clothes pins

*OPTIONAL

(C) General Camping Gear-- Everglades National Park can provide five 10 x 12 foot tents, stakes, and hammers for NEED camps. We advise school districts to purchase their own tents once they are in the program. The park tents are surplus and will not be replaced once worn out. All other equipment must be furnished by the schools.

The following list of equipment can serve as a guide to planning. It is based on past NEED camps. Compare this list to your particular needs.

<u>Number</u>	<u>Equipment</u>
1	COMPLETE FIRST AID KIT!
1	FIRE EXTINGUISHER!
5	lodge tents and accessories
5	hammers
3-4	48-quart ice chests
2-3	propane or white gas lanterns
2	5-gallon water coolers
3-4	pails
1	large propane gas grill with wind guard
2	20-pound propane gas tanks with hoses and connections
3-4	small propane cylinders for lanterns
4	extra lantern mantles
6	insect repellent (liquid repellent such as Cutter recommended)
2-4	camp flashlights
1	broom
1	Roll plastic tape for hoses, tent repairs
6	boxes of wooden safety matches
3	large soup pots
1	large frying pan
2	sauce pans
2	large serving dishes
1	ladle
6	large serving spoons
1	collander
2	can openers
4	plastic storage containers
6	extra mess kits (for visiting principals)
4	pot holders
4	dish towels
1	bag of charcoal
1	package of aluminum foil
1	large bottle of dishwashing liquid
1	gallon bleach

(D) Cooking Tips and Menu--

The first thing to remember is that the "cook" is not just the "cook", but an active participant in the whole experience. Involved menus that require someone staying behind to cook are just not necessary. Plan menus that are easy and fast to prepare, as well as nutritious and enjoyable.

When figuring quantities, allow a large enough portion for each child and adult to be satisfied but not stuffed. Your cafeteria manager can give you measurements for each dish you plan to serve. Remember that children eat more during a camping experience and that cafeteria portions are not always adequate. **PLAN FOR EXTRAS!** Visitors do have a way of dropping in.

Plan to use your perishable meats, such as hamburger, the first night. After that, rely on dishes that use canned products. These are easy to store, are raccoon-proof, and simple to prepare. Ready-made meals, such as canned spaghetti, can be doctored up with a few spices, and make a meal the students really enjoy. Tuna can be used in a variety of ways. Be creative!

Food may be packed in boxes by meals, and marked clearly on ALL sides (for example: BREAKFAST, TUESDAY).

Students are an invaluable asset while preparing meals, and this, too, is part of their learning experience. Rotating tents to help with meal preparation gives all students a chance to participate, and lightens the load on the "head cook".

Following is a five-day menu used in the past at Flamingo. It should help you in your planning wherever you camp, for up to five days.

<u>Breakfast</u>	<u>Lunch</u>	<u>Dinner</u>	<u>Snack</u>
<u>MONDAY</u>			
At home	bag lunch from home	Ravioli Corn on cob Sliced tomatoes Bread Milk	Chips
<u>TUESDAY</u>			
French toast- jelly Chunk cheese orange juice or milk	cheese sandwich chips-pickles milk or juice fruit or any leftover veg. from Monday	Ham Green beans potatoes applesauce bread milk	Fruit cookies

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WEDNESDAY

Cereal-milk	Hamburgers-	Beef & macaroni	Fruit
Toast-butter-jelly	rolls	Mixed vegetables	Cheese
Orange juice or milk	Celery-carrots	Peaches	
	Cookies	Bread	
	Juice or milk	Milk	

THURSDAY

Pancakes-jelly	Hot dogs-roll	Beef stew	S'mores
Fruit cocktail	Beans	Vegetable	
Milk	Orange	Bread	
Chunk of cheese	Milk or juice	Pudding	
		Milk or juice	

FRIDAY

Cereal-milk	Peanut butter-	At home
Toast-jelly	jelly	
Orange juice	Bread	
	Apple or orange	
	Milk or juice	

(E) Tents-- there is no way to learn how to erect a tent except by erecting it! The park can provide written, illustrated instructions for tent erection, but the instructions are involved and can be confusing. Only after you learn to set up a tent do the instructions make any sense. Until you have the tent at your feet, you will never know the joy of first frustration and then final success.

Basically, these steps should be followed in erecting any tent:

- (1) Spread the tent out and position it.
- (2) Stake the tent down, pulling all corners tight.
- (3) Organize the tent poles.
- (4) Connect the tent poles and place them on the tent.
- (5) Raise the tent to completed position.
- (6) Check all poles, stakes, loops, zippers, and make final adjustments.

Never put tent stakes in front of a doorway--students will trip over them. Also, make sure that all stakes (especially on corners) are level with the ground. Almost all accidents at NEED camps have involved falling on exposed tent stakes.

If a tent has a front and back door, one door should be declared off limits. Zippers are the first item to break on tents; the less they are used, the better. Students should be taught to open all zippers on a door completely before going in or out. Half-opened zippers receive too much stress to last long.

Each tent must have one adult in charge. This adult should sleep in the tent with the students. It helps to assign students to a tent before they arrive in the park. Then they can erect and dismantle their own tent as a team. A tent name like "Everglades bobcats" or "crafty crocodiles" with a sign in the window proclaiming it encourages pride and care for the tent.

When properly used and cared for, tents provide reliable shelter for students and their gear. Tents will not stand up to rough-house behavior. Rest, sleep, changing clothes, shelter from rain, and log entries are the only appropriate activities in tents. If the week is planned properly, the students will have little extra time in the tents.

It helps, too, for students to practice tent erecting and dismantling before they arrive. If an extra tent is available, it can be set up on the school grounds the week before a camp. More time can then be spent at the camp on other activities and less time on tents.

If a tent is rolled up wet, it must be erected again and dried out as soon as possible. Mildew grows on wet, rolled tents in a day or so.

(F) Money-- Most schools require a small sum of money from each student to pay for food, propane, gasoline, and other incidentals (which gives you an opportunity for a lesson on the cost of energy or on the unique way we "hunt" for energy by working for money). Schools are advised to keep costs to a minimum in order to give all students an equal chance of participating in the NEED Program.

Fund-raising events are the best way for students to raise money for the camp. Donations are often given by PTA's and other organizations. Free punch and other food can often be obtained from local fast-food establishments.

(G) Parents' Nights-- Parents' minds are put at ease if a meeting is held prior to the campout. They need to know exactly where their children will be, how to contact them if they need to, and what the children will be doing. Many veteran schools show slides of past camps. A park ranger is available for parents' nights to answer questions.

(H) Critters-- mosquitoes, sand-flies, chiggers, and raccoons will not spoil a camp unless you let them. Insects are not generally a problem during the winter camping dates for NEED.

But, one or two camps each season experience an unexpected breakout of mosquitoes or sand-fleas. When it happens, accept it. Slap on some Cutter liquid repellent and go ahead with the schedule. (Aerosol insect sprays are not as good as liquids, and are contrary to an environmental ethic since aerosols harm the atmosphere and too easily pollute the lungs of people near the can.) Insects are an important part of the food chain in South Florida. If an outbreak occurs during your camp, seize the initiative and include them in your program. You cannot ignore them.

You can't ignore raccoons, either. Store all food at night, and do not allow students to keep food in their tents--or even take food into the tents--for raccoons will find food given any chance at all.

(I) Slogging--A shallow-water hike (slog) is an EE activity designed to communicate the significance of the subtle natural environment of the Everglades or an inter-tidal zone (as at Elliott Key). A slog is a hands-on activity which is fun and informative at the same time.

Slogging areas are chosen so that a solid walking base exists, water depths are no more than knee high, and a park road is nearby. Slogs should be organized by tent groups. The adult in charge of the tent stays with his students throughout the slog. We avoid slogging in straight lines to avoid creating permanent trails and ditches.

(J) Canoeing--Like slogging, canoeing is another activity where the student is in direct contact with the world around him. Practice and instruction before the camp help prepare the students for canoeing. Some schools have students sit in chairs and work with paddles. While the canoe trip may take longer if the student paddle, the students will benefit from the work they do. The adult in each canoe is there for safety and to paddle when needed.

IX. Safety

The NEED camping program is an intense period of many experiences that actively involve students and adults. Even though many precautions are taken, it is possible for accidents to occur. It is the responsibility of all adults and children participating in the program to "think safety" at all times.

Park Rangers have attended standard first aid training and are familiar with emergency first aid procedures. Because rangers will not be with the camps 24 hours a day, teachers and school coordinators should learn first aid procedures.

Below are some important safety considerations:

- (1) During the slogging experience, it is imperative that control of the children be maintained at all times. The children will be divided into groups with an adult responsible for keeping the group together. The slog is no place for horseplay: pushing, shoving, splashing, and throwing mud will result in the immediate cessation of the slog. Probably the most hazardous portion of the slog is walking across park roads. Groups will cross roads under the direction of a park ranger. All park rangers conducting off-trail hikes carry portable two-way radios and are able to contact emergency assistance. Since regularly scheduled slogs began in Everglades National Park in 1972, there has never been a serious accident.
- (2) While canoeing, Coast Guard approved life jackets must be worn by all canoeists, adult or child. Students must be taught the proper method of entering and exiting the canoe (hold the gunwales and keep low) to avoid overturning the craft. Standing in a canoe is strictly forbidden. On most canoeing trails the water is shallow enough to stand in should there be a mishap. Again, a park ranger is ready with a portable two-way radio to summon emergency help if needed. In the last several years of children canoeing in the park, there have been only two overturned canoes, both caused by someone standing up in the canoe.
- (3) While students are encouraged to help with meal preparation, there are some duties which should be left to adults. Lighting the stove, refueling it and all activities around the stove are best left to adults. Keep a fire extinguisher near the stove at all times and know how to use it.
- (4) Tent stakes should be pounded flush with the ground to eliminate stepping on them and cutting a foot. No stakes should be used near the front or rear doors of the tent.

(5) As we all learned in January 1977, it can freeze in southern Florida. Children should be prepared for the possibility of extremely cold and windy weather. Several layers of light clothing (jackets, sweat shirts, sweaters, and wind breakers) rather than one heavy garment should be brought to camp by students. As the temperature drops, layers can easily be added to trap body heat and then can just as easily be removed when the temperature rises. Because 80% of the body's heat escapes through the head, a warm cap (like a stocking cap) should be brought to camp. Temperatures in the 30°-50°F range, combined with winds can bring a rapid cooling of the core of the body (hypothermia), and can even result in death if proper clothing is not worn.

MAKE SURE THAT EACH CHILD BRINGS ADEQUATE CLOTHING.

Symptoms of hypothermia are incoherence, disorientation, and violent shivering. Body temperature must be immediately raised to normal by placing the victim in a blanket or sleeping bag with one or two other people. Hypothermia can cause death in South Florida among those unprepared for a change in weather. Be prepared!

(6) It is also possible to encounter extremely warm temperatures in South Florida in the winter. In February 1977, just after the freeze in January, temperatures climbed into the low 90's. When the body is overheated and cannot eliminate excess heat, it can be seriously harmed. The school coordinator and teachers and chaperons must be able to recognize and treat heat exhaustion and heat stroke.

(7) Poisonwood and poison ivy are common in the Everglades, but fortunately, they are easily recognized and avoided. Treatment for contact with these plants consists of thoroughly washing and rinsing the affected skin with soap and water.

X. Appendix.

(A) The National Park Service Approach to Environmental Education: SPICE Strands.

There are many productive ways in which to make use of the environment as an educational tool. One approach is strictly classification: everything has a name and a specific way of interacting with the universe. Scientists describing unique objects use this taxonomical method as a principal operational procedure in their investigations. This method, however, has a drawback for the teacher with a limited scientific background, who may not know the multitude of specific names and conditions with which to describe the environment scientifically.

Another way of approaching environmental study is through an investigative, completely open-ended method. The teacher guides students in their attempts to discover what is present in their surroundings and to place their discoveries into some kind of perspective. The advantage of this method is it provides the kind of study that activates sensory awareness and enables the student to develop creative problem-solving techniques. The difficulty rests with the development of research skills. Research skills are another tool of the scientific investigator, and although they would provide a good background in problem-solving for the student, it takes time to develop them.

The SPICE Strand approach draws upon the advantages of both of these methods while eliminating the disadvantages. It incorporates both the specific and the investigative approaches into a third approach with which both student and teacher can feel more comfortable. It requires identification and classification, but on a modified basis. It also requires open-ended investigation leading to problem-solving. Yet all of its requirements can be taught by a teacher and fulfilled by a student who has little of the rigorous scientific training demanded by the other approaches.

The Strand approach makes necessary a reorganization of thinking into unfamiliar patterns, which may at first be difficult. The valuable, unifying characteristic of the Strand approach, however, makes whatever initial effort may be necessary unquestionably worthwhile.

The Strand approach uses five broad, universal concepts as a way of drawing the environment under a total, integrated "umbrella". They are known as the SPICE Strands because the first letter of each concept makes up one of the letters of the word SPICE. These concepts or Strands are:

SIMILARITIES AND VARIETY: Many likenesses and differences occur among living and nonliving things. A variety of functions, sizes, and structures exist in plants and stars, rocks and animals, processes and people. Yet there are sufficient similarities to permit their classification into orderly patterns. These classifications increase one's understanding of this world.

PATTERNS: Organizational patterns are kinds of structures that may be found in rock formations as well as in social groups of

people and animals. Functional patterns include traffic movements and classroom schedules. Spatial arrangements are patterns that often please us. Such patterns occur both in nature and in artistic design.

INTERACTION AND INTERDEPENDENCE: Nothing exists in isolation. Each individual is constantly interacting with living and nonliving things: his family, his belongings, his friends, his world. These people and things also depend on the individual in order to function properly. The process is continuous (as part of the life cycle) even after death, for dead life-forms nourish the living.

CONTINUITY AND CHANGE: Both living and nonliving things are constantly changing--whether among galaxies and planets or within body cells and body systems. Some things remain the same in spite of change. Matter and energy may change in form, but they can never be created or destroyed.

EVOLUTION AND ADAPTATION: Over centuries and centuries, living and nonliving things alter and develop in the process called evolution. Probably the greatest number of changes over the longest periods of time come about in order to enable an organism to adapt to the environment. Hereditary factors then preserve the continuing elements. The characteristics that enable the organism to adapt best (for example, the best food finder) are apt to be the traits passed on from generation to generation, thus ensuring survival of the species.

Similarities and variety means the simple recognition of each organic and inorganic thing. A classification is derived by noting similar characteristics in distinct objects. Once a classification is made, an object's Patterns can be identified. What is the nature of its design? Of its function (what does it do)? Of its organization? The functional pattern leads directly to Interaction and Interdependence. How does the specific variety interact with air, water, earth, (other) populations? As it Continues to Change, it is constantly undergoing Evolution and Adaptation, according to how it fits into the Pattern of existence. If a substance does not adapt in its present form, it Evolves, through Continuity and Change, into a new Variety, with a new Pattern of Interaction and Interdependence.

Using these large concepts, or Strands, teachers who have had no particular scientific or ecological training can instruct or guide students toward open-ended, purposeful activities. The scope of the Strands can be focused on the specific at almost any level of detail or sophistication. Within the Strands there is a synthesis of environmental relationships. This synthesis makes the Strands applicable to the wide range of disciplines within the school program, yet the Strands provide a tool for study that can be specifically related to the most widely differing ecological situations. For example, Patterns can be applied to the arrangements of beach fauna (biology), mountain ecology (natural history), or people living in an urban area (social sciences).

Teachers should think of themselves as catalysts--permitting the students to develop the answers themselves whenever possible, which will result in a greater retention of the basic understandings. Once the basic Strand understandings are established with the students, they will continue to seek new examples in new environments, leading to a keen awareness of man's interactions with the world.

The Strands can be disastrously misused. The danger inherent with any methodology is that the methodology can be used as a thing in itself, for its own sake. There have been unfortunate examples where the Strands were taught as a subject, instead of used to integrate discipline or to understand processes. Other times, students were told to memorize and parrot them like multiplication tables. Avoid these dangers. The Strands are a framework. You may never have to mention them at all. Like the girders in a building, they are hidden from view, but keep everything from collapsing.

Perhaps the best thing about the Strands is that students can use them as a reference point to interrelate the things they know, see, and feel, in their own lives with all their future experience and education. It is fairly clear that the only way people achieve higher levels of understanding is by understanding new ideas in terms of old ones. Otherwise, people are reduced to learning information and facts without new awareness.

There is one thing about the Strands never to be forgotten: the Strands exist simultaneously in all things at all times. You will find that while using the Strands, one irresistably leads into the others. Often one becomes indistinguishable from another. The Strands always reinforce one another.

This is as it should be. In a world of process, it is inevitable that an honest framework is as dynamic as the world it views.

(B) NEED Evaluation

The Park EE Coordinator sends an evaluation of each NEED camp to the school principal, school coordinator, and area administrative office if requested. Such evaluations have proven valuable for past camps, and principals and school coordinators have continually requested them. An evaluation is simply a tool to help future camps. Likewise, the park welcomes and encourages reciprocal evaluation of its performance. Many of the ideas in this guide have come from old evaluations and outlines of pre- and post-site activities submitted by schools. The following is a copy of the form the park will use to evaluate a NEED camp.

EVALUATION CRITERIA FOR NEED SCHOOLS

1. Understanding of the NEED Program philosophy, goals, objectives, and requirements.
2. Implementation of school-conducted portion of NEED Program.
3. Proposed schedule of activities submitted to park four weeks in advance.
4. Pre-site preparation for campout; outline of materials covered submitted to park one week in advance by letter or phone.
5. Responsibility for discipline of students by preparing them ahead of time and remaining in control during campout.
6. Active participation by all teachers and chaperons in NEED activities.
7. Proper use and care of camping equipment.
8. Classroom follow-up after the NEED camp; outline of post-site work submitted to park one month after camp by letter or phone.

Rating Scale: E = Excellent; G = Good; F = Fair; U = Unacceptable

COMMENTS:SCHOOL & ADDRESS:NEED AREA:# STUDENTS:# DAYS CAMPED:CAMP DATE:SCHOOL COORDINATOR:_____
PARK EE SPECIALIST_____
PARK EE COORDINATOR

(C) Reference Materials

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- * Everglades Natural History Association. 1977. Everglades National Park (slide and tape presentation). Holiday Film Corporation; Whittier, California.

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(D) Resource Materials

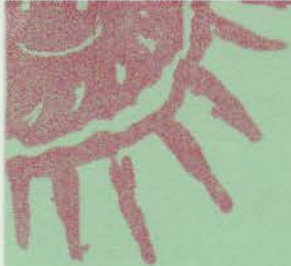
Adventure in Environment
National Environmental Education
Development Materials (K-8)
 Silver Burdett Company
 Box PM-S
 Morristown, New Jersey 07960

Brevard County Environmental
Curriculum Materials (K-8)
 Center for Environmental Learning
 705 Avocado Avenue
 Cocoa, Florida 32922

Environmental Studies (all ages)
 Addison-Wesley Publishing Company
 Menlo Park, California

Martin County Environmental
Curriculum Materials (K-8)
 Environmental Studies Center
 2900 NE Indian Drive
 Jensen Beach, Florida 33457

Outdoor Biology Instructional
Strategies (OBIS) (4-8)
 Lawrence Hall of Science
 University of California
 Berkeley, California 94720



fly over us. I like looking
over the bay and sketching.
When I held the snakes it
made me feel like I shouldn't
be afraid of them. I really
learned from the everglades.

Janet Khaley

February 3, 1976

What the Everglades Means to Me

To me the Everglades means to preserve wildlife and not kill it. We can see the wildlife and where it lives.

When I saw that bald eagle with its white head and tail feathers. I felt good inside. I've seen one before, but to see one in the everglades was nice.

I liked it when the alligators came so close that I wanted to touch them.

I've been to the everglades before, but I like it when I go with other people.

I enjoyed it when we went hiking, canoeing, and slough slogging. We saw animals and plants. We got to taste the black mangrove see the red mangrove.

I enjoyed when we saw the pretty pink spoonbills

turn over to the
other side. →