A Development Plan for Preaching Rock Wildlife Education Center, Georgia

Russell L. Garrison, *Georgia Department of Natural Resources, Wildlife Resources Division, Game Management Section, 2425 Marben Farm Road, Mansfield, GA 30255*

Ken A. Riddleberger, Jr., *Georgia Department of Natural Resources, Wildlife Resources Division, Game Management Section, 2425 Marben Farm Road, Mansfield, GA 30255*

Christopher R. Martin, *Georgia Department of Natural Resources, Wildlife Resources Division, Fisheries Management Section, 2123 Hwy 278, Social Circle, GA 30279*

Joel M. Brown, *Georgia Department of Natural Resources, Wildlife Resources Division, Law Enforcement Section, 2070 Hwy 278, Social Circle, GA 30279*

Abstract: Charlie Elliott Wildlife Center (CEWC), comprised of Preaching Rock Wildlife Education Center (PRWEC), Marben Public Fishing Area (PFA), and Clybel Wildlife Management Area (WMA), is managed by the Georgia Department of Natural Resources, Wildlife Resources Division to serve a variety of user groups, including students, hikers, teachers, anglers, hunters, birdwatchers, and others. The area contains 2,438 ha (6,023 acres) of land, 29 ponds, and a 2-ha (5-acre) rock outcrop. This paper outlines the site development plan for PRWEC and discusses programs and facilities that are to be developed. The mission of PRWEC is to educate Georgia's youth and adults about wildlife, natural resources, and outdoor skills to help them become wise stewards of the environment. Proposed youth education programs include a 3-day residential program, a wildlife outreach program, and a day-use program. A teacher education program will instruct teachers how to use the out-of-doors as a classroom, including a program for developing Outdoor Learning Centers. Other adult education programs will include volunteer, intern, and Elderhostel programs. Indoor and outdoor demonstration areas and a network of nature trails will also be developed.

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Early in 1993, the State of Georgia purchased 2 adjacent tracts of land in Jasper and Newton counties. The purchase of Marben and Clybel farms, lo-

cated approximately 19 km (12 miles) north of Monticello, Georgia, created the 2,438-ha (6,023-acre) Charlie Elliott Wildlife Center (CEWC). The Georgia Department of Natural Resources (DNR), Wildlife Resources Division (WRD), manages the area as Marben Public Fishing Area (PFA), Clybel Wildlife Management Area (WMA), and Preaching Rock Wildlife Education Center (PRWEC). A high amount of use is expected on the area since 39% of Georgia's population (>2.5 million people) live within a 1-hour drive, and 60% live within a 1.5-hour drive.

The land base of CEWC is quite diverse. The area has 29 ponds amounting to nearly 121 ha (300 acres) of water. A 2-ha (5-acre) rock outcrop is located on the northwest corner of the property, with several smaller outcrops located throughout the area. Habitat types on CEWC include pine, hardwood, and several types of field.

WRD will develop Marben PFA as a prime sport fishing area by opening 20 ponds to provide a variety of fishing opportunities. Three lakes are managed for fishing by children only. The 4 largest lakes are managed for bass and bream fishing.

Hunting opportunities are available on Clybel WMA for small game, a variety of special deer hunts, and quota turkey hunts. Besides the traditional hunting uses of the WMA, plans call for a wide array of non-consumptive uses including hiking, birdwatching, field trials, horseback riding, and range shooting.

PRWEC will serve as a wildlife and natural resources training center for children and adults. Although the education programs primarily emphasize wildlife, PRWEC will offer instruction on a wide range of topics. Topics in forestry, ecology, geology, and soils are natural extensions of classes dealing with wildlife.

PRWEC's mission is to educate Georgia's youth and adults about wildlife, natural resources, and outdoor skills, and to help them become wise stewards of the environment. This mission will be achieved through the fulfillment of the following objectives:

—To instill an awareness, knowledge and appreciation of Georgia's habitats and environment.

—To help students understand and experience the relationship between themselves and the natural environment.

—To provide experience in outdoor activities and initiate skills that individuals may use to pursue healthy recreational activities.

—To improve students' observational skills and their ability to record information.

—To develop a knowledge of interactions between living and nonliving elements of the natural environment.

—To develop a knowledge of the wide variety of natural resources and of the methods used to manage these resources.

—To develop critical thinking skills so citizens can actively participate in the resolution of environmental problems.

—To strengthen social relationships among students and teachers.

—To foster a spirit and attitude of inquiry in students.

—To help students gain a sense of independence and self-identity and to succeed in a nongraded setting.

Program Development

PRWEC plans to offer numerous, high quality programs. The close proximity to 3 large cities (Atlanta, Macon, and Athens) allows PRWEC to reach large numbers of people. Residential programs will include a youth wildlife education program, teacher training programs, an annual Natural Resources Conservation Workshop, Elderhostels, and others. PRWEC can also serve as the anchor for outreach programs and Outdoor Learning Centers. Day-use programs can include nature center programs, "Super Saturday" programs, children's fishing events, and trail programs. Though diverse programs will allow WRD to reach a large number of people, quality will be emphasized over quantity. Each PRWEC program is targeted toward specific grade levels: schoolyard visits, 1st grade; outreach programs, 2nd and 4th grade; nature center programs, 3rd grade; residential programs, 5th and 7th grade; and county environmental education programs, 6th grade.

Residential Wildlife Education Program

By giving Georgia's youth an opportunity for extended learning experiences at PRWEC, they can achieve a greater understanding of the environment and develop a deeper motivation for active participation in conservation efforts. PRWEC's residential program will be designed to teach children about wildlife and can be used as a model for educators.

The advantages of a residential program are numerous. Sheperd and Speelman (1985) found that the longer the residential program, the more positive the change in attitude of the students. A residential program provides more "on task" time with the students. Total "on task" time increases from 4 hours per day in a school setting to 8 hours per day in a residential setting. Also, new student social skills are developed in this type of setting. Students will also have the opportunity to demonstrate responsible participation as a member of the community while sharing experiences of living, working, and learning together. Students who learn by doing have better retention. A residential program offers a chance to study a subject in more detail using the unique resources at the site. No school has the resources of CEWC: ponds, various forest habitats, and rock outcrops. A residential program is highly effective at teaching basic scientific principles. Emphasis will be placed on enjoyable education rather than recreation.

The residential program will accommodate 192 students. A program of this size will allow all but the largest schools to bring an entire grade level to the site at one time. A sense of community can be developed and the staff can easily get to know the students.

An ideal size for any outdoor education program is 10–15 students per staff person. The smaller the group, the more individual attention each person will receive. Thirteen staff members will be required for PRWEC residential program.

The Georgia Board of Education limits residential programs to 3 days. Targeted grade levels for PRWEC's residential program are 5th and 7th. Fifth graders will be offered general classes, while 7th graders will be offered more specific course work in wildlife, fisheries, and outdoor education.

Classes will be hands-on, experiential, and always use the outdoors. Twenty-six classes are planned at PRWEC and include shooting sports, wildlife, fisheries, snakes, and mammals. The curriculum will provide students with first-hand experiences with water, plants, animals, land use, rocks, etc. in a natural setting. Students will use reading and other communication skills, mathematics, science, and social studies to make the on-site experience more meaningful. The education program must also meet the needs of the teacher; therefore, the teacher will be able to choose from a variety of class offerings. Expected participation in the residential program is 7,500 students per year.

Wildlife Outreach Program

A Wildlife Outreach Program will be developed to reach students throughout the state. This program is designed to provide schools with wildlife education programs that include live animals. A program staff member can travel to the school site and teach 6 50-minute classes per day (180 students).

The outreach program will target 2nd and 4th graders. Classes on fish, snakes, raptors, and general wildlife will be designed to fit the school's schedule. All classes will use live animals and mounts as the focal point of the program to capture and hold students' attention.

One staff member can visit 3 schools per week. Stress on the animals and the staff dictates a rest day between each program. The program is expected to reach 40,500 students per year.

Teacher Education Program

The limitations of the youth education programs are bed space and staffing. There is simply not enough money or resources available to hire the staff necessary to reach every student in Georgia. Therefore, the best way to reach every student is to encourage, motivate, and instruct teachers in outdoor education strategies and methods. The teacher education program will be designed to show teachers how to use the outdoors as an effective teaching tool.

Educators will have the choice of a weekend program or an intensive 2-week program taught during the summer. Weekend programs will be topic specific; one workshop can deal with wildlife education programming, one with aquatic studies, one with using live animals in the classroom, and one on developing an outdoor learning center. The summer workshops will incorporate all aspects of wildlife education from aquatics to wildlife to developing a wildlife school site. Both weekend and summer workshops will offer credit needed for teacher recertification.

Day-Use Program

In the day-use program, students must visit the site during the normal school day, limiting program time to only 2 to 3 hours. Day-use programs will be limited to 1st through 3rd graders as they usually cannot stay overnight. By only allowing these grades, they do not have to compete for space with the older grades.

With 3 staff members, the day-use program can accommodate 30–50 students per day. The Nature Center (discussed in the Facility Development section) will play an important role in the day-use program. Students will spend half their time studying the exhibits in the Nature Center and the rest in outdoor education programming (e.g., fishing, trails, or pond study). The day-use program can use much of the same curricula as the residential program and will reach 5,000 students per year.

Outdoor Learning Centers

In order to further achieve the mission of PRWEC, an Outdoor Learning Center (OLC) program will be developed. The OLCs will help to reach students not able to visit PRWEC by providing local outdoor learning opportunities and by supporting educators who have been through a teacher workshop.

The goal of the OLC program is to assist in a development of an "outdoor classroom" at schools. Teachers will be able to view several model schoolyard habitats and view a small lab/classroom facility. A handbook, "Developing an OLC," will be developed. The handbook will discuss what a teacher or administrator needs to know to develop an OLC, including acquiring land for the site, schoolyard habitat landscape plans, architectural plans for the learning center and lists of necessary material. Lab designs, snake and raptor cage designs, and touch pond designs are all a part of this necessary equipment. The handbook will provide the teacher/administrator with a step-by-step guide to developing their own OLC. In addition to the above mentioned topics, the handbook will discuss methods of gaining community and board of education support, fund raising ideas, sample grants, and grant sources.

A handbook, "Using Georgia's Outdoors as a Classroom," will be developed to cover the programming aspect of the OLC. Program goals and objectives, sample schedules, teacher planning information, curriculum and class listings, sample health forms, permission slips, and planning checklists will be included. This handbook will tie OLC curriculum to state guidelines and multiple disciplines.

A "Guide to Schoolyard Flora and Fauna in Georgia" will be developed to make the teacher feel at ease when venturing into the outdoors. One of the reasons teachers do not take their students outdoors is their lack of knowledge about what they will find. This is a field guide for teachers, identifying the most common plants and animals teachers may encounter. The guide will include identification facts about many of Georgia's reptiles, amphibians, mammals, birds, and fishes.

Demonstration Areas, Displays, and Collections

Both a museum and an environmental education center must employ indoor exhibit techniques. While the exhibits of a museum are general and more or less permanent in character, the exhibits of an environmental education center are chiefly devoted to explaining and interpreting what is taking place in the outdoors at a particular time in a particular area. The exhibits of PRWEC will tend to be specific rather than general, interpretive rather than authoritarian, and flexible. This rules out the need for large and expensive dioramas. Instead, devices such as charts, maps, collections, specimens, films, recordings, and models are to be used to provide instruction and guidance to those who come to the center.

To stimulate continuing interest, the exhibits will be changed periodically. Displays will be selected and developed around an idea or theme that is important in the current program at PRWEC. Outdoor demonstrations and displays can be located near the nature center and along appropriate trails to give students a better understanding of resources and how they are related to each other. Nineteen outdoor demonstration areas and displays are planned for PRWEC. Demonstrations on hunter education, succession, and wildlife management are a few of the displays planned.

Other Program Ideas

We expect universities and colleges will utilize PRWEC as a laboratory school for the training of pre-service and in-service teachers. PRWEC can also be used for research by students in the fields of wildlife biology, fisheries biology, ecology, and natural resource management.

An intern program will provide upper class college students, recent college graduates, and other carefully selected adults on-the-job training. The program will familiarize interns with the prerequisites, responsibilities, practices, ethics, and the satisfaction of the interpretive naturalist profession.

Adult education programs will provide outdoor learning opportunities for non-students. The program will provide adults with skills that can be of help in their vocation, or aid them in developing leisure time activities. Workshops in fishing, hunter education, muzzleloading, National Bowhunter Education Programs, and National Rifle Association firearms programs can easily be taught. Adult education programs can also be geared toward civic leaders to develop an awareness of the need for conservation and to provide basic information necessary to make wise decisions affecting the environment.

Nature Trails

A network of trails will be developed with several purposes. The primary purpose of the trail system is education. Trails will bring people into contact with the environment for an enjoyable learning experience. A secondary, but very important purpose for a system of trails is to channel people in an orderly fashion through the natural features of the land to minimize their impact. A

third function is to provide access to various areas for management, emergencies, and protection. A good trail system is difficult to plan and construct. Design and construction of trails will be done as carefully as the designing and construction of any building on PRWEC.

Trails will display trees, smaller plants, soils, and native animals that live in the area and their relationship to each other, to other resources and to humans. Trails will also include demonstration areas on soil erosion and geologic formations. Most trails will lead to a demonstration area of some kind.

Trails will vary in length and layout. Short, winding trails reduce fatigue and capture the element of discovery at every turn. An effective trail is 800 m or less, well labeled, and takes less than an hour to walk. At points of interest where groups can assemble, the trail will be wider and cleared. Some longer, interconnecting trails are desirable. These will be labeled with signs giving information on length, points of interest and direction. All trails will be loops, so users can return to the starting point without retracing their steps.

Site Development

The education facility is to be located on the west shoreline of Clubhouse Lake (Fig. 1). This site has many advantages as it is located within walking distance of every habitat type found on CEWC and is also located between 2 lakes and near 3 small ponds. It is also located near 2 different stream types (one with a soil substrate and one with rock substrate). The site provides easy access to existing roads and utilities, yet it can be isolated from other activities such as hunting and fishing. The site provides ample space for all facilities and waste treatment.

Roads and Parking

Functional yet aesthetically pleasing roads and ample parking are necessary features of any outdoor public use area. The proposed entrance road to PRWEC travels through several habitat types and provides the visitor an opportunity to learn about the diverse habitats on the area. The entrance road will be winding to slow traffic and wide enough to allow 2 buses to pass. Service roads will provide access for emergency vehicles, delivery trucks, and service vehicles to all the buildings in the complex.

Parking must provide enough spaces for staff and visitors and will provide a wide turning radius for buses. Natural landscaping and constructing several small parking areas instead of one large area will help to blend parking areas into the natural surroundings.

Utilities

Water for up to 400 people must be assured by providing a storage tank capable of holding a 48-hour supply (Wilkinson 1981). A dry hydrant and pump will be installed at one of the lakes to be used for fire emergencies. Lake water can also be used for irrigation of landscape installations.

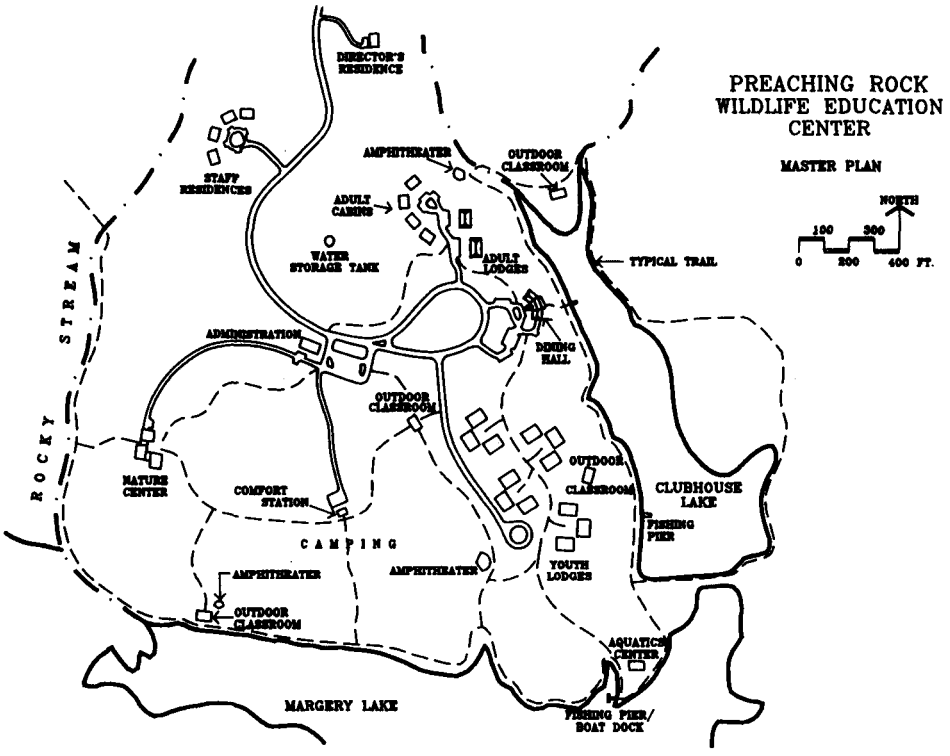

Figure 1. The master plan for Preaching Rock (Charles Elliott) Wildlife Education Center, Georgia.

Adequate waste treatment must be provided to accommodate all planned uses for the area. Terrain, depth to bedrock, soil type, layout of the facility, proximity to the lakes and volume and type of waste must be considered. Due to the size of the facility, it is likely that several septic systems will be most effective.

Buildings

Planned structures include an administration building, nature center, youth dormitories, adult dormitories, dining facility, and classroom pavilions. All buildings will be designed to allow for future expansion and will be handicapped accessible, following American Disabilities Act standards.

Office Building.—The office building will be the first building visitors will see upon arrival. It must include all of the essential facilities for the operation of PRWEC, including a reception area, office space, combination library/conference room, restrooms, duplication room, storage rooms, and janitorial storage.

Nature Center.—The Nature Center will be the focal point of PRWEC. The basic requirements for this building are a reception area, exhibit rooms, classrooms, pond laboratories, snake room, darkroom, graphics room, a combi-

nation library/audio-visual room, restrooms, duplication room, storage rooms, janitorial storage, and store. A greenhouse and raptor pens will be located just outside the nature center.

Kitchen/Dining Facility.—Food quality is essential to the success of a residential program. This facility will be designed to serve as many as 1,050 meals per day to handle the eventual capacity of 192 resident students, 24 teachers, 50 day-use students, 50 adults, and 30 staff. Seating will be provided for 350 people.

The dining hall will be designed as a combination dining hall and auditorium. It is anticipated that conservation organizations might wish to have meetings at the Center, which may include a banquet. In such situations it will be desirable to have a facility with a stage. In inclement weather, it may be necessary to use the facility as an emergency meeting room or classroom. The dining hall will also have 1 large meeting room seating 75 people or 3 small breakout rooms seating 25 people if partition walls are in place.

Wilkinson (1981) recommends between 1 and 1.4 m^2 (10 and 15 ft^2) of floor space per person. This requires a dining hall of 302 to 453 m^2 (3,250–4,875 ft^2). Wilkinson (1981) further recommends 0.2 to 0.4 m^2 (2.5–4 ft^2) of kitchen floor space per person served, equating to a kitchen of 75.5 to 121 m^2 (812.5–1,300 ft^2). Restroom facilities are necessary, both for the public and for the kitchen personnel.

The kitchen will be designed to facilitate the handling of meals in an efficient and rapid manner. It must be furnished with a walk-in freezer, a walk-in cooler, 2 deep fat fryers, 2 convection ovens, a coffee urn, a 10 burner stove with 2 ovens, and a dishwasher unit.

The dining hall will be located within easy walking distance of all other buildings. Service and delivery vehicles will have easy access without passing through living and teaching areas of the Center.

Dormitory and Housing Facilities.—Dormitory facilities must be designed to meet the needs of both adult and youth groups. They must also be practical, comfortable and efficient to operate. Youth dorms will be separate from the adult dorms, making it attractive to both groups.

The youth facility will be equipped with 192 bunk beds and 24 adult beds. The adult facility will be equipped with 50 single beds. Adult groups larger than 50 can be accommodated by using the counselor rooms in the youth dormitories.

Twelve youth cabins each holding 16 students and 2 adult leaders will be built. Cabins will include a counselor room for 2 adult leaders and 2 separate living quarters for youth. The adult rooms will have a private bath. Each student room sleeps 8 and has a bath. Every cabin has a small meeting room that can serve as a classroom.

The cabins will be built to American Camping Association Standards (1990) that require 3.7 m^2 (40 ft^2) of floor space per person, 1 m (3 ft) between beds or 0.3 m (1 foot) when placed end to end. The heads of sleepers must be

3.1 m (7 ft) apart; therefore, bunks must be arranged head to foot or foot to foot. Upper bunks must have rails and should be at least 1 m (3 ft) from the ceiling. Bathrooms must provide 1 toilet and 1 sink per 10 people. One shower is required per 15 people.

The adult facility will have 25 separate hotel-style rooms with private baths. Each will include a desk, study space, luggage, and clothes storage area. Each room will be energy independent.

Rooms will be located in several small buildings, providing the flexibility of separating groups or opening only 1 building when a small group is on site. Small meeting/classrooms can be provided in each lodge. This room will include a kitchenette (a sink, a kitchen counter, a microwave oven), a bulletin board, cabinets, shelves, and a fireplace.

Housing will be provided for the teaching staff. Since most teaching staff will be temporary employees, room and board will be part of their salary package. Each building will provide 2 bedrooms sleeping 2 people each, private baths, a kitchen, and a living area. Four staff units will be required.

Teaching Facilities.—The aquatic education facility will include a pond lab/pavilion, study area and a boating area located on Margery Lake. The boating facility will include storage for paddles, life jackets, and class equipment; a pier and dock; and canoes and boats. Aquatic programs can be conducted in the pond lab, along the shore of Margery Lake, on the dock or out of boats.

The dock will be designed to enable students to move several boats (8–10) into and away from the dock simultaneously. Either a long T-shaped dock or 2 separate docks will be required. Space to moor or dock boats not in use will be included to avoid having to remove them from the water. A launching ramp will be constructed next to the dock.

Other outdoor classrooms will be located strategically around the area. These classrooms will be designed similarly to the pond lab/pavilion. One classroom will be located in each youth dorm cluster and 1 near the adult housing facility.

Additional Facilities

An amphitheater will be constructed in an area requiring little alteration. It will be rustic in design and accommodate 250 people. Lights will be included to allow use of the area at night and will include audio-visual capability. A smaller amphitheater, holding 50 people, will be located between the adult facility and Clubhouse Lake.

The firing range complex will consist of 6 units: small bore, big bore, trap and skeet, sporting clays tower, archery target, and walk through archery field range. An underground magazine facility for the safe and secure storage of guns and ammunition will be built. Target ranges will require covered firing points, with 15 points on the small bore range and 10 points on the big bore range. A sound system will be included for safety.

A sick bay will be located within PRWEC to serve as a first aid station

where insect stings, cuts, and other minor injuries can be treated. It will include a bed, lavatory, etc., and will have an adjoining room for staff member's use when a student is required to stay overnight.

The sick bay can be staffed with a nurse whose dual responsibility is to develop a WRD wellness program and conduct annual medical screenings of Law Enforcement staff. A helicopter pad will be located near by for emergency evacuation and for use by visiting dignitaries.

Several different camping areas will be provided at PRWEC. One public campground with 25 to 30 sites will be located at the north end of the area. A group campsite will be located on the hilltop overlooking Margery Lake and will be used for groups attending the residential program that want a camping experience. A primitive walk-in camping area will be located at Catfish Pond for 25–30 campers. This site can be used by Scouts, hunters, anglers, and other outdoor enthusiasts.

The initial maintenance requirements at PRWEC are expected to be minimal. Mowing will be minimized to promote a natural setting. As janitorial needs are the major expense, students will be required to police their dormitory area and to furnish their own linens.

Conclusion

The need exists in Georgia for an organized statewide wildlife and environmental education effort. Some school systems are conducting excellent programs and other organizations, such as the University of Georgia Cooperative Extension Service are conducting statewide programs. New environmental education efforts are beginning all over the State; however, none of these programs are reaching all of Georgia's youth nor are they devoted to wildlife education.

The programs at PRWEC, designed and operated by the WRD, will accurately and factually address wildlife and wildlife-related issues. PRWEC will introduce youth to the outdoors, hunting, and fishing. It will also provide sportsmen and women an opportunity to improve their skills. PRWEC will accomplish its goals through providing outreach programs, residential programs and day-use programs to Georgia's students. The PRWEC programs will also provide teachers with instruction on the use of the outdoors as a classroom and on developing an OLC. PRWEC can be used as a research and instruction site for college and university students.

This proposal is ambitious and extensive. PRWEC will be unique because it combines environmental education, wildlife education and outdoor education. PRWEC will offer dynamic programs and state of the art facilities and will positively influence Georgia's citizens to create a better environment and higher quality of life. With proper planning, CEWC will be a tremendous asset to the citizens of Georgia and will be an extremely beneficial program to DNR.

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