

# CEER-T-150

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EL VERDE FIELD STATION

Site

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CENTER FOR ENERGY AND ENVIRONMENT RESEARCH

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FIELD STATION

UNIVERSITY OF PORTLAND

ø Station is located on the north

Mountains in northeast Puerto Rico (latitude 18°18'

45 minutes driving time from San Juan along paved road:

Search area is located on land

50 ha re-

nder federal control and is occupied under

a 20-year use agreement with the U.S. Forest Service. The history of the ecosystem

Research at the site goes back to 1865 and the Rain Forest Project under

the direction of Howard Gentry. The research area ranges from 260 to 500m

above sea level and has a mean annual rainfall of 3656 mm (144 in)

mean temperatures of 20 °C (68 °F). The forest

is primarily composed of

Fig. 1. Map of Puerto Rico showing the location of the Luguillo Experimental Forest, the Institute of Tropical Forestry, and CER Facilities.

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The field station is within the 11,339 ha Luquillo Experimental Forest, which is congruent with the Caribbean National Forest. The area was declared a forest reserve in 1903 and has been managed by the U.S. Forest Service since 1917. The Luquillo Mountains reach an elevation of 1075 m above sea level and serve as the headwaters for six

major rivers. The forest contains four life zones (subtropical wet forest, subtropical rain forest, lower montane wet forest, lower montane rain forest) under the Holdridge system of classification. In

addition to its designation as an Experimental Forest, the Caribbean National Forest is also a Biosphere Reserve and contains a Research Natural Area. A wealth of background information is available including a good understanding of the taxonomy of most plant and animal groups, 80 years of climatic observations, 30 years of data on forest growth and composition changes, complete vegetation, soils, and ecological maps, and 20 years of intense study of the tabonuco forest around the

field station, In addition to the El Verde Research Area, many other sites in the Caribbean National Forest and Commonwealth forests are available for study and accessible from the field station

## FLORAL AND FAUNAL DIVERSITY

Puerto Rico stands as the fulcrum between the east-west arm of the Greater Antilles and the north-south arm of the Lesser Antilles. The Flora and Fauna of the island contain elements of both regions. While the insular pattern of reduced richness of the biota is evident in Puerto Rico, the island still has 87 native species of trees, 13 species of bats,

208 species of birds, 41 species of reptiles, and 22 species of amphibians.

?The Caribbean National Forest contains 225 tree species, 83 vertebrate species, and @ wide variety of invertebrates.

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RESEARCH AREER

well-marked trails link eight plots currently being studied by CER  
anc U.S. Forest Service personnel. Two plots are covered by grid system  
@ 2 ha plot marked at 30m intervals ana | he plot marked at 10 m inter-  
vals. feces to other areas of tne forest is by tratls maintained by the

Forest Service. Four randomly-chosen 1 ha plots were established in 1980 for permanent study, and the areas used by Odun in the 1960's are still under observation. Trees 10 cm or greater dbh are tagged in the four plots and many other trees are marked from earlier studies. A 22 m walk-up tower (Fig. 2) extending above the canopy has been in place for 15 years, and a tower and walkway system is projected for construction in 1983. Plantations of pine and mangrove offer the opportunity for comparative study of natural and managed forests.

## RESEARCH FACILITIES

The recently remodeled field station has two laboratory buildings. The older building has three air-conditioned laboratory rooms, an open air cage and terraria, and two experimental rooms in which light, photoperiod, temperature, and humidity can be controlled. One of the latter rooms has a one way window for behavioral observations. The new laboratory contains seven office/laboratories, a storage area, and



an air-conditioned herbarium housing reference collections of plants, invertebrates, reptiles, and amphibians. Laboratories are equipped with water and electricity, refrigerator/freezers, drying oven, balances, and dissecting microscopes. Equipped electrical and machine shops are also maintained. Other available equipment includes a D-vac suction sampler, tree bicycles, and a portable leaf area meter.

LIVING ACCOMMODATIONS

A separate dormitory building contains four rooms, each with a connecting bathroom and shower. Sufficient bunk beds are available to accommodate 12 people. Bedding is provided. A kitchen with refrigerator, stove and dishes is shared communally, and a washing machine and dryer are available.

## STATION CHARGES

A modest station charge includes room, limited access to laboratory facilities, and the cost of power and gas. Effective October 1, 1982:

Daily \$ 7.50/person

weekly 40.00/person

Monthly 125.00/person

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Use of extensive laboratory space requires prior approval and may incur a separate charge.

## TRANSPORTATION

The San Juan International Airport is 40 minutes from El Verde by car, American, Capitol, Delta, Eastern, Pan American and major overseas airlines service Puerto Rico, with inexpensive direct flights offered from major cities on the mainland. For visiting scientists arriving between, 0900-1400 on work days, transportation to the field station can be arranged in advance at the cost of \$10/person one-way. Otherwise, collective taxis and rental cars are available at the airport.

## COMMUNICATIONS

Communication between the field station and CEER facilities in San Juan is by short wave radio. Pay telephones are available 2 short miles from the field station, Correspondence can be sent care of the Terrestrial Ecology Division address and is delivered to the field station once or twice a week.

## (7 AND SUPPLIES

Research pment must be supplied by the individual researcher. Long-tent use of station equipnent or laboratory space must be arranged beforehand. Baggage on flights arriving from the mainland United States is not subject to examination by Customs, but plant and animal material leaving the islend is scrutinized by the U.S.O.A.

## LANGUAGE

Most transactions in Puerto Rico are conducted In Spanish, but English 1s commonly spoken. A working knowledge of Spanish will make your stay here nore enjoyable.

## WEALTH

Malaria and yellow fever are absent from Puerto Rico, but dengue fever and Schistosomiasis are present in lowland areas. Neither is much of a problem in the Caribbean National Forest. Rabies shots are recommended for those having occasion to handle mammals. No dangerous snakes occur in Puerto Rico. Tarantulas, centipedes, scorpions, and stinging plants are present but are of nuisance value only. The sap of some plants (e.g. *Conococidium glabra*) can cause a severe reaction similar to poison ivy. Falls from slippery rocks or trees are a danger, and care should be taken in choosing footwear.

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Emergency medical care is not easily available. Persons with serious medical problems should make station personnel aware of emergency procedures, and should bring needed medications along,

## CLOTHING AND MISCELLAN

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The high temperature, rainfall, and humidity should be borne in mind when selecting clothing. Proper footwear should be waterproof (or easily dried) and give adequate traction on moss-covered rocks and in swamps. Unpreilas are preferred over waterproof ponchos because of the humidity and temperature. As an alternative, a plastic garbage bag worn or hung

over a palm leaf provides shelter and is easy to carry. While tight clothing is recommended, a long-sleeved shirt or sweater may be needed at night or in air-conditioned rooms. Flashlights and batteries are necessary items and should be brought by the researcher.

## THORS

The station is open to researchers and short-term visitors. Casual visits are discouraged because of space limitations and the need to protect research sites. Reservation requests should be submitted at least 30 days ahead of arrival to:

Dr. Robert S. Keide

Head, Terrestrial Ecology Division

Center for Energy and Environment Research

G.P.O. Box 3682

San'duan, Puerto Rico 00936

Terrestrial Ecology telephones are (B03) 767-0334 or 767-0254.

New investigators should include a brief research propose) in their reservation recuests and describe general objectives, methods, duration, Getes, space needs, and other special requirenents. The Caribbean Natio Forest is controlied by the U.S. forest Service and any pernanent requires prior approval. Birds are protected under the Migratory & Treaty Act, and eppropriate collecting permits for animals and plants should be obtained in advance.

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