

Culebra National Wildlife Refuge, Puerto Rico

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These beautiful islands offer stunning beaches, spectacular coral reefs and fantastic birding all year long.

Location

Approximately 17 miles east of Puerto Rico and 12 miles west of St. Thomas, Virgin Islands.

Description

Stunning beaches and spectacular coral reefs distinguish Culebra and its offshore islands east of Puerto Rico. Though not a major tourist destination, the area is well-known for its migratory birds, which descend in great numbers each year. It is home or stopover for 86 bird species (Table 1). Only two of the refuge islands are open to the public—Culebrita and Luis Peña. Culebrita, one mile long and pinched in the center, has



Cayo Luis Peña. Photo/Jerry Bauer.



Playa Flamenco. Photo/Jerry Bauer.



One name for the Sooty Tern is "wide-awake." These birds can land on water for only a few moments because of a curious lack of waterproof plumage. The rest of the time is spent in constant motion. Photo/Jerry Bauer.

a large bay, a mangrove lined lagoon, bone-white beaches and a superb reef on two sides. A rectangular century-old lighthouse on the southeastern extension is listed in the National Register of Historic Places. Two plant species endemic to the island (*Caesalpinia culibrae* and *Justicia culebritae*) have been proposed as additions to the Federal List of Endangered Species. Culebrita claims the

only turtle nesting beaches on the refuge. In addition, this is where Red-billed Tropicbirds (*Phaethon aethereus*), were first found breeding in Puerto Rico. White-cheeked Pintails (*Anas bahamensis*), are often seen on the lagoon.

Cayo Luis Peña is a major nesting site of White-tailed Tropicbirds (*P. lepturus*). Although at one time two families of cattle ranchers were settled on

this 107-acre cay, it is still covered with a large tract of remnant forest which includes a thin stemmed endemic bamboo. Extensive grasslands off the eastern beach once supported a large number of conch, now depleted by fishermen

The other 21 islands comprise the principal seabird nesting sites. They host 13 species of nesting marine birds: Red-billed and White-billed tropicbirds, Audubon's Shearwater (*Puffinus lherminieri*), Brown Booby (*Sula leucogaster*), Red-footed Booby (*S. sula*), Masked Booby (*S. dactylatra*), Laughing Gull (*Larus atricilla*), Roseate Tern (*Sterna dougallii*), Bridled Tern (*S. anaethetus*), Sooty Tern (*S. fuscata*), Royal Tern (*S. maxima*), Sandwich Tern (*S. sandvicensis*) and Brown Noddy (*Anous stolidus*). Three of the species—Audubon's Shearwater, Masked and Red-footed boobies—have been found since 1970 (Kepler).

In addition to the offshore islands, four tracts of land on Culebra were transferred from the United States Navy to the refuge system in 1982. Two are areas of coastal mangrove forests, the third is the northern one-half of Peninsula Flamenco, site of a Sooty Tern colony, and the fourth is Monte Resaca, an unusual boulder forest where orchids, bromeliads, anthurium and vine cacti tangle on a rock-strewn hillside. Monte Resaca is also home to the delicate endemic *Peperonia wheeleri* which is in danger of extinction, and is the critical habitat for the Culebra Giant



The Sooty Tern is one of the most abundant nesters in tropical climes. Males and females share the task of incubating the eggs. Photo/Jerry Bauer.

Anole. The last official recording of this endangered lizard was in 1932, but it has been reportedly sighted by knowledgeable island residents since then.

Access

Culebra can be reached by small aircraft from Isla Grande Airport in San Juan (Flamenco Airways (809) 725-7707; Olivair (809) 724-0818), by charter from Isla Verde Airport in San Juan or by ferry from Fajardo on Puerto Rico's eastern coast (Fajardo Port of Authority, (809) 863-0705 or 0852).

Culebrita and Luis Peña are open to the public from sunrise to sunset for recreational activities (no hunting is allowed). Other areas, including Peninsula Flamenco and Monte Resaca, can be visited with a special-use permit issued by the Refuge Manager. To request one, write:

Refuge Manager
Fish & Wildlife Service
General Delivery
Culebra, PR 00645

At present there are no organized tours within the refuge system, but a proposal is being considered to provide guided tours of Monte Resaca and a nearby beach of the same name where Leatherback, Hawksbill, and Green sea turtles nest. Those interested in a guided tour should write to the Culebra Refuge Manager.

Accommodations

Visitors can stay at the Posada La Hamaca: (809) 742-3516; Puerto Rico Hotel, Punta Aloe Houses: (809) 742-3575; Villa Boheme Guesthouse: (809) 742-3508; Coral Island Guesthouse: (809) 742-3177; or the Seafarer's Inn: (809) 742-3171. All provide comfortable, unadorned accommodations.

Camping is permitted on Playa Flamenco.

For rental units or additional information contact the Culebra Bureau of Tourism: Box 56, Culebra, PR 00645, (809) 742-3521 or 3116.

Boats to visit the offshore islands can be rented or chartered in Dewey (Culebra), through arrangements with local boatowners. The Villa Boheme Guesthouse also provides guests with limited use of boats and vehicles.



Sooty Terns eggs and young suffered from human predation on the islands. Local residents used eggs for food, folk cures and aphrodisiacs. Prohibiting access to nesting sites and imposing stiff fines has reduced the problem. Photo/Jerry Bauer.

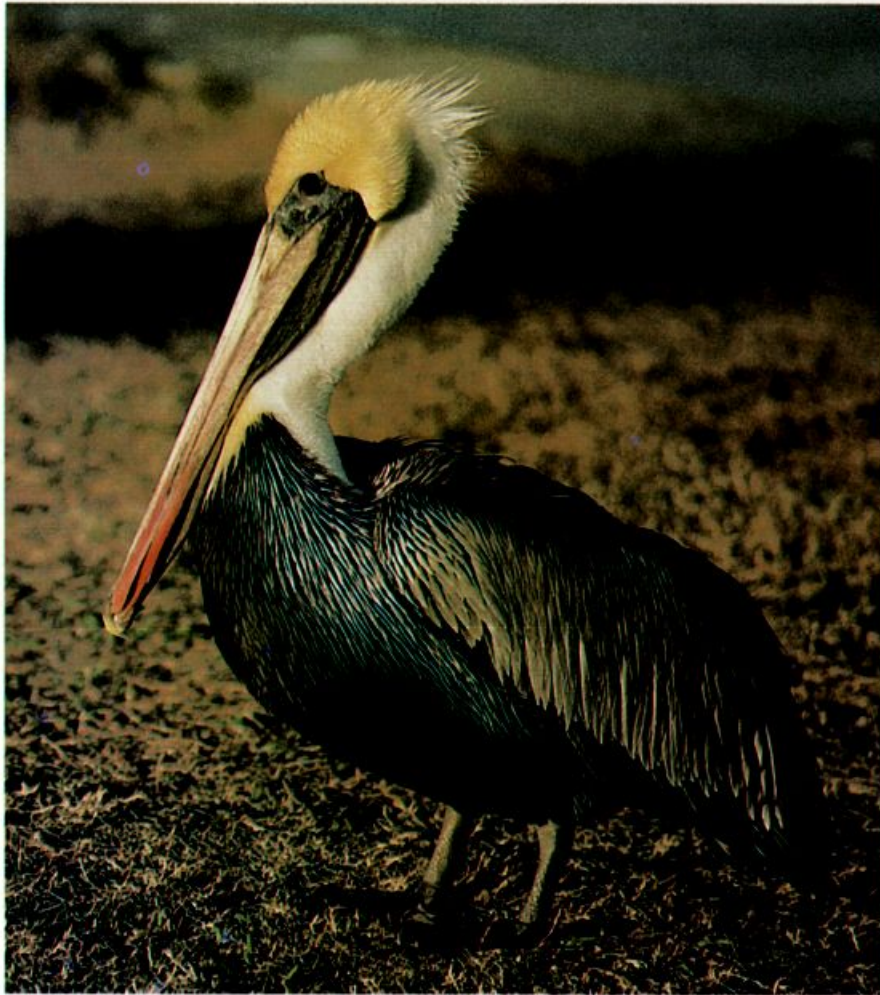
Birding highlight calendar

Gulls and terns are best observed from May through July; boobies from September through March; tropicbirds from February through June; waterfowl from September through January;

North American migrants from November through February. Native species such as White-crowned Pigeon, White-cheeked Pintail, Antillean Crested Hummingbird, and Caribbean Eleania can be seen year-round.



High cliffs above the rocky beaches provide favored nesting sites for the Brown Noddy. Photo/Jerry Bauer.



The handsome Brown Pelican is among the nesting species at Culebra. Photo/Phyllis Fraser.

Historical summary of the island

Culebra, the largest island in this miniature archipelago, seems at first glance to be a lethargic, sun-bleached, hilly mound of dry scrub, coastal forests, and cattle pastures. The brightly colored homes of the island's 2000± residents are all surrounded by deserted beaches, reefs and the immutable sea. Yet its location has provided it with several historical distinctions.

Reportedly visited by Christopher Columbus on his second voyage in 1493, it was first inhabited by Indians, then pirates, followed by Spanish settlers in 1879. Following the Spanish-American War in 1898, President Theodore Roosevelt signed an order placing the public lands of Culebra under the jurisdiction of the United States Navy. In 1902, the Navy opened facilities, establishing its principal Caribbean anchorage, before Guantanamo, in Cu-

lebra's Ensenada Honda. In 1936, the Navy set up target ranges for Naval ships, aircraft gunnery, and bombing practices. These were closed in 1975, and the excess Navy land was divided between the United States Fish & Wildlife Service and Puerto Rico's Commonwealth government.

Parallel to human history, a variety of seabirds have nested, roosted, fished and flown over Culebra. President Roosevelt recognized this (although how he knew remains a mystery, as no records have been saved) and in 1909, under executive order, declared all public lands in Culebra, including offshore islands, a preserve for native birds. Although Alexander Wetmore visited Culebra in 1912, ornithologically the area remained relatively unexplored until Cameron and Kay Kepler began a study of sea birds here in 1970. They found that the offshore islands and Peninsula Flamenco on Culebra were used as breeding grounds for approxi-

mately 87,000 pairs of seabirds of ten species; four established new breeding records for Puerto Rico and two colonies of Sandwich Terns were only the second and third known in the West Indies. In 1978, for the first time since its establishment, the preserved land was assigned a refuge manager who manages it from a base in western Puerto Rico; now there is also an on-site assistant manager.

The spectacular Wide-awakes

The hump-shaped, cliff-lined Cayo Yerba is one of only two cays in the refuge densely covered with sedge. When approaching in a boat, one sees there, contrasting with the hot, blue sky, thousands of hovering Sooty Terns.

The Sooty Tern, a jet black-backed, pure white-bellied bird, is one of the most abundant nesters in tropical oceans. The birds begin to arrive at their breeding sites in the spring. They flock and then land, displaying, parading and establishing territories before copulating, which is often met with interference from the other birds. The eggs, cream-colored with henna specks, hatch in about 26–29 days. Males and females share almost equally in the tasks of alternately incubating and shading the eggs from the hot sun. After the eggs hatch, near the end of June, Sooties forage many miles to sea for food—squid and small fish seized from the ocean's surface—which they regurgitate predigested into the chicks' mouths.

The chicks first fly when about eight weeks old, and leave the colony soon after. Young Sooties banded and studied in the Dry Tortugas have flown to places as far away as the Gulf of Guinea off West Africa, where they live for roughly 2–6 years before drifting back to their natal sites on the other side of the Atlantic Ocean to breed. Breeding occurs usually at 6–8 years of age (sometimes 10 years) which is relatively late when compared with other species and certainly the longest maturity time in the gull family. In spite of their small size (15 to 17 inches long, with an average wingspan of 34 inches), Sooty Terns live long lives: one 32-year-old-plus bird is known to have bred in the Dry Tortugas.

In addition to their late breeding and longevity, the Sooty Terns are distinct in other ways. Due to a puzzling lack of waterproof plumage, these birds can-

not land for more than a very few moments on water; they seem to be in almost constant motion for six, seven, or more of the non-breeding months (thus their other name: Wide-awake, taken from the fact that they seem to be awake all night crying *wide-awake*), landing occasionally on flotsam or driftwood, possibly sleeping while they fly. Unlike some terns, which feed in freshwater or coastal habitats, the Sooties feed in pelagic waters. They carry food back to the colonies in their esophagus—in contrast with other terns which transport it in their bills—possibly to prevent its dessication during the return flight.

Egging, a danger common to most Sooty Terns, (the most heavily exploited of wild birds) has plagued those at the Culebra National Wildlife Refuge. Their eggs have been used for food, folk cures and aphrodisiacs. In fact, in 1970 the Keplers suspected, after informal discussion with local residents, that many eggs were taken by the locals from Cayo Yerba. Presently, a sign prohib-

iting human access, coupled with stiff fines, has greatly reduced the problem.

With a special-use permit one may enter the island at a rocky beach, then skirts cliffs where Sooty and Bridled terns pose, and Brown Noddies nest. Imperceptible tern trails wind through the grass, so one must step with care around eggs and nestlings. To a first-time visitor, it seems an eerie scene, of waist-high sedge, tree skeletons, birds hobbling, flapping and swooping, and an incessant din of protective shrieks and chides.

Next stop is Cayo Luis Peña, where one crosses a white beach and scrambles over volcanic boulders garnished with sweet-smelling alef in search of tropicbirds. The young tropicbirds are white down-coated, with sharp beaks and mascara-black eyes. One wonders whether they are White-tailed Tropicbirds or the rarer Red-billed Tropicbirds. Before leaving Cayo Luis Peña, take a quick swim in the transparent water lined with coral.

After returning to the main island, Culebra Island, visit Monte Resaca, where mosquitoes insure that visits are brief. At night, complete your field notes while watching sailboat masts against the black sky and eating a dinner of delicious fish at one of the three restaurants in Dewey, Culebra's tiny town.

On another morning, as the sun barely lifts out of the sea and a ghostly moon nearly sinks toward it, leave to visit Peninsula Flamenco by truck or jeep (special-use permit necessary). You'll bump along a dirt and rock road on this stark peninsula. The seared hills are dotted with mesquite, cacti and giant milkweed (which indicates land abuse). The vestiges of former abuse can be seen in the rusted tank carcasses, water-filled bomb craters, barbed-wire fences and excessive numbers of livestock.

In Peninsula Flamenco we have a good example of the complexity and interdependence of wildlife habitats. While the United States Navy's depart-



The longest-lived, known-aged Sooty Tern was a banded bird from the Dry Tortugas, aged 32 years. Photo/Jerry Bauer.

Table 1. Birds of Culebra National Wildlife Refuge and surrounding areas

<i>Species</i>	<i>Culebra</i>	<i>Culebrita</i>	<i>Luis Peña</i>	<i>Geniquis</i>	<i>Adjacent Areas</i>	<i>Seasonality</i> ¹
Audubon's Shearwater					X	S
Pied-billed Grebe	X	X				S
Red-billed Tropicbird		X	X	X	X	S
White-tailed Tropicbird			X		X	S
Brown Pelican	X	X	X	X	X	Y
Brown Booby				X		Y
Red-footed Booby				X		S
Masked Booby					X	S
Double-crested Cormorant	X					I
Magnificent Frigatebird	X	X	X	X	X	Y
Great Blue Heron	X	X	X			Y
Green-backed Heron	X	X				Y
Little Blue Heron	X					Y
Cattle Egret	X		X			Y
Yellow-crowned Night-Heron	X					Y
White-checked Pintail	X	X	X		X	Y
Blue-winged Teal	X					S
Northern Shoveler	X					S
Lesser Scaup	X					S
Ruddy Duck	X					S
Red-tailed Hawk	X	X	X			Y
Osprey	X		X		X	S
American Kestrel	X	X	X			Y
Caribbean Coot	X	X				Y
Common Gallinule	X	X				Y
American Oystercatcher	X	X	X		X	S
Semipalmated Plover	X					S
Snowy Plover	X					I
Wilson's Plover	X					S
Killdeer	X					Y
Black-bellied Plover	X					S
Ruddy Turnstone	X	X			X	S
Common Snipe		X				S
Spotted Sandpiper	X	X	X			S
Greater Yellowlegs	X					S
Lesser Yellowlegs	X					S
Willet		X				S
Pectoral Sandpiper	X					S
White-rumped Sandpiper		X				S
Semipalmated Sandpiper	X					S
Western Sandpiper	X					S
Short-billed Dowitcher	X					S
Black-necked Stilt	X					S
Laughing Gull	X			X	X	S
Gull-billed Tern		X				I
Roseate Tern					X	S
Bridled Tern				X	X	S
Sooty Tern	X			X	X	S
Royal Tern	X	X			X	S
Sandwich Tern					X	S
Brown Noddy				X	X	S
Black Skimmer			X			I
White-crowned Pigeon	X					Y
Scaly-naped Pigeon	X	X	X			Y
Zenaida Dove	X	X	X	X		Y
Common Ground-Dove	X	X	X			Y
Mangrove Cuckoo	X	X	X			Y
Smooth-billed Ani	X	X	X			Y
Chuck-will's-widow	X					S
Green Mango	X	X				Y
Green-throated Carib	X	X	X			Y
Antillean Crested Hummingbird	X	X	X			Y
Belted Kingfisher	X	X	X			S
Gray Kingbird	X	X	X			Y
Stolid Flycatcher	X					Y
Caribbean Elaenia	X	X	X			Y
Caribbean Martin	X	X	X		X	S
Barn Swallow	X					S

Table 1. (Continued)

Species	Culebra	Culebrita	Luis Peña	Geniquis	Adjacent Areas	Seasonality ¹
Cave Swallow	X					S
Northern Mockingbird	X	X	X			Y
Pearly-eyed Thrasher	X	X	X			Y
Black-whiskered Vireo	X	X	X			Y
Bananaquit	X	X	X	X		Y
Yellow Warbler	X	X				Y
Black-throated Blue Warbler	X					S
Yellow-rumped Warbler	X					S
Prairie Warbler	X					S
Ovenbird	X	X				S
Northern Waterthrush	X	X	X			S
Louisiana Waterthrush	X					S
American Redstart	X					S
Troupial	X					Y
Greater Antillean Grackle	X			X		Y
Shiny Cowbird	X			X		Y
Yellow-faced Grassquit	X					Y
Black-faced Grassquit	X	X	X			Y

¹ Y = year-round, S = seasonally, I = irregularly.

ture from Culebra in 1975 was a relief to most residents, it proved disastrous to the Sooty Terns on Flamenco. Prior to that year, up to 130,000 Sooties were estimated here. The bombing on the peninsula had produced a grassy habitat ideal for terns, and Navy fences protected the colonies. After the Navy left, cows which ate the grass were turned loose, people began egging, reducing the colony to 20,000 by 1976. That year the tip of the peninsula was fenced and personnel from the Culebra Conservation and Development Authority began a 24-hour-watch during the nesting season. Yet in 1980, there were no Sooties nesting on Flamenco, probably because the habitat was now too advanced in its succession. By 1981, the terns were back, possibly because the fence had been cut that February, and several cows straggled in to feed on the old grass. By 1983, 20,000± birds were estimated to be nesting at this site. By 1985, the estimate reached 30,000±. One can imagine the Sooties sitting around their nests at night, squawking for the good old days when there was bombing.

In the early morning, thousands of terns fly in graceful, yapping chaos at the tip of the peninsula. Occasionally pause in your travels to look over the henna cliffs at nearby cays or to watch the Sooties as they suddenly stop their haphazard hovering and swoop to one side in startling unison.

After birding, reward yourself with a swim at Playa Flamenco—an impressive, mile-long arc of pale sand that separates a bay of light blue water from the dun-colored water of a brackish lagoon.

ACKNOWLEDGMENTS

Orientation and information about the Culebra National Wildlife Refuge were kindly provided by Sean Furniss.

REFERENCES AND SUGGESTED READING

DINSMORE, JAMES J. 1972. Sooty Tern Behavior. *Bull. of Florida State Mus. Biological Sciences*. Vol. 16, Num. 3: 129-179.

FEARE, CHRISTOPHER J. 1976. The breeding of the Sooty Tern, *Sterna fuscata*, in the Seychelles and the effects of experimental removal of its eggs. *J. of Zoo.*, London. 179:317-360.

HARRINGTON, BRIAN A. 1974. Colony visitation behavior and breeding ages of Sooty Terns (*Sterna fuscata*). *Bird-Banding*. 45:115-144.

KEPLER, CAMERON B. and ANGELA K. 1978. The Sea Birds of Culebra and its Adjacent Islands, Puerto Rico. *Living Bird*, 16:21-50.

RAFFAELE, HERBERT A. 1983. A Guide to the Birds of Puerto Rico and the Virgin Islands. Fondo Educativo Interamericano.

ROBERTSON, W. B., JR. 1964. The terns of the Dry Tortugas. *Bull. of Florida State Mus.*, Biological Sciences, 8:1-94.

———. 1969. Transatlantic migration of juvenile Sooty Terns. *Nature*. London. 223 632-634.

UNITED STATES DEPARTMENT OF THE INTERIOR, Fish and Wildlife Service. 1981. Final Culebra-Culebrita Environmental Impact Statement.

WETMORE, ALEXANDER. 1917. The Birds of Culebra Island, Porto Rico. *Auk* 34:51-62.

——— *Calle Elena #10, Ocean Park, Santurce, Puerto Rico 00911*