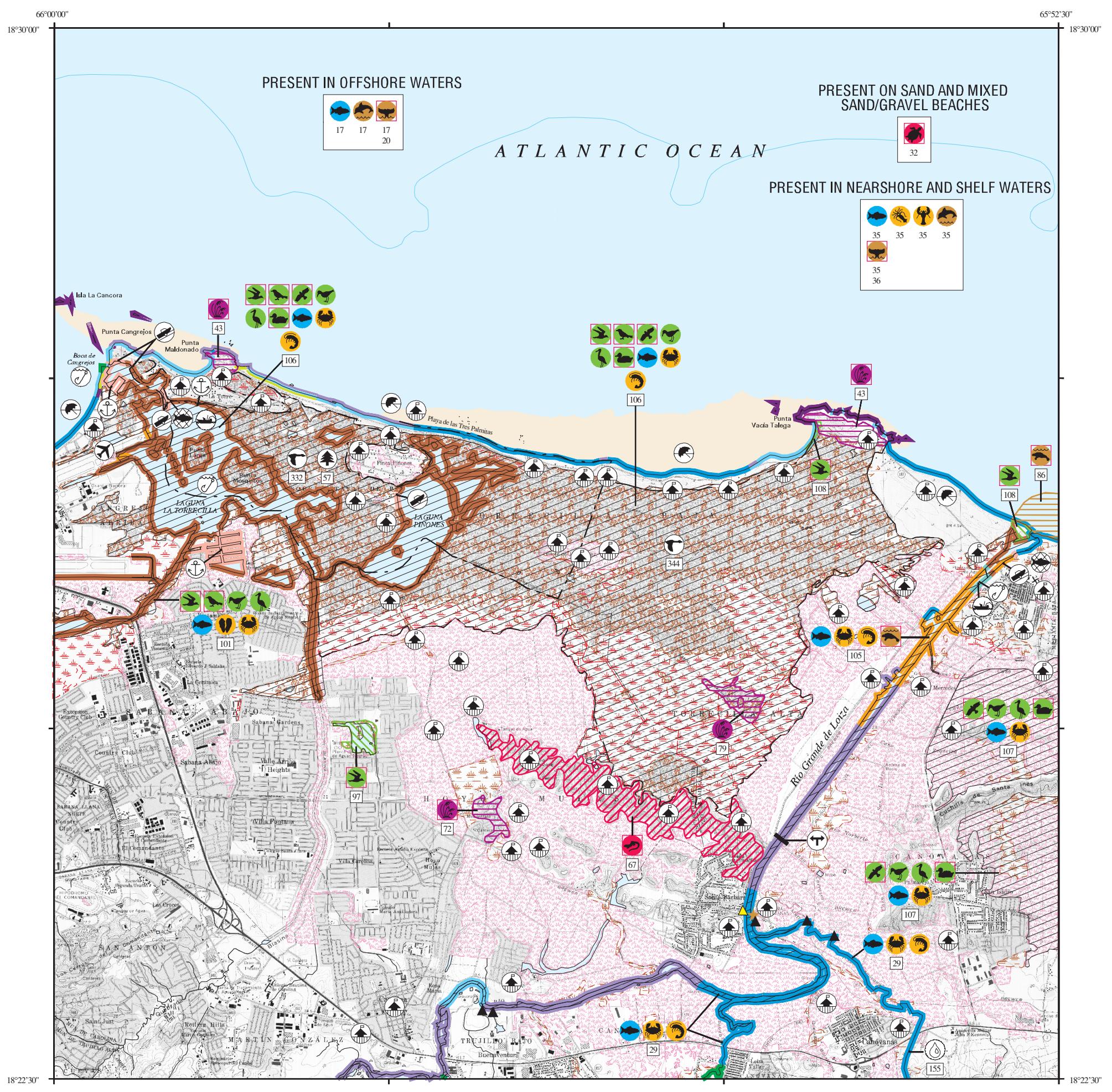


ENVIRONMENTAL SENSITIVITY INDEX MAP



SHORELINE HABITATS (ESI)

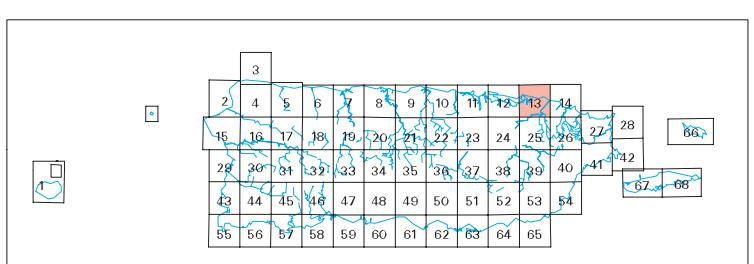
- SHORELINE HABITATS (EST)

 - 1A EXPOSED ROCKY CLIFFS
 - 1B EXPOSED, SOLID MAN-MADE STRUCTURES
 - 2A EXPOSED WAVE-CUT PLATFORMS IN BEDROCK
 - 2B SCARPS AND STEEP SLOPES IN MUDDY SEDIMENTS
 - 3A FINE-TO MEDIUM-GRAINED SAND BEACHES
 - 4 COARSE-GRAINED SAND BEACHES
 - 5 MIXED SAND AND GRAVEL BEACHES
 - 6A GRAVEL BEACHES
 - 6B RIPRAP
 - 7 EXPOSED TIDAL FLATS
 - 8A SHELTERED ROCKY SHORES
 - 8B SHELTERED, SOLID MAN-MADE STRUCTURES
 - 9A SHELTERED TIDAL FLATS
 - 9B SHELTERED VEGETATED LOW BANKS
 -  10D MANGROVES
 -  11A SALT- AND BRACKISH-WATER MARSHES
 -  11B FRESHWATER MARSHES
 -  12A FRESHWATER SWAMPS
 -  12B FRESHWATER SCRUB/SHRUB

STREAM BEACHES (BS)

- STREAM REACHES (RSI)

 - 1 QUIET POOL; LOW-SENSITIVE BANKS
 - 2 STRAIGHT CHANNEL WITH CURRENTS;
LOW-SENSITIVE BANKS (MUD DOMINANT)
 - 3 MEANDERING CHANNEL; SAND POINT BARS
 - 4 MEANDERING CHANNEL; VEGETATED POINT BARS
 - 5 RAPIDS OVER BEDROCK
 - 6 MEANDERING CHANNEL; SAND AND GRAVEL
POINT BARS
 - 7 SPLIT CHANNEL WITH COARSE GRAVEL;
SOME RAPIDS
 - 8 SMALL FALLS; BOULDERS IN CHANNEL
 - 9 LARGE FALLS; BOULDERS IN CHANNEL
 - 10 CHANNELS WITH ASSOCIATED VULNERABLE WETLANDS
 - KARST



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CAROLINA, P.R. (1982) PR-13

PUERTO RICO - ESIMAP 13

BIOLOGICAL RESOURCES:

BIRD:

RAR#	Species	S/F T/E Conc.	J F M A M J J A S O N D Nesting
97	Brown pelican	S/F E/E	X X X X X X X X X X X X X X X X -
101	Brown pelican	S/F E/E HIGH	X X X X X X X X X X X X X X X X -
	Least tern	S T	X X X X X X X -
	Roseate tern	S/F E/T	X X X X X X X -
	Royal tern	HIGH	X X X X X X X X X X X X X X X X -
	Sandwich tern	HIGH	X X X X X X X X X X X X X X X X -
	Shorebirds	HIGH	X X X X X X X X X X X X X X X X -
	Wading birds	HIGH	X X X X X X X X X X X X X X X X -
	Yellow-shouldered blackbird	S/F E/E	X X X X X X X X X X X X X X X X MAR-SEP
106	American coot	HIGH	X X X X X X X X X X X X X X X X -
	Blue-winged teal	HIGH	X X X X X X X X X X X X X X X X -
	Brown pelican	S/F E/E HIGH	X X X X X X X X X X X X X X X X -
	Caribbean coot	S T HIGH	X X X X X X X X X X X X X X X X -
	Common moorhen	HIGH	X X X X X X X X X X X X X X X X -
	Common snipe	HIGH	X X X X X X X X X X X X X X X X -
	Green-winged teal	HIGH	X X X X X X X X X X X X X X X X -
	Gulls	HIGH	X X X X X X X X X X X X X X X X -
	Lesser scaup	HIGH	X X X X X X X X X X X X X X X X -
	Masked duck	S T LOW	X X X X X X X X X X X X X X X X -
	Merlin	LOW	X X X X X X X X X X X X X X X X -
	Northern pintail	HIGH	X X X X X X X X X X X X X X X X -
	Osprey	LOW	X X X X X X X X X X X X X X X X -
	Peregrine falcon	S E LOW	X X X X X X X X X X X X X X X X -
	Pied-billed grebe	HIGH	X X X X X X X X X X X X X X X X -
	Purple gallinule	HIGH	X X X X X X X X X X X X X X X X -
	Ring-necked duck	HIGH	X X X X X X X X X X X X X X X X -
	Royal tern		X X X X X X X X X X X X X X X X -
	Ruddy duck	S T HIGH	X X X X X X X X X X X X X X X X -
	Sandwich tern		X X X X X X X X X X X X X X X X -
	Shorebirds	HIGH	X X X X X X X X X X X X X X X X -
	Wading birds	HIGH	X X X X X X X X X X X X X X X X -
	West Indian whistling-duck	S T HIGH	X X X X X X X X X X X X X X X X -
	White-cheeked pintail	HIGH	X X X X X X X X X X X X X X X X -
	White-crowned pigeon		X X X X X X X X X X X X X X X X -
	Yellow-shouldered blackbird	S/F E/E	X X X X X X X X X X X X X X X X MAR-SEP
107	American coot	HIGH	X X X X X X X X X X X X X X X X -
	Blue-winged teal	HIGH	X X X X X X X X X X X X X X X X -
	Caribbean coot	S T HIGH	X X X X X X X X X X X X X X X X -
	Common moorhen	HIGH	X X X X X X X X X X X X X X X X -
	Common snipe	HIGH	X X X X X X X X X X X X X X X X -
	Green-winged teal	HIGH	X X X X X X X X X X X X X X X X -
	Lesser scaup	HIGH	X X X X X X X X X X X X X X X X -
	Masked duck	S T LOW	X X X X X X X X X X X X X X X X -
	Merlin	LOW	X X X X X X X X X X X X X X X X -
	Northern pintail	HIGH	X X X X X X X X X X X X X X X X -
	Peregrine falcon	S E LOW	X X X X X X X X X X X X X X X X -
	Pied-billed grebe	HIGH	X X X X X X X X X X X X X X X X -
	Purple gallinule	HIGH	X X X X X X X X X X X X X X X X -
	Ring-necked duck	HIGH	X X X X X X X X X X X X X X X X -
	Ruddy duck	S T HIGH	X X X X X X X X X X X X X X X X -
	Wading birds	HIGH	X X X X X X X X X X X X X X X X -
	West Indian whistling-duck	S T HIGH	X X X X X X X X X X X X X X X X -
	White-cheeked pintail	HIGH	X X X X X X X X X X X X X X X X -
108	Least tern	S T	X X X X X X X X X X X X X X X X APR-JUL

FISH:

RAR#	Species	S/F T/E Conc.	J F M A M J J A S O N D Spawning Eggs	Larvae	Juveniles	Adults
17	Pelagic fish		X X X X X X X X X X X X X X X X JAN-DEC	JAN-DEC	JAN-DEC	JAN-DEC
29	Native stream fish		X X X X X X X X X X X X X X X X APR-MAY	APR-MAY	APR-MAY	JAN-DEC
				AUG-NOV	AUG-NOV	AUG-NOV
35	Pelagic fish		X X X X X X X X X X X X X X X X JAN-DEC	JAN-DEC	JAN-DEC	JAN-DEC
	Reef fish		X X X X X X X X X X X X X X X X JAN-DEC	JAN-DEC	JAN-DEC	JAN-DEC
101	Nursery fish		X X X X X X X X X X X X X X X X -	-	-	JAN-DEC
	Snook		X X X X X X X X X X X X X X X X APR-FEB	APR-FEB	JAN-DEC	JAN-DEC
	Tarpon		X X X X X X X X X X X X X X X X -	-	MAY-DEC	JAN-DEC
105	Native stream fish		X X X X X X X X X X X X X X X X -	-	APR-MAY	-
	Nursery fish		X X X X X X X X X X X X X X X X -		AUG-NOV	
	Snook		X X X X X X X X X X X X X X X X APR-FEB	APR-FEB	JAN-DEC	JAN-DEC
	Tarpon		X X X X X X X X X X X X X X X X -	-	MAY-DEC	JAN-DEC
106	Nursery fish		X X X X X X X X X X X X X X X X -	-	JAN-DEC	-
	Snook		X X X X X X X X X X X X X X X X APR-FEB	APR-FEB	JAN-DEC	JAN-DEC
	Tarpon		X X X X X X X X X X X X X X X X -	-	MAY-DEC	JAN-DEC
107	Nursery fish		X X X X X X X X X X X X X X X X -	-	JAN-DEC	-
	Snook		X X X X X X X X X X X X X X X X APR-FEB	APR-FEB	JAN-DEC	JAN-DEC
	Tarpon		X X X X X X X X X X X X X X X X -	-	MAY-DEC	JAN-DEC

PLANT:

RAR#	Species	S/F T/E Conc.	J F M A M J J A S O N D
43	Schoepfia arenaria	S/F T/T	X X X X X X X X X X X X X X X X
72	Ottoschulzia rhodoxylon	S/F E/E	X X X X X X X X X X X X X X X X
79	Pterocarpus swamp		X X X X X X X X X X X X X X X X

INVERTEBRATE:

RAR#	Species	S/F T/E Conc.	J F M A M J J A S O N D Spawning Eggs	Larvae	Juveniles	Adults
29	Freshwater crab		X X X X X X X X X X X X X X X X APR-MAY	APR-MAY	-	JAN-DEC
	Native stream shrimp		X X X X X X X X X X X X X X X X AUG-NOV	AUG-NOV	AUG-NOV	
35	Caribbean spiny lobster		X X X X X X X X X X X X X X X X JAN-DEC	JAN-DEC	JAN-DEC	JAN-DEC
	Octopus		X X X X X X X X X X X X X X X X DEC-MAR	DEC-APR	-	JAN-DEC
101	Blue crabs	HIGH	X X X X X X X X X X X X X X X X -	-	-	JAN-DEC
	Blue land crab		X X X X X X X X X X X X X X X X JUL-AUG	JUL-AUG	JUL-SEP	JAN-DEC
	Quahog (hard clam)		X X X X X X X X X X X X X X X X -	-	-	JAN-DEC
105	Blackback land crab		X X X X X X X X X X X X X X X X -	-	-	JAN-DEC
	Blue land crab		X X X X X X X X X X X X X X X X JUL-AUG	JUL-AUG	JUL-SEP	JAN-DEC
	Native stream shrimp		X X X X X X X X X X X X X X X X -	-	APR-MAY	-
	Purple land crab		X X X X X X X X X X X X X X X X -	-	-	JAN-DEC
106	Blackback land crab		X X X X X X X X X X X X X X X X -	-	-	JAN-DEC
	Blue crabs		X X X X X X X X X X X X X X X X -	-	-	JAN-DEC
	Blue land crab		X X X X X X X X X X X X X X X X -	-	-	JAN-DEC
	Penaeid shrimp		X X X X X X X X X X X X X X X X JUL-AUG	JUL-AUG	JUL-SEP	JAN-DEC
	Purple land crab		X X X X X X X X X X X X X X X X -	-	-	JAN-DEC
107	Blackback land crab		X X X X X X X X X X X X X X X X -	-	-	JAN-DEC
	Blue land crab		X X X X X X X X X X X X X X X X JUL-AUG	JUL-AUG	JUL-SEP	JAN-DEC
	Purple land crab		X X X X X X X X X X X X X X X X -	-	-	JAN-DEC

PUERTO RICO - ESIMAP 13 cont.

BIOLOGICAL RESOURCES: cont.

MARINE MAMMAL:

RAR# Species	S/F T/E Conc.	J F M A M J J A S O N D Mating	Calving
17 Dolphins		X X X X X X X X X X X X	- -
Whales		X X X X X X X X X X X X	- -
20 Sperm whale	S/F E/E HIGH	X X X X X X X X X X X X	- -
35 Dolphins		X X X X X X X X X X X X	- -
Whales		X X X X X X X X X X X X	- -
36 Humpback whale	S/F E/E VERY HIGH	X X X X X X X X X X X X	- -
86 West Indian manatee	S/F E/E	X X X X X X X X X X X X	JAN-DEC JAN-DEC
105 West Indian manatee	S/F E/E	X X X X X X X X X X X X	JAN-DEC JAN-DEC

REPTILE:

RAR# Species	S/F T/E Conc.	J F M A M J J A S O N D Nesting	Hatching	Internesting	Juveniles	Adults
32 Green sea turtle	S/F E/T	X X X X X X X X X X X X	JAN-DEC	JAN-DEC	-	JAN-DEC
Hawksbill sea turtle	S/F E/E	X X X X X X X X X X X X	JAN-DEC	JAN-DEC	-	JAN-DEC
Leatherback sea turtle	S/F E/E	X X X X X X X X X X X X	FEB-JUN	APR-SEP	-	APR-SEP FEB-JUN
67 Puerto Rican boa	S/F E/E	X X X X X X X X X X X X	-	-	-	JAN-DEC JAN-DEC

HUMAN USE RESOURCES:

HUN# Name	Owner/Manager	Contact	Phone
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FOREST:

57 BOSQUE PINONES	DRNA	DIVISION DE MANEJO BOSQUES ESTATALES	787/721-5495
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WILDLIFE REFUGE:

332 RESERVA NATURAL DE PINONES	DRNA	DIVISION DE RESERVAS NATURALES Y REFUGIOS DE VIDA SILVESTRE	787/724-2816
344 RESERVA TORRECILLA ALTA (PROPOSED)	DRNA	DIVISION DE RESERVAS NATURALES Y REFUGIOS DE VIDA SILVESTRE	787/724-2816

WATER INTAKE:

HUN# Name	Owner/Manager	Location	Phone
155 CANOVANAS FILTER PLANT	PRASA		787/876-0140

Biological information shown on the maps represents known concentration areas or occurrences, but does not necessarily represent the full distribution or range of each species. This is particularly important to recognize when considering potential impacts to protected species.