



**Environmental and Cultural Resources Surveys
for
Cayo Lobo**

**Non-Time-Critical Removal Action
at the Municipality of Culebra, Puerto Rico**

Prepared for

**United States Army District, Jacksonville
United States Army Engineering and Support Center, Huntsville**

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Task Order Number:	0001
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Date:	August 23, 2006

ENVIRONMENTAL AND CULTURAL RESOURCES SURVEYS FOR CAYO LOBO

1. INTRODUCTION

In accordance with requests by the regulators involved with the Technical Planning Process and the approved Work Plan, Ellis Environmental Group LC (EEG) is required to provide a cultural resources and environmental survey of each cay that will be investigated under this contract. The purpose of the surveys is to identify cultural resources, sensitive habitats, and endangered plants and animals that may exist in the work areas. Additionally, EEG is requested to determine the access points to the cays where the boats will anchor. This report presents the results of the surveys conducted at Cayo Lobo.

EEG employed two subcontractors with specific Caribbean experience to conduct these surveys. South East Archeological Research (SEARCH) performed the cultural resources survey, and ReForesta, Inc. conducted the habitat and endangered species surveys. The results of the cultural resources survey is included in Appendix A. The habitat and endangered species survey is included in Appendix B.

The Archive Search Report Findings for Culebra Island National Wildlife Refuge (February 1995) indicates that the range at Cayo Lobo is only 20 acres encompassing primarily the saddle area in the middle of the cay. On the ground, the former target area is marked by the existence of numerous tires. EEG plans to start removal of materials potentially presenting explosive hazard (MPPEH) in the center of the cay and move outward until all MPPEH has been accounted for and removed. EEG estimates approximately 22 grids will encompass the area of concern.

2. RESULTS OF SURVEYS

Cultural Resources Survey

Based on the data in the survey report (Appendix A), there were no significant cultural resources found at Cayo Lobo that would limit the surface removal of Munitions and Explosives of Concern (MEC) from this site. As SEARCH personnel observed, there should be no limitation to EEG operations based on cultural resource issues.

The SEARCH expert provided a cultural resources briefing to EEG personnel during the initial project mobilization. All team members will be on the lookout for any items of potential cultural significance. If items are found, EEG will map each location with the GPS and send the coordinates and pictures to the U.S. Army Corps of Engineers, Jacksonville District (CESAJ) project manager to be forwarded to the Cultural Resources Specialist.

Environmental Resources Survey

Due to the low groundcover in the main target area, EEG will remove very little or no vegetation to conduct the surface clearance. Where there is MEC to be destroyed at the site, EEG will remove vegetation in a 25 foot diameter area and will use sand bag or water mitigation to reduce the effect of the blast. EEG will not detonate an item near the areas of cacti and/or sea grapes unless a MEC item cannot be moved, in which case EEG will provide a barricade to protect the sensitive plants.

Based on the data in the survey report, EEG will follow these recommendations:

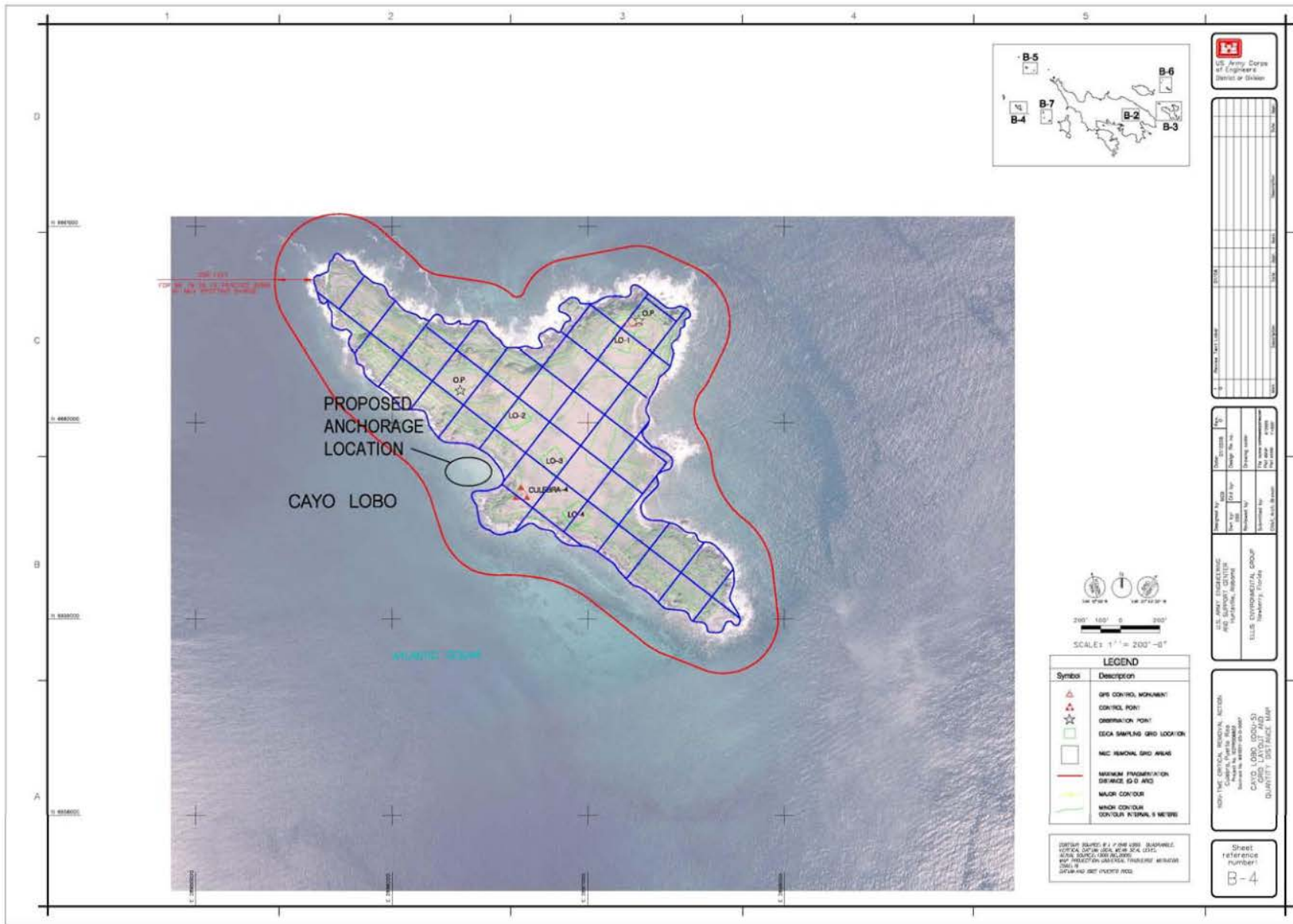
1. Avoid removing Hybrid seagrass patches. Although the plants mostly occur on the cliffs, some extend a few meters inland. These shrubs will tolerate pruning, and if necessary, EEG will prune the bottom foliage to ensure proper detection of MPPEH in the area.
2. Avoid removing the Turk's cap cacti. Most of the individuals have reached maturity and maybe over 30 years old. EEG does not anticipate the need to remove any of these cacti. EEG will barricade these plants when detonation of explosives is in close proximity.
3. If clearing activities extend into the winter months, the crews will inform the appropriate agencies of any bird nesting activity. EEG will coordinate all work with the U.S. Fish and Wildlife Services and Puerto Rico Environmental Quality Board (EQB) personnel to ensure we have current information about endangered birds that may be migrating and nesting in the area, and EEG will work with them to ensure proper protection of the birds. We do not anticipate this to be an issue as we anticipate completion of work on this cay by the end of September, 2006.
4. Inform the appropriate agencies if any snakes are observed. As stated in paragraph 3 above, we will coordinate all work with the appropriate agencies.
5. Avoid disturbing the brown pelicans and the underwater habitat when coming ashore. EEG will coordinate access to the cays with USFWS to ensure protection of the brown pelicans.

Marine Protection

EEG will use a Trident 40-foot boat with a 16-foot beam to transport personnel and equipment to the cays. The boat has a 4-1/2 foot draft and will work well in this area.

EEG will access the cays only from the location as shown in the figure on the following page. EEG will ensure that the boat will be anchored in the area noted on the map. EEG was informed by the USFWS guide that this location is generally used by regulatory agency personnel when entering this cay. The bottom is sandy with only a sparse number of coral heads in the area, and care will be taken to avoid the coral heads in this area when anchoring.

EEG will use a rubber dingy or a small 14- or 18-foot skiff to land personnel and equipment on shore, which is a rocky beach presently littered with debris.



APPENDIX A
CULTURAL RESOURCES SURVEY

**End of Fieldwork Report:
Archaeological Walkover Survey Associated with Unexploded
Ordnance Removal on Isla Culebrita and Cayo Lobo,
Municipality of Culebra, Puerto Rico**

CONSULTANT: Southeastern Archaeological Research, Inc.
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PRINCIPAL INVESTIGATOR: William Keegan, Ph.D.

CLIENT: U.S. Army Corp of Engineers/Ellis Environmental Group

DATE: August 18, 2006

In April 2006, Southeastern Archaeological Research (SEARCH) of Jonesville, Florida was engaged by Ellis Environmental Group, LC, in conjunction with the U.S. Army Corps of Engineers (USACE), Huntsville, to conduct a cultural resource survey of the Cerro Balcón region of Culebra and several of the surrounding cays as part of the Culebra Non-Time-Critical Removal of unexploded ordnance (UXO) from the ground surface. The first phase at Cerro Balcón has been described in a separate executive summary and final report. This second phase of work consisted of a survey of two of these cays: Cayo Lobo and the northwest peninsula of Isla Culebrita (Figure 1). As noted in the Cerro Balcón report, there is no mention of previously recorded archaeological sites on the small cays surrounding Culebra, with the exception of two sites on the east side of Isla Culebrita; one of which is the National Register of Historic Places listed property the Culebrita Lighthouse (“Faro Isla de Culebritas”), built in 1874. The Isla Culebrita sites are outside the present survey project area.



Figure 1. Location of Surveyed Cays—Cayo Lobo and Isla Culebrita

This End of Fieldwork report describes walkover surveys of Cayo Lobo and the northwestern peninsula of Isla Culebrita conducted in July 2006. Dr. William F. Keegan, Curator of Caribbean Archaeology, Florida Museum of Natural History, University of Florida, Gainesville, was sub-contracted as the Principal Investigator. Dr. Keegan conducted his investigation of Cayo Lobo on July 25 and Isla Culebrita on July 26, 2006. Unfortunately, due to severe weather conditions during the time of the survey, it was impossible to return safely to either island for follow-up investigations.

Dr. Keegan's investigations were limited to a walkover survey. No subsurface testing was permitted due to the potential for buried UXO in the project area. An Explosive Ordnance Disposal (EOD) specialist, equipped with a magnetometer, preceded Dr. Keegan at all times during the surface survey. Because the current UXO removal project is limited to surface disposal with no planned subsurface impacts and the islands are protected by the Department of Fish and Wildlife, a surface survey was deemed a sufficient methodology for identifying resources within the project area. The project will have no significant subsurface impacts.

The following is a brief description of the survey completed on Isla Culebrita and Cayo Lobo. A complete report is pending, which will thoroughly present previous research, environmental conditions, archaeological site potential and findings. No sites were located during this investigation.

Cayo Lobo

Cayo Lobo is a small cay to the west of Culebra. It is composed of three high promontories connected by a low saddle (Figure 2). There are military observation bunkers on two of the promontories and a helicopter landing pad on the third. It appears that most of the bombing was restricted to the lower central part of the cay. Today, most of the cay is covered in dense grass, with woodland vegetation on the promontories and along the cliff edges. Surface visibility is only fair in most places, but toward the center of the cay there are former craters and erosion gulleys that offer complete surface exposures.

Keegan's survey covered the entire circumference of the cay, with special attention to cliff edges and other exposures. In addition, most of the low interior was walked in a series of transects that focused on the substantial exposures. The walkover survey achieved extensive coverage of the cay. The cay would certainly have provided access to a variety of resources including marine mollusks and a variety of lithics (milky quartz, diorite, and greenstone) that were used by the Taínos. However, the entire island is a high ridge with steep sides. This rocky outcrop has no beaches to easily land a canoe and no protection from the elements. Cayo Lobo has a low potential for prehistoric archaeological sites. The survey found no evidence of historic or prehistoric activities, other than 20th century military use.

Isla Culebrita

Isla Culebrita, located east of Culebra, has a similar layout to Cayo Lobo but on a much larger scale. There are again three promontories connected by a lowland. Only the northwestern peninsula of Culebrita is within the project area (Figure 3). The vegetation is extremely dense

and covered with thorns. Surface visibility on top of the peninsula is limited due to abundant leaf litter. There is a sand beach at the western tip of the peninsula that extends in front of a large pond (*Laguna del Molino*). This pond is not open to the ocean today, however it may have been a tidal creek at the time the Taínos were living in the region. The pond is described by the 1977 Soil Survey of Humacao Area of Eastern Puerto Rico (1977) as a tidal flat and shown in the aerial to have had access to the ocean on both ends of the pond. The fieldwork and photography for the 1977 soil survey was completed between 1962 and 1968. The sand beach at the tip of this peninsula appears to be a building rather than eroding shoreline and is possibly of modern origin (since A.D. 1500). The soils north of the pond are Catano loamy sand, which are nearly level, rapidly permeable sediments. Most of the remainder of Culebrita consists of Descalabrado clay loam (20-40% slopes, eroded) (USDA 1977). This soil type is well drained and moderately permeable, and occurs in areas of low rainfall. These soils are usually shallow and overlie volcanic bedrock.

The walkover survey progressed along the northwest beach and covered the entire perimeter of the project area. In addition, the margins of the pond were surveyed, and a transect was walked along a diagonal from the southern beach to the northern cliffs. With the possible exception of the pond, there is a low probability that prehistoric sites of significance ever existed here due to poor soils, a lack of freshwater resources, and little protection from the elements. The terrestrial environment offers no resources of value and is a difficult terrain to traverse as it consists of steep, heavily vegetated slopes. No evidence for historic or prehistoric activities was found.

Conclusions

Neither Cayo Lobo nor Isla Culebrita offered any signs of historic or prehistoric activities. No historic structures are located within the project areas. It is our opinion that the archaeological survey work described above and the submittal of a Final Technical report will adequately complete the cultural resource assessment of Isla Culebrita and Cayo Lobo. The walkover survey found no cultural resources and no evidence of past resource exploitation. Therefore, the project areas are not subject to any further investigations or protective or mitigative measures.

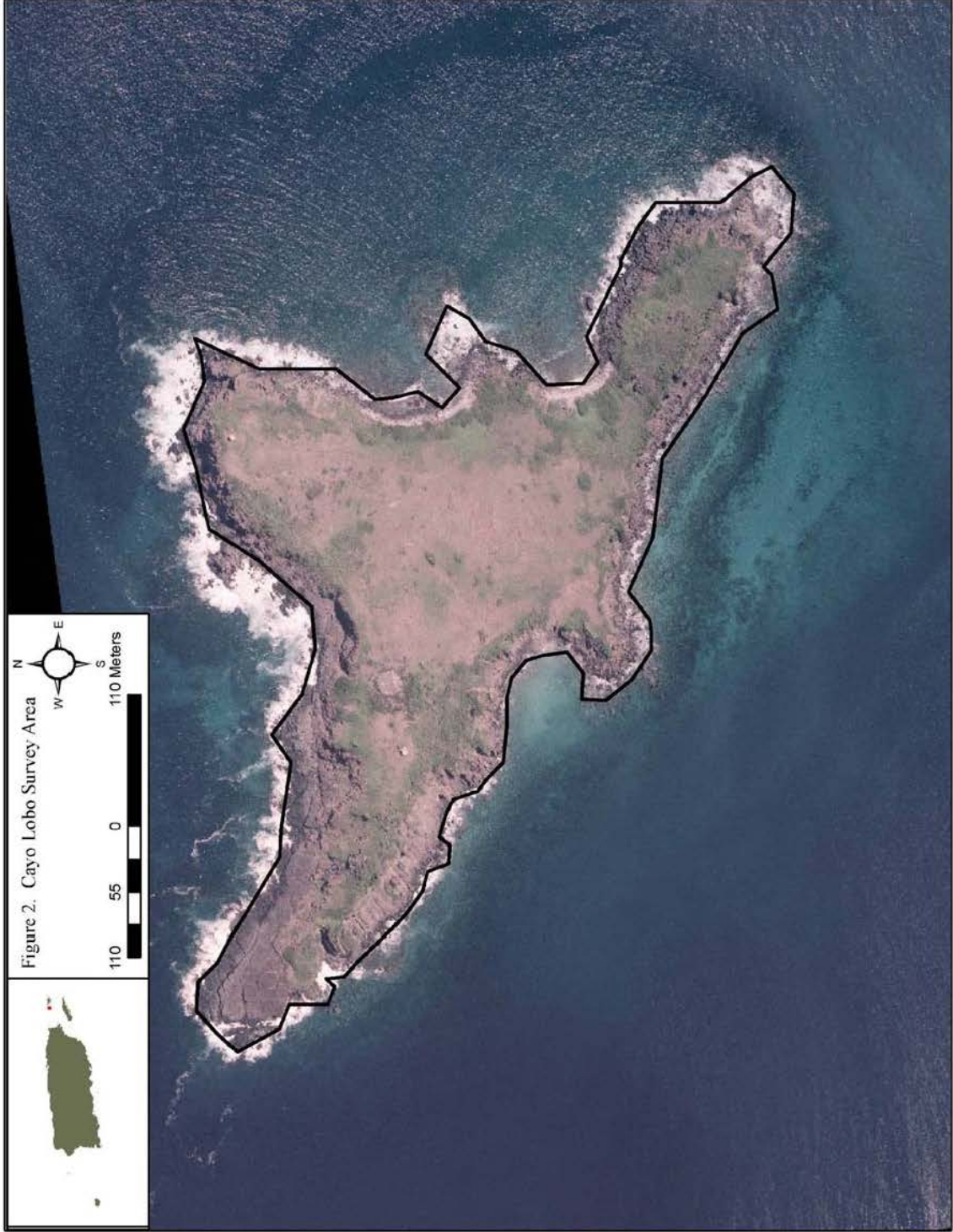




Figure 3. Culebrita Survey Area

APPENDIX B
ENVIRONMENTAL RESOURCES SURVEY

FLORA AND FAUNA SURVEY
FOR
CAYO LOBO
DERP-FUDS CLEAN UP
CULEBRA, Puerto Rico

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Carlos Laboy

Location

Cayo Lobo is located approximately 4.7 kilometers east of Punta Tamarindo Grande in the island of Culebra (see appendix 1 for location map). The cay covers 28 acres and is surrounded by rocky cliffs of volcanic origin. We disembarked on the south side of the island on a thin strip of rocky beach. The site is located within the subtropical dry forest life zone (Ewel & Whitmore 1973).

Methodology

Field work was conducted on July 25, 2006 from 11:30 A.M. to 3:15 PM by Roberto Bello, Alejandro Cubiñá, and Carlos Laboy from Reforesta, Inc., an UXO specialist and an archaeologist were also present. The perimeter of the cay was first covered followed by the interior of the cay. Steep cliffs were out of the scope of work of this survey. Coordinates were recorded with a handheld GPS in DEG.DDDDD, NAD 27 datum.

Flora – We recorded all plant species occurring within the cay. Any plants that could not be identified in the field were taken to the University of Puerto Rico at Río Piedras herbarium for later identification. Plant nomenclature follows Liogier and Martorell (2000).

Fauna – The herpetofauna and avifauna were determined by visual and acoustic means. Rock and fallen branches were frequently turned to detect cryptic species. Nomenclature for the herpetofauna follows Schwartz and Henderson (1991) and Raffaele *et al.* (1998) for the avifauna.

Results

Flora – The cay is dominated by herbaceous vegetation. Hurricane grass (*Bothriochloa pertusa*), and introduced species, covers more than 70 % of the island. The grassland extends from the interior of the island up to the edges of the cliffs. On the western side of the cay, next to the helicopter pad, a small patch of *Leucaena leucocephala* small trees is starting to invade the grassy area. Most shrub and tree species occur on the edge of the cay and in the cliffs. However woody vegetation is not continuous along the perimeter of the cay.

We recorded 60 species of plants (see Table 1). No Puerto Rico Department of Natural Resources critical elements or threatened and endangered species of plants were recorded. Two different plant association types are of interest. First, a small patch of Turk's cap cactus (*Melocactus intortus*) occurs a few meters from the observation post located on the western tip of the cay. This species usually grows on rocky cliffs, but the Cayo Lobo population is growing in high concentrations within a relatively flat area. Second, we've observed a few patches of the Hybrid seagrape (*Coccoloba krugii* x *C. uvifera*) growing on the cliffs and the edge of the plateau on the eastern part of the island. There is some debate in the scientific community if this is a true species or a hybrid. A few individuals of this hybrid have been recorded in the former Live Impact Area in the island of Vieques. Below are approximate cover and coordinates for the different Hybrid seagrape patches:

Group #1 (4ft x 4ft; 18.32515° N, 65.37668°W, 108 ft)

Group #2 (30ft x 60 ft; 18.32509° N, 65.37650°W, 83 ft)

Group #3 (20ft x 20 ft; 18.32271° N, 65.37688°W, 48 ft)

Group #4 (70ft x 40 ft; 18.32221° N, 65.37715°W, 29 ft)

Group #5 (30ft x 100 ft; 18.32185° N, 65.37640°W, 44 ft)

Group #6 (35ft x 15 ft; 18.32151° N, 65.37591°W, 57 ft)

Group #7 (15ft x 15 ft; 18.32129° N, 65.37574°W, 68 ft)

Fauna – We recorded 12 bird and 4 reptile species. Eight brown pelican (*Pelecanus occidentalis*) individuals, a federally endangered species, were observed resting on big rocks along the southern coast of Cayo Lobo.

The most abundant terrestrial organism is probably the Common Puerto Rican ameiva (*Ameiva exsul*). No amphibians were recorded during our diurnal survey, but we would expect to find *Eleutherodactylus antillensis* and *Eleutherodactylus coqui*, two common Coquí species, if we had continued the survey through the night.

The Virgin Islands tree boa (*Epicrates monensis granti*) has been observed in nearby Culebra. During our site visit we did not find any boas or old skins. The only suitable habitat for this snake species occurs along the fragmented scrub forest on the edges of the cay and the adjacent cliffs. However, we have been told by some Culebra residents that Cayo Lobo is known for its rat population. We found a rat skeleton but no living specimens were observed. Rats are known to predate on young boas and recent reintroduction sites have been preceded by rat eradication (Tolson and Pierce 2005).

Recommendations

Given that clearing operation will not take place in the cliffs surrounding the cay, the recovering woody vegetation won't be disturbed. Special care should be taken to

avoid any fires from spreading into the coastal-scrub patches. In addition, we recommend the following:

1. Avoid removing Hybrid seagrape patches (although the plants mostly occur on the cliffs some extend a few meters inland). These shrubs will tolerate pruning if necessary.

2. Avoid removing the Turk's cap cacti (most of the individuals have reached maturity and maybe over 30 years old).

3. If cleaning activities extend into the winter months, the cleaning crews should inform the appropriate agencies of any bird nesting activity.

4. Inform the appropriate agencies if any snakes are observed.

5. Avoid disturbing the brown pelicans and underwater habitat when coming ashore.

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Tolson, P. J. and J. Pierce. 2005. Reintroduction Evaluation and Site Assesments of the Virgin Islands boa, *Epicrates monensis granti* to the U.S. Virgin Islands. U.S. Fish and Wildlife Service, Atlanta,Georgia, 13 p.

<http://plants.usda.gov/>

<http://www.itis.usa.gov/>

Table 1. Flora Cayo Lobo

<u>Scientific name</u>	<u>Common name (Eng.)</u>	<u>Common name (Sp.)</u>	<u>Family</u>
Herbaceous Plants			
<i>Boerhavia coccinea</i> Miller	Hog weed	Mata pavo	
<i>Bothriochloa pertusa</i> (L.) A. Camus	Hurricane grass	Hierba amarga	POACEAE
<i>Capraria biflora</i> L.	Goat weed	Té del país	
<i>Chloris inflata</i> Link	Mexican blue grass	Horquetilla morada	
<i>Cyperus planifolius</i> Rich.			CYPERACEAE
<i>Desmanthus virgatus</i>		Desmanto	NYCTAGINACEAE
<i>Dichanthium annulatum</i> (Forssk.) Stapf	Railroad track grass	Hierba de las traviesas	POACEAE
<i>Digitaria insularis</i> (L.) Mez	Silky grass		SCROPHULARIACEAE
<i>Jatropha gossypifolia</i> L.	Belly ache bush	Higuereta cimarrona	EUPHORBIACEAE
<i>Justicia sphaerosperma</i> Vahl			
<i>Heliotropium angiospermum</i> Murray	Scorpion tail		LEG.-MIMOSOIDEAE
<i>Hymenocallis caribae</i> (L.) Herb.	White lily, spider lily	Lirio blanco	AMARYLLICACEAE
<i>Malvastrum americanum</i> (L.) Torrey in Emory	Malva silvestre Zorra	False mallow	
<i>Mammillaria nivosa</i> Link in Pfeiff.	Snow cactus	Erizo blanco	CACTACEAE
<i>Melocactus intortus</i> (Miller) Urban	Turk's cap	Melón de costa	CACTACEAE
<i>Mimosa pudica</i> L.	Sensitive plant		POACEAE
<i>Opuntia repens</i> Bello	Suckers	Gatos	BORAGINACEAE
<i>Paspalum pleostachyum</i> Doell			CACTACEAE
<i>Ruellia tuberosa</i> L.	Many-roots		MALVACEAE
<i>Setaria rariflora</i> Mikan			POACEAE
<i>Stachytarpheta jamaicensis</i> (L.) Vahl	Blue porterweed		ACANTHACEAE
<i>Tephrosia cinerea</i> (L.) Pers.			POACEAE
<i>Tridax procumbens</i> L.	Tridax	Añil cenizo	LEG.-MIMOSOIDEAE
<i>Urochloa maxima</i> (Jacq.) R. D. Webster	Guinea grass	Pancha	COMPOSITAE
<i>Waltheria indica</i> L.		Hierba de guinea	POACEAE
<i>Wedelia fruticosa</i> Jacq.		Malvavisco	
		Margarita de las rocas	VERBENACEAE
			LEG.-PAPILIONOIDEAE
			COMPOSITAE
			STERCULIACEAE

Table 1. Flora of Cayo Lobo (continued)

<u>Scientific name</u>	<u>Common name (Eng.)</u>	<u>Common name (Sp.)</u>	<u>Family</u>
Shrubs and Trees			
<i>Adelia ricinella</i> L.		Escambrón	EUPHORBIACEAE
<i>Bourreria succulenta</i> Jacq.	Pigeon berry	Palo de vaca	BORAGINACEAE
<i>Bursera simaruba</i> (L.) Sarg.	Gumbo limbo	Almácigo	BURSERACEAE
<i>Calotropis procera</i> (Aiton) W. T. Aiton	Giant milkweed	Algodón de seda	ASCLEPIADACEAE
<i>Capparis cynophallophora</i> L.	Black willow	Burro prieto	
<i>Capparis flexuosa</i> (L.) L.	Dog caper	Palinguán	
<i>Chamaesyce articulata</i> (Aubl.) Britton			EUPHORBIACEAE
<i>Coccoloba uvifera</i> (L.) L.		Uva de playa	POLYGONACEAE
<i>Coccoloba krugii</i> x <i>C. uvifera</i> Howard	Hybrid seagrape	Uva de playa híbrida	POLYGONACEAE
<i>Croton flavens</i> L. var. <i>rigidus</i> Muell. Arg.	Yellow balsam	Adormidera	CAPPARACEAE
<i>Erithalis fruticosa</i> L.	Black torch		CAPPARACEAE
<i>Eupatorium odoratum</i> L.	Bitter bush	Santa María	
<i>Lantana involucrata</i> L.	Seagrape	Wild sage	VERBENACEAE
<i>Ficus citrifolia</i> P. Mill.	White fig		
<i>Jacquinia arborea</i> Vahl			EUPHORBIACEAE
<i>Lantana involucrata</i> L.	Button sage	Jayajabico	RUBIACEAE
<i>Leucaena leucocephala</i> (Lam.) Dewit	Wild tamarind	Jagüey	VERBENACEAE
<i>Opuntia rubescens</i> Salm-Dick ex DC.	Prickly pear	Zarcilla	COMPOSITAE
<i>Pilosocereus royenii</i> (L.) Byles & Rowley	Pipe-organ cactus	Tuna de petate	CACTACEAE
<i>Pisonia subcordata</i> Sw.	Torchwood	Sebucán	CACTACEAE
<i>Pithecellobium unguis-cati</i> (L.) Mart.	Water mampoo	Corcho blanco	THEOPHRASTACEAE
<i>Pluchea carolinensis</i> (Jacq.) G. Don in Sweet	Cat's claw	Azúcares	
<i>Plumeria alba</i> L.	Sweet scent	Cariaquillo	MORACEAE
<i>Randia aculeata</i> L.	Milk tree		
<i>Rauvolfia viridis</i> Willd. ex Roem. & Schultes	Christmas tree	Alhelí blanco	
<i>Tabebuia heterophylla</i> (DC.) Britt.	Bitter bush		NYCTAGINACEAE
	White cedar	Rolón	APOCYNACEAE
		Salvia	
			APOCYNACEAE
	Tintillo		LEG.-MIMOSOIDEAE
			RUBIACEAE
			COMPOSITAE
			BIGNONIACEAE

Table 1. Flora of Cayo Lobo (continued)

<u>Scientific name</u>	<u>Common name (Eng.)</u>	<u>Common name (Sp.)</u>	<u>Family</u>
Vines			
<i>Centrosema virginianum</i> (L.) Bentham	Wist vine	Flor de conchitas	LEG.-PAPILIONOIDEAE
<i>Clerodendrum aculeatum</i> (L.) Schlecht.	Prickly myrtle	Escambrón blanco	
<i>Jacquemontia pentanthos</i> (Jacq.) G. Don	Wild daisy	Aguinaldo azul	CONVOLVULACEAE
<i>Ipomoea tiliacea</i> (Willd.) Choisy	Goat foot	Bejuco de puerco	CONVOLVULACEAE
<i>Metastelma decipiens</i> Schltr.			VERBENACEAE
<i>Oplonia spinosa</i> (Jacq.) Raf.	Prickly bush		ACHANTHACEAE
<i>Rhynchosia reticulata</i> (Sw.) DC.		Frijolillo	LEG.-PAPILIONOIDEAE
<i>Stigmaphyllon emarginatum</i> (Cav.) A. Juss.		Bejuco de San Pedro	MALPIGHIACEAE
<i>Trichostigma octandrum</i> (L.) H. Walt	Basket wiss	Bejuco de paloma	PHYTOLACCACEAE

Espinosa

ASCLEPIADACEAE

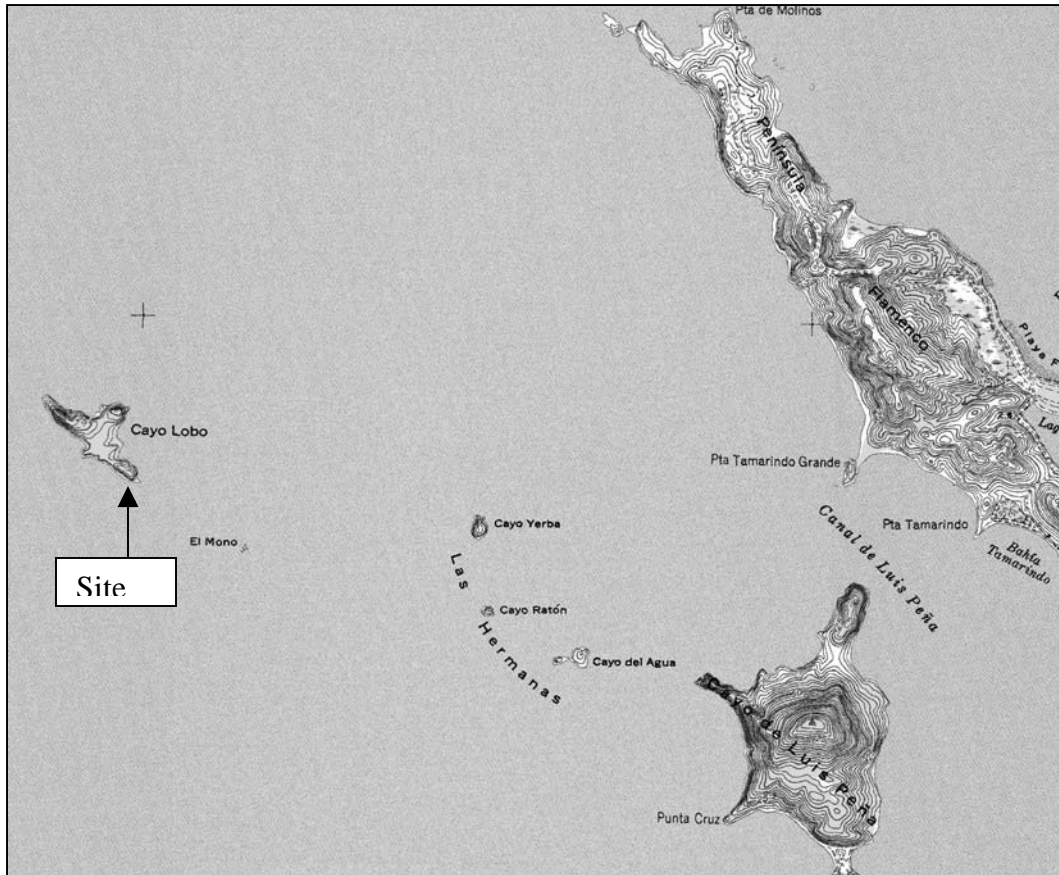
Table 2. Fauna of Cayo Lobo

<u>Scientific name</u>	<u>Common name (Eng.)</u>	<u>Common name (Sp.)</u>	<u>Family</u>
Birds			
<i>Buteo jamaicensis</i>	Red-tailed hawk		
<i>Zenaida asiatica</i>	White-winged dove	Tortola aliblanca	
<i>Zenaida aurita</i>	Zenaida dove	Tortola cardosantera	
<i>Columba squamosa</i>	Scaly-naped pigeon	Paloma turca	COLUMBIDAE
<i>Dendroica petechia</i>	Yellow warbler	Canario de mangle	EMBERIZIDAE
<i>Fregata magnificens</i>	Magnificent frigatebird	Tijereta	ACCIPITIDAE
<i>Tyrannus dominicensis</i>	Gray kingbird		
<i>Pelecanus occidentalis</i> *	Brown pelican	Pelícano pardo	
<i>Haematopus palliatus</i>	Oystercatcher		COLUMBIDAE
<i>Larus atricilla</i>	Laughing gull	Gaviota gallega	
<i>Anous stolidus</i>	Brown noddy		FREGATIDAE
<i>Falco sparverius</i>	American kestrel	Falcón común	LARIDAE
	Pitirre		PELECANIDAE
Reptiles			
	Ostrero		
<i>Anolis cristatellus</i>	Common anole	Lagartijo común	TYBANNIDAE
<i>Anolis pulchellus</i>	Puerto Rican bush anole	Lagartijo jardinero	CARPIDAE POLYCHROTIDA
<i>Ameiva exsul</i>	Common P.R. ameiva	Siguana común	HAEMATOPSIDAE TEIIDAE
<i>Hemidactylus mabouia</i>	House gecko	Salamanquesa	PALCUNIDAE POLYCHROTIDAE

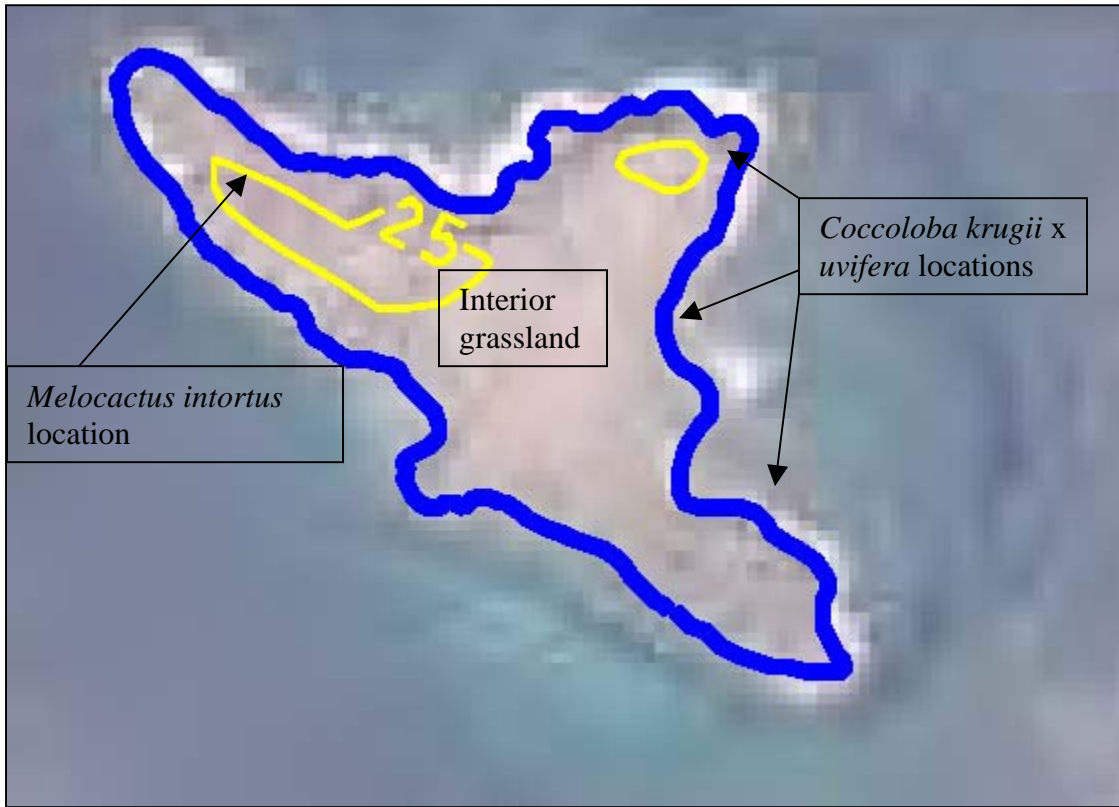
*Endangered species

GEKKONIDAE

Appendix 1 – Location Map



Appendix 2 – Areas of Interest in Cayo Lobo



Appendix 3 – Figures



Figure 1. Hybrid seagrape.



Figure 2. Hurricane grass cover.

Appendix 3 – Figures (continued)



Figure 3. Mature *Melocactus* population.