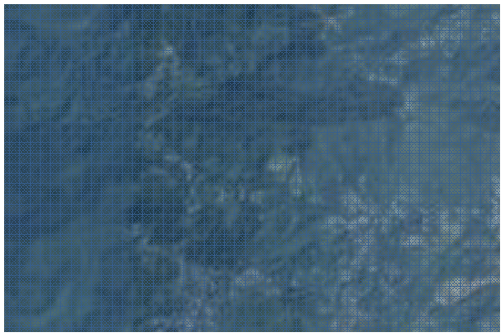
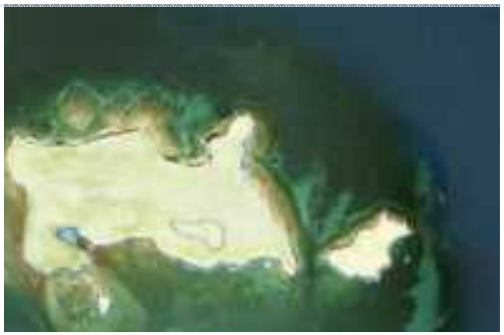
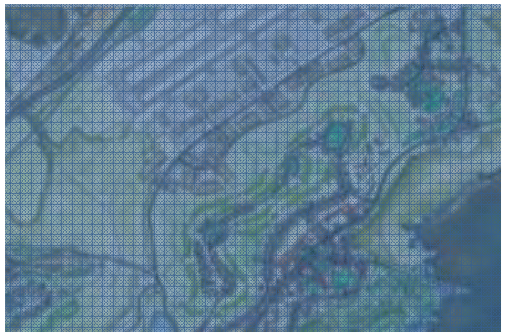
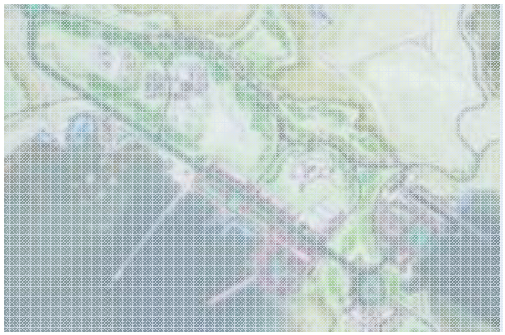



Note on the English version:

This is an "unofficial" English translation of the Master Plan presented in Public Hearings on June, 2011 and as such is not a public document. It is meant to be used as a reference tool for internal review only. In case of inconsistencies between the Spanish and English versions, the Spanish version prevails.




Master Plan

For the lands of former Naval Station Roosevelt Roads

AUTORIDAD PARA EL REDESARROLLO LOCAL
ROOSEVELT ROADS

TABLE OF CONTENTS

ABBREVIATIONS

FNSRR	Former Naval Station Roosevelt Roads
ACM	Asbestos Containing Material
PREPA	PR Electric Power Authority
SJMA	San Juan Metropolitan Area
ANPMMD	Area Natural Protegida Medio Mundo y Daguao
AOC	Areas of Concern
LRA	Local Redevelopment Authority, Roosevelt Roads
ARMY	US Army
NSRR	Naval Station Roosevelt Roads
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DEDC	Department of Economic Development and Commerce
DON	Department of the Navy
DRNA	Departamento de Recursos Naturales y Ambientales
ECP	Environmental Condition of Property (Condición Ambiental de la Propiedad)
EPA	Environmental Protection Agency (Agencia Federal de Protección Ambiental)
FEMA	Federal Emergency Management Agency (Agencia Federal para el Manejo de Emergencias)
ESA	Endangered Species Act (Ley Federal de Especies en Peligro)
FCPR	Fideicomiso de Conservación de Puerto Rico
FIRM	Flood Insurance Rate Maps (Mapas de Tasas de Seguro contra Inundaciones)
GPD	galones por día
IITF	International Institute of Tropical Forestry (Instituto Internacional de Dasonomía Tropical)
JCA	Junta de Calidad Ambiental
PB	Puerto Rico Planning Board
LBP	Lead based paint (Pintura con base de plomo)
MEC	Munitions and Explosives of Concern (Municiones o Explosivos de Preocupación)
NFECA	Naval Facilities Engineering Command Atlantic
NFIP	National Insurance Rate Program (Programa Nacional de Seguros de Inundaciones)
NRHP	National Register of Historic Places (Registro Nacional de Lugares Históricos)
ONU	Organización de las Naciones Unidas
OSHA	Occupational Safety and Health Administration (Administración de Salud y Seguridad Ocupacional)
PIDES	Plan Integral de Desarrollo Estratégico Sostenible de Puerto Rico
PIRA	Plan Integral de Recursos de Agua
PT	Plan Territorial
RCRA	Resources Conservation and Recovery Act (Ley de Conservación y Recuperación de Recursos)
SFHA	Special Flood Hazard Areas (Áreas Especial de Riesgo a Inundación)
SHPO	State Historic Preservation Office (Oficina Estatal de Preservación Histórica)
SWMU	Solid Waste Management Units (Unidades de Manejo de Desperdicios Sólidos)
UVB	Unidades de Vivienda Básica

EXECUTIVE SUMMARY

The closure and transfer of the lands of the former Naval Station Roosevelt Roads (FNSRR) provides an extraordinary opportunity for the economic and social development of the Municipalities of Ceiba, Naguabo, the Eastern Region and Puerto Rico.

The Government of Puerto Rico, recognizing this opportunity and the recent economic changes that have been experienced locally and internationally, has proposed the redevelopment of these lands with the vision of becoming an attractive destination -of mixed use, sustainability and tourism-orientations- that can be positively exploited by the local and international community. The government agency authorized to promote the reuse of FNSRR is the Local Redevelopment Authority for Roosevelt Roads (LRA).

Among the necessary tasks already undertaken by the LRA as part of this strategic effort is the design of the Reuse Plan. This plan brings together the ideas and needs of the residents of the eastern region of Puerto Rico with the best practices that promote the formation of an economic hub that creates jobs for the region. This plan -created in 2004 and supplemented in 2010 via an addendum- is the key document by which all redevelopment actions will be governed. It completed after extensive public participation that included all the stakeholders such as federal and state agencies, local governments and residents of Ceiba and Naguabo and related non-governmental organizations.

Capitalizing on the empowerment that the Puerto Rico Planning Board (PB) gives public agencies to adopt land use plans developed by them, the LRA has developed this Master Plan for the Calification and Classification of lands for Roosevelt Roads (also referred to as the Land Use Plan). It is based on existing environmental qualities of the land, proposed uses and existing behavior of the grounds, among other qualities.

This Land Use Plan should be familiar to many of the Roosevelt Roads redevelopment stakeholders, as it has uses and environmental features similar to those already discussed in previous public participation events. It groups and reinforces new goals and targets defined in previous public efforts and community presentations, workshops, charrettes, town hall meetings, etc.

Califications and classifications (zoning parameters) are defined by the PB through its “Reglamento Conjunto”, the official “Joint Regulation” for construction permits and land uses, as formally valid since November 29, 2010. By adopting this Joint Regulation, the LRA, the municipalities of Ceiba and Naguabo, the PB and the Office of Permits Management (OGPe by its Spanish acronym) can legally enforce development parameters inside NSRR, following standardized rules already established under this Joint Regulation.

The document presented here serves as the Zoning Master Plan, which explains administrative issues that justify the Land Use Plan for Roosevelt Roads, such as:

- • legal authority;
- • development process of Reuse Plan;
- • FNSRR regional context;
- • market analysis;
- • program of proposed projects;
- • proposals for the calification of land;
- • proposals for the classification of land.

In order to promote public confidence and strengthen the image of transparency in the processes of permit procurement and entitlements within FNSRR, the LRA proposes to regulate all construction and land use consultation by adopting the "Reglamento Conjunto de Permisos para Obras de Construcción y Usos de Terrenos" (the *Joint Regulation*) as an official document that, together with this Master Plan, clearly define uses and intensities of development and establish certain conservation measures. Responding to the LRA's goal of directing urban development to the affected areas while promoting sustainable development in natural areas, we propose to limit density and maximum allowable gross area parameters in some districts. In addition, this document establishes a zoning overlay identified as "*buffer and connectivity zones*" (ZAC for its Spanish acronym). The ZACs protect sensitive ecological areas and interconnect protected lands to allow for ecological process continuity. These two initiatives (limiting density and establishing buffer zones) allow the development of compact urban units but with densities that harmonize with the prevailing natural character, while enhancing the behavior of ecosystems in the area.

Following the Government of Puerto Rico's public policy of improving the efficiency of processes of permit procurement and entitlements while maintaining transparency in the process, the LRA has decided to avoid the need to create a new land use regulation specifically for FNSRR, adopting the Regulation Set.

The following summarizes the breakdown of qualified programs within the Land Use Plan for FNSRR:

Tourist Development: The Reuse Plan of Roosevelt Roads focuses on developing a number of tourist destinations throughout the FNSRR, which generate economic activity and local jobs. To enable this central objective of the Plan, the califications assigned around these lands allow mixed and touristic uses. Calification as CT-I, RT-I, CT-L have been assigned in portions of the parcels where it is planned to develop the main destinations for tourists. In the commercial-tourist areas (CT-I, CT-L) it is important to maintain a compact and vibrant urban reading, with street fronts built so as to define a clear urban wall, but that do not allow higher densities than those established on the Roosevelt Roads Reuse Plan (2010 Addendum).

Conservation: The lands comprised by the Medio Mundo and Daguao Protected Natural Area (ANPMMD by its Spanish Acronym) have been classified as Resources Preservation (PR) in harmony with the draft of the Management Plan developed by the Conservation Trust of Puerto Rico (the "Fideicomiso") for this protected area.

It also includes the physical interconnection of several parcels managed by the Trusteeship and currently isolated from each other by calificationes as Resource Preservation (PR) and by means of buffer and connectivity zones (ZAC). This connection encourages continuity and interaction between separate habitats. The classifications of conservation and ZAC also create buffer zones between the protected lands and the developable lands through all the FNSRR.

Recreation: The small and medium recreational uses proposed are distributed all around the lands of the FNSRR. There is an area within the development - known as "Sports Core" - which allows the development of more extensive recreational spaces. This zone promotes the creation of sports recreation projects as well as large extensions of land to be treated as a passive park. The uses within the Sports Core may also allow housing, lodging and shopping areas that complement these sports and recreational uses.

Institutional: To promote mixed uses within the FNSRR, some of the lands have been qualified to allow the development of institutional projects. These spaces will promote the establishment in the lands of the FNSRR of educational institutions (universities, schools), of social services and health care (hospital), among others. These institutions will attend the people of Ceiba, Naguabo, Vieques and Culebra, as well as tourists from Roosevelt Roads. These facilities are permitted to locate within mixed-use calificationes as CT-I, C-L.

Industrial and Commercial Development: Several zones within the Naval Station have been separated for the development of industrial projects, which should leverage on the existing infrastructure, including the airport and the fuel tank farm. The calificationes I-L, I-P and others of Commercial and Tourist Commercial character have been assigned to allow these uses through different zones within the FNSRR. They have also been zoned through all the territory to allow the development of commercial parcels with mixed uses whose purpose will be to equip the FNSRR with spaces for shops and services that benefit residents, employees and visitors to the FNSRR. The presence of tourists require of spaces for their enjoyment providing commercial uses such as shops, offices, car rental services, etc.

Residential: As a fundamental part of the redevelopment of the lands of the FNSRR, various lands distributed throughout the territory have been programmed and dedicated to residential use. These areas provide development capacity of approximately 1,500 basic housing units (UVB), which represents an extremely low

density related with previous plans already approved. These residential areas will promote mixed uses, so that will combine residential uses with tourist, recreational, institutional and commercial.

Some zones have been classified as tourist residential (RT) due to its high scenic value and to allow the presence of mixed-use spaces.

Infrastructure and facilities: The parcels of land devoted to infrastructure and facilities such as water filtration and water treatment plants are being classified as such (DT-G). One area to be dedicated for the development of future infrastructure facilities have been classified as Heavy Industrial (land around the farm fuel tanks).

In addition to the califications and classifications defined in the Regulation Set, this report establishes buffer and connectivity zones (ZAC) that require additional restrictions intended to protect sensitive land, most of which is part of the Natural Protected Area Medio Mundo and Daguao (ANPMMD). In these areas designated as ZAC apply two levels of regulation (in a similar way to a district "overlay"): the calification defined in the maps and the restrictions defined in the corresponding buffer and connectivity zone.

CHAPTER 1: REPORT OF THE LAND USE PLAN

BACKGROUND

In 2003, the U.S. Congress made the decision to close the facilities of the Naval Station Roosvelt Roads (BNRR) in a term of six months following the provisions of the Base Realignment and Closure Act (known as BRAC). In 2004, the NSRR closed operations.

During the same year, the Law for the Authority for the Redevelopment of Land and Facilities of Naval Station Roosevelt Roads, (Act No. 508 of September 29, 2004) was adopted. Besides creating the Local Redevelopment Authority for Roosevelt Roads (LRA), this law established powers, faculties and responsibilities. This law authorized the Department of Economic Development and Commerce (DEDC) as the LRA, which is responsible for developing and implementing the Reuse Plan for the Naval Station Roosevelt Roads.

The Plan aims to guide the transformation of land uses of the Naval Station from military to civilian. It proposes a variety of uses for the land, and includes infrastructure proposals, itinerary and costs.

Following the closure of military operations in the FNSRR the cleanup, maintenance and transfer of land activities began. Currently, the U.S. Navy owns many of the land. Others were transferred to the Government of Puerto Rico, particularly the Department of Health, Department of Natural and Environmental Resources, the Port Authority and the Municipality of Ceiba. Meanwhile, the area known as Camp Moscrip -close to Dry Dock- was transferred to U.S. Armed Forces (ARMY).

In 2010, LRA filed a Supplement to the Reuse Plan of 2004 (hereinafter the Supplement) in response to the economic transformations that have emerged over the past few years, as well as input for processes of citizen participation. The Supplement includes proposals to promote tourism development, economic expansion, job creation and integration of the initiatives of local communities. The same maximizes existing infrastructure and seeks to create conditions conducive to promoting investment in the area.

One of the fundamental issues identified in the process was the need to analyze the proposals of the Supplement within the context of the discipline of spatial planning, so as to promote balanced development and take advantage of the opportunities presented by this land for the social and economic development of Puerto Rico. In this sense, this plan was prepared for the land use of the FNSRR.

Illustration 1. FNSRR lands

LEGAL AUTHORITY

The Organic Law of the Planning Board of Puerto Rico, Act No. 75 of June 24, 1975, empowers the agency to adopt land use plans that are prepared by government agencies. In Article 14, the law states that:

"The Planning Board shall prepare and adopt Land Use Plans and may adopt those that prepare the government agencies and / or entities designated by it. The Planning Board will advise, coordinate and assist these agencies and entities in preparation of the methodology used in the formulation of these Land Use Plan so that physical and environmental terms are are in accordance with the policies and development strategies of Puerto Rico adopted by the Board in the Comprehensive Development Plan. The Land Use Plans, depending if they are regional, urban, rural or municipal development plans, or depending on its geographical scope, will designate the distribution, location, extent, and intensity of land uses.... "

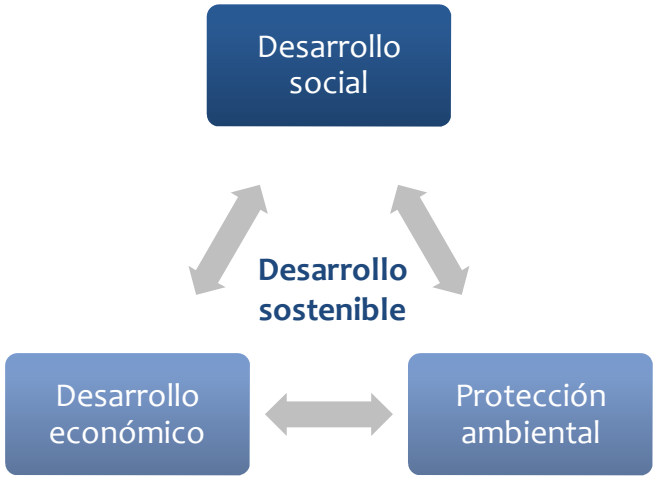
Law 75, *supra*, further states that the land use plans will form the basis for the preparation and review of zoning maps. It also establishes that any work or project to be performed by any person or entity shall be in accordance with the recommendations of land use plans, once adopted by the JP and approved by the Governor.

Following these measures, this Master Plan (Report, Maps and Regulations Set) is presented as the land use plan for the lands of the FNSRR.

MASTER PLAN GUIDING PRINCIPLES

The American Planning Association defines a Master Plan as a long-term comprehensive plan that seeks to guide the growth and development of a community or region and includes analysis, recommendations and proposals for economic development, housing, transportation, community facilities and land use.

The guiding principle of this master plan is the sustainable development, which was developed by the Organization of the United Nations (ONU) as *"development that can meet our current needs without compromising the ability of future generations to meet theirs"* (Brundtland, 1987).



This principle has constrained the process of preparing this plan, which seeks to promote balanced and orderly development of land in the FNSRR.

CITIZEN CONSULTATION

Citizen participation is a fundamental element of sustainable development. In that direction, workshops have been conducted for divulgation and exchange of ideas about the proposals presented in the Supplement to the Reuse Plan.

During the workshops, which took place during the month of February 2010, proposals that are part of the Supplement to the Reuse Plan for the former Naval Station Roosevelt Roads, 2004 were presented and discussed. The workshops were held in the municipalities of Ceiba and Naguabo.

Methodology

The workshops were conducted by the LRA staff and architects. Engineers and students of architecture participated as moderators and facilitators.

Both workshops were formulated based on information from participatory processes carried out during the previous three months. These workshops had the purpose of calibrating the proposals presented and include in the process the needs of the community. Following the completion of these workshops, the results were presented and discussed in a meeting. These three meetings had a participation of over 140 residents.

The workshops began with a presentation about the proposals contained in the Supplement. Participants from both workshops were located randomly on tables, in which there was a moderator. After the presentation, participants were asked to mention at least five (5) proposals that interested them and which were included or considered in the Plan. The ideas were discussed in groups (tables) and then were presented in full. Upon completion, participants and facilitators had an exchange of ideas about the relevant findings of each workshop.

At the subsequent meeting, the facilitators presented the ideas generated in the workshops, organized by category of intervention and how these would be addressed in the next planning steps.

Relevant Findings

The participatory process has given valuable information that is summarized in the table below.

Tourism	To create several cultural areas that distinguishes the historical context of the land.
Health	To coordinate market opportunities with the operator of the hospital and the community he will serve.
Infrastructure	To coordinate the master plan for the airport and create different and attractive connections to Ceiba (Ceiba Park). To create a plan for reusing existing buildings as a benefit to communities. To promote the transfer of existing port facilities to the government of Puerto Rico at the lowest possible cost. To promote the use of renewable energy throughout the development.
Commerce	To promote local investment opportunities as part of the financial plan.
Ecology and Conservation	To create additional value by using the trademark of the Conservation Trusteeship as part of the development.
Recreation and Sports	To promote the reuse of the greatest number of existing facilities for sports and culture.
Housing	To provide housing available to residents of Ceiba and Naguabo.
Education	To promote opportunities for citizens of the area to be trained for jobs that are created as part of the reuse plan.

The following matrix shows the correlation between citizen-proposed improvements to the Reuse Plan and which of those ideas has been incorporated as part of the 2010 Addendum.

Ilustración 2. Matriz de Participación Ciudadana

MATRIZ DE COMPARABLES

del plan de reuso del 2004, la enmienda al plan del 2010 y las ideas esbozadas en los talleres comunitarios del 2010

MATRIX CHART COMPARISON

of 2004 Reuse plan, the 2010 addendum to the plan and the 2010 community workshops ideas

ROOSEVELT ROADS REDEVELOPMENT

STRATEGIC CORRELATION MATRIX: Anchor Use Scenarios	REDEVELOPMENT SCENARIOS AND INITIATIVES / IDEAS																						
	DESTINATION ENTERTAINMENT ATTRACTION				INDUSTRIAL		RESIDENTIAL		EXISTING REUSE PLAN					COMMUNITY INITIATIVES									
	Big Box Retailing/Entertainment Center	Theme Park	World Class Eco-Tourism Resort	Caribbean Riviera	Transshipment and Intermodel Center	Shipyard and Airside Maintenance Center	Vacation and Tourism	Employee	Science Park	University	Residential	Town Center Commercial	Industrial	Connectivity	Smart Growth / Sustainability	Recreation / Parks/ Sports/ Public Amenities	Tourism / Hospitality / Civic	Medical / Health Care / Elderly Care	Infrastructure	Business / Commerce	Community Education	Special Programming
EVALUATION PARAMETERS																							
Leverage Unique Amenities/Assets of the Site																							
Utilization of Airport Facility	◐	●	●	●	●	●	●	○	○	○	○	○	◐	●	●	◐	●	◐	○	●	⊕	⊕	
Utilization of Waterfront and Port	◐	●	●	●	●	●	●	◐	○	○	◐	●	◐	●	●	◐	●	◐	○	●	⊕	⊕	
Utilization of Conservation Areas	◐	●	●	●	○	○	●	●	○	○	◐	○	○	●	●	●	●	○	○	●	⊕	⊕	
Reuse of Facilities / Buildings	◐	○	○	○	◐	◐	◐	●	◐	◐	◐	○	◐	◐	●	◐	◐	●	●	●	●	○	
Leveraging Proximity to El Yunque	◐	●	●	●	○	○	●	○	○	○	○	○	○	●	◐	●	●	○	○	◐	○	⊕	
Leveraging Proximity to Vieques / Culebra	◐	◐	●	●	◐	◐	●	◐	○	○	◐	●	○	●	◐	◐	●	◐	○	◐	○	⊕	
Leveraging Strategic Caribbean Location	●	●	●	●	●	●	●	○	○	○	○	○	○	●	◐	◐	●	◐	○	◐	◐	⊕	
Other Site Aspects																							
Revenue Creation																							
Direct Tax Revenues	●	◐	◐	●	●	●	◐	○	○	○	○	○	◐	●	◐	◐	◐	◐	○	⊕	○	⊕	
Indirect Tax Revenues	●	◐	◐	●	●	●	◐	○	○	○	○	○	◐	●	◐	◐	◐	◐	○	⊕	○	⊕	
Level of Investment	◐	●	●	●	◐	◐	◐	○	◐	◐	○	○	◐	◐	◐	◐	◐	◐	○	◐	◐	⊕	
Job Creation																							
Development Specific	●	●	●	●	○	○	◐	○	○	◐	○	○	◐	◐	◐	◐	◐	◐	◐	●	◐	○	
Local Communities	●	●	●	●	○	○	◐	○	○	◐	○	○	◐	●	◐	◐	◐	◐	◐	●	◐	○	
Overall	●	●	●	●	○	○	◐	○	○	◐	○	○	◐	◐	◐	◐	◐	◐	◐	●	◐	○	
Ability to Attract Investors	○	◐	●	●	◐	◐	◐	⊕	○	○	⊕	⊕	◐	●	●	◐	●	●	○	●	◐	⊕	
Ability to Stimulate Collateral Development	●	●	●	●	○	○	●	○	◐	◐	⊕	⊕	○	●	●	◐	●	●	◐	⊕	○	⊕	
Short Term Value Creation	○	◐	●	●	○	○	◐	○	○	◐	⊕	⊕	◐	⊕	◐	◐	●	◐	⊕	◐	◐	⊕	
Long Term Value Creation	●	◐	●	●	◐	◐	◐	○	○	◐	⊕	⊕	◐	●	●	◐	●	◐	◐	●	◐	⊕	
Time To Implement														◐	○	◐	◐	●	○	⊕	◐	○	
Feasibility	○	◐	●	●	◐	◐	◐	⊕	◐	◐	⊕	⊕	◐	◐	◐	⊕	●	◐	○	⊕	⊕	○	
Infrastructure Demand	●	●	●	●	●	●	◐	◐	○	◐	◐	◐	◐	◐	●	○	◐	◐	○	◐	◐	○	
Overall Economic Impact: Ceiba & Naguabo	◐	◐	●	●	◐	◐	◐	○	○	◐	○	○	◐	◐	◐	○	◐	◐	○	○	⊕	⊕	

KEY
- ○ no strong relationship / NA
- ◐ potentially strong relationship/ Good
- ● very strong relationship / Best
- ⊕ relationship varies

RESULTADO: Esta matriz demuestra que las ideas y elementos principales de diseño esbozados en el suplemento al plan (2010) se alinean (circulos negros) con las ideas presentadas en los talleres en casi más de 70%

RESULTS: This chart shows that the 2010 addendum to the plan shows that our ideas and elements (black dots) align with the community ideas in over 70%

The New San Juan Office Building, Chardon # 159, 2nd Floor Hato Rey, Puerto Rico 00919-5009
Teléfono 787-294-0101 x 5202 Fax: 787-294-0125

AUTORIDAD PARA EL REDESARROLLO LOCAL ROOSEVELT ROADS

INTERNAL STRUCTURE OF THE MASTER PLAN

This Master Plan is presented in eight (8) chapters described below:

- Chapter 1. Report of the Land Use Plan: A description of the general content of the plan, its background and legal basis. It also includes an overview of the methodology used in the process and sets out the general guidelines that will guide the development of the planning document.
- Chapter 2. Regional Context: A description of the social and physical characteristics of the Eastern Region and the municipalities of Ceiba and Naguabo. This section is intended to provide regional and local factors that can influence the land use of the FNSRR.
- Chapter 3. FNSRR Description: It presents, as an inventory, physical characteristics of the land of FNSRR. This chapter includes a description of the biotic and abiotic elements and relevant information on existing infrastructure.
- Chapter 4. Current Planning: It contains a brief summary of the planning instruments that have developed over the past years and are somehow linked to the land of FNSRR and its environment.
- Chapter 5. Market Analysis and Diagnosis: Analyze the factors that provide an opportunity for the development of the land, as well as those areas that need attention.
- Chapter 6. Projects Program: This section presents the proposals in seven sub-programs:
    - Conservation program
    - Tourism development program
    - Industrial and commercial development program
    - Institutional development program
    - Recreational program
    - Infrastructure and endowments program and
    - Residential program.
- Chapter 7. General outlines to guide the use of the FNSRR land: Establishes the overall goals of the use of land within the FNSRR.
- Chapter 8. Proposed Classifications and Califications for the FNSRR land: Includes the map with the proposed classifications and califications. It also includes a brief description of the califications proposals that are meant to guide but not to substitute the consultation with the Set Rules, which govern the uses proposed for the area, with certain exceptions described herein.

CHAPTER 2: REGIONAL CONTEXT

The former Naval Station Roosevelt Roads (FNSRR) is located at the east of the island of Puerto Rico, about 44 miles from San Juan.

It extends over land that belongs to the Machos and Guayacan neighborhoods, from the municipality of Ceiba, and the Quebrada Seca neighborhood, from Naguabo.

The municipalities of Ceiba and of Naguabo are part of the Eastern Region of the Planning Board (JP) The Region has an area of 1263.31 km^2, approximately 14.2% of the total area of Puerto Rico (8874.6 km^2).

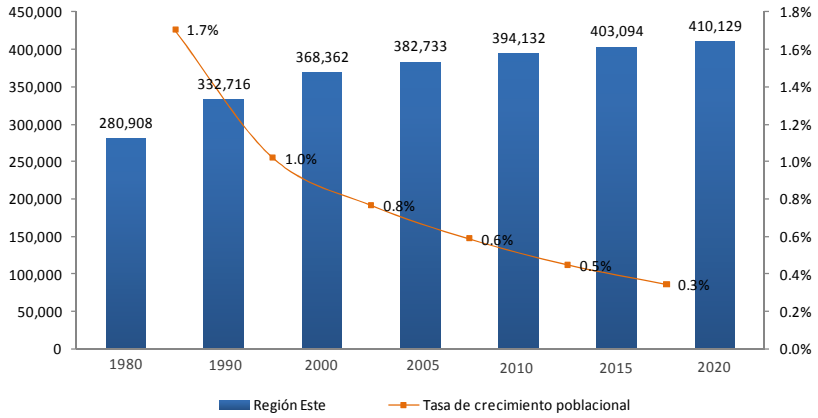
The municipality of Naguabo is bordered on the north with the municipalities of Rio Grande and Ceiba, on the south with Humacao, on the east with the Vieques Passage and on the west with the Municipality of Las Piedras. Its territory is 133.9 km^2.

The Municipality of Ceiba is delimited in the north by the Municipality of Fajardo, in the southwest with Naguabo and in the east, the Caribbean Sea. Its territory is 75.2 km^2.

POPULATION TENDENCIES

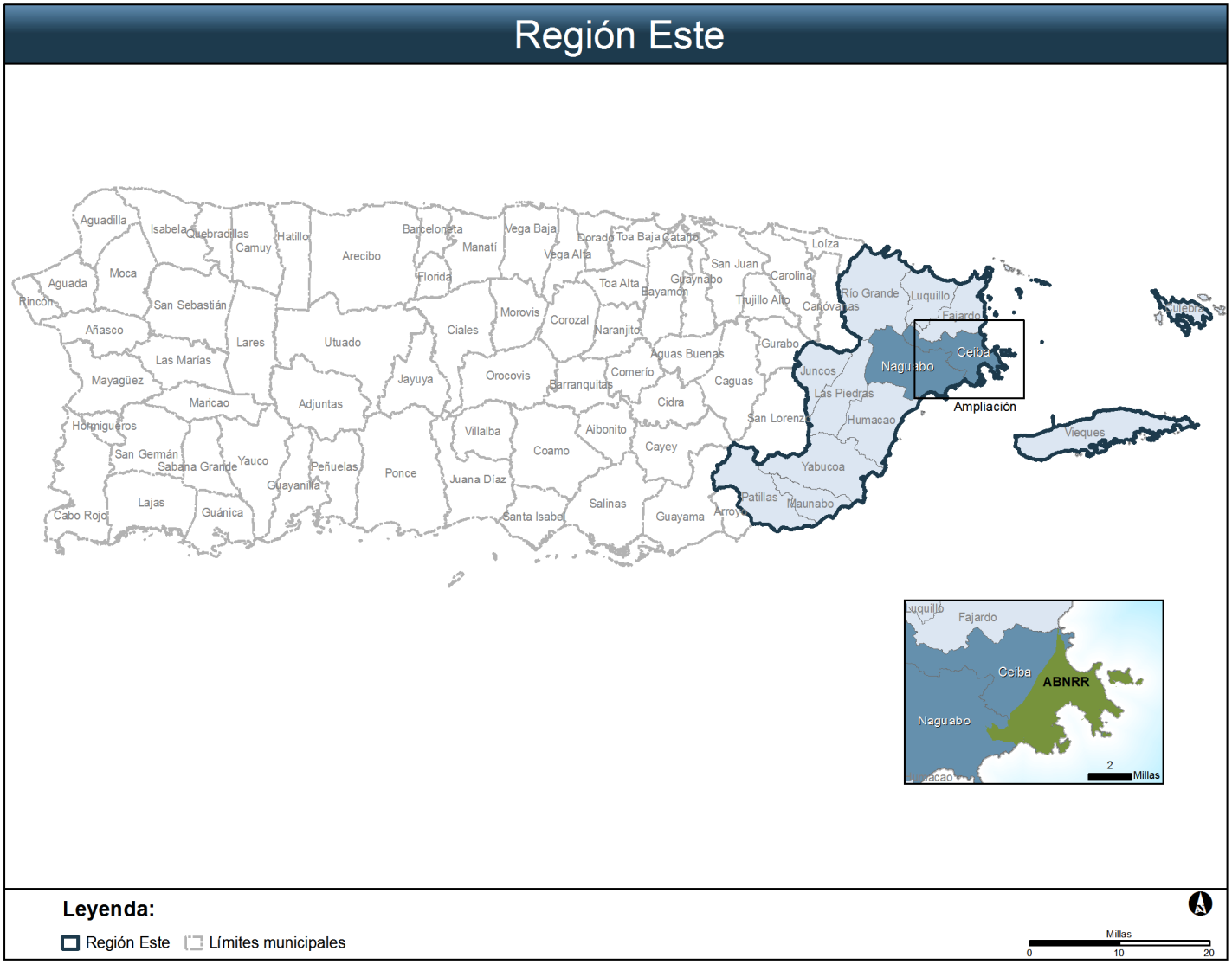
During the past decades, the population of the East Region increased to about 368.362 inhabitants for the Census of 2000. However, it appears that the rate at which the population has been growing is diminishing. This tendency is similar for the rest of Puerto Rico.

Gráfica 1. Tendencia poblacional en la Región Este de Puerto Rico



Fuente: Negociado Federal del Censo y Proyecciones de la Junta de Planificación.

Ilustración 3. Contexto Regional



According to population projections of the JP, by 2010 Ceiba had a population of 18.607 inhabitants Meanwhile, Naguabo had a projected population of 24.902 inhabitants.

Regarding the age of the population, about ten percent of the residents of both municipalities are people with 65 years or more (4,200 inhabitants), according to data from the 2000 Census. In both, Ceiba and Naguabo, more than half the population is between the ages of 20 and 59.

In the case of households, their composition is about three (3) persons, both for Ceiba and Naguabo, as for the Region and Puerto Rico.

Table 1 Ceiba y Naguabo population tendencies

CEIBA

Años	Población	Tasa de crecimiento poblacional
1980	14,944	1.4%
1990	17,145	0.5%
2000	18,016	0.5%
2005*	18,438	0.2%
2010*	18,607	0.4%
2015*	18,958	0.3%
2020*	19,224	

NAGUABO

Años	Población	Tasa de crecimiento poblacional
1980	20,617	0.9%
1990	22,620	0.5%
2000	23,783	0.5%
2005*	24,431	0.4%
2010*	24,902	0.4%
2015*	25,370	0.3%
2020*	25,703	

Fuente: Negociado Federal del Censo y Junta de Planificación.

SOCIOECONOMIC CHARACTERISTICS

This section presents the social and economic characteristics relevant to the municipalities of Ceiba and Naguabo.

Per Capita Income

In the 2000 census, the municipality of Ceiba reported a significantly higher per capita income ($9.256) than Naguabo ($6.960) and relatively higher than the average of Puerto Rico ($8.185). However, it is expected that this situation has changed following the closure of the FNSRR. Naguabo, meanwhile, has a per capita income below the average of Puerto Rico.

Employment

According to the 2000 Census, the labor participation rate between 1990 and 2000 decreased in all municipalities in the Eastern Region, except in Ceiba. The participation rate of Ceiba in 2000 was 47.8%, six percent higher than in 1990 (41.8%). In the case of Naguabo, the labor participation rate in 2000 was 36.7% and in 1990 was 41.7%. During this period, the labor participation rate at the Island was 40.7%.

Poverty Level

According to the 2000 Census, the poverty level in the municipalities of Ceiba and Naguabo was 43.3% and 43.7% respectively. These represent lower figures than in the Region (44.6%) and Puerto Rico (46.1%). Other socioeconomic characteristics are relevant:

- As of September 2010, data from the Department of Labor and Human Resources reported that the unemployment rate of Naguabo (21.1) is higher than that of Ceiba (18.6) and Puerto Rico (16.3).
- The household income in Ceiba is higher than in Naguabo, the Region and Puerto Rico.
- Compared with the Municipality of Ceiba, Naguabo, with a greater number of people employed, had a greater contribution to Gross Domestic Product (PIB) of Puerto Rico.

Tabla 2. Datos socioeconómicos para Ceiba y Naguabo

DATOS SOCIOECONÓMICOS DE CEIBA Y NAGUABO

	Ceiba	Naguabo	PR
Hogares que reciben asistencia pública	975 (17%)	1,614 (20.5%)	253,358 (20.1%)
Hogares que reciben Seguro Social	1,616 (28%)	3,041 (39%)	426,429 (33.8%)
Número de viviendas	6,742	8,875	1,418,476
Viviendas ocupada por dueño	3,668 (63.8%)	3,103 (77.7%)	919,711 (72.9%)
Viviendas ocupada por inquilino	2,082 (36.2%)	891 (22.3%)	341,614 (27.1%)
Población con cuarto año o más	7,087 (66%)	7,335 (52%)	1,371,922 (60%)
Población con años de estudios universitarios	2,004 (19%)	1,475 (10%)	280,089 (12%)

Fuente: Censo de Población, 2000.

Tabla 3. Perfil socioeconómico

PERFIL SOCIOECONÓMICO : Ceiba y Naguabo en el contexto regional y de Puerto Rico

	Ceiba	Naguabo	Región	Puerto Rico	% Región en PR
Tendencias poblacionales					
Población (2000)	18,016	23,783	368,362	3,808,610	10%
% de 0-19 años	32%	32%	33%	32%	
% de 20-59 años	55%	52%	53%	53%	
% de 60 años o más	13%	16%	14%	15%	
Nacimientos (2005)	185	371	5,108	50,560	10%
Muertes (2005)	100	204	2,859	29,434	10%
Proyección poblacional (JP, 2010)	18,607	24,902	393,231	4,149,291	9%
Proyección hogares (2010)	6,080	8,438	132,888	1,387,485	10%
Hogares por habitante (2010)	0.3	0.3	0.3	0.3	
Personas por hogar	3.1	3.0	3.1	3.0	
Características socioeconómicas					
Empleo promedio (2009)	5,000	6,000	103,000	1,168,000	9%
Desempleo promedio (2009)	900	1,600	20,700	180,700	11%
Crecimiento en empleos, por año (2004-2009)	17.5%	18%	8.3%	2.5%	
Ingreso por hogar (JP, 2009)	$51,905.1	$37,100.5	$36,246.3	$42,548.1	
Ingreso per capita (JP, 2009)	$16,355.8	$12,095.1	$12,249.1	$14,227.7	
PIB Total ($ mill, 2006)	$97,201.5	$131,169	$8,143,615.27	$87,601,410.01	9%
PIB Servicios ($ mill, 2006)	$23,981.7	$11,801	$886,583.24	$14,600,238.79	6%
Nivel de pobreza	43.3%	43.7%	44.6%	46.1%	

Fuentes de datos: Censo de 2000, Proyecciones de la Junta de Planificación (JP) y el Departamento del Trabajo y Recursos Humanos.

NATURAL AND TOURISTIC ATTRACTIONS IN THE EAST REGION

The Eastern Region of Puerto Rico has a diversity of natural and constructed elements that promote tourism and recreation in the area.

One of the most important natural elements at international level is the National Forest El Yunque, the only tropical rainforest in the Forest System of the Forestry Service of the United States. El Yunque receives more than one (1) million visitors annually, it is the second most visited tourist attraction in Puerto Rico. This space contains natural ecological life zones and cockpits that are scarce in the rest of Puerto Rico.

Among the Natural Protected Areas, in addition to El Yunque, the Region has: Ten (10) Natural Reserves, two (2) State Forest and two (2) National Wildlife Refuge, among other important natural areas. These areas, in addition to shelter various species of flora and fauna, provide opportunities for passive recreation and tourism and some have facilities for such purposes.

Tabla 4. Áreas naturales protegidas en la Región Este de Puerto Rico

ÁREAS NATURALES PROTEGIDAS EN LA REGIÓN ESTE			
Área natural		Término municipal	Extensión
1	Bosque Estatal de Ceiba	Ceiba, Naguabo y Fajardo	849 cds.
2	Bosque Estatal de Carite	Cayey, Guayama, San Lorenzo, Caguas y Patillas	6,702.8 cds.
3	Reserva Natural Arrecifes La Cordillera	1.5 millas náuticas al nordeste de Fajardo	224.27 cds.
4	Reserva Natural Río Espíritu Santo	Río Grande	
5	Reserva Natural Cabezas de San Juan	Fajardo	447.22 cds.
6	El Pantano, Bosque de *Pterocarpus* , Lagunas Mandry y Santa Teresa	Humacao y Naguabo	2,583 cds.
7	Reserva Natural Bahía Bioluminiscente de	Vieques	1,119.15 cds.
8	Reserva Natural Canal Luis Peña	Culebra	1,208 cds.
9	Reserva Natural Punta Yeguas	Yabucoa	289.77 cds.
10	Reserva Natural Finca Seven Seas	Fajardo	110 cds.
11	Reserva Natural Humedal de Punta Tuna	Maunabo	
12	Reserva Natural Humedal Punta Viento	Patillas	254.8 cdas.
13	Refugio Nacional de Vida Silvestre de Vieques	Vieques	18196.6 cds.
14	Refugio Nacional de Vida Silvestre de Culebra	Culebra	10637.6 cdas.

Fuente: DRNA. Programa de Manejo de la Zona Costanera para Puerto Rico. (borrador).

The beaches of the Eastern Region are another of its major natural and recreational attractions. It has 15 public beaches, some with access for people with physical limitations, resorts, among other amenities. Of these, the Seven Seas Beach in Fajardo has been awarded the distinctive international Blue Flag.

Ilustración 4. Algunos atractivos de la Región Este de Puerto Rico

The Eastern Region also has major facilities of access by land, air and sea. It has six (6) regional airports located in: Fajardo, Ceiba, Humacao, Patillas, Vieques and Culebra. The airports in Ceiba and Vieques receive flights from the Virgin Islands. Meanwhile, the airports in Humacao and Patillas are dedicated primarily to recreational activities such as skydiving and flying clubs.

The possibilities for accommodations in the eastern region are broad and diverse. It has more than 2,600 rooms in local and other internationally recognized hotels. Among these are hotels like El Conquistador Resort & Golden Door Spa (Fajardo) and W Retreat & Spa (Vieques), plus the newly opened St. Regis Bahia Beach Resort (Rio Grande), categorized five (5) stars.

It is also important the tourist and residential complex Palmas del Mar. This is a mixed use complex that includes recreational facilities - marina and golf course - schools and businesses, among other amenities.

Golf is one of the most popular sports in the tourist offer of the Eastern Region. In this region, there are eight (8) golf courses, some at the level of international tournaments (PGA Tour) belonging to prestigious brands such as the Trump International Golf Club.

It is important to note the opportunities offered, by the municipalities of Ceiba and Naguabo, to the future development of the FNSRR. The Integration Plan of Ceiba and Naguabo and the reuse plan of the Naval Station Roosevelt Roads (2005) identified the potential of these municipalities for activities such as nature tourism. As part of the tasks of the integration project, an inventory was made of the resources that these municipalities have for the development of this type of tourism industry. Among these, several FNSRR natural resources are identified, such as the beach Los Machos and the dwarf mangrove forest. Beyond the limits of the FNSRR in Ceiba, there are resources, such as the area of Las Tinajas, and historic resources, such as the old sugar mills Hacienda Santa Maria and Hacienda Aguas Claras, among others.

Among the resources of the municipality of Naguabo the waterfall Salto del Rio Blanco and the Hacienda La Sierra are recognized. Also, Naguabo Beach stands out as an attractive sector for recreation and tourism, particulLRAy its waterfront. This is a gastronomic and craft center based largely on the activity of the fishing village.

In addition to the resources mentioned, the urban centers of the municipalities of Ceiba and Naguabo have historical and cultural elements to be integrated to the tourist activities in the region.

Likewise, these municipalities have not only natural and physical resources but also human resources that are organized with the interest of promoting growth in the region.

CHAPTER 3: DESCRIPTION OF THE FORMER NAVAL STATION ROOSEVELT ROADS

The FNSRR accommodated, until 2004, the main U.S. Naval Station in the Caribbean and the largest in the world outside the continental territory. It has an area of 35.07 km^2.

These facilities were built since the 1940's. The same accommodates built spaces and natural areas, including roads, water and electricity infrastructure, ports and airports, recreational and residential areas, as well as urban spaces facing the sea.

GENERAL DESCRIPTION AND LIMITS

To the east, the land of FNSRR is bordered by the waters of the Vieques Passage and to the west by the highway PR-3 and the PR-53.

The FNSRR is bordered in its western part by the communities: Daguao and Corcho in Naguabo and the Urbanization Las Vegas, el Pueblo, Aguas Claras and Quebrada Seca in Ceiba.

Internally, the FNSRR consists of the following areas:

- Bundy and Capehart, which were predominantly residential areas;
- Downtown, mixed-use area;
- the waterfront, which accommodates port facilities in Ensenada Honda;
- Camp Moscrip, an urban area with residential structures;
- the airport area and
- the conservation areas that are predominantly built in the land of the Natural Protected Area Medio Mundo and Daguao (ANPMMD).

Ilustración 5. Descripción referencial de los terrenos de la ABNRR

EXISTING LAND USES IN ROOSEVELT ROADS

For purposes of the Master Plan, the FNSRR has been divided into 11 zones, plus the airport land, federal properties and the ANPMMD. The following image locates geographically the defined zones and these are described below:

Zone 1: Caribbean Port

This area is mostly urban, with marine components. It is located in the waterfront of Bahia Ensenada Honda. This is a port area which houses two marinas, one for small boats and one with a deeper draft for larger boats. The area also includes the hospital facilities and the fuel tanks ("tank farm").

Zone 2: Caribbean Riviera

Located between the bays of Puerca and Ensenada Honda and includes the Isla de Cabras. These are lands mostly urban with areas of forest and bushes. Between here and Zone 3 is Camp Moscrip that includes residential barracks and other urban infrastructure. Within this zone is located the the old dump.

Zone 3: El Yunque Grand

It includes the area of Punta Puerca, which is undeveloped land of dry forest and bushes. To the south, this area has a minor pier in Puerca Bay among other urban infrastructure. The urban area is known as Moscrip and was transferred to the Army.

Zone 4: Marsh Vista

It covers the areas of dry forest and bushes which are between the waterfront of Ensenada Honda and the mangrove Los Machos. It is bordered on the east by lands of the ANPMMD.

Zone 5: Eco-Outpost

This area is dominated by the mangrove wetlands of Los Machos, which belongs to ANPMMD, managed by the Conservation Trusteeship of Puerto Rico (FCPR). To the Northwest, includes the non-flooded land of Punta de Medio Mundo, which are outside the protected area and houses a shooting range.

Zone 6: Uplands

These are located on the hills of Las Delicias and to the southeast of the airport runway. These lands are largely rural, with a vegetation of forest and bushes and an urban development limited to an interior road and few structures.

Ilustración 6. Usos existentes en los terrenos de la ABNRR

Zone 7: Main Street

This zone includes the area known as Downtown, which has structures used for commercial and tourism purposes, such as the Navy Lodge, schools, a dental clinic and the bowling alley. The same possesses direct access to the Bahia Ensenada Honda and covers areas of mangroves and beaches that are part of ANPMMD.

Zone 8: Sports Zone

This area houses the oldest golf course of the Navy, to the west boundary of the FNSRR. The lack of maintenance of this facility has led to the saturation of the ground and the growth of emergent wetland. Also in this area is located another entrance to the FNSRR in the municipality of Naguabo through the PR-53 road (Exit 10 Aguas Claras).

Zone 9: Paradise Island

This is the area known as Bundy, a rural area that has structures that were used as residences and offices. To the southwest, adjacent to the mangroves of the Rio Daguao, which belong to ANPMMD. This area is the oldest part of the FNSRR.

Zone 10: Capehart

This zone covers the areas of Capehart and the peninsula of Punta Cascajo. The uses in this zone are mostly residential and of conservation, being surrounded by the mangrove of the Rio Daguao and Ensenada Honda, beaches, reefs and sea grass. The wetlands in this area and its coast belong to the ANPMMD. The FNSRR high school is included among the urban uses.

Zone 11: Ceiba Park

The FNSRR high school main entrance to the road through the PR-979 is located here. The area includes land in the coastal area of Medio Mundo. A portion of this coast is the beach Los Machos, which was transferred to the municipality of Ceiba. This zone also locates a radar antenna, close to the road Tarawa Drive.

Other Zones

For purposes of this Master Plan we have considered - in addition to the zones presented - other areas that are part of the lands of the FNSRR and by their nature are not mentioned in the Supplement to the Reuse Plan for Roosevelt Roads. These consist of:

Airport (Zone 12)

The airport of the FNSRR is currently a facility owned by the International Port Authority(AP). It is currently serving airline operations to Vieques, Culebra and other destinations in the neighboring Virgin Islands.

ANPMMD (Zones 13 to 16)

The ANPMMD, consisting of 3.440 cuerdas, occupy about 40% of the land of the FNSRR. This natural area consists of 17 parcels of various sizes, which are fragmented by land that were used for residential, commercial, urban and industrial purposes as well as for bodies of water and some patches of forest (FCPR, 2010).

15 of these 17 parcels were transferred through a Public Benefit Conveyance (PBC) to DRNA in February 2008 by the National Parks Service in order that they could be used for recreational purposes and as a public park in perpetuity. It is projected that the two parcels remaining – Isla Piñero and Cabeza de Perro - be transferred by the PBC to the DRNA through a PBC as soon as the Navy finishes cleaning up contamination from both islands. Prior to the formal transfer in 2006, DRNA had subscribed an agreement with the FCPR for the management of these lands.

In 2010, the FCPR completed the draft Management Plan for the Protected Natural Area Medio Mundo and Daguao (2010), which faces the consideration of a Management Advisory Council (comprising representatives of the DRNA, the LRA, the Trusteeship, Ceiba and Naguabo). While this draft Management Plan has not been formally adopted by the Management Advisory Council, it presents valuable information that has been used as part of this Master Plan and is expected that the proposals contained for the ANPMMD be the ones governing on the uses of the land.

Federal Properties (Zone 17)

As part of the redevelopment process and consistent with the BRAC law, several properties within the FNSRR were transferred to various federal agencies. These properties are located in various areas within the former Naval Station and some of its owners are the Army, Coast Guard and the Department of Homeland Security.

Moreover, the jurisdiction of the FNSRR includes several islands that are in adjacent marine waters. Of these, the largest are: Isla Piñeros, which is an extension of one (1) mile by half (0.5) mile and Cabeza de Perro island, east of Isla Piñeros with an area of quarter mile (1/4) radius. Both sites will be transferred to the DRNA and managed by the FC as soon as finish its environmental remediation and will be added to the ANPMMD.

TOPOGRAPHY

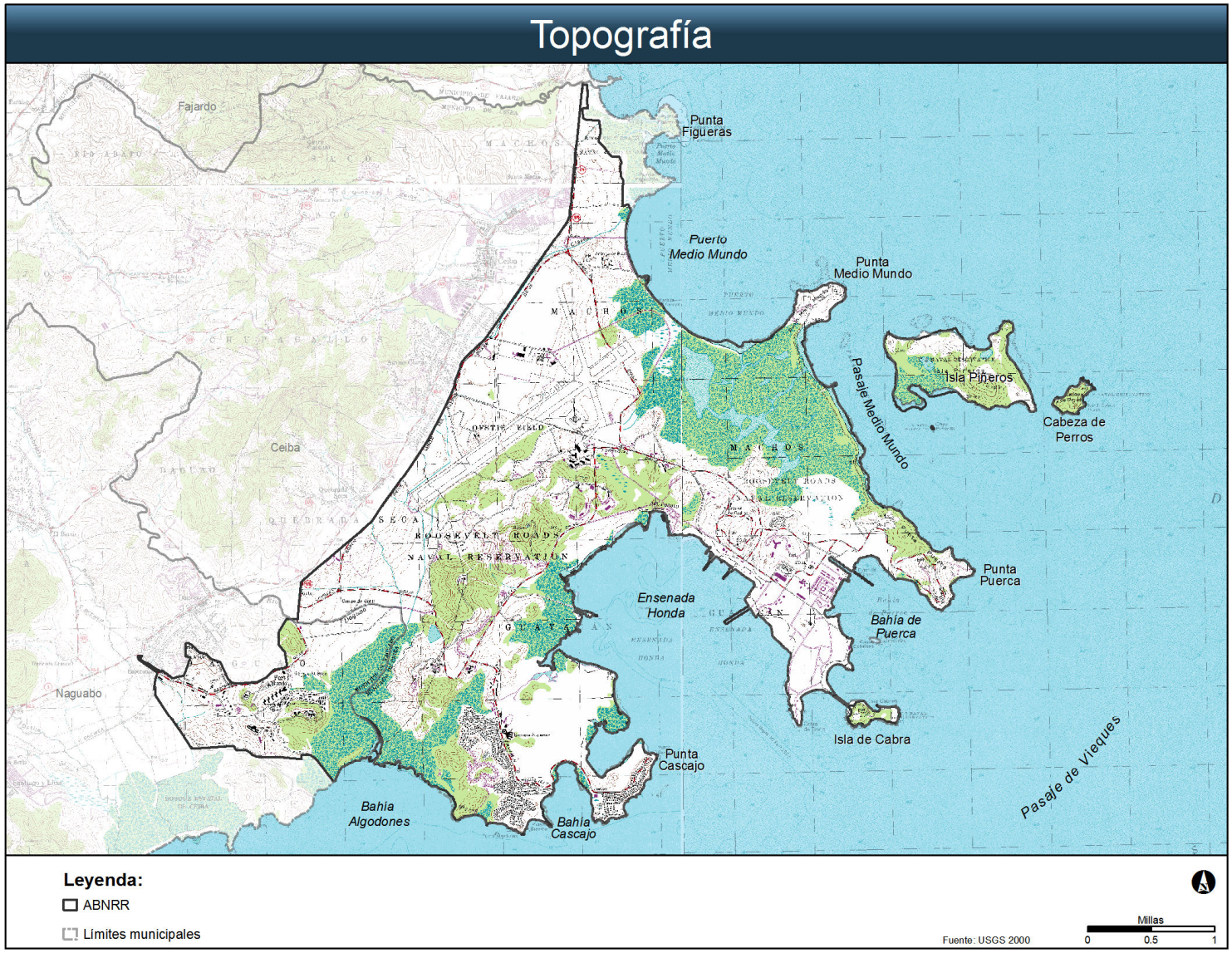
The east coast of Puerto Rico is characterized by a steep topography near the coast that has created narrow valleys alternating with rocky soils. In these valleys, the waves and the marine deposits have produced extensive beach plains, among which stands out the areas of mangroves and lagoons of Medio Mundo and Daguao.

Topographic features that characterize the FNSRR are the peninsulas: Punta Medio Mundo, Punta Puerca, Isla de Cabra and Punta Cascajo. These extensions frame the bays Ensenada Honda, Puerca and Puerto Medio Mundo.

The coastal plains of the FNSRR are interrupted by the scattered hills and lines of mountains. An example of this mountainous topography is seen in the hills Las Delicias, which frame the Bahia Ensenada Honda and have the highest point of the FNSRR, approximately 300 feet above sea level. Other scattered hills are seen in the Capehart area and Punta Puerca.

Moreover, the wide island platform on this coast of Puerto Rico, which extends eastward near the Virgin Islands, promotes the proliferation of coral reefs, chains of small islands and cays. As part of the FNSRR are observed the island Los Piñeros and the islet Cabeza de Perro, separated from the land of the island of Puerto Rico by the Pasaje de Medio Mundo. The highest point in the island Los Piñeros reaches 70ft high. Other smaller mounds can be found in the Bahia Puerca.

Ilustración 7. Topografía de la ABNRR



GEOLOGY

The geology of the former Naval Station Roosevelt Roads (FNSRR) varies between deposits of the Quaternary period and Cretaceous formations.

The geology of the Quaternary period consists of deposits of swamp and beach. Swamp deposits (Qs) are characteristic of the zone occupied by mangroves and in the FNSRR are concentrated towards the coast, in the grounds of Capehart and to the area of Medio Mundo. These are considered considered shallow, poorly drained and contain mud whose color is dark gray and black, with sandy and silty clays, bluish, and organic peat, restricted to low-lying swampy areas.

The beach deposits (Qb) cover coastal areas as the land between Bahia Puerca to Ensenada Honda, where the Maritime Front is located. They are formed of sand and gravel of varied texture. These deposits contain unconsolidated sand of grain ranging from fine to medium, composed of quartz grains, fragments of volcanic rock and remains of the calcareous exoskeleton of marine organisms and reef rubbish.

The alluvium (Qa) is abundant throughout the area of the FNSRR and belongs to the Quaternary period. This is a drag material from rivers or bodies of water that commonly contain gravel, sand and/or clay. The airport is situated on the alluvium, plus a portion of artificial fill along the track. Other areas were inserted with artificial fill (af) in lands of the Maritime Front in Ensenada Honda. This geologic unit consists of unconsolidated sands and gravels of variable size and mixed with clay and silt subordinates. Locally includes river terrace deposits.

These materials and deposits lie on other older geological units such as intrusive, extrusive and volcaniclastic rocks from the Cretaceous period.

One of these is the Formation Daguao (Kda), which is abundant in the coastal land adjacent to the beach. Daguao Formation consists of interstratified volcanic breccias, lava, volcanic rock subordinates and glass tuff. The volcanic breccias are massive, and consist of dark gray lava clasts of porphyritic andesite and a matrix of crystals tuff of clinopyroxene and plagioclase. The units of breccias are cut by dikes of fine-grained porphyritic lava. The rocks of Daguao Formation are commonly epidotized and chloritized to varying degrees. The formation intersects with the lava formation Figuera in some areas, such as the Isla Piñeros. The thickness of this formation is estimated from 1.000 to 1.500 meters.

The Lava Figuera (KFi) is also interspersed with breccia and lava from the top of the Formation Daguao, a geological fault to the north of Naguabo. The Lava Figuera has a sequence of andesitic lava with intercalated volcaniclastic breccia and tuff. The exposure is generally limited to artificial cuts, most of the slopes show only fragments of

lava on the floor. The weathered lava is generally fine-grained reddish brown in color, locally with breccias, with lenticular calcareous wedges and blocks of limestone presumably from the basal limestone of Trujillo Alto. The lava contains scattered small phenocrysts of andesite and pyroxene. Quartz is fairly common in veins and sheets that go from 3 to 9 cm in length.

The Diorite (TKdi) belongs to the period between the Tertiary and Cretaceous and in the FNSRR is found in three parts in the Barrio Guayacan. This is an assortment of rocks from gray to dark gray with texture granular hypidiomorphic of grain medium to large. Its composition is locally that of a horneblende of diorite up to 10% quartz. The feldspar of plagioclase is mostly calcic andesite with some oligoclase. In some places, hornblende crystals are observed up to 6 cm. The exposed rock shows gradations in the mafic content.

From this period also date back the quartz diorite and granodiorite (Tkgd) found in a small piece of land in the area of Isla de Cabra. The hornblende also dominates and there are small amounts of biotite. Locally round metavolcanic xenoliths are found. A sample in the head board of the Rio Daguao exhibits a distinctive matrix of allotriomorphic fine grain of granular quartz and feldspar.

The geological map of the USGS also infers that there is a geological fault that runs along the western portion of the lands of the FNSRR. Outside the limits of the FNSRRR in the waters between Punta Cascajo and Bahia Algodones there is the Falla Peña Pobre.

Ilustración 8. Geología de la ABNRR

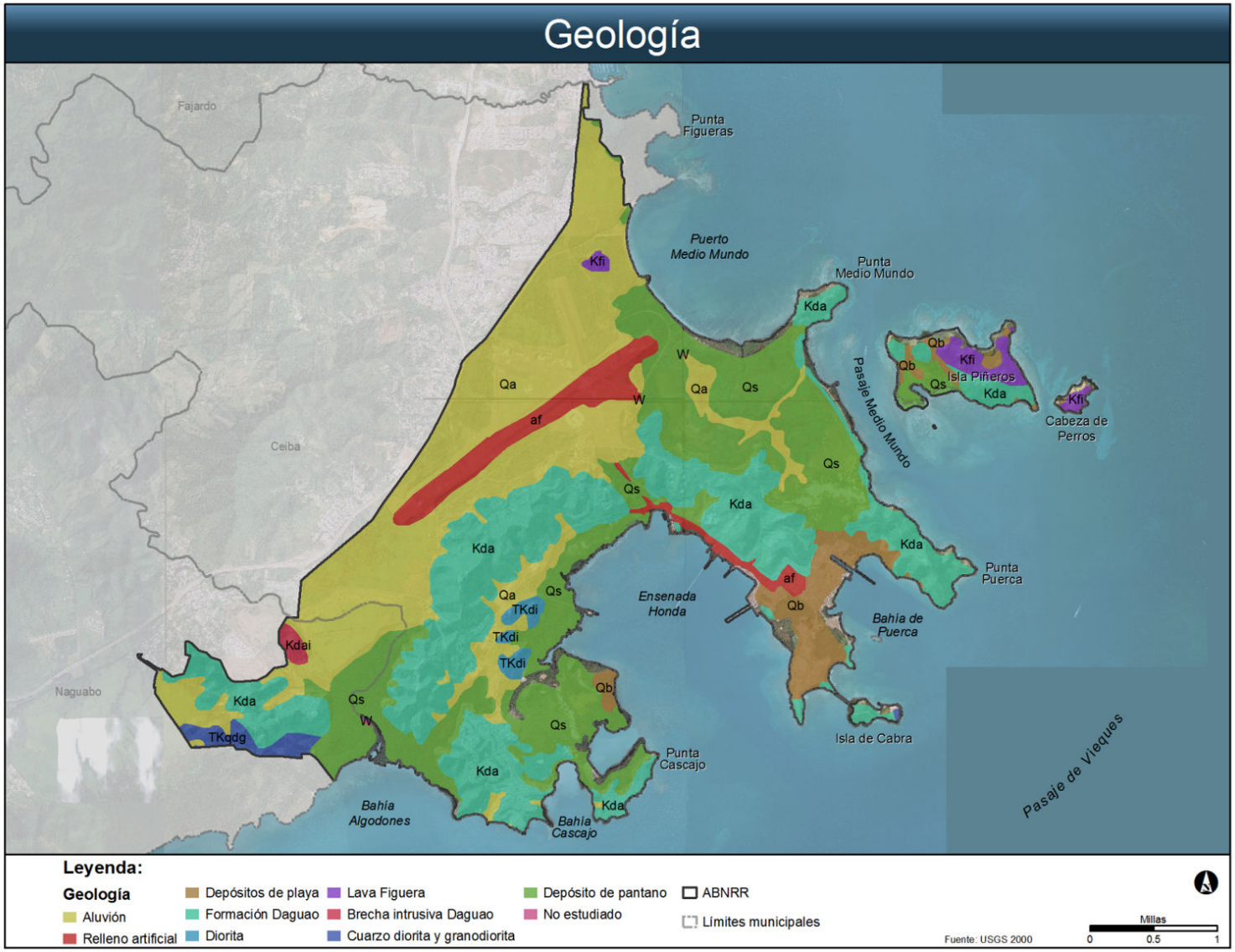


Tabla 5. Geología de la ABNRR

GEOLOGÍA

Unidad	Geología	Periodo	Época	Descripción	Materiales	Ubicación
Qs	Depósitos de pantano	Cuaternario	Holoceno	Suelos lodosos, poco profundos y con poco drenaje	Arcillas arenosas y limosas y turba orgánica.	Zona ocupada por el manglar y en la ABNRR se concentran hacia la costa, en los terrenos de Capehart y hacia el área de Medio Mundo.
Qb	Depósitos de playa	Cuaternario	Holoceno	Arena y grava de textura variada	Arena de grano entre fino y mediano, compuesta de granos de cuarzo, fragmentos de roca volcánica, más restos calcáreos de organismos marinos y escombros arrecifales.	Áreas costeras como los terrenos entre Bahía Puerca hacia Ensenada Honda, donde está el Frente Marítimo.
Qa	Aluvión	Cuaternario	Entre el Holoceno y Pleistoceno	Material de arrastre de los ríos o cuerpos de agua	Grava, arena y/o arcilla	Abunda hacia el oeste de la ABNRR, en terrenos del aeropuerto, y hacia los terrenos bajos de Ensenada Honda y Los Machos.
Tkgd	Cuarzo diorita y granodiorita	Terciario	Eoceno	Surtido de rocas no exfoliadas con textura granular	Domina la hornblenda; también hay pequeñas cantidades de biotita	Pequeña porción de terreno en el área de Isla de Cabra.
Tkdi	Diorita	Terciario	Eoceno	Textura granular hipiodiomórfica de grano mediano a grande	Horneblenda de diorita con hasta 10% de cuarzo	Tres porciones de terrenos en el Barrio Guayacán.
TKgdg	Diorita	Terciario	Eoceno	Grano medio fino	Diorita oscura	Límite Suroeste de la ABNRR, en el Municipio de Naguabo
KFi	Lava Figuera	Cretáceo	Cretáceo inferior	Su exposición es a traves de cortes artificiales; la mayoría de las pendientes muestran sólo fragmentos de lava en el suelo.	Secuencia de lava andesítica con intercalaciones de brecha volcanoclástica y toba.	Isla Piñeros, islote Cabeza de Perro y Puerto Medio Medio Mundo
Kda	Formación Daguao	Cretacio	Cretacio inferior	El espesor de esta Formación se estima de 1,000 a 1,500 metros.	Brechas volcánicas intrusiva, lava, piedra volcánica subordina y toba de cristal.	Terrenos costeros, colinas y áreas rocosas como Las Delicias
Kdai	Brecha intrusiva Daguao	Cretacio	Cretacio inferior	Roca intrusiva	Clastos subangulares de andesita con fenocristales grandes de plagioclasa y clinopyiroxeno en una matriz brechada de la misma composición.	Porción de los terrenos de la ABNRR en Naguabo
af	Relleno artificial			Arenas y gravas no consolidadas de tamaño variable y mixto,	Arcillas y limos subordinados y, localmente, incluye depósitos de terraza fluviales.	En el aeropuerto y terrenos del Frente Marítimo en Ensenada Honda.

Fuente: M'Gonigle, J.W. (1979). Geologic map of the Naguabo and part of the Punta Puerca quadrangles, Puerto Rico: U.S. Geological Survey, Miscellaneous Investigations Series Map I-1099, scale 1:20000.

SOILS

The soils in the FNSRR are predominantly mudflats and clay. The mudflat soils belong to the series of swamps (Ts) and plains (Tf) in the lower parts of the FNSRR and the area of Medio Mundo and Bahia Algodones. The series of mudflats are flooded by sea water most of the year, so just tolerant plants germinate in high levels of salinity. The salt concentration is the greatest limitation for the agriculture, although these soils are developed on ecosystems that provide important services for wildlife.

Other soils flooded in the FNSRR are classified as alluvial wet land (Wa) and the areas that have ponds or some other body of water (W). In these soils the water table is at or near the surface most of the year. The texture of these soils varies from clay to lomic.

Meanwhile, clay soils, such as those belonging to the series Descalabrado (DeC2,DeE2, DgF2 and DrF) Daguao (DcE2), Jacana (JaC2), Rio Abajo (RrB and RrC2) and Sabana (SaE2 and SaF2) have good drainage and are susceptible to erosion. The permeability of these soils is low, except in the soils Daguao, Rio Abajo and Sabana who range from moderately low to high. These soils formed mostly of moderately fine residues derive mainly from volcanic rock. Its slopes vary from 2% to 60% and are susceptible to erosion.

The soils Bajura (Bc), Coloso (Co), Candelero (CdB), Toa (Tt), Vega Alta (VeB) and Mabi (MaB) are also clay and lomic clay. These soils are related to alluvial sediments deposited by flowing water, as is the case of land bathed by the Quebrada Seca. Its slopes are lower, between 0% and 5%, with a drain from poor to good and moderate permeability.

Within these clay soils in the series Mabi, there is also the soil MaC2 in the Municipality of Naguabo. The difference between this and the MaB lies in the erosion of the surface layer of soil MaC2. In this soil the slope is slightly higher (5-12%) than in soils MaB that have poor drainage and permeability from moderately low to moderately high.

Furthermore, the soil of the series Junquitos (JuC) are clay-lomic, but gravelly. In the FNSRR, these soils are found in the municipality of Naguabo, to the west. They are formed in alluvial and colluvial sediments derived from volcanic extrusive rocks. Its slope varies from 5% to 12% its drainage is moderately good and its permeability is moderately low to high.

Also, much of the land of the FNSRR is composed by landfill (Mb). These are seen in the lands of the airport and the Maritime Front in Ensenada Honda. Another small area near the Maritime Front, also classified with GPQ, which corresponds to soils converted to gravel pits and/or quarries.

Ilustración 9. Suelos de la ABNRR

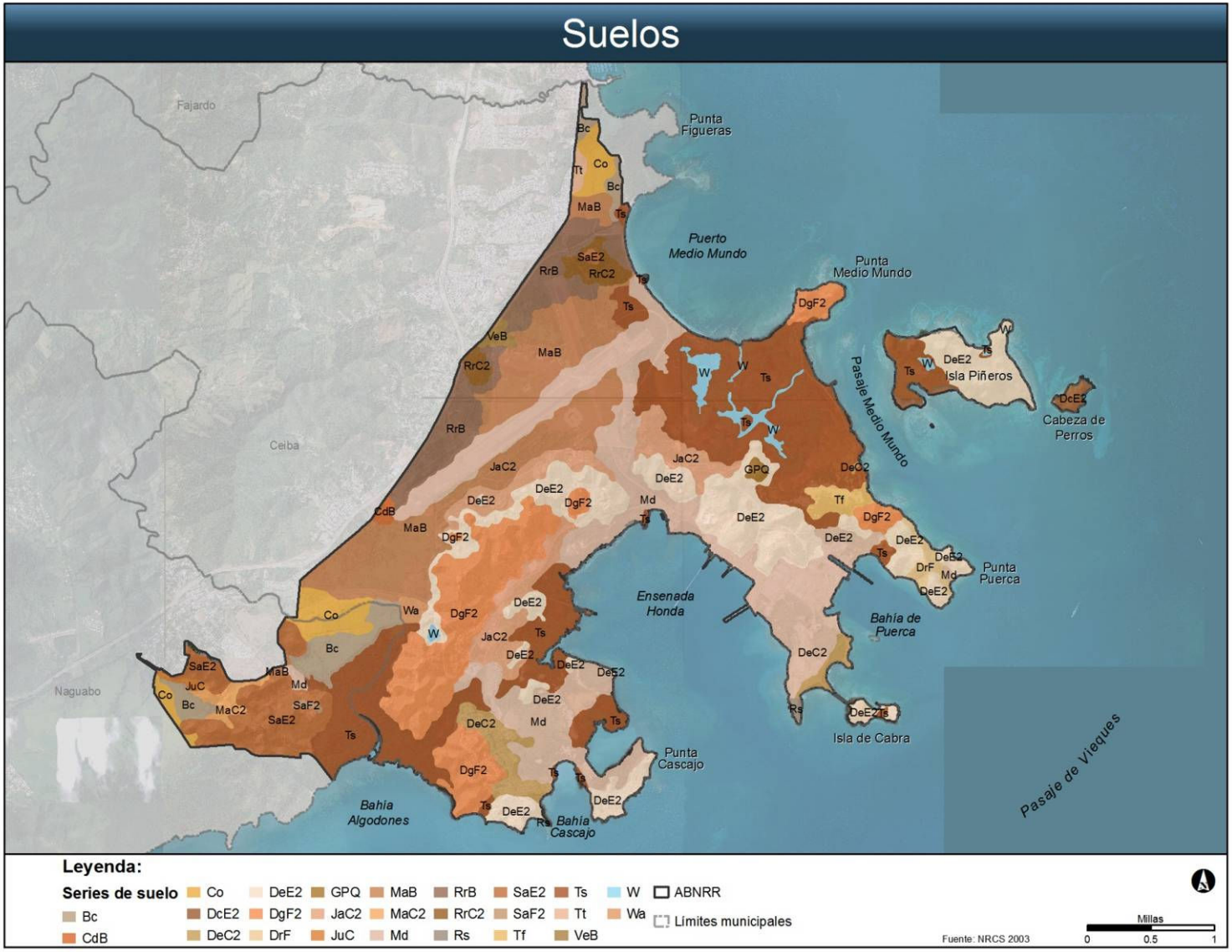


Tabla 6. Suelos

SERIES DE SUELO EN LA ABNRR

Unidad	Serie	Descripción	Material de origen	Geomorfología	Pendiente (%)	Drenaje	Permeabilidad	Componentes menores
Bc	Bajura	Arcilloso	Aluvión	Planicies inundables	0-2	Pobre	Moderada	
CdB	Candelero	Lómico	Sedimentos	Terrazas	2-5	Pobre	Moderada	Suelos Cayagua
Co	Coloso	Limoso arcilloso lómico	Depósitos aluviales estratificados	Planicies inundables	0-2	Pobre	Moderada	Suelos Bajura
DcE2	Daguao	Arcilloso	Residuos de textura moderada fina y fina	Pendientes de montañas	20-40	Bueno	Moderadamente bajo a alto	
DeC2	Descalabrado	Arcilloso lómico	Residuo y coluvio	Laderas y crestas de montañas	5-12	Bueno	Bien baja	
DeE2	Descalabrado	Arcilloso lómico	Residuo y coluvio	Laderas y crestas de montañas	20-40	Bueno	Bien baja	
DgF2	Descalabrado y Guayama		Residuo y coluvio	Laderas y crestas de montañas	20-60	Bueno	Bien baja	
DrF	Complejo Descalabrado Pedregoso*		Residuo y coluvio	Laderas y crestas de montañas	40-60	Bueno	Bien baja	
JaC2	Jacana	Arcilloso	Materiales desgastados	Pendientes de colinas	5-12	Bueno	Bien baja	
JuC	Junquitos	Grava arcilloso lómico	Residuos de textura fina	Abanicos aluviales y laderas de colinas	5-12	Moderadamente bueno	Moderadamente bajo a alto	
MaB	Mabi	Arcilloso	Sedimentos	Abanicos aluviales y terrazas	0-5	Moderado	Moderadamente bajo a alto	Suelos Bajura
MaC2	Mabi	Arcilloso	Sedimentos	Abanicos aluviales y terrazas	5-12	Poco drenaje	Moderadamente bajo a moderadamente alto	
RrB	Río Abajo	Arcilloso	Sedimentos de textura fina	Abanicos aluviales y terrazas	2-5	Moderadamente bueno	Moderadamente alta	
RrC2	Río Abajo	Arcilloso	Sedimentos de textura fina	Abanicos aluviales y terrazas	5-12	Moderadamente bueno	Moderadamente alta	
SaE2	Sabana	Limoso arcilloso lómico	Residuos de textura fina	Pendientes de montañas	20-40	Bueno	Moderadamente bajo a alto	
SaF2	Sabana	Limoso arcilloso lómico	Residuos de textura fina	Pendientes de montañas	40-60	Bueno	Moderadamente bajo a alto	
Tt	Toa	Limoso arcilloso lómico	Sedimentos aluviales estratificados	Planicies inundables	0-2	Bueno	Moderadamente alto a alto	
VeB	Vega Alta	Limoso arcilloso lómico	Sedimentos de textura fina y sedimentos costeros ricos en hierro	Planicies costeras y terrazas	2-5	Bueno	Moderadamente alto a alto	
Tf	Planicies mareales			Planicies mareales	0-2	Bien pobre		
Ts	Pantanos mareales	Ciénagas mareales			0-2	Bien pobre	Moderadamente bajo a alto	
Wa	Terrenos aluviales húmedos			Planicies inundables	0-2	Bien pobre		
W	Agua							
Md	Relleno							
GPQ	Grava, fosas y/o canteras							

** Un "complejo" se compone de dos o más suelos o áreas misceláneas en un patrón tan intrincado o en áreas tan pequeñas que no se puede mostrar por separado en los mapas.*

Fuente: NRCS. (2006). Soil Data Mart: Map Unit Description.

HYDROGRAPHY

The FNSRR is between the hydrographic basins of the east of Puerto Rico, which are characterized by being more extensive, when receiving the highest rainfall on the island (DRNA 2006). Most of the basins that discharge into the lands of the FNSRR are categorized as coastal areas in the Integral Plan of Water Resources (PIRA), from the Department of Natural and Environmental Resources (DRNA). Unlike the basins that are supplied from the flow of major rivers, the coastal areas are defined as hydrographic systems that drain their waters into the sea by intermittent or minor creeks or through diffuse runoff.

The following are surface bodies of water, which are described in the context of the hydrographic basins, and the bodies of groundwater.

Surface Water

Daguao Basin of the Rio

It extends over the municipal boundaries of Ceiba and Naguabo and ends at the FNSRR. This hydrographic system includes the Rio Daguao, the channel of Quebrada Seca and an unnamed tributary.

The Rio Daguao rises in the mountains of the Barrio Chupacallos in the municipality of Ceiba and runs demarcating the division of jurisdiction between the municipality and Naguabo. The Rio Daguao goes into the FNSRR by the southwest and flows southward to the mangrove forest Daguao.

La Quebrada Seca rises in Barrio Quebrada Seca in the municipality of Ceiba and has a sub-basin with elevations between sea level and 1,000 feet. In his journey to the sea, the Quebrada Seca joins the Rio Daguao in the land of the FNSRR.

Another unnamed tributary joins the Rio Daguao when it gets to the mangroves where it empties into the FNSRR. Four other intermittent creeks enter the FNSRR and converge near the southwest border of the airfield until it joins the Rio Daguao (CSA, 2008).

Coastal Area Quebrada Ceiba

The coastal area Quebrada Ceiba includes the Quebrada Ceiba and the Quebrada Aguas Claras. The Quebrada Ceiba originates in the mountains of Barrio Saco in the municipality of Ceiba and goes through the community of Santa Maria. Its flows east to the mangrove forest of Demajagua and ends at the Bahia Demajagua.

The Quebrada Aguas Claras flows from the mountains of the Barrio Chupacallos of Ceiba, through the community of Aguas Claras and traverses the northwestern part of the FNSRR to end in Puerto Medio Mundo. Originally, the Quebrada Aguas Claras flowed southeastward through the central portion of the FNSRR ending in Ensenada Honda. However, as part of the construction of the airfield Oftsie,

the trajectory of the Quebrada Aguas Claras was altered to the current channel (CSA, 2008).

The Coastal Area Quebrada Ceiba also includes an unnamed tributary which flows through the town of Ceiba and joins the Quebrada Aguas Claras.

Area Puerto Medio Mundo

Another coastal area is Puerto Medio Mundo, which extends between the neighborhoods Machos and Guayacan in the municipality of Ceiba. This hydrographic system includes mangroves and lagoons of the Medio Mundo. In these are stored the water runoff and minor drainages from areas with higher elevation from the North of the FNSRR, such as the airport (CSA, 2008).

Ensenada Honda Area

Just as the area of Puerto Medio Mundo, the Area of Ensenada Honda has no major bodies of water. This hydrographic system collects the diffuse runoff from perennial or intermittent flows and urban drainages to come down between the areas of Ensenada Honda and Bahia Puerca.

Coastal Area Quebrada Palma

The runoff from the area of Bundy, southwest of the FNSRR, comes down to the Coastal Area Quebrada Palma. Unlike other hydrographic systems discussed, it does not end within the the FNSRR but rather in the area of Bahia Algodones.

Furthermore, on the Isla Piñeros and the islet Cabeza de Perro bodies of fresh water are not found. However, Isla Piñeros has three brackish water lagoons with sizes of 4.5, 1.9 and 0.6 acres respectively (DON, as cited in CSA, 2008).

Ilustración 10. Hidrografía de la ABNRR

Underground Water

The underground formations of alluvial aquifers are located in flat areas and valleys of Puerto Rico. In the premises of the FNSRR towards the western portion there is an alluvial aquifer. Alluvial aquifers consist of unconsolidated formations of permeable sand and gravel deposited by ancient rivers, which are currently under the ground surface. These aquifers are punctually important, but produce a limited amount of water, which generally serve the needs farming and private needs of a limited area (López & Villanueva, 2006).

In areas which geology corresponds to the Daguao formation it is assumed that there might be confined underground water. The composition of resistant volcanic rock could act as a confining / semi-confining unit (DON, as cited in CSA, 2008).

SIGNIFICANT ECOSYSTEMS

The lands of the FNSRR are within the living areas of the subtropical dry forest to the east and of the subtropical rain forest in the western portion. The subtropical dry forest vegetation is predominantly deciduous and the tree height does not exceed 15 meters in height. Forests in this life zone are richer in species of birds that other wetter life zones (Ewel & Whitmore, 1973). For its part, the humid subtropical zone is among the life zones more intensively used, especially for grazing.

The historical uses that have been given to the lands of the FNSRR - which were predominantly cattle grazing and later military activity - have contributed to replacing the original natural communities with others of forest and weeds. (CSA, 2008).

Currently, vegetation in the lands of the FNSRR consists of coastal forests, grasslands and wetlands. The conditions of the water-salinity, temperature, clarity and currents - favor the development of a large concentration of wetlands, beaches and benthic ecosystems along the coast. These, although outside the territorial limits, are interconnected ecosystemically, from which stands out the seagrass beds.

Ilustración 11. Zonas de vida representadas en los terrenos de la ABNRR

Wetlands

The wetlands are transitional areas between the terrestrial and aquatic ecosystems. One of the most abundant wetland systems in the lands of the FNSRR are mangroves. The mangroves are typical ecosystems of coastal areas, where vegetation has adaptations that allow it to tolerate high salt concentrations and survive in flooded soil.

According to the draft of the Management Plan for the ANPMMD prepared by the FCPR in 2010, the lands of the FNSRR house the second largest mangrove forest around Puerto Rico and one of the best examples on the island. These trees have an extension of 1956.1 cuerdas, which constitutes about 21.9% of the land of the FNSRR. FNSRR Mangroves are seen in the the mouth of the Rio Demajagua in the area of Los Machos, in Ensenada Honda, Daguao and Isla Piñeros.

In the mangrove system of Los Machos, the single dwarf mangrove forest in Puerto Rico has been identified (Medina et al. 2009, as cited in FCPR, 2010). This forest is located near the lagoon area under high concentrations of salinity. The dwarf mangroves dominated by red mangrove (Rhizophora mangle) whose members do not exceed 1.5 meters in height. They lack of a main stem which distinguishes them from specimens found elsewhere in the world (Medina et al., as cited in FCPR, 2010). The International Institute of Tropical Forestry (IITF, for its acronym in English) has estimated that the dwarf mangrove coverage is approximately 86.5 strings (as cited in FCPR, 2010).

The Management Plan also indicates the presence of a remnant swamp bloodwood (Pterocarpus officinalis) in ANPMMD in the area of Rio Daguao, composed of about 65 adults and some young individuals (FCPR, 2010).

It is important to recognize that wetlands are an important cockpit for wildlife. In the FNSRR, wetlands provide shelter for cockpit and vertebrates and invertebrates of commercial and sport value (bass, shad, sea crabs, sea breams) and provide nesting areas for several species of resident and migratory birds, some of them vulnerable or endangered. Among these is the Yellow-shouldered Blackbird (Agelaius xanthomus), an endemic bird which has been classified as endangered at the state and federal levels. In the FNSRR the habitat of this species are the mangroves and the dry forest areas, which were designated as critical habitat for the Yellow-shouldered Blackbird under the Federal Law of Endangered Species (ESA, for its acronym in English).

Freshwater wetlands

The freshwater wetlands or palustrines are in the drainage systems associated with: the Rio Daguao, Quebrada Aguas Claras and a tributary of the Quebrada Palmas, among other smaller areas (CSA, 2008). The vegetation associated with these wetlands includes wet meadows and swamps dominated by the cattail (Typha spp.) grasses (Panicum

spp. And Paspalum spp.) and humid coastal forests (DON, as cited in CSA, 2008).

It is important to note that the golf course that was built in 1966 to the north of the Rio Daguao, remains flooded during most of the year and the vegetation characteristic of wetlands has returned to its original range, making it an emerging herbaceous wetland (FCPR, 2010).

Benthic ecosystems

The coastal waters and the submerged lands bordering the FNSRR house seaweeds, coral reefs and extensive sea grass beds. These waters and substrates are important habitats for marine species by its value for reproduction, breeding, feeding and growth.

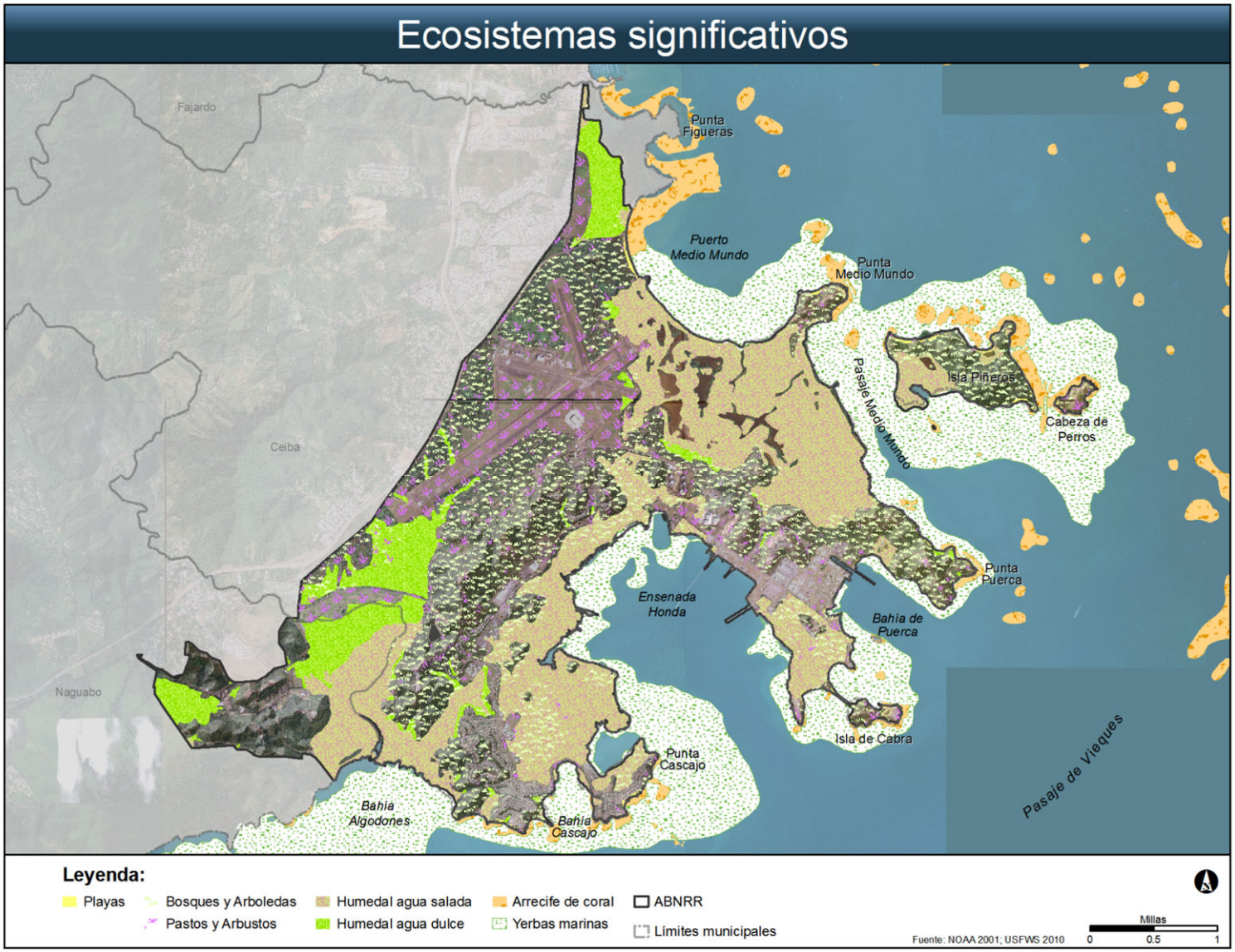
The coral reefs in coastal waters of the FNSRR consist of relatively small patches (Pace & Vega, 1988, as quoted in DON, 2005). The two most diverse reefs are located east of Capehart and north of Islas Piñeros.

According to the document Essential Fish Habitat Assessment Naval Activity Puerto Rico (GMI, 2005) the most abundant coral species in these waters are: Diploria strigosa, Porites astreoides and Siderastrea siderea (GMI, 2005). However, the study indicates that these reefs are not considered in good condition, particulLRAy given the impact of runoff and pollutants from land based sources.

Seagrasses, meanwhile, are extensive and are in good condition. The marine grass-covered are wetlands underwater located in shallow coastal areas and bays (Cerame, 2000).

FCPR data indicate that in the vicinity of the FNSRR have been identified approximately 3.869 cuerdas of seagrass (2010). They are north of the mangrove forest of Los Machos, around Isla Piñeros, within Ensenada Honda and from Punta Cascajo to the northwest coast of Vieques. These Thalassia meadows are part of the more extensive marine corridor in territorial waters of Puerto Rico, which connects the municipality of Ceiba, Punta Cascajo, with the municipality of Vieques. These sea grass maintain one of the largest populations of the West Indian manatee (Trinchechus manatus) in Puerto Rico (USFWS, as cited in FCPR, 2010).

Ilustración 12. Ecosistemas significativos en la ABNRR



Coastal Forests and Grassland

Among the ecosystems identified in the FNSRR there are two types of coastal forests: weeds, also known as dry and bushes, and upland or high ground. The land covered by this type of ecosystem spans 3319.3 cuerdas of the FNSRR or 37% (FCPR, 2010).

The coastal forest of weeds is the most abundant vegetation cover in the FNSRR, including Isla Piñeros. The development of this forest on volcanic substrate is uncommon in Puerto Rico (Lugo, 2005, as cited in FCPR, 2010).

In the area of Ensenada Honda are observed areas of dry forest, in which has been sighted the boa of Puerto Rico (Epicrates inornatus), an endemic and endangered species (FCPR, 2010).

Moreover, the valleys located to the north, northwest and south of the airport and in the islet Cabeza de Perro are covered by grasslands, which spans 282.2 cuerdas of the FNSRR.

Beaches

The FNSRR has 36.7 miles (59.1 km) of coastline, from which 5.1 miles (8.2 km) are covered with sandy beaches (PRP 2010). These beaches serve as an area for nesting of endangered sea turtles turtles as the hawksbill (Eretmochelys imbricata), the leatherback (Dermochelys coriacea), the green sea turtle (Chelonia midas) and the loggerhead (Caretta caretta).

Moreover, approximately 5.7 miles (9.2 km) of the coast of the FNSRR consist of rocky beaches (FCPR, 2010).

Tabla 7. Playas en la Región

TIPOS DE PLAYAS EN LA ABNRR

Playas arenosas	Playas rocosas
Medio Mundo	Isla Cabeza de Perro
costa de la Isla Piñeros	partes de Isla Piñeros
costa alrededor de Punta Puerca	Punta Puerca
Isla Cabras	Isla Cabras
Bahía Cascajo	Punta Cascajo
Bahía Algodones	partes de la zona costera de Bahía Algodones

Fuente: Fideicomiso de Conservacion de Puerto Rico, 2010.

Medio Mundo and Daguao Natural Protected Area

The ANPMMD includes terrestrial, aquatic, estuarine and transitional ecosystems. In the coastal lands and marine areas of the ANPMMD can also be seen areas covered by sandy beaches, rocky beaches, coral reefs and sea grass beds.

The biological richness of the ANPMMD includes 26 rare, endemic, vulnerable or endangered species, including the West Indian manatee, the Yellow-shouldered Blackbird, the Puerto Rican boa, three species of sea turtles: the hawksbill (Eretmochelys imbricata), the leatherback (Dermochelys coriacea) and the green turtle (Chelonia mydas), in addition to the black cobana tree (Stahlia monosperma).

In a broader context, it is important that the land of the ANPDMM, particulLRAy its subtropical dry forest, with the lower montane rain forest in the upper parts of El Yunque, allowed to have a represented in a relatively small region, the six lives zones identified in Puerto Rico, which is an extremely unique natural phenomenon (FCPR, 2010).

Ilustración 13. Área Natural Protegida Medio Mundo y Daguao

Critical Elements of Flora and Fauna

On the land of the FNSRR and associated coastal waters, over a dozen species of flora and fauna have been identified. They are considered critical elements under the federal and local laws. The following critical species were identified in the FNSRR, most of which are in the ANPMMD.

The lands of the FNSRR have been identified as one of the critical areas for wildlife in the document prepared by DRNA in 2007 for the following species:

- West Indian Whistling Duck - *Dendrocygna arborea*
- Least Grebe- *Tachybaptus dominicus*
- White cheeked Pintail- *Anas bahamensis*
- Brown Pelican- *Pelecanus occidentalis*
- Yellow-shouldered Blackbird -*Agelaius xanthomus*
- Ruddy Duck- *Oxyura jamaicensis*
- White-crowned Pigeon- *Patagioenas leucocephala*
- West Indian Manatee- *Trichechus manatus*
- Green sea turtle- *Chelonia mydas*
- Hawksbill sea turtle- *Eretmochelys imbricate*

Critical species that have been found inside FNSRR are included in the following table:

Tabla 8. Especies críticas asociadas a los terrenos de la ABNRR

Especies críticas identificadas en la ABNRR		
Nombre científico	**Nombre común**	**Estatus**
FAUNA		
Aves		
Agelaius xanthomus	mariquíta de Puerto Rico	EN, ENF, EC
Dendrocygna arborea	chiriría nativa	CR, EC
Falco peregrinus anatum	falcón peregrino	CR, EC
Sterna antillarum	gaviota chica	DD, EC
Sterna dougallii	palometa	VU, VUF, EC
Pelecamus occidentales	pelicano pardo	EN, EC
Fulica caribaea	gallinazo nativo	VU, EC
Charadrius alexandrinus	playero melódico	CR, VUF, EC
Charadrius melodus	playero blanco	CR, EC
Reptiles		
Dermochelys coriacea	tinglar	EN, ENF, EC
Chelonia midas	tortuga verde	EN, VUF, EC
Caretta caretta	tortuga cabezona	VU, VUF, EC
Eretmochelys imbricata	carey	EN, ENF, EC
Epicrates inornatus	boa de Puerto Rico; culebrón	VU, ENF, EC
Epicrates monensis	boa de Islas Virgenes	CR, ENF, EC
Mamíferos		
Trichechus manatus	manati antillano	EN, ENF, EC
FLORA		
Stahlia monosperma	**cobana negra**	EC, VU, ENF

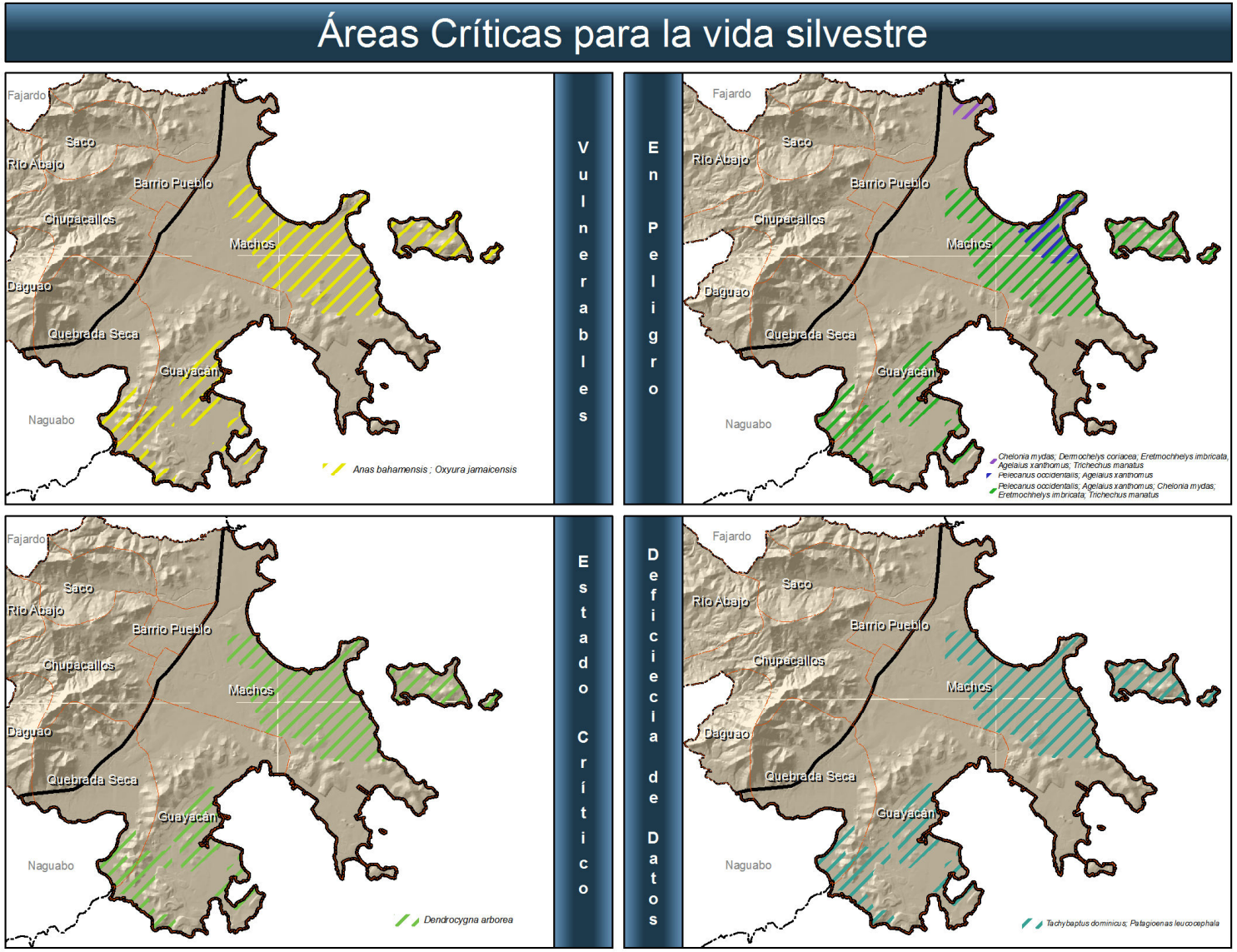
Leyenda

CR- En peligro de extinción crítico (Estatal)	DD- Deficiencia de datos
ENF-En peligro de extinción (Federal)	EC- Elemento crítico
EN-En peligro de extinción (Estatal)	BV- Bajo vigilancia
VU- Vulnerable (Estatal)	

Fuente: DON. 2005. Evaluación Ambiental para la Disposición de la Actividad Naval en Puerto Rico (antigua Base Naval Roosevelt Roads)

The locations are shown on the next illustration:

Ilustración 14. Áreas críticas para la vida silvestre



Moreover, the land of the FNSRR and associated coastal waters were designated as critical habitat for three species of fauna according to ESA. This law defines a critical habitat as a geographic area essential to the conservation of a threatened or endangered species that in the case of not being occupied by those species, has features essential for their recovery.

Critical habitats associated with the land of the FNSRR are:

Yellow-shouldered Blackbird - endemic bird classified endangered species in the state and federal level. In 1977, several zones of coastal forests in Puerto Rico were classified as critical habitat for this species, among which are the lands of the FNSRR. Locally, the Regulations to Govern the Vulnerable and Endangered Species of the DRNA, Regulation 6766, adopted as critical essential natural habitat the federal delimitation of critical habitat for the Yellow-shouldered Blackbird. A critical essential natural habitat is defined by the Regulation 6766 as that required for the survival of vulnerable or endangered species whose characteristics are unique to particular area of Puerto Rico.

Some of the threats this species is that they are exposed to the loss and degradation of the habitat and the parasitism of the nests by the shiny thrush (DRNA 2005). The Management Plan for the lands of the ANPDMM pointed that for 1976, 200 individuals were identified in the FNSRR (DON, 1996), yet this population has decreased since then, with a total of 24-26 individuals identified during the counting of year 2000 (DON,2001).

Elkhorn coral (Acropora palmata) and staghorn coral (Acropora cerviconis) - Coastal waters associated with the FNSRR are part of the critical habitat designated in 2008 for these two coral species that were listed as threatened in the federal list of endangered species in 2006, following the provisions of the ESA. The critical habitat includes approximately 1.383 miles^2 (3.582 sq km) around the island of Puerto Rico, Vieques and Culebra.

Ilustración 15. Hábitat crítico para la mariquita

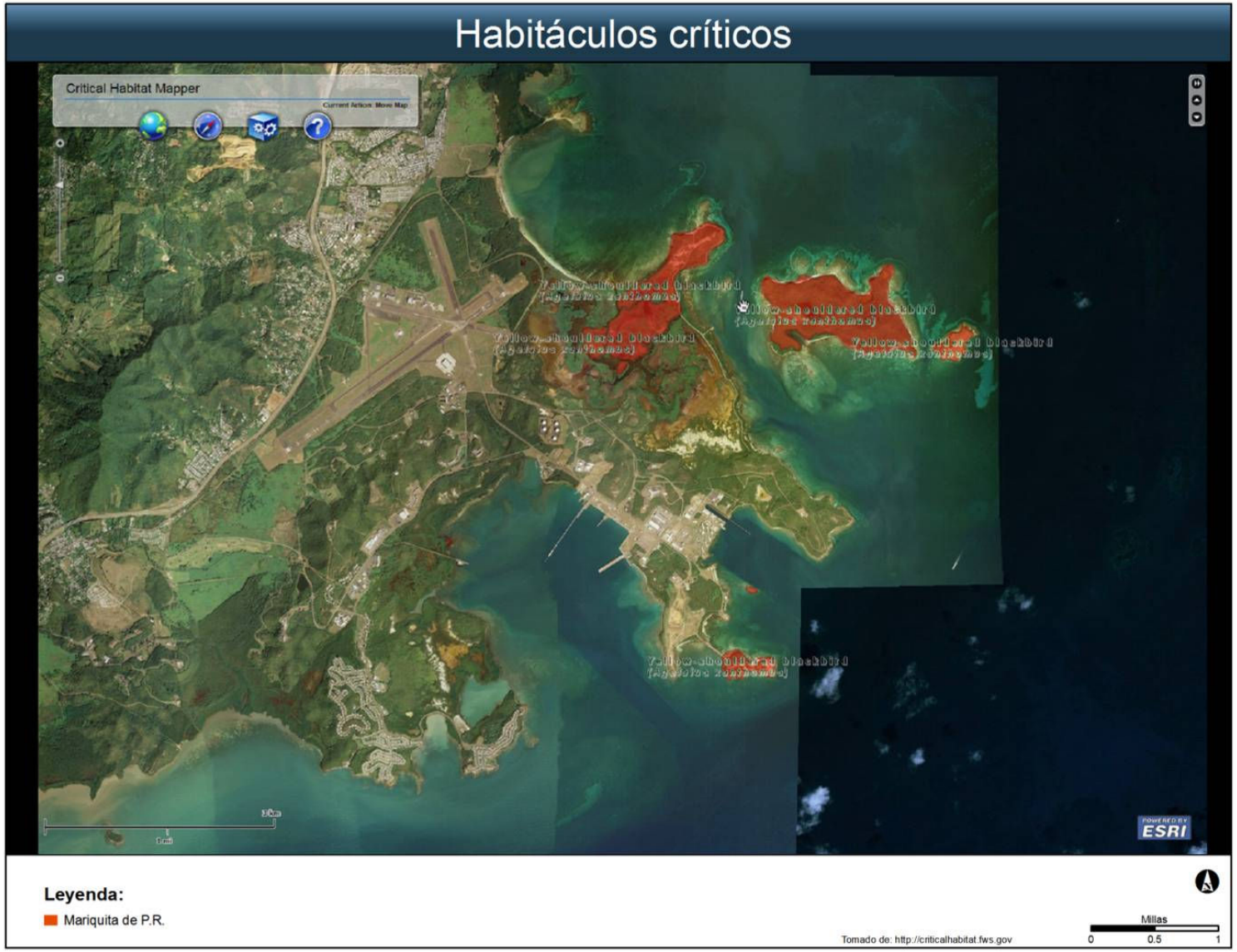
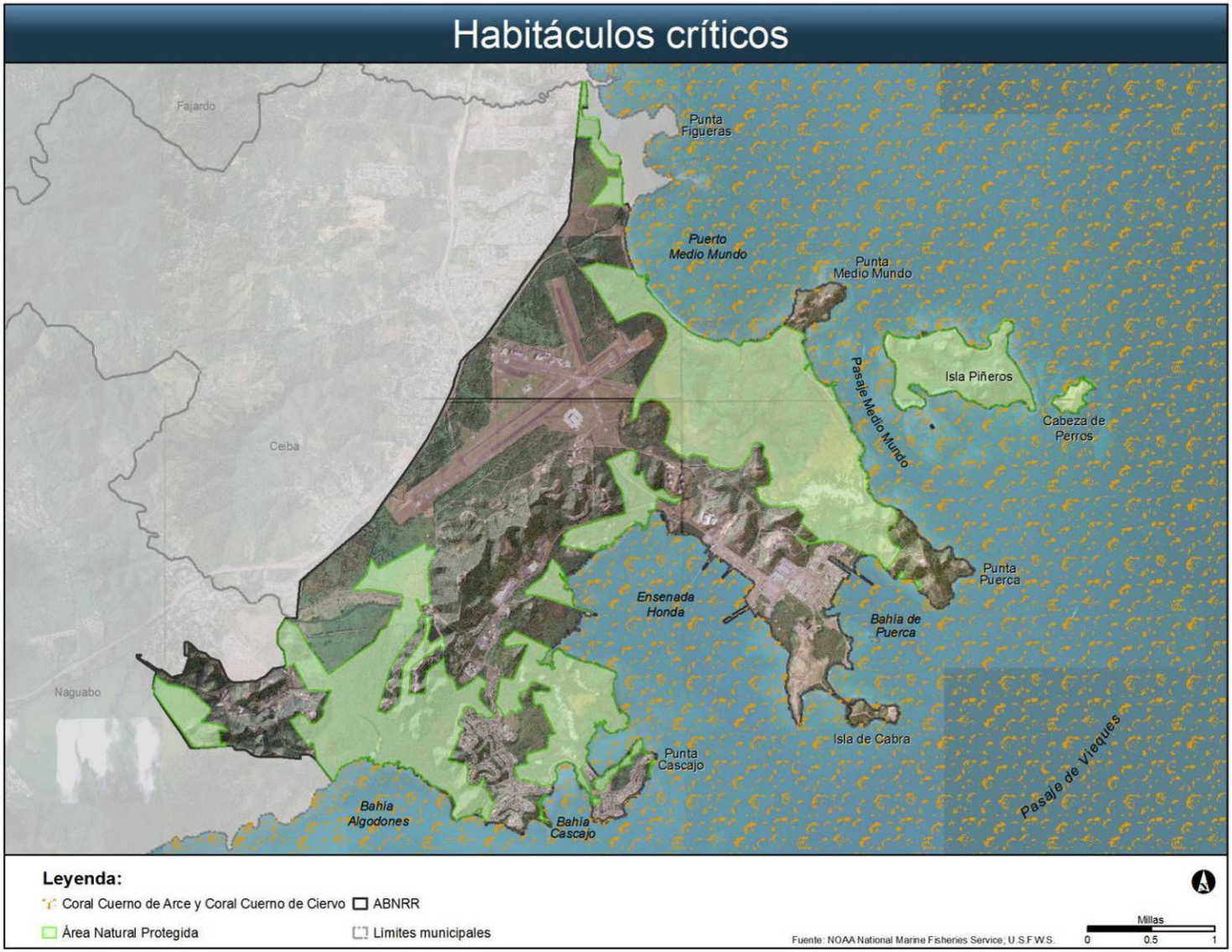


Ilustración 16. Habitáculos críticos para los corales A. palmata y A. cerviconis



HAZARDS

Flooding

Flood prone areas are those with at least one percent (1%) chance of being flooded in any year.

To know the areas susceptible to flooding in the FNSRR, Flood Insurance Rate Maps 2009 (FIRM acronym in English) of the Federal Emergency Management Agency (FEMA, for its acronym in English) have been examined. These maps were created under the National Flood Insurance Program (NFIP, for its acronym in English) and have been adopted by the JP for flood plain management.

According to the FIRM, about 4339.53 cuerdas or 48.7% of the territory of the FNSRR, is classified as a floodplain. Classifications of Special Flood Hazard Areas (SFHA, for its acronym in English) for the area are:

Zone A

This is an area susceptible to flooding with a recurrence period of 100 years. It is determined by approximate methods and for which there is no indication of the base flood elevation. This occupies approximately 382.46 cuerdas of the lands of the FNSRR that correspond to areas washed by the Quebrada Seca in the municipality of Naguabo (or 4.3% of the FNSRR).

Zone AE

These are the areas that correspond to the boundary between the mayor floodway and the floodplain. They have a one percent annual chance of being flooded. This zone is determined by detailed methods of analysis and, at times, the base flood elevation is indicated. About 2872.30 cuerdas or approximately 32.2% of the municipal territory has been classified as Zone AE. These include much of the coastal land and flooded land of the FNSRR, like the area of Los Machos the Medio Mundo and the mouth and mangroves of the Rio Daguao between Ceiba and Naguabo, among others.

Zone VE

Associated with the storm surge, the coastal plain zone corresponds to areas within the one percent annual chance of being flooded by additional risks. It is determined by detailed studies that presents the base flood elevation.

Much of the coastline of the FNSRR is subject to the storm surge zone, including a portion of the area of Medio Mundo. This represents approximately 699.55 cuerdas between the neighborhoods Guayacán and Machos of the Municipality of Ceiba and occupies 7.9% of the land area of the FNSRR.

Finally, the zone that has a 0.2% chance of being flooded in a year covers 4.3% of the FNSRR or about 385.18 cuerdas.

Landslides

Landslides are defined as the movement of materials down the slope. Its incidence depends on factors such as rainfall, type of material found on the surface by the inclination of the terrain and by alterations or anthropogenic disturbances in them.

Monroe (1979) documented four categories of susceptibility to landslides in Puerto Rico. These areas are classified as: areas of increased susceptibility, including areas of active and recent landslides, areas of high susceptibility, moderate susceptibility and low susceptibility.

In the lands of the FNSRR categories of moderate and low susceptibility are found. The zones of moderate susceptibility areas are considered stable, except when disturbed by indiscriminate cuts that transform the terrain to one steep. This category is seen in the area of Las Delicias, Punta Puerca, Punta Medio Mundo, in the area of Bundy and Isla Piñeros.

The rest of the lands of the FNSRR, except wetland areas which were not classified, are of low susceptibility to landslides.

Ilustración 17. Áreas inundables

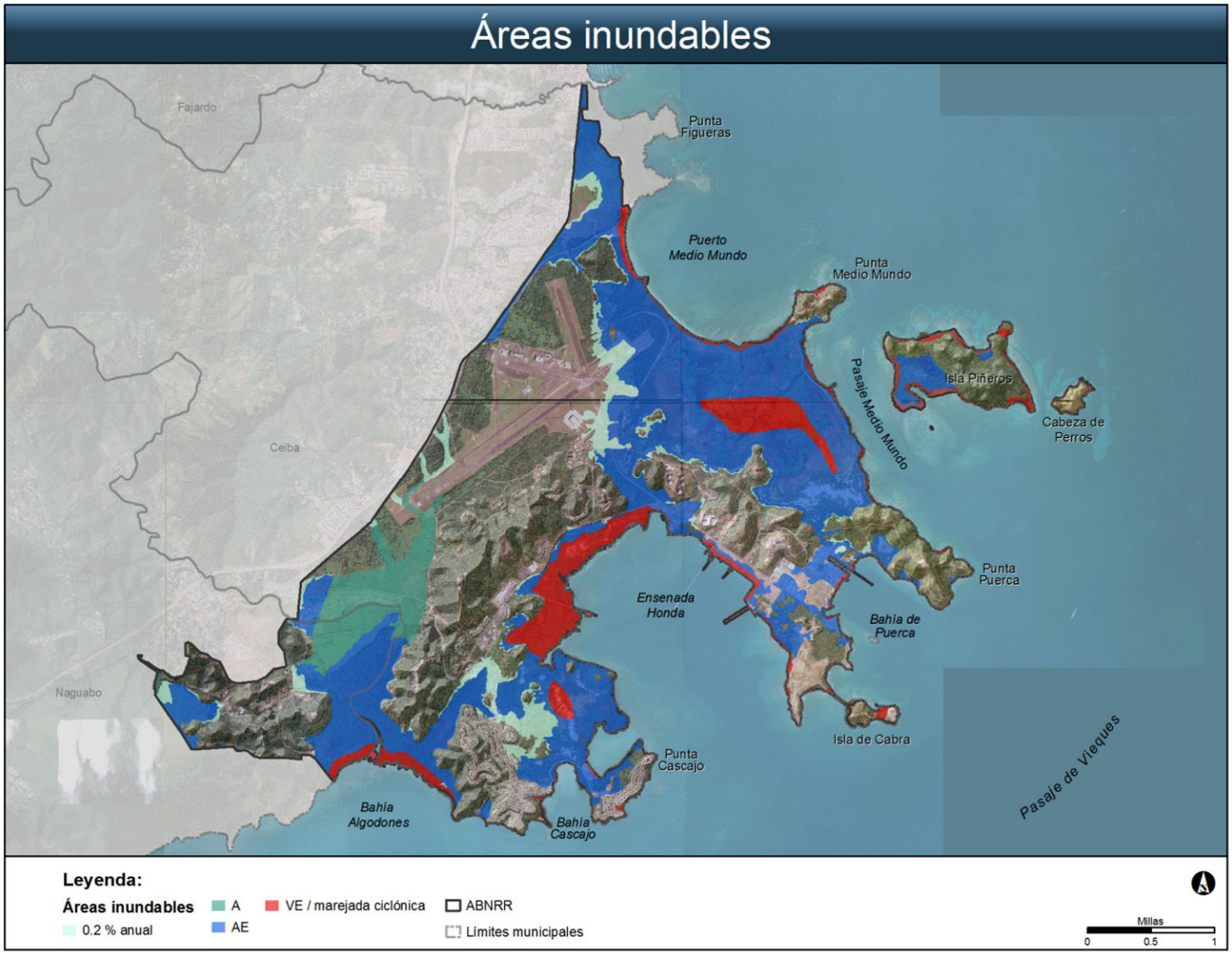


Ilustración 18. Áreas susceptibles a deslizamientos

ENVIRONMENTAL QUALITY

The FNSRR was used for military purposes from 1941 to 2004. According to information from the U.S. Environmental Protection Agency (EPA, for its acronym in English), the installation includes shooting ranges and three potential abandoned pits of open burning-open detonation that are located where the shooting range is, in the Peninsula Punta Medio Mundo. The islets Piñeros and Cabeza de Perro were used for maneuvers and training military exercises since late 1950. The training exercises included the demolition of explosive devices and the maneuvering exercises included the use of pyrotechnic material, training grenades, claymore mines and other munitions.

Since the closure of its facilities, the Navy has given maintenance to these areas under a RCRA permit that was granted in 1994. In 2005, the U.S. Navy published a document called "Environmental Evaluation for the Disposal of the Naval Activity in Puerto Rico" (formerly Naval Station Roosvelt Roads) in which were documented the existing environmental conditions in the property after the closure of military practices and prior to disposal.

The report compiled available information on current and past uses of the FNSRR, with an emphasis on activities associated with the use, storage, release or disposal of hazardous substances and petroleum products or their derivatives; in the identification of new and familiar places, as well as in areas where remedial work has been carried out. The report categorized the areas as follows:

- Category 1: uncontaminated areas, including properties where there is no knowledge or suspicion of any spill as well as all places where a leak was suspected, but in which further research show that there is none.
- Category 2: Areas in which all necessary remedial actions in response to a leak has been taken, which may include land use controls.
- Category 3: Areas in which research is required and/or cleaning work that include additional sites identified recently as well as those known where cleanup efforts are conducted.

The report found that most of the lands of the FNSRR are classified as uncontaminated areas. The need for corrective actions of other premises was identified.

For identification, investigation and cleanup of the terrains the Navy has the Restoration Program (Installation Restoration (IR) Program). Depending on the circumstances, the sites are managed under the provisions of two federal laws that are administered by the EPA. These include: Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

In total, 77 solid waste management units have been identified (SWMUs, for its acronym in English) and 6 areas of concern (AOCs, for its acronym in English). According to

RCRA, the SWMUs represent a unity in which hazardous solid waste has been handled. Meanwhile, the AOCs are locations that may include more than one location area.

In 2007 an Administrative Order by Consent with the EPA had been signed. It established the obligations of the Navy to complete the cleanup of the lands of the FNSRR, under RCRA.

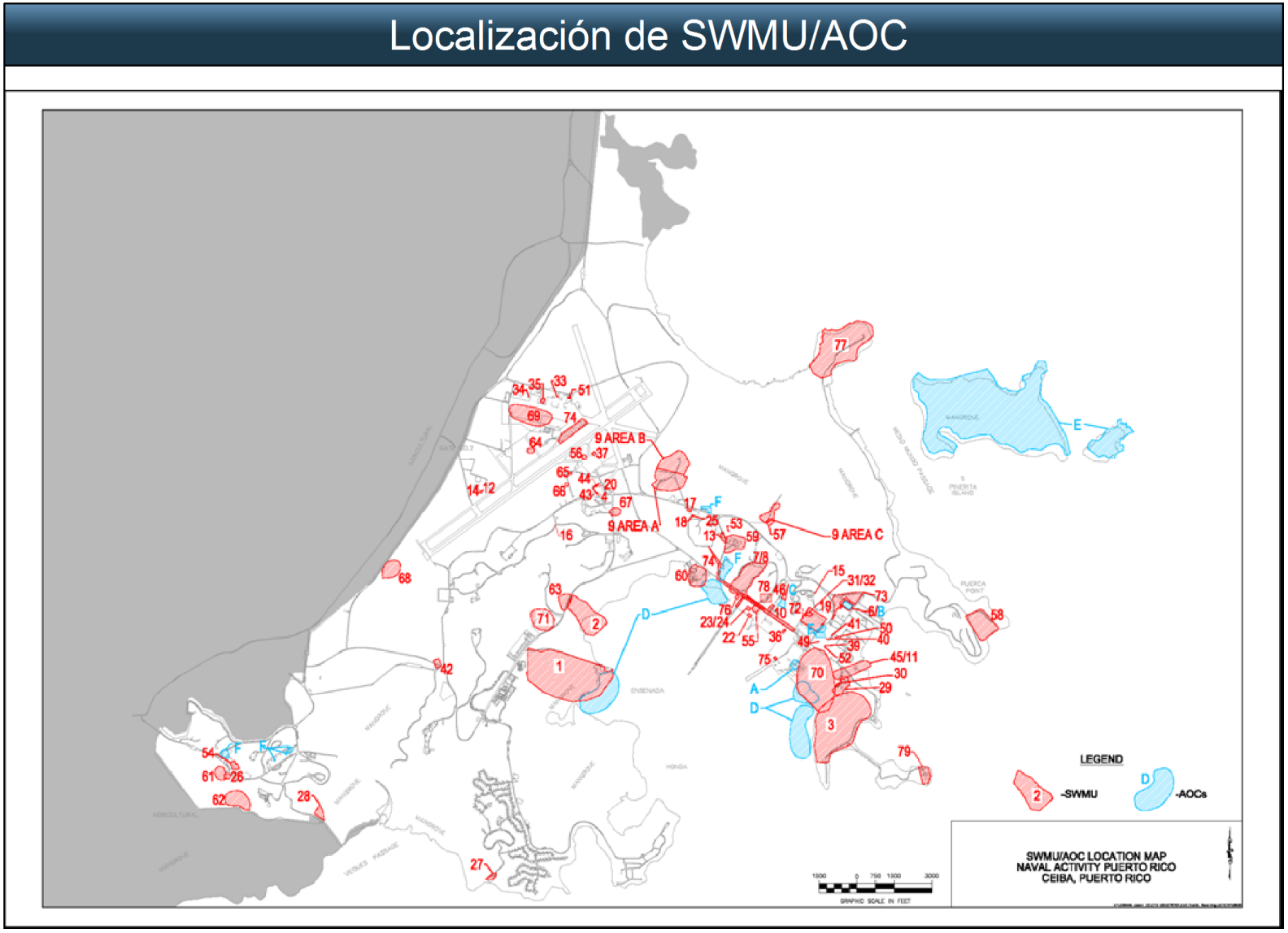
At the time of signing the Consent Order, investigations and/or evaluations had been completed to determine the occurrence of leaks of solid or hazardous waste and / or hazardous constituents in 59 of the SWMUs and AOCs identified in the FNSRR. Of these, 41 SWMUs and AOCs were considered "complete corrective action" and, for other areas, the Consent Order stipulated that the Navy should conduct investigation and cleanup activities, among others actions.

In November 2010, the Navy continued to carry out field investigations, assessments of risk to human health and / or ecological risk and the cleanup of 44 sites.

According to the Navy (2010), with the exception of Isla Piñeros and the shooting range of Armas Cortas (SWMU77), the research left to do could take 18 to 24 months to complete. Subsequently, the Navy will prepare a Corrective Measures Study for many of the sites, which could take an additional year.

Sites that are under investigation or cleanup will not be transferred by the Navy until the cleanup is completed or is nearing completion. These places remain under Navy control on an interim basis - under lease - until the end of cleaning and although eventually will have calification and classification of soils, they will not be developed until the Navy delivers them.

Ilustración 19. Lugares en los que se ha manejado desperdicios sólidos y áreas de preocupación



Fuente: Recuperado en línea el 10 de diciembre de 2010 en: http://nsrr-ir.org/map.asp

According to the Navy, small arms munitions and rockets at the site were identified, but there were no munitions or explosives of concern (MEC, for its acronym in English). The EPA recommended a Phase 1 analysis for the area. The final work plan for this study was presented by the Navy to the EPA, which was commented it on in June 2010.

Meanwhile, the Punta Medio Mundo contains the site SWMU 77 or Shooting Range of Armas Cortas, which was used as a shooting, detonation and open burning range and disposal of munitions. The EPA recommended conducting a Phase 1 study type at the place. In March 2010 the Navy placed before the consideration of the EPA the work and sampling plan associated with the Phase 1 report, which was discussed by the EPA in May 2010.

Currently, the Navy is implementing corrective actions (cleanup) at the sites 7, 8, 54 and 55. Corrective measures are proposed at the sites 31 and 32, located on the Parcel III. It also continued with the investigation and cleanup activities on the Airport Parcel which was transferred to the Port Authority of Puerto Rico. In addition it will continue with the investigation and cleanup activities at the sites of the Maritime Port Parcel after its eventual transfer.

Moreover, on the premises of the FNSRR eight sites were identified where there were leaks or spills of petroleum products from storage tanks: seven of these were underground storage tanks and one was a storage tank on the ground. Tanks and contaminated soil around them were removed and now, these sites are following a corrective action process through the monitoring process of natural attenuation. The same is done in the most polluted places and is based on naturally occurring processes to remove or reduce contaminants in soil or groundwater. Currently, at these eight sites samples are taken of groundwater and soil up to four times a year, following the requirements of EPA.

For the next 10-30 years, the Navy will carry out monitoring of groundwater in areas where contamination was identified and corrective measures were completed. Once the Navy demonstrates to EPA effectiveness of its cleanup efforts, the property title may be transferred to the landlord, even if it still require several years of groundwater monitoring.

Tabla 9. Situación de los sitios en la ABNRR: hasta julio de 2010

Status	Cantidad de sitios
Investigación de instalaciones RCRA (RFI)	13
Estudio de medidas correctivas (CMS)	15
Implementación de medidas correctivas (CM	7
Monitoreo a largo plazo (LTM)	2
Acción correctiva completada (CAC)	49

Fuente: Department of the NAVY Realignment and Closure. (2010, November). Former Naval Station Roosevelt Roads Cleanup Program News.

Asbestos-containing Materials

There have been several studies to document the presence of lead and asbestos at the FNSRR facilities. According to the Environmental Condition of Property Report (2005) in 1990 an analysis was carried out in which 90 buildings were inspected, including housing, administrative offices and industrial buildings. In 77 of these buildings presence of asbestos was reported or suspected.

The investigation revealed that asbestos were used, among other purposes, as insulation in pipes, ceilings and floors. The report included recommendations for handling and control of these materials. However, documented actions did not reduce it.

Subsequently, in May and June 1995, a study about the presence of asbestos was conducted in the following communities:

- Community 3096 - Housing in Capehart
- Community 3097 - Housing SR 3 and 4
- Community 3098 - Housing in Turnkey
- Community 3099 - Flag Quarters, and
- Community 3100 - Housing in Algodones

In the Capehart Community, 100% of the units had asbestos-containing materials (ACM) in various parts of the entire house whose condition was good.

In the community SR 3 and 4, there were housing units with 7%, 11% and 54% of ACM on floors and other parts of the interior. The condition of these materials was also good.

In the Turnkey housing, the percentage of units with ACM ranged from 4% in the kitchen linoleum to 100% in the stucco ceilings. All material identified were categorized in good condition and non-friable.

Later in 1998, an analysis of asbestos was conducted in the buildings 161, DN2-3 and 1625. The results indicated the presence of ACM in the panels of the ceiling, in the green tiles on the floors and in the mastic material collected. However, it was not documented that activities were carried out to reduce this material in buildings during or after the investigation.

Other research conducted in 2003 as part of the rehabilitation of the building 386 show that ACM was reported in the vinyl floors and the bonding of the mastic. According to the report Phase I / II (2005), the age of some buildings suggests the presence of ACM in them.

There have been additional studies to document the presence of asbestos in the FNSRR. These are:

- Final Inspection Report of Asbestos in Nonresidential Buildings, Naval Activity in Puerto Rico, July 1, 2005 (including housing for singles);

- Final Report of Inspection of Asbestos in Military Family Housing, Naval Activity in Puerto Rico, July 1, 2005, and
- Final Report of Risk Assessment / Lead-Based Paint in Military Family Housing,Naval Activity in Puerto Rico, July 1, 2005.

Lead-Based Paint

The federal government banned lead-based paints (LBP) from housing in 1978. In the FNSRR, a total of 879 buildings were built before that year. Therefore, it is presumed that these buildings and other structures built before that date contain LBP.

In 1995, a study was conducted in which areas were inspected to evaluate the content of LBP in Capehart, Turnkey, Flag, Algodones Housing and Playgrounds (3102). To know the presence and levels of lead in intact paint, samples were taken at the paint dust and soil around buildings.

Lead was found and removed in the painting of the Capehart housing and in equipment located in the Nimitz playground. In other areas LBP was not found.

In the samples of soil around Algodones housing, elevated lead levels were found. This was considered an isolated case and not representative of the entire community because the result was found in one sample. However, the result exceeded the levels in which EPA requires corrective action in soils.

In August 1998, other tests were conducted in the buildings 161, DN2-3 and 1625.LBP was found at the DN2-3 building. Meanwhile, the sampling of air quality reported results that were below the standards of the Safety and Health Administration (OSHA, for its acronym in English) for lead.

Air Quality

The Federal Clean Air Act requires that EPA establish National Standards of Air Quality for six common pollutants, including: particulate matter (PM10), ozone (O3), carbon monoxide (CO), sulfur oxides (S02), nitrogen oxides (NOx) and lead (Pb).

These pollutants are also called criteria pollutants because EPA has developed criteria based on human health and the environment to establish allowable emission levels. Those based on criteria related to human health are called primary standards and those associated to environmental standards are called secondary.

EPA prepares the Air Quality Index, which presents data for criteria pollutants. For the purpose of this Plan, the data was obtained for the municipalities of Fajardo and Humacao since there are no monitoring stations for Ceiba and Naguabo.

The data shows that air quality was good during most of the year for the stations reported. The data from Fajardo station show that particulate matter less than 2.5micrometers (PM2.5) and 10 micrometers (PM10) was the main pollutant reported most of the days.

Tabla 10. Datos de contaminantes criterio para municipios circundantes a la ABNRR

RESUMEN DE ÍNDICE DE CALIDAD DE AIRE PARA LAS ESTACIONES DE FAJARDO Y HUMACAO

# de días con AQI[1]	Número de días en que la calidad aire era...				Estadísticas AQI			Número de días en que el contaminante AQI era...		Municipio
	Bueno	Moderado	Insalubre para grupos sensitivos	Insalubre	Máximo	Percentil 90	Mediana	PM2.5	PM10	
270	261	9	0	0	72	39	20	50	220	Fajardo
1	1	0	0	0	12	12	12	1		Humacao

Nota: No se reportaron valores para CO, NO2, O3 y SO2.

Fuente: http://iaspub.epa.gov/airsdata/adaqs.aqi?geotype=co&geoinfo=&sumtype=co&fld=gname&fld=gcode&fld=stabbr&fld=regn&rpp=25&year=2008&geocode=72053

Moreover, in the area surrounding the site of the FNSRR three facilities that report emissions of air pollutants were found. These are:

- The National Guard facilities in the neighborhood Demajagua
- The generating plant "PREPA-Daguao Gas Turbines Power Plant"
- The Naval Station (FNSRR)

For this latest installment, the Environmental Quality Board (JCA) issued a final operating Title V permit under the Clean Air Act for emissions of air in 2006, since in the lands of the FNSRR there were several small sources of emissions which operated intermittently. Most of the emissions were generated by combustion sources which use diesel, JP-5, gasoline or propane. However, after the cessation of naval operations, air emissions have been discontinued. There is no documented notice of current or past violation issued to the FNSRR as a result of noncompliance with the Title V permit (Department of the Navy, 2008).

HISTORIC-CULTURAL RESOURCES

According to the *Naval Facilities Engineering Command Atlantic* (2005), historical places in the premises of the FNSRR are usually associated with agricultural activity in the area, before the establishment of naval activity in it. The exceptions are a domestic colonial structure of the 19th century, located in a flooded coastal area at the south strip of Ensenada Honda and a 19th century sugar complex located near the area of Bundy.

The Navy has conducted research to identify cultural resources within the FNSRR in accordance to the Section 110 of the National Historic Preservation Act, in which resources have been identified of the Spanish colonial era, pre-Columbian and rock art.

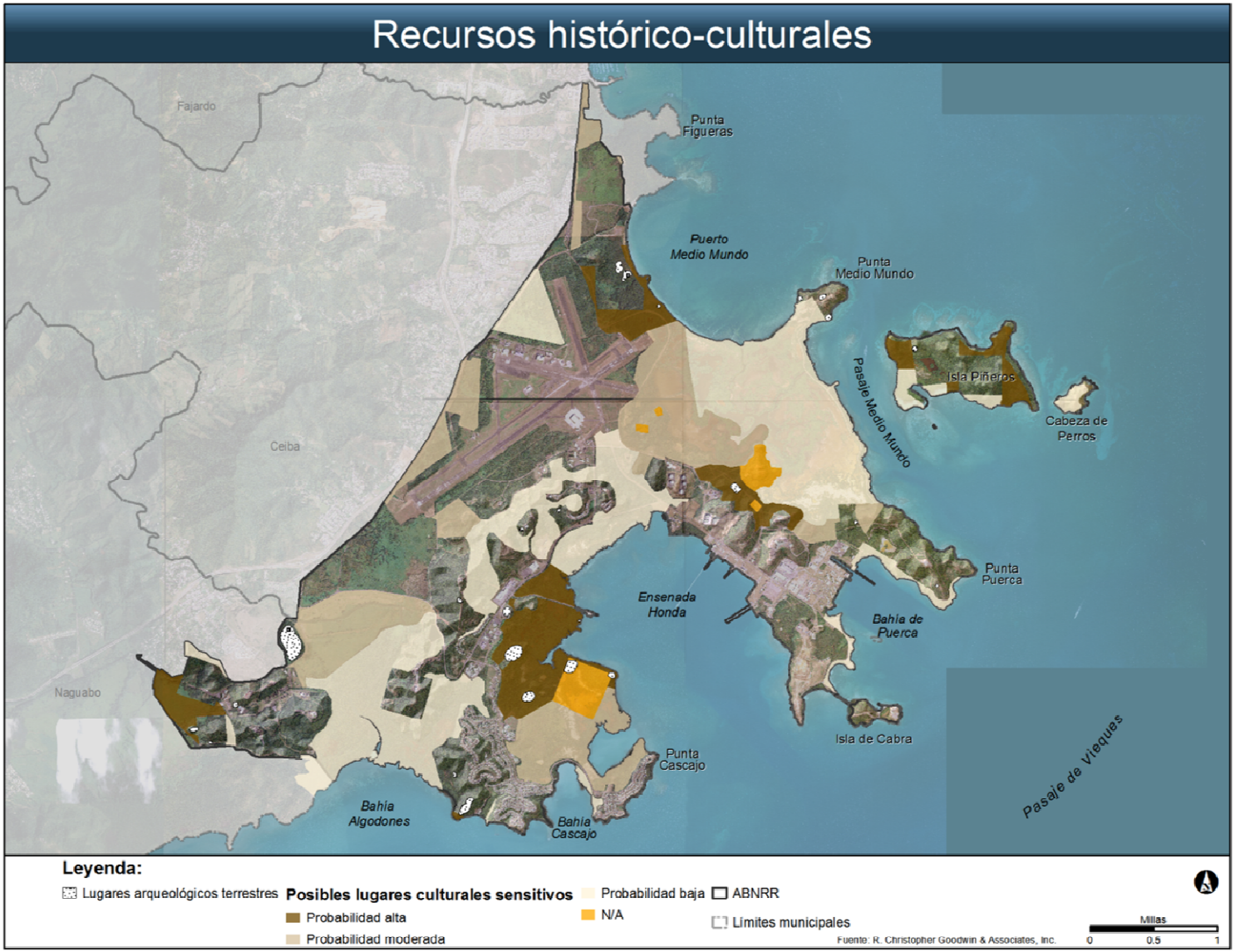
Archaeological Resources

In the lands of the FNSRR have been identified a total of 34 archaeological sites. Of these, 27 were identified during the period from 1994 to 1996 through a survey conducted by the Navy in more than 25% of the FNSRR. The remaining four sites were identified in 2004 and in mid-2005 were studied 79 acres that were considered relatively undisturbed sites with a moderate to high potential to contain archaeological resources, in which were found three additional sites.

Of all the sites identified, 22 are eligible and three are classified as potentially eligible for inclusion in the National Register of Historic Places (NRHP).

According to the Department of the Navy (2005), in 2004 the State Historic Preservation Office (SHPO, for its acronym in English) issued a letter stating that the Navy had completed its efforts of identifying and evaluating land for the architecture on earth, and with the work completed during the summer of 2004 the Navy has met the requirements for the identification of archaeological resources under the 36 CFR 800.4 (a) through (c).

Ilustración 20. Recursos histórico-culturales en los terrenos de la ABNRR



Historic Buildings

Within the lands of the FNSRR 36 buildings or structures that are eligible for inclusion in the NRHP have been identified, which were evaluated as part of the study Architectural Resources Inventory and Evaluation, Naval Station Roosevelt Roads Ceiba, Vieques and Culebra, Puerto Rico, conducted in 2000 and 2001 (Department of the Navy, 2005). On March 3, 2003, SHPO issued a letter which concurred with the results of this report (United States Department of the Navy, Environmental Assessment for the Disposal Activity Puerto Rico, 2007).

In 2004, SHPO signed a letter stating that the Navy had completed the identification and evaluation of architectural and cultural resources in the lands of the FNSRR as required under 36 CFR 800.4 (a) - (c) (CSA, 2008).

INFRASTRUCTURE

Roads

The FNSRR connects with the municipalities of Ceiba and Naguabo, and also with the rest of the eastern area of Puerto Rico, mainly through the state roads PR-3 and PR-53. These roads have sufficient capacity to meet existing and projected demand for the re-development of this project over the next 25 years.

The current accesses to the lands of the FNSRR are the gates 1 and 3. The "Gate 1"provides access from the north of the Naval Station and primarily serves the airport, the area of Los Machos and other features of the northern portion of the Naval station. The "Gate 3" serves the rest of the Naval Station from the far southwest. During the years of operation of the Naval Station there were other accesses which were subsequently closed.

The interior of the FNSRR contains over 100 miles of roads and paths. The modernization and expansion of most of these roads is contemplated. Other existing roads of minor hierarchy will be closed or relocated under the new plan. New works of lighting the streets, creating bike lanes, sidewalks and signage are also contemplated.

Ilustración 21. Infraestructura vial asociada a la ABNRR

Sanitary Sewer

The FNSRR has its own used water treatment system. This system contains several components:

Collection System

Consists of the network of pipes that collect sanitary sewage of the entire Naval Station and discharge the by gravity (32 miles of existing pipe) or pumping (9.5 miles "forced lines" and 28 existing pumping stations) in the three treatment plants within the FNSRR.

Treatment Plants

They consist of mechanical and biological treatment systems to remove solids, nutrients and disinfect the water before discharge. There are three treatment plants in the Naval Station: Bundy, Capehart and Forrestal.

Bundy plant serves the areas of Downtown, Bundy and parts of Capehart. Capehart plant serves mainly residential areas in Capehart. Forrestal's plant serves the areas of the airport, the piers, the hospital and other surrounding areas.

Discharge of Treated Waters

These are the output of treated water into the sea. Bundy plant discharges the water into the Vieques Passage; Capehart plant discharges the water in Ensenada Honda, as well as the Forrestal plant.

Potable water

The water system of the FNSRR consists of three main parts:

Water intake

Receipt of raw water prior to being treated. This takes places in Rio Blanco of Naguabo, 11 miles away from the raw water reserve which is located within the FNSRR. This route is done through a specific line of 27".

Treatment Plant

Conventional system of sedimentation and filtration with parallel routes that make raw water drinkable. The FNSRR has a treatment plant with capacity to treat approximately 4,400,000 gallons per day (GPD). This capacity is sufficient to assume the loads projected within the FNSRR for the next 25 years (excluding supplied to areas outside the Naval Station in Naguabo, and Ceiba).

Distribution System

Distributes drinking water to all the FNSRR. Currently, the distribution system of the FNSRR has over 64 miles of pipeline and includes five storage tanks and seven pumping stations. These facilities must be modernized, including the installation of approximately 20 miles of additional pipeline to the existing.

Ilustración 22. Sistema de agua potable

Electricity

There are two main 38 kV lines that supply electrical power to the FNSRR from the system of the Electric Power Authority (PREPA). One of them serves the airport and the other in Daguao serves eleven (11) substations located throughout the FNSRR that reduce the voltage of the main lines and distribute electrical power to the corresponding voltages required, 13.2kV, 4.16kV or 480V (Source: Reuse Plan2004).

It is planned to transfer this power distribution system to the PREPA, which will make improvements to standardize and upgrade equipment in accordance with applicable codes. Currently there is no independent system of meters into the Naval Station.

Ports

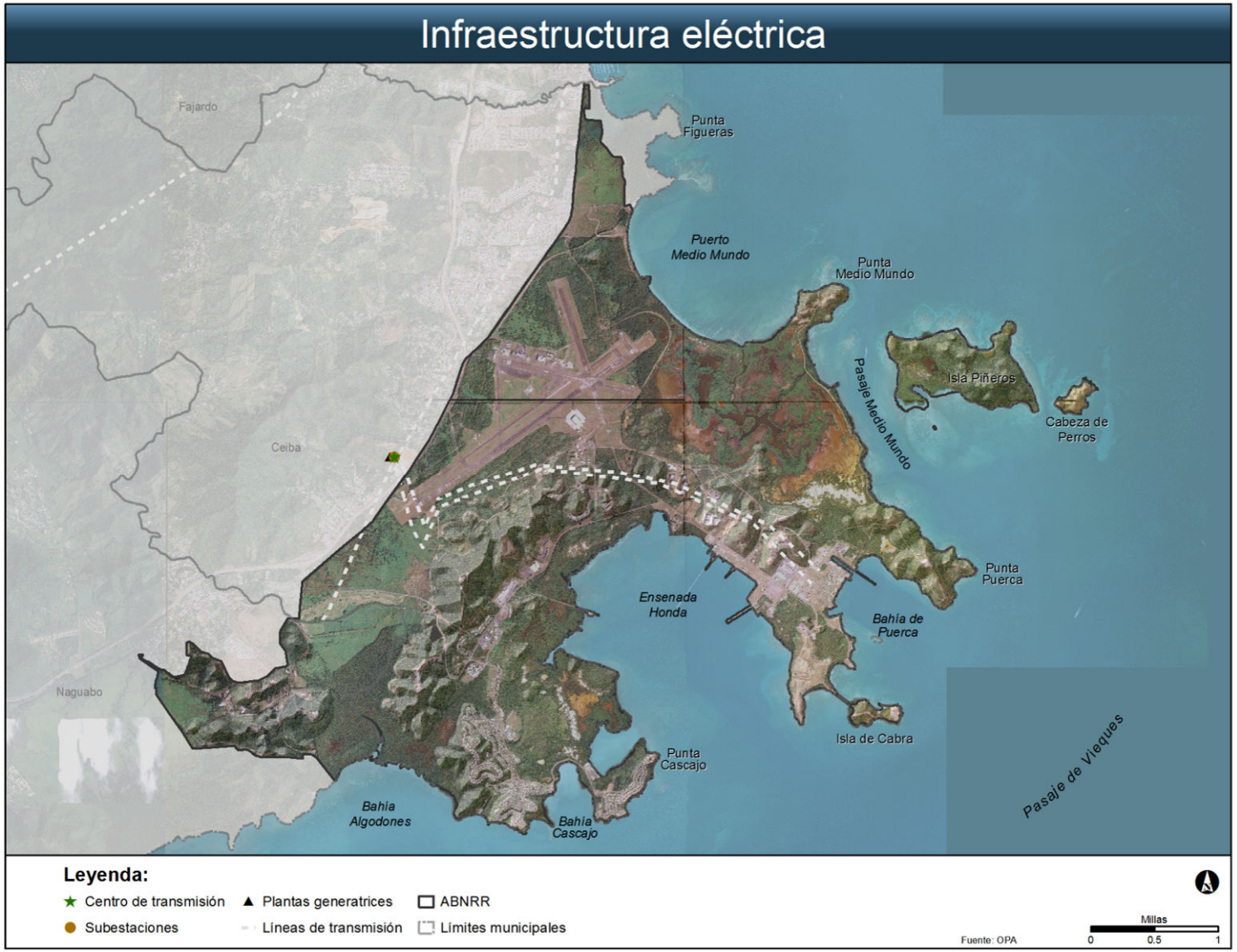
The infrastructure of ports of the FNSRR consists of the airport and the seaports.

The Airport of the FNSRR has one main runway of over 2 linear miles (11,000 feet) and was used by the U.S. Navy to support its fleet of aircraft during training exercises in the area of Ceiba and Vieques. Good conditions at the airport, plus the length of its track, make this an ideal facility to serve the eastern area of Puerto Rico. Currently, the airport José Aponte de la Torre is the basis for several regional airlines and by the presence of the Customs Service has the capacity to receive large-scale international flights.

The Naval Station has two major seaports: Ensenada Honda and Bahia de Puercos. Both facilities have the infrastructure to tie up large ships and draft.

Ensenada Honda was dredged for the last time in the 80's at a depth of 40 feet or so. Its navigation channels are wide enough to receive cruise ships and cargo vessels. It also has a marina of recreational boats and a pier for the fueling that powers tanks located on the mainland. The pier in Bahia de Puercos has a dry dock ("Dry Dock"), unused for decades.

Ilustración 23. Infraestructura eléctrica



CHAPTER 4: CURRENT PLANNING

Planning in the land use of FNSRR requires a review of the plans and regulations related to use of the territory from a regional to a local perspective. While historically the land of the FNSRR has been excluded from regulation on spatial planning as being federal land, it is considered that its transformation to civilian use must evaluate the regulatory conditions that affect it, both directly and indirectly. The following lists the main regulations studied when preparing the land use plan for the FNSRR.

Public Policy Objectives and Land Use Plan for Puerto Rico

This was the first element of the Land Use Plan that was established as a mandate in the "Organic Law of the Planning Board of Puerto Rico", as amended, Act No. 75 of June 24, 1975. This document, adopted by the JP in 1995 - is intended to serve as a guide to agencies and instrumentalities of the Government of Puerto Rico in the formulation of policies, plans and programs. SimilLRAy, should guide decisions and actions on public and private projects as well as in the process of zoning and of other planning tools for land use and other public purposes. It is divided into eight broad goals, namely:

- General goals of the uses of land;
- Goals and objectives of public policy for urban development;
- Goals and objectives of public policy for industrial development;
- Goals and objectives of public policy for agricultural development;
- Goals and objectives of public policy on tourism;
- Goals and objectives of public policy on natural hazards;
- Goals and objectives of public policy for infrastructure;
- Goals and objectives of public policy for natural, environmental and cultural resources.

Strategic Development Plan of Puerto Rico Sustainable (PIDES)

PIDES is the guiding document that sets the vision for economic, urban and social development of Puerto Rico. Its aim is to outline policies for integral development of Puerto Rico and to guide government agencies in the formulation of their plans, programs and projects. In this document the values and large-scale strategic goals based on the principles of environmental and urban sustainability are identified. PIDES was adopted by the Planning Board in May 2010.

Joint Permit Regulation for Construction of Building and Land Use

This Regulation - adopted by JP on November 29, 2010 - is intended to detail the integrated system of permits related to the development and land use in accordance with the public policy outlined in the Act No. 161 of 2009, Law for the Reform of the Permitting Process in Puerto Rico. The same repeals and replaces other planning regulations including the Regulation No. 4, the Regulation for the Calification of Puerto Rico and the Regulation No. 17, Zoning Regulation for the Coastal Zone and the access to the beaches and coasts of Puerto Rico.

Management Program for the Coastal Zone of Puerto Rico (PMZCPR)

This document was developed under the "Federal Law for the Coastal Zone Management, 1972" (CZMA, for its acronym in English) and adopted by JP on July 12, 1978 as the costal element for the Land Use Plan of Puerto Rico (PUTPR) by PU-002Resolution for the JP.

In the municipalities of Ceiba and Naguabo, as in the rest of the coastal municipalities of Puerto Rico, the jurisdiction of the program includes:

> *"... the strip of coastal land of a thousand meters inland, measured from the coastline, as well as additional distance needed to include key natural systems of the coast."*

It also includes the territorial waters of Puerto Rico and the ocean or sea ground under them, as well as several nearby islands and islets. This document was reviewed and updated and is facing the consideration of NOAA and DRNA.

Management Plan for Special Planning Area of Mangroves in Puerto Rico

This plan is intended to establish management strategies for the conservation of all the mangroves of Puerto Rico. The Plan was adopted by the JP in 2003 by the resolution P.U. 002-2003-Mangle PR.

Mangroves in Puerto Rico were designated as Special Planning Areas (APE) in 1978 with the adoption of PMZCPR. These are defined as areas of important coastal resources that are subject to conflicts of present and future use, so they require careful planning.

Naguabo - Humacao Tourist Zone of Interest (ZIT)

The ZIT was adopted in 2000 by JP by means of the Resolution No. 2000-012-JP-ZIT. The delimitation of zones of interest is intended to identify areas with tourism potential to promote their protection and development, applying the existing regulations on land uses so as to promote the location of uses in harmony with the tourism resources within the zone and limits the uses not allowed and / or conflictive.

This ZIT establishes the calification for the coastal land south of the FNSRR in Naguabo, from Ceiba State Forest, including Cayo Algodones, and continues along the coast to the boundary between the Municipality of Humacao and Yabucoa.

Project of integration of Ceiba and Naguabo to the Reuse Plan for the Roosevelt Roads Naval Station

This study was commissioned by the Commerce and Exportation Company in 2004. It was conducted in order to strategically integrate the municipalities of Ceiba and Naguabo to the Reuse Plan for the the Naval Station Roosevelt Roads. It seeks to foster economic development in both municipalities by integrating the proposals of the Plan to those outlined in the Supplement to the Reuse Plan. The proposals of this plan are framed in the following eight areas of intervention.

- Revitalization of Ceiba and Naguabo urban centers;
- To improve the connection between urban centers and the FNSRR, the transport for tourism and recreational purposes using motorized and non-motorized media and the access from the surrounding communities to the FNSRR, particularly Daguao community;
- Sectors with potential, particularly the housing for the elderly and reuse of PRIDCO facilities for the establishment of retail and office services;
- Sustainable Tourism, which focuses on the tourism of nature - ecotourism and cultural tourism;
- To improve the provision of potable water, sanitary sewer, the development of renewable energy and supply and distribution of electricity;
- To provide affordable housing;
- Development of educational programs and recycling companies, and
- Development of community gardens and sustainable manual specific agriculture to the municipalities of Ceiba and Naguabo.

Territorial Plan of the Municipality of Ceiba (draft)

The Municipality of Ceiba is in the process of developing their Territorial Plan (TP).Currently, the document is in Phase II known as Report. This document does not include general proposals for the area of the FNSRR, except for the conveyed “Los Machos” parcel. However, the PT provides a set of policies designed to the areas of need in the Municipality, some that could be addressed in redevelopment of the FNSRR.

Territorial Plan of the Municipality of Naguabo (draft)

The municipality of Naguabo is in the Final Phase (IV) of their Territorial Plan. Like the PT of the Municipality of Ceiba, the PT of the Municipality of Naguabo does not extend to the land of the FNSRR. However, this document presents a series of land use initiatives designed to stimulate the controlled development and the economic activity in the municipality that could be integrated into the redevelopment of the FNSRR.

CHAPTER 5: MARKET ANALYSIS AND DIAGNOSIS

Based on an analysis of the inventory of resources and the circumstances of the land of the FNSRR, this situation analysis is presented which is divided into 4 main areas: economic development and tourism, infrastructure, housing and urban development and conservation.

ECONOMIC DEVELOPMENT AND TOURISM

The availability of communication channels between the metropolitan area of San Juan and the FNSRR and the availability of ports and airport in the former Naval Station make this a strategic location to promote economic development in the east of Puerto Rico, especially Ceiba, Naguabo and the islands of Vieques and Culebra.

Hospitality Market

Data from the Tourism Company of Puerto Rico indicate that in 2008, the inventory of hotels endorsed was of 13.315 rooms. In 2010, this figure is projected to reach the15.543 rooms. However, it appears that the inventory of hotels in Puerto Rico is less than for other tourist destinations in the Caribbean.

The largest concentration of hotel rooms in the island is between the metropolitan area of San Juan (SJMA) and to the northeast, between the municipalities of Rio Grande, Fajardo and Luquillo. The municipalities in the Southeast, between Humacao and Yabucoa, also have tourist facilities.

The lands of the FNSRR provide the opportunity for Ceiba and Naguabo to provide quality and affordable tourism alternatives.

The economic crisis of recent years has affected the chances of funding needed for the construction of new hotels and resorts in Puerto Rico. To mitigate the situation, the Government of Puerto Rico has taken a proactive role, providing incentives and guarantees to investors.

The redevelopment of the FNSRR is presented as an opportunity to attract investment that favors the tourism industry in the island and provide opportunities for strengthening the Eastern Region. The existing infrastructure in the area - the airport, the docks of greater depth and the seafront - together with proposals for amenities such as casinos and hotels, provide opportunities to induce demand for tourism in Puerto Rico.

Recently, around 400 to 600 hotel rooms have been added annually to the markets between the SJMA and the Eastern Region. The estimates presented in the Supplement (2010) point out that the redevelopment of the FNSRR will induce or meet the demand of growth from 100 to 200 rooms annually.

Associated with the hotel industry, in addition, there is the potential of developing a gambling center.

Office Market

The transformation of the land of the FNSRR provides the opportunity to incorporate the development of office space, considering that the housing market and accommodation will eventually generate demand for them. Moreover, the transformation of the area in a node between the SJMA and the South of Puerto Rico and its access to main roads provide the opportunity for office market development as one of the components of this mixed use development.

Commercial Spaces

About 41% of the commercial centers of in the island are located in the SJMA. According to the National Research Bureau Shopping Center Database and Statistical Model, the demand for retail in Puerto Rico can absorb more growth in the retail industry.

The estimated demand for retail sales and the value of spending on such sales on the area of interest are considered adequate to support retail spaces.

Industrial market

The largest industries in Puerto Rico are: the field of manufacturing and warehousing and distribution, which are concentrated in the SJMA.

In the redevelopment of the lands of the FNSRR, the areas near the airport provide suitable spaces for the location of industrial activities. The airport, by its nature, has the potential to attract industrial-related uses that may be located in these areas.

INFRASTRUCTURE

The lands of the FNSRR accommodate communal structures as schools, a bowling alley, a hotel and retail spaces which have the potential to be rehabilitated and reused as part of the redevelopment effort.

The area also has a roadway infrastructure, ports, roads, drinking water, among others, that - after a modernization of it - would facilitate its redevelopment.

The improvement that has been made to the airport that is located within the premises of the FNSRR implies an attraction for the tourist development and improves the connection of the Big Island with the Eastern Caribbean.

The presence of two deep draft ports on the premises of the FNSRR will allow the area to become an important port which could serve to the cruise and ferries industry, as well as a connection point between Vieques and Culebra and the Caribbean.

The presence of the waterfront represents an area of opportunity for its redevelopment and transformation as a tourist destination.

HOUSING AND URBAN DEVELOPMENT

First Home Market

The planned development for the FNSRR is expected to increase the market for first housing in the Eastern Region at creating permanent jobs that will increase the base of the working class in the region and their income. Therefore, it is expected that these increase the demand for housing in the municipalities of Fajardo, Ceiba and Naguabo.

In the eastern region, the secondary housing market is dominated by the Municipality of Rio Grande and Humacao, and to a lesser portion, the municipalities Fajardo and Ceiba.

The development of the FNSRR should contain a balance between the products of primary and secondary housing. It is expected that the proposed amenities and the existing infrastructure increase the absorption capacity of the secondary housing market.

CONSERVATION AND UTILIZATION OF NATURAL RESOURCES AND OPEN SPACES

The area contains unique natural elements, such as the dwarf mangrove and flora and fauna elements that may be attractive for the development of nature tourism activities, like bird watching, kayaking and other passive recreation activities. The presence of critical elements, on the other hand, requires proper management of the land.

Environmentally sensitive areas have been transferred to the DRNA, who has delegated its management to the Conservation Trusteeship of Puerto Rico, and currently has a draft management plan. The FCPR is a conservationist organization, highlighted by the administration and management of its natural areas, many of which are known as destinations for the tourism of nature (e.g. Cabezas de San Juan). The "trademark" of the FCPR adds value to the promotion of the lands of the FNSRR as a destination for the tourism of nature in the Caribbean.

The proximity of the lands of the FNSRR to El Yunque allows the development of initiatives of nature tourism that integrate the fields of El Yunque to the Natural Protected Area Medio Mundo and Daguao and that promote the development of the ecotourism to the benefit of the local communities.

The proximity to Vieques and the availability of port infrastructure allow the development of initiatives of tourism and freight transportation and passengers to the U.S. Virgin Islands and the rest of the Eastern Caribbean.

Existing marine facilities in Puerto Rico primarily supply the needs of the local sailors. However, at the international level; the facilities for mega yachts accompanied by high quality services have gained importance. In addition, the need to provide spaces to dock transient flutes has been observed. In this direction, the port areas of the FNSRR

provide the opportunity and the physical characteristics for the development of nautical tourism in the area.

The presence of the waterfront and its potential conversion to a developed urban destination, together with the ecological destinations within the FNSRR has the potential to create new opportunities for redevelopment and transformation of Roosevelt Roads as a tourist destination at local, regional and international levels.

CHAPTER 6: PROJECTS PROGRAM

The projects to be developed within the FNSRR must comply with the Goals and Objectives of the Reuse Plan for the FNSRR. The LRA will ensure the achievement of those objectives through the maintenance of the Master Plan and the endorsement of public and private projects proposed for the area.

Among the major programs proposed in the Master Plan the Tourism Development, Conservation of Natural Resources, Commercial and Residential are included. Other programs allowed are Institutional, Recreational, Light Industrial and of Facilities.

TOURISM DEVELOPMENT PROGRAM

The development of tourism related facilities form the central part of the Redevelopment Plan for the FNSRR; the multiplier effect on the economy thanks to tourism expenses is very positive for creating jobs. Among the projects scheduled to take place within the next few years are included:

Port Caribe

The focal point within the Reuse Plan for Roosevelt Roads is the main piers area (now re-named "Port Caribe") that will encourage the development of uses attractive for the tourism that are associated with ocean fronts, among which are found:

- a linear walk,
- entertainment venues,
- a cruise ship pier,
- a ferry boat terminal with direct connections to Vieques and Culebra
- a marina for private boats, among others.

For its strategic location and by being the area of the FNSRR with the greatest impact of previous development, the character of this area will be of high density and mixed uses.

Hotel Riviera del Caribe

Located next to the touristic piers for Port Caribe, the Hotel Riviera del Caribe will become the hotel development anchor of the Master Plan. With a construction that exceeds the two million square feet and over $ 900,000,000 in investment, this development will become the primary tourist destination of the entire area east of Puerto Rico. The proposal for the Riviera del Caribe contains a hotel, casino, world class entertainment and extensive gardens to enjoy the views and pleasant climate offered by this location.

The nature of this area of development will be of mixed uses dedicated to tourism. The proposed densities will be high and will keep extensive open and green areas.

El Yunque Grand

Occupying land of Punta Puerca and the secondary pier attached, El Yunque Grand will be a hotel and commercial development with great emphasis on the enjoyment of ecotourism. Advantage will be taken of the unique natural features of Punta Puerca to offer a world class eco-resort that will be marketed as portal to the National Forest of El Yunque.

The characteristics of development within Punta Puerca are of low density and varied eco-tourism uses.

CONSERVATION PROGRAM

Much of the territorial extension of the FNSRR has high ecological value and as such is reserved for conservation.

ANPMMD

About 3.400 cuerdas of land are managed by the Conservation Trusteeship of Puerto Rico (FCPR) as a Natural Protected Area. Within this area applies the implementation of the Management Plan for the Protected Natural Area Medio Mundo and Daguao (ANPMMD), which has been prepared by the FCPR and proposed projects of scientific study, education and low impact recreation related to the ecosystem and its visual appeal.

Because of their scenic, recreational and scientific value, protected areas within the FNSRR will serve as a complementary tourist attraction to the Master Plan of Roosevelt Roads.

Naval Activity Puerto Rico "Biological Assessment"

In 2005, the Navy adopted a Biological Assessment to identify and Project endangered species found in FNSRR.

The protection measures established as parto f the "*Parcel Map for the Disposal of Naval Activity Puerto Rico*" (September 2005) are being incorporated into this Master Plan. Every developer and operator inside NSRR must familiarize and implement such measures in order to comply with this Land Use Plan.

INDUSTRIAL AND COMMERCIAL DEVELOPMENT PROGRAM

Several areas within the Naval Station have been separated for the development of light industrial projects, which should take advantage of the existing infrastructure that includes the airport and the fuel tanks.

In addition, the entire territory has also been zoned to allow the development of commercial parcels with mixed uses whose purpose will be to provide the FNSRR with spaces for shops and services that benefit residents, employees and visitors to the FNSRR. The presence of tourists requires of spaces for their enjoyment by providing commercial uses such as shops, offices, car rental services, etc.

Airside Park

Adjacent to the airport is zoned land to promote the establishment of light industrial development. These areas are ideal for companies or public agencies that require proximity to an airstrip with capacity for the landing of cargo planes and that, in turn, be located near highways and ports.

Fueling Tank Farm & Pier

The existing fuel storage facilities of the FNSRR will be transferred to an agency that administers them for the same use. In addition, it will be possible to generate economic activity by keeping operative a pier of fuel filling, supplementary to the Tank Farm. Within this area industrial uses such as recycling plants and generators of electricity that use renewable energy sources will also be considered.

INSTITUTIONAL DEVELOPMENT PROGRAM

To promote mixed uses within the FNSRR, some of the lands have been qualified to allow the development of institutional projects. These spaces will promote the establishment in the lands of the FNSRR of educational institutions, social services and health services, among others. These institutions will attend the people of Ceiba, Naguabo, Vieques and Culebra, as well as tourists from Roosvelt Roads.

Hospital

Hospital The Roosevelt Roads has a capacity of over 300 beds and can be positioned to meet the needs of primary and secondary health of the residents of Vieques and Culebra, as well as the residents of the east area of Puerto Rico. It can also be used to promote the health tourism industry, where foreign visitors will be attended in a world-class facility while staying within the lands of the FNSRR.

Capehart Institutional Development

Within the area of Capehart, institutional development consistent with existing and proposed residential areas will be permitted. Within the uses permitted, pre-university and university educational complexes and areas for corporate retreats are included among others.

RECREATIONAL PROGRAM

Within the Naval Station, areas have been zoned for recreational use - passive and active - which promote recreation and leisure for residents and visitors in outdoor spaces. Among the planned uses are included: sports complex, marina, golf courses and different kinds of parks of passive and active recreation.

Sports Core

Within the area adjacent to the "Gate 3", including the oldest golf course, active and passive recreational uses are permitted to promote the enjoyment of nature and sports

activities. Permitted uses will include the Botanical Gardens, equestrian facilities, soccer, baseball, basketball and tennis fields, etc.

In addition, hotel amenities and small-scale houses can be developed compatible with these recreational uses.

Marinas

There is infrastructure related to a marine of recreational vessels that will be maintained and modernized to allow the dock more vessels without affecting the marine biology of the place. Tourism development will be allowed around it (residential, shops, small hostels, etc.), thus leveraging the availability of these marine facilities.

Golf Courses

Two golf courses are planned for the FNSRR. For the construction and maintenance of these facilities it will be required the implementation of methods of environmental protection and energy saving. It will be taken into account the protection of endangered species and use of scenic views that should be protected. It will be required from the golf course developers and operators that golf facilities inside Roosevelt Roads follow the "Audubon Cooperative Sanctuary Program" or similar certification requirements.

Ceiba Park

In the area near the airport entrance (Gate 1) will be located a recreational area known as Ceiba Park. There, the creation of coastal recreational facilities (beaches, restaurants, open areas for recreation, fishing pier, etc.) will be promoted and will also serve as a guide (Interpretive Center) about the protected lands of the Conservation Trusteeship within Roosevelt Roads.

Projects of low impact and low density are planned within these areas.

INFRASTRUCTURE AND FACILITIES PROGRAM

Among the uses for facilities planned for the lands of the FNSRR there are the piers for ferries, the cruise piers and the airport, among others. There are scheduled, also, spaces for infrastructure support that include water treatment plants, electrical substations, roads, etc.

Airport

The airport José Aponte de la Torre was transferred by the Navy to the Government of Puerto Rico and is operated by the Port Authority. The same has a main landing runway 11,000 feet long. This installation presents an excellent opportunity for the development of a tourist product in the FNSRR that include air transportation from various international destinations and that communicates the tourist with the Virgin Islands by air.

The airport has space for growing to accommodate industries and agencies that require access to the track. To allow this use, surrounding areas are zoned as industrial.

RESIDENTIAL PROGRAM

As a fundamental part for the redevelopment of the lands of the Naval Station, scheduled space is distributed throughout the territory and dedicated to residential use. These areas will provide development capacity of approximately 1.465 units of basic housing (UVB), which represents an extremely low density in harmony with previous plans. These residential areas will promote mixed uses, so that will combine houses with tourist, recreational, institutional and commercial uses.

Some areas have been classified as residential-touristic due to its high scenic value and to allow the presence of mixed-use spaces. Capehart area has a character predominantly residential because it had this use since the creation of the FNSRR.

CHAPTER 7: GENERAL FEATURES TO GUIDE THE USE OF THE LAND AT THE FNSRR

The use of lands in the FNSRR is framed within the Objectives and Public Policies of the Land Use Plan for Puerto Rico, adopted by the Planning Board in 1995. It sets the following general goals for the use of land, many of which are part of this Master Plan:

- To direct the planning process towards the achievement of a comprehensive sustainable development, ensuring the judicious use of land resources and promoting the conservation of our natural resources for the enjoyment and benefit of present and future generations.
- To develop and implement a land use model within a framework of action ecologically sustainable.
- • To implement educational programs, counseling and reports about the land use that empower and raise awareness to society of the use of tools and techniques of sustainable land development that meet the needs of our present generation and future generations.
- To achieve a balanced urban rural development planning judiciously the land use compatible to the environment and the dynamics of population growth in communities, municipalities and regions, promoting accessibility and the benefits of sustainable development.
- To protect the environment planning the urban development in a compact form in locations designated according to the intensity of use, to protect the land, the water quality and to maintain strict standards of air quality, and provide alternatives of collective transportation to the population.
- To identify, protect and preserve land of high natural value that are part of the natural heritage of Puerto Ricans, to promote the development of activities which foster the judicious use of these lands for the benefit and enjoyment of present and future generations.
- To protect areas of high agricultural productivity and to promote the development of agro-industrial activities in those areas with potential for such uses.
- To encourage affordable housing construction while planning housing developments oriented to families of low and moderate income.
- To identify, protect, preserve and restore historic sites and areas, public spaces, recreational areas, structures and resources that are part of the cultural and historical heritage.
- To minimize the risk of losing life, property and the natural resource degradation as a result of natural disasters through mitigation plans in areas prone to such disasters and to plan the development of high-density land outside the areas identified as susceptible to these risks.
- To coordinate the municipal, state and regional infrastructure investments inducing a more efficient use of public investment programs, strengthening the programs of maintenance and restoration of

existing systems while safeguarding the environment and land resources.

- To achieve the healthy coexistence and social harmony through education and creation of opportunities for advancement for all citizens, encouraging citizen participation, access to information and the reasonable distribution of the benefits of comprehensive and sustainable development among all regions.

MASTER PLAN GOALS

This Master Plan has as general objectives:

- To direct the urban development into existing communities and to the impacted areas.
- To promote mixed use development, which includes the redevelopment of built up areas.
- To provide housing options for both visitors and area residents.
- To promote the use of these lands so that they produce positive impacts at local, regional and island level.
- To provide recreation and leisure spaces to serve both local communities and tourists.
- To take advantage of environmental and infrastructure resources of this property in a comprehensive manner so as to provide positive impacts in the area, Ceiba and Naguabo communities and the region.
- To promote sustainable development in harmony with the natural character of conservation areas of the property, including the implementation of renewable energy sources.
- To highlight the coastal resources and scenic views in the development of amenities and ensure that they provide access to the coast.
- To prepare the existing infrastructure in order to increase the means of access by road, air and sea to the region.
- To promote greater social interaction in the region through the development of residential uses and housing designs that meet the interests and needs of future users.
- To highlighting and integrate the particular and touristic resources in the region, such as El Yunque, to the use of the land.
- To create the right conditions in terms of regulations to facilitate investment, both locally and internationally.

DEVELOPMENT AREAS

The Reuse Plan for the FNSRR includes 11 development zones, each with specific characteristics and uses according to their geographic location and existing infrastructure. For the purposes of covering in this report all the lands of the FNSRR, the geographic areas not covered by these 11 districts have been demarcated as zones 12 to 17.

Following is a breakdown of the 17 districts and their intended uses:

Zone 1 Port Caribe

Located in front of Ensenada Honda, in the area of the FNSRR with greater previous development. Its access to the sea promotes the port development insignia and commercial heart of the plan for reuse. Its main uses include:

- Walk Port with components of entertainment, restaurants, services and retail
- Hotel component
- Port of international cruises and the regional ferry to Vieques and Culebra
- Recreational marine of small boats
- Hospital
- Industrial area with fuel reserve ("tank farm", recycling plant and other infrastructure)
- Other uses of support related to the presence of the waterfront, hospital, industrial zone, hotels, etc.

Zone 2 Caribbean Riviera

Its location, between Ensenada Honda and Bahia de Puerca - make this area one ideal to locate the anchor tourist destination, adjacent to Port Caribe. Its main uses include:

- Hotel complex with component of gambling
- Touristic entertainment with shops, restaurants and services
- Civic gardens facing the sea
- Golf course of championship[1]
- Other uses of support related to the presence of the waterfront, resorts and tourist entertainment, etc..

Zone 3 El Yunque Grand

Punta Puerca is one of the most privileged locations within the FNSRR because of its scenic views and natural surroundings. It is proposed to use the topic of El Yunque National Forest to give unique character to this development. To maintain the prevailing character in this area, low-density uses and sustainable construction are proposed, among which are:

- Hotel (s) of sustainable nature with villas
- Interpretive Center of El Yunque
- Other uses of support related to the eco-hotel and visitors center

Zone 3 also includes a portion of Camp Moscrip adjacent to the Army land. Here are proposed touristic uses that take advantage of its port infrastructure and proximity to Caribbean Riviera. Proposed uses include:

[1] Every It will be required from the golf course developers and operators that golf facilities inside Roosevelt Roads follow the "Audubon Cooperative Sanctuary Program" or similar certification requirements.

- Walk Port with touristic commercial uses and services
- Fishing Centre for entertainment
- Residential villas overlooking the harbor
- Other uses of support related to the location facing the harbor and the proximity of this area with El Yunque Grand, Caribbean Riviera, land of the Army and Punta Puerca

In the event that the Army Reserve facilities have been relocated, and the land transferred to the LRA or private entity, these lands would become part of Zone 3.

Zone 4 Marsh Vista

Marsh Vista is located adjacent to the lands of the ANPMMD in a high area with spectacular views. This location serves as a transition among the developed land of Port Caribe to the south, with the ANPMMD to the north, so its development must be consistent with the function of the buffer zone. Uses include:

- Golf course and clubhouse with restaurant
- Residential villas overlooking the ANPMMD and the sea
- Other uses related to this location (as a buffer zone) and the residential and recreational uses described above

Zone 5 Eco-outpost

Punta Medio Mundo is accessed only through the lands of the ANPMMD and therefore must have a conservationist nature and with uses of very low density. We propose the following uses:

- Ecological accommodations area
- Center for Research related to the ANPMMD
- Boardwalks and observation platforms
- Other uses of related support with a conservationist nature of this area

Zone 6 Uplands

Its location in the mountains of Las Delicias, between "Main Street" (Zone 7) and the Airport made suitable the location of mixed-use, of low and medium density, complementary to the rest of the the Master Plan. Among these uses are:

- Light industrial park related to the airport
- Multi-terrain golf course with a sustainable nature[2]
- Residences related to the golf course
- Residential developments with ocean views
- Areas of commercial and office support

[2] Every It will be required from the golf course developers and operators that golf facilities inside Roosevelt Roads follow the “Audubon Cooperative Sanctuary Program” or similar certification requirements.

- Other uses of support related the presence of the golf, residential villas, light industrial park, etc.

Zone 7 Main Street

The Zone 7 located in "Downtown", an area with extensive infrastructure and existing buildings with potential for reuse. Among the proposed uses that are included:

- Commerce support for the neighborhood
- Educational Facilities
- Student housing
- Housing (houses, apartments)
- Offices and services
- Hotel redevelopment of the Navy Lodge
- Other uses of support related to the neighborhood and educational use of the area that take advantage of existing infrastructure.

Zone 8 Sports Core

Located next to Gate 3 and with direct access from the PR-53 in Naguabo, these lands contain areas undeveloped and suitable for maintaining green areas. Among the proposed uses that are included:

- Sports facilities for regional use
- Equestrian amenities
- Environments of parks and gardens of passive use
- Commercial facilities for community use
- Other commercial and touristic amenities related with recreational uses predominant in this area. May include sports school, lodging, retail, etc.

Zone 9 Island Paradise

This area is characterized by having an isolated location, relatively remote from the rest of the development. It is proposed to create a destination for training and corporate conference center with several products addressing this market. Among the proposed uses are the following:

- Amenities for conferences, training and retreats
- Hotels
- Commerce and uses of support (including restaurants)
- Residential and tourist villages
- Other uses related to the nature of retirement in this area

Zone 10 Capehart

Capehart has a residential nature since the beginning of Roosevelt Roads. It is proposed to reinforce this behavior by adding other amenities of support to the residential use. Among the proposed uses are included:

- Residential and tourist villages
- Light Commercial (retail, restaurants)
- Corporate uses (potential for corporate or institutional campus)

- Public beach
- Other uses related to the predominantly residential nature and of mixed-use of medium and low density.

Zone 11 Ceiba Park

Ceiba Park is located next to Gate 1, near the airport and the urban center of La Ceiba. The location includes a parcel to the north of the beach Los Machos. Although the analysis of the FNSRR conducted as part of this Report includes the parcel of Los Machos, transferred to the municipality of Ceiba by a PBC, this parcel is not part of the land qualified / classified under this effort. This parcel is part of the Territorial Plan of the Municipality of Ceiba and therefore is not zoned in this document.

For this zone 11, multiple uses for public enjoyment are intended to be developed, including a welcome center to the complex of Roosevelt Roads. Among the amenities to locate in this area are:

- Business development for public use (including parks, retail, tourist cabins, etc.).
- Amenities related to Villa Pesquera and the fishing pier
- Public Service Offices
- Other uses related to the location near the main entrance to the FNSRR and its proximity to the urban center of Ceiba.

Zone 12 Airport

This area is occupied by the lands of the FNSRR already transferred to the Port Authority (PA) through a "Public Benefit Conveyance" (PBC). These lands are managed according to a Master Plan developed exclusively for this site by the AP. The airport is operating as a regional one.

Zone 13 Medio Mundo Conservation

This area is located within the lands belonging to the DRNA and is administered by the Conservation Trusteeship. The geographic boundaries and the proposed uses in this portion of land are defined according to the draft of the Management Plan of the ANPMMD.

Zone 14 Ensenada Honda Conservation

This area is located within the lands belonging to the DRNA and is administered by the Conservation Trusteeship. The geographic boundaries and the proposed uses in this portion of land are defined according to the draft of the Management Plan of the ANPMMD.

Zone 15 Daguao Conservation

This area is located within the lands belonging to the DRNA and is administered by the Conservation Trusteeship. The geographic boundaries and the proposed uses in this portion of land are defined according to the draft of the Management Plan of the ANPMMD.

Zone 16 Piñeros Conservation

This area is located within the lands belonging to the DRNA and is administered by the Conservation Trusteeship. The geographic boundaries and the proposed uses in this portion of land are defined according to the draft of the Management Plan of the ANPMMD. Currently the islands of Piñero and Cabeza de Perro are in process of remediation from the Navy before being transferred to the DRNA.

Zone 17 U.S. Government Lands

This area is composed by the parcels transferred to federal agencies as part of the processes under BRAC. These parcels are not contiguous with each other and are located throughout all the land of FNSRR and include:

- Army Reserve
- U.S. Coast Guard
- Department of Homeland Security

Belonging to the federal government, these lands will not be qualified / classified as part of this Master Plan.

Figura . Áreas del Plan de Reúso de la ABNRR

CHAPTER 8: PROPOSALS FOR CLASSIFICATION AND CALIFICATION

The redevelopment of the FNSRR involves changes in the prevailing usage patterns prior to the closure of this military base in 2004. Proposals for classification and calification described here are based, among other things, in existing environmental qualities of the FNSRR soils, in the socio-cultural context where the former Naval Station is located, in uses proposed by previous studies and in the existing behavior of the ground.

CLASSIFICATION OF LAND IN THE FNSRR

According to the Joint Regulation of the Planning Board, the classification is defined as the land distribution into three basic categories: urban land, buildable land and rural land. Definitions of these classifications are taken from the Act 81 of 1991, as amended, Autonomous Municipalities Act. The classifications proposed in this Master Plan for the FNSRR lands are:

Urban Land

It consists of land that has road access, water supply, electricity supply and other infrastructure necessary to the development of administrative, economic and social activities that are performed in these soils and that are included in consolidated areas by the edification.

Rural Land

Consisting of land which must be specifically protected of the urbanization process due to, among others, its agricultural and livestock value, actual or potential; its natural value; its recreational value, actual or potential; of the risks to the safety or public health; or because it is not necessary to meet the expectations of urban growth in the foreseeable future of eight (8) years. This soil classification includes two categories:

- **Rural Common Soil**: Not considered for urban use or buildable because, among others, the urban or developable land classified by the Plan is sufficient to accommodate anticipated urban development.
- **Specially Protected Rural Land**: Its not contemplated for urban use or buildable because of its special location, topography, aesthetic, archaeological or ecological unique natural resources or other attributes, it is identified as an area that should never be used as urban land.

In the lands of the FNSRR the built areas that have basic infrastructure have been classified as urban land, among which are the waterfront, the area of Capehart, Downtown, Moscrip and the airport, including areas such as Las Delicias, Bundy, Punta Puerca and the old landfill.

The rural lands are comprised by the lands of the ANPDMM, which were classified as specially protected

rural land. Other areas of wetlands associated to Ensenada Honda were also classified as specially protected rural land.

The lands of Punta Medio Mundo and Playa Cascajo were classified as common rural land. The lands that are owned by the federal government were excluded from the calification and classification.

Of the total land within the FNSRR, the area devoted to conservation comprises 40%, while urban land reaches the 58.6%. The remaining 1.45% belongs to non-federal lands classified under this Plan. However, federal land (SF) was identified for purposes of the management plan.

Tabla 11. Resumen de las clasificaciones propuestas

CLASIFICACIONES		
SU	20,542,622	58.6%
SREP	13,721,155	39.1%
SRC	300,376	0.9%
Propiedad Federal	512,082	1.5%
Total	35,076,235	100.0%

CALIFICATION OF LANDS

The califications (zoning) of the land have been defined using the districts designated by the Joint Regulation of Permits for Construction Works and Land Use, adopted by the PB on November 29, 2010. In this way it will be possible the evaluation of projects, taking advantage of the knowledge and experience accumulated by the rating agencies and practitioners proponents concerning the content of this Joint Regulation.

Fulfilling the goals and objectives of public policy for the LRA, the land has been zoned in ways that promote its transformation and orderly and sustainable use. It also seeks to promote redevelopment in the short, medium and long term by enabling the adapted reuse of existing properties for the immediate benefit of these lands and to program the development of other areas in a longer period of time.

Note that this Land Use Plan allows densities and gross areas of construction far below the ones provided in the califications of the Joint Regulation. That is why this Master Plan describes -within each of the 17 zones that divide the FNSRR - any change or variation related to density (square feet for each Dwelling Unit Basic) and / or gross building area.

Ilustración 24. Mapa de Clasificación de Suelos

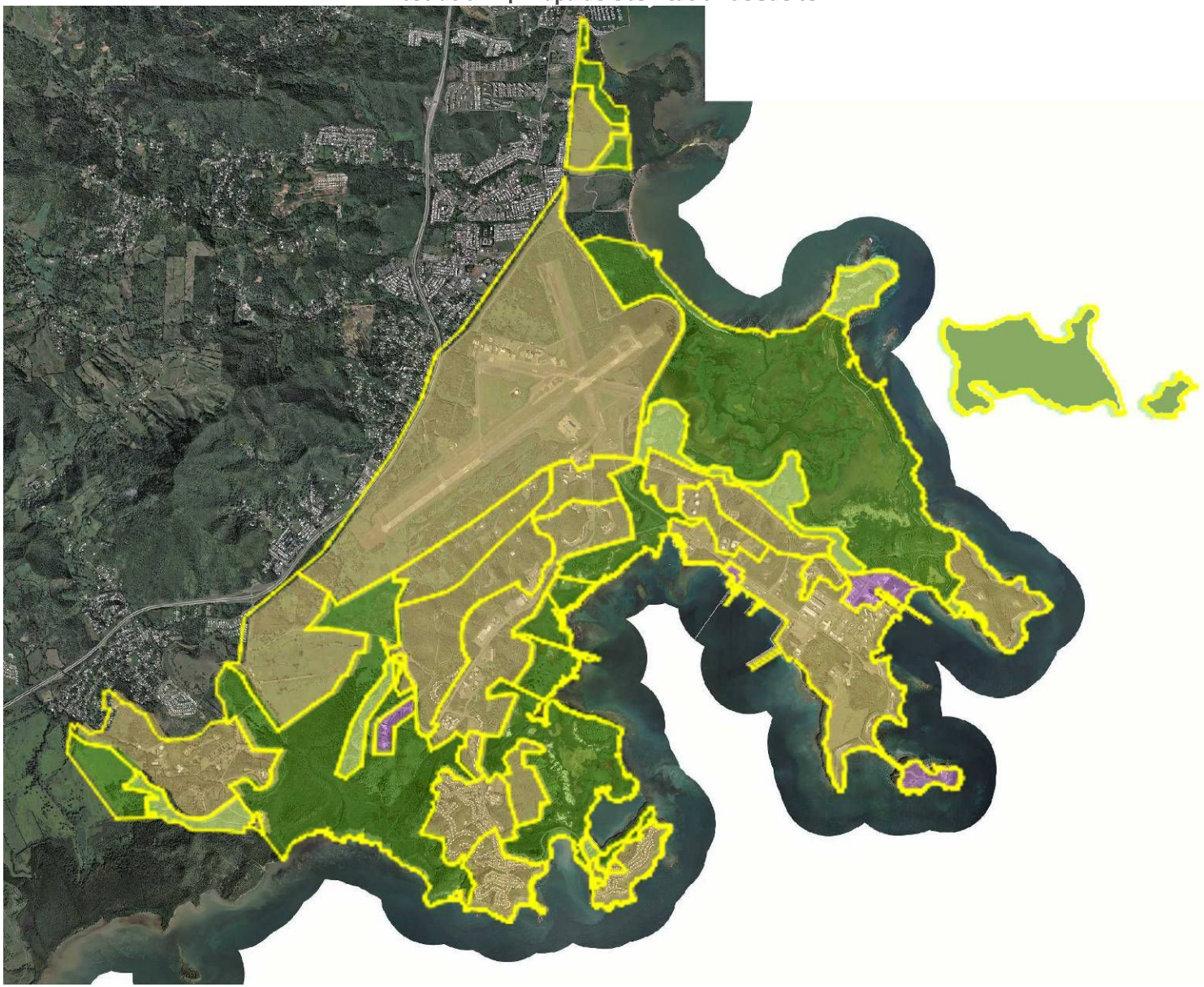
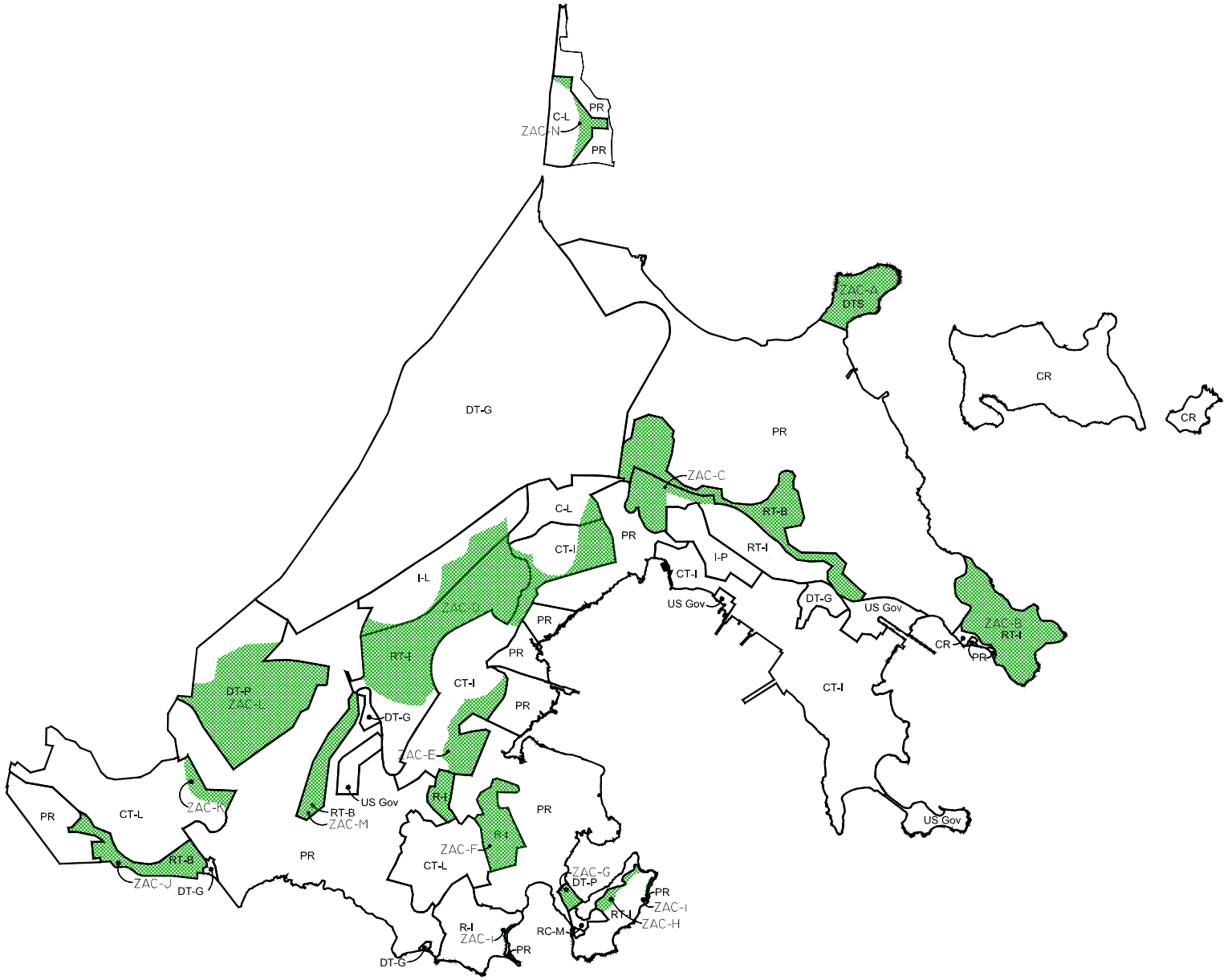


Ilustración 25. Mapa de Calificación



BUFFER AND CONNECTIVITY ZONES

Considering the ecological importance of representing the protected lands belonging to the ANPMMD and tempering FNSRR the development of the to the topic of sustainable tourism, this land use plan contemplates the presence of some buffer and connectivity zones (ZAC) by way of special restrictions superimposed at the underlying califications. These "overlays" do not replace califications defined in the map of calification; they represent a second set of instructions which add and / or modify the calification parameters defined in the Joint Regulation.

In essence, the ZAC impose certain requirements for conservation and sustainable construction for the developments to be carried out within these areas. In addition, each ZAC may represent the presence of some limits to the established in the Joint Regulation in terms of density (square feet for each dwelling unit) and / or gross floor area. The ZAC may require the following parameters within each of these:

1. Detailed Hydrologic-Hydraulic Study. All permits to register for projects within the ZAC should conduct an H & H study taking into account the behavior of storm water from and to the land protected adjacent to the ZAC.

2. Detailed ESC Plan. All permits to register for projects within the ZAC should make a detailed Erosion and Sedimentation Control Plan, considering especially the protection of lands qualified as protected. The lands protected from Roosevelt Roads are very sensitive to changes produced by the entry of sedimentation caused by uncontrolled earth movement and generated by ordinary work in the adjacent district. This is why particular attention is required for these areas through the requirement of the special CES Plan.

3. Green Permit Requirement. There are some ZAC with special requirements which need the submission of all building permits as a Green Permit, as defined in Chapter 11 of the Joint Regulation. The purpose of this requirement is to ensure a special care on the environment when building in connectivity and buffer zones near protected areas. Within the requirement of the Green Permit special attention to the following items will be given:

    a. **Site Development** (P-7 and PI-5). The projects that require compliance with this point must satisfy two stages:

        i. To protect or restore the habitat. The intention of this point is to preserve natural areas and restore impacted areas to provide habitat and promote biodiversity. It seeks to control the area to be impacted During the construction process and / or restore much of the land with native vegetation.

ii. To maximize the open space. The intention of this point is to promote biodiversity by providing a wide "ratio" of open spaces vs. the built footprint. It seeks to create open spaces with vegetation in at least 20% - sometimes 50% - of the total solar to be developed.

b. **Storm water Design** (P-8 and IP-6). The projects that require compliance with this point must satisfy two stages:

i. Control of quantity. The intention of this point is to limit the disruption of the area's natural hydrology by reducing the impervious cover, increasing infiltration within the site, reducing or eliminating pollution of the storm water discharges and eliminating contaminants. It seeks, among others, to implement a management system of water runoff that does not increase storm water discharges of the site on the basis of the same existing conditions.

ii. Control of quality. The intention of this point is to limit the disruption and pollution of natural water flow properly managing storm water runoff. It seeks to design and implement a system of storm water runoff management adopting the best management practices (Best Management Practices) and thereby to remove at least 80% of "Total Suspended Soils" (TSS) compared to existing conditions in the property to be developed.

c. **Light Pollution Reduction** (P-10 and PI-8). The intention of this point is to minimize light spill from the building and from the the site, to reduce glare from the building to keep a night sky with better visibility and to reduce the impact of the development on the night environment. It seeks to reduce the intensity of the lights that emit outward light and to impose physical barriers that cut the passage of light beyond the boundaries of the site.

For more details about the Green Permit system and the technical requirements of each of the prerequisites and points needed, please refer to Chapter 11 of the Joint Regulation and the Guidelines "LEED 2009 New Construction and Major Renovations" published by the U.S. Green Green Building Council.

Buffer and connectivity zones identified as part of this plan are:

ZAC-A

Located in Punta Medio Mundo in the Zone 5 of the Master Plan. Seeks to reduce the effects of erosion and sedimentation, to maintain most of the land without impact, to reduce the negative impact of light pollution and to reduce the vehicular traffic to and from Punta Medio Mundo. Green Permit register is required within this buffer zone.

ZAC-B

Located in Punta Puerca, in the Zone 3 of the Master Plan. Seeks to reduce the effects of erosion and sedimentation, to maintain most of the land without impact and to reduce the negative impact of light pollution. Green Permit register is required within this buffer zone.

ZAC-C

Corridor located between Punta Puerca and the airport, to the west of the dwarf mangroves in the Zone 4 of the Master Plan. Seeks to reduce the effects of erosion and sedimentation and to maintain most of the land without impact. Green Permit register is required within this buffer zone.

ZAC-D

Located in Las Delicias, in the Zone 6 of the Master Plan. Seeks to reduce the effects of erosion and sedimentation and to maintain most of the land without impact. Green Permit register within this buffer zone is recommended but not required.

ZAC-E

Located to the south of Downtown, in the Zone 7 of the Master Plan. Seeks to reduce the effects of erosion and sedimentation and to maintain most of the land without impact. Green Permit register is required within this buffer zone.

ZAC-F

Located near the former high school, in the Zone 10 of the Master Plan. Seeks to reduce the effects of erosion and sedimentation and to maintain most of the land without impact. Green Permit register within this buffer zone is recommended but not required.

ZAC-G

Located on the beach Capehart, Zone 10 of the Master Plan. Seeks to reduce the effects of erosion and sedimentation, to maintain most of the land without impact and to reduce the negative impact of light pollution. Green Permit register is required within this buffer zone.

ZAC-H

Located in Capehart, Zone 10 of the Master Plan. Seeks to reduce the effects of erosion and sedimentation, to maintain most of the land without impact and to reduce the negative impact of light pollution. Green Permit register is required within this buffer zone.

ZAC-I

Two buffer zones next to small seaside parcels that are part of the ANPMMD in the area of Capehart. Seeks to reduce the effects of erosion and sedimentation, to maintain most of the land without impact and to reduce the negative impact of light pollution. Green Permit register is required within this buffer zone.

ZAC-J

Located in Bundy, in Zone 9 of the Master Plan. Seeks to reduce the effects of erosion and sedimentation, to maintain most of the land without impact and to reduce the negative impact of light pollution. Green Permit register is required within this buffer zone.

ZAC-K

Located in Bundy, in the Zone 9 of the Master Plan. Seeks to reduce the effects of erosion and sedimentation, to maintain most of the land without impact and to reduce the negative impact of light pollution. Green Permit register is required within this buffer zone.

ZAC-L

Located in the former golf course, in the Zone 8 of the Master Plan. Seeks to reduce the effects of erosion and sedimentation and to maintain most of the land without impact. Green Permit register within this buffer zone is recommended but not required.

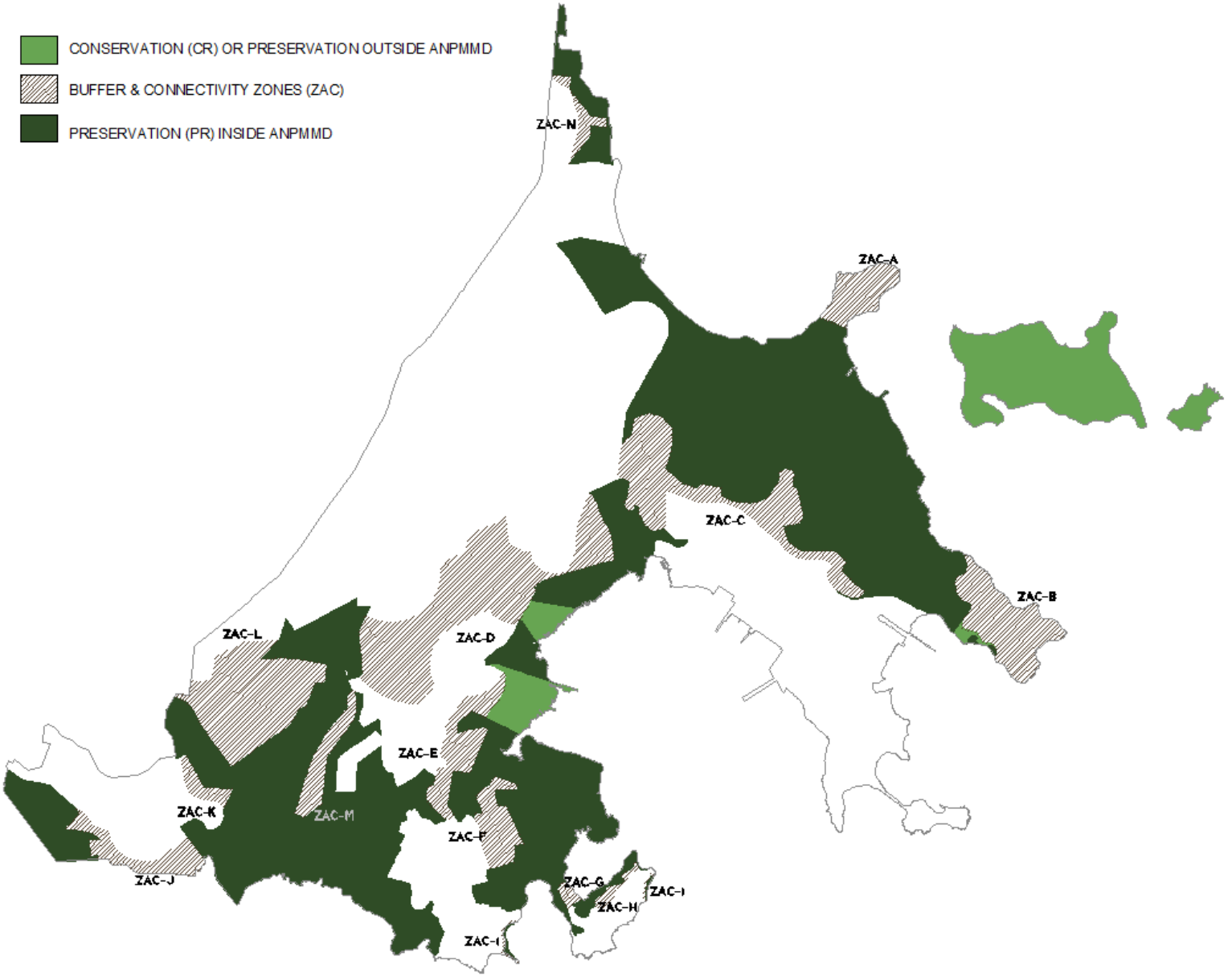
ZAC-M

Located in Guadalcanal, in the Zone 6 of the Master Plan. Seeks to reduce the effects of erosion and sedimentation and to maintain most of the land without impact. Green Permit register within this buffer zone is recommended but not required.

ZAC-N

Located between the Ceiba Forest and the parcel of Machos Alto, in the Zone 11 of the Master Plan. Seeks to reduce the effects of erosion and sedimentation, to maintain most of the land without impact and to reduce the negative impact of light pollution. Green Permit register within this buffer zone is recommended but not required.

Ilustración 26. Zonas de Amortiguamiento y Conectividad (ZAC) junto a terrenos protegidos



Applicability of Conservation Measures as Specified in the Naval Activity Puerto Rico "Biological Assessment"

In 2005, the Navy adopted a Biological Assessment to identify and Project endangered species found in FNSRR.

The protection measures established as parto f the "*Parcel Map for the Disposal of Naval Activity Puerto Rico*" (September 2005) are being incorporated into this Master Plan. Every developer and operator inside NSRR must familiarize and implement such measures in order to comply with this Land Use Plan.

DETAILS OF CALIFICATIONS AND BUFFER ZONES BY AREAS

The followings tables define the areas of work of the FNSRR and within each one the califications, the buffer and connectivity zones and any variation in density or gross floor area. Projects that do not require presenting a Green Permit but that require compliance with some points of the system of Green Permit must submit a certification from a licensed professional (as established in the Chapter 11 of the Joint Regulation) which demonstrate compliance with the provisions of each respective point.

Zone 1 Port Caribe

Its waterfront location and good ports infrastructure make this zone ideal for dense, mixed uses related to tourism. This is the Reuse Plan commercial heart.

CT-I Comercial Turístico Intermedio

Main uses: Waterfront promenade with entertainment, retail, restaurants, recreacional marina and cruiseship terminal. Tourist services and other related uses.
Changes to the joint regulation parameters: The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Gross Construction Area" (Area Bruta de Piso), which is limited to only 35% of the zoned parcel area.

I-P Industrial Pesado

Main uses: Fuel storage tanks, recycling facility, treatment plant and electrical infrastructure.
Changes to the joint regulation parameters : No changes to the Joint Regulation parameters.

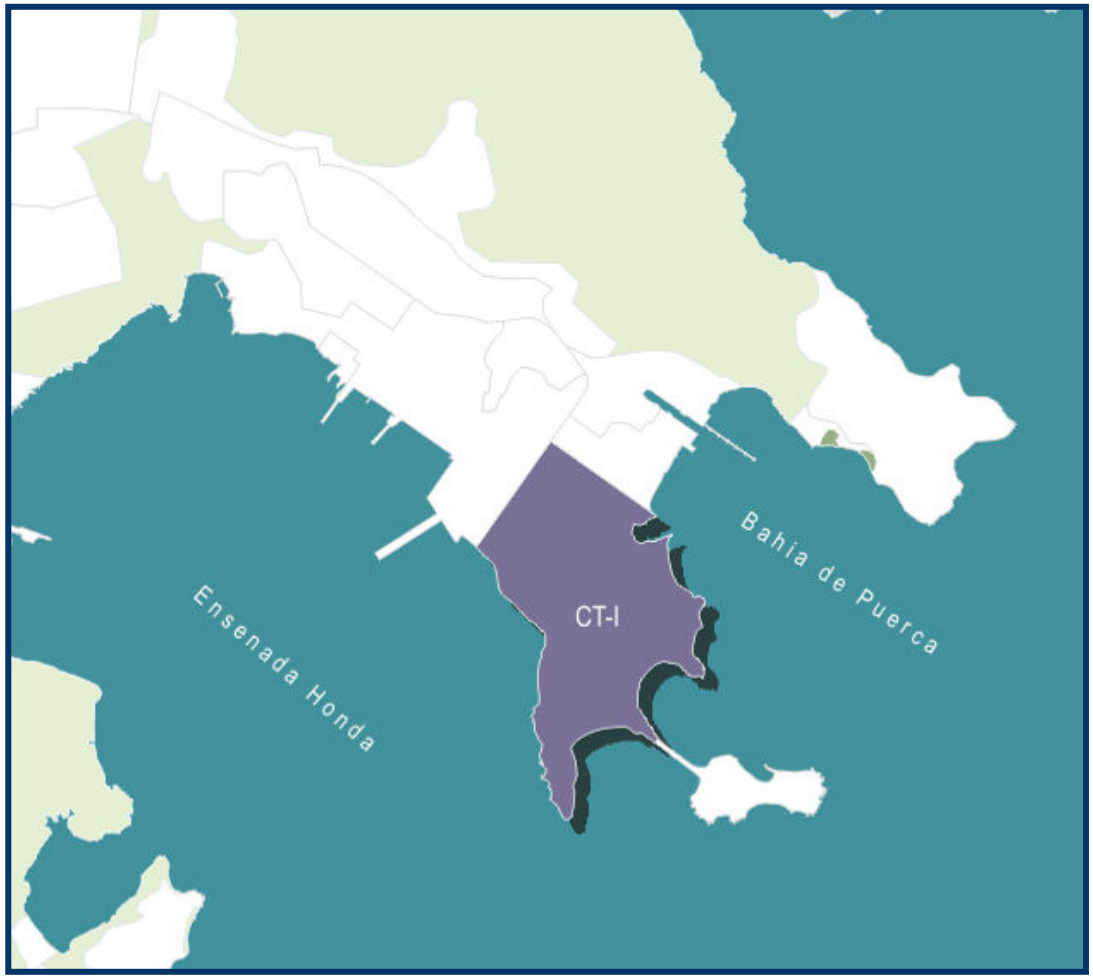
DT-G Dotacional General

Main uses: Hospital.
Changes to the joint regulation parameters : No changes to the Joint Regulation parameters.

ZAC

There are no ZACs within this zone.

Zone 2 Caribbean Riviera



Located between Ensenada Honda and Bahia de Puerca, this is the ideal location for the anchor hotel development.

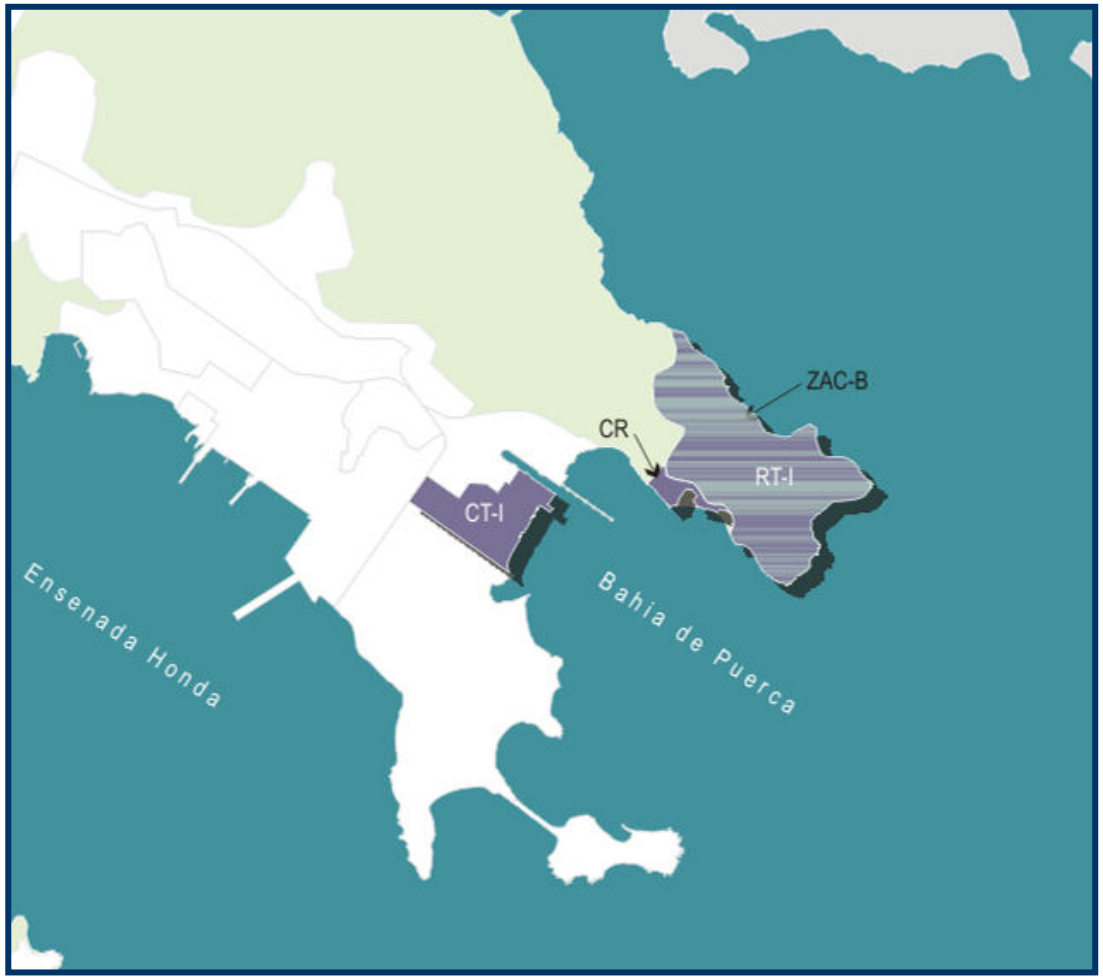
CT-I Comercial Turístico Intermedio

Main uses: Hotel with casino, civic gardens and other tourist-oriented entertainment amenities.
Changes to the joint regulation parameters: The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Gross Construction Area" (Area Bruta de Piso), which is limited to only 35% of the zoned parcel area.

ZAC

No existen ZAC dentro de esta Zona.

Zone 3 El Yunque Grand



Punta Puerca is one the most valuable land in FNSRR for the ecological tourism component of the Reuse plan. To maintain the natural environment, a very low density eco-lodge and sustainable villas are proposed for this area. Zone 3 also contains the commercial-tourism oriented lands near the old dry-dock facility.

RT-I Residencial Turístico Intermedio

Main uses: *Eco-lodge*, visitor's center and Eco-lodge-oriented residential.

Changes to the joint regulation parameters The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Density", which is limited to only 2000 sq mt per basic housing unit.

CT-I Comercial Turístico Intermedio

Main uses: Waterfront promenade with entertainment, retail, restaurants, recreational marina and cruise ship terminal. Tourist services and other related uses..

Changes to the joint regulation parameters: The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Gross Construction Area" (Area Bruta de Piso), which is limited to only 35% of the zoned parcel area.

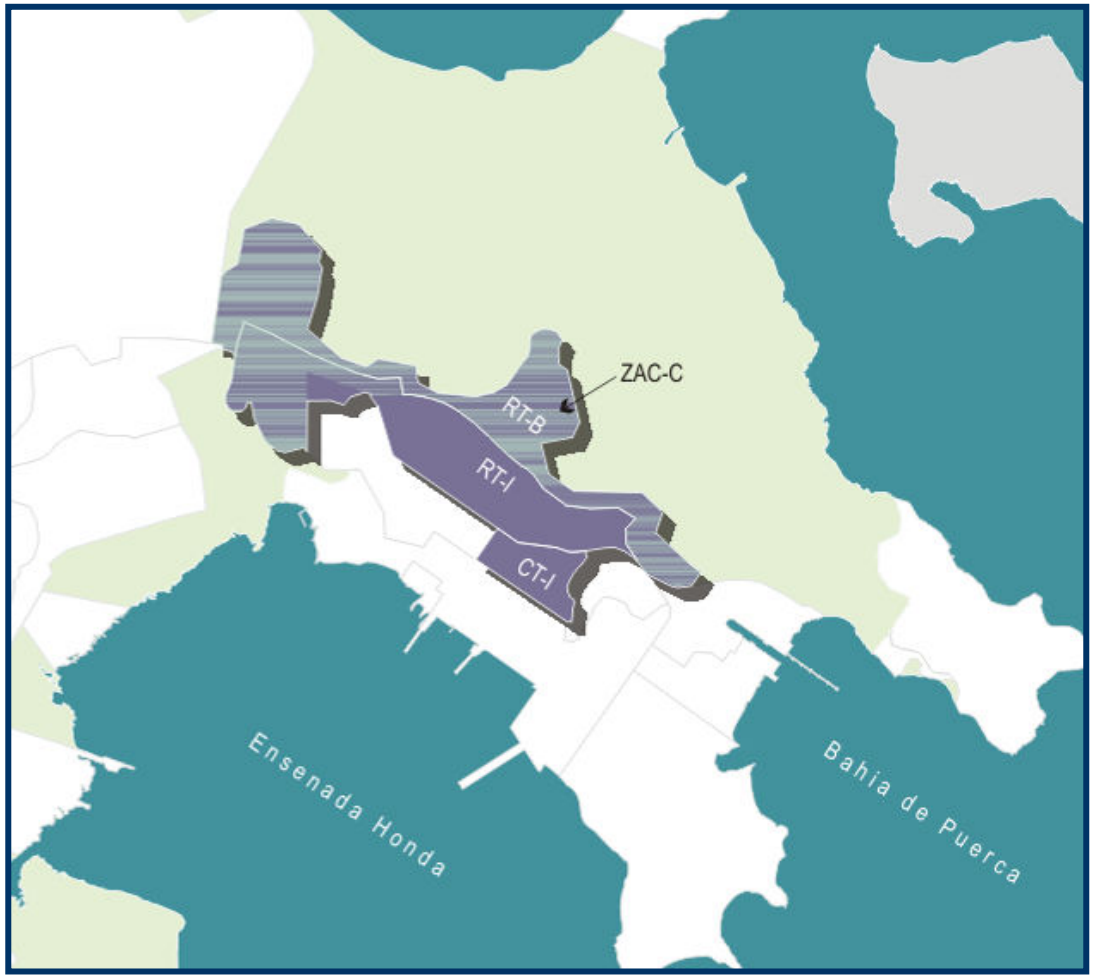
CR Conservación de Recursos

Trails to access the coast and other very low impact uses that promote conservation.

ZAC

	H-H	CES	**Requisitos de Permiso Verde (PV)**			
			Radicar PV	Desarrollo de Sitio	Escorrentía	Contam. Lumínica
ZAC-B	■	■	■	■	■	■

Zone 4 Marsh Vista



Marsh Vista is adjacent to ANPMMD, located on highlands with magnificent vistas. This zone is transicional between conservation and development and as such must be developed as a buffer area, with low impact on the protected natural habitats of ANPMMD.

RT-I Residencial Turístico Intermedio

Main uses: Ecological golf course, clubhouse and golf-oriented residential.

Changes to the joint regulation parameters The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Density", which is limited to only 1000 sq mt per basic housing unit.

CT-I Comercial Turístico Intermedio

Main uses: Mixed commercial, entertainment, retail, restaurants, and other tourist support uses..

Changes to the joint regulation parameters: The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Gross Construction Area" (Area Bruta de Piso), which is limited to only 35% of the zoned parcel area.

RT-B Residencial Turístico de Baja Densidad

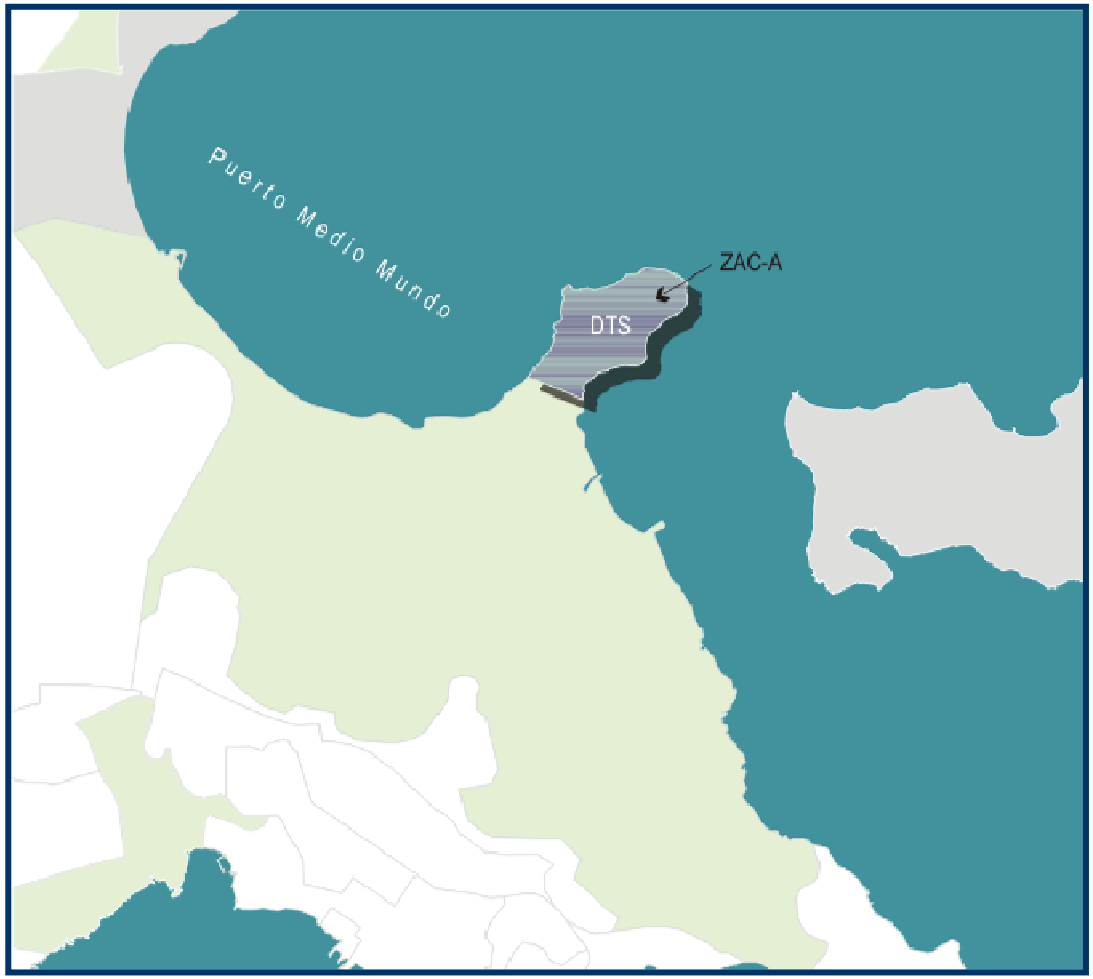
Main Uses: Detached, environmentally friendly residential.

Changes to the joint regulation parameters : No changes to the Joint Regulation parameters.

ZAC

	H-H	CES	**Requisitos de Permiso Verde (PV)**			
			Radicar PV	Desarrollo de Sitio	Escorrentía	Contam. Lumínica
ZAC-C	■	■	■	■	■	■

Zone 5 Eco-outpost



Punta Medio Mundo can be accessed only through ANPMMD lands and to maintain a low impact n these areas, uses in this zone must relate to low-density conservation and ecologic research uses.

DTS Desarrollo Turístico Selectivo

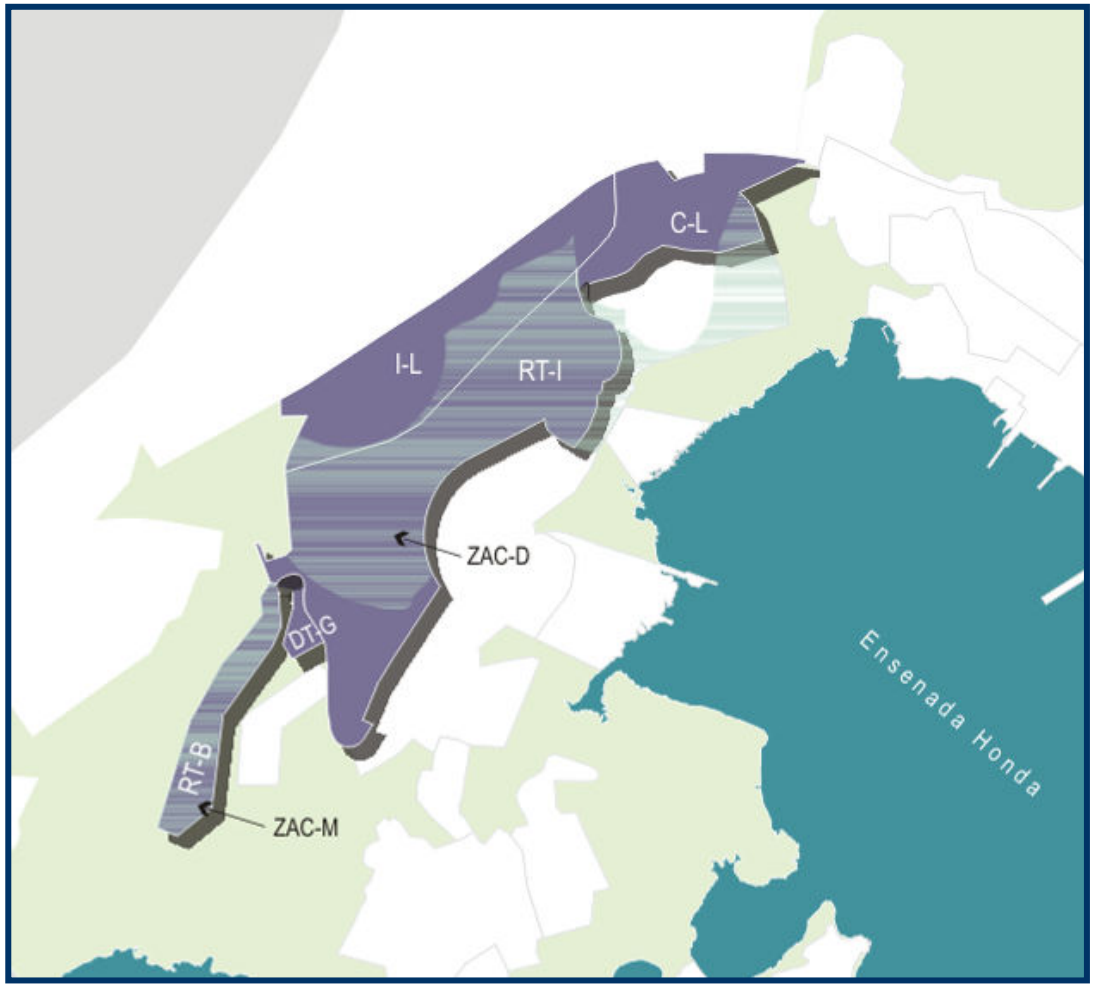
Main uses: Small sustainable lodge, office and research space that may host sustainability studies on ANPMMD lands.

Changes to the joint regulation parameters: No changes to the Joint Regulation parameters.

ZAC

	H-H	CES	Requisitos de Permiso Verde (PV)			
			Radicar PV	Desarrollo de Sitio	Escorrentía	Contam. Lumínica
ZAC-A	■	■	■	■	■	■

Zone 6 Uplands



Low and medium density developments are allowed by the Reuse Plan on the Las Delicias hills. These uses include airside industrial, golf-oriented residential and light commercial.

RT-I Residencial Turístico Intermedio

Main uses: Golf course with environmentally-friendly certification, clubhouse and golf-oriented residential.

Changes to the joint regulation parameters The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Density", which is limited to only 2000 sq mt per basic housing unit.

RT-B Residencial Turístico de Baja Densidad

Main Uses: Detached, environmentally friendly residential.

Changes to the joint regulation parameters : No changes to the Joint Regulation parameters.

I-L Industrial Liviano

Main uses: Office, warehousing and other uses related to an airside industrial park.

Changes to the joint regulation parameters: The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Gross Construction Area" (Area Bruta de Piso), which is limited to only 20% of the zoned parcel area.

C-L Comercial Liviano

Main uses: Retail, office and other institutional uses.

Changes to the joint regulation parameters: The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Gross Construction Area" (Area Bruta de Piso), which is limited to only 20% of the zoned parcel area.

DT-G Dotacional General

Main uses: Potable water filtration plant.
Changes to the joint regulation parameters : No changes to the Joint Regulation parameters.

ZAC

	H-H	CES	Requisitos de Permiso Verde (PV)			
			Radicar PV	Desarrollo de Sitio	Escorrentía	Contam. Lumínica
ZAC-D		■		■		■
ZAC-M	■	■		■	■	

Zone 7 Main Street

Zone 7 is located in "Downtown", an area apt for dense redevelopment and urban infill because of its readily available infrastructure and central location.

CT-I Comercial Turístico Intermedio

Main uses: Local commercial, dormitorios, residential, hotel and offices. The master plan allows for about 800 basic residential units.

Changes to the joint regulation parameters: The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Gross Construction Area" (Area Bruta de Piso), which is limited to only 20% of the zoned parcel area.

PR Preservación de Recursos

Improvements to habitats and habitat interconnections.

ZAC

	H-H	CES	Requisitos de Permiso Verde (PV)			
			Radicar PV	Desarrollo de Sitio	Escorrentía	Contam. Lumínica
ZAC-D		■		■		■
ZAC-E	■	■	■	■	■	

Zone 8 Sports Core

Located alongside Gate 3 and with direct access from the PR-53 highway in Naguabo, this zone is able to sustain open parks and recreacional facilities.

DT-P Dotacional Parque

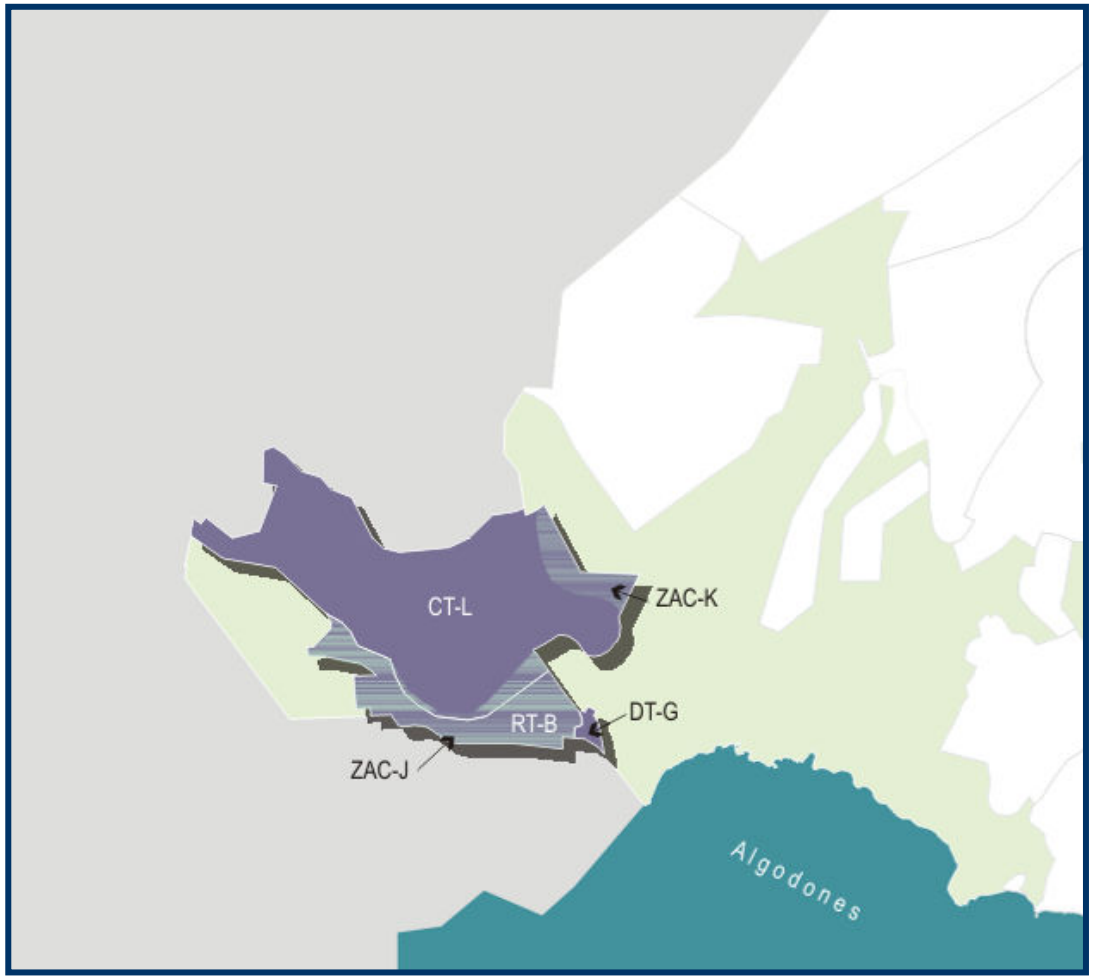
Main uses: Sprots and recreation uses, including passive (Parks) and active (Sports courts). Does not include golf.

Changes to the joint regulation parameters : No changes to the Joint Regulation parameters.

ZAC

	H-H	CES	Requisitos de Permiso Verde (PV)			
			Radicar PV	Desarrollo de Sitio	Escorrentía	Contam. Lumínica
ZAC-L	■	■	■	■	■	

Zone 9 Island Paradise



This zone is characterized by is relatively isolated location relative to the rest of FNSRR. The remote character is suitable for the proposed corporate training and conference development that the Reuse Plan establishes.

CT-L Comercial Turístico Liviano

Main Uses: Hotels, conference center, training facilities, tourist-oriented commercial.
Changes to the joint regulation parameters: The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Gross Construction Area" (Area Bruta de Piso), which is limited to only 20% of the zoned parcel area.

RT-B Residencial Turístico de Baja Densidad

Main Uses: Detached, environmentally friendly residential.
Changes to the joint regulation parameters : No changes to the Joint Regulation parameters.

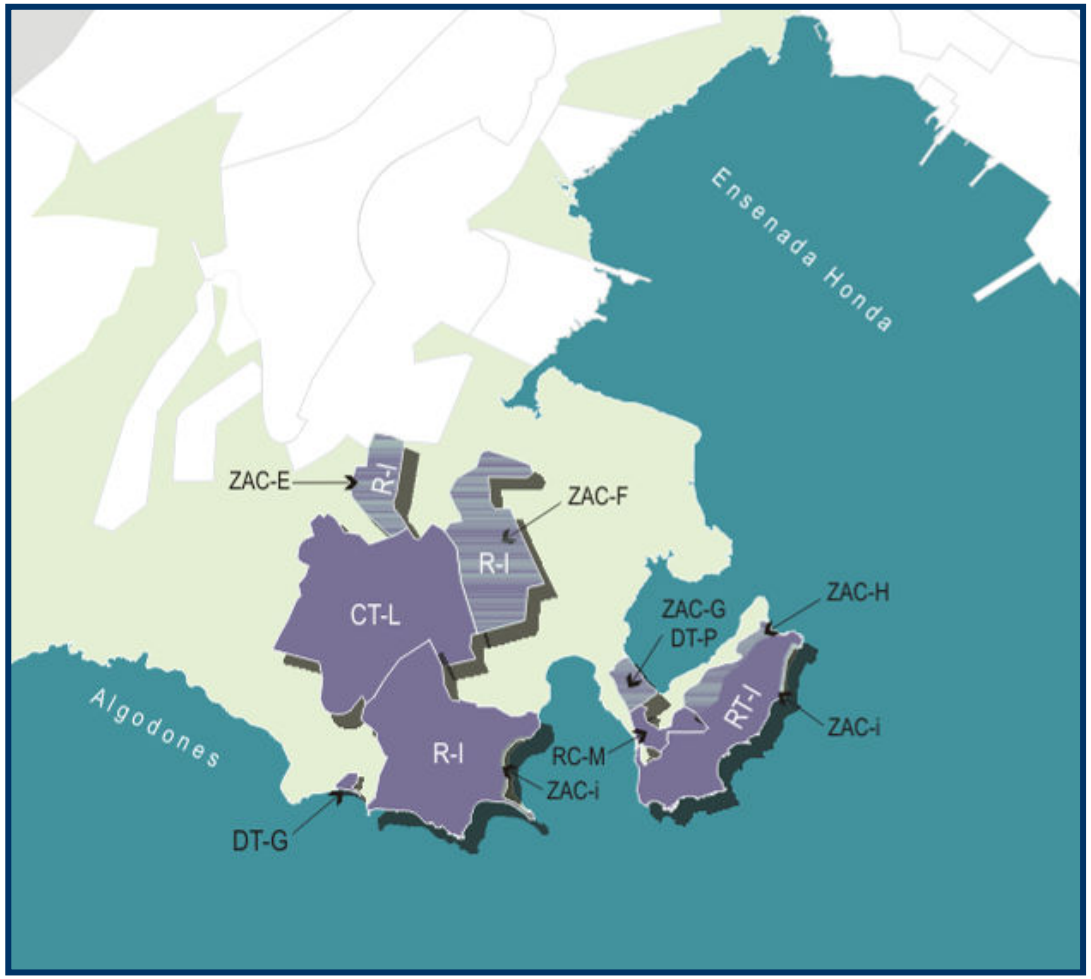
DT-G Dotacional General

Main Uses: Sanitary treatment plant.
Changes to the joint regulation parameters : No changes to the Joint Regulation parameters.

ZAC

	H-H	CES	Requisitos de Permiso Verde (PV)			
			Radicar PV	Desarrollo de Sitio	Escorrentía	Contam. Lumínica
ZAC-J	■	■	■	■	■	■
ZAC-K	■	■		■	■	

Zone 10 Capehart



Capehart has shown a residential character since the FNSRR beginnings. As such it is proposed to continue with more residential and support uses.

RT-I Residencial Turístico Intermedio

Main Uses: First homes and vacation villas and condos. Can include small inns.
Changes to the joint regulation parameters The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Density", which is limited to only 1000 sq mt per basic housing unit.

R-I Residencial Intermedio

Main Uses: Single family and multifamily residential.
Changes to the joint regulation parameters: The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Density", which is limited to only 1000 sq mt per basic housing unit.

RC-M Residencial Comercial Mixto

Main Uses: Basic commercial uses serving the inmediate neighborhood.
Changes to the joint regulation parameters: The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Gross Construction Area" (Area Bruta de Piso), which is limited to only 20% of the zoned parcel area.

CT-L Comercial Turístico Liviano

Main Uses: Hotel, corporate offices, institutional, retail, residential and restaurants.
Changes to the joint regulation parameters: The zoning parameter is adopted as defined by the Joint Regulation with the exception of "Gross Construction Area" (Area Bruta de Piso), which is limited to only 20% of the zoned parcel area.

DT-P Dotacional Parque

Main Uses: Public beach.
Changes to the joint regulation parameters : No changes to the Joint Regulation parameters.

DT-G Dotacional General

Main Uses: Sanitary treatment plant.
Changes to the joint regulation parameters : No changes to the Joint Regulation parameters.

ZAC

	H-H	CES	Requisitos de Permiso Verde (PV)			
			Radicar PV	Desarrollo de Sitio	Escorrentía	Contam. Lumínica
ZAC-E	■	■	■	■	■	
ZAC-F	■	■	■	■	■	
ZAC-G	■	■		■	■	■
ZAC-H	■	■		■	■	■
ZAC-i	■	■		■	■	■

Zone 11 Ceiba Park

Ceiba Park is located next to Gate 1, close to the airport and urban Ceiba. This location includes a plot in the North of the Beach Los Machos. Although the analysis of the FNSRR carried out as part of this Master Plan includes the Los Machos parcel conveyed to the municipality of Ceiba through a PBC, this Land Use Plan does not consider it. Los machos is as of this .

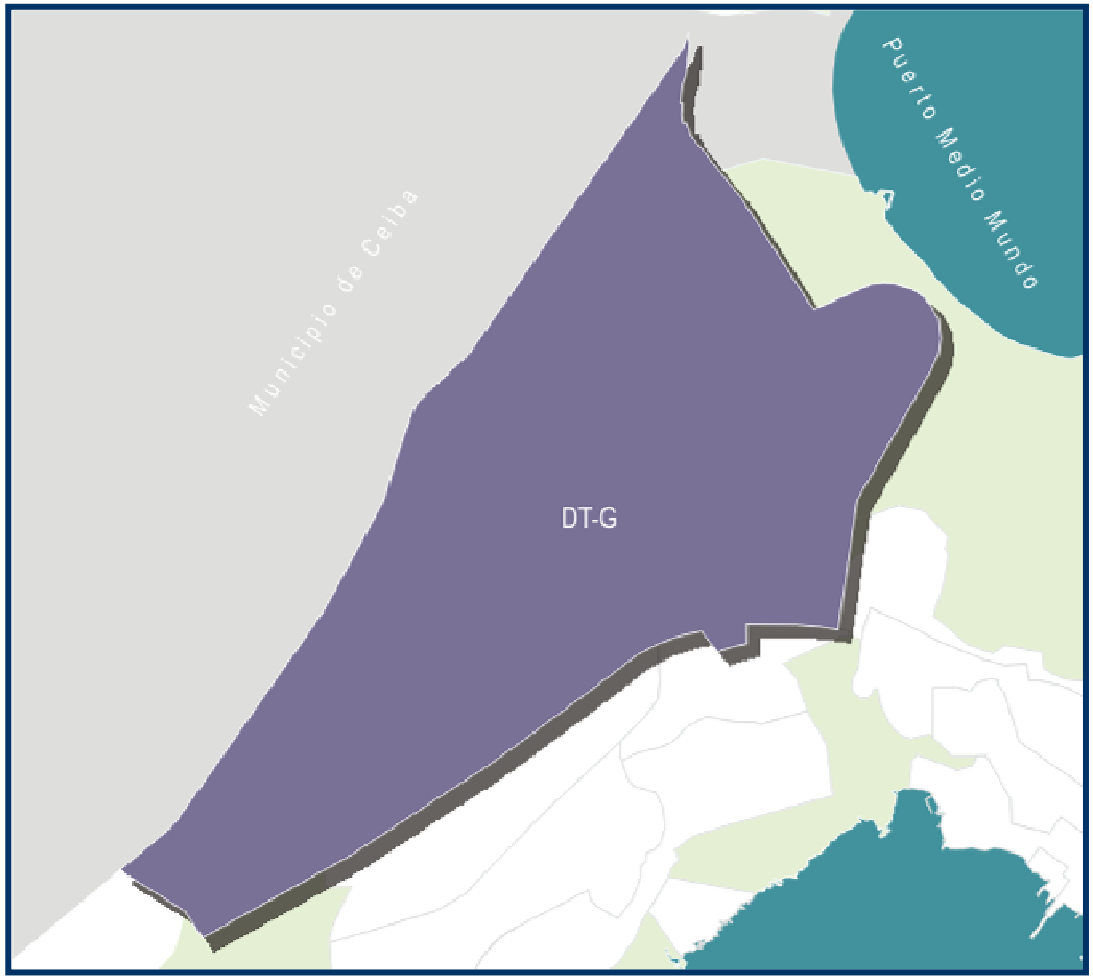
C-L Comercial Liviano

Main Uses: Institutional, public service and entertainment, as defined in the 2010 Addendum.
Changes to the joint regulation parameters : The zoning parameter is adopted as defined in the Joint Regulation with the exception of Gross Construction Area (Area Bruta de Piso), which is limited to only 20% of the zoned parcel area.

ZAC

	H-H	CES	Requisitos de Permiso Verde (PV)			
			Radicar PV	Desarrollo de Sitio	Escorrentía	Contam. Lumínica
ZAC-N	■	■		■	■	■

Zone 12 Aeropuerto



This zone is part of the conveyed (PBC) airport property. It is under the jurisdiction of the Ports Authority and is managed according to a separate Master Plan. Currently this facility operates as a regional (International) airport serving Vieques, Culebra and the Virgin Islands.

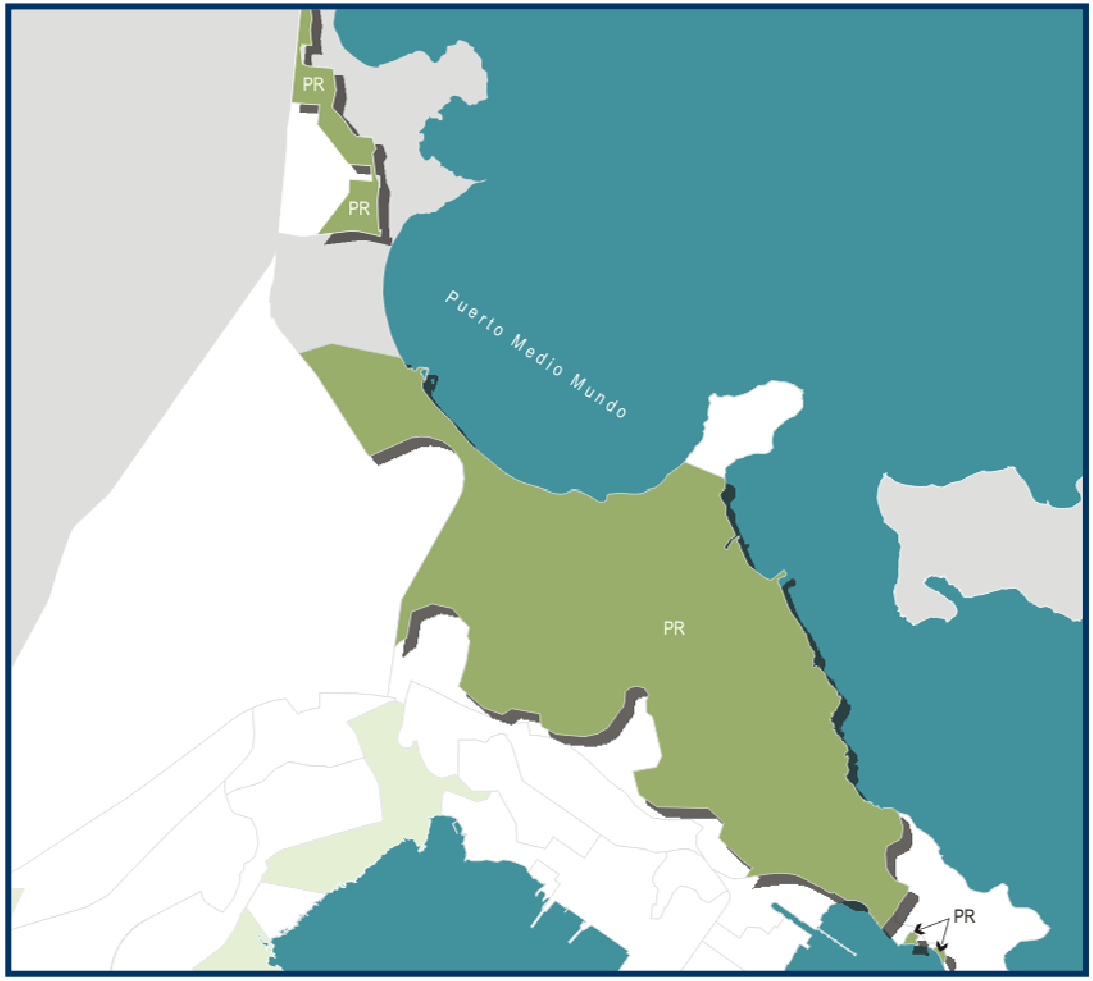
DT-G Dotacional General

Main Uses: Airport and support facilities.
Changes to the joint regulation parameters : No changes to the Joint Regulation parameters.

ZAC

There are no ZACs within this zone.

Zone 13 Conservación ANPMMD: Medio Mundo y Los Machos



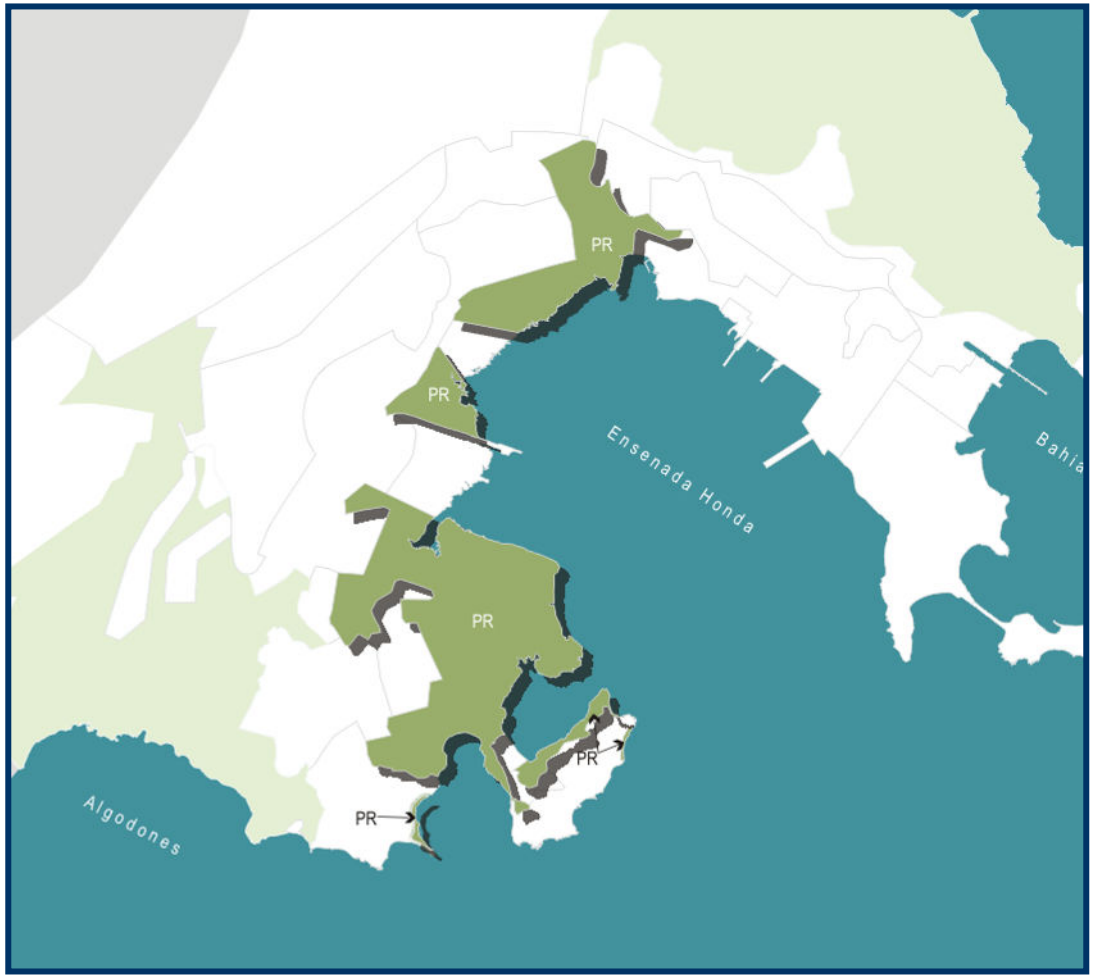
PR Preservación de Recursos

Uses allowed as part of this preservation zone are defined by the PRCT through its management plan for ANPMMD.

ZAC

There are no ZACs within this zone.

Zone 14 Conservación ANPMMD: Ensenada Honda



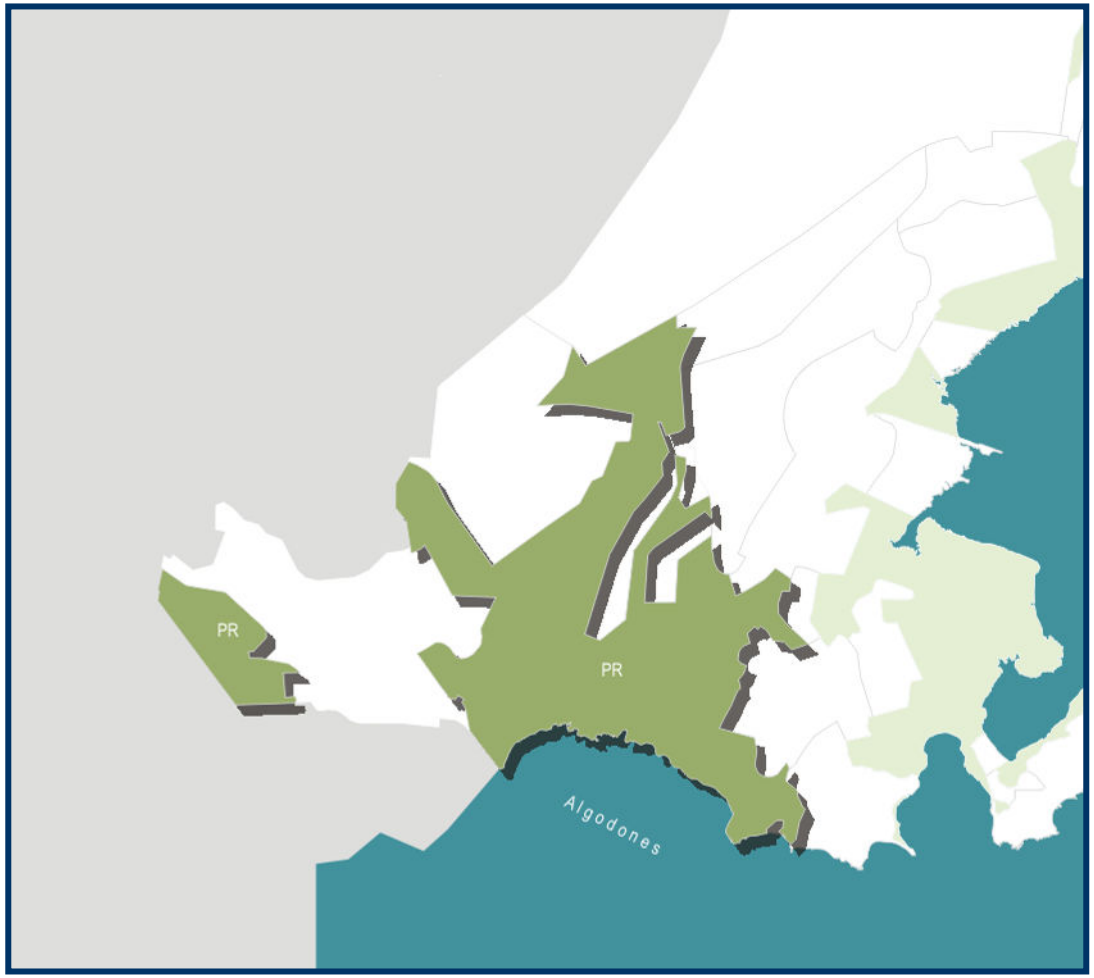
PR Preservación de Recursos

Uses allowed as part of this preservation zone are defined by the PRCT through its management plan for ANPMMD.

ZAC

There are no ZACs within this zone.

Zone 15 Conservación ANPMMD: Río Daguao



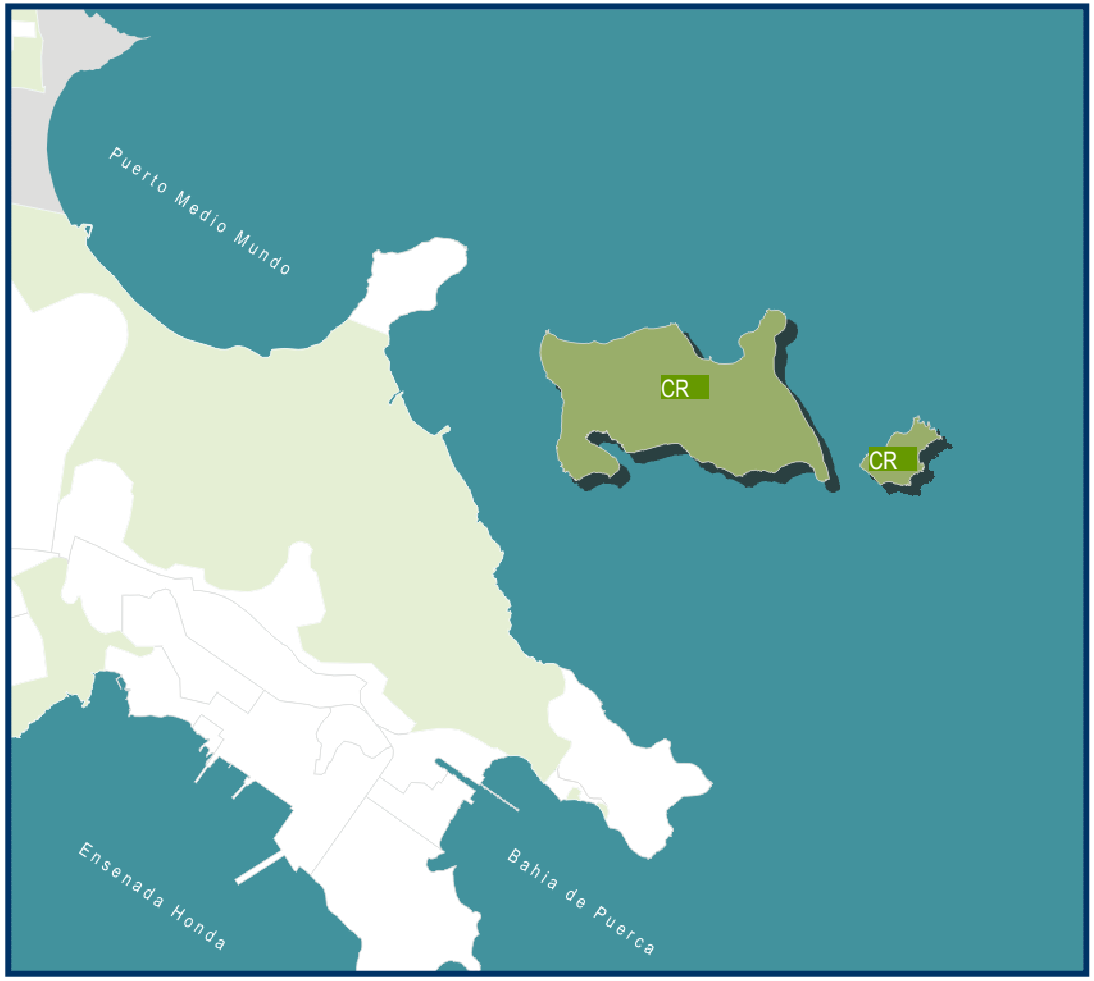
PR Preservación de Recursos

Uses allowed as part of this preservation zone are defined by the PRCT through its management plan for ANPMMD.

ZAC

There are no ZACs within this zone.

Zone 16 Conservación ANPMMD: Isla Piñeros



CR Conservación de Recursos

One use that can be considered in this area is public Beach. Being part of the parcels to be conveyed to the DNER, other uses will be defined through the Department of natural Resources and the Conservation Trust.

ZAC

There are no ZACs within this zone.

Zone 17 US Government Lands

This area is composed of the parcels transferred to federal agencies as part of the process governed by BRAC. These plots are not adjoining each other and are located across all areas of the FNSRR and include:

- Army Reserve
- US Coast Guard
- Department of Homeland Security

Being federal land, these parcels are not being considered as part of this Master Plan.

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Naval Station Roosevelt Roads Installation Restoration Program: http://nsrr-ir.org/

USFWS: http://criticalhabitat.fws.gov/flex/crithabMapper.jsp