

PR Coral Reef Progress Report

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DNER

PR Coral Reef Economic Valuation Study Area Covered

- Fajardo – 40,712 habitant. Several areas designated as Natural Reserves: Cabezas de San Juan, Seven Seas Reserve and Ceiba State Forrest.
- La Cordillera Reserve – no habitants, several small keys off the north, northeast coast of Fajardo.
- Culebra Island– 1,900 habitants in 31.6 km². Compose of several smaller islands and keys. Canal Luis Peña Natural Reserve.
- Vieques Island – 9,106 habitant in 132 km². Most of the island is designated as a National Wildlife Refuge (DOI) divided in two units (east and west). State reserve off south coast.

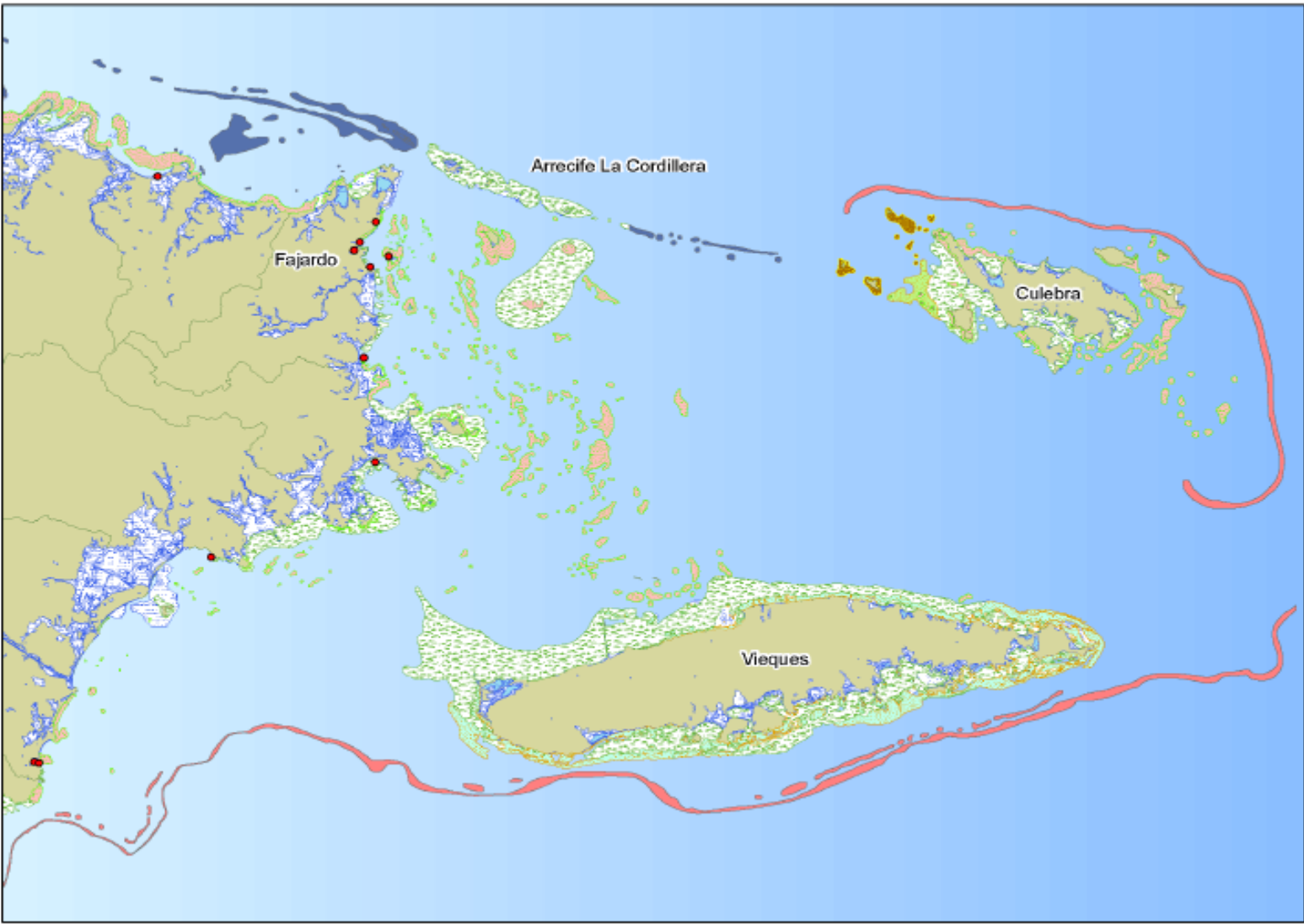
PR Coral Reef Economic Valuation Study Area Covered

Área de Estudio

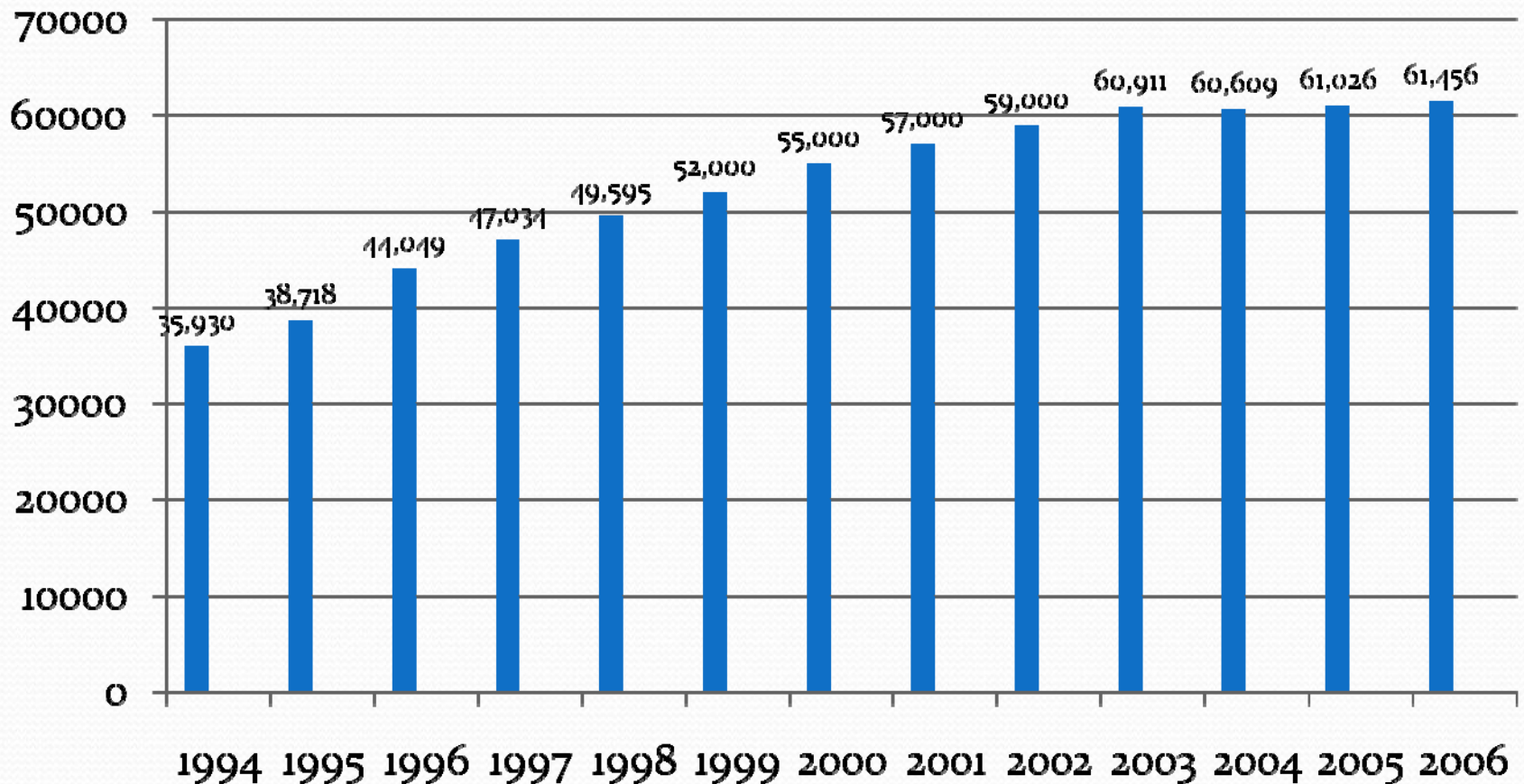


0 2.5 5 10 Km

- Marinas
- Arrecife de coral de parchos
- Arrecife de coral
- Roca de playa
- Arrecife general
- Arrecife rocoso
- Hierbas marinas
- Arrecife de plataforma
- Humedales



Register Vessels in Puerto Rico



PR Coral Reef Economic Valuation Study

- Total value is calculated as a function of commodities, exploit and services. Sum of the exploit value (commodities and services) and the passive value (future value, present value, hereditary, etc.).
- Identify uses of the area and the users.
- Commodities considered include: commercial and ornamental fishing, materials for the construction, and artisanal or cultural uses.
- Services included tourism & recreation, erosion protection, scientific research and education.

PR Coral Reef Economic Valuation Study

- Three methods used to calculate the value: one approach include market value and two designing and implementing questionnaires for travel cost (TCM) and the contingency valuation method (CVM).
- Three different surveys were develop to implement both methodologies. One to address the general population (CVM), and two addressed to users (TMC).
- Implemented in previously identify key access points such as, marinas, boat ramps and other areas.

Ecosystem Passive Values

Actual Value	\$305,555,844
Future Value	\$192,535,465
“Hereditary Value”	\$210,258,412
Bio-diversity Value	\$190,885,510
Total Passive Value	\$899,235,231

Passive value is the disposition of people to pay to preserve the different values that natural resources have.

Uses or Activities Values

Diving



Recreational Fishing



Snorkeling



Boating & Sailing



Kayak



Beach Trips & Sunbathing



POSSIBLE ASSOCIATE COST TO USES

EQUIPMENT RENTAL

- Kayak, Diving and/or snorkeling gear, sailing or boating and related equipment.

TRANSPORTATION (including cost to site)

- Air fare & car rental (if applicable)
- Do not include cost of personal vehicle
- Gasoline, tolls, parking, taxi, tours costs and others.

LODGING

- Hotel room or rent apartment.
- Applies to the persons that undertook direct activities costs and those which their main purpose was the select activity.

FOOD AND BEVERAGE

- Feeding costs related to the day activity.

OTHERS

- Other direct costs associated to the activity.

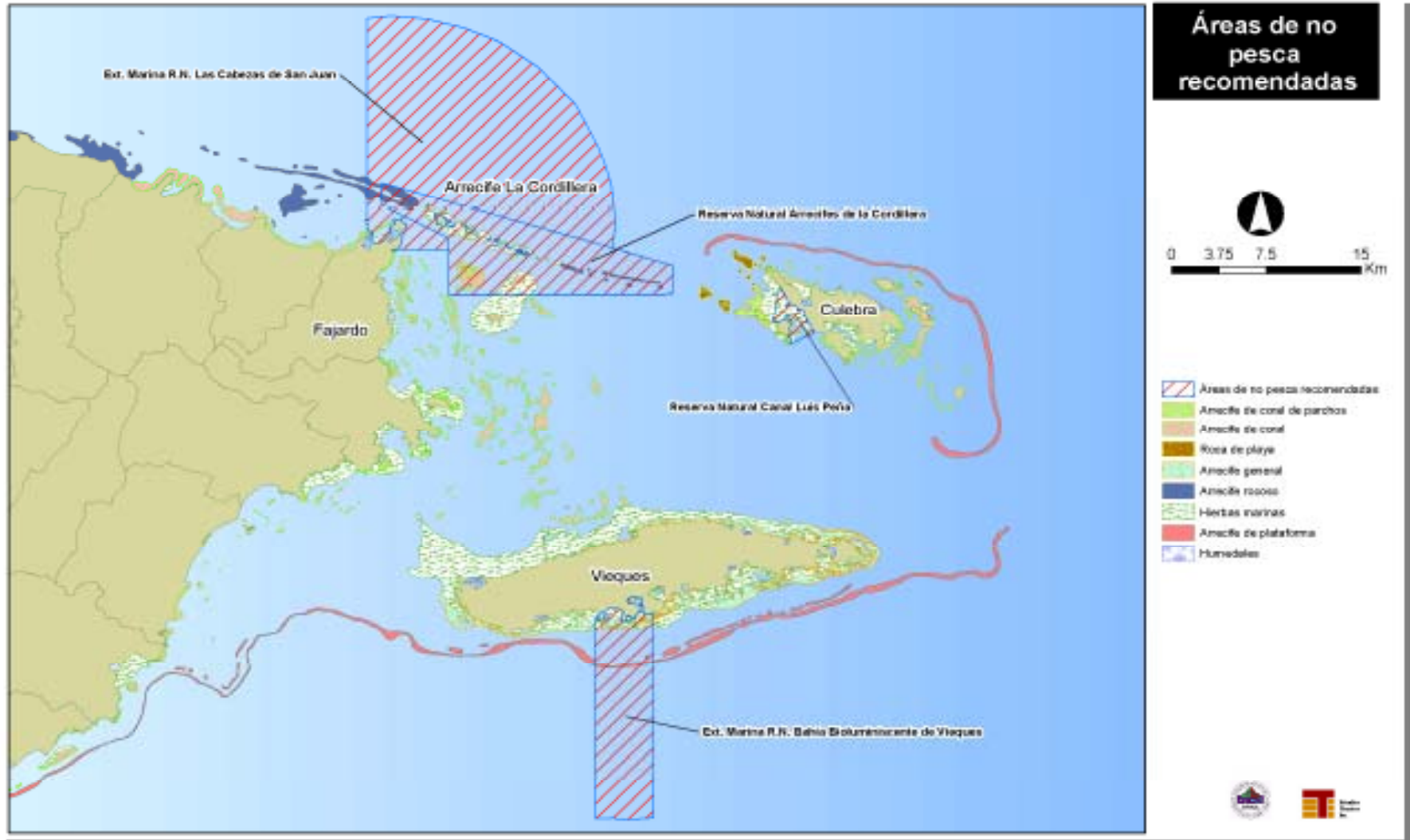
Valor del Ecosistema 2007

Valores Estimados	Valor Anual
Valor Pesca Artesanal	\$454,367
Valor Pesca Ornamental	\$0
Valor Usuarios	\$192,027,166
Valor de Protección	\$531,548
Valor de educación e investigación	\$928,758
Valor Existencial	\$305,555,937
Valor Futuro	\$192,535,517
Valor Heredable	\$210,258,467
Valor Bio-Diversidad	\$190,885,562
Total	\$1,093,177,322

Management Recommendations

- Establish permanent close areas (next figure).
- Significant increase the penalties for violations of environmental laws.
- Studies of Characterization and zoning of the area.
- Surveillance and patrolling the Ecosystems.
- Establish access limits to sensitive areas.
- Deploy more buoys.
- Promote sustainable tourism practices within users.

PR Coral Reef Economic Valuation Study Area Covered



Management Recommendations

- Provide permanent restoration and monitoring programs in the area.
- Establish an access system for boats that are interested in visiting the area utilizing special DNER permits, for example.
- Establish a continuous education program, with information booths, etc..

Financial Recommendations

- Implement an environmental tax to finance a small fund.
- Incorporate the tourists and users in the protection and management of the area (users fees of natural reserves resources).
- Establish a continuous education program, with information booths, etc..