



STATEWIDE COMPREHENSIVE  
OUTDOOR RECREATION PLAN  
(SCORP)  
FOR PUERTO RICO 2020-2025



Final plan

October 30, 2020

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## ACRONYMS AND ABBREVIATIONS

ACP	Conservation Priority Areas	NPA	Natural Protected Areas
ADA	American with Disabilities Act	PDM	Pre-Disaster Mitigation
ATV	All-Terrain Vehicles	OPSP	Open Project Selection Process
CARICOOS	Caribbean Coastal Observing System	PLN	Para La Naturaleza
CATI	Computer Assisted Telephone Interviewing	PR	Puerto Rico
CCAP	Coastal Change Analysis Program	PRCS	Puerto Rico Community Survey
COR3	Central Office of Recovery, Reconstruction and Resilience	PRHTA	Puerto Rico Highways and Transportation Authority
CPTED	Crime Prevention Through Environmental Design	PRPB	Puerto Rico Planning Board
DMO	Destination Marketing Organization	PRTC	Puerto Rico Tourism Company
DNER	Department of Natural and Environmental Resources	RA	Recreative Areas
DRD	Sports and Recreation Department	RTCA	Rivers and Trails Conservation Assistance Program
EO	Executive Order	RTP	Recreational Trails Program
FAST	Fixing America's Surface Transportation	SCORP	State Comprehensive Outdoor Recreation Plan
FEMA	Federal Emergency Management Agency	SPSS	Statistical Package for the Social Sciences
FHWA	Department of Transportation's Federal Highway Administration	STBG	Surface Transportation Block Grant Program
FLP	Forest Legacy Program	TA	Transportation Alternatives
FMA	Flood Mitigation Assistance Program	TOD	Transportation-oriented development
GNP	Gross National Product	UPR	University of Puerto Rico
GNP	Gross National Product	US	United States of North America
HMGP	Hazard Mitigation Grant Program	USACE	US Army Corps of Engineers
LWCF	Land and Water Conservation Fund	USDA	US Department of Agriculture
NGO	Non-Governmental Organizations	USEPA	US Environmental Protection Agency
NLHP	National List of Historic Places	USFS	US Forest Service
NOAA	National Oceanic and Atmospheric Administration	USFWS	US Fish and Wildlife Service

# 1 INTRODUCTION

The Puerto Rico Sports and Recreation Department (DRD, by its Spanish acronym) is the agency designated by the Commonwealth of Puerto Rico to prepare and update the State Comprehensive Outdoor Recreation Plan (SCORP) for the island. The SCORP is required to be eligible for Land and Water Conservation Fund (LWCF) assistance and must be updated every five years.<sup>1</sup>

Since the enactment of the (LWCF) Act in 1965, the SCORP has become an essential instrument for the outdoor recreational needs in Puerto Rico. The Commonwealth has been able to prioritize the protection of resources used in leisure activities, to create new recreational opportunities and to provide access to public recreational spaces to all citizens.

This SCORP covers a five-year period from 2020 to 2025 and adheres to the following main components:

- An assessment of the demand for outdoor recreation centered on the needs and preferences of the population.
- An analysis of the supply of outdoor recreational places.
- An identification of outdoor recreation issues.
- An implementation program that identifies the Commonwealth's priorities for the next five years, including but not limited to those that the government will address through the LWCF and those that will be addressed by other means.

A Wetlands component consistent with Section 303 of the Emergency Wetlands Resources Act of 1986 and a Trails component as encouraged by Section 8(a) of Public Law 90-543, as amended, and Section 11(a) of Public Law 90-542, as amended, respectively.

## The purpose of the LWCF Act of 1965 is to:

Assist in preserving, developing, and assuring accessibility to all citizens of the US of present and future generations, and visitors, such quality and quantity of outdoor recreation resources as may be available and are necessary and desirable for individual active participation in such recreation.

Strengthen the health and vitality of the citizens by (1) providing funds for and authorizing federal assistance to the States in planning, acquisition, and development of needed land and water areas and facilities and (2) providing funds for the federal acquisition and development of certain lands and other areas.

<sup>1</sup> Land and Water Conservation Fund State Assistance Program: Federal Financial Assistance Manual. Volume 69. Effective Date: October 1, 2008.

## 1.1 Methodology

The 2020-2025 SCORP is being developed in various phases as presented in the following figure. Each chapter of this document explains the data sources and processes used. In this section, we will focus on the public participation program, which is the core element of the plan.

Figure 1. Process used to develop the SCORP 2020-2025



### 1.1.1 Public Participation Program

This revision of the SCORP includes plentiful opportunities for public participation involving all segments of the population, such as Puerto Rico residents, Non-Governmental Organizations (NGOs) related to outdoor recreation, concessionaires and municipal representatives that work with sports and recreation. Different traditional and non-traditional methods were implemented to maximize the citizens' participation, as presented in the following figure.

Figure 2. Public participation methods used in this project

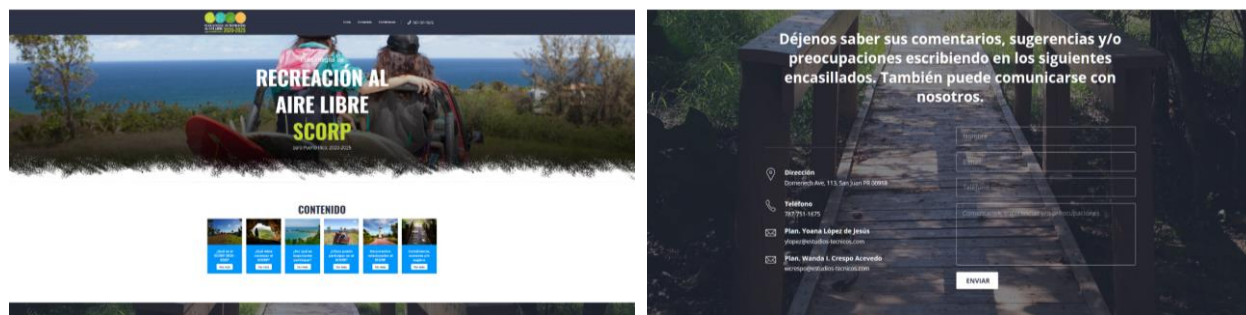




### 1.1.2 Project's Web page

A web page was created to inform the general public of activities and to gather comments from interested parties: [<http://estudiostecnicos.com/projects/SCORP2020-2025/>]. The content is in Spanish and provides information on the SCORP, and public participation options while granting access to the SCORP under revision.

Figure 3. Image of the web page developed for the revision of the SCORP 2020-2025



### 1.1.1 Survey to the residents of Puerto Rico

A statistically representative survey of the population of Puerto Rico was conducted from January 29, 2020 to February 28, 2020. The sample size was 500 residents over 18 years of age, living in a household with either wired or wireless communications. The sample was stratified by geography (using DRD regions) and demography (age and gender distribution according to the US Census). The maximum error was  $\pm 4.4\%$  with a 95% confidence level.

The survey was conducted by telephone, as in the previous SCORP. Information was compiled electronically using the CATI system (Computer Assisted Telephone Interviewing). The telephone survey was carried out by 15 interviewers seven days a week: from Monday through Friday from 3 PM to 8 PM, and Saturdays and Sundays from 10 AM to 7 PM. The information was processed using SPSS (Statistical Package for the Social Sciences).

### 1.1.2 Online survey to non-governmental organizations (NGO)

Concessionaires and other NGOs that provide services or activities related to the outdoor recreation throughout Puerto Rico were consulted through an online survey. The survey was distributed to a list serve of various NGOs that are registered in the PR Department of State and outdoor recreation organizations compiled by ETI.

The web survey was completed by 53 NGOs and concessionaires that provide outdoor recreation services and activities in Puerto Rico. It was sent via email to more than 700 NGO and concessionaires through Puerto Rico, and it was available from February 10, 2020 until March 10, 2020.

### 1.1.3 Online survey to municipal representatives

Representatives from municipalities who work with sports and recreation were consulted using an online survey. The online survey was sent to a list of 56 employee's emails that was provided by the DRD. This online survey was per availability. Respondents were those who have internet, access to the survey (link) and interest in completing the survey.<sup>2</sup> The survey was available from April 17 to May 1, 2020.

### 1.1.4 Public comment period

The final draft of the SCORP was available for public review from September 28, 2020 to October 28, 2020. The document was available at the DRD's web page and its social media. People and organizations interested in commenting were encouraged to send their comments through a dedicated email address or via regular mail. Comments received were evaluated and incorporated as appropriate.

## 1.2 Geographic units used for the analyses

The DRD regions were used to carry out the analysis by geographic area, such as needs and infrastructure. The DRD divides Puerto Rico's 78 municipalities into nine regions as presented in the following map.<sup>3</sup>

Map 1. Distribution of municipalities by DRD region, Puerto Rico



For the full list of the municipalities that comprise each region, refer to the Appendix 1.

<sup>2</sup> The methodology was modified from previous SCORP, in which focus groups were used. A focus group with representatives from municipalities of the nine DRD regions that work with sports and recreation was scheduled for March 18, 2020, but it was canceled due to the government shutdown because of the COVID-19 outbreak.

<sup>3</sup> These regions vary from the previous SCORP, in which the DRD divided the 78 municipalities into 10 regions: Northwest, West, North, South, North, Metropolitan, Central, Southeast, East and Northeast. The former Northwest and Southwest regions are now the West region, while the South region and the Northeast region remained the same. The Toa region was consolidated into the North and Metropolitan regions and the Central, Central South and Southeast were redistributed into Central, Southeast, and East regions, respectively.

# General context of Puerto Rico



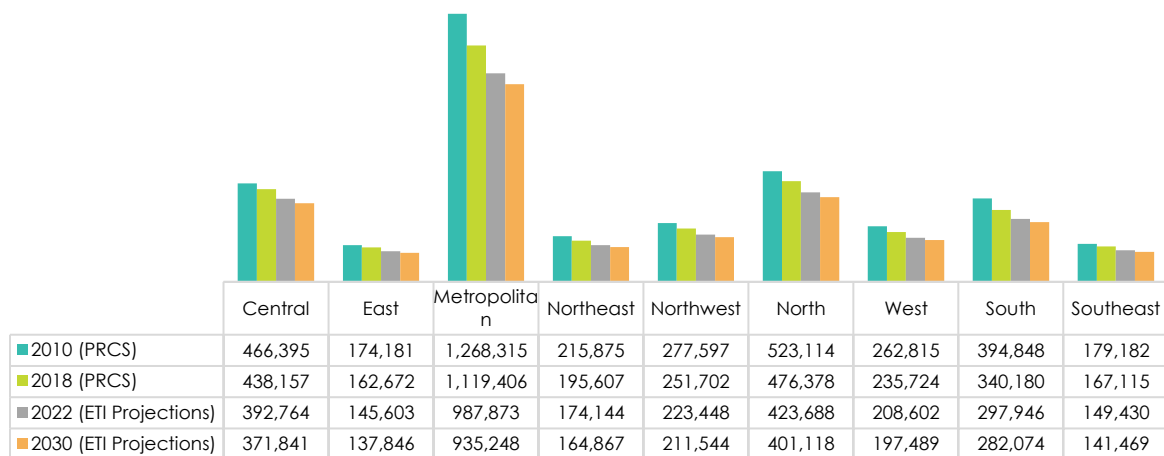
## 2 GENERAL CONTEXT OF PUERTO RICO

### 2.1 Population's characteristics

According to the Puerto Rico Community Survey 2014-2018 (hereinafter referred as PRCS 2018), Puerto Rico has a population of 3,386,941, and a population density of 379 inhabitants per square kilometer. During the past years Puerto Rico has been losing population for various reasons including an increase in migration and a reduction in births rates.

Population concentrates in the Metropolitan region with over 1.1 million citizens (33%) followed by the North region, with 476,378 inhabitants (14%). The East, Southeast and Northeast regions have less than 200,000 inhabitants each. All regions, however, are experiencing a decline in population, as shown in the following graph. The Metropolitan and South regions are losing population at a higher rate than the other regions, dropping by -1.2% and -1.5%, respectively each year from 2010 to 2018.

Graph 1. Population by region



Source: US Census Bureau, American Community Survey, Puerto Rico Estimates (2010, 2018) and projections made by Estudios Técnicos, Inc (2022, 2030).

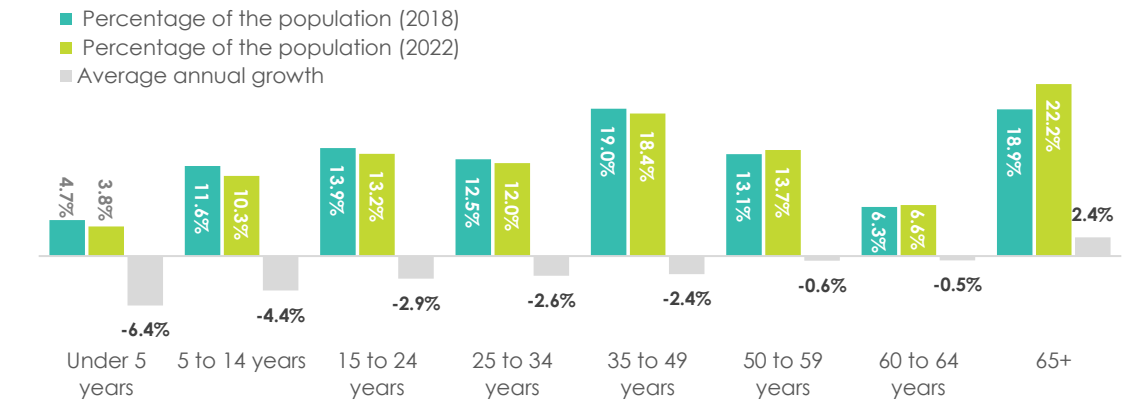
#### 1.2.1 Population by age

The recreational needs and demands vary with the age of the population. As a result, it is crucial to consider population characteristics when planning outdoor recreation. In Puerto Rico, the median age of the population has increased during the past years, from 35.9 in 2010 to 40.9 years in 2018.

About a fifth of the population is 65 years or older and 18 years or less (PRCS, 2018). In Puerto Rico, the elderly population is growing at a higher rate than other population segments as individuals of working age continue to migrate. To illustrate, those of 65 years or more represented 11.2% of the population in 2000 contrasted with 14.5% in 2010 and 19% in 2018. Contrastingly, the proportion of people 18 years or younger has decreased over the years, being 28.6% in 2000, 28.3% in 2010 and 20% in 2018. In 2022, it is projected that the population

of 65 years and older will be the largest population group in Puerto Rico. In fact, it is the only group that shows growth, while the rest continue to decline.

**Graph 2. Projected population by age**



Source: US Census Bureau, American Community Survey, Puerto Rico Estimates 2014-2018. Projections by Estudios Técnicos, Inc.

**Table 1. Selected characteristics of the population by region (2018)**

Region	Population	Median Age	Men's Median Age	Women's Median Age	Population 18 years or less	%	Population 65 years or more	%
<b>Central</b>	438,157	40.0	38.5	41.3	91,129	21%	75,659	17%
<b>East</b>	162,672	40.9	39.4	42.1	33,807	21%	29,915	18%
<b>Metropolitan</b>	1,119,406	41.3	39.0	43.5	219,476	20%	217,608	19%
<b>Northeast</b>	195,607	40.4	38.6	41.9	40,952	21%	36,005	18%
<b>Northwest</b>	251,702	41.9	40.6	43.1	50,216	20%	48,143	19%
<b>North</b>	476,378	40.8	39.4	42.2	98,306	21%	88,454	19%
<b>West</b>	235,724	42.5	40.2	44.4	44,762	19%	52,578	22%
<b>South</b>	340,180	40.1	38.0	42.0	72,979	21%	63,567	19%
<b>Southeast</b>	167,115	39.8	37.7	41.9	36,318	22%	28,694	17%
<b>Total</b>	3,386,941	40.9	39.0	42.6	687,945	20%	640,623	19%

Source: US Census Bureau, American Community Survey, Puerto Rico Estimates 2014-2018.

When examining the distribution of the population by region, it was observed that all regions have 17% or more of its population with 65 years or older in 2018. This data contrasts the 12% that was reported in the previous SCORP (data from 2011). The region with the highest percentage of citizens 65 years or older (22%) was the West (PRCS, 2018) as shown in the following population pyramids.



### 1.2.2 Income and poverty levels

The median household income in Puerto Rico was \$20,928 (PRCS, 2018). The West region, with \$15,256, reported the lowest median household income, while the highest median household income was reported in the Metropolitan region (\$25,681).

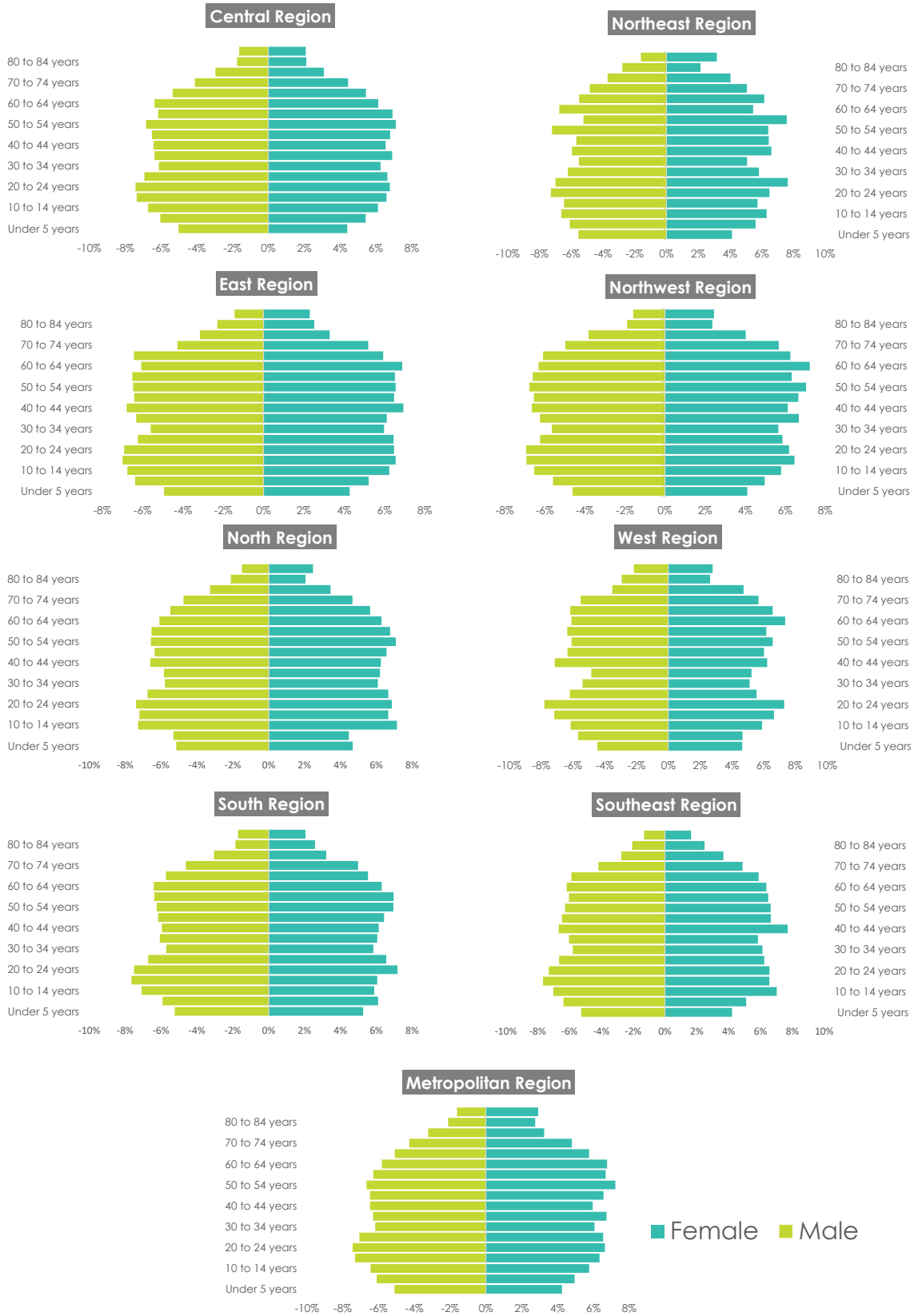
Approximately 45% of the households in Puerto Rico live below poverty level. The higher percentages of households below poverty levels were found in the Northwest (53%), West (53%), South (52%), Southeast (52%) and North (50%) regions. The lowest percentage was in the Metropolitan region (37%).

Table 2. Poverty level by region (2018)

Region	Total Households	Household's Income in the past 12 months below poverty level	Household's Income in the past 12 months below poverty level (%)	Median household income
Central	150,496	65,556	44%	\$22,214
East	54,344	25,501	47%	\$19,400
Metropolitan	420,110	156,583	37%	\$ 25,681
Northeast	65,020	29,157	45%	\$ 20,114
Northwest	90,678	47,623	53%	\$ 16,535
North	165,904	83,520	50%	\$ 17,677
West	83,867	44,774	53%	\$15,256
South	116,760	61,038	52%	\$ 17,174
Southeast	57,896	29,959	52%	\$ 17,423
<b>Total</b>	<b>1,205,075</b>	<b>543,711</b>	<b>45%</b>	<b>\$20,928</b>

Source: US Census Bureau, American Community Survey, Puerto Rico Estimates 2014-2018.

Graph 3. Population pyramids by regions (2018)



Source: US Census Bureau, American Community Survey, Puerto Rico Estimates 2014-2018.

### 1.2.3 Population with disabilities

The US Census Bureau defines the term disability as a long-lasting physical, mental, or emotional condition that can make it difficult for a person to do activities such as walking, climbing stairs, dressing, bathing, learning, or remembering. The condition can also impede a person from being able to go outside their homes alone or to work at a job or business.<sup>4</sup>

According to the 2018 PRCS, one in every five individuals in Puerto Rico (21%) had a disability. The regions with the highest proportion of people with disabilities were the Central and Northwest with 25% and 24%, respectively. The East region reported the lowest percentage of individuals with a disability at 11%.

Table 3. Population with disabilities by region (2018)

Region	Non-institutionalized population (2018) <sup>5</sup>	Population with disabilities	%	Women total population	Women with disabilities	%	Men total population	Men with disabilities	%
Central	436,800	110,348	25.0%	228,263	58,207	25.0%	208,537	52,141	25.0%
East	162,200	18,308	11.0%	84,773	9,511	11.0%	77,427	8,797	11.0%
Metropolitan	1,108,432	238,602	22.0%	593,472	131,303	22.0%	514,960	107,299	21.0%
Northeast	194,510	39,601	20.0%	102,083	21,259	21.0%	92,427	18,342	20.0%
Northwest	249,489	60,753	24.0%	128,771	31,049	24.0%	120,718	29,704	25.0%
North	474,122	94,350	20.0%	245,700	48,488	20.0%	228,422	45,862	20.0%
West	234,710	50,538	22.0%	122,634	27,224	22.0%	112,076	23,314	21.0%
South	336,562	69,174	21.0%	175,660	35,983	20.0%	160,902	33,191	21.0%
Southeast	164,746	36,670	22.0%	85,750	19,690	23.0%	78,996	16,980	21.0%
<b>Total</b>	<b>3,361,571</b>	<b>718,344</b>	<b>21.0%</b>	<b>1,767,106</b>	<b>382,714</b>	<b>22.0%</b>	<b>1,594,465</b>	<b>335,630</b>	<b>21.0%</b>

Source: US Census Bureau, American Community Survey, Puerto Rico Estimates 2014-2018.

The most common type of disability reported in Puerto Rico was ambulatory difficulty, defined as a “serious difficulty of walking or climbing stairs”.<sup>6</sup> The regions that registered the largest percentages of the population with this disability were the Northwest (15%) and Central (14%) areas. The other frequent types of disabilities are cognitive, which refers to a serious difficulty concentrating, remembering, or making decisions due to physical, mental, or emotional condition, and independent living difficulties, in which people have difficulties of doing errands alone such as visiting a doctor’s office or shopping due to a physical, mental, or emotional condition.<sup>7</sup>

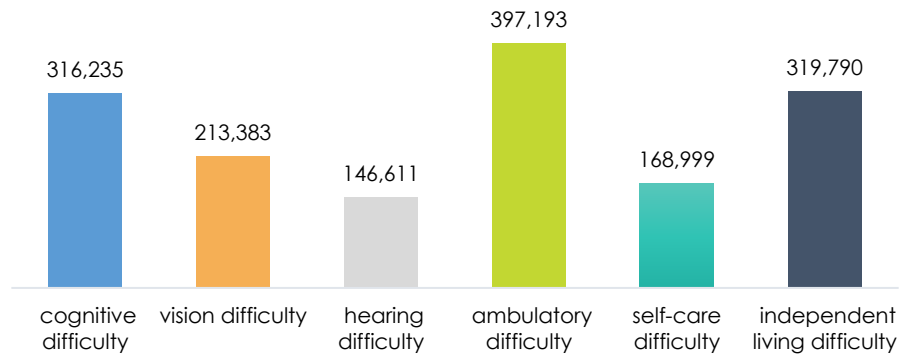
<sup>4</sup> <https://factfinder.census.gov/help/en/index.htm#glossary.htm>

<sup>5</sup> Noninstitutional group quarters are facilities that house those who are primarily eligible, able, or likely to participate in the labor force while resident. The noninstitutionalized population lives in noninstitutional group quarters such as college/university student housing, military quarters, and other noninstitutional group quarters such as emergency and transitional shelters for people experiencing homelessness and group homes.

<sup>6,7</sup> “American Community Survey and Puerto Rico Community Survey 2018 Subject Definitions”, retrieved from [https://www2.census.gov/programs-surveys/acs/tech\\_docs/subject\\_definitions/2018\\_ACSSubjectDefinitions.pdf](https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2018_ACSSubjectDefinitions.pdf)



Graph 4. Types of disabilities (difficulty)



Source: US Census Bureau, American Community Survey, Puerto Rico Estimates 2014-2018.

Table 4. Population by type of difficulty by region (2018)

Region	Population with a cognitive difficulty		Population with a vision difficulty		Population with a hearing difficulty		Population with an ambulatory difficulty		Population with a self-care difficulty		Population with an independent living difficulty	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Central</b>	52,050	12%	33,497	8%	23,334	5%	59,767	14%	21,720	5%	44,429	10%
<b>East</b>	9,400	6%	3,041	2%	2,853	2%	8,904	5%	5,245	3%	11,858	7%
<b>Metropolitan</b>	113,066	10%	60,738	5%	50,295	5%	134,692	12%	64,747	6%	104,377	9%
<b>Northeast</b>	17,350	9%	11,662	6%	8,406	4%	23,080	12%	10,114	5%	19,521	10%
<b>Northwest</b>	24,343	10%	23,825	10%	15,531	6%	37,006	15%	11,006	4%	29,863	12%
<b>North</b>	40,964	9%	30,933	7%	18,877	4%	51,153	11%	23,446	5%	45,453	10%
<b>West</b>	21,521	9%	14,411	6%	10,469	4%	27,541	12%	10,790	5%	24,519	10%
<b>South</b>	26,014	8%	20,707	6%	11,419	3%	39,543	12%	17,298	5%	29,522	9%
<b>Southeast</b>	11,527	7%	14,569	9%	5,427	3%	15,507	9%	4,633	3%	10,248	6%
<b>Total</b>	<b>316,235</b>		<b>213,383</b>		<b>146,611</b>		<b>397,193</b>		<b>168,999</b>		<b>319,790</b>	

Source: US Census Bureau, American Community Survey, Puerto Rico Estimates 2014-2018.

### 1.2.4 Availability of vehicles per household

Puerto Rico is highly dependent on personal vehicles as a means of transportation. Approximately 84% of households in Puerto Rico have at least one automobile available, which means that 16% of households did not have a vehicle (US Census Bureau, 2018). The region with the largest percentage of occupied housing units without vehicles was the West region (18%) and the lowest was the East (14%).

Table 5. Availability of vehicles in occupied housing units by region (2018)

Region	Occupied housing units	No vehicles available	%	1 vehicle available	%	2 vehicles available	%	3 or more vehicles available	%
Central	150,496	24,169	16%	60,403	40%	45,852	30%	20,072	13%
East	54,344	7,550	14%	23,909	44%	15,965	29%	6,920	13%
Metropolitan	420,110	72,765	17%	175,148	42%	121,496	29%	50,701	12%
Northeast	65,020	10,527	16%	26,980	41%	19,969	31%	7,544	12%
Northwest	90,678	13,939	15%	40,022	44%	26,406	29%	10,311	11%
North	165,904	25,566	15%	74,023	45%	46,170	28%	20,145	12%
West	83,867	14,692	18%	37,271	44%	22,819	27%	9,085	11%
South	116,760	20,164	17%	52,139	45%	31,997	27%	12,460	11%
Southeast	57,896	9,140	16%	26,145	45%	16,670	29%	5,941	10%
<b>Total</b>	<b>1,205,075</b>	<b>198,512</b>	<b>16%</b>	<b>516,040</b>	<b>43%</b>	<b>347,344</b>	<b>29%</b>	<b>143,179</b>	<b>12%</b>

Source: US Census Bureau, American Community Survey, Puerto Rico Estimates 2014-2018.

## 2.2 Puerto Rico's Fiscal and Economic Conditions

The island has undergone a major transformation in the last two decades with a prolonged and deep contraction of the economy and a major loss of population. Going forward, several issues, such as a critical fiscal situation, an increase in social demands, and downside projection of the economy, must be tackled.

In late February 2020, the government of Puerto Rico submitted a revised Fiscal Plan for the next five years that provides a projection of fiscal and economic matters and a glimpse of the serious fiscal issues still to be resolved. The Fiscal Plan incorporates major cuts in several social services, including budget reductions to the Health and Education Departments, further termination of agencies, and cutbacks in payroll.

The Fiscal Plan projects the population to be 3.0 million by 2025 and estimates a negative growth in real Gross National Product (GNP) of 1.5% and 0.7% in fiscal years 2021 and 2022. From 2023 to 2025, growth rates will be positive but modest; 0.7%, 2.2% and 1.2% for each of the three fiscal years. This prognosis is based on the continued inflow of federal reconstruction funds and their investment in construction activity. It is estimated that around \$36.3 billion will enter the economy during those years. What proportion will be invested and thus, have an impact on the economy is uncertain.

The overall picture for Puerto Rico drawn by the Fiscal Plan suggests that there will not be a significant improvement in fiscal matters and that the island's social problems could very well worsen due to fiscal constraints and the impacts of both the 2017 hurricanes and the recent earthquakes. With respect to infrastructure of various kinds, including outdoor recreation facilities, the problem is not so much of capacity since the island has a smaller economy and population, but of improvements in the condition of existing facilities.

## 2.3 Geographic and natural context

Puerto Rico is located to the east of the Greater Antilles, between the Atlantic Ocean and the Caribbean Sea. It includes the main island of Puerto Rico, the two populated islands of Vieques and Culebra, as well as Mona, Monito and other small islands and keys.

Map 2. Location of Puerto Rico in the Caribbean



Puerto Rico's climate is tropical marine, mild with little seasonal temperature variations, thus making the Island suitable for outdoor recreational activities all year round. Puerto Rico's topography, wildlife and historical and cultural resources also provide multiple opportunities for outdoor recreation.

Almost half of Puerto Rico's surface consists of mountains and hills. There is a chain of mountains known as The Cordillera Central which runs from East to West. The limestone region is located between the interior and the coast, both in the northern and southern parts of the main Island. All the limestone areas have karst features, particularly the northern limestone, with landforms such as cave systems, limestone hills, canyons, and underground rivers. Impressive limestone formations can also be seen in offshore cays and islands such as Mona island.

Puerto Rico has 224 rivers, 553 named streams and 38 reservoirs, according to the Comprehensive Water Resources Plan (DNER, 2013). In the mountainous center of the island, waterfalls and natural pools can be found as well as in the deep canyons in the karst region.

Puerto Rico has 799 miles of coastline. There are diverse natural systems along the coasts, including cliffs, beaches, sand dunes, mangrove forests and estuaries. Puerto Rico also has 10.35 miles of territorial waters and submerged lands with a diversity of natural systems such as coral reefs and sea grass beds.

As previously indicated, Puerto Rico's natural resources offer an extraordinary supply of areas for outdoor recreation. In addition to the myriad of ecosystems and wildlife, Puerto Rico's history and culture are also important for the recreation of visitors and residents.

**Figure 4. Diversity of ecosystems and cultural resources in Puerto Rico**



**Water ecosystems**  
Rivers, reservoirs, waterfalls and ponds



**Marine environments**  
Coral reefs, sea grass beds



**Mountains and hills**  
Inland Forests



**Historic and cultural resources**  
Indigenous parks  
Historic centers and landmarks



**Coastal ecosystems**  
Beaches, wetlands and estuaries



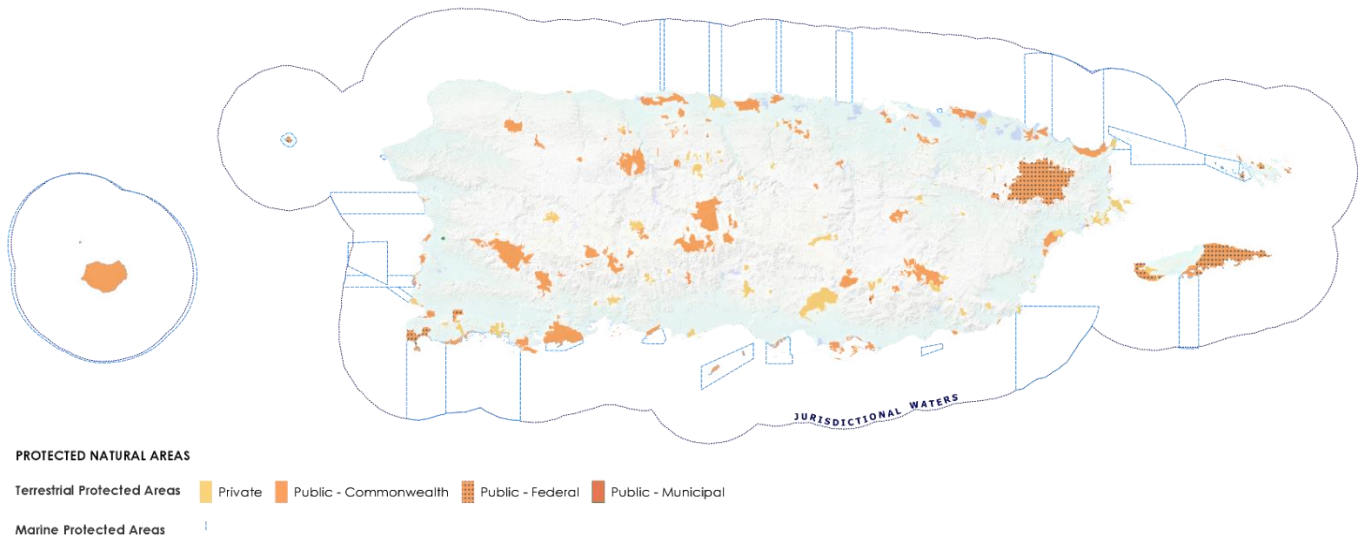
**Karst zone**  
Caves, underground rivers, canyons

### 2.3.1 Protected natural areas

Puerto Rico's land surface is approximately 8,934 square kilometers (km<sup>2</sup>) of which 16.1% is protected by the Commonwealth and federal governments, and local NGO (Castro-Prieto et al, 2019). These 159 terrestrial protected areas include Commonwealth public lands such as natural reserves, state forests, wildlife refuges, natural corridors, and national parks, that are administered by the Department of Natural and Environmental Resources (DNER). Federal lands include El Yunque National Forest (USDA, Forest Service) and five national wildlife refuges, administered by the US Fish and Wildlife Service. It is estimated that 90% of the terrestrial protected areas in Puerto Rico are public and 10% are privately owned by NGOs or individuals (Castro-Prieto et al, 2019).

Puerto Rico's territorial waters extend nine nautical miles, covering 13,552 km<sup>2</sup>. In these waters, there are 27 marine protected areas that cover 26.7% (3,618 km<sup>2</sup>) (Castro-Prieto et al, 2019).

Map 3. Protected natural areas in Puerto Rico



Source: Caribbean Landscape Conservation Cooperative, 2015. Puerto Rico Protected Areas Database (version of December, 2018). GIS data, San Juan, PR.

These terrestrial and marine protected areas have different management objectives, which allow or prohibits diverse recreational uses such as fishing and hunting, among others that are described in the following sections.

## 2.4 Commonwealth's entities roles and responsibilities associated to outdoor recreation in Puerto Rico

Commonwealth's entities that have responsibilities in outdoor recreation include the DRD, the Department of Natural and Environmental Resources (DNER), the Institute of Puerto Rican Culture, the Puerto Rico Tourism Company (PRTC) and the 78 municipalities. The following table summarizes the roles and responsibilities of these entities with respect to outdoor recreation in Puerto Rico.

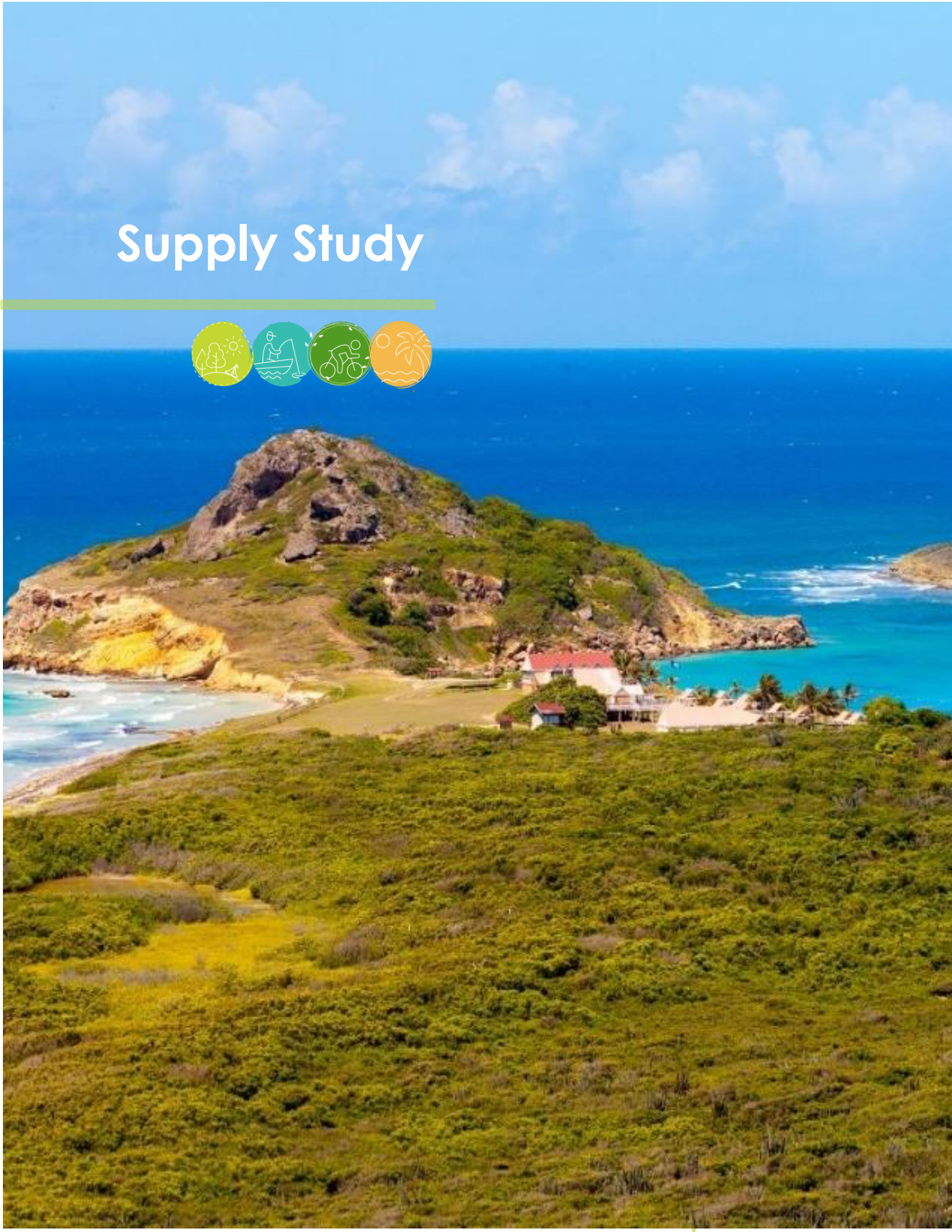
Table 6. Commonwealth's entities roles and responsibilities associated to outdoor recreation in Puerto Rico

Agency	Roles and responsibilities
<b>Sports and Recreation Department</b>	Most of the Commonwealth parks and outdoor sports facilities are administered by the DRD, which was created in 1980 and was restructured by Law No. 8 of January 8, 2004. The DRD is responsible for: improving the quality of life and promoting better use of leisure time for all segments of the population, including the elderly and people with disabilities; developing sports and recreation addressing specific interests and needs of the communities; guaranteeing access to sports and recreational activities and facilities to the most disadvantaged, although these must be accessible to all regardless of their social or physical condition; providing adequate security conditions and supervising all sports and recreational activities; playing an active role in the maintenance and improvement of sports and recreational facilities and in the planning and construction of new ones.

Agency	Roles and responsibilities
<b>Department of Natural and Environmental Resources</b>	<p>The DNER' duties and powers come from the Organic Law of the Department of Natural and Environmental Resources, Law No. 23 of 1972, as amended, and the Law No. 171 of 2018, known as the 2018 Reorganization Plan of the Department of Natural and Environmental Resources. According to these statutes the agency is responsible for the protection, management and conservation of Puerto Rico's natural resources including the territorial sea, all the wildlife, wetlands, and the conservation of beaches, among other.</p> <p>The agency has the faculty to establish, build, develop, operate, and maintain recreational areas, structures, and facilities on the lands under its custody and administration. Is also responsible for the management and operations of all natural, recreational, or historical parks that are declared national parks, as well as state forests, natural reserves, marine reserves, wildlife refuges and other protected areas. The DNER is responsible for implementing multiple laws and regulations including the Model Forest Act, Law 182 of 2014, the Puerto Rico Forest Act, Law 133 of 1975 and the New Wildlife Law of Puerto Rico, Law 241 of 1999 as amended.</p>
<b>Institute of Puerto Rican Culture</b>	<p>The purpose of the Institute of Puerto Rican Culture is to preserve, promote, enrich, disseminate, and achieve the widest and deepest knowledge and appreciation of Puerto Ricans cultural values (18 L.P.R.A. sec. 1195). This agency was created in 1955 and since then, one of its many functions had been to attend the public disclosure of all the outstanding manifestations of Puerto Rican culture through exhibitions, concerts, recitals, theater, fairs, festivals, etc. Also is the manager of most of the historic and cultural facilities throughout the island.</p>
<b>Puerto Rico Tourism Company</b>	<p>The powers and responsibilities of the PRTC come from the Law No. 10 of 1970, as amended known as the " Puerto Rico Tourism Company Act" and the Department of Economic Development and Commerce of Puerto Rico Reorganization Plan of 2018.</p> <p>The PRTC works primarily in the promotion and advertising of tourism in Puerto Rico.<sup>8</sup> It is responsible for developing a Nature Tourism Program, conducting an inventory of nature tourist attractions in Puerto Rico, and implementing and promoting nautical tourism. The PRTC must evaluate and establish quality standards for tourism facilities to improve public cleanliness of streets, parks, beaches, plazas, boardwalks, lakes, forests, and other tourist places. The entity also owns and administers the Dársenas Square and the Paseo la Princesa in Old San Juan, including their permanent artisans' markets.</p>
<b>Municipalities</b>	<p>Facilities has been transferred from the DRD to the municipalities according to the provisions of Law No. 120 of August 17, 2001, known as "Municipalization of Community Recreational and Sports Facilities Act" [21 L.P.R.A. § 814 et seq.]. This law was recently repealed, and the provisions were included in the Municipal Code of Puerto Rico, Law No. 107 of August 14, 2020.</p>

<sup>8</sup> These projects should include ecotourist projects that have been duly certified by the DNER.

# Supply Study



## 3 SUPPLY OF OUTDOOR RECREATION RESOURCES AND FACILITIES IN PUERTO RICO

### 3.1 Introduction

Outdoor recreation facilities and areas in Puerto Rico are administered by Commonwealth, federal and municipal entities, NGOs, and private landowners. Public outdoor recreation facilities are administered mainly by the DNER, the DRD, municipalities, the PRTC, and the Institute of Puerto Rican Culture. Federal agencies that provide recreational facilities include the US Forest Service, the US Fish and Wildlife and the National Park Service. *Para La Naturaleza*, a local NGO, is the private entity that manages the largest amount of areas for outdoor recreation in Puerto Rico.

The supply of outdoor recreation was identified using the following sources of information<sup>9</sup>:

- Database of recreational facilities in Puerto Rico submitted by the DRD, comprising information from municipalities and government agencies.
- Information provided by the Bureau of Protected Natural Areas and Forest Services of the DNER pertaining to the infrastructure of the Commonwealth's Protected Natural Areas and its condition.
- Secondary sources of information prepared by state and federal agencies, including: *El Yunque National Forest Atlas; A Comprehensive Inventory of Protected Areas and other Land Conservation Mechanisms in Puerto Rico; the Strategic Plan for the Management of Fish and Wildlife Resources in Puerto Rico; and the inventory of coastal areas prepared as part of the Master Plan for Public Access to the Puerto Rico's Coasts.*

The resulting information is organized in the following categories:

- Natural areas and nature-based facilities,
- Parks and sports facilities and
- Historic and cultural areas.

Quantities have been identified for some areas, but these are an approximation as they do not constitute a detailed inventory of the existing areas. Consequently, they should not be compared with information from previous SCORPs.

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<sup>9</sup> The *Land and Water Conservation Fund State Assistance Program Manual* states that comprehensive plans must evaluate the supply of outdoor recreation resources and facilities, although a quantitative statewide inventory is not required.



## 3.2 Natural areas and nature-based facilities

This SCORP discusses the supply of natural areas and nature-based facilities in two main categories:

- land based outdoor recreation areas and facilities, and
- coastal and marine outdoor recreation areas and facilities.

### 3.2.1 Land based outdoor recreation areas and facilities

Land based outdoor recreation areas and facilities encompass the protected natural areas where outdoor recreation is allowed, according to their management objectives. They also include non-designated areas such as rivers and waterfalls, caves, and other geological formations that are frequently used. These land-based natural areas and facilities are detailed in the following table.

Table 7. Land based natural areas and nature-based facilities

Areas and facilities	Number
1 Protected natural areas with recreational facilities	72
2 National Parks	21
3 Waterfalls and natural pools	209
4 Freshwater recreational fishing facilities	5
5 Cave exploration, rappelling and canyoning	25
6 Camp sites, trailer camps or cabins	25
7 Trails (Public NPA with sites with trails)	51
8 Linear parks	16
9 MTB areas	56
Landscape and wildlife observation	
10 Observation towers	11
11 Lookouts	25
12 Scenic routes	2
13 Waterfronts	20
14 Hunting areas	4

#### 3.2.1.1 Protected natural areas and national parks

There are approximately 72 protected natural areas throughout Puerto Rico that are suitable for outdoor recreation activities given basic infrastructure, no restrictions or easy accessibility. Most of these areas are state forests, natural reserves and wildlife refuges administered by the DNER. Some can be accessed freely and have infrastructure such as interpretative trails, gazebos, observation towers and fishing piers. Others, nonetheless, lack infrastructure and must be accessed through rustic and often improvised trails.

However, in many of the Commonwealth protected areas, infrastructure is in bad condition and deteriorated due to natural events and lack of proper maintenance. In fact, hurricane María and the recent earthquakes have caused severe damages to recreational infrastructure, some of which have remained closed or cannot be used.

The DNER and various municipalities also administer the Puerto Rico's National Park System. National Parks are defined as "every space, facility, structure, beach, public beach, forest, marine reserve, historic or natural resource or monument that, due to its importance for all Puerto Ricans, is declared as such by Executive Order or under the laws of the Commonwealth of Puerto Rico".<sup>10</sup> There are 22 areas designated as national parks, including beaches, vacation centers, a zoo, and urban parks, among others.

Another national park, the Río Tanamá National Park, was designated by Law 395-2004<sup>11</sup>. In compliance with the law, the former Puerto Rico National Parks Company demarcated the park, acquired land, and commissioned a master plan. Currently, however, the acquisition process has not been completed and supporting infrastructure has not been developed. Therefore, it is not formally open to the public.

One of the most important outdoor recreational areas in Puerto Rico is El Yunque National Forest. This forest has a system of trails and waterfalls that are highly frequented by tourists and residents, as well (Quiñones, et al, 2018).

Additional natural areas are owned by *Para La Naturaleza*, some of which in addition to its natural value, are of historical significance. Several of these properties are not open to the public whereas others can be visited through coordinated tours. The NGO's Casa Pueblo in



**View from the Guánica State Forest**



**El Yunque National Forest**

<sup>10</sup> Translated from Law No. 9 of 2001, "Puerto Rico National Parks System Act" as amended.

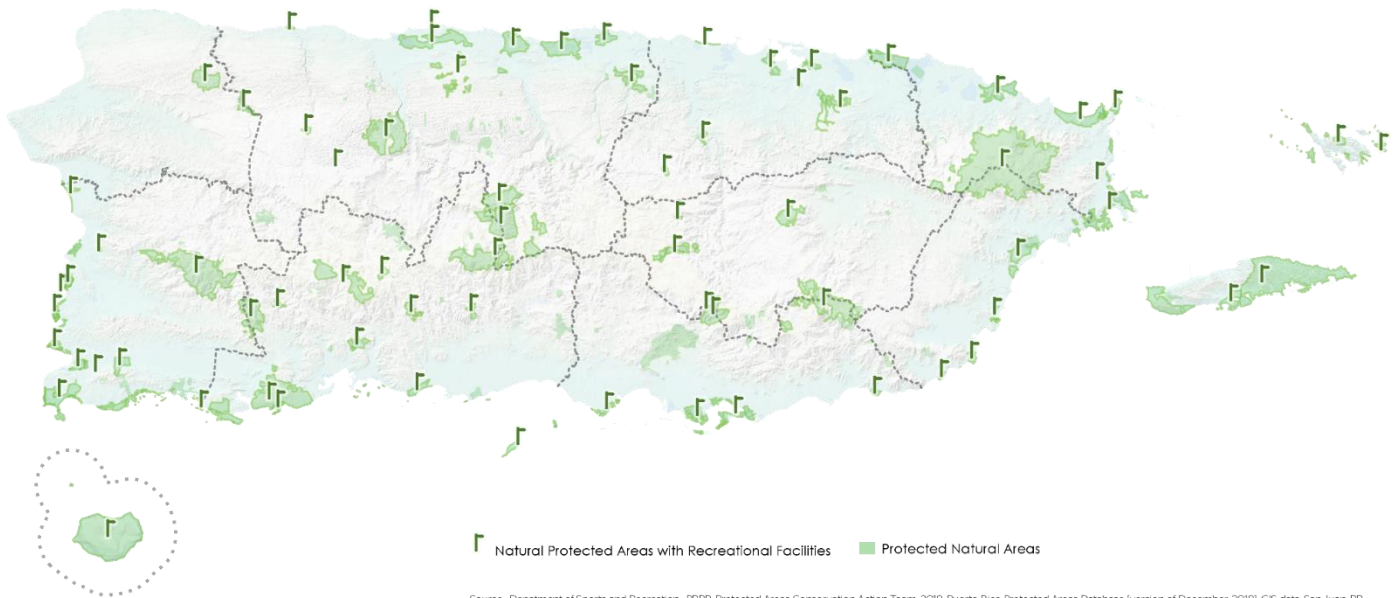
<sup>11</sup> Río Tanamá National Park Act, Law No. 395 of 2004.

Adjuntas and the Luis Muñoz Marín Foundation in Trujillo Alto also own and manage natural areas that are used for outdoor recreation in Puerto Rico.



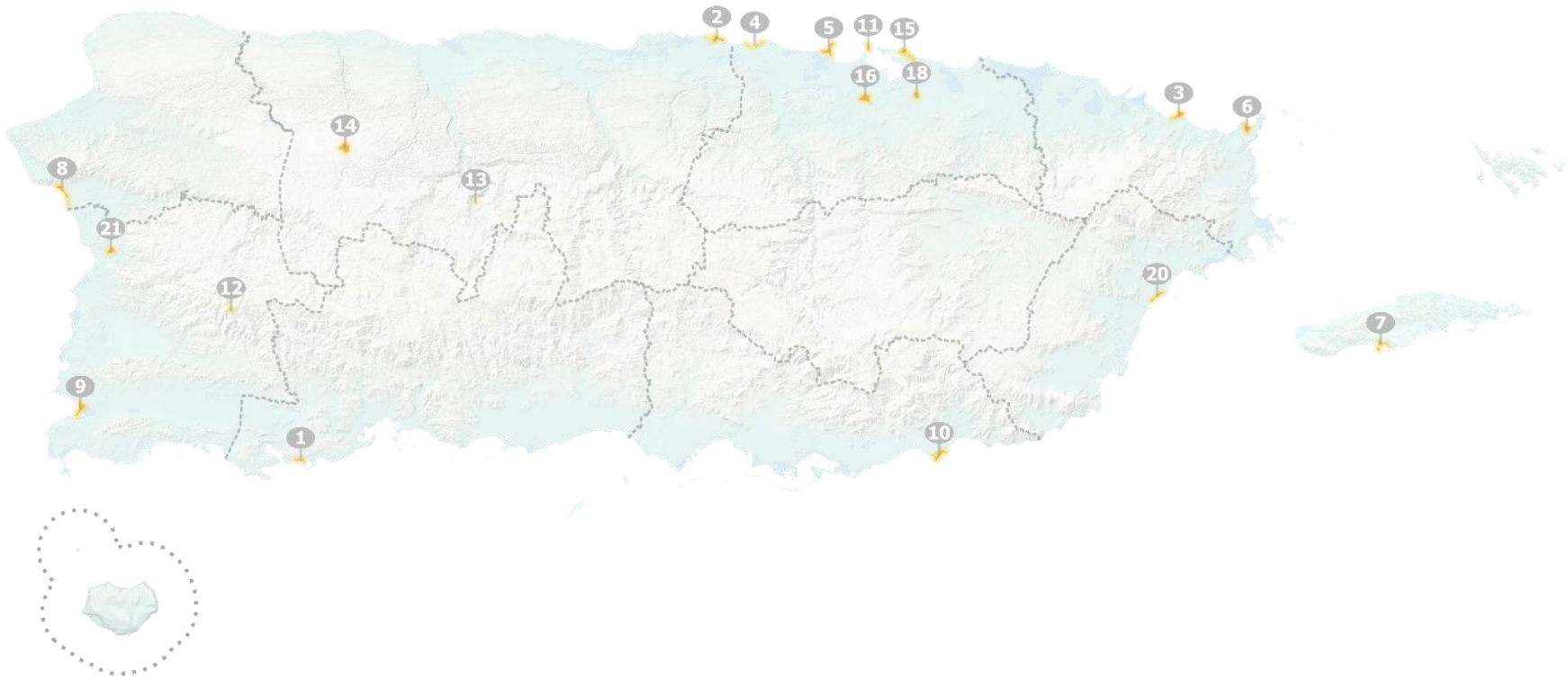
**Hacienda La Esperanza in Manatí owned by PLN**

**Map 4. Terrestrial protected natural areas used for outdoor recreation in Puerto Rico**



Source: Department of Sports and Recreation; PRPB, Protected Areas Conservation Action Team, 2018; Puerto Rico Protected Areas Database (version of December, 2018). GIS data. San Juan, PR.

Map 5. Puerto Rico National Parks



- 1. Balneario Caña Gorda
- 2. Balneario Cerro Gordo
- 3. Balneario La Monserrate
- 4. Balneario Manuel "Nolo" Morales
- 5. Balneario Punta Salinas
- 6. Balneario Seven Seas
- 7. Balneario Sun Bay
- 8. Centro Vacacional/Balneario Tres Hermanos

- 9. Centro Vacacional/ Balneario de Boquerón
- 10. Balneario/Centro Vacacional Punta Guilarte
- 11. Centro Recreativo Isla de Cabra
- 12. Centro Vacacional Parque Ecológico Monte del Estado
- 13. Parque Nacional Villas del Lago Caonillas
- 14. Parque Nacional Cavernas del Río Camuy

- 15. Parque del Tercer Milenio
- 16. Parque Julio E. Monagas
- 17. Parque Laguna del Condado
- 18. Parque Nacional Luis Muñoz Marín (Parque urbano)
- 19. Parque Luis Muñoz Rivera (Parque urbano)
- 20. Centro Vacacional/Balneario/ Punta Santiago
- 21. Zoológico de Mayagüez

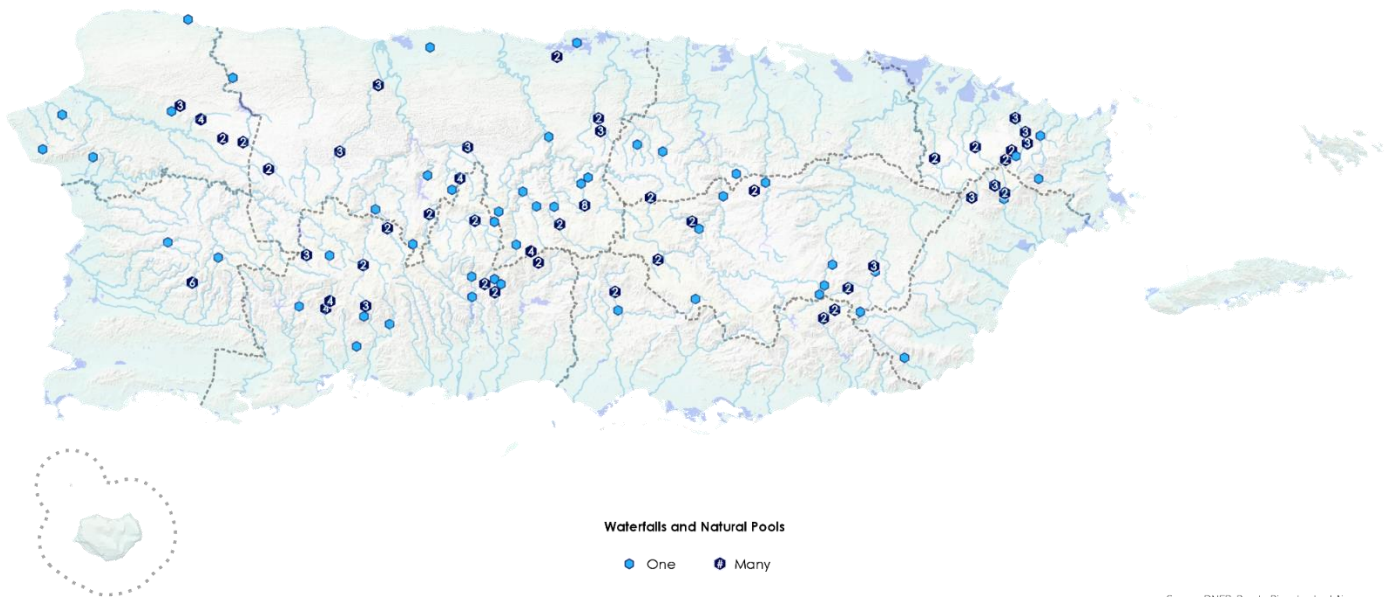
### 3.2.1.2 Recreational areas and facilities related to freshwater resources: rivers, waterfalls, and reservoirs

Over 209 waterfalls and natural pools have been identified throughout Puerto Rico. These waterbodies and water features are widely used for outdoor recreation. Most of the areas in rivers, such as waterfalls and natural pools, are accessed by informal trails and private lands. Generally, users park along the roads or in improvised parking areas. Flash floods are common, and users must be advised of safety concerns and encouraged to monitor the weather before visiting these areas. In addition, efforts should be made to improve access, to the extent possible, so that people can enjoy the inland water resources in an organized manner.



**La Planta waterfall, Arcibo**

**Map 6. Freshwater resources used for outdoor recreation in Puerto Rico**



Four reservoirs in Puerto Rico- Cerrillos, Lucchetti, La Plata and Guajataca- have public outdoor recreation facilities, which include visitor centers, boat ramps, and gazebos. These facilities have been developed by the DNER to promote recreational fishing in inland waters. In other reservoirs, boat access is provided by fishing clubs through private lands. Indeed, public facilities for outdoor recreation and fishing in inland waters is necessary. The Strategic Plan for the Management of Fish and Wildlife Resources in Puerto Rico identified the need of boat ramps for recreational fishing in Guayo, Carite and Cidra reservoirs (DNER, 2013). The same plan identified the need for fishing piers in the following rivers: Pitahaya River, Bucaná, Río Grande de Loíza, and Río Espíritu Santo (DNER, 2013).

### 3.2.1.3 Cave exploration, rappelling and canyoning

Puerto Rico has multiple geological formations that provide the opportunity for cave exploration, canyoning and climbing. Geologic formations in the karst region such as caves, cavern systems, underground rivers, haystack hills, sinkholes and cliffs are used by locals and tourists for such activities. Moreover, Puerto Rico has around 2,000 caves, but only 207 of these have been documented (DRNA, 1972, as cited in DNER, 2008).

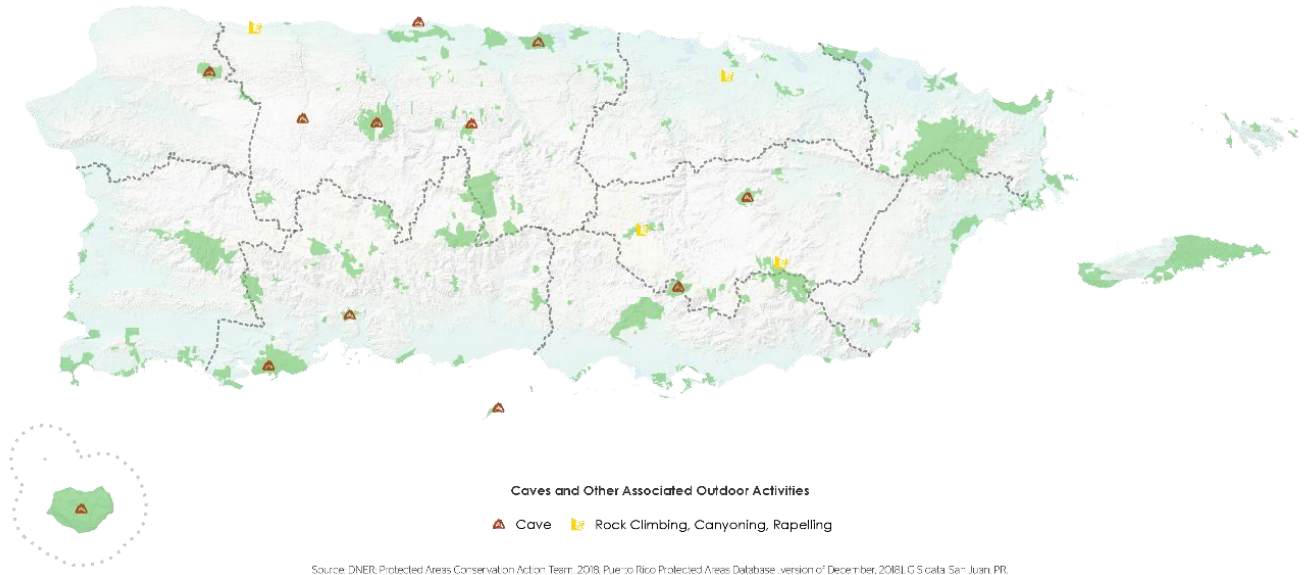
There are at least 14 protected areas with caves, canyons, and other natural features. Cueva del Viento in the Guajataca State Forest is one of the best known. The National Park, Parque de Las Cavernas del Río Camuy, is one of the most important and visited tourist destinations in Puerto Rico. Unfortunately, the park has been closed to the public since Hurricane María.

Additional areas for canyoning and rappelling are found in the interior of the island, as well as in the karst region and the cliffs on its coasts.



**Cueva del Viento, Guajataca State Forest**

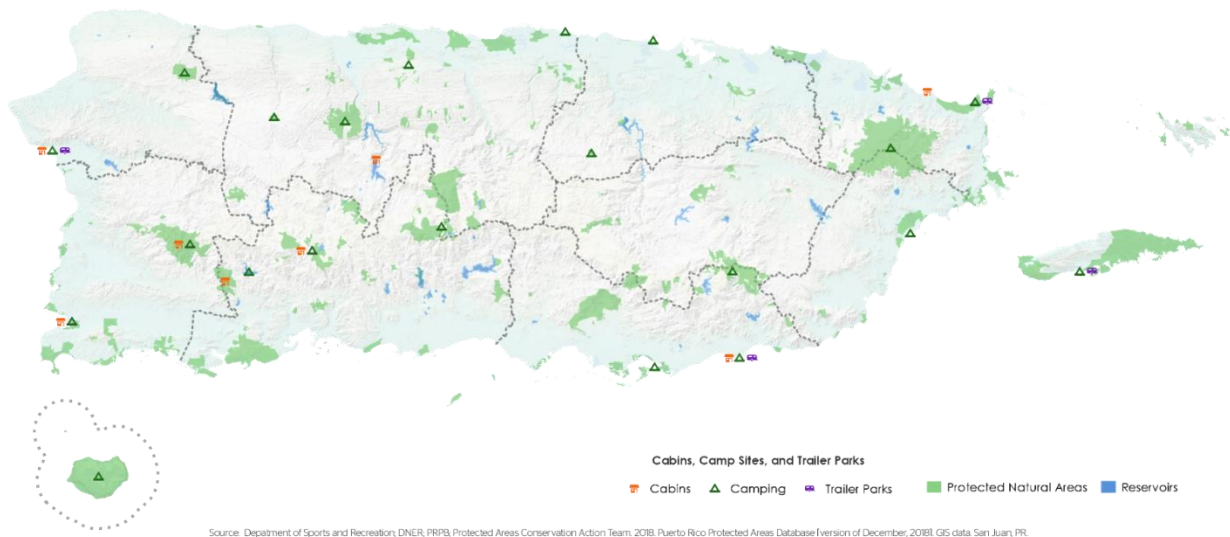
**Map 7. Areas used for cave exploration, rappelling and canyoning**



### 3.2.1.4 Campgrounds, cabins, and trailer parks

There are 26 public areas with campgrounds, rustic cabins, and trailer parks throughout Puerto Rico. Located in state forests, natural reserves, and national parks, these are administered by the DNER, except for Flamenco in Culebra, which belongs to the municipality.

**Map 8. Camp sites, cabins, and trailer parks**



Recreational facilities can be found in the mountainous forests and near the beach. However, many of these areas, especially in the state forests and national parks, remain closed due to the damages caused by Hurricane María.

In addition, there are numerous private campgrounds, glamping sites and rustic cabins within Puerto Rico that cater to all kinds of tourists and visitors.

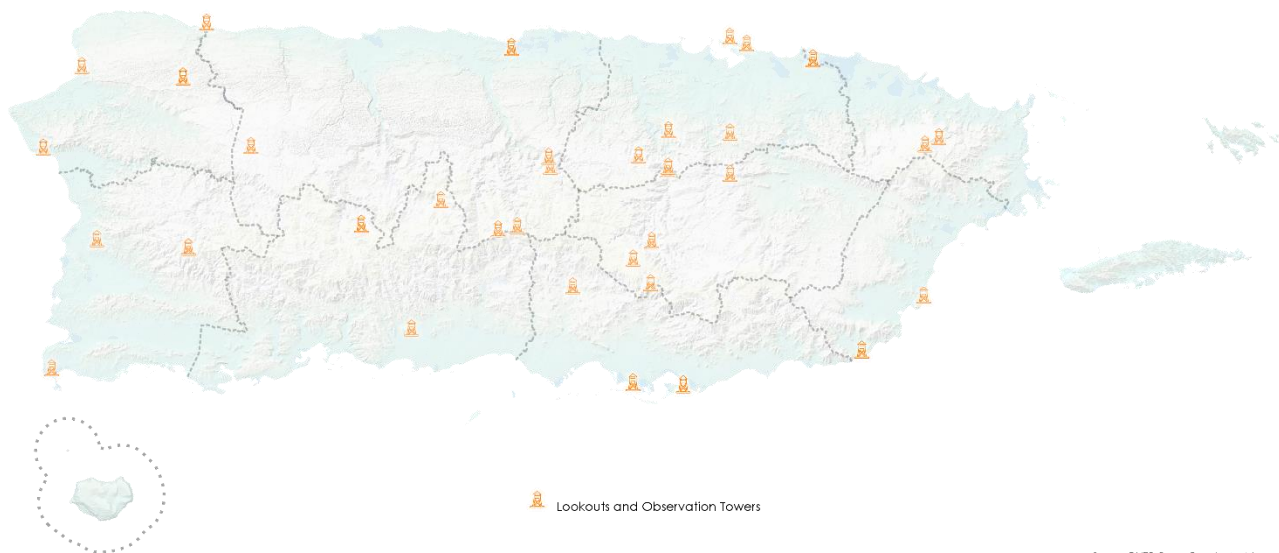


**Campground in Cerro Mágico, Adjuntas is managed by the NGO Casa Pueblo**

### 3.2.1.5 Landscape and wildlife observation: observation towers and lookouts

Observation towers and lookouts provide the opportunity to appreciate landscape and wildlife. Eleven observation towers were identified inside federal and Commonwealth protected natural areas. Additionally, nearly 25 lookouts around Puerto Rico were identified. Many of the protected natural areas and historic landmarks are situated on the roadside, particularly along the "Luis Muñoz Marín Panoramic Route".<sup>12</sup>

**Map 9. Landscape and wildlife observation lookouts**



<sup>12</sup> The trails plan describes this scenic route in more detail.





**Lookout in the Monte del Estado National Park**



**Observation Tower in Las Salinas Wildlife Refuge**

### 3.2.1.6 Hunting sites

There are four official hunting areas in Puerto Rico, all administered by the DNER. Bird hunting is permitted on the premises, except on Mona Island, where only pigs and goats can be hunted.

**Table 8. Official hunting sites in Puerto Rico**

Name	Municipality
RN Humacao Efraín Archilla Diez	Humacao
Reserva Natural de Isla de Mona y Monito	Mayagüez
Reserva Nacional de Investigación Estuarina de Bahía de Jobos	Salinas
Refugio de Vida Silvestre Iris Alameda de Boquerón / BE de Boque	Cabo Rojo

### 3.2.2 Coastal and marine facilities and areas

Puerto Rico's shores are endowments of public domain, as are coastal waters up to nine nautical miles. Accordingly, all could be used for recreational activities, although there are some restrictions or seasonal closures on leisure fishing in certain marine reserves.

Coastal and marine facilities and areas for outdoor activity contain beaches, cliffs, coastal lagoons, bays, and wetlands, as well as boat ramps, waterfronts, marinas, and mooring buoys. Some of the most frequented coastal and marine areas in Puerto Rico for open-air recreation are presented in the table below.

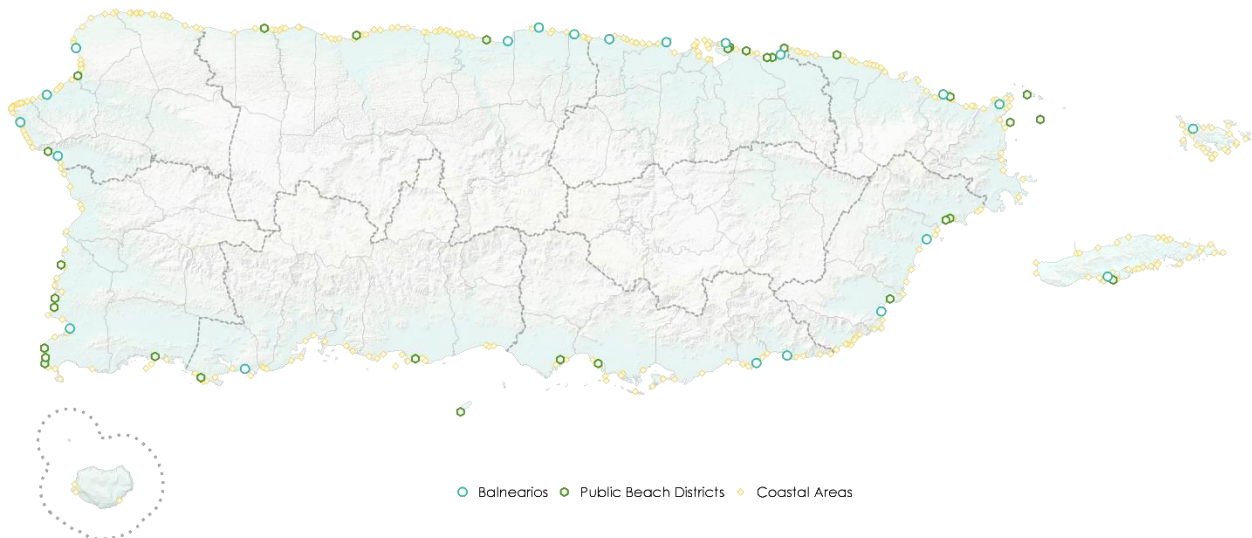
**Table 9. Coastal and marine facilities and areas**

Coastal and marine facilities and areas		Number
1	Beaches (most frequently used for bathing or snorkeling)	250
2	Beach/parks ( <i>balnearios</i> )	21
3	Coastal lagoons and bioluminescent bays	27
4	Public boat ramps and piers	25
5	Marinas and nautical clubs	21
6	Waterfronts	23
7	Mooring buoys	276
8	Underwater trails	3

### 3.2.2.1 Coastal areas and beaches

A total of 369 coastal areas have been identified in the Puerto Rico Public Access Master Plan (DNER, 2014). Coastal areas are defined as the seashore that incorporates beaches formed by unconsolidated sand and gravel, rocky coastline, rocky cliff, rocky beach, muddy beaches, cliffs, and coastline covered by wetlands (DNER, 2014).

**Map 10. Coastal areas and beach parks (*balnearios*) in Puerto Rico**



Source: DNER PRPB

Not all the coastal areas are safe for bathing and swimming, but the opportunities for outdoor recreation are diverse. Coastal and marine areas used for a myriad of water sports, such as surfing, kite surfing, windsurfing, paddleboard, kayaking, fishing, snorkeling, scuba diving, and boating, as well as wildlife and landscape observation, among many others.

There are 52 Public Beach zoning districts, which are coastal areas reserved for the use of visitors. These areas must be defined with buoys, though not all are for recreational use. However, not all these areas have recreational facilities. In 2014, it was found that there were only 21 coastal areas with facilities to support outdoor recreation (DNER, 2014). These beach parks or *balnearios* are coastal recreational centers with minimal facilities including access roads, parking, sanitary services, and showers. Moreover, their main use are the enjoyment of the sea and sun baths (Joint Permit Regulation, 2010). However, many of these facilities were devastated by Hurricane María and subsequent storm surges, and some are currently closed.

Puerto Rico also has world-class surfing beaches. Popular surfing beaches are on the West coast (Rincón, Aguadilla and Isabela), on the North coast (various spots from Arecibo through Vega Alta), and on the Metro area (San Juan, Loíza, Luquillo) and Patillas in the South.



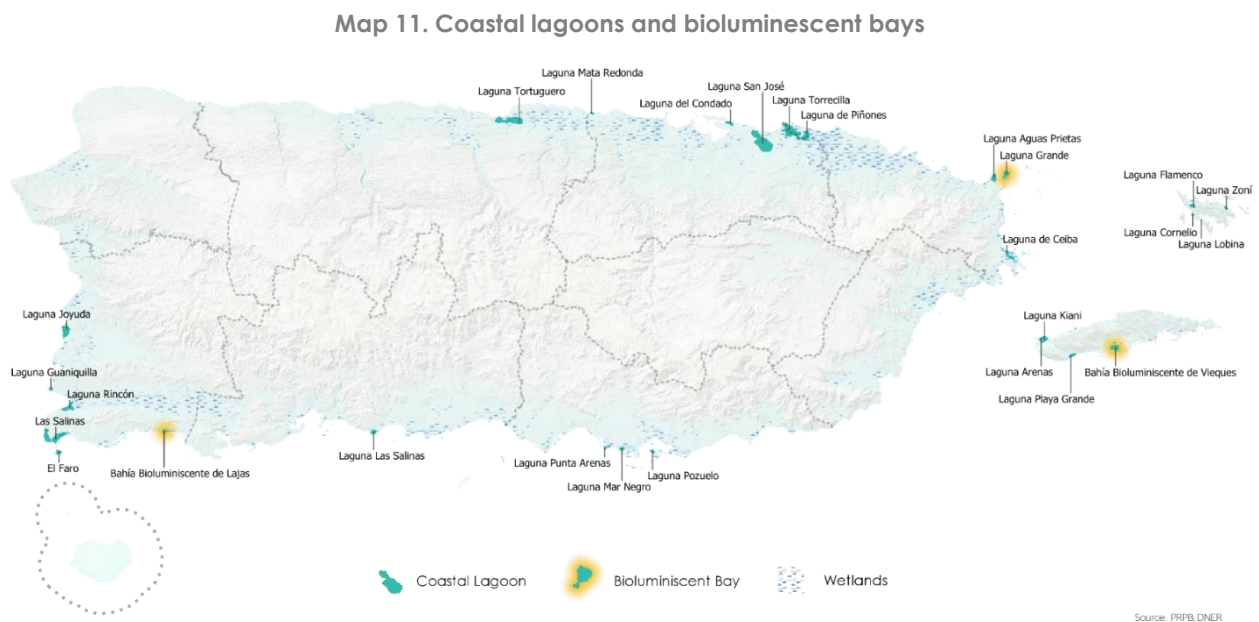
**Coastal and marine areas used for a myriad of outdoor recreation activities**

### 3.2.2.2 Bioluminescent bays and coastal lagoons

Coastal lagoons and bays are also important outdoor recreation areas. There are 27 coastal lagoons and bioluminescent bays throughout Puerto Rico that are used for activities such as birdwatching, kayaking, and fishing. In the San Juan Metropolitan Area, the Condado Lagoon and Torrecilla Lagoon are the most visited. The Condado Lagoon, a protected area, is frequently used for kayaking, paddle boarding and bathing. The Torrecilla Lagoon is an important location for recreational, charter, and commercial fisheries. Laguna Tortuguero in Vega Baja and Joyuda are also important for birdwatching and other nature-based activities.

Laguna Grande in the Cabezas de San Juan Natural Reserve, the Vieques bioluminescent bay, which is the brightest worldwide along with, and, to a lesser extent, La Parguera (in Lajas) are highly frequented by kayak tours for its bioluminescence phenomena.

Coastal lagoons and the more frequented bioluminescent bays are presented in the following map.



It could be said that coastal lagoons have extraordinary potential for nature-based recreation that is not being optimized. However, any infrastructure or activity must be carefully planned and managed because of the sensitivity of these ecosystems.

### 3.2.2.3 Waterfronts, public boat ramps and piers

There are 22 waterfronts situated in different municipalities throughout Puerto Rico that provide access to the coasts. However, some, like the Guancha in Ponce, have been severely affected by natural events, such as the recent earthquakes.

The DNER has developed infrastructure to support access to coastal waters, especially for recreational fishing. There are eight boat ramps, nine boarding docks, five fishing piers and three fishing boardwalks, among other supporting infrastructure (DNER, 2013).

Furthermore, 55 ramps and a boarding dock were identified which presumably were developed by private entities, such as fishing clubs. These, added to the facilities developed by the DNER, make up a total of 62 boat ramps and 10 boarding piers in Puerto Rico.

Both users of these areas and DRNA staff have identified the need for developing new facilities and improving recreational fishing facilities on public lands administered by the DNER (DNER, 2014).

There are 56 private marinas and nautical clubs aimed at recreational fishing. It is estimated that these facilities have the capacity to house more than 4,915 boats in docks and another 2,896 in "dry stacks". To support nautical activity and protect coral reefs and associated environments the DNER and the NOAA have installed 276 mooring buoys, mostly found on the East of Isla Grande, between Culebra and Fajardo (139) (DNER, 2013). However, many of these are damaged and still insufficient to address the demand.



**La Guancha in Ponce is one of the most visited outdoor recreation facilities. It has been severely impacted by the earthquakes that are still affecting the south of Puerto Rico.**

**Map 12. Coastal and marine facilities**



### 3.3 Parks and outdoor sports facilities

This section describes public gardens, arboretums<sup>13</sup> and parks and sports facilities used for outdoor recreation. Parks, courts, and outdoor sports facilities are the most abundant outdoor recreation amenities in Puerto Rico. Most of these are administered by the municipalities. These parks serve their surrounding communities, and other are of regional scope. Many of them combine playgrounds and sports facilities, such as basketball courts and baseball fields.

**Table 10. Botanical gardens, parks, and sports facilities**

Botanical gardens, Arboretums		Number
1	Botanical gardens	2
2	Arboretum	1
Parks		
1	Community parks/playgrounds	580
2	Water parks/ Public pools	22
Outdoor sports facilities		
1	Jogging track	41
2	Skateboard parks	10
3	Tennis courts	26

<sup>13</sup> An Arboretum is an area devoted to specimen plantings of trees and shrubs and is considered an outdoor museum of trees.

Outdoor sports facilities		
4	Golf courses (Public)	2
5	Basketball courts	707
6	Volleyball courts	8
7	Soccer fields	13
8	Softball/ baseball fields	312
9	Handball Court	2
10	Sports Complex/Facilities	259
11	Stadiums	57

### 3.3.1.1 Botanical gardens/public gardens

Puerto Rico has two public botanical gardens. First, the Río Piedras Botanical Garden, which belongs to the University of Puerto Rico, is part of the protected natural area known as Corredor Ecológico of San Juan. Another well-known botanical garden is the William Miranda Marín in Caguas. Moreover, the Parque Doña Inés, located in Trujillo Alto, is an arboretum that houses a collection of endangered endemic trees. It is also part of the protected area known as the Corredor Ecológico of San Juan. In these areas multiple activities are carried out such as summer camps, fairs, educational activities, among others.



Caguas Botanical Garden



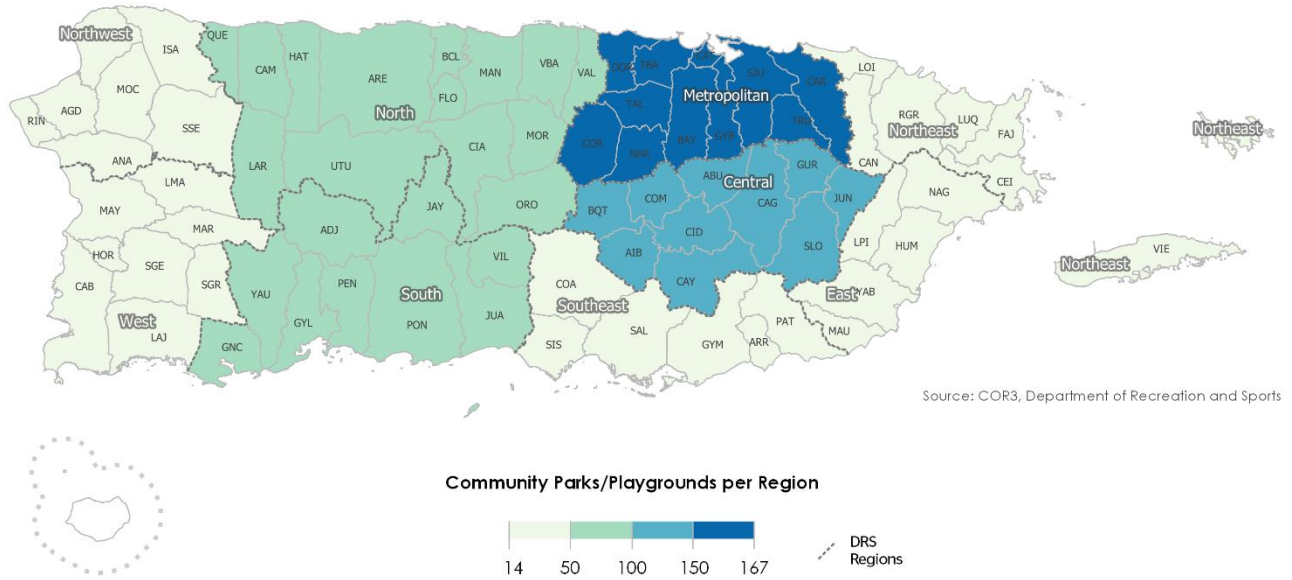
Arboretum Parque Doña Inés

### 3.3.1.2 Community parks/playgrounds

Community parks such as playgrounds and sports facilities are the most common facilities for outdoor recreation in Puerto Rico. These include recreational facilities inside gated communities and in public areas. As seen in the following map, the 580 community parks, sport complex and playgrounds are concentrated in the Metropolitan and the Central

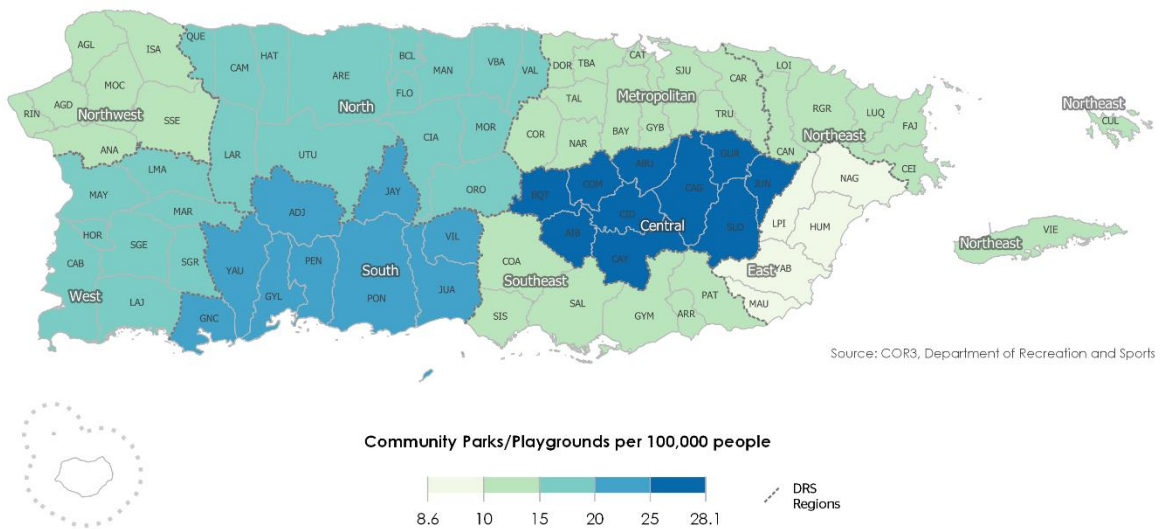
regions. While the regions in the western and eastern ends of Puerto Rico have a smaller distribution of this type of park, as seen in the following map.

**Map 13. Distribution of community parks and playgrounds**



When examining the distribution of community parks and playgrounds by the number of inhabitants, the East region has the least number of community parks and playgrounds in relation to the number of inhabitants. The opposite is true the Central region, which has the highest number parks compared to the number of residents.

**Map 14. Distribution of community parks and playgrounds per 100,000 inhabitants**





### 3.3.1.3 Water parks and public pools

There are approximately 22 water parks and public pools throughout Puerto Rico. Some of these are swimming pools, while others are small thematic parks with shallow pools. Many of these are municipal enterprises that require a fee for admission.



**Small water park in a plaza in Old San Juan**



**Pool in La Perla, San Juan**

There are thermal pools in the municipality of Coamo, which are a unique recreational facility in Puerto Rico visited by locals and tourists as well. These are also managed as a municipal enterprise and a fee is required to use the facilities.

### 3.3.2 Outdoor sports facilities

Sports facilities include communal facilities, such as jogging tracks, baseball parks and basketball courts, to name a few. In total, 1,437 of these facilities were identified, as presented in the following map. Most of the municipal and neighborhood parks are baseball/softball parks and basketball courts. In the future, changes in the demographic characteristics of the population and their demands might require more diversity in the supply of parks and other places for recreation, including more areas for passive recreation.

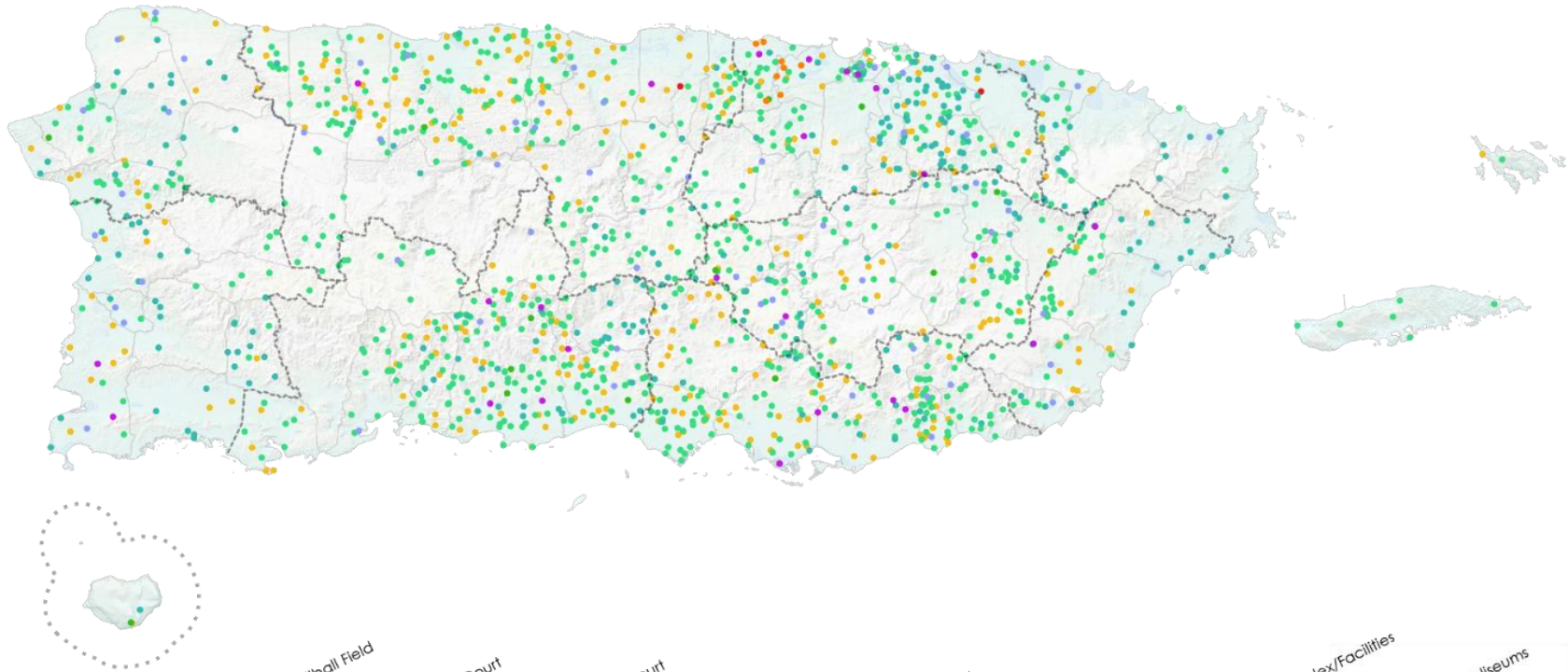










**Community basketball court, San Juan**



**Baseball park in Rincón**

Map 15. Outdoor sports facilities



Region	 Baseball/Softball Field	 Basketball Court	 Volleyball Court	 Soccer Field	 Tennis Court	 Handball	 Sports Complex/Facilities	 Stadiums/Coliseums	Total
Central	30	86		3	3		29	10	161
East	12	36			2		18	3	71
Metropolitan	32	80	8	2	7	1	70	7	207
North	94	159		1	3	1	18	13	289
Northeast	7	24					18	2	51
Northwest	13	24		1			20	6	64
South	53	123		4	5		33	6	224
Southeast	57	115		1	4		20	5	202
West	14	18		1	2		33	5	73

Note: The position of points is random within the municipality level and serves illustration purposes only.

Source: COR3; Department of Recreation and Sports

### 3.3.3 Historic and cultural facilities/areas

Historical resources are also widely used for outdoor recreation activities, but not all areas are for public use. Puerto Rico has 365 sites and districts in the National List of Historic Places (NLHP); the most visited being the Old San Juan and its historic sites. Furthermore, there are a plethora of historic sites in all 78 municipalities that are essential for tourism and the economy.

Table 11. Historic and cultural facilities and areas

Historic and cultural facilities and areas		Number
1	Historic Sites/places (NLHP)	365
2	Farms that provide tours - private	20
3	Public plazas/town squares	87

The list of historic sites includes, among others, lighthouses, churches, old bridges, and archeological sites, such as the Tibes Indigenous Ceremonial Center and the Caguana Indigenous Ceremonial Park, whose supporting infrastructure was developed with the LWCF. Although not formally designated as outdoor recreation areas, there are other places of historical and cultural importance for locals and visitors. These include the old train tunnels, the roadhouses (*casas de caminero*), and the old sugar estates, among others. Over the past years, interest in these historic sites, particularly agricultural ones, has led to the restoration of several private *haciendas*, many of which provide tours and activities.

In addition, all the municipalities have at least one public square that offer open space for outdoor recreation. Concerts and other cultural events are offered by the municipalities in these areas. Some of the biggest municipalities, such as Ponce and San Juan have more than one public square.

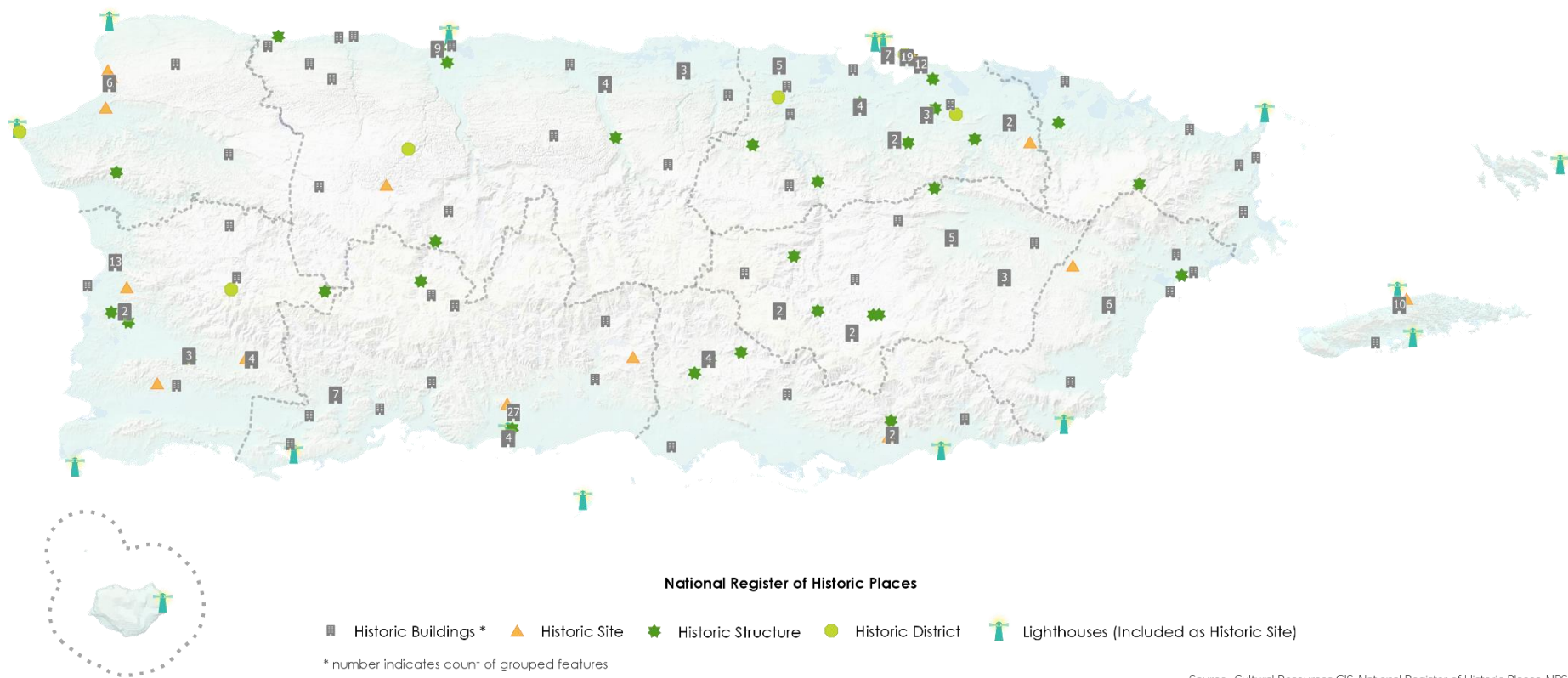


Caguana Ceremonial Center



Guaniquilla old train tunnel

Map 16. Historic sites in Puerto Rico



Source: Cultural Resources GIS, National Register of Historic Places, NPS



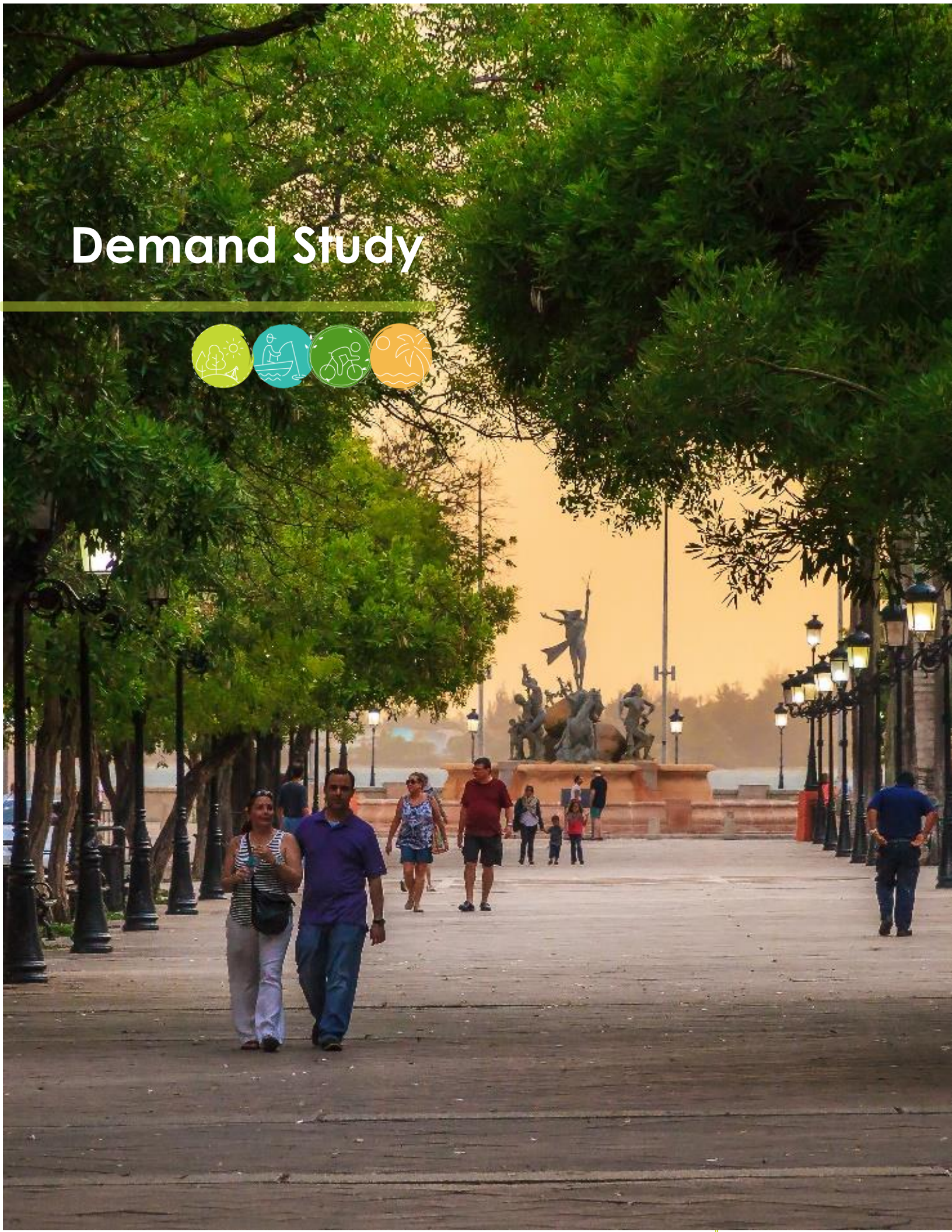
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### 3.4 Main findings of the supply study

Information from the different sources was combined to determine the number of places for outdoor recreation in Puerto Rico. Over 3,000 places for outdoor recreation were identified. However, some places may be duplicated given that they may encompass other protected areas or may be a sports complex with multiple facilities. For this reason, these numerical values should not be compared with the previous SCORP.

The data provides valuable information regarding the extent and distribution of outdoor recreation areas and facilities in Puerto Rico. However, it is important to recognize that it is very difficult to generate a detailed inventory as many of the natural, cultural and landscape features in Puerto Rico used for recreation are often found on private lands. Furthermore, although it may seem that there are many facilities for outdoor recreation in Puerto Rico, to date, many are closed due to unsafe conditions for visitors.

# Demand Study



## 4 DEMAND STUDY

### 4.1 Introduction

One of the essential components of the SCORP is an evaluation of the demand for outdoor recreation, including the population's outdoor recreation preferences. To fulfill this requirement, perceptions and needs associated with outdoor recreation in Puerto Rico were consulted with three sectors through surveys. These groups were the following:

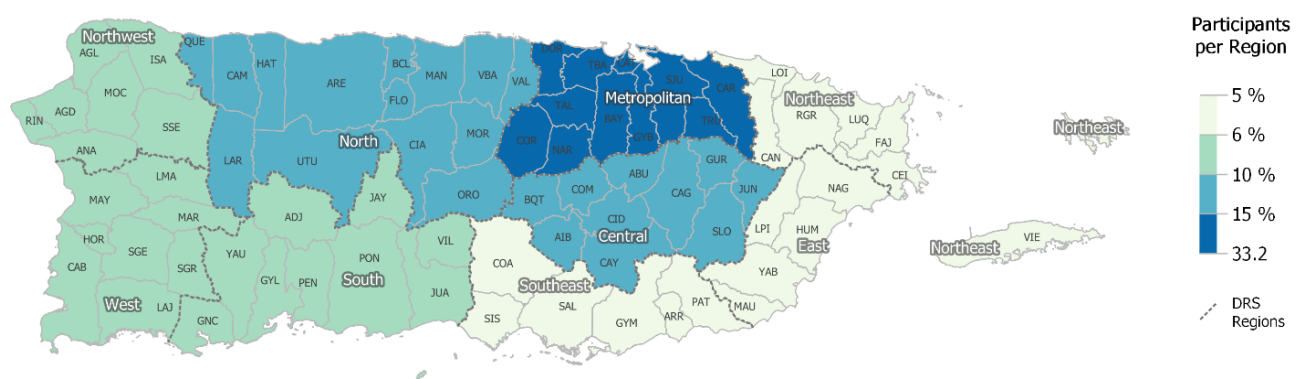
- General population: Residents of Puerto Rico 18 years of age or more living in households,
- NGO and concessionaires, and
- Municipal representatives.

The methodology used is described in section 1.1.1. Statistical tests were performed to distinguish significant differences by region, by sex or age. In most cases, no significant differences were found. Therefore, the results are presented for Puerto Rico and the regional and demographic trends are discussed only for the variables with significant differences.

#### 4.1.1.1 Participant's profile

People in the 78 municipalities were interviewed. The distribution of the participants by region is presented in the following map.

Map 17. Municipality of residence of the participants



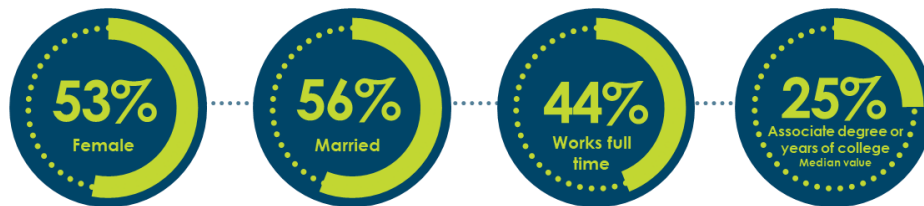
The largest proportion of participants were women (53%). The median age is 47 years, the maximum age is 93 years, and the minimum age is 18 years.

Moreover, 44.0% of participants have a full-time job, and 25.2% are retired/pensioned. The highest academic degree attained by the median of the interviewees is Associate degree or some years of college. Further, 53% of the participants indicated that they were married or living together.



**Most of the participants were women**

**Graph 5. Selected participants' characteristics**



Median age: 47 years, maximum age is 93 years, minimum age is 18 years

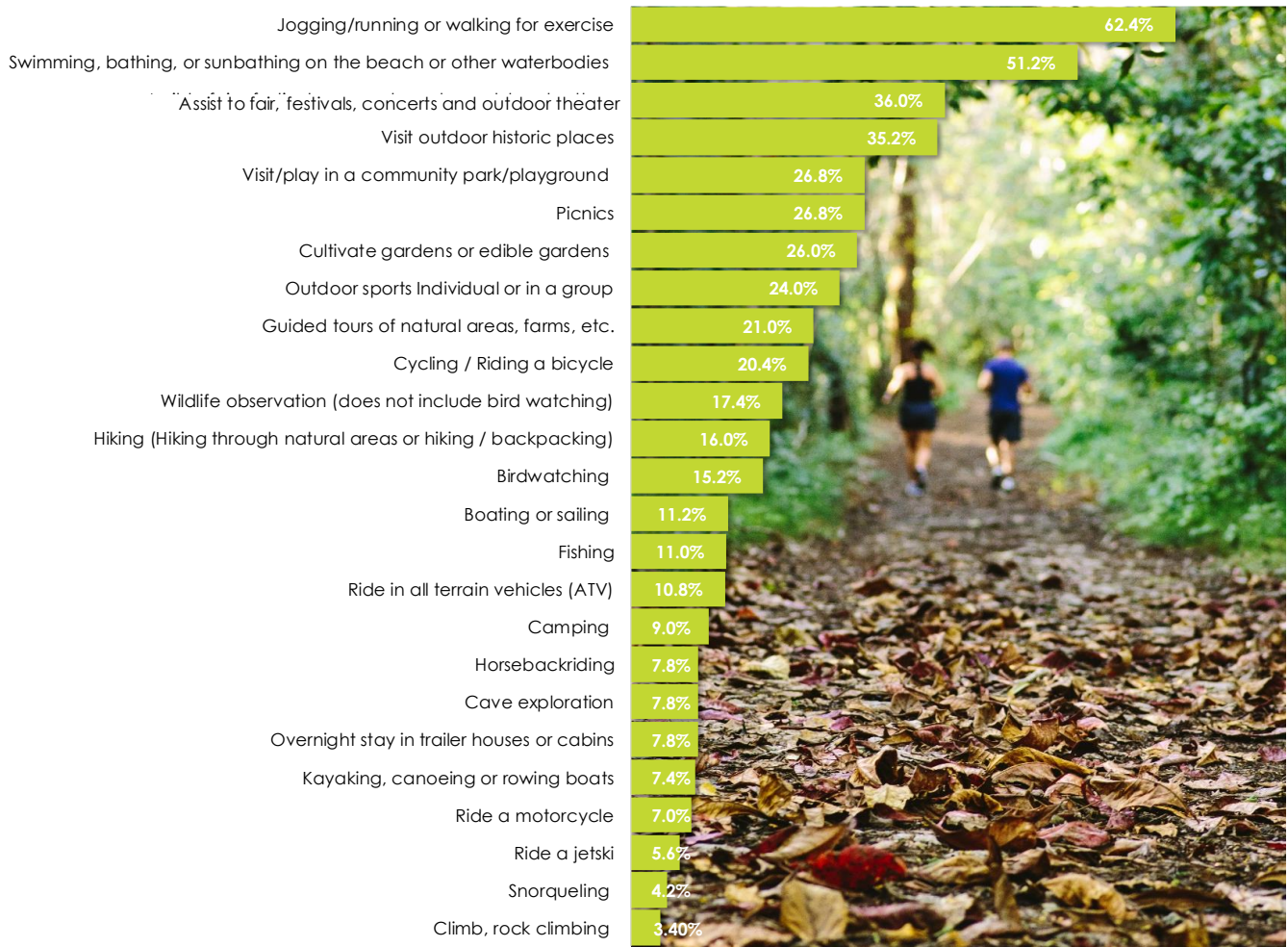
On average, the households interviewed consisted of three individuals: typically, with one person under 18 years of age and another over 65 years of age. The median household income ranged from \$15,000 to \$19,999. Moreover, about two in very ten households (21%) has a resident with a physical, mental, or sensory impairment.

#### 4.1.1.2 Outdoor recreation activities most frequently practiced by Puerto Ricans

The two outdoor recreation activities most frequently practiced in Puerto Rico are jogging, running, and/or walking for exercise (62.4%) and swimming or sunbathing on the beach or other waterbodies (51.2%). Those who indicated that they swim, bathe, or sunbathe do so usually on the beach (43.8%), followed by pools (28.6%), rivers (11.6%), reservoirs (2.2%) and hot springs (0.2%). The following graph presents the top 25 outdoor activities that are practiced by the people who live in Puerto Rico.



**Graph 6. Top 25 outdoor recreation activities practiced in Puerto Rico**



The numeric base are the 500 people interviewed. As it is a multiple-choice question, a separate count is made for each of the answers mentioned, and the sum of percent can be different from 100%.

Other frequently practiced outdoor recreation activities are in connection with arts and culture. At least three of every ten people visit outdoor historic places (35.2%) and assist fairs, festivals, concerts, and outdoor theaters (36.0%).

Attending sporting events stands out among the most practiced sports activities (12.0%) followed by playing basketball (10.8%) and softball or baseball (9.6%), as shown in the following table.

**Table 12. Could you please indicate which of the following outdoor recreation activities you have participated alone or accompanied in the past twelve months? – Sports**

Sport	%	Sport	%
Attend outdoor sporting events	12.0%	Track & Field	0.2%
Play basketball	10.8%	Handball	0.2%
Playing softball or baseball	9.6%	Skateboard	0.2%
Play volleyball	7.4%	Track & Field Fitness Trainer	0.2%
Play football	2.8%	Football	0.2%
Play tennis	1.4%	Sports fight	0.2%
Does not know / Does not indicate	0.6%	Wrestling	0.2%
Outdoor gym	0.4%	Outdoor weightlifting	0.2%
Karate	0.4%	Play golf	0.2%
Beach volleyball	0.4%		

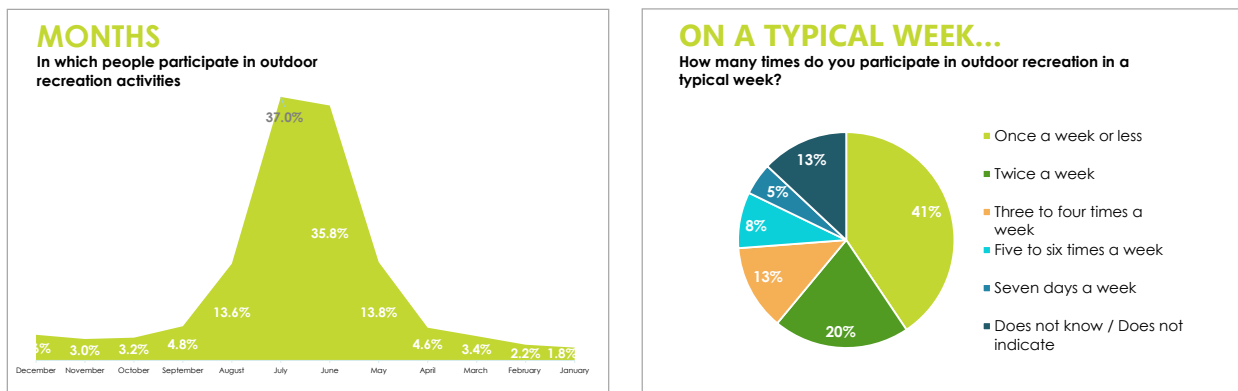
*Note: The numeric base are the 500 people interviewed. As it is a multiple-choice question, a separate count is made for each of the answers mentioned, and the sum of percent can be different from 100%.*

On the other hand, it should be noted that one in ten people indicated that they do not practice any outdoor recreation activity (12.2%).

#### 4.1.1.3 Trends and characteristics related to outdoor recreation activities

The highest proportion of respondents practice outdoor recreation activities throughout the year with June and July being the busiest months. On a typical week, 40.6% of people practice outdoor recreation activities at least once.

**Figure 5. Period and frequency in which people practice outdoor recreation activities**



*Note: The numeric base are the 500 people interviewed.*

As age increases, the frequency with which people practice outdoor recreation activities on a typical week decrease. In fact, the proportion of people under the category of “does not know/ does not indicate” increases linearly with age, suggesting that these people do not practice outdoor recreation activities.

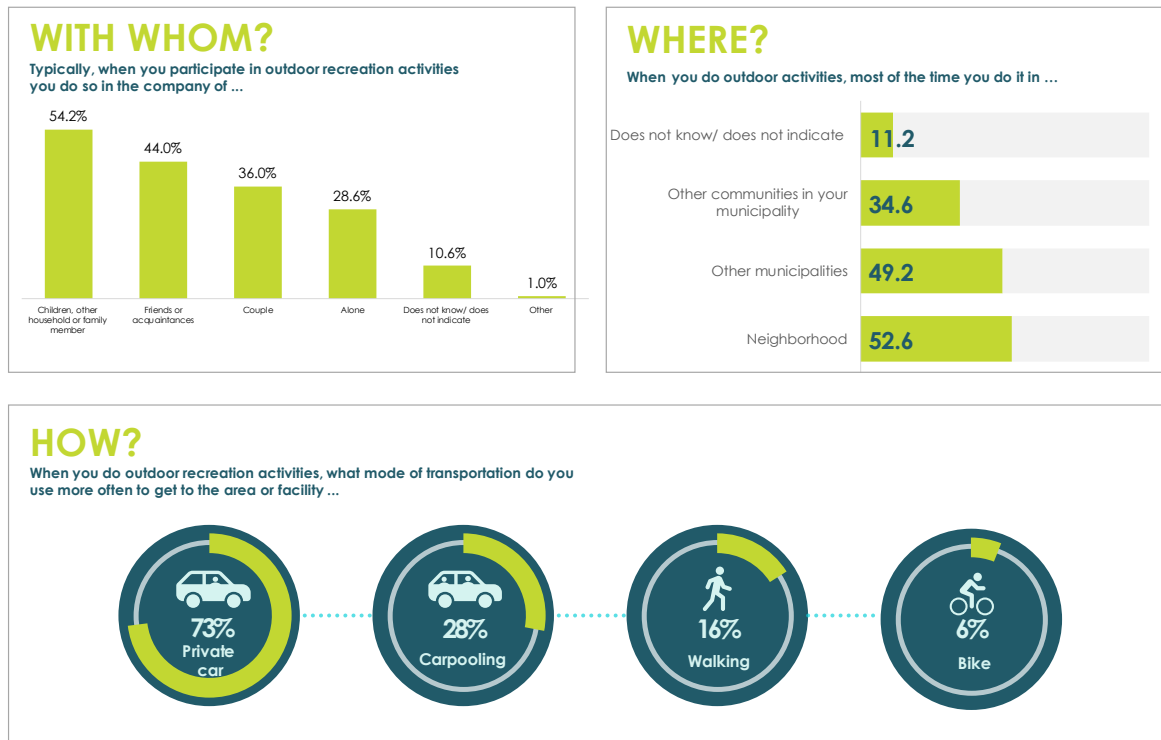
**Table 13. On a typical week, how many times do you participate in outdoor recreation activities?**

	18 - 29	30 - 49	50 - 64	65 or more	Total
Once a week or less	35.9%	43.6%	39.8%	41.5%	40.6%
Twice a week	29.1%	22.4%	16.3%	14.4%	20.4%
Three to four times a week	16.5%	16.7%	13.8%	3.4%	12.8%
Five or six times a week	9.7%	4.5%	8.9%	11.9%	8.4%
Seven days of the week	4.9%	3.2%	4.9%	6.8%	4.8%
Does not know / Does not indicate	3.9%	9.6%	16.3%	22.0%	13.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Note: The numeric base are the 500 people interviewed.

Typically, people practice outdoor recreation activities with a member of their household or family (54.2%) and with friends or acquaintances (44.0%). Many practice outdoor recreation activities in their communities (52.6%) or in another municipality (49.2%). To arrive at these locations, people commonly use their private cars (73%), carpool (28%), walk to the area (16%), or use a bicycle (6%).

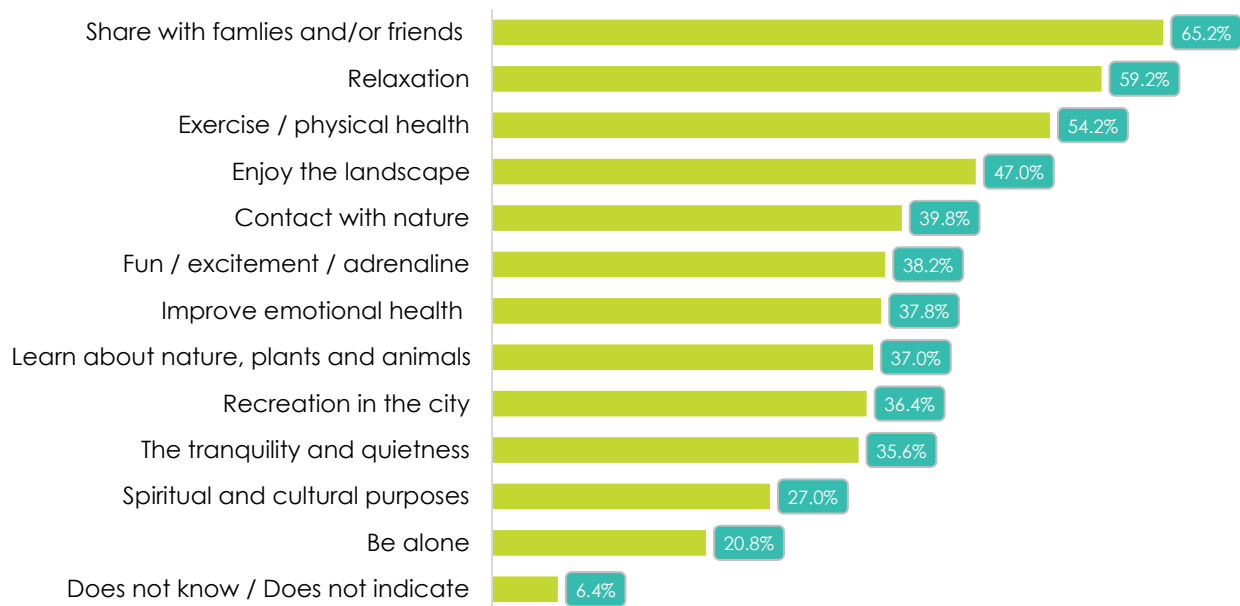
**Figure 6. With whom, where and how people practice outdoor recreation activities**



Note: The numerical base is the 500 people interviewed. As it is a multiple-choice question, a separate count is made for each of the answers mentioned, and the sum of percent can be different from 100%.

More than half of the respondents mentioned sharing with families and friends (65.2%), relaxing (59.2%), and exercising (54.2%) as activities they enjoy doing outdoors. Other aspects such as enjoying the landscape (47.0%), contact with nature (39.8%) and fun/excitement and adrenaline (38.2%) are also reasons for wanting to experience recreational outside activities.

**Graph 7. Which of the following aspects that I am going to mention to you, if any, are those that you enjoy the most in outdoor recreation in Puerto Rico?**

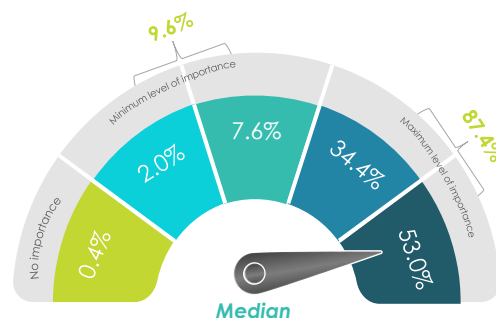


Note: The numeric base are the 500 people interviewed. As it is a multiple-choice question, a separate count is made for each of the answers mentioned, and the sum of percent can be different from 100%.

#### 4.1.1.4 Importance of outdoor recreation for Puerto Ricans

For most of the participants (87.4%), outdoor recreation is either important or very important. Outdoor recreation is meaningful for all age groups, but even more for younger groups.

**Graph 8. How important or not is for to you to enjoy outdoor recreation?**



Note: The numeric base are the 500 people interviewed.

**Table 14. How important or not is for to you to enjoy outdoor recreation? By age**

	18 - 29		30-49		50 - 64		65 or more		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Very important	63	61.2%	82	52.6%	64	52.0%	56	47.5%	265	53.0%
Important	36	35.0%	51	32.7%	40	32.5%	45	38.1%	172	34.4%
Some important	3	2.9%	15	9.6%	12	9.8%	8	6.8%	38	7.6%
Less important	0	0.0%	4	2.6%	3	2.4%	3	2.5%	10	2.0%
No important	0	0.0%	0	0.0%	0	0.0%	2	1.7%	2	0.4%
Does not know / Does not indicate	1	1.0%	4	2.6%	4	3.3%	4	3.4%	13	2.6%
<b>Total</b>	<b>103</b>	<b>100.0%</b>	<b>156</b>	<b>100.0%</b>	<b>123</b>	<b>100.0%</b>	<b>118</b>	<b>100.0%</b>	<b>500</b>	<b>100.0%</b>

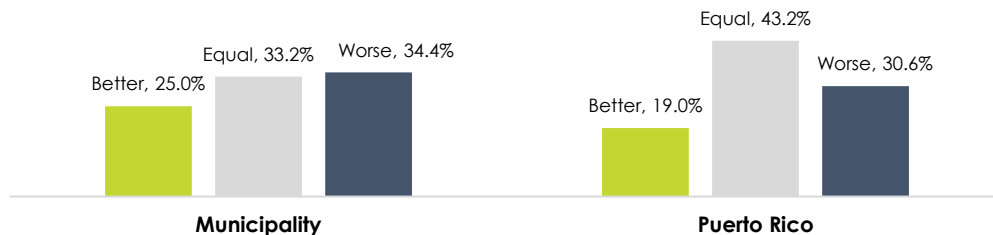
Note: The numeric base are the 500 people interviewed.

#### 4.1.1.5 Opportunities for outdoor recreation in the municipalities and in Puerto Rico

There are differences in how people perceive recreational opportunities in their municipalities versus Puerto Rico. Participants perceive that the situation has worsened in their municipalities, but that at the level of Puerto Rico the opportunities remain the same.

In the previous SCORP the largest number of participants indicated that the conditions in both Puerto Rico (45.2%) and their municipalities (45%) were the same as in previous years.

**Graph 9. Are the opportunities for outdoor recreation in your municipality/Puerto Rico better, the same or worse than five years ago?**

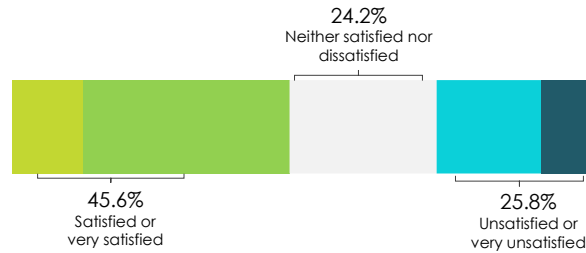


Note: The numeric base are the 500 people interviewed.

#### 4.1.1.6 Satisfaction of the population with outdoor recreation

Nearly half of the people (45.6%) are satisfied or very satisfied with the opportunities for outdoor recreation available in their municipalities. While one in four (25.8%) is unsatisfied or very unsatisfied, as seen in the following graph.

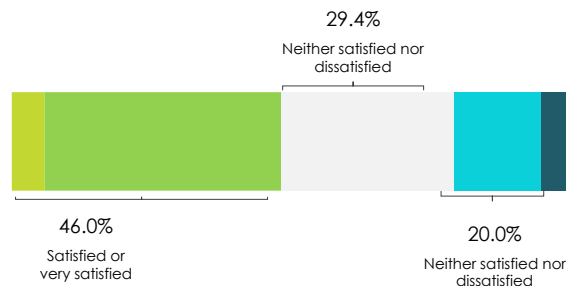
Graph 10. How satisfied or unsatisfied are you with the opportunities for outdoor recreation available in your municipality today?



Note: The numeric base are the 500 people interviewed.

A similar trend was observed when the same question was asked referring to the satisfaction of the opportunities for outdoor recreation available in Puerto Rico. 46.0% indicated that they were satisfied or very satisfied with the opportunities, and 20% were unsatisfied or very unsatisfied.

Graph 11. How satisfied or unsatisfied are you with the opportunities for outdoor recreation available in Puerto Rico today?



Note: The numeric base are the 500 people interviewed.

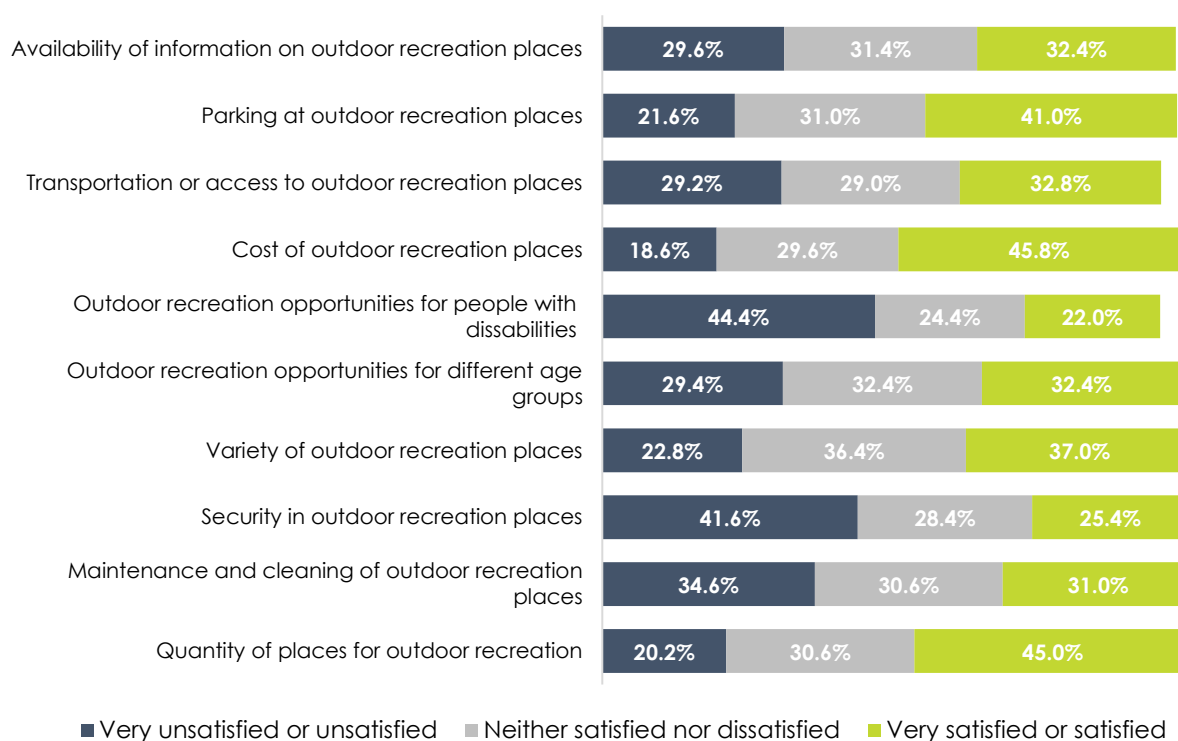
The highest proportion of participants are satisfied or very satisfied with the cost of enjoying outdoor recreation areas (45.8%) in Puerto Rico. More than half of those interviewed in the Central (51.6%) and North (53.6%) regions are very satisfied or satisfied with the cost of enjoying outdoor recreation places. However, in the South region, three out of ten participants (30.0%) indicated being unsatisfied or very unsatisfied.

Likewise, 45.0% of participants are satisfied or very satisfied with the number of places for outdoor recreation in Puerto Rico. More than half of the surveyed population in the Northeast (57.1%), Northwest (56.8%) and Central (51.6%) regions are satisfied or very satisfied with the number of places for outdoor recreation available in Puerto Rico. The Southeast region

showed the largest portion (40.0%) of people unsatisfied or very unsatisfied with the number of places for outdoor recreation.

Overall, the least satisfactory factors correspond to outdoor recreation opportunities for people with disabilities (44.4%) and the security in outdoor recreation places (41.6%). More than half of the respondents in the East (52.0%), Northeast (50.0%) and Southeast (52.0%) regions are unsatisfied or very unsatisfied with the availability of outdoor recreation opportunities for people with disabilities. As per safety, more than half of participants in the Southeast (56.0%) and South (50.0%) regions are unsatisfied or very unsatisfied with the security in outdoor recreation places.

**Graph 12. Now I am going to read you a list of aspects related to outdoor recreation in Puerto Rico and I would like you to indicate how satisfied or dissatisfied you are with them.**



*Note: The numeric base are the 500 people interviewed. As it is a multiple-choice question, a separate count is made for each of the answers mentioned, and the sum of percent can be different from 100%.*

Approximately 34.6% of participants are satisfied or very satisfied with the maintenance and cleaning of outdoor recreation places. The Northwest region has the highest proportion (43.2%) of people who are satisfied or very satisfied with the maintenance and cleaning of outdoor recreation places. Contrastingly, the South has the largest percentage (42.0%) of people unsatisfied or very unsatisfied with this aspect. Moreover, the Southern region also has the highest percentage of people unsatisfied or very unsatisfied with transportation to outdoor recreation places (34.0%).

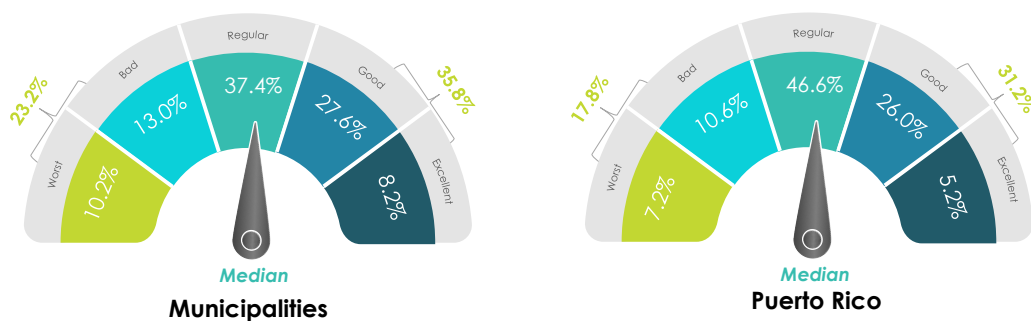
The Northeast region stands out as the area where most interviewees (57.1%) indicated that they were neither satisfied nor dissatisfied with the variety of places for outdoor recreation. In addition, 46.4% of interviewees were neither satisfied nor dissatisfied with outdoor recreation opportunities for different age groups.

Half of the participants in the North region (50.7%) indicated they are satisfied or very satisfied with the parking at outdoor recreation places. While the Southeast region has the highest proportion of participants (44.0%) that are unsatisfied or very unsatisfied with the availability of information on outdoor recreation places in Puerto Rico.

#### 4.1.1.7 Condition of outdoor recreation facilities

The largest proportion of Puerto Ricans perceive that the condition of the outdoor recreation facilities in their municipalities and in Puerto Rico is average; 37.4% and 46.6%, respectively. Approximately 35.8% of participants perceive that the conditions of the facilities in their municipalities is excellent or good while 23.2% perceive it is bad or poorer than anticipated. For facilities in Puerto Rico, 31.2% indicated that they are in excellent or good condition and 17.8% indicated that the condition is bad or worse than expected.

**Graph 13. How would you describe the current condition of the outdoor recreation facilities and / or places in your municipality and in Puerto Rico?**



Note: The numeric base are the 500 people interviewed.

#### 4.1.1.8 Reasons why participants believe that recreational facilities are in poor or worse condition

##### *Facilities in their municipalities*

The lack of maintenance (22.6%) was the main reason people think the facilities are in bad or worse condition, especially in the Central, Northeast, West and Southeast regions. The second reason was facilities not being restored after damages caused by Hurricane María (18.3%), particularly in the Northeast, Northwest, North and South.

The deterioration and poor condition of the facilities (18.3%) was mentioned more frequently in the Metro and East regions. Other reasons frequently mentioned were the lack of or very few outdoor recreation facilities and the abandonment of structures, mostly in the Northeast region.



### ***Facilities in Puerto Rico***

As for Puerto Rico, participants believe that the main reasons why facilities on the island are in bad conditions is due to the deterioration of facilities (23.6%), especially in the Central, Metro, Northwest, West and Southeast regions. The lack of maintenance (22.5%) was the second reason, especially in the Central, Northeast, and West areas. Abandonment of facilities was mentioned predominantly in the North. Additionally, the lack of restoration of facilities damaged by hurricane María was mentioned by 15.7% of participants.

**Table 15. Could you tell me why you understand that the areas or facilities are in bad or worst condition in your municipality?**

Responses provided by participants	Central	East	Metro	Northeast	Northwest	North	West	South	Southeast	Puerto Rico
	%	%	%	%	%	%	%	%	%	%
Lack of maintenance	30.8%	0.0%	21.9%	25.0%	0.0%	19.0%	33.3%	20.0%	66.7%	22.6%
Since Hurricane Maria they have not been fixed	0.0%	30.0%	12.5%	25.0%	40.0%	23.8%	0.0%	40.0%	0.0%	18.3%
Deteriorated / Bad condition	7.7%	40.0%	25.0%	0.0%	20.0%	19.0%	22.2%	0.0%	16.7%	18.3%
There are no or very few outdoor recreation facilities	23.1%	10.0%	9.4%	0.0%	20.0%	9.5%	0.0%	6.7%	16.7%	10.4%
Abandonment	15.4%	0.0%	9.4%	25.0%	20.0%	9.5%	0.0%	0.0%	0.0%	7.8%
Lack or absence of lighting	0.0%	10.0%	3.1%	0.0%	0.0%	9.5%	0.0%	0.0%	0.0%	3.5%
The mayor does not make many efforts for the settlement	0.0%	0.0%	0.0%	0.0%	0.0%	4.8%	11.1%	0.0%	0.0%	1.7%
After the tremors they were damaged	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.3%	0.0%	1.7%
Closed and unavailable areas	7.7%	0.0%	3.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%
There are almost none and those that are deteriorated	7.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
Destroyed or abandoned	0.0%	0.0%	3.1%	0.0%	0.0%	0.0%	0.0%	6.7%	0.0%	1.7%
The Municipality does not provide adequate maintenance	0.0%	0.0%	3.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
Lack of security	0.0%	0.0%	0.0%	0.0%	0.0%	4.8%	0.0%	0.0%	0.0%	0.9%
Lack of security and cleanliness	0.0%	10.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
You have to leave town to recreate	7.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
People have to take money out of their pocket to participate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.7%	0.0%	0.9%
Most are neglected in towns, only tourist areas are clean	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.7%	0.0%	0.9%
The facilities are closed after Maria	0.0%	0.0%	3.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
Bad location	0.0%	0.0%	3.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
Cannot be used	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.1%	0.0%	0.0%	0.9%
Politicians steal the kids	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.1%	0.0%	0.0%	0.9%
Does not know / Does not indicate	0.0%	0.0%	3.1%	25.0%	0.0%	0.0%	11.1%	0.0%	0.0%	2.6%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Note: The numeric base are the 116 people interviewed, people who indicated that the conditions of the facilities are bad or terrible. The shaded numbers correspond to the regions for which significant differences were found.

**Table 16. Could you tell me why you understand that the areas or facilities are in bad or worst condition in Puerto Rico?**

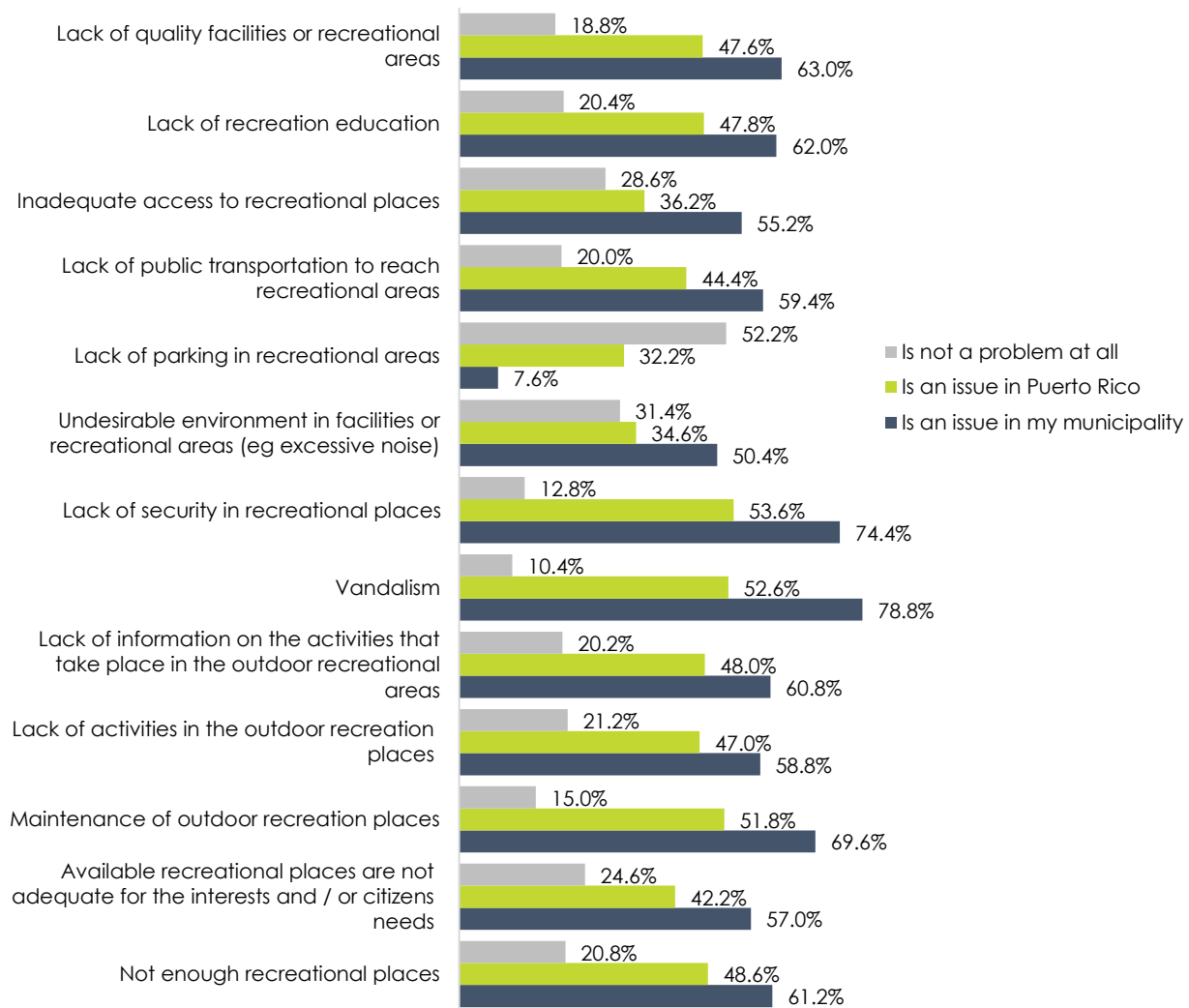
Responses provided by participants	Central	East	Metro	Northeast	Northwest	North	West	South	Southeast	Total
	%	%	%	%	%	%	%	%	%	%
Deteriorated / Bad conditions	25.0%	0.0%	36.0%	0.0%	33.3%	15.4%	25.0%	8.3%	40.0%	23.6%
Lack of maintenance	25.0%	0.0%	20.0%	100.0%	0.0%	38.5%	25.0%	16.7%	20.0%	22.5%
Abandonment	25.0%	16.7%	20.0%	0.0%	0.0%	30.8%	12.5%	8.3%	0.0%	16.9%
They have not been fixed since Hurricane María	16.7%	50.0%	4.0%	0.0%	33.3%	15.4%	0.0%	25.0%	20.0%	15.7%
Lack or absence of lighting	0.0%	0.0%	0.0%	0.0%	16.7%	0.0%	0.0%	16.7%	0.0%	3.4%
There are almost none and those available are deteriorated	8.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	2.2%
Almost all are closed	0.0%	0.0%	0.0%	0.0%	16.7%	0.0%	0.0%	8.3%	0.0%	2.2%
Lack of outdoor facilities	0.0%	0.0%	4.0%	0.0%	0.0%	0.0%	0.0%	8.3%	0.0%	2.2%
Mayors do not fix them	0.0%	16.7%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%
Lack of security	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	1.1%
Lack of everything	0.0%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%
Government has done nothing after Maria	0.0%	0.0%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%
Most are abandoned or destroyed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%	0.0%	1.1%
Governments do nothing for Puerto Rico	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	1.1%
After the tremors they were damaged more	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	1.1%
Bad location	0.0%	0.0%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%
Travel a lot and compare with other countries	0.0%	0.0%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Note: The numeric base are the 89 people interviewed, people who indicated that the conditions of the facilities are bad or terrible. The shaded numbers correspond to the regions for which significant differences were found.

#### 4.1.1.9 Main problems associated with outdoor recreation at the municipal and Commonwealth level

Security is perceived as an issue at the municipal and Commonwealth levels, according to participants. Within municipalities, the main problems affecting outdoor recreation are vandalism (78.8%) and the lack of security in outdoor recreation places (74.4%). More than half of the interviewees understand that all issues affect their municipality, except the lack of parking in recreational places. In fact, 52.2% of the participants think this is not a problem at all.

**Graph 14. I am going to read you a list of potential situations related to outdoor recreation and I would like you to indicate which ones you consider to be a current problem in your municipality and in Puerto Rico.**



*Note: The numeric base are the 500 people interviewed. As it is a multiple-choice question, a separate count is made for each of the answers mentioned, and the sum of percent can be different from 100%.*

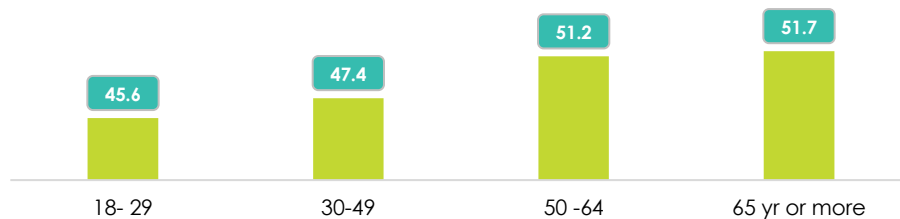
For Puerto Rico, more than half of the participants think that the main problems are also vandalism (52.6%) and the lack of security in outdoor recreation places (53.6%). Moreover, 51.8% mentioned the maintenance of outdoor recreation places as a problem.

#### 4.1.1.10 Obstacles that prevent Puerto Ricans from participating in outdoor recreation activities

Fear of being the victim of an assault or criminal incident (49.0%) is the main obstacle that limits citizens from participating in outdoor recreation activities in Puerto Rico. More than half of the participants in the East (52.0%), North (55.1%) and Southeast (60.0%) regions identified this as an obstacle. The proportion of people who believe that this is an obstacle increases with age.

In fact, the fear of being the victim of an assault or incident was also mentioned as one of the main obstacles in the previous SCORP, where levels of dissatisfaction with this matter were also reported.

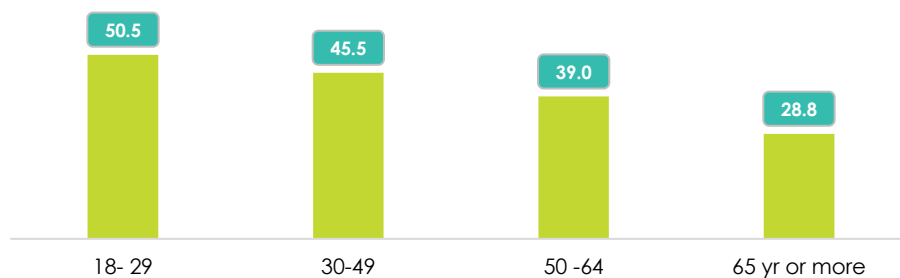
**Graph 15. Fear of being the victim of an assault or incident as an obstacle to participate in outdoor recreation activities by age**



*Note: The numeric base are the 245 participants who answered this question.*

The second obstacle was the bad condition of recreational facilities (42.6%), especially in the East region (52.0%). In addition, the lack of time (41.0%) was an issue that decreases with age.

**Graph 16. Lack of time as an obstacle to participate in outdoor recreation activities by age**



*Note: The numeric base are the 205 participants who answered this question.*

**Table 17. In your opinion, what are the main obstacles, if any, that prevent or limit citizens from participating in outdoor recreation activities in Puerto Rico?**

Obstacles	Central	East	Metro	Northeast	Northwest	North	West	South	Southeast	Total
	%	%	%	%	%	%	%	%	%	%
Fear of being the victim of an assault or incident	46.9%	52.0%	49.4%	46.4%	45.9%	55.1%	36.1%	48.0%	60.0%	49.0%
Bad condition of recreational facilities	43.8%	52.0%	41.6%	39.3%	37.8%	49.3%	27.8%	46.0%	44.0%	42.6%
Lack of time	43.8%	24.0%	41.6%	46.4%	48.6%	39.1%	44.4%	42.0%	28.0%	41.0%
Lack of money	40.6%	24.0%	31.9%	42.9%	35.1%	34.8%	30.6%	36.0%	32.0%	34.2%
Lack of transportation	35.9%	28.0%	33.1%	35.7%	27.0%	36.2%	30.6%	26.0%	28.0%	32.2%
Lack of equipment for recreation	35.9%	28.0%	24.7%	21.4%	27.0%	36.2%	25.0%	20.0%	40.0%	28.2%
Lack of information on places to go and what to do	29.7%	20.0%	27.7%	32.1%	24.3%	26.1%	25.0%	28.0%	28.0%	27.2%
Lack of accessibility to areas for outdoor recreation	29.7%	24.0%	23.5%	21.4%	21.6%	27.5%	22.2%	32.0%	40.0%	26.2%
Lack of accessibility for people with disabilities	34.4%	8.0%	23.5%	25.0%	29.7%	26.1%	22.2%	20.0%	44.0%	25.6%
Lack of complementary services (food, bathrooms, nursing)	28.1%	20.0%	21.7%	17.9%	24.3%	30.4%	13.9%	20.0%	40.0%	23.8%
Fear of having an accident	25.0%	16.0%	21.7%	14.3%	16.2%	33.3%	19.4%	26.0%	40.0%	23.8%
Lack of facilities or areas for outdoor recreation	29.7%	20.0%	19.9%	17.9%	18.9%	26.1%	16.7%	22.0%	44.0%	23.0%
Poor physical condition or health condition	23.4%	16.0%	19.9%	25.0%	27.0%	18.8%	13.9%	22.0%	20.0%	20.6%
Lack of adequate parking	20.3%	16.0%	22.3%	21.4%	21.6%	21.7%	8.3%	14.0%	28.0%	20.0%
Lack of knowledge or skills for recreational activities	28.1%	8.0%	15.1%	14.3%	24.3%	17.4%	16.7%	22.0%	24.0%	18.6%
Lack of facilities to spend the night	20.3%	16.0%	13.9%	14.3%	21.6%	21.7%	11.1%	10.0%	28.0%	16.6%
Lack of a companion interested in outdoor recreation activities	17.2%	12.0%	11.4%	10.7%	18.9%	11.6%	11.1%	20.0%	24.0%	14.2%
Crowding in recreational places	18.8%	12.0%	13.3%	14.3%	18.9%	8.7%	5.6%	12.0%	24.0%	13.6%

Note: The numeric base are the 500 people interviewed. Shaded numbers correspond to values of 50% or more. As it is a multiple-choice question, a separate count is made for each of the answers mentioned, and the sum of percent can be different from 100%.

#### 4.1.1.11 Desired recreational facilities at the municipal and Commonwealth levels

Participants were asked to indicate which outdoor recreation facilities would they like to see in their municipalities and in Puerto Rico. Passive parks were the first choice for the municipalities as well as for Puerto Rico.

Other recreation facilities that were mentioned for both geographical areas were swimming pools, picnic areas and community gardens. In the case of the municipalities, the areas for cycling were mentioned among the top five; while for Puerto Rico, camping areas were selected among the most desired recreational facilities. These and other facilities with the highest percentages are presented in the following table.

**Table 18. Which, if any, of the following outdoor recreation facilities would you like to see in your municipality and in Puerto Rico?**

Ranking	Municipality	%	Ranking	Puerto Rico	%
1	Passive parks (playground)	46.4%	1	Passive park (playground)	47.6%
2	Swimming pools	44.6%	2	Camping areas	43.6%
3	Picnic Areas	44.2%	3	Swimming pools	43.2%
4	Bicycle areas	41.4%	4	Picnic Areas	43.0%
5	Community gardens or orchards	41.4%	5	Community gardens or orchards	42.8%
6	Outdoor concert, cinema and / or theater areas	40.8%	6	Park with trees and vegetation	42.4%
7	Parks with trees and vegetation	40.6%	7	Beach facilities (e.g. showers, restrooms, etc.)	42.2%
8	Camping areas	40.2%	8	Bicycle areas	41.8%
9	Farms and historic farms that provide visits or tours	40.0%	9	Farms and historic farms that provide visits or tours	41.4%
10	Basketball court	38.4%	10	Hiking trail (hiking in natural areas   or hiking / backpacking)	41.4%
11	Volleyball court	38.4%	11	Basketball court	39.8%
12	Hiking trail (hiking in natural areas or hiking / backpacking)	36.2%	12	Outdoor concert, cinema and / or theater areas	39.4%
13	Soccer field	36.0%	13	Soccer field	39.2%
14	Wildlife/landscape observation areas (not birdwatching)	35.6%	14	Volleyball court	39.0%
15	Tennis court	33.6%	15	Wildlife/landscape observation areas (not birdwatching)	37.8%
16	Birdwatching areas	33.4%	16	Tennis court	36.8%
17	Horse riding areas	31.6%	17	Areas to spend the night (trailer parks or cabins)	36.0%
18	Facilities on the rivers	31.6%	18	Facilities on the rivers	36.0%
19	Beach facilities (e.g. showers, restrooms, etc.)	31.6%	19	Softball or baseball park	36.0%
20	Areas to spend the night (trailer parks or cabins)	31.4%	20	Birdwatching areas	35.4%

Ranking	Municipality	%	Ranking	Puerto Rico	%
21	Softball or baseball park	31.0%	21	Mountain bike areas	33.8%
22	Mountain bike areas	30.2%	22	Horse riding areas	33.4%
23	Skatepark	29.8%	23	Docks/piers for fishing in rivers	32.8%
24	Docks/piers for fishing in rivers	26.8%	24	Rock climbing areas (mountains, cliffs)	32.4%
25	Golf course or range	25.2%	25	Skatepark	31.2%
26	Rock climbing areas (mountains, cliffs)	24.8%	26	Golf course or range	30.8%
27	Areas to ride in all-terrain vehicles (ATV)	24.8%	27	Areas to ride in all-terrain vehicles (ATV)	29.0%
28	Bird hunting areas	9.0%	28	Bird hunting areas	13.6%

Note: The numeric base are the 500 people interviewed. Shaded numbers correspond to values of 50% or more. As it is a multiple-choice question, a separate count is made for each of the answers mentioned, and the sum of percent can be different from 100%.

The Southeast region was where the participants mentioned the greatest variety of facilities, even so there are no statistically significant differences between regional preferences.



Table 19. Which, if any, of the following outdoor recreation facilities would you like to see in your Municipality? By Region

	Central	East	Metro	Northeast	Northwest	North	West	South	Southeast	Total
Passive parks (playground)	40.6%	52.0%	42.8%	50.0%	45.9%	49.3%	47.2%	50.0%	60.0%	46.4%
Swimming pools	40.6%	52.0%	32.5%	50.0%	51.4%	47.8%	61.1%	56.0%	56.0%	44.6%
Picnic Areas	43.8%	56.0%	38.0%	42.9%	37.8%	43.5%	52.8%	50.0%	64.0%	44.2%
Bicycle areas	43.8%	48.0%	36.1%	42.9%	37.8%	42.0%	41.7%	48.0%	52.0%	41.4%
Community gardens or orchards	34.4%	52.0%	39.2%	46.4%	35.1%	40.6%	36.1%	48.0%	64.0%	41.4%
Outdoor concert, cinema and / or theater areas	39.1%	36.0%	41.6%	42.9%	32.4%	40.6%	36.1%	48.0%	48.0%	40.8%
Parks with trees and vegetation	34.4%	48.0%	38.0%	57.1%	40.5%	42.0%	33.3%	42.0%	52.0%	40.6%
Camping areas	35.9%	56.0%	36.7%	32.1%	40.5%	44.9%	30.6%	48.0%	52.0%	40.2%
Farms that provide visits or tours	43.8%	56.0%	32.5%	42.9%	37.8%	40.6%	44.4%	42.0%	52.0%	40.0%
Basketball court	31.3%	44.0%	34.9%	50.0%	37.8%	44.9%	27.8%	46.0%	44.0%	38.4%
Volleyball court	34.4%	40.0%	33.1%	46.4%	35.1%	47.8%	36.1%	44.0%	44.0%	38.4%
Hiking trail (hiking in natural areas or hiking / backpacking)	32.8%	40.0%	37.3%	39.3%	32.4%	29.0%	30.6%	50.0%	36.0%	36.2%
Soccer field	37.5%	40.0%	31.9%	46.4%	27.0%	34.8%	33.3%	46.0%	44.0%	36.0%
Wildlife/landscape observation areas (not birdwatching)	45.3%	32.0%	31.3%	35.7%	32.4%	30.4%	30.6%	44.0%	52.0%	35.6%
Tennis court	39.1%	44.0%	28.9%	28.6%	27.0%	30.4%	30.6%	44.0%	48.0%	33.6%
Birdwatching areas	35.9%	40.0%	27.1%	39.3%	32.4%	29.0%	33.3%	44.0%	48.0%	33.4%
Horse riding areas	32.8%	36.0%	26.5%	42.9%	29.7%	27.5%	27.8%	44.0%	40.0%	31.6%
Facilities on the rivers	31.3%	36.0%	28.9%	25.0%	27.0%	31.9%	30.6%	36.0%	52.0%	31.6%
Beach facilities (e.g. showers, restrooms, etc.)	12.5%	48.0%	29.5%	35.7%	27.0%	33.3%	27.8%	46.0%	52.0%	31.6%
Areas to spend the night (trailer parks or cabins)	29.7%	32.0%	24.7%	28.6%	32.4%	30.4%	36.1%	46.0%	48.0%	31.4%
Softball or baseball park	29.7%	32.0%	30.1%	28.6%	29.7%	36.2%	19.4%	38.0%	32.0%	31.0%
Mountain bike areas	29.7%	28.0%	27.1%	25.0%	29.7%	29.0%	25.0%	44.0%	44.0%	30.2%

	Central	East	Metro	Northeast	Northwest	North	West	South	Southeast	Total
Skatepark	25.0%	32.0%	27.1%	28.6%	24.3%	31.9%	30.6%	40.0%	40.0%	29.8%
Docks/piers for fishing in rivers	17.2%	32.0%	23.5%	35.7%	29.7%	27.5%	25.0%	36.0%	36.0%	26.8%
Golf course or range	23.4%	28.0%	22.9%	25.0%	29.7%	23.2%	16.7%	38.0%	28.0%	25.2%
Rock climbing areas (mountains, cliffs)	20.3%	28.0%	23.5%	21.4%	27.0%	26.1%	19.4%	32.0%	32.0%	24.8%
Areas to ride in all-terrain vehicles (ATV)	28.1%	24.0%	19.9%	25.0%	21.6%	24.6%	22.2%	38.0%	32.0%	24.8%
Bird hunting areas	4.7%	8.0%	10.2%	7.1%	5.4%	7.2%	8.3%	18.0%	8.0%	9.0%

Note: The numeric base are the 500 people interviewed. Shaded numbers correspond to values of 50% or more. As it is a multiple-choice question, a separate count is made for each of the answers mentioned, and the sum of percent can be different from 100%.

**Table 20. Which, if any, of the following outdoor recreation facilities would you like to see in Puerto Rico? By Region**

	Central	East	Metro	Northeast	Northwest	North	West	South	Southeast	Total
Passive park (playground)	46.9%	60.0%	45.8%	35.7%	45.9%	47.8%	41.7%	48.0%	72.0%	47.6%
Camping areas	50.0%	52.0%	36.1%	32.1%	45.9%	49.3%	36.1%	46.0%	68.0%	43.6%
Swimming pools	45.3%	48.0%	34.3%	35.7%	43.2%	46.4%	52.8%	50.0%	64.0%	43.2%
Picnic Areas	51.6%	48.0%	40.4%	32.1%	37.8%	39.1%	41.7%	46.0%	60.0%	43.0%
Community gardens or orchards	46.9%	44.0%	38.0%	39.3%	40.5%	42.0%	36.1%	50.0%	68.0%	42.8%
Park with trees and vegetation	42.2%	52.0%	39.2%	42.9%	40.5%	40.6%	38.9%	44.0%	64.0%	42.4%
Beach facilities (e.g. showers, toilets, etc.)	43.8%	44.0%	36.1%	46.4%	35.1%	42.0%	36.1%	54.0%	68.0%	42.2%
Bicycle areas	45.3%	48.0%	38.6%	32.1%	37.8%	44.9%	38.9%	44.0%	56.0%	41.8%
Farms and historic farms that provide visits or tours	48.4%	48.0%	37.3%	32.1%	48.6%	31.9%	30.6%	52.0%	64.0%	41.4%
Hiking trail (hiking in natural areas   or hiking / backpacking)	43.8%	48.0%	38.6%	46.4%	40.5%	33.3%	33.3%	52.0%	56.0%	41.4%
Basketball court	40.6%	36.0%	38.6%	32.1%	40.5%	40.6%	30.6%	48.0%	52.0%	39.8%
Outdoor concert, cinema and / or theater areas	39.1%	36.0%	37.3%	39.3%	40.5%	39.1%	27.8%	42.0%	68.0%	39.4%
Soccer field	42.2%	32.0%	35.5%	35.7%	40.5%	36.2%	36.1%	50.0%	56.0%	39.2%
Volleyball court	43.8%	32.0%	35.5%	32.1%	35.1%	43.5%	30.6%	48.0%	52.0%	39.0%
Wildlife/landscape observation areas (not birdwatching)	42.2%	44.0%	34.3%	32.1%	35.1%	31.9%	33.3%	44.0%	64.0%	37.8%

	Central	East	Metro	Northeast	Northwest	North	West	South	Southeast	Total
Tennis court	42.2%	32.0%	33.1%	32.1%	32.4%	37.7%	25.0%	50.0%	52.0%	36.8%
Areas to spend the night (trailer parks or cabins)	40.6%	44.0%	28.9%	32.1%	37.8%	33.3%	33.3%	48.0%	52.0%	36.0%
Facilities on the rivers	39.1%	40.0%	31.9%	32.1%	32.4%	31.9%	27.8%	50.0%	56.0%	36.0%
Softball or baseball park	39.1%	28.0%	33.1%	32.1%	32.4%	42.0%	25.0%	40.0%	56.0%	36.0%
Birdwatching areas	39.1%	32.0%	31.9%	35.7%	29.7%	29.0%	33.3%	46.0%	60.0%	35.4%
Mountain bike areas	37.5%	36.0%	28.3%	28.6%	32.4%	34.8%	30.6%	40.0%	56.0%	33.8%
Horse riding areas	37.5%	40.0%	28.3%	28.6%	35.1%	33.3%	27.8%	42.0%	44.0%	33.4%
Docks for fishing in rivers	29.7%	40.0%	29.5%	35.7%	32.4%	31.9%	27.8%	40.0%	48.0%	32.8%
Rock climbing areas (mountains, cliffs)	37.5%	28.0%	31.3%	28.6%	32.4%	23.2%	33.3%	40.0%	44.0%	32.4%
Skateparks	32.8%	28.0%	27.1%	28.6%	29.7%	30.4%	27.8%	42.0%	48.0%	31.2%
Golf course or range	29.7%	28.0%	27.1%	28.6%	37.8%	24.6%	27.8%	44.0%	48.0%	30.8%
Areas to ride in all-terrain vehicles (ATV)	31.3%	24.0%	24.7%	25.0%	29.7%	24.6%	25.0%	42.0%	52.0%	29.0%
Bird hunting areas	12.5%	8.0%	13.3%	7.1%	10.8%	11.6%	11.1%	24.0%	24.0%	13.6%

Note: The numeric base are the 500 people interviewed. Shaded numbers correspond to values of 50% or more. As it is a multiple-choice question, a separate count is made for each of the answers mentioned, and the sum of percent can be different from 100%.

## 4.1.2 Survey to NGO and concessionaires that provide outdoor recreation services and activities in Puerto

### 4.1.2.1 General characteristics of the NGO and concessionaires that responded to the survey

Almost nine out of ten participants<sup>14</sup> (86.8%) represent a non-profit organization that offers outdoor recreation services or organizes outdoor recreation activities, while 13.2% owns or is an employee of a concessionaire or business that offers outdoor recreation services.

On average, the participating entities have been providing services in Puerto Rico for 27 years. Some have been established for 2 years, while others have been working in Puerto Rico for more than a century.

**Table 21. Years that the entity has been providing services in Puerto Rico**

Years	
n	30
Average	27
Median	20
Minimum	2
Maximum	113

Note: The numeric base of this table is composed of the 30 participants that answered question.

These participating entities work with diverse populations, but mainly with the general community, including youth, families, children, and students.

**Table 22. Populations served by the participating entities**

Populations served	Frequency	%
General community	38	71.7%
Youth	33	62.3%
Families	30	56.6%
Children	31	58.5%
Students	29	54.7%
Tourists	24	45.3%
Persons with disabilities	24	45.3%
Elderly population	18	34.0%
People with mental health conditions	8	15.1%
Athletes	2	3.8%

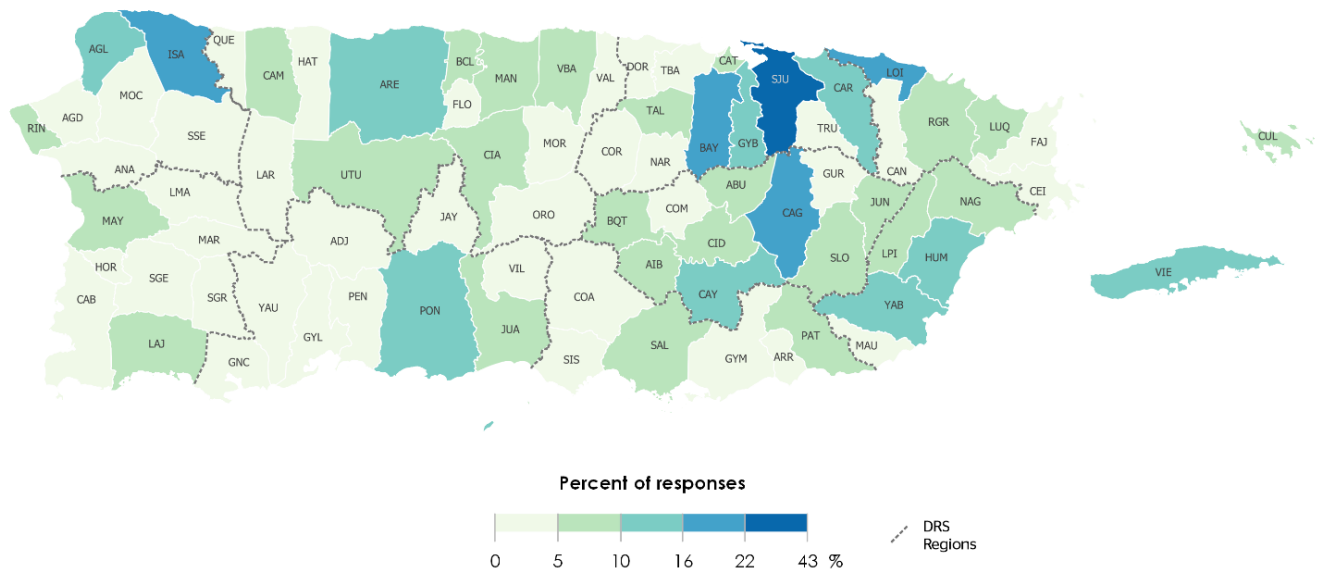
<sup>14</sup> Henceforth, participating NGO and concessionaires will be identified as the participants or participating entities.

Populations served	Frequency	%
Hunters	1	1.9%
Other	4	7.5%

Note: The numeric base are the 53 representatives who responded the survey. As it is a question with multiple answers, a separate count is made for each of the answers mentioned and the sum of percent can be different from 100%.

Participating entities provide activities and services throughout 71 municipalities in Puerto Rico. Many entities provide services in San Juan (43.4%), while 24.5% serve all Puerto Rico.

**Map 18. Could you indicate the municipalities where your organization or concessionaire typically provides activities/services?**



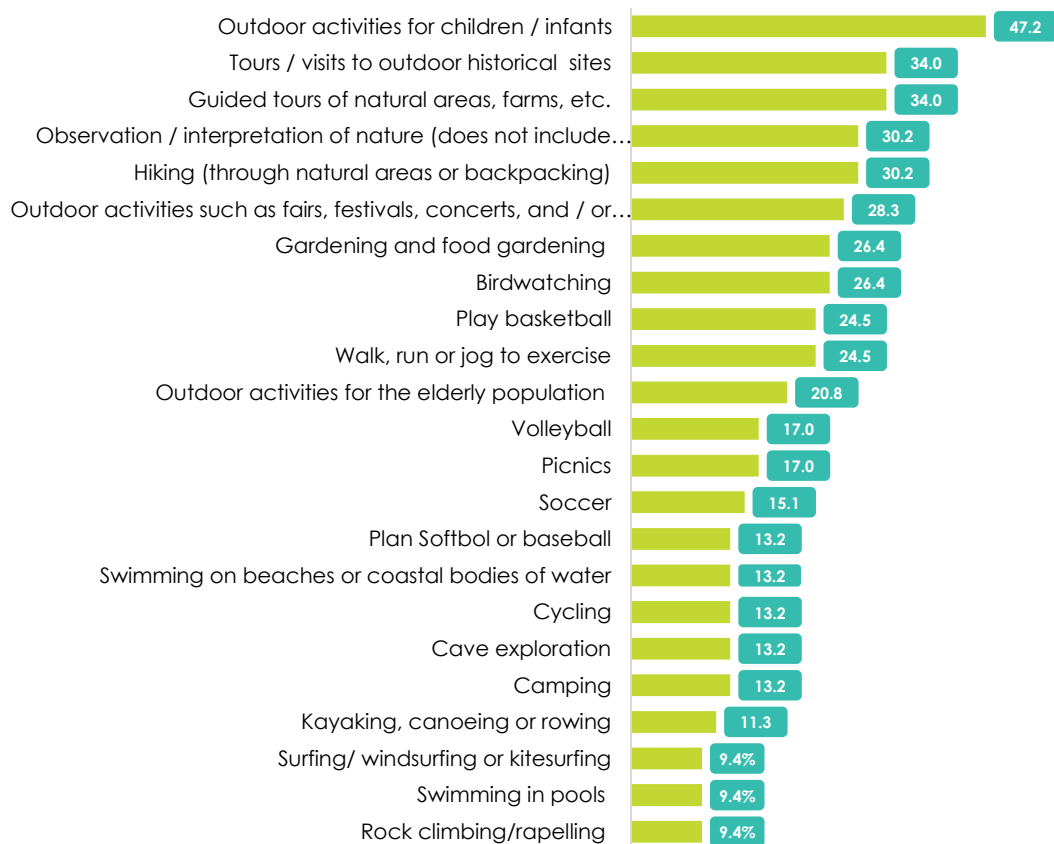
### 4.1.2.2 Outdoor recreation activities provided by participating entities

The top five outdoor recreation activities stated by participating entities are outdoor activities for children or infants (47.2%), tours and visits to historical sites (34.0%), guided tours to natural areas or farms (34.0%), nature observation/interpretation other than birdwatching (30.2%), and hiking (30.2%). These and other activities are presented in the following graph.



Many of the participating entities provide activities for children and infants

Graph 17. Could you please indicate what are the main outdoor recreation activities / services offered or practiced by the organization or concessionaire you represent?

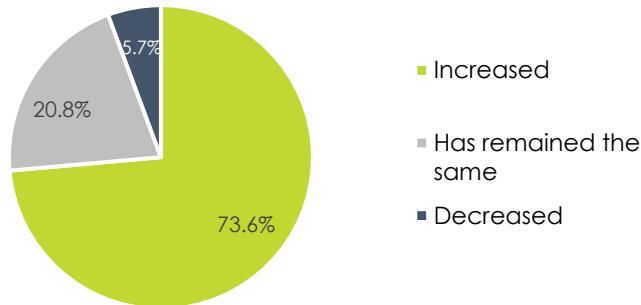


Note: The numeric base are the 53 representatives who responded the survey. As it is a question with multiple answers, a separate count is made for each of the answers mentioned and the sum of percent can be different from 100%.

### 4.1.2.3 Demand and opportunities for outdoor recreation in Puerto Rico

The overall demand for outdoor recreation has increased over the past five years, according to 73.6% of the participating entities.

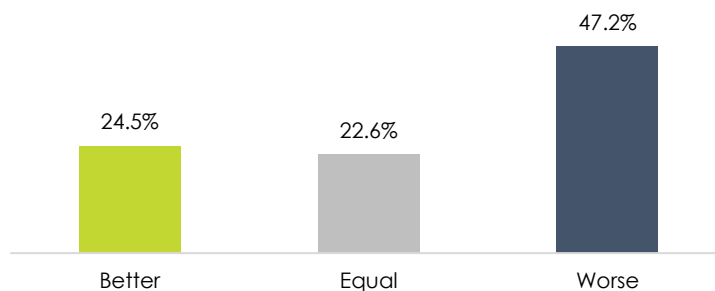
Graph 18. Over the past few years, do you think the demand for outdoor recreation in Puerto Rico has ...?



Note: The numerical base for this graph are the 53 entities participating in the survey.

Almost half of the participating entities (47.2%) perceive that outdoor recreation opportunities in Puerto Rico are worse than five years ago. This is also the median and mode values. Nearly two out of every ten entities think that the opportunities have either improved (24.5%) or are equal (22.6%), whereas 5.7% did not know.

Graph 19. According to your experience through the organization or concessionaire you represent, are the opportunities for outdoor recreation in Puerto Rico better, equal or worse than five years ago?

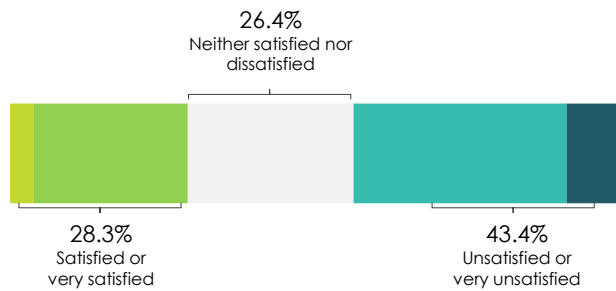


Note: The numeric base are the 53 representatives who responded the survey.

### 4.1.2.4 Satisfaction of NGO and concessionaires with outdoor recreation in Puerto Rico

Moreover, 43.4% of participating entities are unsatisfied or very unsatisfied with the opportunities available for outdoor recreation in Puerto Rico. Approximately 28.3% are satisfied or very satisfied.

**Graph 20. According to your experience through the organization or concessionaire you represent, how satisfied or dissatisfied are you with the opportunities available for outdoor recreation in Puerto Rico?**



Note: The numeric base are the 53 representatives who responded the survey.

Participants from NGOs were asked their level of satisfaction about the condition of the facilities/areas for outdoor recreation in Puerto Rico. 64.2% was unsatisfied or very unsatisfied. In fact, the median value and the mode were both 47.2%, which corresponds to the people that indicated they were unsatisfied.

In general, participants showed dissatisfaction with multiple aspects of outdoor recreation in Puerto Rico. Maintenance, cleaning, and beautification of places for outdoor recreation are some of the greatest causes of dissatisfaction (79.2%). Most of the participants are also unsatisfied or very unsatisfied with the outdoor recreation opportunities for people with disabilities (77.4%). Other reasons mentioned are availability of information on outdoor recreation places (67.9%), security in outdoor recreation places (60.4%), number of places for outdoor recreation (56.6%), opportunities for people of different age groups (56.6%), transportation or access to outdoor recreation places (56.6%), and parking at outdoor recreation places (52.8%).

On the other hand, participants showed slightly more satisfaction with the variety of places for outdoor recreation (37.3%), although 47.2% indicated to be unsatisfied or very unsatisfied.

**Table 23. Please indicate, how satisfied or unsatisfied are you with the following aspects related to outdoor recreation in Puerto Rico?**

Aspects	Satisfied or very satisfied	Unsatisfied or very unsatisfied	Neither satisfied nor unsatisfied	Did not responded
Condition of facilities/areas for outdoor recreation in Puerto Rico	15.1%	64.2%	18.9%	1.9%
Number of places for outdoor recreation	20.8%	56.6%	22.6%	0.0%
Maintenance, cleaning and beautification of places for outdoor recreation	13.2%	79.2%	7.5%	0.0%
Safety in places for outdoor recreation	11.3%	60.4%	28.3%	0.0%
Variety of types of places for outdoor recreation	37.7%	47.2%	15.1%	0.0%
Opportunities for outdoor recreation for people of different age groups	22.6%	56.6%	15.1%	5.7%
Opportunities for outdoor recreation for people with disabilities	11.3%	77.4%	5.7%	5.7%



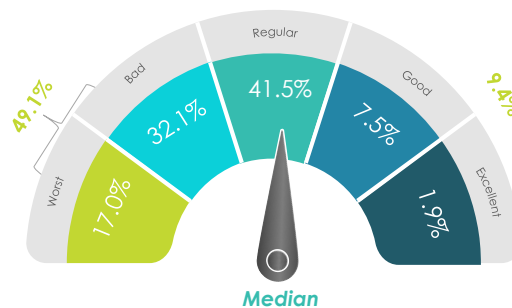
Aspects	Satisfied or very satisfied	Unsatisfied or very unsatisfied	Neither satisfied nor unsatisfied	Did not responded
Cost of outdoor recreation places	24.5%	35.8%	37.7%	1.9%
Transportation or access to outdoor recreation venues	20.8%	56.6%	20.8%	1.9%
Parking at outdoor recreation places	22.6%	52.8%	22.6%	1.9%
Availability of information on outdoor recreation venues	18.9%	67.9%	11.3%	1.9%

Note: The numeric base are the 53 representatives who responded the survey.

#### 4.1.2.5 Condition of outdoor recreation places

When asked to describe the current condition of the facilities and/or outdoor recreation areas in Puerto Rico, 49.1% indicated these were in poor conditions.

Graph 21. How would you describe the current condition of the outdoor recreation places in Puerto Rico?



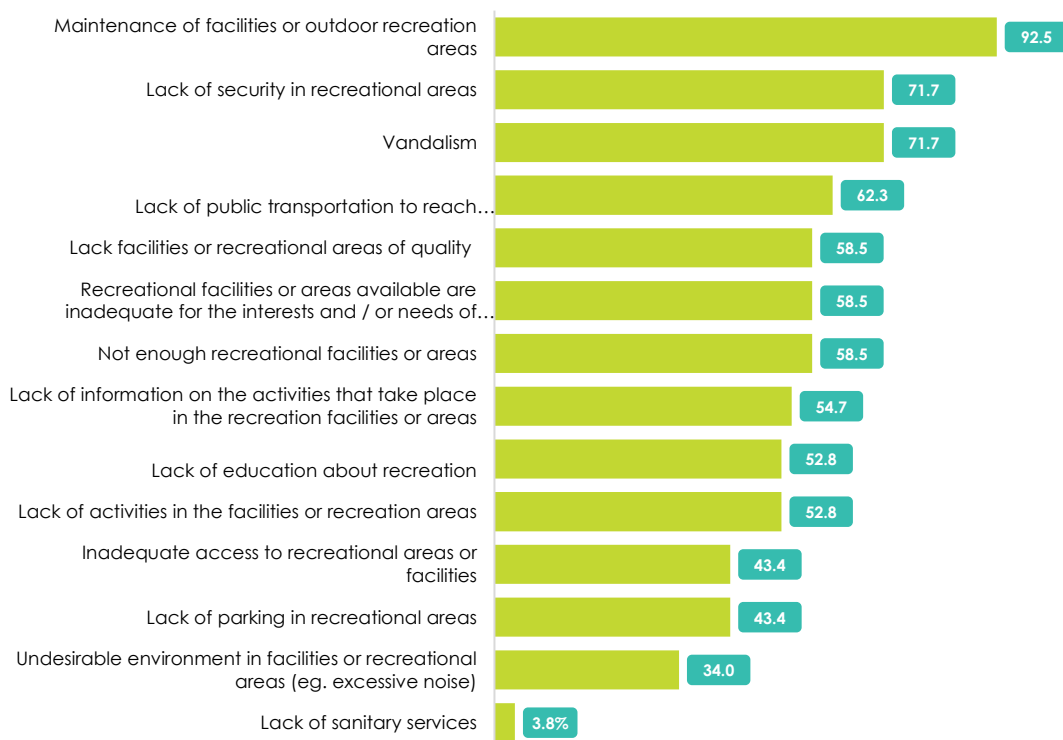
Note: The numeric base are the 53 representatives who responded the survey.

#### 4.1.2.6 Main problems associated with outdoor recreation in Puerto Rico

Nine out of ten participating entities identified the lack of maintenance facilities as a problem. Moreover, 71.7% stated vandalism and lack of security in recreational areas were an issue as well.

Most of the participating entities identified these additional seven problems: lack of public transportation to reach recreational places (62.3%), not enough recreational places (58.5%), inadequacy of available recreational places for citizens' interests and needs (58.5%), lack of quality outdoor recreational places (58.5%), absence of information on the activities that take place in the recreation facilities or areas (54.7%), lack of outdoor activities (52.8%), and a lack of education about outdoor recreation (52.8%).

**Graph 22. which situations related to outdoor recreation do you consider to be a current problem in Puerto Rico?**



Note: The numeric base are the 53 representatives who responded the survey. As it is a question with multiple answers, a separate count is made for each of the answers mentioned and the sum of percent can be different from 100%.

#### 4.1.2.7 Obstacles that prevent Puerto Ricans from participating in outdoor recreation activities

According to the participating entities, the main obstacles that prevent the population from joining outdoor recreation activities include bad condition of recreational facilities (77.4%) and a lack of information on places to go and what to do (71.7%). In addition, accessibility to outdoor recreational places (68.8%) was mentioned as a predominant obstacle with many indicating that facilities are typically closed when people visit them.

Associated with ease of access, a few participants mentioned bureaucracy and other complications when reserving areas for outdoor recreation or when requesting information. Additionally, the lack of bike lanes to access these areas is an existing issue.

The fear of being a victim of a crime (62.3%) was also mentioned by these participants. With respect to the facilities, participants mentioned the lack of places for outdoor recreation (60.4%), lack of complementary services (such as food services and restrooms) (54.7%), and the lack of facilities to spend the night (50.9%) as obstacles that limit their outdoor recreation activities. More than half of the participating entities also mentioned the lack of money (50.9%) as obstacle that prevent the Puerto Ricans to participate in outdoor recreation activities.

**Table 24. What are the main obstacles, if any, that prevent or limit citizens from participating in outdoor recreation activities in Puerto Rico?**

Obstacles	Frequency	%
Bad condition of recreational facilities	41	77.4%
Lack of information on places to go and what to do	38	71.7%
Lack of accessibility to outdoor recreation places	37	69.8%
Facilities are closed when people can visit them	36	67.9%
Fear of being the victim of crime	34	64.2%
Lack of facilities or areas for outdoor recreation	33	62.3%
Lack of complementary services (food, bathrooms)	29	54.7%
Lack of money	27	50.9%
Lack of facilities to spend the night	27	50.9%
Lack of transportation	25	47.2%
Lack of accessibility for people with disabilities	25	47.2%
Lack of adequate parking	23	43.4%
Lack of knowledge or skills for recreational activities	21	39.6%
Lack of equipment to practice outdoor recreation activities	19	35.8%
Poor physical condition or health condition	17	32.1%
Lack of time	14	26.4%
Fear of having an accident	13	24.5%
Crowding in recreational places	11	20.8%
Lack of a companion interested in outdoor recreation activities	8	15.1%
Other	3	5.7%

Note: The numeric base are the 53 representatives who responded the survey. As it is a question with multiple answers, a separate count is made for each of the answers mentioned and the sum of percent can be different from 100%.

#### **4.1.2.8 Challenges faced by the participating entities related to outdoor recreation activities**

Quality and quantity of outdoor recreation places are the main challenges that face the participating entities related to the practice of outdoor recreation activities. For 47.2% of the contributing organizations, the places are not adequate to carry out the activities they practice or promote, and 42% believe the facilities are not enough to carry out the activities they practice or promote.

**Graph 23. Could you tell us what are the main challenges, if any, that your organization faces to enjoy outdoor recreation in Puerto Rico?**



Note: The numeric base are the 53 representatives who responded the survey. As it is a question with multiple answers, a separate count is made for each of the answers mentioned and the sum of percent can be different from 100%.

Other challenges mentioned were associated with costs, such as permits, parking, maintenance costs, and budgetary issues. The need of a proper public liability insurance policy was mentioned by two organizations. Another challenge was the lack of collaboration and alliances with NGO to promote outdoor recreation in Puerto Rico.

#### 4.1.2.9 Desired recreational facilities in Puerto Rico

Most of the participating entities identified the need of picnic areas, camping areas, community gardens or orchards, hiking trails, parks with trees and vegetation, bicycle areas, including bike lanes, beach facilities (e.g. showers, restrooms, etc.), passive parks outdoor concert, cinema and/or theater areas, and farms that provide tours.

When asked about other facilities, various participants identified the need of access and facilities on beaches to support surfing. Other coastal facilities mentioned included beach parks and green areas or corridors along the coast where people could walk.

**Table 25. Do you understand that more of the following facilities should be developed in Puerto Rico?**

Ranking	Facilities	%
1	Picnic Areas	69.8%
2	Camping areas	67.9%
3	Community gardens or orchards	60.4%
4	Hiking trail (hiking in natural areas or hiking / backpacking)	58.5%
5	Parks with trees and vegetation	56.6%
6	Bicycle areas	56.6%
7	Beach facilities (e.g. showers, restrooms, etc.)	56.6%
8	Passive parks (playground)	52.8%
9	Outdoor concert, cinema and / or theater areas	50.9%
10	Farms and historic farms that provide visits or tours	50.9%
11	Wildlife/landscape observation areas (not birdwatching)	49.1%
12	Birdwatching areas	45.3%
13	Facilities on the rivers	45.3%

Ranking	Facilities	%
14	Areas to spend the night (trailer parks or cabins)	43.4%
15	Rock climbing areas (mountains, cliffs)	43.4%
16	Boat ramps	32.1%
17	Skatepark	30.2%
18	Mountain bike areas	28.3%
19	Horse riding areas	28.3%
20	Soccer field	28.3%
21	Docks/piers for fishing in rivers	26.4%
22	Swimming pools	24.5%
23	Volleyball court	17.0%
24	Tennis court	17.0%
25	Areas to ride in all-terrain vehicles (ATV)	17.0%
26	Basketball court	15.1%
27	Mooring buoys	13.2%
28	Access and facilities on beaches that promote surfing	7.5%
29	Bird hunting areas	5.7%
30	Softball or baseball park	5.7%

Note: The numeric base are the 53 representatives who responded the survey. As it is a question with multiple answers, a separate count is made for each of the answers mentioned and the sum of percent can be different from 100%.

#### 4.1.2.10 Priorities identified by the NGOs

Participating entities were asked to indicate three priorities that are needed to strengthen or improve outdoor recreation in Puerto Rico. The top priority identified by over half of the participants (54.7%) was the need for protection of more natural, historical, and cultural areas to be used for outdoor recreation. The other two priorities dealt with the need to improve facilities and the need to create alliances between NGO and the government to administer and manage the outdoor recreation places. These and other priorities identified are presented in the following table.

**Table 26. From your perspective, which three aspects should have priority to strengthen/ improve outdoor recreation in Puerto Rico?**

	Frequency	%
Protect more natural and historical / cultural areas to be used for outdoor recreation	29	54.7%
Improve existing facilities to serve their purpose	23	43.4%
Develop alliances between governmental and non-governmental entities to administer and manage the areas / facilities	22	41.5%
Allocate more resources for the management and maintenance of the facilities	21	39.6%
Educate people to protect existing facilities / areas	14	26.4%
Transform existing facilities to serve the needs of the population	11	20.8%

	Frequency	%
Physically connect the facilities in the municipalities (through green corridors, bicycle rides, etc.)	10	18.9%
Develop more facilities for outdoor recreation	9	17.0%
Improve transportation to access the areas (roads, sidewalks, mass transit, bicycle lanes, etc.)	7	13.2%
Promote existing facilities	4	7.5%
Increase the management and maintenance personnel of the areas (includes recruit professional and specialized trained employees)	4	7.5%
Education (Road safety education and Education should not be limited to protection)	2	3.8%

Note: The numeric base are the 53 representatives who responded the survey. As it is a question with multiple answers, a separate count is made for each of the answers mentioned and the sum of percent can be different from 100%.

### 4.1.3 Survey of municipal representatives

The survey was answered by nine municipal employees of the municipalities' sports and recreation units (hereinafter, referred as participants). Six regions were represented in the survey. There were no municipal employees from the North, Northwest and East region who responded the survey.<sup>15</sup>

Map 19. Regions represented in the survey to municipal representatives



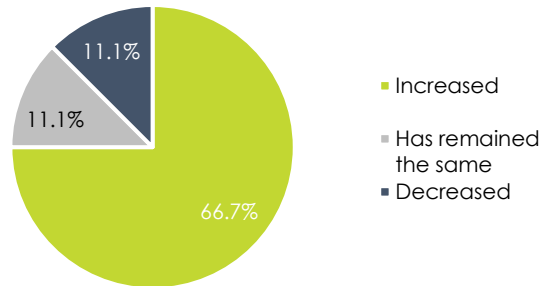
On average, participants have been working in outdoor recreation related functions for 7.4 years. They provide services for the general population, kids, elderly and people with disabilities.

<sup>15</sup> It is likely that the incidence of responses may have been affected by the COVID-19 lockdown, which began on March 16, 2020 when the Governor issued an Executive Order (EO) to that effect. In that period, most of the municipal personnel were not working nor teleworking.

#### 4.1.3.1 Demand and opportunities for outdoor recreation in Puerto Rico

66.7% of the participants understand that the demand for outdoor recreation in their respective municipalities have increased during the past five years.

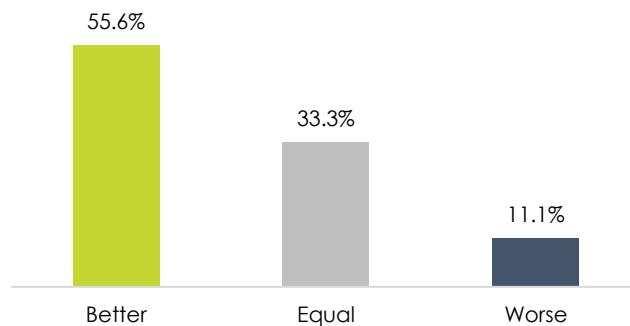
**Graph 24. During the past five years, do you think that the demand for outdoor recreation in the municipality that you represent has ...?**



Note: The numeric base are the nine representatives who responded the survey.

More than half of participants understand that the opportunities for outdoor recreation in their municipalities are better than five years ago, and 33.3% understand that have remained the same.

**Graph 25. Are the opportunities for outdoor recreation in the municipality you represent better, equal, or worse than five years ago?**

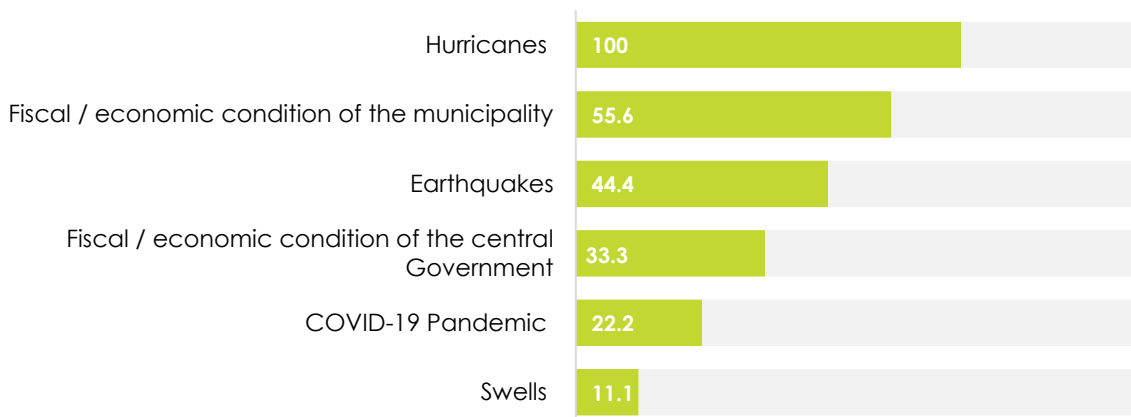


Note: The numeric base are the nine representatives who responded the survey.

#### 4.1.3.2 Events that have had positive and negative impacts on outdoor recreation in their municipalities

Participants were asked to identify events or situations, if any, which have had a positive impact on outdoor recreation in their municipalities. They mentioned the celebration of competitions and sport events, outdoor classes, and cultural events, to name a few. In addition, they perceive more awareness among the population on the need to maintain good physical condition.

**Graph 26. In your opinion, in the past five years, which events or situations, if any, have had a negative impact on outdoor recreation in the municipality that you represent? (in %)**



Note: The numeric base are the nine representatives who responded the survey. As it is a question with multiple answers, a separate count is made for each of the answers mentioned and the sum of percent can be different from 100%.

On the negative side, natural disasters as well as municipal and Commonwealth's fiscal situations are the main negative events that have impacted outdoor recreation in their municipalities. In fact, all participants identified that hurricanes Irma and María had adverse consequences on outdoor recreation in their municipalities, as shown in the previous graph.

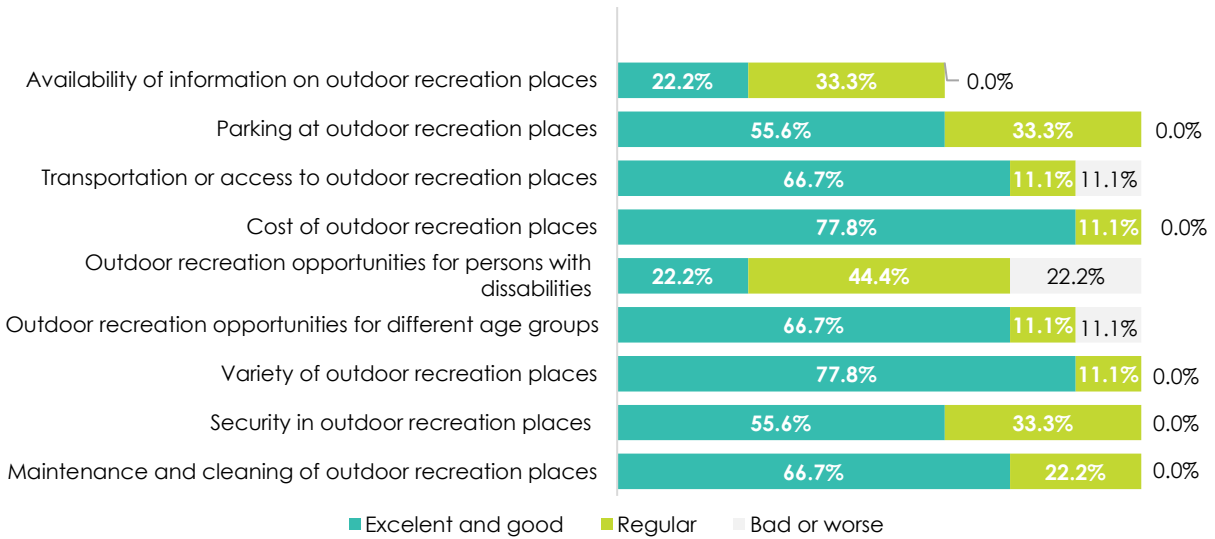
#### **4.1.3.3 Conditions of outdoor recreation places**

Participants perceive that outdoor recreation places in their municipalities are between good (44.4%) and regular (44.4%) condition. None of the participants indicated bad or worse.

Most participants understand that the variety of outdoor recreation places, the cost of enjoying them, their maintenance, the security in such places, parking, transportation to these places and the opportunities for people of different ages are aspects that are in excellent or good condition. On the other hand, two aspects that could improve are the opportunities for people with disabilities and the availability of information on outdoor recreation places.



**Graph 27. What is the condition of the following aspects in the municipality you represent?**



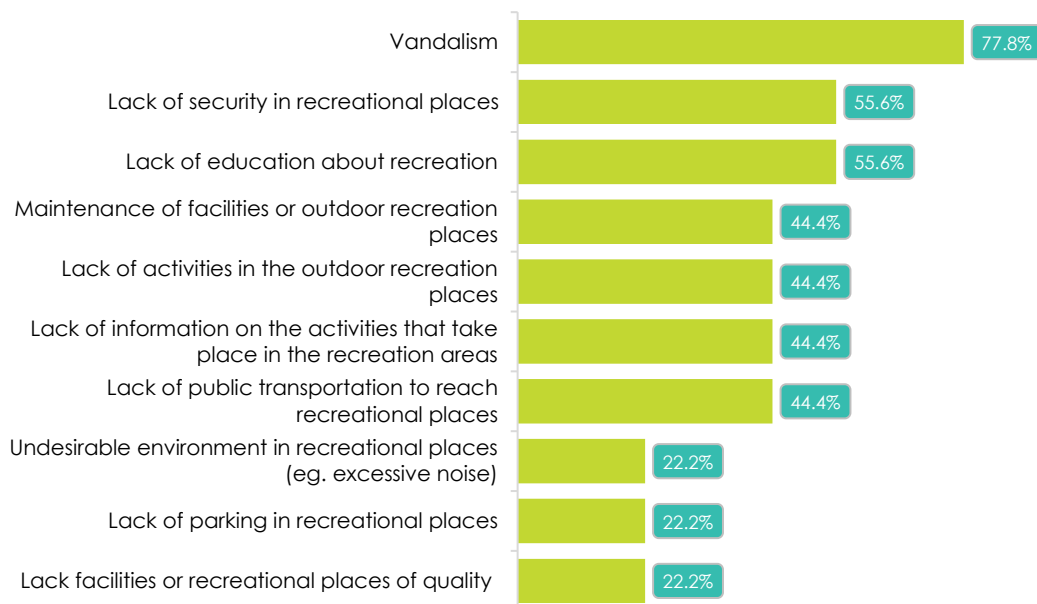
Note: The numeric base are the nine representatives who responded the survey.

#### 4.1.3.4 Main problems associated with outdoor recreation in Puerto Rico

Most of the participants understand that the following situations are the main problems associated to outdoor recreation in their municipalities: vandalism, lack of security in recreational areas and lack of education about recreation. While 44.4% of the employees surveyed understand that the following are also important problems: maintenance of facilities, lack of activities in the recreation areas, lack of information about such events, and lack of public transportation to reach recreational areas.

Additional problems identified by participants are the lack of resources to hire suitable and certified staff in addition of the need to have staff during evening or night schedules. The absence of support in promoting recreational destination in the municipalities was also identified, specially from the DRD as well as the PRTC.

**Graph 28. Which situations related to outdoor recreation do you consider to be a current problem in the municipality you represent?**



Note: The numeric base are the nine representatives who responded the survey. As it is a question with multiple answers, a separate count is made for each of the answers mentioned and the sum of percent can be different from 100%.

#### 4.1.3.5 Obstacles that prevent residents from your municipality from participating in outdoor recreation activities

According to the participants, the main obstacles that prevent or limit residents of their municipalities from participating in outdoor recreation are the lack of equipment needed to practice outdoor recreation activities and the lack of companion interested in outdoor recreation activities. These and other obstacles mentioned are presented below.

**Table 27. What or which do you understand are the main obstacles, if any, that prevent or limit the residents of your municipality from participating in outdoor recreation activities in your municipality?**

Main responses	%
Lack of equipment for recreation	55.6%
Lack of a companion interested in outdoor recreation activities	55.6%
Lack of time	44.4%
Lack of knowledge or skills for recreational activities	44.4%

Note: The numeric base are the nine representatives who responded the survey. As it is a question with multiple answers, a separate count is made for each of the answers mentioned and the sum of percent can be different from 100%.

#### 4.1.3.6 Desired recreational facilities

Most of the participants identified ten types of facilities that they would like to have in their respective municipalities. Among these are places for outdoor artistic or cultural activities,

MTB trails, landscape and wildlife observation areas, riverside facilities, hiking trails, and areas for bicycles and ATVs, as well as soccer fields.

**Table 28. Which, if any, of the following outdoor recreation facilities would you like to see in your municipality and in Puerto Rico?**

Ranking	Municipality	%	Ranking	Puerto Rico	%
1	Outdoor concert, cinema and / or theater areas	66.7%	1	Birdwatching areas	33.3%
2	Mountain bike areas	66.7%	2	Bird hunting areas	33.3%
3	Facilities on the rivers	66.7%	3	Wildlife/landscape observation areas (not birdwatching)	22.2%
4	Birdwatching areas	55.6%	4	Areas to spend the night (trailer parks or cabins)	22.2%
5	Rock climbing areas (mountains, cliffs)	55.6%	5	Rock climbing areas (mountains, cliffs)	22.2%
6	Areas to ride in all-terrain vehicles (ATV)	55.6%	6	Outdoor concert, cinema and / or theater areas	22.2%
7	Bicycle areas	55.6%	7	Horse riding areas	22.2%
8	Soccer field	55.6%	8	Golf course or range	22.2%
9	Docks/piers for fishing in rivers	55.6%	9	Beach facilities (e.g. showers, restrooms, etc.)	22.2%
10	Hiking trail (hiking in natural areas or hiking / backpacking)	55.6%			

Note: The numeric base are the nine representatives who responded the survey. As it is a question with multiple answers, a separate count is made for each of the answers mentioned and the sum of percent can be different from 100%.

#### 4.1.3.7 Priorities identified municipal representatives

Municipal representatives were asked to indicate three priorities that are needed to strengthen or improve outdoor recreation in Puerto Rico. The top priorities identified by participants are:

- 1) Transform existing facilities to serve the needs of the population (44.4%);
- 2) Educate people to protect existing facilities and areas (44.4%); and
- 3) Develop alliances between governmental and non-governmental entities to administer and manage the areas/facilities (33.3%).



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## 4.2 Main findings of the demand study

### *General population*

For Puerto Ricans, enjoying outdoor recreation is very important, while sharing with family and friends, relaxation in the outdoors, exercising and enjoying the scenery are the activities that people enjoy the most.

Outdoor recreation is practiced throughout the year, particularly during the summer, and mostly within the community. Running or walking as exercise, as well as swimming or sunbathing on the beach are the preferred activities.

The largest proportion of people understand that the opportunities for outdoor recreation in their municipalities are worse than five years ago, while in Puerto these are objectionable but unchanged. Nevertheless, the level of satisfaction with recreational opportunities in Puerto Rico and its municipalities is high. Overall, people are satisfied with the cost of outdoor recreation sites and the number of such facilities.

The least satisfactory factors are the opportunities for people with disabilities and the security in outdoor recreation facilities. Vandalism and the fear of being the victim of an assault or criminal incident prevent or limit citizens from participating in outdoor recreation activities in Puerto Rico. People are also dissatisfied with the condition of the facilities due to the lack of maintenance and that they have not been repaired since Hurricane María.

Participants also expressed that they would like to have more parks in their municipalities and in Puerto Rico, as well as swimming pools, picnic areas, bicycle areas, community gardens or orchards, parks with trees and vegetation and camping areas, among other.

### ***NGOs and concessionaires***

Participating entities were mostly NGO that typically provide outdoor activities for children or infants, tours and visits to historical sites and natural areas, nature-based activities, and social services.

These entities understand that the demand for outdoor recreation has increased over the past five years, but the opportunities for outdoor recreation in Puerto Rico have worsened. They are not satisfied with the available opportunities for outdoor recreation in Puerto Rico, the condition of the facilities, especially with their maintenance, as well as with the opportunities for persons with disabilities and for different age groups.

They perceive, like the general population, that the main problems that affect outdoor recreation are the lack of maintenance of facilities, vandalism, and lack of security in outdoor recreational areas. In fact, the poor condition of recreational facilities is limiting people from participating in outdoor recreation activities, as well as the lack of information about where to go and what to do and the perception of insecurity and accessibility issues.

For most of the participating entities, there is a need for facilities that support cultural and nature-based activities such as: picnic areas, camping areas, community gardens or orchards, hiking trails, parks, and outdoor areas for cultural activities. They identified as a priority the need to protect more natural, historical, and cultural areas; improve the existing areas and the establishment of alliances between NGOs and the government to administer and manage the outdoor recreation sites.

### ***Municipal representatives***

Although there was limited representation of the municipalities in the survey, in many aspects the findings coincide with the other sectors surveyed. Like NGOs and concessionaires, most of the municipal representatives understand that the demand for outdoor recreation in their respective municipalities has increased during the past five years. Contrary to other participants, they understand that opportunities for outdoor recreation are better than they were five years ago, and that the condition of facilities in their municipalities are quite good. Positive aspects have been the celebration of activities and events, and the population's increasing interest in taking care of their health.

On the negative side, they mentioned natural disasters such as storms and tremors and the fiscal condition as situations that have adverse impacts on outdoor recreation. Like the other groups consulted, the perception of security and vandalism were identified as a problem in their municipalities. Also, the lack of equipment and of companions were identified as limiting factors for participating in outdoor activities.

Among the facilities desired for their municipalities are outdoor concert, cinema and/or theater areas, and areas for recreation and adventure sports, such as MTB, rock climbing, ATV, among others. For Puerto Rico, birdwatching areas as well as hunting areas were identified as the preferred ones to be developed further.

In order to strengthen outdoor recreation, they identified the need to transform or repurpose existing facilities to serve the populations' needs, to educate people to protect existing sites,

and to develop alliances between governmental and non-governmental entities for the administration and management of existing facilities.

***In summary***

Overall outdoor recreation is important for Puerto Ricans and its organizations, the demand has increased, but the opportunities have worsened. The poor condition of the facilities, the lack of opportunities for people with disabilities and the fear of being a victim of a crime are obstacles to recreation. There is a general interest in expanding opportunities for recreation which is reflected in the facilities that people would like to have, many of which can be provided by repurposing existing facilities. Finally, collaboration appears to be an important response to improve and strengthen outdoor recreation in Puerto Rico.

# Trails Plan



## 5 TRAILS PLAN

### 5.1 Introduction

States are encouraged to consider in their outdoor recreation plans the needs and opportunities for establishing recreation and historic trails, and wild, scenic, and recreational river areas. Trail opportunities in Puerto Rico are many and diverse, and include terrestrial and aquatic trails, which can range in use from hiking or walking to bike and aquatic trails.

Trails promote environmental and cultural stewardship and health and wellbeing. They also promote tourism and local economic development through the emergence of other related businesses such as camping and other lodging sites, tour operators and restaurants, among other. In Puerto Rico, they can be developed in natural settings, for example, mountain ranges, valleys and cliffs, forests, beaches, stream banks, rivers, lakes, and lagoons, among other natural features.

### 5.2 Trails in Puerto Rico

#### 5.2.1 Hiking trails and linear parks

Trails for public use in Puerto Rico are found mainly within the protected natural areas. Various natural areas have interpretive trails, while others have rustic trails, some of which are improvised or are traditional paths. The DNER is the Commonwealth agency that develops and maintains trails inside its protected areas and national parks under its jurisdiction; the USFS develops and maintains trails in El Yunque National Forest, and the USFWS inside the national wildlife refuges. Other NGO's, such as Para La Naturaleza, Casa Pueblo and the Luis Muñoz Marín Foundation also develop and maintain trails inside their properties.

About 50 protected natural areas, both public or private, have interpretative trails, rustic trails, or traditional paths. Some of the most frequented public areas for hiking are the Guajataca and Guánica State Forests and El Yunque National Forest. This national forest has 18.8 miles (30 km) of hiking trails (Quiñones, et, al. 2018).

Municipalities and the Puerto Rico Highways and Transportation Authority (PRHTA) have developed linear parks that are often shared by pedestrians, runners, and cyclists. About 16 documented linear parks add to the supply of trails in Puerto Rico. Some of them are located along roads, rivers, and coasts, enabling the opportunity for recreation and exercise.

It should be noted that there are several trails going through private lands. Many of these are used to reach areas of scenic, historical, or natural importance such as rivers and caves.



## Map 20. Trails and linear parks



Source: PRPB, Protected Areas Conservation Action Team. 2018. Puerto Rico Protected Areas Database (version of December, 2018). GIS data. San Juan, PR. Puerto Rico desde el Aire.; Rescate Playas Borinqueri



### 5.2.2 Aquatic trails

In Puerto Rico, water trails for public use have not been highly developed. There is an interpretive water trail in the Humacao Natural Reserve. In the Northeast Ecological Corridor Natural Reserve, the DRNA and a local NGO are enhancing and developing an interpretive trail along the Sabana River in Luquillo.

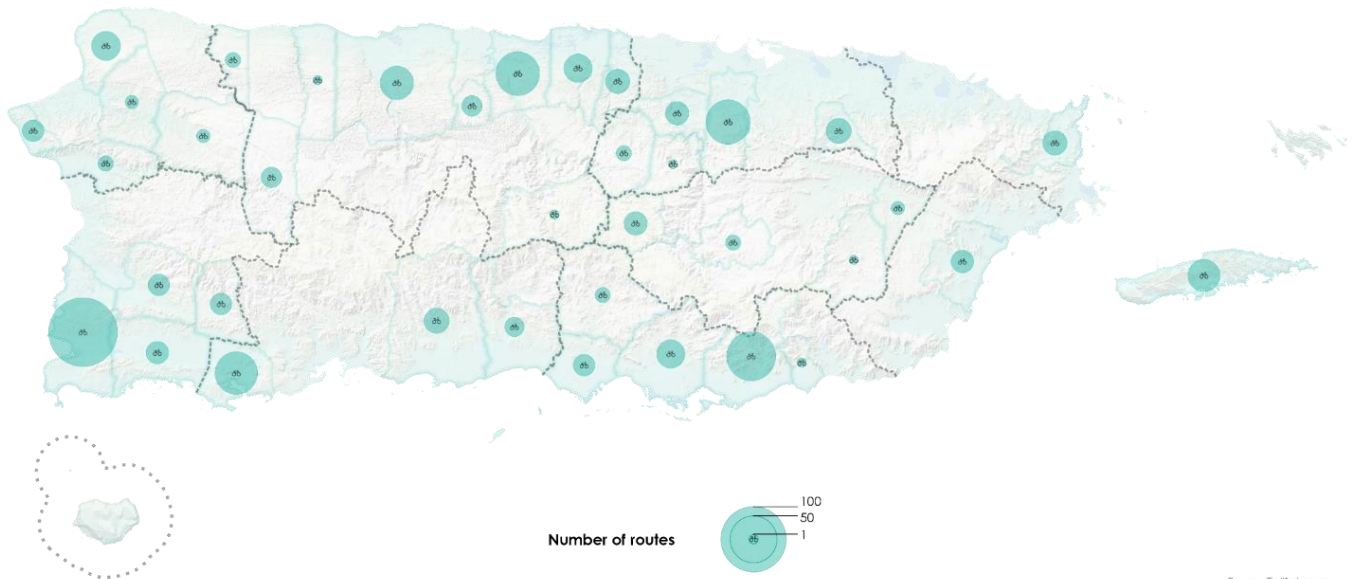
There are also multiple areas used for kayaking in the Ceiba mangroves, located at the mouth of the Río Guajataca, in the bioluminescent lagoons of Vieques and Fajardo, and on reservoirs and coastal lagoons such as El Condado Lagoon. Private companies provide tours to some of these locations, including rafting in the Añasco River and cave tubing in the Tanamá River.

There are also three underwater trails in the Isla Caja de Muertos (Natural Reserve), El Escambrón Marine Park and in the Laguna del Condado Estuarine Reserve.

### 5.2.3 MTB trails

In Puerto Rico, MTB users have documented 555 MTB trails in 59 public and private areas.<sup>16</sup> One of the most recognized areas for MTB is the Julio Enrique Monagas National Park. Other MTB trails are within protected areas, such as the Algarrobo in the Corredor Ecológico de San Juan, and the Cambalache Forest. Furthermore, the municipalities of Cabo Rojo and Juana Díaz have various mountain bike trails. Most of these trails, although in public and private lands, are developed and maintained by users, who have organized among themselves for such purposes.

Map 21. MTB areas and trails



<sup>16</sup> Source: <https://www.trailforks.com/region/puerto-rico/ridingareas/>

### 5.2.3.1 Scenic routes

The “Luis Muñoz Marín Panoramic Route” was established by Law 71 of 1965, as amended, and is included in the National Scenic Byways Inventory for its natural, scenic, historic, and cultural values. The road is 266 kilometers long and crosses the central mountain range, covering 21 municipalities<sup>17</sup> and four State Forests<sup>18</sup>. It is mostly used by vehicles, and occasionally, by organized walks<sup>19</sup>. It has a management plan prepared by the PRHTA, which is being updated.

In 2015, the PR-957 and PR-186 roads in the municipality of Canóvanas were designated as scenic routes with the approval of the Law No. 54-2015, known as “Ruta Escénica Mirador de El Yunque”. The US Forest Service and the PRTC prepared a study for its designation as a National Scenic Byway.<sup>20</sup>

#### Future scenic routes

In coordination with municipalities and other Commonwealth agencies, the PRHTA has identified 12 additional roads with the potential to be designated as scenic routes. These are found in the map and table below. It would be necessary to complete the assessments for these routes and study the possibility of connecting and prioritize those that provide the opportunity for connectivity with protected areas or important recreation places.

Map 22. Scenic routes



<sup>17</sup> These municipalities are: Maunabo, Yabucoa, San Lorenzo, Patillas, Guayama, Cayey, Aibonito, Barranquitas, Coamo, Villalba, Orocovis, Ponce, Juana Díaz, Jayuya, Utuado, Adjuntas, Lares, Sabana Grande, Maricao, Las Marías and Mayagüez.

<sup>18</sup> These State Forests are: Carite, Toro Negro, Guilarte and Maricao.

<sup>19</sup> These walks are organized by the NGO, El Fondo de Mejoramiento, each year.

<sup>20</sup> Source: <https://act.dtop.pr.gov/plan-de-manejo-de-la-ruta-panoramica/>

**Table 29. Proposed and designated scenic routes in Puerto Rico**

Designated scenic routes	
1	Ruta Panorámica Luis Muñoz Marín National Scenic Byways
2	Ruta Escénica Mirador de El Yunque Law 54-2015
Scenic routes projected or proposed by the ACT or in coordination with municipalities and other agencies	
1	PR-187 (Loíza)
2	PR-191 (Río Grande/El Yunque)
3	PR-3 (Fajardo-Ceiba-Naguabo-Humacao)
4	PR-139 (Ponce)
5	PR-128 (Yauco)
6	PR-333 (Guánica-Yauco)
7	PR-111 (Aguadilla-Moca-San Sebastián-Lares-Utuado)
8	PR-2 (Quebradillas)
9	PR-10 (Arecibo-Utuado)
10	PR-149 (Manatí-Ciales-Orocovis)
11	PR-693 (Dorado-Vega Alta)
12	PR-165 (Dorado-Toa Baja)

Sources: Information provided by the Puerto Rico Highways and Transportation Authority, Office of Strategic Planning in February 2020.

## 5.3 Opportunities for an Island wide Trail System

### 5.3.1 The development of trails as the Commonwealth public policy

The Government of Puerto Rico enacted Law 314 of 2000 "To establish the public policy on pedestrians, mountain bike, aquatic and equestrian trails in Puerto Rico". This law has the following main components:

- Establishes that the public policy of the Government of Puerto Rico is to promote mountain cycling, kayaking, canoeing, and hiking;
- Mandates all the instrumentalities of the Government of Puerto Rico to identify areas under their jurisdiction where paths or trails already exist or may be established for pedestrians or mountain bikers;
- Ordains the DNER to prepare a register of trails on its properties, which can also include private trails;
- Ordains the DNER to establish, by regulation, the requirements where motorized and non-motorized trails will be established; and

- Allows that the owners of lands which have natural trails can include them in the register, and these lands can be considered Auxiliary Forests, pursuant the provisions of the “Puerto Rico Forest Act”.

Presently, the provisions of this law have not been met, but there is an opportunity and the need for its implementation as the foundation for a robust trail system.

### **5.3.2 Federal Funds and Assistance**

#### ***Land and Water Conservation Funds (LWCF)***

LWCF assistance may be available for the development and marking of trails, overlooks, and turnouts for nature walks, hiking, bicycling, horseback riding, and exercising, among others. Assistance include walkways and trails on historic property in addition to footpaths leading to fishing and hunting facilities.

#### ***National Park Service Rivers and Trails Conservation Assistance Program (RTCA)***

The RTCA provides technical assistance to support community-led natural resource conservation and outdoor recreation projects. Planning assistance is provided for the design of trails and parks, for conservation efforts, for the improvement of access to rivers, for the protection of special places, and for the creation of leisure opportunities.

#### ***FHWA Recreational Trails Program (RTP)***

The RTP is an assistance program of the FHWA, which provides funds to the States to develop and maintain recreational trails and trail-related facilities. These include nonmotorized and motorized recreational trail uses, such as hiking, bicycling, in-line skating, equestrian use, and road motorized vehicles.

### **5.3.3 Future Trails Planning**

The demand study reflects that trails are a high priority for the residents of Puerto Rico. As a result, it must become a government priority to promote this type of activity that will foster economic development, and the health and well-being of the population.

There is a need to strengthen and organize existing information, including data on the actual rights of way and traditional paths where trails are legally and feasible to develop. There are many efforts dispersed among state and federal agencies, municipalities, NGO's and communities. Coordination, therefore, is necessary. Other needs for a trail system include connectivity between trails, maintenance of existing trails, promotion and education of such areas, and coordination with private and public landowners.

#### **5.3.3.1 Priorities for the next five years**

High level priorities for the next five years include:

- Rebuild, enhance, and maintain existing trails and routes
- Delineate regional trail systems by designing trails to connect natural areas, communities and historical and cultural landmarks and businesses

- Address the private landowner's liability issues by approving recreational use statutes to grant limited liability to landowners who permit access for recreational purposes
- Develop and disseminate an inventory of trails according to Law 314 of 2000
- Establish a trail working group
- Strategic Investment of resources to advance the trails system as a tourism and economic asset

### ***Rebuild, enhance, and maintain existing trails and routes***

Trails inside the protected areas and National Parks, mainly those of the DRNA, need improvements and maintenance. Rebuild and maintenance efforts need to consider climate change effects such as sea level rise and potential increases in landslides, among others. Planning for a trail system also needs to take into account demographic shifts and populations with disabilities.

### ***Delineate regional trail systems to connect natural areas, communities and historical and cultural landmarks and businesses***

There are various trails initiatives and plans of regional scope that must be considered in a trail system, which are in different planning stages and support is needed for their completion and success. At this moment, an integrated network of trails provides an extraordinary opportunity to address many of the prevailing needs on the island, in addition to tourism and recreation, economic development, health and wellbeing, and education. Various regional trails systems that has been proposed include:

#### **(1) Model Forest Routes and Trails**

The Puerto Rico Model Forest Act (Law No. 182 of 2014) provides that the PRTC should coordinate initiatives to promote sustainable tourism inside the Model Forest area, including interpretative routes, and hiking trails that will connect protected natural areas. The Model Forest covers 378,639 acres of forested lands across 17 municipalities, connecting 26 protected natural areas.

#### **(2) Coffee Farms Trails**

Touristic Coffee Route- The NGO Cafiesencia has been working with coffee farmers in the development of a Coffee Route in the Central-West part of the Island. The NGO developed a [feasibility study](#) and has been working with farmers on potential trail routes along their farms. In fact, there's an agreement with the municipality of Yauco to start a pilot route.

#### **(3) Northeast Trail Network**

The purpose is to connect El Yunque National Forest with the surrounding natural areas, such as the Northeast Ecological Corridor and Cabezas de San Juan Natural Reserves. A Memorandum of Understanding (MOU) was signed by the US Forest Service, the DNER, Para La Naturaleza, the Puerto Rico Campers Association and other NGO's, the municipalities of Luquillo and Fajardo, and community based organizations to plan, design and implement

the project. A [conceptual trails plan](#) was developed for the project and assistance is being provided through the RTCA Program in the planning process.

#### (4) Potential trail systems associated to the irrigation system districts

There are three irrigation system districts in Puerto Rico with the potential to provide recreational trail opportunities along their canals. These are the South Coast Irrigation District, the Lajas Valley Irrigation System, and the Isabela Irrigation District. Pedestrian trails along the canals are an opportunity for nature, water conservation and historic interpretation.

Previous demonstrative activities in the Juana Diaz and Isabela canals showed the citizens' interest and desirability to know and enjoy these resources<sup>21</sup>. Similar trails are found in Portugal (Las Levadas canal system in Madeira Islands).<sup>22</sup>



Trails along the canals' margins are an opportunity for nature protection, water conservation and historic interpretation

#### (5) Trail Networks and Corridors (SCORP 1994-1998)

The 1994-1998 SCORP included a matrix of trails and networks that are considered as the baseline for the register and other provisions of Law 314-2000. These networks and trails are presented in the following table and map. The proposals need to be revisited to study their feasibility, condition of sites and potential additions. However, there is an extraordinary opportunity to develop these networks and corridors and integrating Model Forest projects, coffee plantation trails proposed by Cafiesencia and the Northeast Trails, among other ongoing efforts.

Table 30. Trail networks and corridors

Network ID	Network	Municipality	Trails
1	Boquerón-Ensenada Network	Cabo Rojo	Laguna Guaniquilla and Playa Buyé
		Cabo Rojo	Balneario de Boquerón
		Cabo Rojo	Refugio de Aves de Boquerón
		Lajas	Laguna Cartagena and Sierra Bermeja
		Cabo Rojo	Salinas y Faro de Cabo Rojo
		Cabo Rojo	Cabo Rojo National Wildlife Refuge (CRNWR)
		Cabo Rojo	Llanos Costa
		Cabo Rojo	Balneario El Combate

<sup>21</sup> See <https://www.periodicolaperla.com/estudiantes-surenos-dan-catedra-sobre-otra-maravilla-de-la-ingenieria/>; <https://construccionelnuevodia.com/noticia/ecoturismo-en-los-canales-de-riego-de-isabela/>

<sup>22</sup> <http://discoveringmadeira.com/levadas-madeira>

Network ID	Network	Municipality	Trails
		Lajas	Bosque Boquerón and Pitahaya
		Lajas	La Parguera
		Lajas	Phosphorescent Bay- Montalva
		Guánica	Bosque de Guánica Oeste
2	San Juan Network	San Juan	Fuerte de El Morro
		San Juan	Parque Muñoz Rivera and El Escambrón
		San Juan	Base Naval de Miramar
		San Juan	Parque Central de San Juan
		San Juan	Parque Muñoz Marín
		San Juan	Jardín Botánico
3	Boca Cangrejos Network	Carolina	Balneario Isla Verde
		Loíza	Bosque de Piñones
		Loíza	Miñi-Miñi
4	Seven Seas Corridor <sup>23</sup>	Fajardo	Balneario Seven Seas
		Fajardo	Cabezas de San Juan
		Fajardo	Reserva Natural de la Cordillera
5	Bosque de Guánica Network	Guánica	Balneario Caña Gorda-Punta Jacinto
		Guánica	Bosque de Guánica Este
		Guánica	Playas Ballena y Tamarindo
6	Western Coastal Network	Rincón	Rincón Bicycle Lane
		Añasco	Balneario de Añasco
		Añasco	Caño Boquilla and Río Añasco
		Mayaguez	Mayaguez Bicycle Lane
7	Humacao Network	Naguabo	Ríos Antón Ruíz y Blanco
		Naguabo	Bosque de Ceiba
		Humacao	Refugio de Vida Silvestre and Pantano de Humacao
		Humacao	Morro de Humacao
8	Laguna Tortuguero Corridor	Manatí	Hacienda La Esperanza
		Manatí	Balneario Mar Chiquita
		Manatí	Laguna Tortuguero
9	Dorado Corridor	Vega Alta	Playa Cerro Gordo
		Dorado	Estuario Río La Plata and Ojo del Buey
		Toa Baja	Balneario Punta Salinas and Río Cocal
10	Barrio Islote Network	Arecibo	Río Grande de Arecibo
		Arecibo	Islote and Caño Tiburones
		Arecibo	Bosque de Cambalache
11	Vieques Network	Vieques	Vieques Island

<sup>23</sup> Note: This could be renamed as the Northeast trail network and include the Northeast Ecological Corridor and the other areas included in the conceptual trail plan.



Network ID	Network	Municipality	Trails
		Vieques	Bahía Mosquito
12	Karst Network <sup>24</sup>	Moca	Cordillera Jaicoa
		Isabela	Bosque Guajataca
		Camuy	Montaña Guarionex y Río Camuy
		San Sebastián	Cañón del Lago de Guajataca
		Quebradillas	Lago Guajataca
		Utuado	Río Tanamá from Road 111
13		Arecibo	Bosque de Río Abajo
		Utuado	Lago Dos Bocas
		Arecibo	Sabana Hoyos Limestone Hills
		Ciales	Río Encantado- Hato Viejo
14	Toro Negro Corridor	Jayuya	Bosque Toro Negro (Cerro Punta sector)
		Ciales	Lago El Guineo
		Orocovis	Bosque Toro Negro (Doña Juana sector)
		Orocovis	Bosque Toro Negro (Lago Matrullas)
		Jayuya	Parador Gripiñas
15	Maricao Network	Maricao	Bosque de Maricao
		Maricao	Parador Hacienda Juanita
		Maricao	Vivero de peces de Maricao
		Maricao	Centro Vacacional Monte del Estado
16	Susúa Corridor	Sabana Grande	Bosque Estatal Susúa
		Yauco	Lago Luchetti
17	Monte Guilarte Corridor	Adjuntas	Bosque de Guilarte
		Adjuntas	Lago Garzas
18	Carite Corridor	Guayama	Lago Carite
		Guayama	Bosque de Carite
19	Toa Vaca Corridor	Villalba	Lago Guayaba
		Villalba	Lago Toa Vaca
20	Baños de Coamo Corridor	Santa Isabel	Lago Coamo
		Coamo	Parador Baños de Coamo
21	Laguna Guánica Corridor	Lajas	Valle de Lajas and El Anegado
		Guánica	Laguna de Guánica
		Guánica	Río Loco
22	Lago Caonillas Corridor	Utuaado	Lago Caonillas
		Adjuntas	Lago Adjuntas
		Adjuntas	Lago Pellejas
		Utuaado	Lago Viví
23		Naranjito	Catedral de Bambú

<sup>24</sup> This could include the Isabela Irrigation District Channels.

Network ID	Network	Municipality	Trails
	Catedral de Bambú Corridor	Toa Alta	Lago La Plata

Source: Puerto Rico State Outdoor Recreation Plan 1994-1998.

Map 23. Proposed Networks and Corridors (Source: SCORP 1994-1998)



Source: DNER

***Address the private landowner’s liability issues by approving recreational use statutes to grant limited liability to landowners who permit access for recreational purposes***

Many trails that connect protected areas or that provide access to areas of interest pass through private lands. To promote a trail system, the development of statutes that address the landowner’s responsibility shall be coordinated with the Legislature of Puerto Rico.

***Develop an inventory of trails according to Law 314 of 2000***

A public and comprehensive inventory of private and public trails would facilitate the planning, maintenance, and implementation of other actions leading to the trails system. It would also facilitate the development of maps and trail routes information that should be available on a centralized web page.

***Establish a trail working group***

Federal and Commonwealth entities and NGO that manage natural areas and trails in Puerto Rico have distinct missions. In addition, there are different citizen groups and individual

interested in developing trails. A working group will convene all the interested parties to collaborate in the planning, design, and maintenance of a trail system in Puerto Rico.

A working group will also guide the strategic investment of resources to advance the trails system as a tourism and economic asset. For this effort, economic development agencies will be key. Trails attract tourists from Puerto Ricans and abroad. As a result, the inclusion of the Department of Economic Development and Commerce, the PRTC and the Puerto Rico DMO is essential.

# Wetlands Component



## 6 WETLANDS COMPONENT

### 6.1 Introduction

The LWCF State Assistance Program Manual states that the SCORP must contain a wetlands component pursuant to Section 303 of the Emergency Wetlands Resources Act of 1986. This component must:

- Be consistent with the National Wetlands Priority Conservation Plan, prepared by the USFWS
- Provide evidence of consultation with the state agency responsible for fish and wildlife resources, which is the DNER
- Contain a listing of wetland types which should receive priority for acquisition, and
- Consider outdoor recreation opportunities associated with its wetland's resources for meeting the State's public outdoor recreation needs.

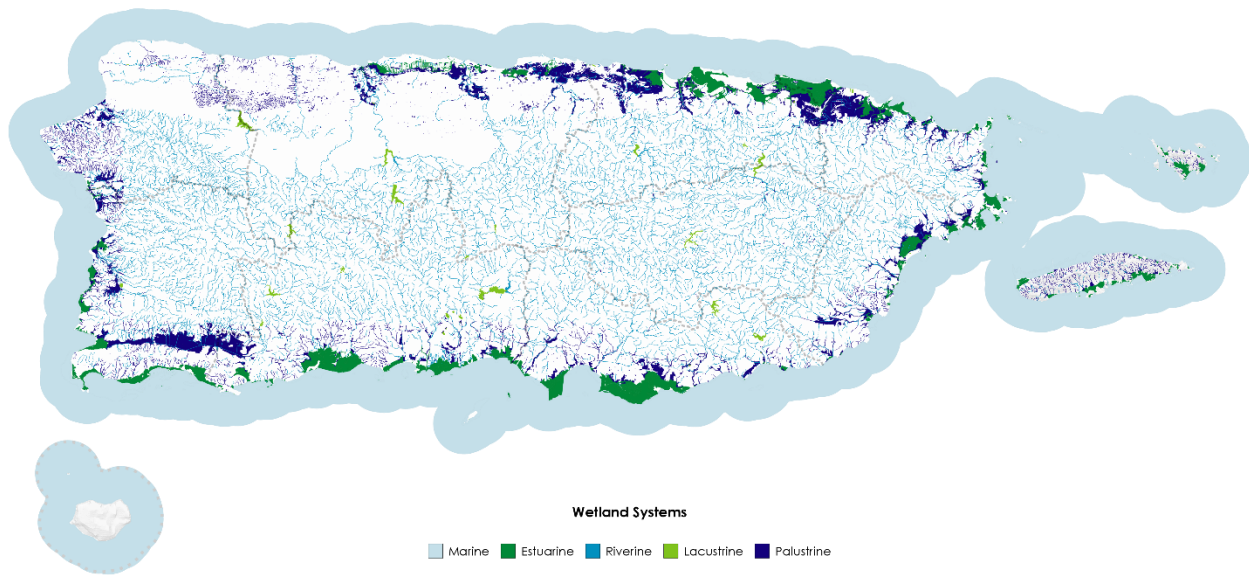
Information to update the wetlands component was requested to the DNER. The DNER provided a list of all conservation priority areas in Puerto Rico and information on wetlands' areas that are suitable for outdoor recreation activities. In addition, various documents prepared by the DNER, related to the protection, and use of wetlands, were used in the preparation of this chapter. These are the Puerto Rico Coastal Zone Management Program (2014 draft), the Strategic Plan for the Management of Puerto Rico's Fish and Wildlife Resources (2013), the Puerto Rico Comprehensive Wildlife Conservation Strategy (2015) and the Puerto Rico's Mangrove Forests Special Planning Area Management Plan (2003).

### 6.2 Wetlands definition and categories

Wetlands provide a wide range of recreation opportunities like fishing, wildlife viewing, kayaking, and hunting. In addition, wetlands support wildlife, improve water quality, assist with flood control, provide coastal protection, and contribute to groundwater recharge.<sup>25</sup> Wetlands are classified as lacustrine, riverine, marine, estuarine and palustrine (Cowardin et al., 1979). These classifications along with their distribution and coverage are presented in the following table and map.

#### Map 24. Wetlands in Puerto Rico

<sup>25</sup> Detailed Inventory of Protected Areas and Other Mechanisms for Land Protection in Puerto Rico, US Forest Service, International Institute of Tropical Forestry, USDA (August 2019), retrieved from [https://data.fs.usda.gov/research/pubs/iitf/iitf\\_qtr\\_50\\_spa\\_lowres.pdf](https://data.fs.usda.gov/research/pubs/iitf/iitf_qtr_50_spa_lowres.pdf)



Source: U.S. Fish and Wildlife Service, National Wetlands Inventory - Version 2 - Surface Waters and Wetlands Inventory, 2020

**Table 31. Wetlands classification scheme**

Type of wetland	Definition	Coverage in Puerto Rico (in acres)
Lacustrine	These wetlands are limited to the shallow areas of rivers and lagoons. These wetlands and deep-water habitats are commonly situated in a topographic depression or dammed river channel without trees, shrubs, persistent emergent, emergent mosses, or lichens with greater than 30% area coverage. Their total area exceeds 8 hectares (20 acres) or may be less than 8 hectares if the boundary is active wave-formed or bedrock or if the water depth in the deepest part of the basin exceeds 2 m (6.6 ft) at low water. Ocean-derived salinities are always less than .5 ppt.	5,538
Riverine	Refers to all wetlands and deep-water habitats within a channel except for wetlands dominated by trees, shrubs, persistent emergent, emergent mosses, or lichens and those with habitats that have ocean-derived salinities more than .5 ppt. The riverine wetlands are limited to the shallow areas of rivers and stream flows.	21,159
Marine	The marine system consists of the open ocean overlaying the continental shelf and its associated high-energy coastline. Marine habitats are exposed to the waves and currents of the open ocean. The water regimes are determined primarily by the ebb and flow of oceanic tides. In these cases, salinities normally exceed 30‰, with little or no dilution except outside the entrance of estuaries. Two types of coastal environments are also considered part of this system since they generally support typical marine biota. These are shallow coastal indentations or bays without significant freshwater inflow and coasts with exposed rocky islands that provide the mainland with little or no shelter from wind and waves. Coral reefs and sea grass beds are examples of this type of wetland.	1,197,543
Estuarine	These are comprised of deep-water tidal habitats and adjacent tidal wetlands. They are usually semi-enclosed by land, but have open, partly obstructed, or sporadic access to the ocean. In this case, ocean-derived water is at least occasionally diluted by freshwater runoff from the land. Estuarine wetlands are affected by the tide with low energy waves where the water salinity is normally greater than 0.5 parts per thousand and varies due to the evaporation and the mixture of seawater and fresh water.	73,787

Type of wetland	Definition	Coverage in Puerto Rico (in acres)
Palustrine	Found in freshwater and may be subject to tidal flows. Trees, shrubs, and herbaceous plants in persistent development, erected and rooted, or submerged, and/or floating plants dominate the landscape of this type of wetland. The variety of palustrine wetlands includes marshes, swamps, humid prairies, grottos, and small shallow pools where ocean-derived salinities are below .5 ppt. Also, among this type of wetlands are some open-water bodies that cover less than 8.1 hectares and their depth do not exceed 6.6 feet.	76,948

## Wetlands condition

Over the past centuries, wetlands coverage in Puerto Rico has been significantly reduced. Technological factors and government incentives led to the progressive destruction of wetlands during the first decades of the twentieth century, when activities such as dredging, drainage and filling were encouraged to promote agricultural activities (DNER, 2009). Wetlands have also been affected by filling and dredging for urban-residential and commercial developments as well as the excessive extraction of groundwater on the North and South coasts aquifers, which reduces water supply to these ecosystems.

Recently, hurricane María caused several damages to wetlands. A preliminary assessment conducted in five wetlands in Punta Tuna (Maunabo), Punta Santiago (Humacao), Piñones (Loíza), Ciénaga Las Cucharillas (Cataño) and Jobos (Isabela) found that primary damage to all sites was witnessed in the form of defoliation, in the uprooting of trees, and/or in the breaking of tree branches and trunks.<sup>26</sup> Overall, mortality across all sites and habitats was 27%, and mangrove mortality was 53%.

Climate change is a major threat for wetlands. A recent coverage assessment using the NOAA Coastal Change Analysis Program (C-CAP) found that, in a scenario of a sea level rise of three-feet, almost 60% of estuarine wetlands and at least one third (29.9%) of emerging estuarine wetlands would be affected (DNER, 2019). Wetlands more susceptible to changes in salinity gradients are highly vulnerable. One of this is the *Pterocarpus officinalis* forests, which have been reduced to only a few remnants. Herbaceous wetlands such as the Caño Tiburones and those in the Humacao Reserve are severely threatened by climate change effects.

Despite the massive destruction of wetlands in the first decades of the 20th century, mangrove coverage increased due to new legal protections. Excluding riparian wetlands, about 20% to 63% of remaining forested or non-forested wetlands receive some type of protection (DNER, 2015). Wetlands are protected mainly as natural reserves, state forests, federal and Commonwealth wildlife refuges, or as a National Estuarine Research Reserve. The rest of the wetland systems in Puerto Rico, mainly palustrine systems, remain without protection and subject to human intervention.

<sup>26</sup> Branoff, B., Cuevas, E. & Hernández, E. 2018. Assessment of Urban Coastal Wetlands Vulnerability to Hurricanes in Puerto Rico. Retrieved from: <http://dma.pr.gov/wp-content/uploads/2018/09/FEMA-Wetlands-Report.pdf>

The responsibility for protecting wetlands in Puerto Rico lies in the Commonwealth and federal agencies such as the DNER, the Puerto Rico Planning Board (PRPB), the USFWS, USACE and USEPA. The Commonwealth protects wetlands by means of land use regulations, acquisitions, and designations among other strategies. Moreover, the Puerto Rico Wetlands Public Policy Act, Law No. 314 of 1998 establishes the protection of wetlands, including the swamps and marshes, as part of the public policy of the Commonwealth of Puerto Rico.

### 6.3 Priority acquisition wetlands

The objective of the National Wetlands Priority Conservation Plan of 1989, prepared by the USFWS, is to assist agencies in focusing their acquisition efforts on the more important, scarce, and vulnerable wetlands. In general, wetlands that are given priority consideration for acquisition are those that “provide a high public benefits, that are representative of rare or declining wetland types within an ecoregion, and that are subject to identifiable threat of loss or degradation”.

The DNER, in its *Puerto Rico State Wildlife Action Plan: Ten Year Review*, reported great progress, identifying, and addressing conservation needs of the Commonwealth's wetlands and other fish and wildlife resources. Coral reefs, as well as riparian and mangrove forests, were classified as habitats of greatest conservation need. The DNER, through the “Puerto Rico Natural Heritage Program Act”, Law No. 150 of 1988, identifies lands of natural value and maintains an inventory of these conservation priority areas. According to this law, the inventory must include:

- areas that are home to endangered species,
- wetlands and floodplains,
- areas of importance for migratory species, and
- natural communities.

The priority wetlands conservation areas are included in the following table and map.

**Table 32. Conservation Priority Areas (APC) with wetlands in Puerto Rico (DNER, April 2020)**

	CONSERVATION PRIORITY AREA	MUNICIPALITY	AREA (ACRES)
1	Bahía Ballena	Guánica	441.53
2	Bahía Montalva	Lajas	2,099.85
3	Bajura	Isabela	646.06
4	Bosque Costero de Dorado	Dorado	51.35
5	Cabezas de San Juan	Fajardo	543.8
6	Caño Boquilla	Mayaguez	718.9
7	Caño Corazones	Mayaguez and Cabo Rojo	1,059.07
8	Caño La Puente	Añasco	124.91

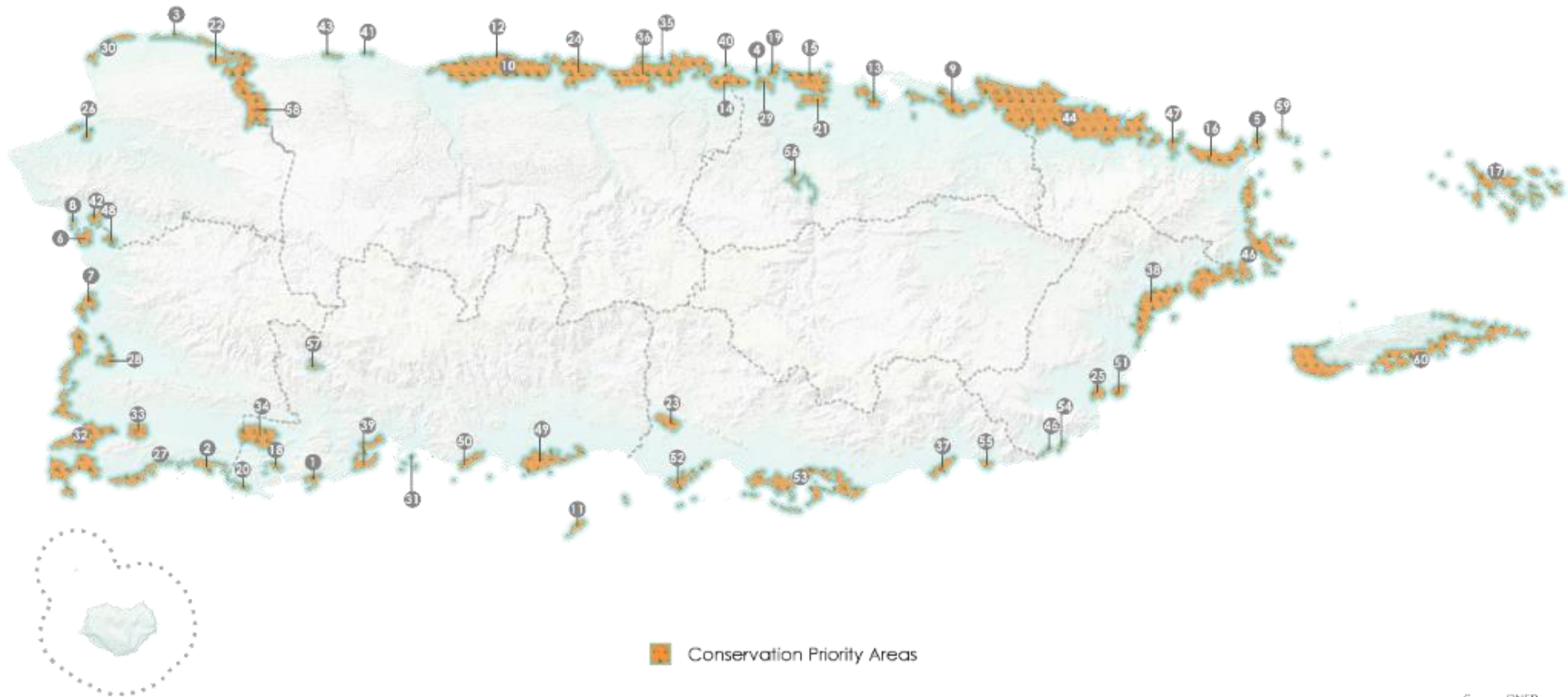


	CONSERVATION PRIORITY AREA	MUNICIPALITY	AREA (ACRES)
9	Caño Martin Peña, Laguna San José	Carolina and San Juan	2,593.47
10	Caño Tiburones	Arecibo, Barceloneta and Manatí	9,221.42
11	Cayo Berbería y RN Isla Caja de Muerto	Juana Díaz and Ponce	465.96
12	Charca La Tembladera	Arecibo	16
13	Ciénaga Las Cucharillas	Cataño, Guaynabo and Bayamón	995.08
14	Ciénaga Prieta	Manatí, Vega Alta, Vega Baja and Dorado	1,804.15
15	Ciénaga San Pedro y Sector El Caracol	Toa Baja	2,747.57
16	Corredor Ecológico del Noreste	Luquillo and Fajardo	2,896.52
17	Culebra	Culebra	4,777.18
18	Estuario Bahía de Guánica	Guánica	873.7
19	Estuario Rio La Plata	Dorado	385.71
20	Finca La Jungla	Guánica	205.64
21	Habitat Coqui Llanero	Toa Baja	949.02
22	Hábitat Sapo Concho	Isabela	652.59
23	Hábitat Sapo concho sur central	Santa Isabel and Coamo	960.84
24	Hacienda La Esperanza	Manatí	2,354.29
25	Humedales Costeros de Yabucoa	Yabucoa	539.73
26	Humedales de Cayures	Aguada	421.38
27	Humedales de La Parguera	Lajas	2,296.32
28	Humedales Laguna Cuevas	Cabo Rojo	721.49
29	Humedales Sur Dorado	Dorado	513.89
30	Humedales, Desfiladeros y Bosques Costeros NO	Aguadilla	655.12
31	Islotes y Cayos	Guayanilla and Peñuelas	177.88
32	Joyudas - Lagunas Cabo Rojo	Cabo Rojo	9,926.07
33	Laguna Cartagena	Cabo Rojo	961.27
34	Laguna Guánica	Guánica	2,952.35
35	Laguna Puerto Nuevo	Vega Baja	27.54
36	Laguna Tortuguero, Cabo Caribe	Manatí, Vega Alta, Vega Baja and Dorado	8,085.39
37	Lagunas de Arroyo	Arroyo	772.05
38	Lagunas de Humacao	Humacao	4,454.15
39	Llueras - Punta Verraco	Guayanilla	1,606.28
40	Manglar Cerromar	Dorado	25.84

	CONSERVATION PRIORITY AREA	MUNICIPALITY	AREA (ACRES)
41	Manglar de Carrizales	Hatillo	101.23
42	Pantano Pozo Hondo	Añasco	506.12
43	Peñón Brusi	Camuy	208.36
44	Piñones-Río Mameyes	Río Grande and Luquillo	23,356.16
45	Playa California	Maunabo	104.44
46	Playa de Fajardo - Cayo Algodones	Fajardo, Ceiba and Naguabo	8,158.84
47	Pterocarpus Luquillo	Luquillo	504.14
48	Pterocarpus y Humedales Bo. Sabanetas	Mayagüez	281.77
49	Punta Cabuyones	Ponce	2,898.68
50	Punta Cucharas	Ponce	702.65
51	Punta Guayanés	Yabucoa	459.96
52	Punta Petrona	Santa Isabel	3,314.98
53	Punta Pozuelo	Salinas and Guayama	13,121.36
54	Punta Tuna	Maunabo	122.75
55	Punta Viento	Patillas	246.1
56	Refugio de Vida Silvestre Lago La Plata	Toa Alta	465.31
57	Refugio de Vida Silvestre Lago Luchetti	Yauco	232.05
58	Río Guajataca y Desfiladeros	Isabela	5,963.75
59	RN La Cordillera	Fajardo	327.7
60	Vieques	Vieques	11,057.09

Source: DNER. Provided on April 2020.

Map 25. Wetlands in Conservation Priority Areas (APC)






Source: DNER

## 6.4 Outdoor recreation opportunities associated with wetlands

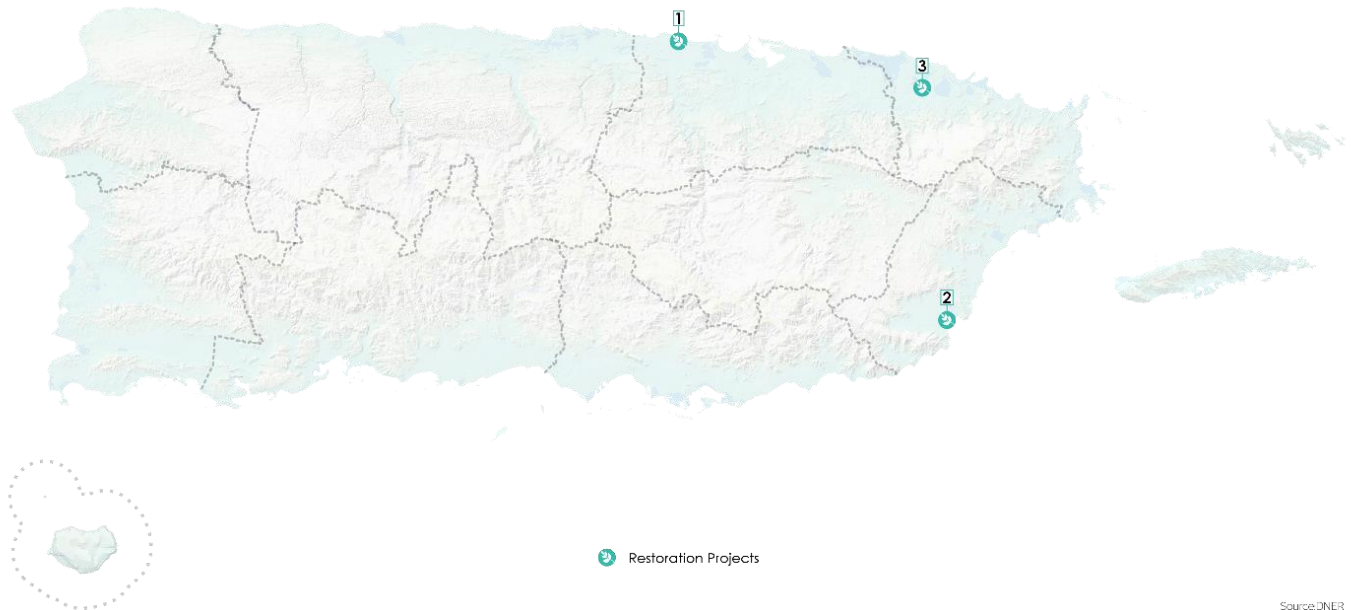
The DNER identified the following three areas where habitat enhancements for outdoor recreational activities can take place. These areas are owned by the Puerto Rico Land Authority and are described in the following table and map.

Table 33. DNER's Proposed Habitat Restoration Projects

	PROJECT	LOCATION	OWNER	DESCRIPTION	LOCATION OF THE AREA
1	Sport Hunting, Recreational Fishing, Education and Passive Recreation Project	Finca La Julia, Dorado	Puerto Rico Land Authority	Habitat restoration project where outdoor recreation activities, such as hunting and recreational fishing can take place. The DNER has the Aquatic Resources Education and Hunters Education programs that work directly with the community, offering workshops and clinics to promote these activities. Existing ponds, water levels and vegetation associated with these wetlands would be modified to create areas where hunting of aquatic species and recreational fishing can be practiced and areas where workshops and clinics can be offered to the community. The proposed habitat restoration for this property would create optimal habitat for aquatic wildlife. Not only species of interest for sports would benefit, but also native and endemic flora and fauna that could coexist in this type of habitat.	
2	Outdoor Sports Park	Yabucoa	Miguel Morales Figueroa and Shell Chemical Yabucoa Inc.	Habitat restoration project to develop a place where you can practice the sport of hunting pigeons and doves, and passive recreation. It's the interest of DNER to co-manage these lands in collaboration with community groups interested in practicing this sport. This property has land that has great potential for restoration and management for the benefit of wildlife and outdoor recreation. Through management DNER seek to maintain the productivity of these areas for the benefit of wildlife. Some of the recommended activities are water retention projects to keep the land flooded most of the year, planting (e.g. millet) and reforest with typical species of the area to provide refuge. The wetland areas would be used to practice the sport of water hunting. The dry lands would be a place to practice turtledove and pigeon hunting if food crops to attract the birds are planted. For passive recreation and recreational fishing would be used the coastal forest area,	

	PROJECT	LOCATION	OWNER	DESCRIPTION	LOCATION OF THE AREA
				<p>the swamp region dominated by bloodwood (<i>Pterocarpus officinalis</i>) and the area adjacent to the Guayanés River and the beach. These are ideal for bird refuge and passive recreation, since they would include sidewalks that lead to the river and the beach with their respective rest areas. Sport fishing can be allowed in the area by installing platforms for these purposes.</p>	
3	Aquatic Species Sport Hunting Project	Loíza	--	<p>Habitat restoration project to develop a place where the sport of water hunting can be practiced. This property comprises floodplain agricultural land that was abandoned. They are currently dominated by grasslands used for grazing cattle. The flooded areas are currently used for outdoor recreation (hunting and fishing). Hunter groups have identified this wetland as an important area for hunting ducks and other waterfowl. It is an area that provides habitat for wildlife, especially when it remains flooded. As part of the management and restoration of the habitat that is intended to be carried out in these areas, the water of the ponds and the vegetation associated with these wetlands would be kept at an optimal level to attract birds in order to promote the practice of hunting species aquatic. The proposed habitat restoration for this property would create optimal habitat for aquatic wildlife. Not only species of sporting interest would benefit, but also native and endemic flora and fauna that could coexist in this type of habitat.</p>	

Map 26. DNER's Proposed habitat restoration projects



Mangroves in Puerto Rico are designated as a “Special Planning Area” by the PRPB. The special planning areas are coastal areas subject to current and potential conflicts, in which the need for detailed planning is required. According to this, the DNER and the PRPB developed a Management Plan for the Puerto Rico Mangroves Special Planning Area.<sup>27</sup> The purpose of this management plan is to harmonize the protection of mangroves with Puerto Rico’s social and economic activity and to propose a series of outdoor recreation facilities meant to optimize their sustainable use. The plan proposes the development of trails in the following wetlands:

<sup>27</sup> With the adoption of the PRCZMP in 1978, all of Puerto Rico’s mangroves were designated as Special Planning Areas (SPA) by the PRPB. Through Resolution *PU-002-2003-Mangle PR*, the PRPB adopted the “Special Planning Area Management Plan for Puerto Rico’s Mangroves”, whose preparation was in coordination with the PDNER.

- Caño Tiburones
- Río Cocal (near the Punta Salinas beach)
- Río Espíritu Santo Natural Reserve
- Caño Boquilla Natural Reserve
- Bosque Estatal de Ceiba
- Refugio de Vida Silvestre y Pantano de Humacao (Efraín Archilla Natural Reserve)
- Laguna Joyuda Natural Reserve
- Salitrales de Cabo Rojo and
- La Parguera

The plan includes general guidance to plan and promote recreational uses in wetlands. These include:

1. Identify the wetland areas that have been disturbed and determine their recreational potential.
2. Restore wetlands that have been disturbed to its original state or enhance them using native vegetation suitable for these areas.
3. Consider the following facilities for the development of recreational activities in wetlands:
  - boardwalks
  - interpretative trails
  - rest areas
  - observation towers
4. Promote the use of canoes and rowboats for riding and fishing in the canals, lagoons, and rivers, or any other body of water lined by wetlands. The use of motor vessels must be restricted in said areas.
5. Provide visitor parking areas outside of the wetlands.
6. Place signs in selected areas to educate visitors about the regulations, laws, and places of interest within the recreational area.
7. Prohibit the use of ATV in areas dedicated to recreation and other activities incompatible with the ecosystem.



# Outdoor recreation issues





## 7 OUTDOOR RECREATION ISSUES

During the past years, Puerto Rico faced significant challenges with both, negative and positive implications on outdoor recreation. Some of the issues mentioned in the previous SCORP are still evidenced in the demand study. These include the fear of being a victim of a crime, poor access, the lack of opportunities for different population segments, and the lack of government coordination.

The government's fiscal situation in tandem with the natural catastrophes that have affected Puerto Rico have put significant pressure on all aspects of outdoor recreation. More recently, the COVID-19 pandemic, although temporarily limited in access, has proved the importance of outdoor recreation for the well-being of our society. Fortunately, the demand and interest of the residents and visitors for outdoor recreation has increased, and there are recovery funds that can be used to improve outdoor recreation facilities. Consequently, Puerto Rico is facing an extraordinary opportunity to strengthen outdoor recreation as an important pillar of the reconstruction process.

### 7.1 Outdoor recreation challenges

The following table shows the most common issues that were identified (more than 50%) by the different groups surveyed in the demand study. As shown in the following table, most of the concerns at the municipal and Commonwealth levels are similar. These issues can be grouped into four main themes: crime and security perception, outdoor recreation facilities, access, and education and awareness.

Table 34. Issues identified in the demand study

Issues	Issues at the municipal level		Issues at the Commonwealth level	
	Population survey	Municipal representatives	Population survey	NGO
Vandalism	X	X	X	X
Lack of security in recreational places	X	X	X	X
Maintenance of outdoor recreation places	X		X	X
Not enough recreational places	X			X
Available recreational places are not adequate for the interests and / or citizens needs	X			X
Lack of education on recreation	X	X		X
Lack of public transportation to reach recreational areas	X			X
Inadequate access to recreational places	X			
Lack of information on the activities that take place in the outdoor recreational areas	X			X

	Issues at the municipal level		Issues at the Commonwealth level	
Lack of activities in the outdoor recreation places	X			X
Undesirable environment in facilities or recreational areas (e.g. excessive noise)	X			

These matters, along with the intergovernmental and intersectoral collaboration, are aspects that need to be addressed to improve the outdoor recreation in Puerto Rico.

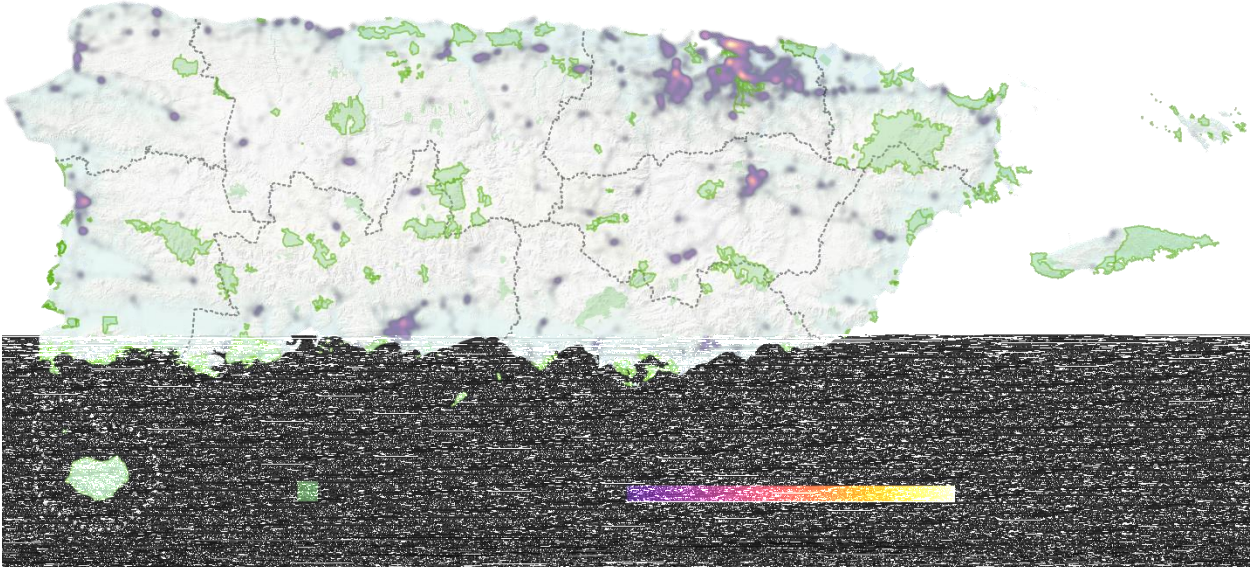
**7.1.1 Issues related to crime and security in outdoor recreation facilities**

**Issue 1. Crime and security perception**

The fear of being a victim of an assault or criminal incident is the main obstacle that prevents or limits citizens from participating in outdoor recreation activities in Puerto Rico. Vandalism and lack of security in recreational areas were also identified as the significant problems associated with outdoor recreation at the municipal and Commonwealth levels. Although Puerto Rico has a high incidence of crime, it might not be associated with outdoor recreation places. However, this is a topic that needs to be investigated in greater depth in Puerto Rico.

The following map shows the protected natural areas and the concentration of criminal incidence which includes murder, violation, theft, aggravated assault, escalation, illegal appropriation and stolen vehicles as registered by the Statistics Monitoring Section of the Puerto Rico Police.

Map 27. Criminal incidence and protected natural areas







The Enrique Martí Coll is an example of the infrastructure that has been closed due to structural problems, even before the passage of Hurricane María

Hurricane María also caused great devastation in public protected natural areas, where much of the supporting infrastructure are in poor conditions. Currently, the corresponding repairs have not been made because the funds are in the process of disbursement. Furthermore, the limited fiscal capacity of the DNER, which manages many of these areas, makes it difficult to improve and expand the supporting infrastructure. The detrimental behaviors and practices of some users have also affected recreational infrastructure, particularly the inadequate disposal of solid waste and vandalism of supporting infrastructure.



Damage from Hurricane María in the Punta Tuna Natural Reserve (left); Vandalism and lack of maintenance in Bosque Carite (right)

### Issue 3. Need to increase diversity and offer of public outdoor recreation facilities

According to the demand study, Puerto Ricans are satisfied with the number of outdoor recreation facilities. However, they mentioned a series of facilities that they would like to see in their municipalities and in Puerto Rico as shown in the following table. This highlights the need to diversify the public supply of outdoor recreation facilities. In fact, different plans have also identified the need for facilities in natural protected areas, rivers, and in beaches.<sup>29</sup>

Table 35. Top 10 needed facilities as identified in the demand study

	General public	NGO	Municipalities
Bicycle areas	X	X	X
Hiking trail (hiking in natural areas   or hiking / backpacking)	X	X	X
Beach facilities (e.g. showers, restrooms, etc.)	X	X	X
Outdoor concert, cinema and / or theater areas	X	X	X
Passive parks (playground)	X		X
Community gardens or orchards	X		X
Picnic Areas	X		X
Parks with trees and vegetation	X		X
Camping areas	X		X
Farms and historic farms that provide visits or tours	X		X

In addition, many Commonwealth public areas need supporting infrastructure such as trails and bathrooms.

#### 7.1.3 Issue 4. Limited opportunities for people with disabilities and elder population

The demand study reflected that the availability of outdoor recreation opportunities for people with disabilities continues to be an important issue in Puerto Rico. In 2018, it was estimated that 21% of Puerto Rico’s population has a disability (PRCS, 2014-2018).<sup>30</sup> However, according to the demand study, the availability of outdoor recreation opportunities for people with disabilities was one of the aspects of greatest dissatisfaction, particularly in the East, Northeast and Southeast regions. In fact, the Southeast region has one of the highest proportion of people with disabilities in Puerto Rico, according to the PRCS.

As in the previous SCORP, there is still a need to adapt the recreational infrastructures that were developed prior to the approval of the American with Disabilities Act (ADA) as the construction of many facilities occurred beforehand.

<sup>29</sup> “Strategic plan for the management of fishing and wildlife resources in Puerto Rico” (2013) and “Master Plan for Public Access to the Coasts of Puerto Rico” (2014). Department of Natural and Environmental Resources (DNER).

<sup>30</sup> According to the 2018 PRCS, two of the most common disabilities registered in Puerto Rican population are related to mobility. These are (1) ambulatory difficulty that is defined as serious difficulty walking or climbing stairs and (2) independent living condition, defined as the difficulty of doing errands alone such as visiting a doctor’s office or shopping due to a physical, mental, or emotional condition.

Additionally, initiatives should also consider the needs of the elderly. The population group of 65 years or over is growing at a higher rate than other population segments. In 2018, the elderly represented 19% of the population and is expected to increase to 22% in year 2022. Demographics have changed and, therefore, facilities require adjustments to fit needs. Moreover, other strategies tailored to this population, such as activities and the provision of transportation, should be integrated.



**Increase outdoor recreation opportunities for people with disabilities**

#### **7.1.4 Issues related to access**

The challenges associated to accessibility include the lack of public transportation, obstructions to the public access of coasts, and private ownership of important natural and historical places for outdoor recreation.

##### **Issue 5. Deficiencies in public transportation**

Limitations of access to recreational facilities result in the exclusion of populations; particularly, the elderly, people with disabilities and low-income populations. These populations commonly require assistance to move to different places. Therefore, deficiencies in public transportation are an important issue. In Puerto Rico, the public transportation system is limited which limits the opportunities to access outdoor recreational facilities without having a private vehicle.

In addition, Puerto Rico has the highest poverty levels of any US jurisdiction. Therefore, people have less money to spend in outdoor activities than in other jurisdictions, including transportation related costs. In Puerto Rico, every new residential development is required to provide community amenities, such as outdoor recreational facilities, according to Chapter 17 of the Joint Permit Regulation, Regulation No. 31 of 2010. However, for the purpose of increasing the offer of affordable housing in urban areas by reducing construction costs, the PRPB exempts developers from providing neighborhood facilities even though they are required to leave an area for a park that is properly graded and leveled.

As a result, it is becoming increasingly necessary to ensure that all populations have access to quality outdoor recreation opportunities. Access can be addressed by diversifying transportation options such as improving pedestrian and bicycle infrastructure, increasing opportunities at the community level, and strengthening programs aimed at these and other special populations.

## Issue 6. Limitations on public access to the coast

Swimming or sunbathing on the beach is one of the preferred outdoor recreation activities in Puerto Rico. However, public access to the coast has been an issue for decades, mainly due to coastal developments and coastal erosion (DNER, 2014).<sup>31</sup> During the past years, coastal erosion has aggravated due to atmospheric events. As a result, there are deteriorating structures in different areas along the coast that limit physical and visual access to the sea, constraining recreational opportunities.

If the development patterns continue along the coasts and these affected structures are not removed, the opportunities for recreation may continue to be affected by coastal erosion and sea level rise.

**Physical and visual access to the beach limited by coastal developments in Puerto Rico**



## Issue 7. Private ownership of lands

As observed in the inventory, the offer of natural and historical outdoor recreation locations is extensive. There are many opportunities for the enjoyment of natural resources, such as rivers and caves, as well as historical resources. However, in many instances, access to these areas can be only achieved through private lands, which restricts public access and constitutes a liability issue for private landowners.

### 7.1.5 Issues related to information, education, and awareness

## Issue 8. Lack of information about outdoor recreation facilities and their offerings

Often, the lack of knowledge of available outdoor areas and activities limits the population's access to the enjoyment of outdoor recreation. The PRTC and Discover Puerto Rico<sup>32</sup> promote the island as a premier market destination, although recently the PRTC focused on residents, and the DMO, on US and international tourists. An effort has been made by both entities to promote areas where outdoor recreation activities can be done, resulting in a significant progress in collecting and making information available. Nevertheless, the demand study

<sup>31</sup> Department of Natural and Environmental Resources (DNER), 2014. Master Plan for Public Access to the Coasts of Puerto Rico.

<sup>32</sup> This is Puerto Rico's Destination Marketing Office or DMO.

showed that people still do not know where to go or what to do in Puerto Rico. Lack of a coordinated promotional and educational strategy is also an issue. Most of the public agencies' web pages and promotional information is outdated, and web pages are hard to navigate, which makes finding the information difficult.

Social media has been widely used by individuals to promote outdoor recreation places. On the one hand, more people have been interested in visiting places that they did not know prior. Unfortunately, these places are found on private land where access is not adequate, and infrastructure may not be safe for everyone. Occasionally, visits to some areas have increased as with traffic, leading to improvised parking and the inadequate disposition of waste. Moreover, the lack of signage of public areas, including access gates and operating hours, serves to further constrain people's access.

### **Issue 9. Climate change and natural disasters**

In 2017, the National Recreation and Park Association stated that "climate change raises vital questions for park and recreation administrators, the industries that supply the field, and the public that recreates outdoors" and that "climate change has begun to change the way we plan, design and manage parks, public lands and recreation facilities. It will continue to have profound effects on parks and recreation for the foreseeable future."<sup>33</sup>

Puerto Rico's outdoor recreation faces a series of challenges including:

- A changing climate with worsening natural events, such as hurricanes, extreme rainstorms, severe droughts, increase coastal erosion, and sea level rise. This affects infrastructure as well as the natural resources that sustain the outdoor recreation activities.
- Recreation options, particularly in urban areas have become much more limited in the face of extreme heat waves and urban heat island effects. This limits the participation of people particularly elderly population and people with cardiovascular and other health problems.
- Increasing temperatures and a corresponding increase in pest species such as mosquitos also limits outdoor recreation opportunities
- More frequent and harmful algal blooms, sargassum and whitening of the coral reefs, which makes beaches and reefs less attractive and more vulnerable.

Such conditions directly affect how people spend their leisure time, reducing options and/or making it unsafe to engage in some outdoor activities. To successfully manage these changes, the recreation sector will need to adapt with comprehensive planning efforts and robust methods of outreach and education.

### **7.1.6 Issues related to intergovernmental or intersectoral collaboration**

#### **Issue 10. Lack of intergovernmental or intersectoral collaboration**

As in the previous SCORP, there are weaknesses in interagency and cross-sector coordination regarding facilities, programs, and sources of funds. Collaboration between agencies and

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<sup>33</sup> Richard J. Dolesh. National Recreation and Park Association "Climate Change Is Changing the Face of Outdoor Recreation" retrieved from: <https://www.nrpa.org/parks-recreation-magazine/2017/october/climate-change-is-changing-the-face-of-outdoor-recreation/>



the municipalities also need to improve, especially now that the reconstruction processes and funds could substantially support the improvement of outdoor recreation in Puerto Rico.

### **Issue 11. Fiscal situation**

The fiscal situation at the municipal and Commonwealth levels has implications in outdoor recreation, in particular the maintenance of the facilities, which was mentioned as one of the main issues. It also has implications for the staff assigned to the areas, which is extremely limited, and in the existing programs to promote associated activities.

Municipalities and Commonwealth agencies such as the DNER, fund and manage different public services that compete for funding from the same limited sources. As a result, the maintenance of outdoor recreation facilities has experienced a decline in budget allocation.

Transfers of facilities and recreational areas have been made between agencies and from agencies to municipalities. However, agencies operational budgets have not been increased to effectively operate and maintain these facilities, which in addition to having an important function for the Puerto Rican society, have the potential to be valuable assets for local economic development.

## 8 ACTION PLAN: PRIORITIES FOR THE NEXT FIVE YEARS

The diversity of opportunities and places for outdoor recreation is one of the Puerto Rico strengths. Even with the challenges previously discussed, outdoor recreation presents vast opportunities to promote human health, well-being, and local economic development. There is also an opportunity to improve and expand the existing infrastructure using the Land and Water Conservation Funds and by leveraging other sources of funds.

The following table summarizes the issues previously discussed and the Puerto Rico's long-term goals and proposed strategies to address them. Proposed strategies are described below.

**Table 36. summary of issues and relation to goals and strategies**

Issues											
Issue 1. Crime and security perception											1
Issue 2. Poor condition of outdoor recreation facilities											2
Issue 3. Need to increase diversity and offer of public outdoor recreation facilities											3
Issue 4. Limited opportunities for people with disabilities and elder population											4
Issue 5. Deficiencies in public transportation											5
Issue 6. Limitations on public access to the coast											6
Issue 7. Private ownership of lands											7
Issue 8. Lack of information about outdoor recreation facilities and their offerings											8
Issue 9. Climate change and natural disasters											9
Issue 10. Lack of intergovernmental or intersectoral collaboration											10
Issue 11. Fiscal situation											11
Goals and strategies											
Goal 1. Restore, enhance, and maintain outdoor recreation facilities and places considering the social, environmental, and economic context											
Restore and enhance deteriorated infrastructure in protected natural areas, National Parks and other Commonwealth outdoor recreation facilities	1	2	4	9							
Use low maintenance materials and landscape features in the restoration of infrastructure	1	2	9	1							
Restore and enhance deteriorated outdoor recreation infrastructure in the communities of the 78 municipalities ensuring that proposals are sensitive to the physical and social characteristics of the neighborhoods	1	2	3	4	5	1					
Make use of design features to prevent crime and increase usage of facilities	1	2	4	8							
Promote the "Leave No Trace Principles" among users	1	2	8	9	1	0	1				

## Goals and strategies

### Goal 2. Expand outdoor recreation opportunities for all Puerto Rico residents and visitors

Acquisition of wetland areas to expand recreational opportunities	3	6	7	9										
Transform buyout properties to parks or restore to natural habitats	3	9	10	11										
Develop priority projects for 2020-2025	2	3	4											

### Goal 3. Increase participation and inclusion in outdoor recreation

Improve access to people with disabilities in outdoor recreation facilities	2	3	4	5	6									
Diversify the means of transportation to outdoor recreation facilities	3	4	5	9	10	11								
Improve public access to the coasts	1	4	6	7	9									
Develop activities' programs in outdoor recreation areas	1	3	4	5	8	10								
Disseminate information of the available places, infrastructure, and activities	8	11												
Educate the population on outdoor safety and outdoor ethics	1	2	8	9	11									
Ensure access to affordable outdoor recreation	2	3	4	5	7									

### Goal 4. Increase intergovernmental and intersectoral collaboration to transform outdoor recreation into an important component of Puerto Rico's social and economic development

Optimize the use of recovery funds, to the extent possible, to improve, enhance and develop outdoor recreation infrastructure and implement the strategies proposed in this SCORP	1	2	3	4	5	6	7	9	10	11				
Establish agreements to manage and administer selected areas	1	2	3	7	10	11								
Estimate the impact of outdoor recreation activities in Puerto Rico's economy	2	3	10	11										

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## **Goal 1. Restore, enhance, and maintain outdoor recreation facilities and places considering the social, environmental, and economic context**

### ***Strategy 1.1 Restore and enhance deteriorated infrastructure in protected natural areas, National Parks and other Commonwealth outdoor recreation facilities***

During the next five years, the priority should be the restoration and enhancement of outdoor recreation facilities and supporting infrastructure in natural areas and national parks that have been damaged by natural events, as well as other that requires maintenance.

Many of the damaged and closed facilities of Island-wide significance that are socially and economically important should be restored and open to the public as soon as possible. These facilities are associated with State Forests, Natural Reserves, Natural Refuges, Ecological Corridors and National Parks. For example, the Río Camuy Cave System National Park has been closed since hurricane María. This is the only park that provided the opportunity for students and all population segments to learn about the physiography of karst. In addition, this is one of the main tourist attractions of the island.

### ***Strategy 1.2 Use low maintenance materials and landscape features in the restoration of infrastructure***

Is important to consider that the Central Government and the municipalities are in a difficult fiscal situation and the allocation of funds for the maintenance of natural areas and other outdoor recreation facilities will continue to be reduced. Therefore, it is necessary to consider this limitation in the design and selection of materials for the restoration process. There are also landscaping works that require little maintenance, which should be considered.

Climatic conditions and its effects must be determining factors, such as the increase of temperature, flash floods, cyclonic events, sea level rise and drought, among other. For example, at present it is important to rethink the use of water fountains which are high maintenance and use significant amounts of water.

### ***Strategy 1.3 Restore and enhance deteriorated outdoor recreation infrastructure in the communities of the 78 municipalities ensuring that proposals are sensitive to the physical and social characteristics of the neighborhoods***

In general, the number of parks such as playgrounds and sports facilities in Puerto Rico is appropriate but many are not being properly used or are in bad condition. These must be transformed and improved to meet the needs and preferences of the population.

The maintenance of facilities is key to address the population's perception of insecurity in recreational areas. The facilities for outdoor recreation in good condition are more attractive and have higher utilization, as these are safer and secure. A study found that green space in parks leads to lower crime, but moreover that crime is deterred if parks are well design and maintained.<sup>34</sup>

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<sup>34</sup> <https://theconversation.com/can-parks-help-cities-fight-crime-118322>

Another study found that crime in green spaces is strongly associated by the neighborhood setting, and whether and when crime occurs depends upon the greenspace type, location, and social context.<sup>35</sup> Typically, the standard used to develop a park is to ensure that all residents live within a maximum range of it, and this generally excludes specifications concerning the types of amenities that are required, based on the composition and preferences of the community. One of the most effective strategies to address this issue is to incorporate users and the community in the design and conceptualization of the recreational area and facility.

**Strategy 1.4 Make use of design features to prevent crime and increase usage of facilities**

There is also a framework, known as “Crime Prevention Through Environmental Design” (CPTED), that can be useful to address this issue in Puerto Rico. It uses park design to reduce crime, by implementing the following principles:<sup>36</sup>

**Table 37. Crime Prevention Through Environmental Design Principles**

<b>Access Control</b>	Uses the layout of the design to physically limit the access points. This practice can also guide users, both positive and negative, to a specific direction within the park. Controlling access makes negative users feel uncomfortable and less apt to commit a crime.
<b>Surveillance</b>	Eliminates physical barriers that inhibit the casual observer from scrutinizing behaviors inside a space. Surveillance is enhanced by lighting, proper placement of shrubbery, well-placed windows, elimination of physical barriers, and architecture and social commitment.
<b>Territorial Reinforcement</b>	Turning an area over to legitimate users who will take ownership of the space and care for it. This helps eliminate or reduce nuisance behaviors. Engage with the community to develop activities in the area.
<b>Maintenance and Management</b>	Scheduled maintenance. Have a plan and take the extra steps to create a clean, well-kept area for your patrons. Do not let things like graffiti, garbage and/or damaged property be seen by your positive users.

Source: Cannavino (2013). Using Design to Reduce Crime.

**Strategy 1.5 Promote the “Leave No Trace Principles” among users**

Vandalism, excess noise, and other inappropriate conducts among users were issues identified in the demand study. Outdoor recreation providers can address this issue by promoting sustainable practices among users.

For example, if agencies and municipalities do not have fiscal resources to maintain and collect garbage from containers with frequency, they should consider reducing garbage

<sup>35</sup> Kimpton, A., Corcoran, J., & Wickes, R. (2017). Greenspace and crime: An analysis of greenspace types, neighboring composition, and the temporal dimensions of crime. *Journal of Research in Crime and Delinquency*, 54(3), 303-337. Retrieved from: <https://journals.sagepub.com/doi/abs/10.1177/0022427816666309>

<sup>36</sup> Cannavino, M. 2013. Using Design to Reduce Crime. Taken from: <https://www.nrpa.org/parks-recreation-magazine/2016/march/using-design-to-reduce-crime/>

cans in certain areas, especially in protected areas, and encouraging visitors to implement the leave no trace principles. Leave no trace principles include:<sup>37</sup>

**Table 38. Leave No Trace Principles**

<b>Plan and prepare ahead of visiting a natural area</b>	This allows users to have a more enriching and safe experience, since they know in advance the permitted or prohibited activities, the resources of the area, among other relevant information.
<b>Travel &amp; camp on durable surfaces</b>	Damage occurs when surface vegetation or communities of organisms are trampled beyond recovery. For example, on the beaches it is important to direct users away from the sand dunes or the dune restoration projects, and in natural reserves and forests it is important to direct people to stay on the trails.
<b>Dispose of waste properly</b>	Visitors should be encouraged to cleanup before leaving and to take all the solid waste with them. In addition, to reduce the amount of waste by planning their meals, and other needs.
<b>Leave what you find</b>	Do not take forest or marine organisms, such as seashells and snails to minimize site alterations.
<b>Respect wildlife</b>	Learn about wildlife through quiet observation. Do not disturb wildlife by touching, feeding or otherwise interfering with its habitual activities.
<b>Be considerate of other visitors</b>	Courtesy toward other visitors include avoiding excessive noise, uncontrolled pets and damaged surroundings take away from the natural appeal of the outdoors. Many people go to natural areas such as forests, natural reserves and isolated beaches, to listen to nature.

Source: Leave No Trace: Center for Outdoor Ethics.

As a temporary measure, the DNER could assign staff, such as the Ranger Corps, to oversee compliance with applicable laws and regulations in beaches, National Parks and protected areas. This could complement the social media campaign that the agency is implementing instructing beach users to not leave trash behind.

If people are knowledgeable of their surroundings and the areas they visit, they are more likely to protect and take care of them. Ensuring that people can enjoy the different natural resources of Puerto Rico will create more awareness, care, and protection. But this will require the availability of information through different sources, especially through environmental and cultural interpretation.

<sup>37</sup> Source: Leave No Trace: Center for Outdoor Ethics. Retrieved from: <https://lnt.org/why/7-principles/>

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## Goal 2. Expand outdoor recreation opportunities for all Puerto Rico residents and visitors

### Strategy 2.1 Acquisition of wetland areas to expand recreational opportunities

The Commonwealth will prioritize the acquisition of wetlands where access for outdoor recreation is feasible. These areas are detailed in the Wetlands Component.

Whenever feasible, the LWCF will be requested for the acquisition of lands and the development of supporting outdoor recreation facilities, such as trails, observation towers, among others that have been identified by the DNER.



**The Commonwealth will prioritize the acquisition of wetlands that provide outdoor recreation opportunities using LWCF**

### Strategy 2.2 Transform buyout properties to parks or restore to natural habitats

Municipalities and Commonwealth entities are eligible, and some have requested funds to acquire properties for open space using FEMA funds and CDBG-DR funds. Oftentimes these properties remain unimproved empty lots and there is a risk of illegal occupation of the same by non-compatible uses.

In such cases, there is an opportunity for communities to leverage the potential benefits of these properties by developing parks for outdoor recreational activities, wetlands management, nature reserves, camp sites (except where adequate warning time is not available to allow evacuation), or other uses compatible with the conservation of the natural floodplain functions.<sup>38,39,40</sup>

### Strategy 2.3 Develop priority projects for 2020-2025

The following list of outdoor recreation projects are identified as priorities for LWCF funding. This list was developed using information from the demand study, and supported by protected area management plans and other DNER studies.

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<sup>38</sup> Environmental Law Institute. 2017. Floodplain Buyouts: An Action Guide for Local Governments on How to Maximize Community Benefits, Habitat Connectivity, and Resilience. Retrieved from: <https://www.eli.org/sites/default/files/eli-pubs/actionguide-web.pdf>

<sup>39</sup> HUD Exchange: Disaster Recovery Buyout Program: <https://www.hudexchange.info/programs/cdbg-dr/disaster-recovery-buyout-program/#buyout-program-overview-considerations-and-strategies>

<sup>40</sup> FEMA. Property Acquisitions for Open Space [https://www.fema.gov/media-library-data/1487973067729-d34bd451527229a45bad0ef5ac6ddf93/508\\_FIMA\\_Acq\\_FAQs\\_2\\_24\\_17\\_Final.pdf](https://www.fema.gov/media-library-data/1487973067729-d34bd451527229a45bad0ef5ac6ddf93/508_FIMA_Acq_FAQs_2_24_17_Final.pdf)

**Table 39. Priority outdoor recreation facilities**

Bicycle areas/trails
Hiking trails inside protected natural areas and outside (See trails Plan)
Beach facilities (e.g. showers, restrooms, parking, etc.)
Community gardens or orchards
Picnic Areas
Parks with trees and vegetation
Camping areas
Restoration of historic plantations and farms

In the demand study, many residents indicated that they would like to see orchards or community gardens. Many neighborhood parks could be transformed into community gardens that are designed and maintained by the community itself, where recreational programs could be established to transform users into stewards. This is suitable for all population segments and has multiple benefits. Depending on the management, these areas are also appropriate for other recreational activities such as birdwatching, walking, photography, cultural activities, and other passive outdoor recreation activities.

In addition, the DNER has developed management plans for many of the Commonwealth's natural areas, such as natural reserves and state forests. These plans have identified the need for hiking trails, interpretative signs, infrastructure for people with disabilities and supporting

infrastructure such as bathrooms, parking, among other. This infrastructure is considered eligible under the LWCF State Assistance Program.



**Many neighborhood parks could be transformed into community gardens where recreational programs could be established to transform users into stewards**



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## Goal 3. Increase participation and inclusion in outdoor recreation

It is important to develop and implement strategies to address the barriers that prevent Puerto Ricans from participating in outdoor recreation activities, such as the fear of being a victim of crime, and lack of transportation, of money, and of opportunities for different populations, among others.

Participation and access to outdoor recreation places could be addressed by combining different strategies such as improving physical access to the facilities, improving access inside the facilities, disseminating information related to the facilities and creating activities inside the facilities for different groups, ensuring that these are relevant to the people and mostly to the surrounding communities.

### *Strategy 3.1 Improve access for people with disabilities to outdoor recreational areas*

The availability of outdoor recreation opportunities for people with disabilities has been an issue for years. As in the previous SCORP, there is still a need to adapt the recreational infrastructure that was developed prior to the approval of the American with Disabilities Act (ADA) as the construction of many facilities occurred prior the approval of related regulations. The reconstruction of many of the facilities associated to the disaster is an opportunity to bring these facilities up to code, including ADA compliance.

### *Strategy 3.2 Diversify the means of transportation to outdoor recreation facilities*

Offentimes increasing parking space is the first option considered when improving access to outdoor recreation areas. However, it is also important to expand the ways in which people can reach these areas. Improvements to sidewalks, providing bicycle paths as well as public transportation are alternatives that need to be improved or provided urgently in Puerto Rico.

This strategy is linked to the trails plan, which proposed the design a sustainable network of trails and greenways. This non-motorized transportation network could reduce the need of additional motorized transportation infrastructure. The collaboration between municipalities and the PRHT is essential to ensure interconnectivity of the infrastructure that supports this type of transportation system. The implementation of the Puerto Rico Complete Streets Plan and Design Guidelines<sup>41</sup> and the Comprehensive Bicycle and Pedestrian Plan for Puerto Rico<sup>42</sup>, developed by the PRHTA, are key to implement this strategy. In fact, the Comprehensive Bicycle and Pedestrian Plan for Puerto Rico proposes a cyclist network, presented in the following figure, for the long term in Puerto Rico whose implementation is essential to address this strategy.

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<sup>41</sup> Puerto Rico Department of Transportation and Public Works, Department of Transportation and Highways Authority. 2018. Comprehensive Bicycle and Pedestrian Plan for Puerto Rico.

<sup>42</sup> Puerto Rico Department of Transportation and Public Works, Department of Transportation and Highways Authority. 2018. Puerto Rico Complete Streets Plan and Design Guidelines.

Figure 7. Proposed bicycle network for Puerto Rico

Figure 6.1: Proposed Bicycle Network



Source: SDG

Source: Puerto Rico Department of Transportation and Public Works, Department of Transportation and Highways Authority. 2018. Comprehensive Bicycle and Pedestrian Plan for Puerto Rico.

### **Strategy 3.3 Improve public access, safety, and security to the coasts**

This strategy seeks to address the problems that hinder free access to the coast and that are damaging the beaches, which are important tourist asset. Improving public access to the coasts will require:

- Removing structures that limit physical access to the coasts,
- Removing structures parallel to the coasts that are deteriorated or that negatively affect the coastal dynamics,
- Improving pedestrian accesses to the coasts,
- Installing signage to identify public access to the coasts, and
- Restricting new developments that limit visual access to the coast.

This strategy requires coordination with municipalities, the DNER and with the PRPB, which is responsible for land uses and regulates access to the coastal areas.

Improving public access to the coasts and beaches of Puerto Rico will also require the installation of safety signs and beach safety flags, which warn about risk conditions (e.g. rip-currents) and water quality for bathers (e.g. high levels of bacteria).

### ***Strategy 3.4 Develop activities in outdoor recreation areas***

It has been found that parks that are well design, maintained and in which activities are scheduled are safer as these attract residents whose presence serves as a crime deterrent.<sup>43</sup> Crime is closely related to inequality and parks alone are not the solution. However, designing and managing it in a way that is inclusive for all population may reduce criminal activity and other social problems. In addition, activities can address needs expressed by the population in the demand study such as the outdoor concerts and movies, gardening, historic tours, among other. To carry out this strategy it is recommended to:

- Design outdoor recreation programs in community parks. It is recommended to carry out a survey to determine the preference of the people in each community. The program should address the diversity of the communities.
- Develop outdoor recreation services and programs for elder population. To address transportation issues, programs for this population need to be developed in their communities or near the routes of public transportation. Information on activities must be available to this population and their families and caretakers. Potential partners for this initiative are the Puerto Rico Office of the Ombudsman for the Elderly, AARP Puerto Rico Chapter, the municipal citizen service offices and sports and recreation offices, among other.



**The activities should address the needs and diversity of the communities**

### ***Strategy 3.5 Disseminate information of the available places, infrastructure, and activities***

Puerto Rico's recreational assets are unknown to many residents and visitors and enhanced marketing efforts will inform of choices available to them. A centralized and updated

<sup>43</sup> Way, T. 2018. Parks help cities – but only if people use them. Retrieved from: <https://theconversation.com/parks-help-cities-but-only-if-people-use-them-103474>

repository of information on public facilities, infrastructure uses, activities and access is necessary. This could be linked to the DRD, the DNER, the PRTC, Discover Puerto Rico and municipalities web pages and social media.

### ***Strategy 3.6 Educate the population on outdoor safety and outdoor ethics***

In line with the leave no trace principles, education is key to create awareness on how to prepare before visiting outdoor places such as beaches, rivers, and off-road trails. Planning helps understand the potential risks, and users will be more capable of dealing with situations. As a result, is less probable that misconceptions and fears discourage participation in outdoor recreation activities.

For example, the Caribbean Coastal Observing System (CARICOOS) developed an APP known as “Pa’ La Playa” (“To the beach”), where people can obtain information on the weather conditions, waves and water quality before going to the beach. This helps users prepare before visiting a beach. Promoting this application and encouraging people to stay informed before visiting natural areas could reduce injuries and help save lives.

On the other hand, outdoor ethics are an important education topic. It may vary depending on the recreational area, but overall comprises avoiding unnecessary noises, and maintain courtesy for others using the outdoors, among other.

### ***Strategy 3.7 Ensure access to affordable outdoor recreation***

Puerto Rico has the highest poverty levels of any US jurisdiction as well as the highest inequality index, which is also among the highest in the world.<sup>44</sup> Therefore, people have less money to spend in outdoor recreation than in other jurisdictions, including related costs such as lodging, transportation and equipment among other. Therefore, it is necessary that the Commonwealth and the municipalities ensure that the associated costs such as entrance fees and parking remain affordable for the population.

Moreover, this evidences the need to improve the Commonwealth’s vacation centers, cabins in state forests and camping areas so that the residents of Puerto Rico have access to this infrastructure.

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## **Goal 4. Increase intergovernmental and intersectoral collaboration to transform outdoor recreation into an important component of Puerto Rico’s social and economic development**

### ***Strategy 4.1 Optimize the use of recovery funds, to the extent possible, to improve, enhance and develop outdoor recreation infrastructure and implement the strategies proposed in this SCORP***

It is necessary to consider recreation as an important asset for economic development and the well-being of the Puerto Rico’s population. Interagency and cross-sector coordination is

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<sup>44</sup> The Gini coefficient is a measure intended to represent the income or wealth distribution of a nation’s residents and is the most used measurement of inequality. This value for Puerto Rico is 0.55 and for US is 0.48.

fundamental to implement the strategies previously mentioned, and to optimize the use of available funds for the next five years, particularly those aimed at rebuilding the Island.

This strategy is aligned with the Recovery Plan for Puerto Rico, which dedicates several courses of action to the protection of natural resources, while taking advantage of the economic benefits generated by outdoor recreation. Such plan also establishes the goal of stabilizing and protecting beaches and dunes in the island from human degradation to, among other things, support biodiversity, tourism and recreation and improve the livelihood of coastal communities and increase resiliency.

This plan also mentions that the Puerto Rico Department of Labor and Human Resources will create workforce development programs focused on building capacity and jobs in habitat restoration and other recovery needs to support these restoration efforts. In the long term, this workforce will be able to apply the skills they develop in other sectors, such as construction, education, and tourism (COR3, 2018).

Available funding sources are detailed in Appendix 3.

#### ***Strategy 4.2 Establish agreements to manage and administer selected areas***

There are at least two mechanisms through which Commonwealth entities can enter into agreements with NGO and other private entities to manage and or administer recreational areas. The DNER is empowered by its organic law to enter in co-management agreements<sup>45</sup>. The agency has done it in several of its facilities such as in the Guánica State Forest where the community group has raised funds for outdoor infrastructure development and other management actions.

The Public Private Partnerships Act, Law No. 29 of 2009, as amended<sup>46</sup> is another mechanism that provides that government entities can use the "Participatory Public Private Partnerships" for the delegation of the operations, functions, services or commissions of any government entity, as well as for the design, development, financing, maintenance or operation of one or more facilities, or any combination of the above.

#### ***Strategy 4.2 Estimate the impact of outdoor recreation activities in Puerto Rico's economy***

Outdoor recreation has a major impact on Puerto Rico's economy, which is not being quantified. A Congressional report estimated that the outdoor recreation economy grew by 3.9% in 2017, faster than the 2.4% growth for the overall U.S. economy and has grown approximately 9.9% since 2012 (Congressional Research Service, 2019).<sup>47</sup>

The LWCF Assistance Manual provides that studies aimed at analyzing or documenting the contributions of outdoor recreation resources to a State's economy may be eligible for funding. This type of study will support the Commonwealth's decision-making process in terms of funding allocations for the management and maintenance of facilities. Also, will

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<sup>45</sup> Law No. 23 of June 20, 1972, as amended, known as "Organic Act of the Department of Natural and Environmental Resources".

<sup>46</sup> This Law is one of the governmental actions that encourages public agencies to enter into an agreement with for profit or nonprofit entities.

<sup>47</sup> Congressional Research Service, 2019. The Outdoor Recreation Economy. Retrieved from: <https://fas.org/sgp/crs/misc/R45978.pdf>

strengthen the much-needed collaboration between sectors to improve outdoor recreation in Puerto Rico.

## 9 OPEN PROJECT SELECTION PROCESS (OPSP): 2020-2025<sup>48</sup>

### 9.1 Objectives

The purpose of establishing an open project selection is to guarantee all eligible project Sponsors to have the opportunity to participate in the benefits of the Land and Water Conservation Fund Program (LWCF) and to enable the Commonwealth of Puerto Rico to affirmatively address the recreation issues and meet priority needs.

### 9.2 Open Project Selection Process

As in previous project selection criteria, the 2020 Open Project Selection Process (OPSP) continues to fulfill two major goals. First, to give emphasis on the project selection that conforms directly to the needs and priorities as identified in the 2020 State Comprehensive Outdoor Recreation Plan (SCORP) for the Commonwealth of Puerto Rico. Secondly, to implement a program that will work to the greatest extent, include all segments of the public including minority populations, the elderly, people with disabilities and underserved populations.

The project selection will be subject to a ranking process with weighted values that will consider the sponsor's capabilities to administer grants, certification of matching funds, project feasibility and experience in administering and maintaining outdoor recreation facilities.

Also, part of the LWCF grant evaluation process, of the Sports and Recreation Department (DRD, by its Spanish acronym) staff conduct a technical review of all grant applications. To ensure equal opportunity for all eligible project sponsors, each submitted grant application packet will need to include all the materials requested in the LWCF Assistance Manual. Ineligible or incomplete applications will be returned to the project sponsor with an explanation of why their application was returned. Project applicants are encouraged to contact DRD staff with questions regarding the LWCF grant applications process.

#### 9.2.1 Project Sponsors

Puerto Rico has a population of approximately 3.4 habitants. Beside the state agencies of the central government, there are 78 municipalities that may become potential sponsors to participate in the LWCF program. From all the grants that have been approved for Puerto Rico since 1966, approximately 50% have been used for state government projects, 24% for projects sponsored by different municipalities and the remaining 26% for projects of public corporations or other government entities.

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<sup>48</sup> The Open Project Selection Process (OPSP) section was prepared by the Sports and Recreation Department.

Projects sponsors are:

1. State Agencies
2. Municipalities
3. Non-profit organizations under the jurisdiction of the central government. This category refers to public corporations or other government entities.

### 9.2.2 2020 SCORP Priorities

The Puerto Rico Statewide Comprehensive Outdoor Recreation Plan was prepared following the guidelines as required in the LWCF Assistance Manual. During the process, the following state priorities were established:

1. Restore, enhance, and maintain outdoor recreation facilities and places considering the social, environmental, and economic context.
2. Expand outdoor recreation opportunities for all Puerto Rico residents and visitors.
3. Increase participation and inclusion in outdoor recreation.
4. Increase intergovernmental and intersectoral collaboration to transform outdoor recreation into an important component of Puerto Rico's social and economic development.

In general, the 2020 SCORP priorities will guide future project development. Although, this does not necessarily set aside other outdoor recreation needs, the OPSP will have to respond to these priorities. This process will ensure that LWCF funds are directed to projects that have a significant impact to a community, a region, or the territory of Puerto Rico.

### 9.2.3 Project Selection

As part of the LWCF program's requirements, the 2020 State Comprehensive Outdoor Recreation Plan for the Commonwealth of Puerto Rico, must develop and implement the Open Project Selection Process (OPSP). The OPSP will use a ranking system to evaluate the sponsor's proposals. Project presented to DRD for grant funding will be scored according to the criteria established in the OPSP and the points received in the rating system.

### 9.2.4 Ranking system (45points)

1. Project type (10 Points)
  - a. Renovation (10 points)
  - b. Combination renovation/development/acquisition (7 points)
  - c. New construction (5 points)
  - d. Acquisitions (5 points)
2. Project services area (5 points)
  - a. Statewide (5 points)
  - b. Region (4 points)

- c. Municipality (3 points)
  - d. Large segment of municipality (2 points)
  - e. Neighborhood only (1 points)
3. The project meets priority needs as identified the SCORP process (5 points)
- a. Meets the 4 priorities (5 points)
  - b. Meets 3 priorities (4 points)
  - c. Meets 2 priorities (3 points)
  - d. Meets 1 priority (2 points)
  - e. No priority /cannot be measure (0 points)
4. The grant proposal reflects public participation at the Sponsor's level and has documented community support (5 points)
- a. Very strong broad documented support (5 points)
  - b. Strong document supports (4 points)
  - c. Support, some documentation (3 points)
  - d. Weak support, little documentation (2 points)
  - e. Very weak, support, no documentation (1 points)
  - f. No support (0 points)
5. All segment of the public including the elderly and the handicapped were considered in the grant proposal (5 points)
- a. Both sexes and broad range of age groups and types of users (5 points)
  - b. Both sexes/several age group (4 points)
  - c. Organized publicly sponsored (team sports) activities (3 points)
  - d. Limited used or age group (2 points)
  - e. Used not defined (1 points)
6. Access for Disabled (5 points)
- a. All portions of facility are ADA accessible (5 points)
  - b. Plans for ADA access at most portions of the facility (3-4 points)
  - c. Limited ADA access (1-2 points)
  - d. No ADA access, or no plans for ADA access (0 points)
7. The projects are in conformance with the State policy for outdoor recreation and responds to the land use plan (5 points)
- a. To a maximum extend (3-4 points)
  - b. Average (1-3 points)
  - c. No extend/cannot be measured (No points)
8. If an acquisition project, is it located in wetlands area? (5 points)



- a. The project is located within a wetland area identified by the Department of Natural Resources (4-5 points)
- b. The project is located on a wetland not identified by the Department of Natural Resources. (1-3 points)

The preceding ranking system will be complemented with the DRD internal screening process to determine the projects to be funded under the LWCF. The organizational units from the DRD that will intervene in this process, include, but are not limited to:

1. Office of the Secretary, Sports and Recreation Department
2. Auxiliary Secretariat of Sports and Recreation
3. Auxiliary Secretariat of Infrastructure, Sports and Recreation Department
4. Budget Division, Sports and Recreation Department

### **9.2.5 OPSP exemptions**

In case that a natural disaster destroys properties dedicated to outdoor recreation, the DRD will be exempt from complying with the process hereby established. The DRD will be authorized to use a percentage of the funds to restore the properties affected by the natural disaster.

Also, the DRD may honor requests to amend existing state or locally sponsored projects to increase its costs, including the federal share, without further OPSP competition.

### **9.2.6 Funding cycle**

The funding cycle will start with the DRD notifying the municipalities of the availability of LWCF funds by October of each year as soon as the certification of apportionment from the Department of the Interior is received. A deadline will be set to March of the forthcoming year to receive a proposal with the required documentation. Grant proposals will be evaluated by the DRD staff and submitted to the National Park Services Southeast Regional Office on a timely basis for approval.

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- National Park Service: <https://www.nps.gov/state/pr/index.htm?program=all>
- Discovering Madeira: <http://discoveringmadeira.com/levadas-madeira>
- Leave No Trace- Center for Outdoor Ethics: <https://lnt.org/why/7-principles>
- PR Trail Networks (Trailforks): <https://www.trailforks.com/region/puerto-rico/ridingareas/>
- HUD Exchange: Disaster Recovery Buyout Program: <https://www.hudexchange.info/programs/cdbg-dr/disaster-recovery-buyout-program/#buyout-program-overview-considerations-and-strategies>

## Commonwealth Regulations

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Public Law 90-542, "Wild and Scenic Rivers Act", as amended

Public Law 101-336, "American with Disabilities Act of 1990", as amended

Sources of pictures used in the document: iStock.com and Estudios Técnicos, Inc.



Appendices

# APPENDIX 1. LIST OF MUNICIPALITIES AND POPULATION'S PROJECTION BY REGION

Table A-1-1 List of municipalities per DRD region

<p><b>Central</b></p> <ul style="list-style-type: none"> <li>• Aguas Buenas</li> <li>• Aibonito</li> <li>• Barranquitas</li> <li>• Caguas</li> <li>• Cayey</li> <li>• Cidra</li> <li>• Comerío</li> <li>• Gurabo</li> <li>• Juncos</li> <li>• San Lorenzo</li> </ul>	<p><b>East</b></p> <ul style="list-style-type: none"> <li>• Humacao</li> <li>• Las Piedras</li> <li>• Maunabo</li> <li>• Naguabo</li> <li>• Yabucoa</li> </ul>	<p><b>North</b></p> <ul style="list-style-type: none"> <li>• Bayamón</li> <li>• Carolina</li> <li>• Cataño</li> <li>• Corozal</li> <li>• Dorado</li> <li>• Guaynabo</li> <li>• Naranjito</li> <li>• San Juan</li> <li>• Toa Alta</li> <li>• Toa Baja</li> <li>• Trujillo Alto</li> </ul>
<p><b>Northeast</b></p> <ul style="list-style-type: none"> <li>• Canóvanas</li> <li>• Ceiba</li> <li>• Culebra</li> <li>• Fajardo</li> <li>• Loíza</li> <li>• Luquillo</li> <li>• Río Grande</li> <li>• Vieques</li> </ul>	<p><b>Northwest</b></p> <ul style="list-style-type: none"> <li>• Aguada</li> <li>• Aguadilla</li> <li>• Añasco</li> <li>• Isabela</li> <li>• Moca</li> <li>• Rincón</li> <li>• San Sebastián</li> </ul>	<p><b>Metropolitan</b></p> <ul style="list-style-type: none"> <li>• Arecibo</li> <li>• Barceloneta</li> <li>• Camuy</li> <li>• Ciales</li> <li>• Florida</li> <li>• Hatillo</li> <li>• Lares</li> <li>• Manatí</li> <li>• Morovis</li> <li>• Orocovis</li> <li>• Quebradillas</li> <li>• Utuado</li> <li>• Vega Alta</li> <li>• Vega Baja</li> </ul>
<p><b>West</b></p> <ul style="list-style-type: none"> <li>• Cabo Rojo</li> <li>• Hormigueros</li> <li>• Lajas</li> <li>• Las Marías</li> <li>• Maricao</li> <li>• Mayagüez</li> <li>• Sabana Grande</li> <li>• San Germán</li> </ul>	<p><b>South</b></p> <ul style="list-style-type: none"> <li>• Adjuntas</li> <li>• Guánica</li> <li>• Guayanilla</li> <li>• Jayuya</li> <li>• Juana Díaz</li> <li>• Peñuelas</li> <li>• Ponce</li> <li>• Villalba</li> <li>• Yauco</li> </ul>	<p><b>Southeast</b></p> <ul style="list-style-type: none"> <li>• Arroyo</li> <li>• Coamo</li> <li>• Guayama</li> <li>• Patillas</li> <li>• Salinas</li> <li>• Santa Isabel</li> </ul>

Table A-1-2. Change in population from year 2010 to year 2018 by region, Puerto Rico

Region	Municipality	Population (2010)	Regions Population (2010)	Population 2018	Regions Population (2018)	Regions Population Annual Change	Regions Population Percent Change
Central	Aguas Buenas	28,827	466,395	26,275	438,157	-6.1%	-0.6%
	Aibonito	26,161		23,457			
	Barranquitas	30,272		28,755			
	Caguas	143,301		131,363			
	Cayey	48,255		44,530			
	Cidra	43,604		40,343			
	Comerío	20,773		19,539			
	Gurabo	44,073		46,894			
	Juncos	39,829		39,128			
	San Lorenzo	41,300		37,873			
	East	Humacao		58,924			
Las Piedras		38,146	37,768				
Maunabo		12,393	11,023				
Naguabo		26,331	26,266				
Yabucoa		38,387	34,149				
Metropolitan	Bayamón	212,183	1,268,315	182,955	1,119,406	-11.7%	-1.2%
	Carolina	179,356		157,453			
	Cataño	28,663		24,888			
	Corozal	37,312		34,165			
	Dorado	37,631		37,208			
	Guaynabo	98,875		88,663			
	Naranjito	30,460		28,557			
	San Juan	404,748		344,606			
	Toa Alta	72,756		73,405			
	Toa Baja	90,867		79,726			
	Trujillo Alto	75,464		67,780			
Northeast	Canóvanas	47,151	215,875	46,108	195,607	-9.4%	-1.0%
	Ceiba	14,493		11,853			
	Culebra	1,939		1,314			
	Fajardo	37,875		32,001			
	Loíza	30,703		26,463			
	Luquillo	20,131		18,547			
	Río Grande	54,270		50,550			
	Vieques	9,313		8,771			
Northwest	Aguada	42,232	277,597	38,643	251,702	-9.3%	-1.0%
	Aguadilla	61,965		54,166			
	Añasco	29,254		27,368			



Region	Municipality	Population (2010)	Regions Population (2010)	Population 2018	Regions Population (2018)	Regions Population Annual Change	Regions Population Percent Change
	Isabela	45,681		42,420			
	Moca	40,280		36,872			
	Rincón	15,203		14,269			
	San Sebastián	42,982		37,964			
North	Arecibo	97,633	523,114	87,242	476,378	-8.9%	-0.9%
	Barceloneta	24,506		24,299			
	Camuy	35,381		32,222			
	Ciales	19,067		16,912			
	Florida	12,697		11,910			
	Hatillo	41,645		40,390			
	Lares	31,600		26,451			
	Manatí	44,631		39,692			
	Morovis	32,339		31,320			
	Orocovis	23,646		21,407			
	Quebradillas	25,985		24,036			
	Utuado	33,741		29,402			
	Vega Alta	39,807		37,724			
	Vega Baja	60,436		53,371			
West	Cabo Rojo	50,468	262,815	49,005	235,724	-10.3%	-1.1%
	Hormigueros	17,213		16,180			
	Lajas	26,000		23,315			
	Las Marías	10,156		8,599			
	Maricao	6,244		6,202			
	Mayagüez	91,205		77,255			
	Sabana Grande	25,532		23,054			
	San Germán	35,997		32,114			
South	Adjuntas	19,541	394,848	18,181	340,180	-13.8%	-1.5%
	Guánica	19,990		16,783			
	Guayanilla	21,986		19,008			
	Jayuya	16,865		14,906			
	Juana Díaz	51,020		46,960			
	Peñuelas	24,879		20,984			
	Ponce	170,920		143,926			
	Villalba	26,565		22,993			
	Yauco	43,082		36,439			
Southeast	Arroyo	19,607	179,182	18,111	167,115	-6.7%	-0.7%
	Coamo	40,229		39,265			

Region	Municipality	Population (2010)	Regions Population (2010)	Population 2018	Regions Population (2018)	Regions Population Annual Change	Regions Population Percent Change
	Guayama	45,416		41,706			
	Patillas	19,552		17,334			
	Salinas	31,265		28,633			
	Santa Isabel	23,113		22,066			
Puerto Rico		3,762,322	3,762,322	3,386,941	3,386,941	-10.0%	-1.0%

Source: US Census Bureau, American Community Survey, Puerto Rico Estimates 2014-2018.

**Table A-1-3. Puerto Rico population estimates by region (2018, 2022, 2030)**

Region	2018 (PRCS)	2022 (ETI Projections)	2030 (ETI Projections)
<b>Central</b>	438,157	392,764	371,841
<b>East</b>	162,672	145,603	137,846
<b>Metropolitan</b>	1,119,406	987,873	935,248
<b>Northeast</b>	195,607	174,144	164,867
<b>Northwest</b>	251,702	223,448	211,544
<b>North</b>	476,378	423,688	401,118
<b>West</b>	235,724	208,602	197,489
<b>South</b>	340,180	297,946	282,074
<b>Southeast</b>	167,115	149,430	141,469
<b>Puerto Rico</b>	<b>3,386,941</b>	<b>3,003,497</b>	<b>2,843,497</b>

Source: US Census Bureau, American Community Survey, Puerto Rico Estimates 2014-2018) and projections made by Estudios Técnicos, Inc (2022, 2030)

## APPENDIX 2. RECREATIONAL FACILITIES IN STATE FORESTS, NATURAL RESERVES AND FISH AND WILDLIFE REFUGES ADMINISTERED BY THE DNER

Areas	Number of Recreative Areas (RA)	Capacity of people in recreational area	Number of parking lots	Number of gazebos	Number of camping areas	Camping area capacity	Area for swimmers
<b>Jobos Bay National Estuarine Research Reserve</b>	Exhibition Hall	30	5	7	No	N/A	N/A
<b>Jobos Bay National Estuarine Research Reserve</b>	Interpretative trails	Groups of 10 to 15 people					
<b>Guánica State Forest</b>	Closed by earthquakes				No	No	Yes
<b>Boquerón State Forest</b>					No	N/A	Yes
<b>Caja de Muertos Island Nature Reserve</b>	1	300	N/A	4	No	0	Playa Pelicano and Playa Coast Guard (for...
<b>La Parguera Nature Reserve</b>	Playita Rosada	350	70	7	No	0	2 (for 100 people)
<b>La Parguera Nature Reserve</b>	Mata La Gata	300	N/A	6	No	0	1 (for 60) people)
<b>Northeast Ecological Corridor Nature Reserve/La Cordillera/Canal Luis Peña</b>	0	0	0	0	No	0	3 beaches: La Selva, Paulinas and Playa Escondida
<b>Toro Negro State Forest</b>	2	200	120	11	Yes	15	Pool (out of service)
<b>San Patricio State Forest</b>	9 trails		Only for people with disabilities	3 gazebos in disrepair	No	N/A	N/A
<b>Boquerón Wildlife Refuge</b>	2 trails; Camino del Este and Camino del Oeste		6 spaces next to the office	1 in front of the office; 2 in the side path	No	N/A	N/A

Areas	Number of Recreative Areas (RA)	Capacity of people in recreational area	Number of parking lots	Number of gazebos	Number of camping areas	Camping area capacity	Area for swimmers
<b>Cerrillos Reservoir Wildlife Refuge</b>	Gazebos	64	4 for people with disabilities and 16 for general public	13	Only for fishing tournaments		N/A
<b>Cerrillos Reservoir Wildlife Refuge</b>	Administration area	80	2 for people with disabilities and 18 for general public				
<b>Cerrillos Reservoir Wildlife Refuge</b>	Boat ramp area	152	3 for people with disabilities; 12 for general public and 13 vehicles with...				
<b>Cerrillos Reservoir Wildlife Refuge</b>		Total = 296	Total = 9 for people with disabilities; 46 for general public and 13 vehicles with...				
<b>Punta Las Cucharas Nature Reserve</b>	Cardona Island		N/A	0	No	N/A	Yes
<b>Efraín Archilla Diez Nature Reserve (Humacao)</b>	283 acres between land and aquatic trails	100 - 150	18 regulars and 2 for people with disabilities in the reserve and 10...	4	No	N/A	Beach not suitable for swimmers.
<b>La Plata Reservoir Wildlife Refuge</b>	1	150 shore fishermen approximately. During...	110 vehicles and 16 for boat trailers	24	No	N/A	N/A
<b>Tortuguero Nature Reserve</b>	2			7	No	N/A	N/A
<b>Guilarte State Forest</b>	2 trails and a cabin area	45 distributed in the trails		6	7 cabins. Not available.	28	N/A
<b>Caño Tiburones Nature Reserve</b>							
<b>Susúa State Forest</b>	Recreational Area and Visitor's Center. A total of 5 cuerdas.		4 in recreational area and 2 in visitor's center	17	5 cabins with 6 parking lots on 3 cuerdas		N/A

Areas	Number of Recreative Areas (RA)	Capacity of people in recreational area	Number of parking lots	Number of gazebos	Number of camping areas	Camping area capacity	Area for swimmers
<b>Espíritu Santo River Nature Reserve</b>	It has no recreational area			0	N/A	N/A	Beaches are used by the guests of...
<b>Carite State Forest</b>	No recreational area available	If available 30 to 40 people per...	20 per area	0 available gazebos	1 - no available	30	1 natural pool
<b>Aguirre State Forest</b>	Area closed since Hurricane María				No	N/A	N/A
<b>Piñones State Forest</b>	DRNA area in Piñones Lagoon	300	30 vehicles and 1 bus of 70 passengers.	3	No	N/A	
<b>Piñones State Forest</b>	Recreational Fishing Area "La Península del Pescador"	200	20 cars and one bus for 70 people	1	No	N/A	
<b>Luchetti Reservoir Wildlife Refuge</b>	3	40	25 approximately	10	Closed	N/A	N/A
<b>Cambalache State Forest</b>	1	75	50-60 approximately	2	1	65	N/A
<b>Mona Island Nature Reserve</b>	2	60 people in Sardinera Beach and 50 in Beach...	N/A	4 in Sardinera Beach and 6 in Pájaro Beach	2	110	2
<b>Punta Tuna Nature Reserve</b>	All the reserve	No Load Capacity Study available		There is no formal parking lot, is used...			
<b>Río Abajo State Forest</b>	Recreational area closed since Hurricane María	35	14	5	Out of service		N/A
<b>Maricao State Forest</b>	1	30	10	4	No	N/A	N/A
<b>Guajataca State Forest</b>	El Capa Blanco	6 in gazebos	3	1	No	N/A	N/A
<b>Guajataca State Forest</b>	William Estremera	6 in gazebos	3	1	No	N/A	N/A
<b>Guajataca State Forest</b>	Observation tower	10 in gazebos	8	0	No	N/A	N/A

Areas	Number of Recreative Areas (RA)	Capacity of people in recreational area	Number of parking lots	Number of gazebos	Number of camping areas	Camping area capacity	Area for swimmers
<b>Guajataca State Forest</b>	El Aragón	12 in gazebos	18	4	No	N/A	N/A
<b>Guajataca State Forest</b>	Camping Area	18 in gazebos	12	6	Yes	18	N/A
<b>Puerto Mosquito Bay Nature Reserve</b>	Media Luna Beach	500		4	Yes	24 demarcated spaces with space for 350	Yes
<b>Puerto Mosquito Bay Nature Reserve</b>	Bioluminescent bay	Maximum of 400 people by night. Not all...		0	No	0	Not suitable for swimmers
<b>Guajataca Reservoir Wildlife Refuge</b>	Recreational Area	150	45	6	No	0	N/A

Source: Information provided by Mr. Farel S. Velázquez, Acting Director, Bureau of Protected Natural Areas and Forest Services. Puerto Rico Department of Natural and Environmental Resources. May 2020.

## APPENDIX 3. FUNDING OPPORTUNITIES TO ADDRESS PRIORITY STRATEGIES

In addition to the LWCF there are sources of funding that will help address the strategies proposed in the SCORP for the next five years.

### Land and Water Conservation Fund States Assistance

The LWCF State Assistance Program provides matching grants to States for the acquisition and development of public outdoor recreation sites and facilities. In 2020, \$3,371,423 Land and Water Conservation Funds have been assigned to Puerto Rico<sup>49</sup>. The program requires at least 50% of total project cost as a local matching fund. However federal funds such as the CDBG and CDBG-DR could be used as a match if the proposed projects comply with national objectives and with other requirements and regulations.

Eligible projects include land acquisition, development of new parks and rehabilitation of existing recreational facilities.<sup>50</sup>

**Table A-3- 40. LWCF’s eligible recreation facilities and support facilities (Chapter 3, C 4 and 5)**

LWCF		Facilities/needs identified in the demand study SCORP 2020-2025
Facilities		
<b>Picnic facilities</b>	LWCF assistance may be available for tables, fireplaces, shelters, and other facilities related to family or group picnic sites.	Picnic areas
<b>Trails</b>	LWCF assistance may be available for the development and marking of overlooks, turnouts and trails for nature walks, hiking, bicycling, horseback riding, exercising, motorized vehicles and other trail activities.	Hiking trail (hiking in natural areas or hiking/backpacking) , bicycle areas
<b>Fishing/hunting facilities</b>	LWCF assistance may be available for trails, fishing piers and access points, initial clearing and planting of food and cover, stream improvements, wildlife management areas, fish hatcheries and other facilities necessary for public fishing or hunting. In developing and evaluating fish hatchery proposals, only such areas and facilities will be eligible if they will be open to the public for general compatible outdoor recreation. States shall give priority to hatcheries that provide urban fishing opportunities.	Hunting facilities

<sup>49</sup> Recovered from <https://www.doi.gov/pressreleases/secretary-bernhardt-announces-227-million-state-outdoor-recreation-and-conservation>.

<sup>50</sup> LWCF State Assistance Program Manual, Chapter 3, C 1 (a).

LWCF		Facilities/needs identified in the demand study SCORP 2020-2025
<b>Camping facilities</b>	LWCF assistance may be available for tables, fireplaces, restrooms, information stations, snack bars, utility outlets and other facilities needed for camping by tent, trailer or camper. Cabins or group camps of simple basic design and accessible to the public in an equitable manner are eligible. Group camps designated for specific groups or for which specific groups will be given priority access are not eligible for LWCF assistance (Chapter 8.B).	Camping areas
<b>Exhibit facilities</b>	Outdoor exhibit or interpretive facilities that provide opportunities for the observation or interpretation of natural resources located on the recreation site or in its immediate surrounding areas. This includes small demonstration farms, arboretums, outdoor aquariums, outdoor nature exhibits, nature interpretive centers and other similar facilities. However, exhibit areas will not be assisted if they function primarily for academic, historic, economic, entertainment or other non-recreational purposes.	Farms and historic farms that provide visits or tours; parks with trees and vegetation
<b>Agricultural lands</b>	Outdoor recreation and support facilities, such as demonstration farms and wildlife management and hunting areas, may be planned by the project sponsor in conjunction with agricultural activities, provided that the type and extent of the agricultural activity is limited to that necessary to support the outdoor recreation activity.	<ul style="list-style-type: none"> <li>•Farms and historic farms that provide visits or tours</li> <li>•hunting areas</li> </ul>
<b>Zoo facilities</b>	Fund assistance can contribute to the renovation of such facilities to achieve a more natural environmental setting. Support facilities to serve the needs of the recreationist, such as walkways, landscaping, comfort facilities, parking, etc. are also eligible.	
<b>Spectator facilities</b>	LWCF assistance may be available for amphitheaters, bandstands and modest seating areas related to playfields and other eligible facilities. Seating provisions to accommodate persons with disabilities should be provided.	Outdoor concert, cinema and / or theater areas
<b>Community gardens</b>	Land preparation, perimeter fencing, storage bins and sheds, irrigation systems, benches, walkways, parking areas and restrooms related to a community garden. In such a project, community gardening must be clearly identified in the SCORP as a needed outdoor recreation activity and must be accessible to the public in an equitable manner.	Community gardens or orchards
<b>Support facilities</b>	LWCF assistance may be available for support facilities needed by the public for outdoor recreation use of an area, such as roads, parking areas, utilities, sanitation systems, restroom buildings, simple cabins or trail hostels, warming huts, shelters, visitor information centers, kiosks, interpretive centers, bathhouses, permanent spectator seating, walkways, pavilions, snack bar stands, and equipment rental spaces. When appropriate, support facilities may be sheltered from the elements by providing a simple roof or cover. Bathhouses, public restrooms, maintenance sheds, etc., are potentially eligible for LWCF assistance since their basic function is to provide support for outdoor recreation facilities.	Beach facilities as showers and restrooms



LWCF		Facilities/needs identified in the demand study SCORP 2020-2025
<b>Access</b>		
<b>Accessible facilities</b>	LWCF assistance may be available for the adaptation of new or existing outdoor recreation facilities and support facilities for use by persons with disabilities. However, outdoor recreation facilities to be used exclusively by disabled persons are not eligible unless such facilities are available to the general public or are part of an outdoor recreation area that serves the general public.	Access for people with disabilities
<b>Boating facilities</b>	LWCF assistance may be available for most facilities related to motor boating, sailing, canoeing, kayaking, sculling and other boating activities. These facilities include, but are not limited to, docks, berths, floating berths secured by buoys or similar services, launching ramps, breakwaters, mechanical launching devices, boat lifts, boat storage, sewage pump-out facilities, fuel depots, water and sewer hookups, restrooms, showers, electricity and parking areas.	Limitations on public access to the coast
<b>Security and Maintenance</b>		
<b>Operation and maintenance facilities</b>	Facilities that support the operation and maintenance of the recreation resource on which they are located are eligible, such as maintenance buildings, storage areas, administrative offices, dams, erosion control works, fences, sprinkler systems and directional signs. Regional and area wide maintenance facilities are eligible provided the project sponsor agrees to include those park and recreation areas served by the maintenance facility in the scope of the project agreement and under the conversion provisions of Section 6(f)(3) of the Act.	Facilities maintenance
<b>Beautification</b>	The beautification of an outdoor recreation area is eligible provided it is not part of a regular maintenance program and the site's condition is not due to inadequate maintenance. This includes: landscaping to provide a more attractive environment; the clearing or restoration of areas that have been damaged by natural disasters; the screening, removal, relocation or burial of overhead power lines; and the dredging and restoration of publicly owned recreation lakes or boat basins and measures necessary to mitigate negative environmental impacts.	Crime and security perception

In addition to the LWCF there are sources of funding that will help address the strategies proposed in the SCORP for the next five years.

## Acquisition of ecological important lands: Forest Legacy Program

The Forest Legacy Program (FLP) is a volunteer land acquisition and conservation easement program that is administered by USFS and implemented cooperatively with the DNER's Forest Service Bureau. This program was established to acquire land and conservation easements from willing sellers inside areas that are designated as Forest Legacy Areas based on the following criteria: forest condition, water basins, biodiversity, scenery, cultural attributes, wildlife habitat, and recreational potential.

Puerto Rico competes with other states for funding of this program, which requires a match of 25%. At present, eight Forest Legacy Areas have been identified: Guánica, Caonillas–Dos Bocas, El Yunque, La Plata-Coamo, Maricao, Maunabo, Quebradillas and Río Grande de Loíza<sup>51</sup>.

## Trails: Moving Ahead for Progress in the 21st Century Act (MAP 21 Act): Transportation Alternatives Program (Recreational Trails Program)

Under the Recreational Trails Program (RTP), funding opportunities exist for trail related projects. The RTP is administered by the Puerto Rico Highways and Transportation Authority (PRHTA) and provides federal assistance to acquire, develop and maintain recreational motorized and non-motorized trails. Federal transportation funds benefit recreation activities like hiking, bicycling, in-line skating, equestrian use, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles.

The Fixing America's Surface Transportation (FAST) Act reauthorized the Recreational Trails Program (RTP) for Federal fiscal years 2016 through 2020 as a set-aside under Surface Transportation Block Grant Program (STBG).<sup>52</sup>

**Table A-3- 41. Courses of Action identified in the Recovery Plan Economic and Disaster for PR (2018)**

Fiscal year	2016	2017	2018	2019	2020
Puerto Rico Highway Program	\$158 M	\$158 M	\$158 M	\$158 M	\$158 M
Territorial Highway Program	\$42 M	\$42 M	\$42 M	\$42 M	\$42 M

<sup>51</sup> Puerto Rico Forest Action Plan (DNER, 2015).

<sup>52</sup> Territorial and PR Program funds (recovered from <https://www.fhwa.dot.gov/fastact/factsheets/territorialprhighwaysfs.cfm>)

## Recovery efforts in Puerto Rico

After hurricanes Irma and María passed through Puerto Rico, the government developed a long-term recovery plan known as “Transformation and Innovation in the Wake of Devastation: An Economic and Disaster Recovery Plan for Puerto Rico”. This plan views recovery efforts as an opportunity to transform the economic growth of the Island by implementing best practices that are cost-effective and innovative. The Central Office of Recovery, Reconstruction and Resilience (COR3) is responsible for developing each of the courses of action in coordination with the potential implementers identified in such plan. This plan includes various courses of action that are aligned with outdoor recreation which are described in the following table:

Table A-3- 42. Courses of Action identified in the Recovery Plan Economic and Disaster for PR (2018)

Courses of Action		Description	Potential Total Costs	Potential Funder(s)	Potential Implementer(s)
<b>NCR 20</b>	<b>Redesign, Reorganize, and Rebuild Puerto Rican Parks</b>	Conduct assessments to help the Puerto Rican parks system improve governance/operations efficiency, align park amenities to community needs, and reengineer parks to serve as stormwater infrastructure. Rebuild parks in compliance with building codes for hurricane prone areas to be consistent with assessment findings.	\$335 million – \$651 million	PA, HMGP, CDBG-DR, DOI, EPA, DOT, public-private partnership, private insurance, nongovernment sources	DRD, DNER
<b>NCR 22</b>	<b>Promote Alternative Tourism for Economic Development</b>	Catalyze experience-based tourism in key hub areas and enhance efforts to preserve unique natural, cultural, and historical assets.	\$140 million – \$233.4 million	DOC EDA, USDA, DOI, NOAA, NEH, NARA, IMLS, NEA, DOL	ICP, PRTC, DOC EDA, SBA, DNER
<b>NCR 23</b>	<b>Protected Natural Area Land Management for Alternative Tourism</b>	Create plans, policies, and actions to support, manage, and monitor the development of alternative tourism, such as nature tourism. Develops impact investment program for public-private tourism infrastructure.	\$3 million – \$4 million	Government of Puerto Rico, nongovernment sources	DNER, ICP, Para La Naturaleza, other NGOs
<b>NCR 24</b>	<b>Enterprise Development for Alternative Tourism</b>	Develop small, medium, and micro enterprises in communities that lack populations with basic entrepreneurial skills to build creative tourism market concepts and launch new enterprises.	\$1.2 million – \$2.4 million	DOC EDA, nongovernment sources, private insurance	DMO, ICP, PRTC, municipal governments, NGOs

Source: COR3. Transformation and Innovation in the Wake of Devastation: An Economic and Disaster Recovery Plan for Puerto Rico.

### The Community Development Block Grant – Disaster Recovery (CDBG – DR) Program

The Puerto Rico Department of Housing (PRDOH) has been designated by the Government of Puerto Rico as the agency responsible for administering CDBG-DR funds in close collaboration with COR3. The CDBG-DR Action Plan includes the following programs that will help address the strategies proposed in this SCORP. HUD allows CDBG-DR funds to be used as matching funds for other federal programs if the HUD-funded project also has eligible activities under the CDBG-DR Program. The next table presents some of the CDBG-DR programs that can fund projects and activities related to this SCORP.

Table A-3-43. Options of CDBG-DR Programs funds for SCORP action plan

Programs Category	Programs	Total	Max Award	Administering Entities	Description	SCORP recommendations that could benefit
<b>Economic Recovery Program</b>	Tourism and Business Marketing Program	\$25,000,000	\$25,000,000	DMO	Continued stabilization or increase in tourism-related revenues and increase in businesses moving to Puerto Rico, generating economic return.	Marketing
	Re Grow PR Urban-Rural Agriculture Program	\$92,500,000	Variable	PRDOH, Small and Medium Agricultural Businesses, Non-governmental organizations, Units of General Local Government Jurisdictions, and other Governmental Entities	Promotes and expands island-wide food security; Addresses impacts to damaged agricultural productivity; Enhances food quality production, cultural/culinary tourism, and eco-tourism; and Enhances social, economic, and environmental resilience.	Community gardens
<b>Multisector Initiative Programs</b>	City Revitalization Program: Municipal Allocation	\$1,123,000,000	\$100,000,000	PRDOH-Municipalities	These funds may provide assistance for public services, including but not limited to: wellness or recreational needs; improvements to the urban	Improve access to outdoor recreation facilities

Programs Category	Programs	Total	Max Award	Administering Entities	Description	SCORP recommendations that could benefit
	City Revitalization Program (Reverdece Puerto Rico)	10% of the Program allocation			landscape, including sidewalks, lighting, and parking lots; activities to remove architectural barriers affecting people with disabilities; construction improvements in public spaces (public squares), cultural spaces and art facilities, and recreational areas and facilities. These funds could also serve to implement green infrastructure in projects such as reforestation and recovery efforts of natural resources that can be undertaken through non-profit entities, and activities that consider a comprehensive approach with multiple benefits for central areas of cities, including co-location with transportation-oriented development (TOD), increasing pedestrian mobility and the use of non-motorized means of transportation (bicycle lanes) and other modalities	Improve or develop urban parks and green spaces Improve access to people with disabilities

### Evacuation trails: Hazard Mitigation Assistance Program (FEMA)

Hazard Mitigation is any effort to reduce loss of life and property by lessening the impacts of natural hazards. Hazard Mitigation seeks to affect long-term changes to reduce identified risks.

For example, maintenance, development or signposting of some trails, or some sections of these, could benefit from HMGP if they have a dual function as tsunami evacuation routes. In the city of Newport in Oregon, some tsunami evacuation routes were

developed using these funds. This project improved an existing evacuation area, Safe Heaven Hill, and leveraged additional resources to improve an existing evacuation route and provide interpretative signs estimating travel time to the assembly area<sup>53</sup>.

Currently, FEMA administers three programs that provide funding for eligible mitigation planning and projects that reduces disaster losses and protect life and property from future disaster damages. At the moment, Puerto Rico is receiving funds via the Hazard Mitigation Grant Program (HMGP).<sup>54</sup> As a result of Hurricane María, on February 12, 2019, FEMA notified the Government of Puerto Rico of the establishment of the 12-month funding lock-in limit. The amount of HMGP funding available based on this disaster is \$2,999,975,000 in federal hazard mitigation funding derived from the total federal disaster assistance provided under the disaster declaration.

On 2018, FEMA approved to use the Global Match approach to meet HMGP 25 percent non-federal cost share requirement. FEMA also acknowledged the intent to use the value of projects funded with CDBG-DR funds to carry the Global Match Program. The Government of Puerto Rico will dedicate approximately \$1b in CDBG-DR funding to provide the required cost share for HMGP projects. This means that all HMGP projects will be fully funded, with no additional cost share required from the Sub applicant. The CDBG-DR funding will provide eligible matching projects that will count as the HMGP cost share.

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<sup>53</sup> Recovered from: [https://www.fema.gov/media-library-data/1552337943458-6746260b0746bae76126bf947e1ff6e5/Mitigation\\_Showcase\\_OR\\_Newport\\_Tsunami.pdf](https://www.fema.gov/media-library-data/1552337943458-6746260b0746bae76126bf947e1ff6e5/Mitigation_Showcase_OR_Newport_Tsunami.pdf)

<sup>54</sup> The three programs are the Hazard Mitigation Grant Program (HMGP), the Flood Mitigation Assistance (FMA) Program, and the Pre-Disaster Mitigation (PDM) Program. Recovered from: <https://recovery.pr/en/recovery-programs/hazard-mitigation-assistance#hazard-mitigation-assistance>



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