

Year 2007 Projects

Project Name	Activity	Project Description	Habitat Type	Acreage	Linear Miles
FY 06/ 100 x 35 Planting Campaign	Restoration / Rehabilitation	The Department of Natural and Environmental Resources is leading the largest planting campaign in the history of the Island. The target is to plant 1,000,000 trees per year all over the state. Some of the main priority areas of the campaign include the municipalities that comprise the San Juan Bay Estuary (SJBE) watershed which is the San Juan Metropolitan Area. During this fiscal year over 50,000 trees were planted in critical sites, such as the Cucharillas Marsh, riparian corridors and in green areas bordering stormwater sewage. The Department Natural and Environmental Resources have a very active leading role in the development of the Comprehensive Conservation and Management Plan of the San Juan Bay Estuary. The Partnership has participated in activities of the campaign during the year, specially those targeted to estuarine habitat restoration and enhancement. The tree selection is based on food and habitat enhancement for local species. The initiative includes the development of new urban forests in the SJBE watershed.	Other	50.00	0.50
FY 06/ Bulky Waste Removal from Martin Peña Channel Eastern Border	Restoration / Rehabilitation	The eastern segment of the Martin Peña Channel has been a target of tons of bulky waste and illegal dumping activity for over six decades. Traditionally, poor communities adjacent to the estuarine system have disposed of large amount of waste in and around the estuary bodies of water. All these wastes, mostly aquatic debris, not only affect the aesthetic value of the system but also pose health and environment risks to all humans, fauna and flora within the ecosystem. In a multi-million investment campaign, the San Juan Municipal Government is cleaning many key areas impacted by bulky waste and illegal dumping. During this year the San Juan Municipal Government cleaned several spots filled with bulky waste such as used cars, refrigerators and furniture in the eastern border of the Martin Peña Channel. Several of these cleanups were made after San Juan Bay Estuary (SJBE) community leaders organized petitions for their communities to be cleaned up.	Forested Wetland	7.00	0.70
FY 06/ Erosion and sediment control at Carolina public beach	Protection / Maintenance	Installation of temporary sand retention fences specially designed and patented for the project by the NuShore Company. These panels will retain suspended sand in the water and by this mean will promote coastal accretion that will restore the coastal contour of the beach. The fences will be placed for two years and then will be removed from the area. A representative from the Carolina Municipality actively participates in the San Juan Bay Estuary Partnership Implementation Committee and is constantly informing the Committee on its progress. This is the first large-scale beach restoration and erosion control project in Puerto Rico. Our organization hopes it can provide a methodology that can be used or implemented in other eroding beaches of the San Juan Bay Estuary and the coasts of the Island and the Caribbean. The strategic localization of the project will have a key impact in the recreational use of the San Juan Bay Estuary natural resources.	Beach	16.00	1.00
FY 06/ Hacienda Virginia Wetland and Mangrove Restoration	Restoration / Re-establishment	The Puerto Rico Ports Authority, following the SJBE CCMP, conducted a multi-million mitigation project as part of a modification to the Luis Muñoz Marín Airport required by the Federal Aviation Administration. The place chosen was Hacienda Virginia at the Eastern part of the SJBE. The activities developed during last year were the following: <i>1) Mangrove Forest Creation</i> Creation of a mangrove forest in areas that were upland. According to Cowardin et al (1979), this area would be equivalent to Forested Wetland and Estuarine, which will include a mix of mangroves and other wetland trees. The purpose of this area is to provide continuity to the adjacent mitigation, where the mangrove forests were the most predominant component of its success. Among the species that are been planted here, the most visible will be Rhizophora mangle, Avicennia germinas, Laguncularia racemosa, Pterocarpus officinalis, Annona glabra and Sthalia monosperma. All of these are planted at 1 meter centers in order to promote quick establishment and avoid nuisance species in the area. The depth of the area varies from -3 ft to 0 ft, which will promote the movement and flushing of water throughout the system. <i>2) Herbaceous Wetland Restoration</i> The portions of the parcel subject to this type of restoration were areas historically filled or drained. These are now a transitional zone between mangrove forests and transitional forests. They also provide habitat for aquatic bird species. The area restored consisted of disturbed upland areas with a predominance of venezuelan grass (Paspalum fasciculatum). Although this plant is considered FACW, in Finca Virginia it is found in the upland portions of the site. These areas also include mounds and berms that have been created to control the flow of water through the site. <i>3) Herbaceous Wetland Enhancement</i> Portions of the site currently exist as wetlands, but the vegetation and hydrology were adversely impacted by cattle. These areas also had a heavy component of nuisance, exotic and invasive vegetation, but the presence of native vegetation and appropriate elevations make them a resource worth improving and preserving. In these areas, minimal or no grading was implemented, and the majority of the enhancement was achieved through improvement of hydrology and flushing (where appropriate), removal of detrimental species and supplemental planting of beneficial vegetation. <i>4) Transitional Forest Creation</i> Most of the mitigation site consisted of disturbed uplands, which had undergone earth movement and drainage to make the area adequate for cattle grazing. The project included the creation of a transitional forest, which is now an upland portion on the area adjacent to the access road in order to protect it. This transitional forest consists of	Freshwater Marsh	128.00	0.00

		<p>15.43 acres and includes wetland and upland species, which were established in an area with grading that ranged from 1 ft to 4 ft. It is expected that the lower portion of this area will be flooded during different portions of the year, which is why the vegetation consists of wetland tree species and shrubs. The upland portion will also serve as a berm that will ensure that water flows through the mitigation site instead of away from it. The transitional forest creation also consists of scrub/shrub wetland, while the remaining portion was planted with native upland tree species.</p> <p>5) <i>Open Water Enhancement</i> Open water enhancement was developed in the existing open water / vegetated ditches, which consist of 3.64 acres. These ditches were created with the purpose of draining the site and making it available for agricultural purposes. These ditches are approximately 3 feet deep and carry water from the site to the Piñones State Forest. Throughout the years, these ditches have been covered in vegetation. Although some of this vegetation is desired (spikerush), most of the area was covered by nuisance species (cattail). The project eliminated all nuisance exotic species and enhanced native desired species. In flood events, the drainage ditches will continue to discharge excess of water to the adjacent wetland systems.</p> <p>6) <i>Open Water Restoration</i> Approximately 1.30 acres of open water lagoons/ponds were created at the site with the purpose of providing habitat to aquatic bird species, reptiles, amphibians and fish. The ponds are strategically located in the central part of the mangrove forests, to be able to transition from deeper to shallow elevations, and on the northernmost section of the site, to serve as a barrier for intruding cattle.</p>			
FY 06/ International Coastal Cleanup	Enhancement	The San Juan Bay Estuary has been collaborating with the International Coastal Cleanup, organized by the The Ocean Conservancy, for over ten years. The organization joined forces with the local coordinator of the event to clean parts of the western border of the Martin Peña Channel. Over 300 volunteers showed up at the event and were divided into three groups. One cleaned the east section, the second the middle of the site and the third the western part of the Channel. 195 heavy duty construction trash bags were collected. The Environmental Scientist of the San Juan Bay Estuary served as captain of the event. The cleanup lasted from 8 a.m. to noon and 3,705 pounds were recovered from the red mangroves. The Department of Natural Resources donated 100 native trees to the public as part of its local reforestation campaign, named Verdor 100 x 35. Nearly a 100% of volunteers were students from local universities and schools.	Mangrove	5.00	1.50
FY 06/ La Esperanza Restoration and Cleanup	Enhancement	Since this is a small island, there was no land connection to transport debris out of the site, main reason for its accumulation during time. The problem was overcome with a donation from an ecotourism company that provided transportation for volunteers and debris using three large rafts and kayaks. Several government agencies, community groups, residents, environmental organizations and private companies joined the challenge of cleaning La Esperanza Island. There were 114 volunteers working for more than three hours in the activity. Local Department of Agriculture donated 60 native trees that were planted by students and volunteers. Native plants will restore natural coastal vegetation and habitat typical of this area. Around 2,700 lbs of debris were removed, including fishing nets, monofilaments and syringes. Educational activities with environmental characters were developed before and after the event.	Barrier Island	2.00	1.00
FY 06/ Mangrove planting at the San Juan Bay	Restoration / Re-establishment	This project helps improve the coastal habitat of the the San Juan Bay through the planting of red mangrove (Rhizophora mangle) propagules, enhancing its wildlife and fisheries value, in an area that has been severely impacted by urban development. The fringe of mangroves to be established will provide a self-sustaining structure for protection against coastal erosion, which is currently poorly provided by the unconsolidated material deposited as fill on the lagoon's shorelines during the past. Over the years, filling of mangrove areas for development have increased coastal erosion along the San Juan Bay's western shoreline. The restoration project will also improve the aesthetics of the area, fostering citizen's pride for their community. The project will provide new opportunities for the development of recreational and nature related activities. Using a local adaptation of the Riley Technique, 200 mangrove seedlings were planted on the western part of the San Juan Bay. With the Riley technique PVC tubes are placed firmly on the Bay bottom to protect mangrove seedlings from waves, storms and debris. Currently, the location presents a highly visible erosion problem and mangroves were planted as a natural erosion control method. The project was performed by 56 persons that are part of the San Juan Bay Estuary Volunteer Corps. Community leaders also joined the event. An educational phase is taking place to communicate residents of the importance of red mangroves. The site is monitored by local students as part of their Science classes. A 3' x 5' full color educational sign was developed and will be placed in the planting site as part of the educational strategy.	Mangrove	1.00	0.50
FY 06/ Suarez Canal Cleanup	Enhancement	Over 90 volunteers of the SJBEP collected over 2,000 lbs of debris, including bulky waste. This was a collaborative effort with the municipal police that provided security to people working on the border of the main access to the Luis Muñoz Marín International Airport cargo zone and one of the main distribution axes of San Juan. This aquatic cleanup event was performed to improve habitat for several endangered species and the aesthetic value of the Canal. Most of the aquatic debris of this area was originated from land-based sources. Debris collected also will reduce marine life injuries and mortality related to ingestion or entanglement with aquatic debris. Baseline information was collected and documented. The data sheet and protocol of the Center for Marine Conservation was used to provide data regarding debris origin. This will provide valued information to support future educational campaigns on the area and other efforts.	Mangrove	2.00	0.70

Total	211.00	5.90
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