

FEMA Funds Promote the Study of Puerto Rico's Ecosystem

Release Date: mars 17, 2024

The agency awarded funds to the Jobos Bay Natural Reserve and the Cambalache Species Refuge

Guaynabo, Puerto Rico – The Department of Natural and Environmental Resources' (DNER) Jobos Bay, located between the municipalities of Salinas and Guayama, is much more than a nature reserve where flora and fauna coexist in harmony. It is the only national estuarine research reserve in Puerto Rico and the Caribbean, and one of only 30 in the United States and its territories, according to the National Oceanic and Atmospheric Administration (NOAA).

The strong winds of Hurricane María destabilized the ecological balance of the reserve, but time and nature's own regenerative power helped it resurge. The Federal Emergency Management Agency (FEMA) has complemented this effort by allocating over \$462,000 to the DNER to repair structures and technology that support the mission of this research center.

“Aside from being an eco-tourism destination, Jobos Bay contributes to the management and conservation of the nation's network of estuarine reserves. This funding allocation helps the reserve improve its facilities and acquire the necessary equipment to continue its scientific and educational mission,” said FEMA Federal Disaster Recovery Coordinator José G. Baquero.

The reserve has a dual function: it is a scientific research laboratory and a wildlife monitoring center. Aitza E. Pabón Valentín, director and manager of the Jobos Bay National Reserve and Estuarine Research, said that they study changes in vegetation, the behavior of endemic species and phenomena related to climate change.

“We have a station that we call the sentinel. From there, we measure ground pressure, water inflow and changes in vegetation every month. The theory is — and one can already see it — that the habitats are migrating inland. That is, the



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mangrove forest is moving inland as the sea level rises. We are quantifying that effect of climate change,” said Pabón Valentín.

The facilities also have an educational function aimed at the conservation of the reserve's marine and terrestrial ecosystems, which is undertaken in collaboration with local and federal agencies, schools, universities and community groups.

“We have several ongoing scientific investigations. One student is working on her doctoral work with the populations of Cassiopeas, which are marine jellyfish. We have work that the Natural Resources Conservation Service of the Department of Agriculture is doing on the seafloor census and others related to sea weeds, and we are monitoring migratory and local birds,” the director said.

Meanwhile, the training coordinator of the DNER’s coastal program and environmental scientist Jimmy Peña added that, in addition to studying phenomena related to climate change, the reserve also has a function aimed at rehabilitating the estuary.

“Although people and tourism are welcome, (the reserve) is based on research. We develop mangrove growth scientifically, that's why we have the different stages of mangrove development,” Peña said. “The juvenile mangroves are being used to restore the coast of Mata la Gata Island, but also to restore other places.” To date they have planted more than 4,000 juvenile mangrove trees.

The reserve’s Visitors Center is located in what was once the Aguirre Sugar Plantation Clubhouse and currently serves as a laboratory where field samples obtained from the bay are analyzed. Meanwhile, the cultural activities center was built in the old Aguirre train station.

FEMA’s allocation contemplates repairing the walls and roofs of both buildings, as well as the observation towers, wooden gazebos and a boardwalk. The Wi-Fi antennas, which are vital for the collection and dissemination of investigative data, will also be repaired.

Moreover, the agency also allocated over \$509,000 to repair the Cambalache Species Refuge, a detention center located in Arecibo that houses exotic animals brought illegally to Puerto Rico. The shelter currently houses different types of mammals, reptiles — including alligators, crocodiles and snakes — and several



species of birds.

Repairs scheduled for the Species Refuge include work on the main office, repair of electrical infrastructure, and replacement of fixtures and the water cistern. Several species cages will also be repaired and replaced, including the reptile terrarium and the bird and mammal cages.

The two DNER projects have hazard mitigation funds: over \$127,000 for the Jobos Bay Estuarine Research Center and nearly \$47,000 for the Cambalache Species Refuge, to address water infiltration problems in the roofs, doors and windows, and to add additional protection to the electrical systems.

Meanwhile, the executive director of the Central Office for Recovery, Reconstruction and Resiliency (COR3), Manuel A. Laboy Rivera, said that “DNER’s permanent works are important and very particular because they are aimed at restoring facilities that seek to preserve natural resources for scientific purposes or for the use and enjoyment of the people, as is the case of these projects to which FEMA allocated funds. Currently, the DNER has 155 projects in design acquisition process, design or construction bidding, with investments totaling \$90.8 million. We will continue to support the DNER throughout the required process for these projects in Salinas and Guayama to begin development soon.”

To date, FEMA has allocated over \$32.4 billion for more than 10,900 projects that will address damages following Hurricane María. Of these, the DNER has nearly \$152 million from the agency for permanent works to repair its infrastructure.

For more information about Puerto Rico’s recovery, visit fema.gov/disaster/4339, fema.gov/disaster/4473 and recovery.pr. Follow us on our social media at Facebook.com/FEMAPuertoRico, Facebook.com/COR3pr and [Twitter @COR3pr](https://Twitter.com/COR3pr).

Jobos Bay National Estuarine Research Reserve, Salinas, PR



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SALINAS, Puerto Rico (March 1, 2024) – The Federal Emergency Management Agency (FEMA) allocated over \$462,000 to the PR Department of Natural and Environmental Resources (DNER) to repair structures and technology that support the mission of the Jobos Bay National Estuarine Research Reserve. Photo FEMA/Eliezer Hernández

Jobos Bay National Estuarine Research Reserve, Salinas, PR





SALINAS, Puerto Rico (March 1, 2024) – The Jobos Bay is the only national estuarine research reserve in Puerto Rico and the Caribbean, and one of only 30 in the United States and its territories, according to the National Oceanic and Atmospheric Administration (NOAA). The facilities also have an educational function aimed at the conservation of the reserve's marine and terrestrial ecosystems, which is undertaken in collaboration with local and federal agencies, schools, universities and community groups. Photo FEMA/Eliezer Hernández

