

August 24, 2021

Rafael A. Machargo Maldonado, Esquire
Secretary
Puerto Rico Department of Natural and Environmental Resources

Dear Mr. Secretary,

Please accept our cordial greetings.

On February 1, 2016, the Puerto Rico *Department of Natural and Environmental Resources* (DNER) and the *Vieques Conservation and Historical Trust* (VCHT) entered into a collaboration agreement (Collaboration Agreement between the *Department of Natural and Environmental Resources* and the *Vieques Conservation and Historical Trust* for co-management of the *Vieques Bioluminescent Bay Nature Reserve* (VBBNR) Agreement #2016-000079).

Since then, and even prior to this, our organization has developed a series of activities and initiatives that fulfill, and often exceed, the responsibilities stipulated in the agreement. Although we never received comments for the reports submitted in past years, we have continued to work for the conservation and responsible management of the VBBNR.

Grouped together in this document, are the main activities that our organization has carried out in support of the VBBNR before and after the signing of the Agreement, affording you a broad and clear picture of the work and commitment of our organization.

We would be pleased to receive you in Vieques, at your convenience, to demonstrate on the ground achievements of our efforts, and the projects that are in process and described in the attached document. We are available to answer any questions or doubts that may arise from this document.

Sincerely yours,

Lirio Márquez D'Acunti
Executive Director
Vieques Conservation and Historical Trust (VCHT)

**Translation of original
documents
sent to DNER.**

**Seal and Stamp August 2021
Office of the Secretary**

Pinciple Co-management Activities of the Vieques Bioluminescent Bay Nature Reserve (VBBNR) Conducted by the Vieques Conservation and Historical Trust

On February 1, 2016, the *Puerto Rico Department of Natural and Environmental Resources* (DNER) and the *Vieques Conservation and Historical Trust* (VCHT) entered into a collaboration agreement (Collaboration Agreement between the *Department of Natural and Environmental Resources* and the *Vieques Conservation and Historical Trust* for co-management of the *Vieques Bioluminescent Bay Nature Reserve* (VBBNR) Agreement #2016-000079.

Since then, and even prior to this, our organization has developed a series of activities and initiatives that fulfill, and sometimes exceed, the responsibilities stipulated in the agreement.

This document summarizes, for the convenience of the Secretary, information previously presented to various officials of the Agency and to the Vieques Reserve Manager, biologist Edgardo Belardo, with whom we maintain a good relationship and regular communication of co-management activities and report incidents or eventualities that could affect the Reserve.

As contextual evidence of the VCHT's dedication and efforts to fulfill its mission, which includes "*...one of the main objectives is to preserve and study the bioluminescent bays found on the island,*" we include pertinent historical data on the organization and its commitment to the Reserve.

Background of support for the Reserve provided by our organization prior to the Agreement:

- The VCHT is incorporated as a non-profit organization in 1984 and obtains 501(c)(3) exemptions from the US Federal Government and 1101.01 from the *Commonwealth of Puerto Rico* and includes in its mission, from its inception, the conservation of the bioluminescent bays of Vieques and works on prospects for support of Puerto Mosquito.
- The VCHT collaborates with the Puerto Rico Legislature and other entities promoting the initiative proclaiming the *Puerto Mosquito Bioluminescent Bay* and adjacent lands as a Natural Reserve under the jurisdiction of what was then the *Puerto Rico Department of Natural Resources*.
- Led by Dr. Barbara Bernache Baker and the organization's first president, Myrna Pagan Connelly, a three-decade trajectory begins, in local and international forums, promoting the need for conservation of Puerto Mosquito and the Reserve.
- The *Elizabeth C. Langhorne Laboratory* is created at our headquarters, in the Esperanza sector of Vieques, for the purpose of promoting scientific research supporting the conservation of the bioluminescent bays of Vieques.

- Dr. Barbara Bernache Baker represents the VCHT at the *Association for Science in Limnology and Oceanography* (ASLO) conference where she makes a call to the international scientific community to promote scientific research for the conservation of the bioluminescent bays of Vieques.
- A relationship is established with the University of California at San Diego and the Scripps Institution of Oceanography to advise and explore the possibility of conducting research in Vieques.
- Local environmental education efforts begin that evolve into the *MANTA* educational program, which includes education and tours related to bioluminescent bays and their conservation.
- The *MANTA* program receives a number of awards, including three national awards from the *Environmental Protection Agency* (EPA) in recognition of its conservation education programs and educational design related to environmental science and the bioluminescent bays. This program visits Vieques' schools, hosts visiting groups and establishes an award-winning summer program.
- The VCHT creates an exhibit (*Biobay Room*) dedicated to the bioluminescent bay. This exhibit contains a series of interactive dynamics and educational-artistic representations about the Reserve, the bioluminescent bay, and conservation of the resource. The exhibit was funded, in part, by a grant from the *National Oceanic and Atmospheric Administration* (NOAA).
- Another NOAA grant supports the creation of our *Marine Life* exhibit, that aims to educate the community and visitors about the need to conserve the wonders of the marine world. The exhibit includes a series of aquarium tanks, displays of preserved organisms, posters and educational materials at our facility in the Esperanza boardwalk area. The exhibit features a twelve-foot mural map of Vieques, highlighting the Reserve area, other protected areas and some restricted areas on the island. The tanks contain creatures collected from local waters and returned quickly to their habitat (the VCHT maintains its collection permits from the DNER). The tanks, of what is now known as "*The Smallest Aquarium in the World*," are for educational purposes, not simply for exhibition. We offer talks, educational activities about environmental problems, the times and reasons for closures, endangered species, and visits to the *Biobay Room*. Occasionally, at the request of the DNER, the aquarium team and members of the field research team assist the DNER in events where documentation is needed, assistance in aquatic transportation, field assistance on the coast, among others. Under normal (pre-pandemic) conditions, the *Aquarium* receives thousands of people per year.

- The VCHT designed, in collaboration with the DNER and funded by an EPA grant, a pilot project to train bioluminescent bay guides. The two-week course included a manual, presentations by experts, and tours of the Reserve.
- The VCHT, through a grant from the DNER and the *Garnier* company, produced a high quality educational brochure for the community and visitors focusing on the ecosystem and conservation of Puerto Mosquito bioluminescent bay.
- The VCHT becomes a founding member of the *Puerto Rico Light Pollution Control Committee*. The VCHT conducts research and community education visits to schools, neighborhoods and community fairs.
- The VCHT has conducted educational campaigns, forums, presentations and conferences (both technical and communal) for the control of light pollution in Puerto Rico, with emphasis on Vieques. The VCHT designed and produced a high quality booklet on light pollution in Vieques.
- The VCHT coordinated and participated in the first measurements of the skies in Puerto Mosquito using quality technological instruments.
- Over the years the VCHT has sponsored, encouraged, assisted or collaborated in a large number of scientific investigations in Puerto Mosquito and, on occasion, has provided support for other bioluminescent bays. Since the 1980's, studies of the bay have been conducted with the purpose of establishing a scientific regimen and invite scientific interest.
- In 2014 a pilot study, funded by the VCHT and developed as a collaboration between the VCHT, the DNER and the *Scripps Oceanographic Institution of the University of California, San Diego*, was completed to establish methodologies and generate baseline information for the purpose of creating an ongoing, long-term program of scientific research in Puerto Mosquito.
- The VCHT is coordinating and assisting in a series of visits by the DNER, the *University of Puerto Rico, Mayagüez* campus, the *University of Puerto Rico, Humacao* campus, the *University of California*, and the *United States Geological Survey (USGS)* to study drastic declines in the populations of the bioluminescent dinoflagellate *Pyrodinium bahamense* at Puerto Mosquito in Vieques and Laguna Grande in Fajardo.
- The VCHT and its electric boats, contracted for research in Puerto Mosquito, serve as nautical transportation for field visits and provide support to researchers and DNER officials.

- The VCHT obtained a grant from the U.S. Environmental Protection Agency (EPA) to fund erosion and sedimentation control to the bay through the use of green infrastructure on the access road to the bioluminescent Puerto Mosquito Bay that runs from Sun Bay. This grant was matched by funds from the Puerto Rico Legislature, through the DNER, and numerous in-kind contributions obtained by the VCHT from: the USGS, the Municipality of Vieques, Vieques contractors and businesses, the *U.S. Fish and Wildlife Service* (USFWS), among other collaborators. The total investment in the project -- cash and in-kind contributions -- was over \$475,000. This project reduced sediment input to the bay, thereby improving the water quality so necessary to maintain a healthy *Pyrodinium* population. The project contributed greatly to improving the visitor experience along this trail and led to several scientific collaborations and educational activities for local students and visitors and support activities by some concessionaires. The project was designed by David Aponte, implemented by *Protectores de Cuencas* and managed by the VCHT.
- The erosion and sedimentation control project opened the door to an important collaborative agreement between the DNER, the Environmental Quality Board (EQB) and the USGS, with in-kind contribution from the VCHT, to establish a permanent water quality monitoring station, transmitting 24/7 telemetry -- the only one of its kind in the world in a bioluminescent bay. VCHT Field Investigator Mark P. Martín-Bras was certified as a USGS licensed volunteer and participated in the installation, maintenance, and operation of the station. Currently, the station is still in the bay, but the agreement between the Agencies is no longer in effect and will soon be decommissioned by the USGS. This station produced essential information on the behavior of a bioluminescent bay that did not exist anywhere else in the world.
- The VCHT continues to conduct scientific research and support efforts of other researchers, thesis students, and collaborators investigating the bioluminescent bays and other areas of the Reserve that are considered of high ecological value, such as research on avifauna, lagoons, endangered species, and water quality in other water bodies in the Reserve.
- The VCHT sponsored and coordinated the first *Bioluminescence Symposium* in Puerto Rico held in Vieques in November 2009. It was attended by members of the scientific community from Puerto Rico and the United States; local and federal agency personnel; members of the Puerto Rico Legislature; the Vieques community; and people from other countries interested in the topic. Panelists included the most recognized experts on the subject of bioluminescence and bioluminescent bays: Dr. Juan González Lagoa, Professor Fernando Gilbes, Dr. Michael Latz, oceanographer Edie Widder, architect Fernando Abruña, Elizabeth Padilla, superintendent of *Para La Naturaleza's Cabezas de San Juan Reserve* and the VBBNR's manager, biologist Edgardo Belardo. The two-day symposium, attended by close to 300 people, was supported by various private sector corporations established in Vieques and the *Sea Grant* program. One of the symposium workshops generated important recommendations from the community, attending scientists and technicians regarding the management of the VBBNR.

The symposium began a series of previously unheard of collaborations, among the community of conservation entities with an interest in bioluminescent bays, that has resulted in the development of a new set of recommendations for the management of the VBBNR.

The symposium initiated a series of previously unheard of collaborations among the conservation community with an interest in bioluminescent bays that has led to scientific research, collaborations and data exchange, educational initiatives, and consensus in scientific opinion regarding the management of these resources.

- The VCHT funded a training on bioluminescent bay research methodologies provided by scientists from the *Scripps Institution of Oceanography at the University of California, San Diego*. VCHT staff, local biologists, teachers, educators, and the Reserve Manager were trained in research techniques and plankton counting methods under the microscope.
- The VCHT established a program to research and count plankton populations in the bay, especially *Pyrodinium bahamense*, that since FY 2014-2015 has been funded by the *Special Joint Commission of Legislative Funds for Community Impact*. As part of this project a regimen, of weekly plankton counts at the VCHT *Elizabeth C. Langhorne Laboratory* and water quality sampling, was established to create a database on the abundance and analysis of the plankton community in the bioluminescent Port Mosquito Bay which is still ongoing. This project is now in its sixth year and has produced an extensive database on conditions in the bay. This type of research was recommended at the 2009 symposium and by the VCHT Scientific Advisory Committee. The data generated by this research program provides a better understanding of the cycles of this and possibly other bioluminescent bays and covers a diversity of extreme periods that allow us to understand the resilience of the system. As part of the project we have documented events such as: the impact of *Hurricane Maria*, events of declining abundance of bioluminescent dinoflagellates, periods of closure of the Reserve related to the Covid-19 pandemic and other events.

Many of the activities and achievements summarized earlier in this document continue to be carried out, except for those where the goal was met or were of a singular nature.

Activities Initiated After the Signing of the Co-management Agreement

Included below are some of the activities that have taken place since the signing of the co-management agreement. We are willing to meet, at your convenience, to present more detailed or specific information on the topics discussed in this document.

- ❖ The analysis of plankton populations in Puerto Mosquito continues, through a grant from the legislative grants program of the *Special Joint Commission of Legislative Funds for Community Impact*. These results, and their reports, were submitted and published as part of the project and our participation as co-managers. Ongoing research on plankton population analysis represents a five-year cycle. We are in the midst of the second cycle, recommended by the scientific advisors, to determine the normal functioning of this system and to serve as sentinels for possible climate change related changes, or as a result of atmospheric and/or anthropogenic events.
- ❖ Added to the plankton population analysis protocol was the monitoring of a species with potential harm to humans and other organisms, *Akashiwo spp.* Fortunately this has not been reported in numbers that present a danger to users. This listing is an example of the scope of the project as a science for management.
- ❖ Nutrient sampling was added to the water quality sampling.
- ❖ The VCHT is supporting the work of Dr. Kathleen Cusick, of the University of Maryland, who is designing research to study the genetics of *Pyrodinium bahamense*, including data from Puerto Mosquito. This type of research would normally be very expensive. However, our collaboration as co-managers with the participation of the Reserve Manager, Edgardo Belardo, provides this information without the need for DNER.
- ❖ The VCHT is awaiting supplies and training for a study, led by Professor David Gondek of Ithaca College in New York, examining the bacteria in the bioluminescent bays of Vieques. Professor Gondek is creating a research plan.
- ❖ The VCHT participated in the design and execution of a *Para la Naturaleza* study, through a *National Aeronautics and Space Administration (NASA)* grant, for geospatial documentation and mapping of the areas visible from the Puerto Mosquito Bioluminescent Bay. Lights were cataloged using a viewpoint from the center of Puerto Mosquito Bay and luminaires were visited using a methodology established by the researchers and using the *ArcGIS Explorer* and *Survey 123* software. The maps and results were presented locally to the Reserve Manager, local biologists, government officials and concessionaires. The study is being used to make adjustments to luminaires that present a problem for the appreciation of bioluminescence phenomena.
- ❖ As part of our commitment as co-manager, and with the purpose of increasing the scientific capacity of our field and laboratory equipment, the VCHT acquired a high quality, precision instrument for water quality monitoring in the Reserve. The instrument, a *YSI EXO 2* field unit, is comparable to units used by the DNER and USGS in their scientific investigations in other natural areas of Puerto Rico and the United States. The equipment cost of \$17,000 was fully funded by the VCHT.

- ❖ The VCHT obtained approval from the *Puerto Rico Department of Education* to participate in schools as educators on the topic of bioluminescent bays and their conservation.
- ❖ The VCHT continues its educational role by participating in presentations in Puerto Rico and Vieques schools on the importance of the *Vieques Bioluminescent Bay Nature Reserve*.
- ❖ The VCHT establishes and continues a collaboration with *Casa Montessori* to teach about the bioluminescent bay and the mangroves in an educational dynamic where presentations, school visits, face-to-face and virtual exchanges with Vieques' schools and activities to improve the Reserve, are carried out.
- ❖ Under the co-management agreement, the VCHT continues to carry out the *MANTA* program. This program emphasizes natural resource conservation education and includes components directly related to bioluminescent bays. The program conducts cleanups on the shores of Puerto Mosquito, educational talks at the VCHT Pavilion and the *Bioluminescent Bay Hall* about the ecosystem, daytime and nighttime visits to Puerto Mosquito and sometimes to other bioluminescent bays in Puerto Rico, participation in scientific research trips, introduction to the microscopic world in the laboratory, and participation in educational campaigns for the community. The *MANTA* program has a summer component focusing on three different age groups. The topics of these groups cover different approaches appropriate for their ages:
 - o *Minimanta* - Introduction to nature and the bioluminescent bay.
 - o *MantaRaya* - Introduction to the scientific method and bioluminescent bay
 - o *MANTA* - Careers in the conservation, science and tourism of the bioluminescent bay.
- ❖ The VCHT develops a citizen science component where members of the *MANTA* program, community students, students participating in science fairs, educators, tour guides, government or community members, can participate in research trips as observers or assistants. In groups of three or fewer people, they are taken, free-of-charge to participate in the research process allowing them to understand the need for ecosystem research and conservation and, in many cases, to develop their professional or student careers.

- ❖ Through a grant from the *Puerto Rico Community Foundation* and the *Red Nose Day for Puerto Rico Fund*, the VCHT developed, during the past school year, the *Wizards of Nature* project, dedicated to training Vieques students for work in the island's nature tourism industry. Thirty-six high school students received various training and certifications:
 - o Boating license, including law 430
 - o First Aid CPR License
 - o Microsoft Suite Basic Software Certificate
 - o Conversational English
 - o National Association for Interpretation (NAI) Certification
 - o Basic training in ecology and guiding techniques with field visits to Puerto Mosquito
 - o Other training and techniques that included renewable energy, mangrove restoration and meditation with the sea.

- ❖ The VCHT created the *Open Lab* program. This program establishes a schedule for visits to the *Elizabeth C. Langhorne Lab*. On these visits by appointment, participants learn about the research process in the bioluminescent bay and the world of plankton under the microscope. Students, Reserve grantees and their guides have been the most frequent participants.

- ❖ The *Elizabeth C. Langhorne Lab* and its director, Vieques biologist Airamzul Cabral Guadalupe, have assisted a number of students working on science fairs with projects that include the Puerto Mosquito bioluminescent bay as a research objective. Two of these students received awards in Puerto Rico and the United States.

- ❖ The VCHT participated as co-manager of the Reserve in the *ASLO 2019: Aquatic Science Meeting*. This international conference of the *Association for the Sciences of Limnology and Oceanography* brings together the world community of experts and entities, related to these sciences, to present their findings, promote research and create collaborations. The VCHT participated in three sessions presenting topics related to the Puerto Mosquito bioluminescent bay, the impacts of *Hurricane Maria* on the bioluminescent ecosystem and community science. The VCHT, along with the *University of California at San Diego*, hosted the special session dedicated to bioluminescent bays. As a result of this session, a collaboration with different universities in Puerto Rico and the US Virgin Islands and oceanographic institutes was initiated to exchange data, work on comparisons and unite the community of experts working on scientific research on bioluminescent bays. We presented a scientific poster, at ASLO, on data from Puerto Mosquito Bay reflecting data collection during the years of long-term projects of research and analysis of plankton populations, their importance in understanding the functioning of Puerto Mosquito Bioluminescent Bay and recovery after *Hurricane Maria*. The VCHT team hosted the bioluminescent bays' session and presented a paper on community integration in scientific research work.

- ❖ The VCHT periodically offers talks to the community at its facilities. Due to the conditions imposed by the Covid-19 pandemic, it has not been possible, during 2020-21, to participate in person. However, in compliance with established health and safety protocols, activities have been offered to the community in the form of limited participation for specific sectors of the community to educate them about the results of research at Port Mosquito, the impacts of events and happenings, and general information about the bioluminescent bay. Among them:
 - o Presentations to the community about the bioluminescent bay
 - o Presentations on mangroves in the Reserve
 - o Presentations on the avifauna in Vieques and others in the Reserve
 - o Presentations on student participation in the Reserve
 - o Presentation on the impact of *Hurricane Maria*
 - o Presentations on the recovery of the bioluminescent dinoflagellates after *Maria*
 - o Presentations by Dr. Elvira Cuevas and Dr. Ernesto Medina on the impact of *Hurricane Maria* on the mangrove forest of Puerto Mosquito
 - o Presentations on the *Mangrove Project*, explained later in this document.
 - o Presentations on the scientific research and results of plankton counts in the bay

Assistance During and After *Hurricane Maria*

The VCHT was an integral part of the Reserve's research and recovery support system during and after the massive impact of *Maria* on Vieques. Having water quality data, plankton abundance and distribution, and observations of the Reserve allowed us to determine some of the impacts and monitor the recovery of the systems after the initial impact. It also allowed us to determine, in coordination with the Reserve Manager and scientific advisors brought to Vieques by our organization, which areas were most impacted and most in need of support and restoration. The VCHT was in communication, prior to the passage of *Hurricane Maria*, with members of the *Municipal Office of Emergency Management*, its director, the Reserve Manager and the administrator of the *Sun Bay Spa of the Department of Recreation and Sports*.

- o Water quality measurements and water samples were taken prior to the passage of the hurricane.
- o Verified the operation and readiness action instructions of the USGS water quality station located in Puerto Mosquito.
- o The VCHT met with the USGS to discuss the water quality and preparedness instructions for the USGS water quality station.

- o The VCHT met with concessionaires who were available.
- o Prepared the VCHT facilities, including research components at the Reserve.
- o Two days after the passage of *Hurricane Maria*, visited the Reserve as far as we could access and documented visible impacts.
- o Assisted the resort and DNER staff in damage assessments and possible short and long-term solutions.
- o Donated tools, equipment, and field work to the Reserve to support the vegetative material removal effort. These included 1 chainsaw, 1 hook saw (loper), a battery for the Reserve's vehicle and other work materials.
- o Over twelve initial visits were made in the months after *Maria* to assess initial damage. Some of these visits were made with DNER personnel.
- o Collaborated with another local organization, *ViequesLove*, which provided the funds to hire heavy equipment and debris removal personnel and open the impenetrable roads in the Reserve.
- o Began conducting back-to-back nighttime visits to observe and document changes in bioluminescence.
- o Coordinated with the USGS to obtain data from the monitoring station while it was operating, and before winds and surge from the hurricane rendered it inoperative.
- o We initiated a series of analyses to determine the impact in a scientific manner on the bay:
 - Eye inspections are conducted.
 - A report is presented to Secretary Tania Vázquez in a meeting on the impacts and actions related to *Hurricane Maria*.
 - Obtained the collaboration of Dr. Elvira Cuevas and Dr. Ernesto Medina from the *Center for Applied Tropical Ecology and Conservation (CATEC)* of the University of Puerto Rico, for the analysis of the state of the mangrove forest of Puerto Mosquito after the passage of *Hurricane Maria*.

- Coordinated and funded field visits with CATEC staff where samples and measurements were taken.
 - CATEC's laboratory provides its analyses and presents results to the VCHT, who presents them to the DNER.
 - The need for action in the area west of the entrance to Puerto Mosquito Bay is determined as the main priority.
 - This need is presented to the DNER, the Scientific Advisory Committee, the Board of Directors of the VCHT and its membership.
 - The VCHT decides to create a program addressing this problem and seeks funds to implement solutions to the loss of mangrove, which could result in changes in the hydrology of the ecosystem, thus causing the decrease of the bioluminescence phenomenon in Puerto Mosquito.
- Thus was born the *Mangrove Project* of the VCHT for the reforestation and restoration of the mangrove forest that is an integral part of the ecosystem of the bioluminescent bay of Puerto Mosquito, with the design of a nursery and a reforestation program for the identified areas. This project has encouraged scientific research in the Reserve and training of VCHT staff in research areas appropriate for co-management.
 - The VCHT presents its initial reforestation plan to the DNER and the Manager and begins efforts with a prototype at the *Marine Life Exhibit* at our headquarters in Esperanza.
 - The VCHT receives grants and in-kind collaboration from various foundations, academia and government agencies to build and operate two mangrove nurseries at its facilities in the Puerto Real area, at the former Barbosa School (VCHT's current project to rescue an abandoned school and develop an education, scientific research and community resilience center focused on appropriate science and technology to achieve small island sustainability and resilience).
 - Nurseries are integrated as educational tools for students, grantees and the community. The nurseries will become part of our collaboration with local schools and visiting groups, always following the health and safety measures stipulated in the VCHT Protocol for COVID-19 control.
 - Visits to potential planting areas begin in collaboration with DNER staff.
 - VCHT staff are trained in mangrove and seagrass reforestation techniques in workshops offered in collaboration with *The Ocean Foundation* and DNER.

- Planting activities begin in the areas determined by the work team.
- Four transects are planted with red mangrove - *Rhizophora mangle* - and white mangrove - *Laguncularia racemosa*.
- In the month of August 2021, we have over one thousand red mangroves (*Rhizophora mangle*) in different stages of growth, over four hundred white mangroves (*Laguncularia racemosa*), fifty black mangroves (*Avicennia germinans*) and over 50 button mangroves (*Conocarpus erectus*). All of these are growing in the VCHT nurseries, under a methodology that includes salinity changes, solar energy pumping and mangrove rescue in areas of high anthropogenic impact.
- Field visits are made to the impacted areas of Puerto Mosquito Bay to verify the condition of the reforested areas and to observe other possible areas of interest for reforestation.
- This nursery system increases the resilience of the Puerto Mosquito mangrove by providing a source of mangroves in case of future high impact weather events.
- *Mangrove Project* collaborators have produced, with the field assistance of the VCHT, several scientific investigations that will be published, among them:
 - o Current bathymetry of Puerto Mosquito
 - o Data on the benthic habitat of the bay in relation to seagrasses
 - o Data on mangroves and their distribution
 - o Transparency and temperature data in areas of interest in Puerto Mosquito
- We report the existence of an invasive seagrass species in Puerto Mosquito. Researcher Manuel Merello confirms the species as *Halophila stipulacea* and makes a series of measurements to determine its distribution. Preliminary results were shared with the Reserve Manager.

This document includes some of our actions as co-managers of the *Vieques Bioluminescent Bay Nature Reserve* with the purpose of establishing communication with the new administration. Difficulties arising from the pandemic have hindered traditional forms of meetings and communication among collaborators. Nevertheless, we wish to extend our invitation to the Secretary, and his staff, and reiterate our availability to further elaborate on the topics included in this or other previously submitted reports. We are available, whether on Vieques, the Big Island or virtually, to discuss these or other matters.