

Dog Island Acquisition Project
21-155-001-C873
Final Report

March 2024

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This report was funded in part through a grant from the Texas General Land Office (GLO) providing Gulf of Mexico Energy Security Act of 2006 funding made available to the State of Texas and awarded under the Texas Coastal Management Program. The views contained herein are those of the authors and should not be interpreted as representing the views of the GLO or the State of Texas.



Project Background:

Dog Island is an 829-acre coastal "island" located a few miles west of Matagorda, Texas (28-39-19.13, N, 96-01-15.47 W). The island is situated between the Colorado River delta, the Texas Parks, and Wildlife Department's (TPWD) Mad Island Marsh Wildlife Management Area, and the open expanse of West Matagorda Bay. The landscape is reflective of the unique diversity of central Texas' coastal systems. The northern boundary (approximately 300 acres) of the island is a densely vegetated wooded uplands that serve as habitat for native and migratory birds, and wildlife species. The southern side of the island is comprised of almost 600 acres of pristine tidal marsh with numerous tidal creeks, potholes, flats, swales, and bayous that interlace throughout the wetlands. Intertidal oyster reefs are abundant in the island's tidal creeks and form a protective fringe along the West Matagorda Bay shoreline. The proximity of the island to the Colorado River delta ensures suitable salinities, sediments, and nutrients to sustain oyster populations, marsh productivity, and helps to maintain the biodiversity of aquatic resources that use the area as estuarine nursery. The island's topography, location, and current use provide unique opportunities as a hub for education and outreach activities, birding, wildlife viewing, and to study the impacts of freshwater management strategies and sea level rise on coastal health and productivity.

The acquisition of Dog Island has protected more than 800 acres of vital coastal habitat at a cost of less than \$250 per acre. Its proximity to historic Texas Parks and Wildlife Department and Texas Nature Conservancy properties creates and preserves a coastal conservation corridor > 9-miles long, at the eastern end of West Matagorda Bay. Access to the island's resources has been improved by the creation of a boat access area, a mowed and maintained 4-mile trail, several interior access points, a camping area, and the installation of three benches to allow visitors and hikers a place to rest. Texas Parks and Wildlife Biologists created a Wildlife Management Plan to assist with managing invasives and improving the area for native wildlife and avian species. The property is currently listed in the TPWD Land Management Assistance Program.

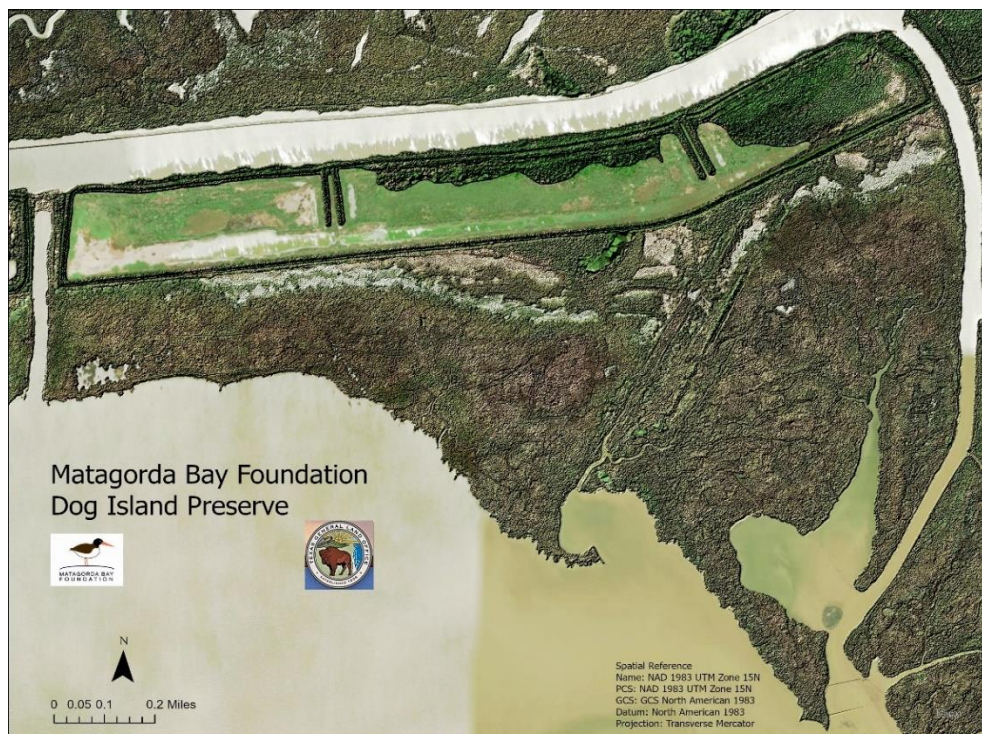


Figure 1 Surface Elevation Map of Dog Island

Task 1 Summary: Due Diligence

The Matagorda Bay Foundation (MBF) contracted with Doyle and Wachtstetter Surveying to conduct a Category 1A land survey and BioWest Consulting was hired to complete a Phase I Environmental Study; the survey and Phase I Study were completed November of 2021. Identifying an appraisal service that was qualified and willing to conduct the required “yellow book” survey on a coastal island was challenging. The appraisal was completed by Valbridge Property Advisors during May 2022. MBF received a willing seller letter from the property owners and obtained a title commitment, and the required Phase I ESA was submitted to the Texas General Land Office (GLO).

Task 2 Summary: Land Acquisition

The General Land Office approved our appraisal, survey, draft deed, and The Matagorda Bay Foundation purchased the property from the landowner. The title was conveyed to Matagorda County and the Matagorda Bay Foundation and Matagorda County entered into a lease agreement that conveyed all land stewardship and conservation activities to the Matagorda Bay Foundation for a period of 99 years. Both the deed and the lease agreement were recorded with the Matagorda County Clerk’s Office, and copies were submitted to GLO. The GLO initially provided permanent signs, which the MBF installed at the project site following the acquisition. Unfortunately, the first signs provided to MBF were removed by poachers/vandals and discarded. MBF and GLO staff collaborated on the design and creation of two much larger signs (4ft. by 8ft.). These signs were placed at the eastern and western property boundaries. MBF submitted requests for liability insurance estimates for property to indemnify the county and state.

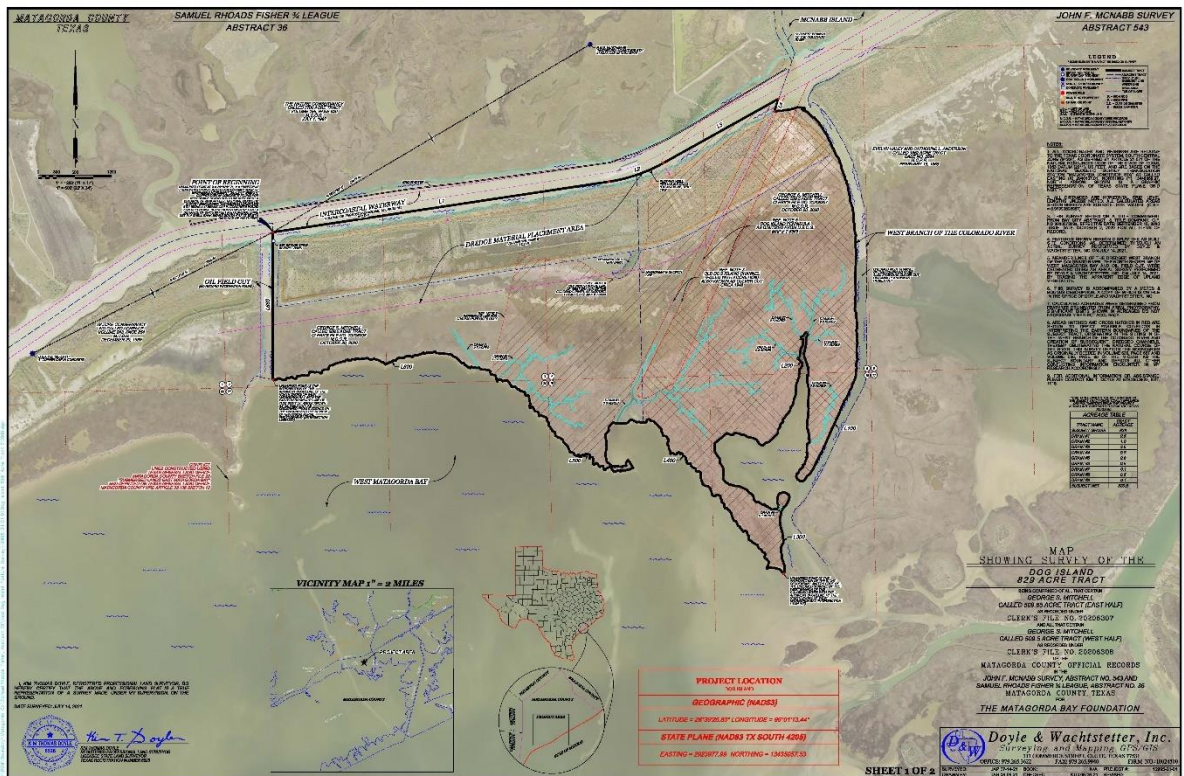


Figure 2 Survey of Dog Island



Figure 3 small signs destroyed by vandals.



Figure 3 Large redesigned sign.



Figure 5 Eastern boundary of property.



Figure 6 Western boundary of property.

Task 3: Mapping, Verification, Boundary Sign Placement

MBF used available LIDAR and satellite data to create detailed maps of island topography and vegetation communities in ArcGIS©. Ground verification and drone surveys were used to confirm mapping and habitat designation. MBF plans to keep these records and survey data to establish baselines for shoreline loss/accretion, habitat extent, and invasive species coverage. MBF used these maps to assist with trail location, wildlife viewing areas, and future infrastructure design and possibly construction. The digital maps of Dog Island will be available on the MBF website and social media platforms, and on Matagorda County government websites, once approved by county officials.

Three maps of the island were created in ArcGIS for Task 3. – a topographic map, a digitized habitat map, and a habitat map created using ArcGIS ISO cluster analysis.

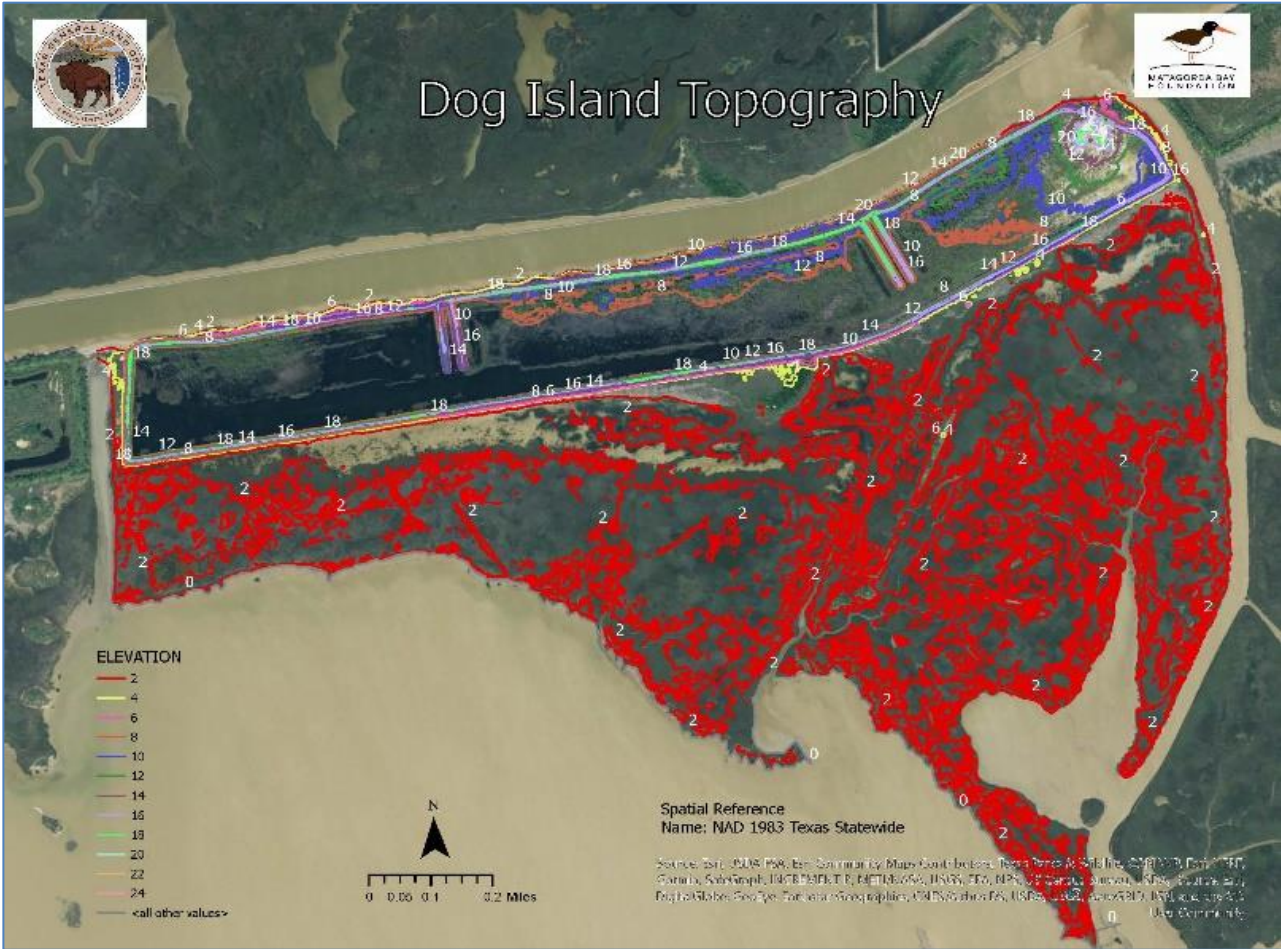


Figure 7 ArcGIS topo map of Dog Island



Figure 8 ArcGIS digitized habitat map.



Figure 9 ArcGIS Iso Cluster analysis habitat map.

MBF engaged with volunteers from PACK (Paddling Anglers in Canoes and Kayaks) to assist with kayak trail routing and mapping around island and river delta. Using stakeholder input from PACK members, and local kayak enthusiasts, MBF used GIS to develop digital paddle, trail, and property use maps. We are currently coordinating with Texas Parks and Wildlife Department (TPWD) Mad Island Wildlife Management Area (WMA) staff to negotiate kayak launch access through WMA property. Once completed, we hope to have the kayak trails and use maps advertised by TPWD.

The trail maps also include proposed future uses including camping, kayaking, and wildlife viewing.

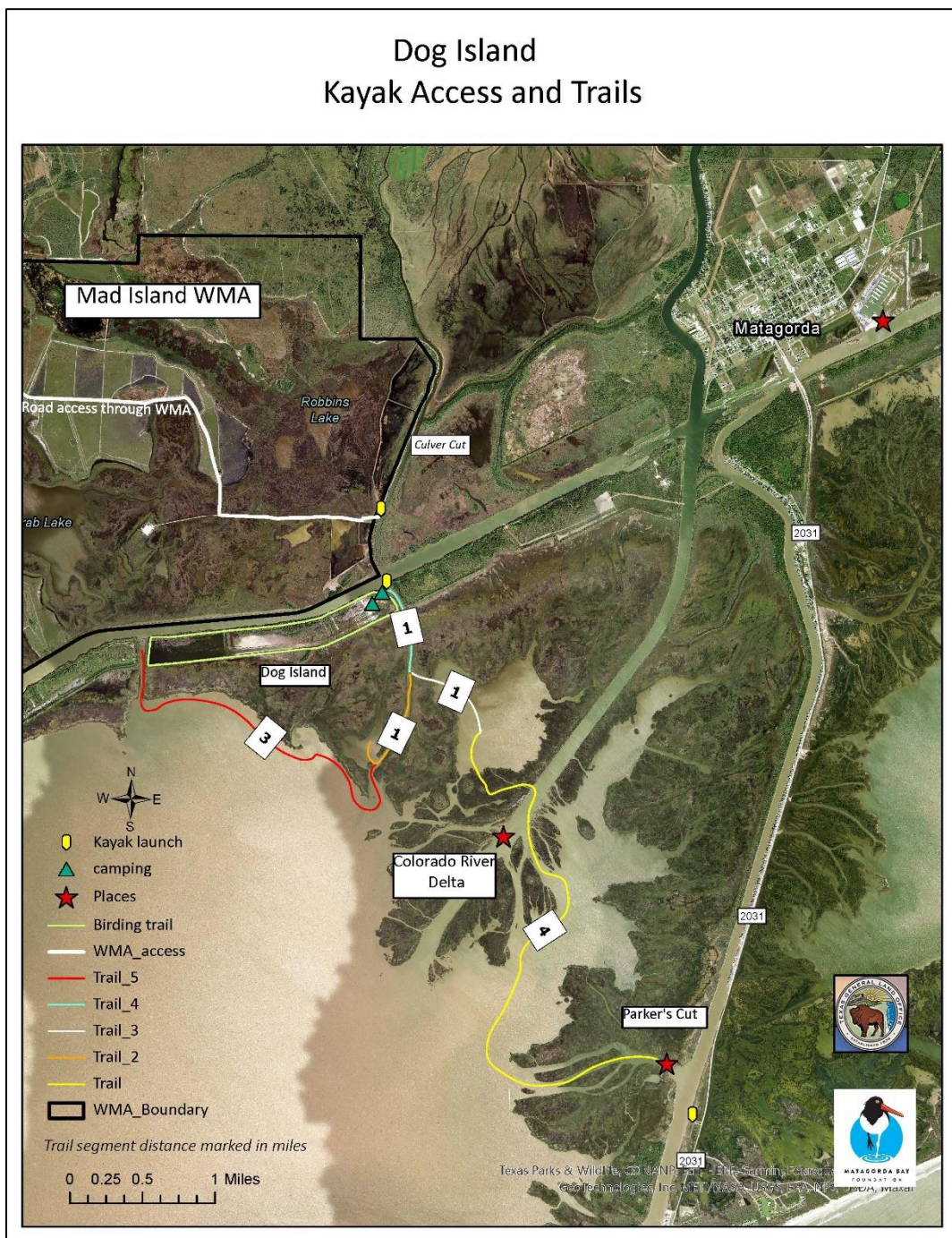


Figure 10 Wilderness and kayak trails map.

To delineate boundaries along the wetland (bay-side) fringe, MBF designed, purchased, and placed 20, GLO approved, signs designating ownership and restricting access at intervals around the island.

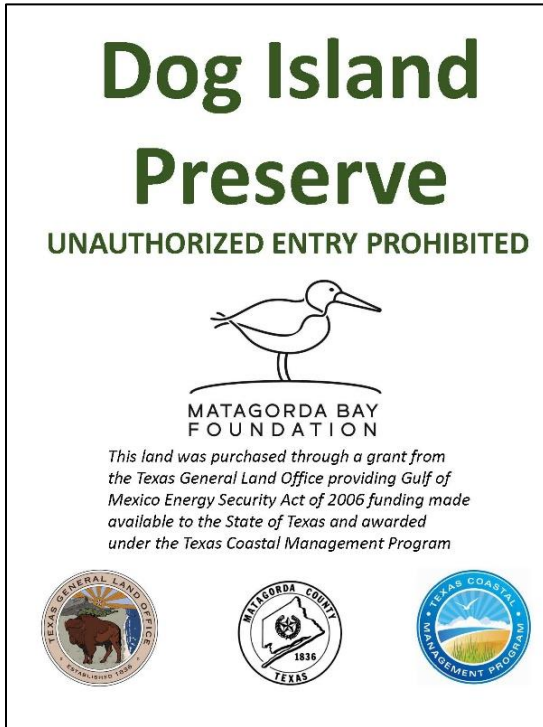


Figure 11 Boundary sign design.



Figure 12 Boundary sign placed on wetland fringes.

Task 4: Wildlife Management Plan

MBF engaged with local, state, and federal resource managers to develop a draft Wildlife Management Plan (WMP) for the property. The goals of the WMP include – identify the extent of native habitats and invasive species, improve habitat for native game and non-game species, implement invasive species control measures, restore, and protect essential habitats, delineate, and protect/enhance sensitive areas.

The property was surveyed by USFWS and TPWD staff and the property is now part of the TPWD Land Management Assistance Program. We have organized several feral hog hunts to help control the population and reduce damage from rooting. Our focus for these hunts is to introduce underserved and disadvantaged youth to the outdoors and hunting.

The Matagorda Bay Foundation coordinated with Mr. Greg Akins, TPWD Angler Educator, Mr. Willard Scott 4W's Outdoors, and other adult volunteers to provide firearm safety, hunter education, outdoor awareness, and conservation stewardship education to a group of youth from Houston, Texas. The group has made two successful trips to the Dog Island property. All hunting was coordinated with local TPWD Game Wardens (David Janssen)



Figure 13 Youth hunt.

Task 5: Birding and Public Use Infrastructure

MBF engaged with staff from the Gulf Coast Bird Observatory (GCBO), United States Fish and Wildlife Service (USFWS), TPWD, United States Army Corps of Engineers, Audubon Texas, Texas Nature Conservancy, and local stakeholders to design infrastructure needed to optimize bird and wildlife viewing on the property.

To facilitate property access, MBF cleared a 4-mile trail after coordinating with TGLO, TPWD, and USFWS to ensure best management practices are undertaken and critical habitat is not disturbed.

Trail construction involved the removal of heavy brush and deadfall along the crown of the existing levee. A total of four access sites were cleared and improved as part of the trail creation project. The main access area located at the northeast corner of the property provides a rustic mooring area near the shell bank, and a 4-mile maintained trail, and two interior access trails provide improved wildlife viewing opportunities.

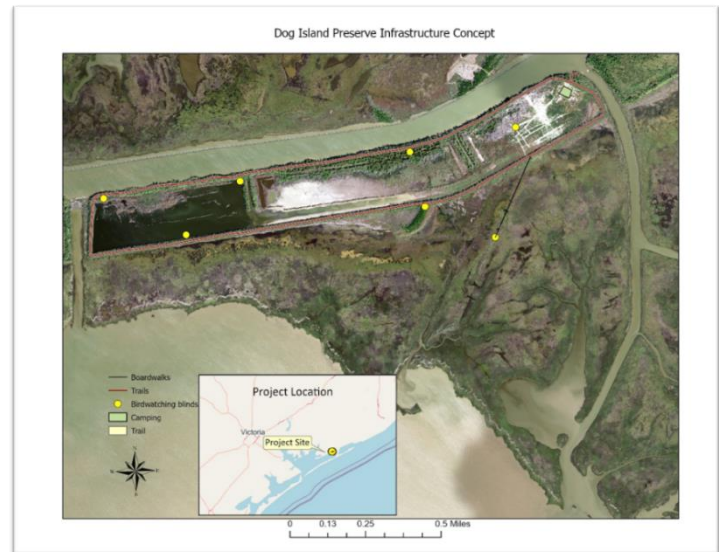


Figure 14 initial trail map.



Figure 15 Vegetation prior to mowing.



Figure 16 Initial trail clearing.

After the initial construction and clearing of the 4-mile loop was completed, we engaged the help of volunteers from Phillips 66 to help with some maintenance and sign placement. Notice how quickly the vegetation grows on the trails. This was only 1-month after the initial clearing.



Figure 17 Phillips 66 volunteers.

The Matagorda Bay Foundation brought volunteers from Ducks Unlimited to assess the health and habitat value of a small freshwater pond at the western end of the island. This area is well known to illegal hunters as a location to harvest ducks during the fall and winter. The Ducks Unlimited volunteers found a wealth of forage for a variety of migratory waterfowl in the pond - vegetation and mollusks.



Figure 18 Pond on island.



Figure 19 Aquatic vegetation and forage in pond.

The Dog Island property has been included in the past 2-years of Audubon Christmas Bird Counts. In 2022 over 69 distinct species of bird were added to annual Audubon counts. We have hosted many birdwatching groups and birding enthusiasts on the island since the initial trail clearing was completed.



Figure 20 Bird and wildlife viewing enthusiasts.

To improve visitors' experiences the Matagorda Bay Foundation purchased materials and constructed three benches to be placed along the island for resting and viewing. Boy Scouts and volunteers helped build and paint the benches prior to moving them to the island.

Throughout the project we have engaged with more than 125 volunteers that have contributed to the design, maintenance and upkeep of the island's trails and viewing areas and received >\$45,000 in donations leveraged from other sources.

We continue to work with volunteers and donors to realize the full potential of the island's resources as a protected natural resource area.

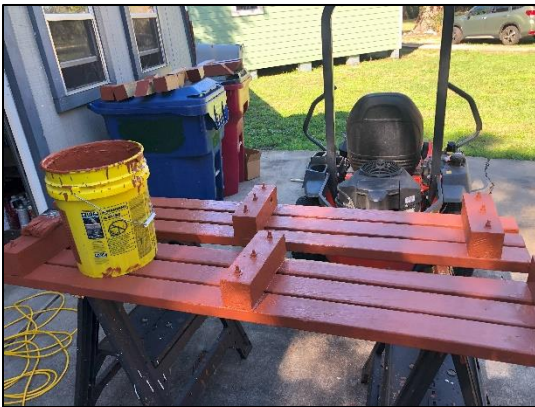


Figure 21 Bench construction.



Figure 22 Benches on trail.



Figure 23 View from bay side bench.

MBF contracted with landscape architects at Atkins-*Realis* to develop technical specifications, designs and drawings for public access and wildlife viewing infrastructure. The virtual rendering included MBF vision for a boat dock/kayak launch at the eastern side of the island, a raised boardwalk, viewing platform, and accessible landscape and trail features.

The virtual renderings are included below.



Dog Island Nature Park
South end of Boardwalk with Birdwatching Platform



11/17/2023
* Images are conceptual in nature and may vary from final design.



Dog Island Nature Park
Boat Dock and Canoe Launch



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South end of Boardwalk with Birdwatching Platform



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Dog Island Nature Park
Boardwalk



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Dog Island Nature Park
Trail Down Levee to Boardwalk



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Trail Down Levee to Boardwalk



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Dog Island Nature Park
Trail Down Levee to Boardwalk



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Acknowledgements – The Matagorda Bay Foundation would like to thank the following for assisting with this project:

- The professional and patient GLO staff provided guidance and encouragement throughout the process.
- Our funding and support partners including –
 - GLO CMP
 - Ed Rachal Foundation
 - Colleen Claybourn
 - Henry Hamman,
 - Scott Mitchell
 - The West Endowment
 - The Therese Hershey Foundation
 - Houston Sierra Club
 - TPWD Biologist Todd Pilcik
 - USFWS staff Woody Woodrow and Jennifer Wilson
 - Audubon Texas
 - The Matagorda Bay Bird Fest
 - PACK of Houston
 - Matagorda County Judge and Commissioners court
 - Joe and George Kana
 - Lyondell-Basel

