

# America's Great Restoration Opportunity

From Cancun, Mexico to Key West, Florida, the great arc of the Gulf of Mexico coast and its waters support thousands of plant and animal species and thriving human communities. But the Gulf is in trouble. It can only be saved by the concerted restoration of its bays, estuaries, and other natural features. The Nature Conservancy is working with a wide range of partners to create a sustainable future for the region's people, plants, and animals for ours—and future—generations.





BY THE NUMBERS

# THE GULF OF MEXICO:

Contributes more than

**\$2**

**TRILLION**

per year to US GDP through ecosystem goods and services



Supports more than

**20**

**MILLION**

jobs



Is home to

**15,419**

**SPECIES,**

**52**

of which are critically endangered, endangered, or threatened

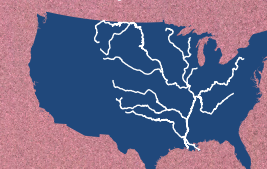
Drains

**40%**

of the land in the continental U.S. through

**33**

major rivers



Is a migratory corridor for

**BILLIONS**

of birds every spring & fall



Produces more than

**40%**

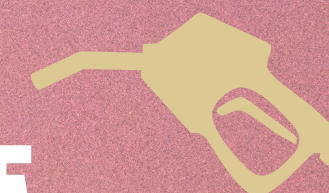
of the nation's seafood



Contains

**HALF**

of the nation's coastal wetlands



Supports

**90%**

of all domestic & offshore oil & gas production



# OUR GREAT RESTORATION OPPORTUNITY

## FOR CONSERVATION THAT LASTS

The Gulf of Mexico is one of the most remarkable places on Earth. It provides food, jobs, and improves the quality of life for millions of people living along its shores, and its estuaries support an astonishing diversity of plants and animals. While this complex system has suffered from years of human impacts and natural disasters, much of the Gulf remains, at least for now, beautiful and productive with its own unique culture of music, food, art, and recreation based on its natural character.

Hurricane Katrina in 2005, the Deepwater Horizon Oil Spill in 2010, Hurricane Harvey in 2017, and Hurricane Michael in 2018 demonstrated how vulnerable the Gulf is – these tragedies made many people feel helpless, victims of forces beyond their control. But the Gulf’s communities are not helpless. People have fought back from adversity. They are determined to make the Gulf more resilient to the problems that lie ahead.

For 35 years, The Nature Conservancy has worked with many partners in the Gulf to protect critical landscapes, pioneer on-the-ground and in-the-water restoration projects, and advocate for policies to achieve large-scale conservation in each state. Our goal in the Gulf is to restore and sustain the Gulf’s natural systems so that they continue to benefit human communities, provide habitat for the full range of plant and animal species, and make human and natural communities more resilient to change.

Bob Bendick







## THE LIFEBLOOD OF THE GULF

# WATER

Many of the Gulf's most important and natural shoreline features — oyster reefs, mangrove forests, and tidal marshes — require regular flows of clean, fresh water for survival. Forty percent of the land in the continental United States drains into the Gulf of Mexico, so the condition of forests, prairies, and wetlands far upstream play a crucial role in its health.

Across the Gulf, the Conservancy is working with cities and towns to diminish the adverse impacts of urban stormwater runoff. In the Gulf's watersheds, we are helping farmers, ranchers, and public and private forest land owners develop new land management techniques and restore and protect natural buffer areas, wetlands, and floodplains to reduce the flow of nutrients into rivers and streams and to maintain the flow of freshwater into the Gulf's estuaries.

### THE ATCHAFALAYA RIVER BASIN INITIATIVE

The plumbing in the Atchafalaya River Basin, America's Great Swamp Forest, is broken. Man-made locks, canals, levees, and water control structures are causing water to flow the wrong way in some places, flooding in others, and depriving still others of enough water to sustain this unique ecosystem.

Through restoration, science, and working closely with the community, The Nature Conservancy is addressing the challenge of restoration head on. In 2016 the Conservancy purchased more than 5,000 acres in the Bayou Sorrell area of the Atchafalaya to deploy restoration strategies that will demonstrate effective hydrological restoration methods that can be applied to other parts of one of the most unique wildlife habitats in the world.



### THE MISSISSIPPI RIVER PROJECT

The Mississippi River Basin includes 1.245 million square miles in 31 states and two Canadian provinces — forming the world's fourth largest river basin. The river provides water to drink and to sustain agriculture, and is a thoroughfare for the transport of goods to and from the nation's heartland. Fresh water funneling into the Gulf of Mexico sustains robust fisheries, which provide food, jobs, and economic security to millions of people.

To ensure the future of clean freshwater flows, the Conservancy's Gulf of Mexico Program is cooperating with our Mississippi River Initiative to help farmers, ranchers, and forest landowners to bring back natural floodplain areas like bottomland hardwood forests and to reduce the flow of nutrients into rivers and streams, with the goals of improving the health of the entire river and reducing the area of the Dead Zone in the Gulf of Mexico.







## AN INSURANCE POLICY FOR THE FUTURE

# SHORELINES

Restoring damaged shorelines to reduce community vulnerability makes economic and ecological sense. The Nature Conservancy is joining together with federal, state, and local governments to demonstrate the value and effectiveness of shoreline restoration. By designing and sponsoring projects — such as oyster reef construction, marsh building, coral reef restoration, and conservation of coastal land — we are strengthening shorelines and demonstrating that restoration of natural features is a cost-effective way to reduce vulnerability to storms, while at the same time creating recreational opportunities and important habitat for the Gulf's resident and migratory species.



Decisions made at the local level can have a powerful impact. It is estimated that every dollar invested in hazard mitigation results in four times the cost savings in avoided storm damage. The Conservancy is using its scientific tools and partnerships with engineers and designers to work closely with local governments to create community plans that will strengthen community resilience to sea-level rise and tropical storms.



### A UNIFIED VISION FOR MISSISSIPPI SOUND

Much of the Mississippi Sound shoreline was devastated by Hurricane Katrina in 2005 and was also impacted by the 2010 Deepwater Horizon oil spill. Despite these catastrophes, a wide range of restoration activities have been completed or are taking place across the three-state Mississippi Sound shoreline such that it is becoming an example of what comprehensive watershed-based Gulf of Mexico restoration might look like. The projects include:

- The acquisition and restoration by TNC of Lightning Point at the mouth of Bayou La Batre, a small commercial fishing and boat building port. The former industrial land at Lightning Point will be restored to salt marsh, oyster reef and upland habitats, will help shield the port from storms and will provide recreational access for residents and visitors. This project was made possible with the support of the Gulf Environmental Benefit Fund (GEBF) administered by the National Fish and Wildlife Foundation (NFWF)

- Conservation land acquisition in Mississippi and Alabama around Grand Bay. These acquisitions were made possible with NFWF GEBF grants through the State of Alabama
- Restoration of oyster reefs in Bay St Louis and Back Bay Biloxi
- Reconstruction of the Bay St Louis waterfront and other parts of that community to increase resilience to storms
- Planning for the removal of low dams on the Pearl River to allow passage upstream of endangered Gulf sturgeon

The Nature Conservancy has led, been involved in, or supported a number of these and related projects. Mississippi sound is exhibiting the kind of collaborative and science-based restoration for critical Gulf watersheds that can serve as a model for the rest of the Gulf.





## ALABAMA'S LIVING SHORELINES

Alabama's Gulf Coast includes healthy marine ecosystems and dynamic estuarine habitats that, in turn, support thriving marine and estuarine species and a robust seafood industry. The Nature Conservancy is implementing living shoreline restoration projects to reduce shoreline erosion, enhance marsh habitat, and improve water quality in estuaries in Mobile Bay and beyond.

The term "living shorelines" refers to the use of nature-based techniques and materials such as oyster shells,

reef blocks, bagged shells, live shellfish, and plants to help protect eroding shorelines. Since 2005, The Nature Conservancy and our partners have worked with public and private partners to install more than nine miles of reef at 17 locations across the Alabama Gulf Coast.

This work, done in part with the support of more than 1,800 volunteers, and represents more than \$28 million spent to protect and restore the coast.

## PENSACOLA'S EAST BAY

The undeveloped shoreline to the east and north of Escribano Point in Pensacola's East and Blackwater Bays are areas where oysters and seagrasses existed and flourished for many years before being lost to sedimentation, water quality degradation, and other factors.

With \$13.2 million in funding from the National Fish and Wildlife Foundation's Gulf Environmental Benefit Fund, The Nature Conservancy, along with several partners including the State of Florida and Santa Rosa County, has

begun construction of the Pensacola East Bay Oyster Habitat Restoration Project.

The Pensacola East Bay Oyster Habitat Restoration Project complements the restoration of commercially fished oyster habitat in the Pensacola Bay system. Projects like this one have been shown to produce cleaner water, increase fish production, reduce shoreline erosion, increase biodiversity, and significantly increase recreational fishing opportunities.







HELPING PEOPLE BENEFIT ECONOMICALLY,  
ECOLOGICALLY, & SOCIALLY

# COMMUNITIES

The Nature Conservancy is committed to ensuring that local communities, including areas with lower income and minority group populations, benefit from restoration jobs, are more resilient to storms and floods, and are able to maintain traditional cultural connections between people and the Gulf. This is not just a theoretical idea for the Conservancy. We were selected to create a Gulf conservation corps that puts young adults to work restoring the Gulf's natural areas, we are running workshops with local governments on how to make their communities more resilient to natural hazards, and we are restoring natural resources, such as oyster reefs, for their economic and ecological benefits.



## GULFCORPS

With the support of a National Oceanic and Atmospheric Administration award of \$7 million, and the collaboration of partners at The Corps Network and the Student Conservation Association, The Nature Conservancy operates a Gulf restoration project that is creating 300 restoration jobs for local disadvantaged young adults over three years.

This project, GulfCorps, is conserving habitat along the Gulf by hiring teams of young adults who do hands-on work to restore natural features and natural habitat on conservation lands.

GulfCorps crews are distributed across all five Gulf states, are operated by existing local organizations, and are accomplishing conservation activities such as planting native vegetation, removing invasive species, and restoring streambanks and shorelines. The crewmembers and crew leaders are being trained in a range of field work disciplines that will provide them with marketable skills in the restoration economy taking shape in the Gulf of Mexico.



## TEXAS' HALF MOON REEF

Half Moon Reef, a 54-acre restored habitat in Texas' Matagorda Bay, is a pioneer project of The Nature Conservancy's oyster restoration work along the Gulf of Mexico. The multi-year project has generated remarkable social and economic benefits across the bay.

In 2016, The Nature Conservancy partnered with Texas Sea Grant to survey the community, in particular anglers and fishing guides, to determine the social and economic benefits of increased recreational fishing in Matagorda Bay due to the restoration of Half Moon Reef.

Our research demonstrated that the restored habitat generated an average 551% increase in oyster size, and a 40% increase in biodiversity — more shellfish, small invertebrates, and fish like flounder and redfish in and around Half Moon Reef — to create a popular hotspot for hundreds of sport anglers across the region. In total, our research found that Half Moon Reef contributes \$1.3 million annually to Texas' economy.







# UNDERSTANDING THE GULF SCIENCE



At The Nature Conservancy, on-the-ground restoration and policy decisions are informed by comprehensive and groundbreaking science. Our research is revealing just how valuable wetlands and other natural coastal features can be in protecting coastal communities from the impacts of storms and is revealing previously unknown migratory pathways of fish, birds, and marine mammals through and across the Gulf so that those animals can be protected through their entire life cycles.

## BUILDING STRONGER, AND MORE COST EFFECTIVE, SHORELINES

2017 was the costliest hurricane season on record. The ongoing rate of coastal development combined with land subsidence, climate change, and sea level rise increases the odds that catastrophic storms and floods are likely to become progressively more common — and costlier — in both lives and property. It is estimated that events causing \$100 billion in damages may become three times more frequent here in the future.

The Nature Conservancy is leading research into how the restoration of healthy coastal habitats — like marshes and oyster reefs — can be an extremely cost-effective solution for reducing those risks. Our research shows that wetland

and reef restoration in the Gulf of Mexico can yield benefit-to-cost ratios of above 3.5 on average, meaning more than \$3.50 in direct flood-reduction benefits for every \$1 spent on restoration.

In the Gulf of Mexico, nature-based solutions are particularly cost effective in comparison to most ‘gray’ solutions. Large-scale oyster and wetland restoration projects could help avert more than 45 percent of the climate risk over a 20-year period in the Gulf, saving more than \$50 billion in flood damages. Nature-based solutions can be even more cost effective if additional ecosystem services such as fisheries, recreation, and other benefits are considered.

## SCIENCE HIGHLIGHT: MIGRATORY SPECIES IN THE GULF OF MEXICO

Each year, hundreds of animal species travel over, through, or around the edges of the Gulf of Mexico, often on migration routes that can extend hundreds of miles from the Gulf into the Atlantic. The health of these pathways used

by fish, sea turtles, marine mammals, and birds is critical not only to species survival, but also to the overall health of the Gulf of Mexico.

Until recently, little was known about these vital pathways. The Nature Conservancy, working with partners at research institutions across the Gulf, synthesized disparate information about 26 different species that depend on the Gulf for migration, to increase understanding of the migratory strategies and corridors used throughout the Gulf. Our research has revealed that there are four particularly significant migratory blueways in the Gulf that are mostly unprotected, and used year-round by the animals across the Gulf.

Our intent is that this research will inform and motivate government decision-makers to support further research on migratory pathways in the Gulf, and to enact measures for conservation of those pathways to enable the survival of individual species and protection of the overall health of the Gulf of Mexico ecosystem.







ONE COAST. ONE FUTURE.

# THE TIME IS NOW

## BE A PART OF THE GULF'S SUCCESS STORY

The Nature Conservancy needs your help in saving the Gulf of Mexico.

We are now in a crucial window of opportunity for shaping the future of the Gulf. The tragedies faced by the coast have focused significant attention and resources on the future of the Gulf region. For the first time in the Gulf's history, Federal, state, and local governments, with the assistance of the RESTORE Council and the Gulf Environmental Benefit Fund administered by the National Fish and Wildlife Foundation, are using these resources to plan and carry out systematic restoration of the Gulf's health and natural character. The actions of The Nature Conservancy play a critical role in Gulf recovery:

- We are doing independent, original, and collaborative science to ensure that public funds are invested in the right restoration priorities
- We are purchasing the most strategic remaining natural lands along the Gulf's shorelines
- We are doing on-the-ground and in-the-water restoration projects that demonstrate new techniques for creating the future Gulf coast
- We are leading the efforts to involve, engage, and employ young people, including disadvantaged youth, in Gulf restoration
- We are pioneering the use of natural infrastructure and nature-based solutions to better protect coastal communities from natural hazards
- We are educating and informing the public about the essential relationship between nature and people
- We are living and working in Gulf communities; we don't tell people what to do — we work alongside them to gain their confidence and trust in creating a healthier future Gulf

While there is public money available to accomplish on-the-ground restoration work, these funds do not support the Conservancy's efforts to plan, coordinate, and advocate for comprehensive and science-based Gulf restoration. Our experience in the Gulf has shown that strategic private investment in our work can leverage and focus effective large-scale public investment. When you support The Nature Conservancy's work across the Gulf of Mexico, you play a key role in producing lasting, tangible, and precedent-setting conservation in the Gulf region.

Despite all the problems it faces, we are optimistic about the future of the Gulf of Mexico. Our optimism comes from seeing what has been done already, and knowing that the Gulf's leaders, communities, scientists, and conservationists share our vision, and our sense of urgency. Join us in making the Gulf of Mexico a success story for generations to come.



BY THE NUMBERS

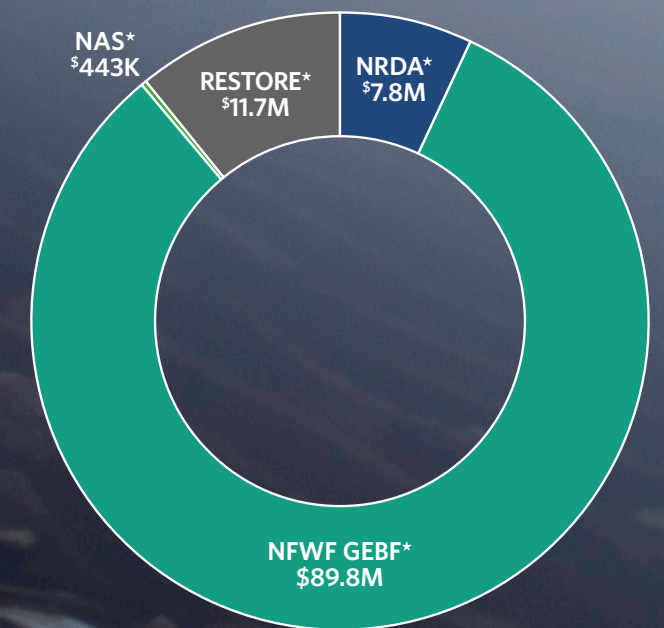
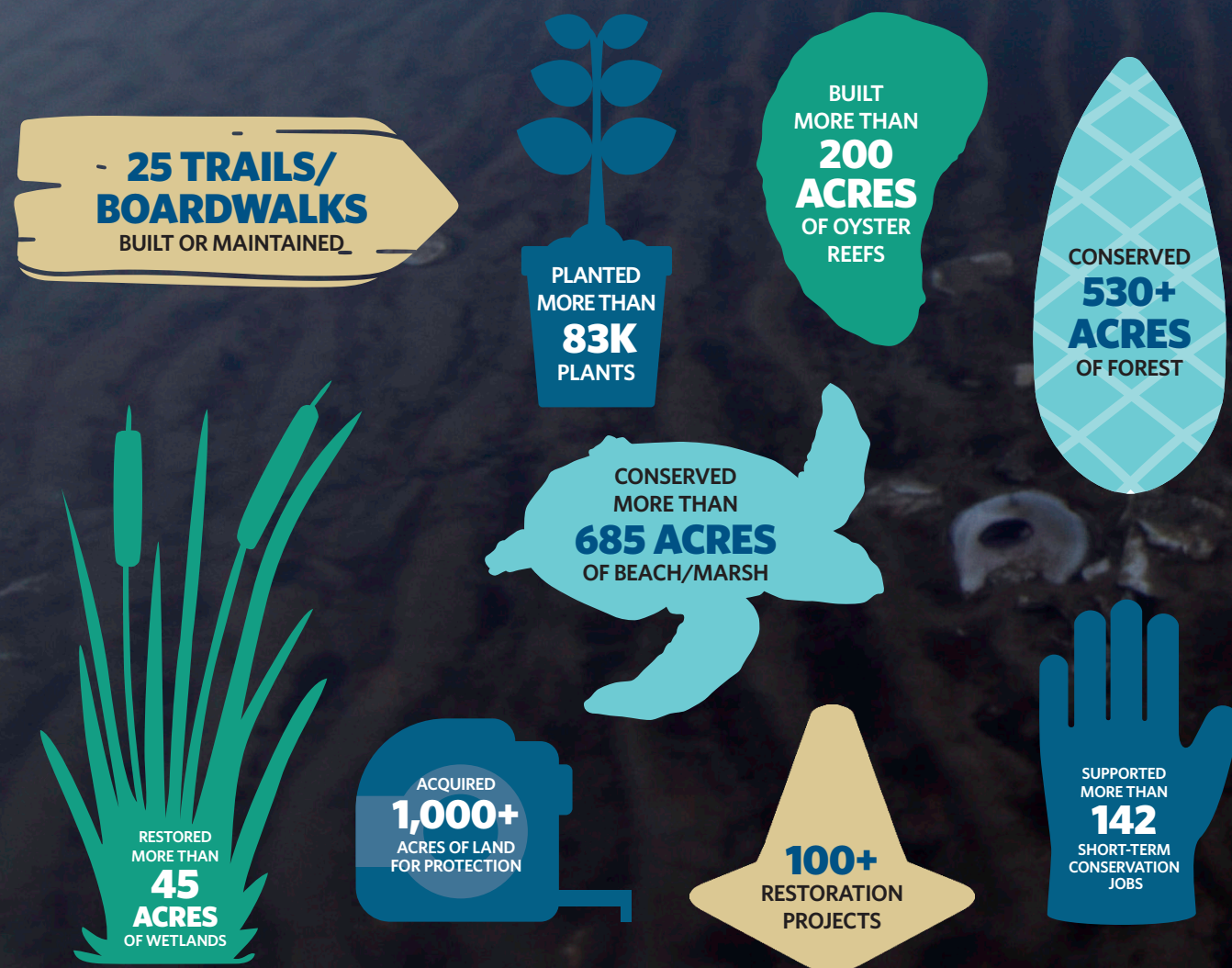
# THE NATURE CONSERVANCY'S INFLUENCE ON GULF RESTORATION

TNC has received more than \$109 million in Deepwater Horizon oil spill restoration funding to carry out land acquisition, restoration, science and youth employment projects. We have influenced much more Deepwater Horizon funding to help ensure its wise use for Gulf restoration.

Of the \$109.8 million in TNC projects supported by Deepwater Horizon Funding Sources:

TNC funded projects  
funding by project type

TNC funded projects  
funding by source



\* NRDA = Natural Resource Damage Assessment, National Oceanic and Atmospheric Administration | NFWF GEBF = National Fish and Wildlife Foundation Gulf Environmental Benefit Fund | NAS = The National Academies of Sciences, Engineering, and Medicine | RESTORE is a initiative of the Gulf Coast Ecosystem Restoration Council



The Nature Conservancy's goal in the Gulf of Mexico is to restore and sustain the natural systems within and that affect the Gulf such that those systems benefit human communities, provide habitat for the full range of plant and animal species, and make human and natural communities more resilient to change. We pursue this goal through four connected strategies: Protecting Freshwater Resources, Restoring Shorelines, Helping Communities Benefit from Gulf Restoration, and Cutting-Edge Science.



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