

RESTORE Council FPL 3 Proposal Document

General Information

Sponsor:

U.S. Department of Commerce – National Oceanographic and Atmospheric Administration

Title:

Gulf of Mexico Coast Conservation Corps (GulfCorps) Program

Project Abstract:

The U.S. Department of Commerce, through the National Oceanic and Atmospheric Administration (NOAA), is requesting \$15M in Council-Selected Restoration Component funding to implement the Gulf of Mexico Coast Conservation Corps (GulfCorps) Program for an additional 4 years. This would include implementation funds as FPL Category 1. Initially funded under the Council's 2015 Initial FPL, the GulfCorps program supports the primary RESTORE Comprehensive Plan goal of restoring and conserving habitat. GulfCorps organizations in each Gulf state will recruit, train, employ and help to inspire hundreds of young adults to produce habitat restoration benefits and become the Gulf of Mexico's future restoration workforce. GulfCorps will continue to collaborate with State, Federal and local agencies, and non-profit organizations to manage natural resources and implement restoration, conservation and resilience projects. Based on project input from RESTORE Council Members and local experts, the GulfCorps will implement habitat restoration, conservation and monitoring activities in a range of Gulf of Mexico habitats including marshes, prairies, forests, oyster reefs and shorelines. GulfCorps crews will also facilitate public access to Gulf habitats by building and maintaining boardwalks and trails.

GulfCorps program activities will contribute to the restoration of 8,000 acres of coastal habitat, providing employment opportunities for 300 young people across the Gulf region. The program will also provide 640,000 hours of labor for priority conservation projects in all five Gulf States. The GulfCorps Program duration is 4 years.

FPL Category: Cat1: Implementation Only

Activity Type: Program

Program: Gulf of Mexico Coast Conservation Corps (GulfCorps) Program

Co-sponsoring Agency(ies): N/A

Is this a construction project?:

No

RESTORE Act Priority Criteria:

(I) Projects that are projected to make the greatest contribution to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region, without regard to geographic location within the Gulf Coast region.

(II) Large-scale projects and programs that are projected to substantially contribute to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast ecosystem.

(III) Projects contained in existing Gulf Coast State comprehensive plans for the restoration and protection of natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and

coastal wetlands of the Gulf Coast region.

(IV) Projects that restore long-term resiliency of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands most impacted by the Deepwater Horizon oil spill.

Priority Criteria Justification:

Criteria I) Over a 4-year duration, NOAA proposes to continue the innovative GulfCorps program implementing high priority ecosystem and habitat restoration projects in all 5 states, while also training hundreds of young adults to become the Gulf's next generation restoration workforce and helping youth develop fundamental job skills. Through leveraging, partnerships, supportive networks and planning the program aims to become self-sustained. Criteria II) The GulfCorps program is designed to restore large scale coastal habitat by implementing priority conservation, restoration and resilience projects and activities benefitting 8,000 acres of the Gulf Coast, while providing career training to and promoting stewardship in local people in all five Gulf states. GulfCorps projects across the Gulf are conducted in a watershed-approach to conservation, restoration and resilience, and built upon each other along a natural line of ecological progression. Criteria III) GulfCorps provides the foundational labor for many projects found within state comprehensive plans. These project require the very same skills and expertise that GulfCorps members are developing and mastering, bringing local skilled labor into the restoration job market when and where it is needed most. Criteria IV) GulfCorps contributes to present-day and longer-term Gulf resilience by training a workforce to implement conservation, restoration, protection, and response activities. The education and professional development components build professionalism, trust, and strong relationships with project partners and agencies served by GulfCorps. These conditions promote a stewardship ethic that will support the resilience of the Gulf ecosystem for generations to follow and protect natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region through participants' personal connections to nature.

Project Duration (in years): 4

Goals

Primary Comprehensive Plan Goal:

Restore and Conserve Habitat

Primary Comprehensive Plan Objective:

Restore , Enhance, and Protect Habitats

Secondary Comprehensive Plan Objectives:

Promote Natural Resource Stewardship and Environmental Education

Secondary Comprehensive Plan Goals:

Enhance Community Resilience

PF Restoration Technique(s):

Create, restore, and enhance coastal wetlands, islands, shorelines and headlands: Protect natural shorelines

Promote natural resource stewardship and environmental education: Promote natural resource stewardship and environmental education

Protect and conserve coastal, estuarine, and riparian habitats: Habitat management and stewardship

Reduce excess nutrients and other pollutants to watersheds: Agriculture and forest management

Restore oyster habitat: Living shorelines

Location

Location:

This program will occur within the major coastal estuaries and habitats in each Gulf state. Crews will be based in the larger Gulf cities and work laterally across the Gulf within their respective state or area.

HUC8 Watershed(s):

Please see the RESTORE Council Gulfwide location information available at:

https://restorethegulf.gov/sites/default/files/Gulfwide%20Watersheds_Counties_CongressionalDistricts.pdf

State(s):

Texas

Alabama

Mississippi

Louisiana

Florida

County/Parish(es):

Please see the RESTORE Council Gulfwide location information available at:

https://restorethegulf.gov/sites/default/files/Gulfwide%20Watersheds_Counties_CongressionalDistricts.pdf

Congressional District(s):

Please see the RESTORE Council Gulfwide location information available at:

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Narratives

Introduction and Overview:

General Description: The suite of coastal habitats that make up the northern Gulf of Mexico, including coastal wetlands, submerged aquatic vegetation, and critical upland habitats, support valuable ecological, economic, and social services. Following the Deepwater Horizon Spill, agencies, task forces and trustee resource groups, including the RESTORE Council, have identified key restoration and recovery strategies for the Gulf of Mexico. The work implemented by the GulfCorps will continue to support those recovery strategies. The GulfCorps Program facilitates the restoration, conservation and stewardship of several of the highest priority habitats and watersheds across all 5 Gulf states. The Program is driven by the science, experience and planning of the agency and non-profit organizations that participate. GulfCorps provides a labor pool to help implement project partners' most important conservation, restoration and resilience efforts.

Comprehensive Plan goals and objectives: The initial GulfCorps program's goal aligned squarely with the Comprehensive Plan Goal 1, to restore and conserve habitat, and its objectives were met through the restoration, conservation and protection of habitat in all 5 Gulf states. The proposed continuation of GulfCorps shares the same priority goal and objective while adding the secondary goal of enhancing community resilience (Goal 4), by promoting natural resource stewardship, environmental education, and development of job skills.

Primary Goal - Restore and conserve habitat: GulfCorps projects across the Gulf are conducted in a watershed-approach to conservation, restoration and resilience. To do this, the Program works with resource experts in each state to identify and prioritize the most critical and high-value restoration sites, and the conservation and restoration practices that need to be applied to each site, over time. By taking a multi-habitat approach, the GulfCorps Program can address the primary goal, to restore and conserve habitat across the Gulf of Mexico.

Primary Objective - Restore, conserve and protect habitat: GulfCorps will restore, conserve and protect habitat by focusing the majority of project time managing vegetation, including invasive species treatment, reducing overgrowth, preparing for and participating in prescribed burns, and, propagating, growing and transplanting native species in marshes, mangroves, dunes and forests. Crews will also spend time installing living shorelines and other shoreline restoration-type projects. This work is often complemented by replacing, repairing or creating trails/boardwalks that are open to the public.

Secondary Goal - Enhance community resilience: The GulfCorps program will enhance community resilience in 3 ways: 1) by implementing restoration and conservation projects that make the Gulf of Mexico ecosystem and communities more resilient in the face of erosive wave conditions, wildfire, drought, flooding, hurricane response and recovery; 2) by exposing, employing and shepherding young people from communities that are often disproportionately impacted by environmental stressors into conservation and restoration related jobs and careers; and 3) by providing young people with quality subject matter and developmental training, through real-world work experience conducting restoration and conservation projects, as well as projects and response activities that enhance the resilience of nature and people in the Gulf.

Secondary Objective - Promote natural resource stewardship and environmental education: Promotion of natural resource stewardship and environmental education is a fundamental tenant of the entire program, occurring throughout the entire program from the recruitment of crew members to their post-program placement. The technical trainings are led by natural resource experts and professionals in the field from the partners and agencies that host GulfCorps projects. The Program will continue to incorporate training that increases the job preparedness of participants by creating and delivering expert soft skills and professional development learning that directly address the needs of each participant.

Environmental Benefits: Conservation, restoration and resilience projects to be implemented in all 5

Gulf states will include, but not be limited to, invasive species management through mechanical and chemical treatments; native vegetation planting across all coastal-zone habitat types; other vegetation management, such as brush and understory removal, forest thinning and prescribed fire; threatened/endangered species and habitat restoration and stewardship activities, such as pond restoration, red-cockaded woodpecker nest protection, sea turtle monitoring and creation/protection of nesting shorebird habitat; coastal habitat restoration and resilience through shoreline protection projects that build sand dunes, saltmarshes, intertidal oyster reefs and submerged aquatic vegetation; restoration of rare/threatened habitat types, such as pitcher plant bogs in Florida, Alabama and Mississippi, and coastal prairies in Louisiana and Texas. GulfCorps crews may also repair/maintain/create public recreational amenities, from trails, boardwalks and bird observatories to kayak launches to blueway/paddle trails to debris removal often needed at these areas.

Environmental Stressors: The Gulf is subject to a wide variety of natural stressors (e.g., drought, fluctuating temperatures, hurricanes, land subsidence, sea-level rise, and saltwater intrusion) and human stressors (e.g., river channelization causing alteration of important wetland flooding and sedimentation regimes; residential development; industrial activities including oil and gas extraction contributing to land loss; agricultural and wastewater discharges; trawling impacts to the sea floor; and invasive species). The GulfCorps' on-the-ground conservation activities will work to offset some of these human and environmental stressors.

Total Cost: \$15,000,000. Implementation 86%; Planning and accounting 10%, and Monitoring and Data Management 4%.

Timeline: The proposed program would operate for 4 years beginning in the Fall of 2021 and ending in the Summer/Fall of 2025. Each year crews will work from fall through the beginning or middle of the following summer. Work can begin immediately upon the authorization to proceed by the RESTORE Council. The crews will begin at the end of each summer and work through the beginning or middle of the following summer each year for 4 years, ending in the summer of 2025. GulfCorps will build upon existing NEPA-authorized project work, relationships and continued planning with project partners.

Partners: Program Partners: The GulfCorps Program's core team includes NOAA Fisheries who will act as the fiscal sponsor, environmental compliance lead, project advisor, and liaison to the RESTORE Council and Steering Committee. NOAA will partner with The Nature Conservancy, the implementation lead of the Program, who will manage the conservation and project planning, monitoring, subawards/contracts and overall operations components of GulfCrops. The Student Conservation Association will lead the development and implementation of annual orientations and will manage logistics for the region-wide, technical training of the conservation corps. The Corps Network will implement a professional development program intended to help the conservation corps prepare GulfCorps members and leaders for careers in conservation and restoration while actively assisting the placement of participants with opportunities that lead to those positions. The Forest Stewards Guild will be the technical training provider for the federally regulated certifications required for chainsaw operation and prescribed fire qualifications. Project Partners: The Program currently works with, and proposes to continue working with, over 60 distinct project partners from varying departments/offices within each agency and non-profits across all 5 Gulf states. Conservation Corps Partners: The proposed program model builds on the years of capacity building, planning, partnerships and collaboration between the Program Partners, Project Partners and Conservation Corps Partners (Corps) in all five Gulf states. The 6 Corps organizations that operate the 11 GulfCorps crews have helped to shape the Program's goals through the diversity of audiences that they serve.

FPL 3 Planning Framework: The goals and methods of the GulfCorps program align with the following framework approaches: create, restore, and enhance coastal wetlands, islands, shorelines, and headlands; protect and conserve coastal, estuarine and riparian habitats; Reduce excess nutrients and other pollutants to watersheds; and restore oyster habitat. The GulfCorps program also aligns with the techniques: protect natural shorelines; habitat management and stewardship, agriculture and forest management and living shorelines.

Proposed Methods :

The Program anticipates treating over 1,000 acres impacted by invasive species; enhancing 4,000 acres of wetlands, shorelines, and/or marsh; enhancing over 3,000 acres of coastal uplands and forest; and monitoring up to 1,000 acres of restored habitat within priority Gulf coast watersheds. To ensure the effectiveness of these restoration activities the GulfCorps program is using the best available science, an effective adaptive management framework, and a robust monitoring framework. GulfCorps has demonstrated that all of this is possible through employing local young people from the communities where the work is located. GulfCorps projects have been guided by the State-appointed RESTORE Act Representatives in Texas, Louisiana, Mississippi, Alabama and Florida. Program staff communicates with these representatives at a minimum of semi-annually to provide updates on the progress of the GulfCorps crews and to coordinate on project ideas and project partners for the crews in their state. Then, program staff coordinate further with staff of the various agencies and nonprofits on-the-ground to develop detailed scopes of work and schedules, and to determine training requirements and tool selection. These scopes of work are used to contract with the crews from each state and are simultaneously submitted for full NEPA review and authorization.

Approaches, Techniques and Methods: The proposed Gulf-wide Program will focus on four priority approaches: Create, restore, and enhance coastal wetlands, islands, shorelines, and headlands; Protect and conserve coastal, estuarine, and riparian habitats; Reduce excess nutrients and other pollutants to watersheds, and Restore oyster habitat. The techniques and specific methods for the projects will be guided by the project partners and will generally fall into the following approaches/methods:

Approach: Create, restore, and enhance coastal wetlands, islands, shorelines, and headlands

Technique: Protect natural shorelines

Methods:

- Living shoreline restoration including the placement of intertidal oyster reef breakwaters made from oyster shell, rock, concrete or other modular technologies. [4,12,16,19,28,30,33,45,47]
- Planting of native marsh and estuarine plants adjacent to the living shorelines. [28,30]
- Seed collection, propagation and transplantation of native wetland and saltmarsh plants through learning-based, assisted growing opportunities. [13]
- Rebuilding sand dunes using plants, sand fencing and other methods depending on the partner and project. [1,11]

Approach: Protect and conserve coastal, estuarine and riparian habitats

Technique: Habitat Management and Stewardship

Methods:

- Mechanically and chemically treating invasive plant and animal species. [13,44,46]
- Reforestation through planting of native trees and plants; seed collection, propagation and transplantation of native forest plants. [13,27]
- Assisting with the reintroduction, population management and habitat restoration of native endangered forest animals such as the Dusky gopher frog and Diamondback terrapin. [13,32]
- Prescribed fire application and preparation including reducing vegetative fuel loads through mechanical cutting of brush; installing and maintaining fire-breaks; and protecting the nesting,

rearing or feeding areas inhabited by endangered and threatened species. [39]

- Retrieving, removing, cataloging and disposing of debris from litter and from recent storm events. [26,29]
- Protecting habitat for nesting shorebirds and sea turtles by educating the public and installing/maintaining signage. [24, 29]
- Removing brush and reducing canopy cover by cutting trees, removing invasive species and introducing prescribed fire into pitcher plant bogs and coastal prairies along the beaches and coastlines. [13, 29]
- Repairing, maintaining and constructing public access boardwalks, trails and other amenities that prevent renegade trails, crossings and drive-overs within sensitive coastal habitats. [29]
- Implementation and advancement of goals set forth in the habitat restoration management priorities of the Program's project partners.

Approach: Restore oyster habitat

Technique: Living Shorelines

Methods:

- Recycling and curing oyster shells from restaurants. [4,8]
- Living shoreline restoration including the placement of intertidal oyster reef breakwaters made from oyster shell, rock, concrete or other modular technologies. [4,31]
- Rebuilding and maintaining living shorelines damaged after storm events. [31]

Gulf-wide Approaches and Techniques:

Comprehensive Plan Objective: Promote natural resource stewardship and environmental education

Techniques: Providing technical and non-technical training, professional development, work experience, and paid positions in restoration, conservation, resilience, and response fields.

Methods:

- Recruitment of the crews will occur primarily locally and regionally, and will strive to engage people from low-income, low-opportunity populations. Many of the young people that begin as GulfCorps crew members experience vigorous, demanding work for the first time in their lives. They are given the tools they will need to succeed, including soft-skills and professional development training. They are introduced to an industry many never knew existed and past crew members have been inspired to work in conservation and restoration-related fields.
- At the start of each season a program-wide GulfCorps orientation brings together members, leaders, and staff from each conservation corps for a multi-day, in-person training. This orientation provides an important balance between classroom and experiential learning. The goals of the GulfCorps orientation are to provide participants with a greater understanding of the value of restoring coastal habitats, expectations of the program, and the tools and framework to successfully complete their GulfCorps assignments. During orientation, members learn how the Deepwater Horizon oil spill impacted the coastal ecosystem. They also gain valuable understanding of how to properly conduct conservation and restoration work; resolve conflicts and work well as a team; be an effective leader in the field; advance their career and improve job readiness skills; collect data in the field; and manage risk at work sites. Incorporating project partners, who will eventually be supervising the work of the GulfCorps crews, into the training has proven to be an effective way to build trust between the crew and the partners.
- The professional development program is designed to assess the goals and gaps in each person's personal portfolio and develop a plan to meet the goals and fill the gaps through a series of adaptively designed training modules, assessments, surveys, assignments and workshops. These

activities range from updating a resume or refining interview skills to receiving training on work ethic, healthy eating and hydration, or balancing a budget. For example, during the first 2 years of GulfCorps, eight members worked with their corps organization to complete their high-school diplomas as the program was accepted by Franklin County Schools in Florida as an alternative learning opportunity that gives classroom credit. These efforts are necessary to meet the professional development goals of the proposed program: At the end of each season, depending on the needs for the following season, the GulfCorps team will work to place at least 70% of the crew members and leaders in jobs, internships, temporary placements, apprenticeships, promotions or careers in conservation and restoration-related fields. All trainings will be automatically tracked by crewmember and will be used to match members with employment opportunities that are in line with their experience and goals. When a pre-match is made, the probability of a member being qualified and interested in a placement opportunity is greater, leading to a higher chance of employer selection. Additionally, to ensure placement success, GulfCorps graduates will be supported and tracked for one year after their term of service at 3, 6, 9, and 12 month intervals.

- Restoration Training: In order to achieve the highest potential efficiency and effectiveness in the work that GulfCorps implements, participants will receive the following basic training: Wilderness First Aid/CPR, Wildland Firefighter Type II (Crewmember) S130/190, Wildland Firefighter Chainsaw Training (S212), Paddle Sport or Boating Safety, OSHA safety and construction training, Plant Identification, Herbicide Application/Safety, and other subject matter trainings based on the projects the crews will implement.

Environmental Benefits:

Total Anticipated Environmental Benefits:

8,000 acres restored or enhanced by conducting the following actions:

- Invasive Species Management: GulfCorps will map, treat, and reduce the coverage and prevalence of invasive plant and animal species on over 1,000 acres [14,18].
- Marsh/Wetland/Shoreline Restoration and/or Enhancement: GulfCorps crews will enhance wetlands, shorelines, and marsh on over 4,000 acres through a variety of restoration and conservation projects, including: planting native wetland/marsh species, restoring hydrologic functions, repairing and protecting shorelines, removing debris and trash, improving public amenities, removing overgrown brush, and conducting prescribed fire in wetlands, bogs, prairies and marshes across the Gulf [20,23,36,40].
- Coastal Upland and Forest Restoration and Conservation: GulfCorps crews will enhance over 3,000 acres of coastal uplands and forests within priority Gulf coast watersheds through a wide array of conservation techniques including: prescribed fire and fire-preparation, vegetation canopy clearing, fuels and brush reduction, debris removal, public amenity maintenance, endangered species habitat enhancements, and collecting ecological data to inform the progression of conservation needs [15,21].

Total Anticipated Economic Benefit:

-The program will operate 11 crews across the Gulf (2-3 crews per state). Each crew will support teams of 8 young adults, with 88 total participants a year for 4 years. The length of work season will grow each year, beginning with approximately 9 months in year 1, and expanding to 10-11 months in years 2-3, and 12 months in year 4.

-Over the 4 years, the GulfCorps projects to on-board 352 full-time corps member positions, 300 of which are estimated to complete their term based on current GulfCorps attrition rates.

Metrics:

Metric Title: RES005: Recreational improvements - # improvements to recreational infrastructure: Recreational improvements

Target: 28

Narrative: GulfCorps members' efforts will provide increased access, education, opportunity and improved public experience when members of the public use recreation amenities along the Gulf coast. Each year GulfCorps crews will complete at least 7 improvements to trails, boardwalks or other public use facilities across the Gulf for a total of 28 improvements

Metric Title: COI105: Economic benefits - % costs contracted to existing local organizations: Capacity, Outreach, Incentives

Target: 86

Narrative: This percentage is calculated by taking the full amount of the award and subtracting NOAA's administrative funds as well as the The Nature Conservancy's anticipated indirect costs.

Metrics:

Metric Title: RES005 : Recreational improvements - # improvements to recreational infrastructure

Target: 28

Narrative: GulfCorps members' efforts will provide increased access, education, opportunity and improved public experience when members of the public use recreation amenities along the Gulf coast. Each year GulfCorps crews will complete at least 7 improvements to trails, boardwalks or other public use facilities across the Gulf for a total of 28 improvements

Metric Title: COI105 : Economic benefits - % costs contracted to existing local organizations

Target: 86

Narrative: This percentage is calculated by taking the full amount of the award and subtracting NOAA's administrative funds as well as the The Nature Conservancy's anticipated indirect costs.

Metric Title: COI103 : Economic benefits - # temporary jobs created

Target: 300

Narrative: GulfCorps crew members will complete the following milestones to be considered a temporary job: 1) Full attendance at Orientation or completion of contractor-delivered orientation from the provided handbook, 2) One project-specific training course, 3) One industry certification, 4) Completion of the Individual Development Plan (IDP), and 5) Minimum of 640 hours (approximately 16 weeks) of project-related work experience.

Metric Title: PRM007 : Monitoring - Acres being monitored

Target: 1,000

Narrative: GulfCorps members will gather and record information that allows land managers to evaluate the performance of restoration, tell the 'story' of the project, and provide metrics of success of restoration.

Metric Title: HR008 : Removal of invasives - Acres restored

Target: 1,000

Narrative: Invasive plant and animal species often decrease the suitability and productivity of habitat for native organisms by shading out native plants, reducing freshwater availability and otherwise consuming food for native species. GulfCorps members will contribute to the restoration of coastal habitat through the mechanical removal and/or chemical treatment of

invasive plant species, and physical removal of invasive animal species such as Apple snails.

Metric Title: HR004 : Habitat restoration - Acres restored

Target: 3,000

Narrative: GulfCorps members will contribute to the enhancement of coastal upland habitat through efforts to improve hydrology, increase conservation, increase native vegetation viability, and other restoration techniques

Metric Title: HR013 : Wetland restoration - Acres restored

Target: 4,000

Narrative: GulfCorps members will contribute to the restoration of wetland habitat through restoration actions such as revegetation of emergent or submerged marsh vegetation, improvements to hydrology, creation or maintenance of living shorelines and creation or maintenance of reef structures in order to enhance wetland function. GulfCorps crews will restore at least 250 acres of wetland through planting and/or wetland creation, and they will enhance over 3,750 acres of wetland through stewardship, restoration, conservation and resilience activities such as vegetation management and thinning, debris removal and habitat protection.

Risk and Uncertainties:

The GulfCorps program constantly monitors, identifies and mitigates risks before they become elevated issues. The GulfCorps' ability to identify and overcome risks and uncertainties encountered to date has shown the program's unique ability to adapt to changing conditions. No major risks are expected in this continuation of the program.

Some risks and uncertainties that the GulfCorps Program could encounter, and the associated mitigation measures, include:

Catastrophic events - Events such as hurricanes [25], flooding [34,37], or wildfire [17] could impact crew operations or the project partner's ability to work with the crew if they are called to assist with emergency response and relief efforts. Mitigation of this risk was demonstrated during years 1 and 2 of the current program, when the Florida GulfCorps organization received a grant to provide full Community Emergency Response Training (CERT) for both of the Florida GulfCorps crews and the Mississippi GulfCorps crew. This training was completed less than a month before Hurricane Michael [5] hit Mexico Beach, FL as a Category 5 storm. The Apalachicola-based GulfCorps crew sprang into action before the storm hit to evacuate hospital patients and indigent people to places of refuge further inland from the storm. Along with the CERT training, the technical training (first aid/CPR, chainsaw, safety, and prescribed fire) and the soft skills training (operating under duress, conflict resolution) was directly transferable to the skills needed to respond to a disaster. This training allowed crews to safely clear trees from roads, restore access to and repair the homes of the elderly and indigent, distribute supplies, feed and comfort other relief workers and help to coordinate the response efforts of other organizations.

After a disaster the affected project partners are often unable to continue GulfCorps-based work for some time. The proposed GulfCorps program will train members in disaster response, allowing them to be useful to the community and project partners in which they serve when disasters occur and until project-based work can resume.

Climate change - Long-term impacts of climate change could affect the GulfCorps program if sea level rise [6,10,38,49], changes in rainfall patterns or increases in hurricane intensity [22] damage or impact completed projects. In most cases, the restoration efforts of the GulfCorps Program will buffer the impacts of climate change as they protect and enhance natural systems. Predicting and mitigating the impacts of climate change on GulfCorps projects is a task being addressed by

scientists and practitioners from within the land and resource management agencies and organizations that host the crews.

Weather extremes - Elements such as intense heat/cold, droughts, and sustained rainy seasons can negatively impact project work [35] and cause overages in time and reductions to productivity. Staff, crew leaders and project partners consider weather extremes a significant risk to the safety and to the work that crews undertake. Crews are prepared with “rainy-day” activities and are directed to avoid working in potentially dangerous situations.

Working with young adults - The GulfCorps Program works with young adults typically between the ages of 18-25. Challenges associated with working with this age group include behavioral issues, maintaining motivation, and potential work-related injuries. GulfCorps will continue to mitigate these risks by providing an in-depth orientation covering interpersonal and technical skills, expert soft-skills training, and personal/professional development opportunities.

Pre-risk mitigation measures:

Developing trusted relationships - Program staff work closely with the project partners to develop and implement projects. This close-knit relationship allows the parties to establish rapport and trust facilitating effective communication between them. When challenges do occur, trust is in place to work through and overcome issues associated with a project.

Effectively training members and staff - Thorough training for crew members allows them to safely conduct field work and function as a team. All participants, staff and many partners participate in a comprehensive orientation that provides training how to properly conduct conservation and restoration work, resolve conflict, work well as a team, properly use equipment and tools to conduct field work, and manage relationships and risks in the field. Corps staff and crew leaders receive training on GulfCorps Program reporting and data monitoring.

Diversifying project partners - The GulfCorps Program consists of 11 crews from 6 Conservation Corps, over 140 project sites, and more than 60 agency or nonprofit project partners. Although challenges may arise due to different ways that these entities function, the variety of partners in the Program is one of its greatest strengths. Partners are able to share successes and lessons learned which allows for a unique level of adaptability. The diversity in work also helps to reduce the mundane and keep crew morale high while also providing a broad array of work experience to each member.

Monitoring and Adaptive Management:

The GulfCorps program staff developed the GulfCorps Monitoring and Evaluation Handbook [9] in September 2019, it is built upon the National Academies of Sciences 2017 report “Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico” [42] and a number of other resources [2,3,7,26,41,43,48]. The Handbook provides a step-by-step monitoring protocol for choosing the most appropriate monitoring methods and walks the user through the process of accurately and consistently collecting data to track the progress and measures the effectiveness of the conservation or restoration work performed. The GulfCorps crews will focus on two types of ecological monitoring during the length of the award.

Implementation Monitoring - The GulfCorps project team created Project Implementation Tracking Sheets to record this type of monitoring data.

Performance Monitoring - Performance monitoring is used to determine whether the management

activities are having the desired habitat response. These basic indicators of restoration performance will provide critical understanding of the restoration activity over the short term and will also help establish a foundation of basic monitoring data for individual site locations that can be continued, and/or expanded upon by our project partners in the future. The performance criteria GulfCorps crews use when working on certain project types include:

Invasive Species (flora) Removal - Performance Criteria: Density and/or percent cover of target invasive species per m². Density and/or percent cover of target native species per m².

Flatwoods and Bog Restoration - Performance Criteria: Percent canopy cover of each sampling area. Percent cover of each ground-cover category per m². Leaf litter depth per m². Total basal area (calculated by project sponsor or others) per acre.

Invasive Species (fauna = Apple Snails) Removal - Performance Criteria: Density of snails and egg masses per m². Density and/or percent cover of target species per m².

Shoreline Restoration, Marsh Grass Planting - Performance Criteria: Percent cover of marsh grasses per m². Density of target native species per m².

Shoreline Restoration, Living Shorelines for Erosion Reduction and Shoreline Stabilization - Performance Criteria: Shoreline position change (positive or neutral depending on project). Percent cover of vegetation per m².

Data Management:

The Program collects implementation, performance and programmatic data across a wide geographic area and many project/activity types. The diversified nature of the data currently precludes using any one software to meet the data management needs. Program staff manage various types of documents on several systems to track all data generated by the grant, program and crews. Data is analyzed/stored in Microsoft or Google products in restricted folders on protected servers or in restricted Google drives. Program staff will continue to use current methods for data management while continuing to seek a solution to ease the amount of time/effort spent by staff tracking data in multiple systems. Data stored on the Google drive will be preserved for future use. Implementation data will be managed via Project Implementation Tracking Sheets developed from the GulfCorps Monitoring Guidebook while project-specific performance/programmatic data will be managed via electronic documents.

Program staff will submit semi-annual reports to NOAA that will lead to a capstone final report. This data will also be uploaded to NOAA's publicly available DIVER database (<https://www.diver.orr.noaa.gov/>) and the Program's public website (nature.org/gulfcorps) which houses factsheets, project sheets and periodic updates on the Program.

Collaboration:

The GulfCorps was initiated as a collaboration between NOAA, The Nature Conservancy and other project partners. The collaborative nature of the program extends to RESTORE Council members and to project partners. The GulfCorps relies on input from Council members and project partners to identify, plan and implement restoration actions in the Gulf States. NOAA has adaptively managed the program by seeking input from Council members and project partners to identify and implement program improvements including expanded work seasons and accelerated job placement training. Collaboration with internal and external partners has been critical to the development of a robust and GulfCorps program and NOAA intends to maintain this collaboration to implement and

adapt the program to meet the Council members' needs.

Public Engagement, Outreach, and Education:

The Program will continue to build on the first 3 years of its public engagement, outreach and education strategy. The Program has an Outreach and Education Coordinator who actively manages and collaborates on the Program's Facebook page (facebook.com/GulfCorps), contributes to substantive updates on the public website (nature.org/gulfcorps), coordinates film crew activities, drafts fact sheets and delivers presentations at regional/state conferences. Program staff also continually seek input from RESTORE Council representatives and staff, corps staff and crews, project partners, NOAA staff and community members on ways to engage Gulf communities in discussions on the importance of restoring and conserving the Gulf of Mexico ecosystems and economies to better serve future generations.

To date, GulfCorps, staff/members have attended/presented at numerous conferences and public meetings: Gulf of Mexico Alliance (GoMA) 2019 All Hands Meeting, Coastal and Estuarine Research Foundation 2020 Conference, 2019 Florida Deepwater Horizon Restoration Summit, the inaugural Alabama Governor's Restoration Summit and RESTORE Council public meetings in all 5 Gulf states. The Program partnered with GoMA on the Embrace the Gulf 2020 campaign to highlight the Gulf community, tourism, economy, education and environment 10 years post Deepwater Horizon. In July 2019 staff collaborated with NOAA's National Marine Fisheries Service on the Habitat Month campaign, posting on Twitter and Facebook. Crews also engaged in local outreach/education programs through project partner events, such as planting and cleanup days. Film crews from TNC, NOAA and Mary Kay Cosmetics featured crews from all 5 states in film projects that can be found on YouTube and the Program website.

Moving forward Program staff will continue to expand the communication strategy by actively updating the Facebook page and public website with crew member/partner highlights; videos produced by TNC, NOAA, and others; fact sheets; and upcoming events. Staff will explore ways to partner with institutions of higher learning to help members propel their careers post-GulfCorps. Staff will continue to present at conferences, retreats and other public gatherings and collaborate with other NGOs in encouraging communities to support their local Corps.

Leveraging:

Funds: \$200,000.00

Type: Bldg on Others

Status: Proposed

Source Type: Other

Description: Other Federal, State, and Not for Profit project partners will provide trainers for S212 Chainsaw Training and S130/190 Wildland Firefighter Type II including the arduous pack tests, and other training courses for participants. This will save the GulfCorps program the cost associated with these necessary certifications. Additional training will be provided as needed.

Funds: \$2,000,000.00

Type: Co-funding

Status: Proposed

Source Type: Other

Description: AmeriCorps, CNCS (Corporation for National Community Service) and other workforce and conservation corps funding programs will be used to supplement crew stipends through existing grant agreements and programs. As a result these leveraged co-funding sources will provide the operational budget needed to cover up to 25% of the costs needed to support a crew for a full year. Also, many GulfCorps members will be eligible to

receive educational award opportunities in the form of scholarships to cover expenses related to higher education or vocational training

Funds: \$9,200,000.00

Type: Bldg on Others

Status: Received

Source Type: Other Federal

Description: The continuation of the GulfCorps program will build upon the infrastructure and experience developed with investment of RESTORE Council FPL1 (and amendment) funding. Due to this previous investment, the GulfCorps would be able to start work immediately upon funding without a ramping up period.

Environmental Compliance:

As the lead federal agency for the GulfCorps Program, NOAA will complete applicable environmental compliance prior to the implementation of any GulfCorps on-the-ground work. Initially, the GulfCorps program will implement priority restoration activities through a series of previously approved, NEPA-authorized conservation, restoration and resilience projects sites throughout the Gulf of Mexico's coastal zone that have already completed required NEPA compliance. These 140 distinct projects (see attachment 1) are NEPA-compliant through 2025. The projects were identified based on input provided by state RESTORE Council representatives during the first four years of the program.

As new projects and sites as recommended for the program, NOAA will utilize Restoration Center's Programmatic Environmental Impact Statement (PEIS) to analyze environmental impacts and comply with NEPA [30]. The GulfCorps program proposes to continue project work at the compliant sites while annually adjusting the scopes of work and NEPA authorizations based on the progress of work and continuing opportunities that may arise.

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Budget

Project Budget Narrative:

The requested \$15,000,000 budget includes funding for planning, implementation, monitoring, and data management. Ten percent of the budget will be allocated towards planning activities including the identification of conservation and restoration projects, organizational development, and ensuring environmental compliance. The implementation budget (86% of the total) includes funding for 11 crews across the Gulf (2-3 crews per state). Each crew will support teams of 8 young adults, with 88 total participants a year for 4 years. The length of work season will grow each year, beginning with approximately 9 months in year 1, and expanding to 10-11 months in years 2-3, and 12 months in year 4. The implementation budget also includes personnel time and costs associated with the management and support of crews, crew leaders, and project outcomes. This includes partner personnel communications, management of the project budget, project logistics, performance issues, and other actions in direct support of the Corps team. The monitoring and adaptive management budget will provide for creating and maintaining the GulfCorps monitoring protocols and plans for each metric and project as well as providing comprehensive training on advanced monitoring and data collection techniques. The budget for data management includes maintaining publically available program data on a cloud-based data entry platform and on a public-facing server to make the data accessible to the interested public.

Total FPL 3 Project/Program Budget Request:
\$ 15,000,000.00

Estimated Percent Monitoring and Adaptive Management: 2 %

Estimated Percent Planning: 10 %

Estimated Percent Implementation: 86 %

Estimated Percent Project Management: N/A

Estimated Percent Data Management: 2 %

Estimated Percent Contingency: 0 %

Is the Project Scalable?:

Yes

If yes, provide a short description regarding scalability.:

The GulfCorps program can be modified if needed. For example, the number of young adult participants and the length of their work season can be scaled up or down. If required, a reduction in the number of participants would be preferred to shorter work terms, since shorter terms decrease efficiency significantly. The number of acres and amount of work hours are directly proportionate to the size of the crews and their planned duration. Therefore, any scaling down of the program would result in commensurate reductions to the Anticipated Benefits listed above. To maintain program viability, there is a limit to how much the program can be reduced.

Environmental Compliance¹

Environmental Requirement	Has the Requirement Been Addressed?	Compliance Notes (e.g., title and date of document, permit number, weblink etc.)
National Environmental Policy Act	Yes	All GulfCorps projects have complete NEPA via the NOAA Restoration Center PEIS. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start. Providing an example of NEPA documentation from GulfCorps Year 3 activities in Mississippi.
Endangered Species Act	Yes	As a part of the NEPA compliance process, ESA consultations with USFWS and NMFS have already been completed. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start. Providing an example of ESA documentation from GulfCorps Year 3 activities in Mississippi.
National Historic Preservation Act	Yes	as a part of the NEPA compliance process, NHPA consultations with state SHPOs have already been completed. The projects reviewed in year 3 are the same projects that will be

¹ Environmental Compliance document uploads available by request (restorecouncil@restorethegulf.gov).

		implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start.
Magnuson-Stevens Act	N/A	Note not provided.
Fish and Wildlife Conservation Act	N/A	Conducted in conjunction with the ESA consultation. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start.
Coastal Zone Management Act	N/A	as a part of the NEPA compliance process, CZMA consultations with coastal zone managers have already been completed. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start.
Coastal Barrier Resources Act	N/A	Conducted in conjunction with the ESA. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start.
Farmland Protection Policy Act	N/A	Note not provided.
Clean Water Act (Section 404)	N/A	Note not provided.

River and Harbors Act (Section 10)	N/A	Note not provided.
Marine Protection, Research and Sanctuaries Act	N/A	Note not provided.
Marine Mammal Protection Act	Yes	Conducted in conjunction with the ESA consultation. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start.
National Marine Sanctuaries Act	N/A	Note not provided.
Migratory Bird Treaty Act	Yes	Conducted in conjunction with the ESA consultation. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start.
Bald and Golden Eagle Protection Act	N/A	Conducted in conjunction with the ESA consultation. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start.
Clean Air Act	N/A	Note not provided.
Other Applicable Environmental Compliance Laws or Regulations	N/A	Note not provided.

Maps, Charts, Figures

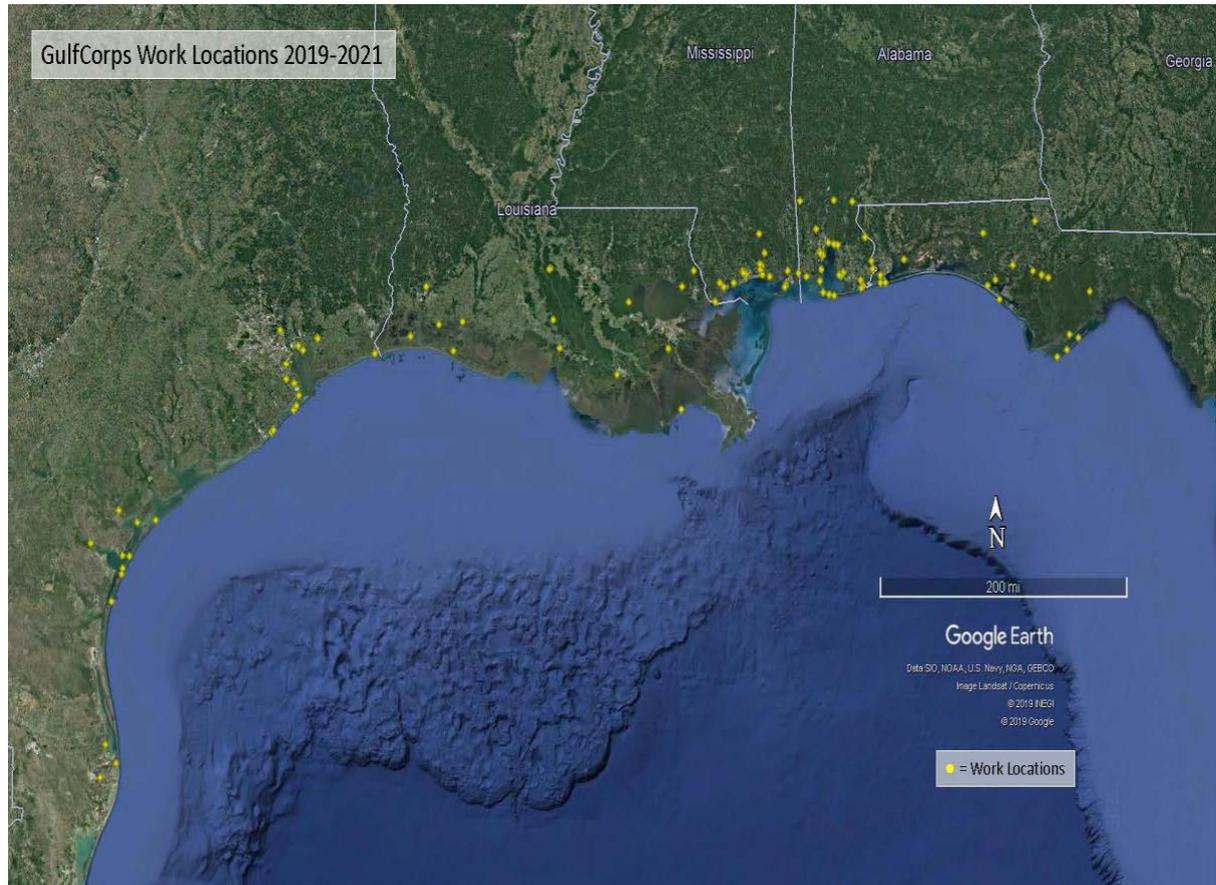


Figure 1: Map of Potential GulfCorps Sites-FPL3b

Other Uploads

Main Uploads_0:

Attachment 1-Proposed Project List for GulfCorps.pdf

Caption : N/A

[Link to Download](#)

<http://www.restorethegulf.gov/apps/piper/web/Uploads/Download/proposal/606/38>

Tables_2:

Attachment 1-Proposed Project List for GulfCorps.pdf

Table describing GulfCorps project locations with completed environmental compliance.

[Link to Download](#)

<http://www.restorethegulf.gov/apps/piper/web/Uploads/Download/proposal/603/38>

Tables_3:

Attachment 1-Proposed Project List for GulfCorps.pdf

Table describing GulfCorps project locations with completed environmental compliance.

[Link to Download](#)

<http://www.restorethegulf.gov/apps/piper/web/Uploads/Download/proposal/604/38>

RESTORE Council FPL 3 Proposal Document

General Information

Proposal Sponsor:

U.S. Department of Commerce - National Oceanic and Atmospheric Administration

Title:

Gulf of Mexico Coast Conservation Corps (GulfCorps) Program

Project Abstract:

NOAA is requesting \$15,000,000 to implement the GulfCorps Program for an additional 4 year period. GulfCorps organizations in each Gulf state will recruit, train, employ and help to inspire hundreds of young adults to produce tangible habitat restoration benefits and to become the Gulf of Mexico's future restoration workforce. GulfCorps will continue to collaborate with State, Federal and local agencies, and non-profit organizations to manage natural resources and implement sound restoration, conservation and resilience projects. The program will contribute to the restoration of 8,000 acres of coastal habitat and provide employment opportunities for 300 young people across the Gulf of Mexico region. The program will provide 640,000 hours of labor for priority conservation projects in all five Gulf States. Based on project input from RESTORE Council Members and local experts, the GulfCorps will implement habitat restoration, conservation and monitoring activities in a wide range of Gulf of Mexico habitats including marshes, prairies, forests, oyster reefs and shorelines. The GulfCorps crews will also facilitate public access to Gulf habitats by building and maintaining boardwalks and trails.

FPL Category: Cat1: Implementation Only

Activity Type: Program

Program: Gulf of Mexico Coast Conservation Corps (GulfCorps) Program

Co-sponsoring Agency(ies): N/A

Is this a construction project?

No

RESTORE Act Priority Criteria:

(I) Projects that are projected to make the greatest contribution to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region, without regard to geographic location within the Gulf Coast region.

(II) Large-scale projects and programs that are projected to substantially contribute to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast ecosystem.

(III) Projects contained in existing Gulf Coast State comprehensive plans for the restoration and protection of natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region.

(IV) Projects that restore long-term resiliency of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands most impacted by the Deepwater Horizon oil spill.

Priority Criteria Justification:

Criteria I) Over a 4-year duration, NOAA proposes to continue the innovative GulfCorps program implementing high priority ecosystem and habitat restoration projects in all 5 states, while also training hundreds of young adults to become the Gulf's next generation restoration workforce and helping youth develop fundamental job skills. Through leveraging, partnerships, supportive networks and planning the program aims to become self-sustained.

Criteria II) The GulfCorps program is designed to restore large scale coastal habitat by implementing priority conservation, restoration and resilience projects and activities benefitting 8,000 acres of the Gulf Coast, while providing career training to and promoting stewardship in local people in all five Gulf states. GulfCorps projects across the Gulf are conducted in a watershed-approach to conservation, restoration and resilience, and built upon each other along a natural line of ecological progression.

Criteria III) GulfCorps provides the foundational labor for many projects found within state comprehensive plans. These projects require the very same skills and expertise that GulfCorps members are developing and mastering, bringing local skilled labor into the restoration job market when and where it is needed most.

Criteria IV) GulfCorps contributes to present-day and longer-term Gulf resilience by training a workforce to implement conservation, restoration, protection, and response activities. The education and professional development components build professionalism, trust, and strong relationships with project partners and agencies served by GulfCorps. These conditions promote a stewardship ethic that will support the resilience of the Gulf ecosystem for generations to follow and protect natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region through participants' personal connections to nature.

Project Duration (in years): 4

Goals

Primary Comprehensive Plan Goal:

Restore and Conserve Habitat

Primary Comprehensive Plan Objective:

Restore , Enhance, and Protect Habitats

Secondary Comprehensive Plan Objectives:

Promote Natural Resource Stewardship and Environmental Education

Secondary Comprehensive Plan Goals:

Enhance Community Resilience

PF Restoration Technique(s):

- Create, restore, and enhance coastal wetlands, islands, shorelines and headlands: Protect natural shorelines
- Promote natural resource stewardship and environmental education: Promote natural resource stewardship and environmental education
- Protect and conserve coastal, estuarine, and riparian habitats: Habitat management and stewardship

- Reduce excess nutrients and other pollutants to watersheds: Agriculture and forest management
- Restore oyster habitat: Living shorelines

Location

Location:

This program will occur within the major coastal estuaries and habitats in each Gulf state. Crews will be based in the larger Gulf cities and work laterally across the Gulf within their respective state or area.

HUC8 Watershed(s):

Please see the RESTORE Council Gulfwide location information available at:

https://restorethegulf.gov/sites/default/files/Gulfwide%20Watersheds_Counties_CongressionalDistricts.pdf

State(s):

Texas

Alabama

Mississippi

Louisiana

Florida

County/Parish(es):

Please see the RESTORE Council Gulfwide location information available at:

https://restorethegulf.gov/sites/default/files/Gulfwide%20Watersheds_Counties_CongressionalDistricts.pdf

Congressional District(s):

Please see the RESTORE Council Gulfwide location information available at:

https://restorethegulf.gov/sites/default/files/Gulfwide%20Watersheds_Counties_CongressionalDistricts.pdf

Narratives

Introduction and Overview:

General Description: The suite of coastal habitats that make up the northern Gulf of Mexico, including coastal wetlands, submerged aquatic vegetation, and critical upland habitats, support valuable ecological, economic, and social services. Following the Deepwater Horizon Spill, agencies, task forces and trustee resource groups, including the RESTORE Council, have identified key restoration and recovery strategies for the Gulf of Mexico. The work implemented by the GulfCorps will continue to support those recovery strategies. The GulfCorps Program facilitates the restoration, conservation and stewardship of several of the highest priority habitats and watersheds across all 5 Gulf states. The Program is driven by the science, experience and planning of the agency and non-profit organizations that participate. GulfCorps provides a labor pool to help implement project partners' most important conservation, restoration and resilience efforts.

Comprehensive Plan goals and objectives: The initial GulfCorps program's goal aligned squarely with the Comprehensive Plan Goal 1, to restore and conserve habitat, and its objectives were met through the restoration, conservation and protection of habitat in all 5 Gulf states. The proposed continuation of GulfCorps shares the same priority goal and objective while adding the secondary goal of enhancing community resilience (Goal 4), by promoting natural resource stewardship, environmental education, and development of job skills.

Primary Goal - Restore and conserve habitat: GulfCorps projects across the Gulf are conducted in a watershed-approach to conservation, restoration and resilience. To do this, the Program works with resource experts in each state to identify and prioritize the most critical and high-value restoration sites, and the conservation and restoration practices that need to be applied to each site, over time. By taking a multi-habitat approach, the GulfCorps Program can address the primary goal, to restore and conserve habitat across the Gulf of Mexico.

Primary Objective - Restore, conserve and protect habitat: GulfCorps will restore, conserve and protect habitat by focusing the majority of project time managing vegetation, including invasive species treatment, reducing overgrowth, preparing for and participating in prescribed burns, and, propagating, growing and transplanting native species in marshes, mangroves, dunes and forests. Crews will also spend time installing living shorelines and other shoreline restoration-type projects. This work is often complemented by replacing, repairing or creating trails/boardwalks that are open to the public.

Secondary Goal - Enhance community resilience: The GulfCorps program will enhance community resilience in 3 ways: 1) by implementing restoration and conservation projects that make the Gulf of Mexico ecosystem and communities more resilient in the face of erosive wave conditions, wildfire, drought, flooding, hurricane response and recovery; 2) by exposing, employing and shepherding young people from communities that are often disproportionately impacted by environmental stressors into conservation and restoration related jobs and careers; and 3) by providing young people with quality subject matter and developmental training, through real-world work experience conducting restoration and conservation projects, as well as projects and response activities that enhance the resilience of nature and people in the Gulf.

Secondary Objective - Promote natural resource stewardship and environmental education: Promotion of natural resource stewardship and environmental education is a fundamental tenant of the entire program, occurring throughout the entire program from the recruitment of crew members to their post-program placement. The technical trainings are led by natural resource experts and professionals in the field from the partners and agencies that host GulfCorps projects. The Program will continue to incorporate training that increases the job preparedness of participants

by creating and delivering expert soft skills and professional development learning that directly address the needs of each participant.

Environmental Benefits: Conservation, restoration and resilience projects to be implemented in all 5 Gulf states will include, but not be limited to, invasive species management through mechanical and chemical treatments; native vegetation planting across all coastal-zone habitat types; other vegetation management, such as brush and understory removal, forest thinning and prescribed fire; threatened/endangered species and habitat restoration and stewardship activities, such as pond restoration, red-cockaded woodpecker nest protection, sea turtle monitoring and creation/protection of nesting shorebird habitat; coastal habitat restoration and resilience through shoreline protection projects that build sand dunes, saltmarshes, intertidal oyster reefs and submerged aquatic vegetation; restoration of rare/threatened habitat types, such as pitcher plant bogs in Florida, Alabama and Mississippi, and coastal prairies in Louisiana and Texas. GulfCorps crews may also repair/maintain/create public recreational amenities, from trails, boardwalks and bird observatories to kayak launches to blueway/paddle trails to debris removal often needed at these areas.

Environmental Stressors: The Gulf is subject to a wide variety of natural stressors (e.g., drought, fluctuating temperatures, hurricanes, land subsidence, sea-level rise, and saltwater intrusion) and human stressors (e.g., river channelization causing alteration of important wetland flooding and sedimentation regimes; residential development; industrial activities including oil and gas extraction contributing to land loss; agricultural and wastewater discharges; trawling impacts to the sea floor; and invasive species). The GulfCorps' on-the-ground conservation activities will work to offset some of these human and environmental stressors.

Total Cost: \$15,000,000. Implementation 86%; Planning and accounting 10%, and Monitoring and Data Management 4%.

Timeline: The proposed program would operate for 4 years beginning in the Fall of 2021 and ending in the Summer/Fall of 2025. Each year crews will work from fall through the beginning or middle of the following summer. Work can begin immediately upon the authorization to proceed by the RESTORE Council. The crews will begin at the end of each summer and work through the beginning or middle of the following summer each year for 4 years, ending in the summer of 2025. GulfCorps will build upon existing NEPA-authorized project work, relationships and continued planning with project partners.

Partners: Program Partners: The GulfCorps Program's core team includes NOAA Fisheries who will act as the fiscal sponsor, environmental compliance lead, project advisor, and liaison to the RESTORE Council and Steering Committee. NOAA will partner with The Nature Conservancy, the implementation lead of the Program, who will manage the conservation and project planning, monitoring, subawards/contracts and overall operations components of GulfCrops. The Student Conservation Association will lead the development and implementation of annual orientations and will manage logistics for the region-wide, technical training of the conservation corps. The Corps Network will implement a professional development program intended to help the conservation corps prepare GulfCorps members and leaders for careers in conservation and restoration while actively assisting the placement of participants with opportunities that lead to those positions. The Forest Stewards Guild will be the technical training provider for the federally regulated certifications required for chainsaw operation and prescribed fire qualifications. Project Partners: The Program currently works with, and proposes to continue working with, over 60 distinct project partners from varying departments/offices within each agency and non-profits across all 5 Gulf states. Conservation Corps Partners: The proposed program model builds on the years of capacity building,

planning, partnerships and collaboration between the Program Partners, Project Partners and Conservation Corps Partners (Corps) in all five Gulf states. The 6 Corps organizations that operate the 11 GulfCorps crews have helped to shape the Program's goals through the diversity of audiences that they serve.

FPL 3 Planning Framework: The goals and methods of the GulfCorps program align with the following framework approaches: create, restore, and enhance coastal wetlands, islands, shorelines, and headlands; protect and conserve coastal, estuarine and riparian habitats; Reduce excess nutrients and other pollutants to watersheds; and restore oyster habitat. The GulfCorps program also aligns with the techniques: protect natural shorelines; habitat management and stewardship, agriculture and forest management and living shorelines.

Proposed Methods:

The Program anticipates treating over 1,000 acres impacted by invasive species; enhancing 4,000 acres of wetlands, shorelines, and/or marsh; enhancing over 3,000 acres of coastal uplands and forest; and monitoring up to 1,000 acres of restored habitat within priority Gulf coast watersheds. To ensure the effectiveness of these restoration activities the GulfCorps program is using the best available science, an effective adaptive management framework, and a robust monitoring framework. GulfCorps has demonstrated that all of this is possible through employing local young people from the communities where the work is located. GulfCorps projects have been guided by the State-appointed RESTORE Act Representatives in Texas, Louisiana, Mississippi, Alabama and Florida. Program staff communicates with these representatives at a minimum of semi-annually to provide updates on the progress of the GulfCorps crews and to coordinate on project ideas and project partners for the crews in their state. Then, program staff coordinate further with staff of the various agencies and nonprofits on-the-ground to develop detailed scopes of work and schedules, and to determine training requirements and tool selection. These scopes of work are used to contract with the crews from each state and are simultaneously submitted for full NEPA review and authorization.

Approaches, Techniques and Methods: The proposed Gulf-wide Program will focus on four priority approaches: Create, restore, and enhance coastal wetlands, islands, shorelines, and headlands; Protect and conserve coastal, estuarine, and riparian habitats; Reduce excess nutrients and other pollutants to watersheds, and Restore oyster habitat. The techniques and specific methods for the projects will be guided by the project partners and will generally fall into the following approaches/methods:

Approach: Create, restore, and enhance coastal wetlands, islands, shorelines, and headlands

Technique: Protect natural shorelines

Methods:

- Living shoreline restoration including the placement of intertidal oyster reef breakwaters made from oyster shell, rock, concrete or other modular technologies. [3,8]
- Planting of native marsh and estuarine plants adjacent to the living shorelines. [8]
- Seed collection, propagation and transplantation of native wetland and saltmarsh plants through learning-based, assisted growing opportunities. [5]
- Rebuilding sand dunes using plants, sand fencing and other methods depending on the partner and project. [1]
- Mechanically and chemically treating invasive plant and animal species. [5]
- Protecting habitat for nesting shorebirds and sea turtles by educating the public and installing/maintaining signage. [6,7]

- Removing brush and reducing canopy cover by cutting trees, removing invasive species and introducing prescribed fire into pitcher plant bogs and coastal prairies along the beaches and coastlines. [5,7]
- Repairing, maintaining and constructing public access boardwalks, trails and other amenities that prevent renegade trails, crossings and drive-overs within sensitive coastal habitats. [7]

Approach: Protect and conserve coastal, estuarine and riparian habitats

Technique: Habitat Management and Stewardship

Methods:

- Mechanically and chemically treating invasive plant and animal species. [5]
- Reforestation through planting of native trees and plants; seed collection, propagation and transplantation of native forest plants. [5]
- Assisting with the reintroduction, population management and habitat restoration of native endangered forest animals such as the Dusky gopher frog and Diamondback terrapin. [5]
- Prescribed fire application and preparation including reducing vegetative fuel loads through mechanical cutting of brush; installing and maintaining fire-breaks; and protecting the nesting, rearing or feeding areas inhabited by endangered and threatened species. [10]
- Retrieving, removing, cataloging and disposing of debris from litter and from recent storm events. [7]
- Implementation and advancement of goals set forth in the habitat restoration management priorities of the Program's project partners.

Approach: Reduce excess nutrients and other pollutants to watersheds

Technique: Agriculture and Forest Management

Methods:

- Mechanically and chemically treating invasive plant and animal species. [5]
- Reforestation through planting of native trees and plants; seed collection, propagation and transplantation of native forest plants. [5]
- Prescribed fire application and preparation including reducing vegetative fuel loads through mechanical cutting of brush, and installing and maintaining fire-breaks. [10]

Approach: Restore oyster habitat

Technique: Living Shorelines

Methods:

- Recycling and curing oyster shells from restaurants. [3]
- Living shoreline restoration including the placement of intertidal oyster reef breakwaters made from oyster shell, rock, concrete or other modular technologies. [3,9]
- Rebuilding and maintaining living shorelines damaged after storm events. [9]

Gulf-wide Approaches and Techniques:

Comprehensive Plan Objective: Promote natural resource stewardship and environmental education

Techniques: Providing technical and non-technical training, professional development, work experience, and paid positions in restoration, conservation, resilience, and response fields.

Methods:

- Recruitment of the crews will occur primarily locally and regionally, and will strive to engage people from low-income, low-opportunity populations. Many of the young people that begin as GulfCorps crew members experience vigorous, demanding work for the first time in their lives. They are given the tools they will need to succeed, including soft-skills and professional development training. They are introduced to an industry many never knew existed and past

crew members have been inspired to work in conservation and restoration-related fields.

- At the start of each season a program-wide GulfCorps orientation brings together members, leaders, and staff from each conservation corps for a multi-day, in-person training. This orientation provides an important balance between classroom and experiential learning. The goals of the GulfCorps orientation are to provide participants with a greater understanding of the value of restoring coastal habitats, expectations of the program, and the tools and framework to successfully complete their GulfCorps assignments. During orientation, members learn how the Deepwater Horizon oil spill impacted the coastal ecosystem. They also gain valuable understanding of how to properly conduct conservation and restoration work; resolve conflicts and work well as a team; be an effective leader in the field; advance their career and improve job readiness skills; collect data in the field; and manage risk at work sites. Incorporating project partners, who will eventually be supervising the work of the GulfCorps crews, into the training has proven to be an effective way to build trust between the crew and the partners.
- The professional development program is designed to assess the goals and gaps in each person's personal portfolio and develop a plan to meet the goals and fill the gaps through a series of adaptively designed training modules, assessments, surveys, assignments and workshops. These activities range from updating a resume or refining interview skills to receiving training on work ethic, healthy eating and hydration, or balancing a budget. For example, during the first 2 years of GulfCorps, eight members worked with their corps organization to complete their high-school diplomas as the program was accepted by Franklin County Schools in Florida as an alternative learning opportunity that gives classroom credit. These efforts are necessary to meet the professional development goals of the proposed program: At the end of each season, depending on the needs for the following season, the GulfCorps team will work to place at least 70% of the crew members and leaders in jobs, internships, temporary placements, apprenticeships, promotions or careers in conservation and restoration-related fields. All trainings will be automatically tracked by crewmember and will be used to match members with employment opportunities that are in line with their experience and goals. When a pre-match is made, the probability of a member being qualified and interested in a placement opportunity is greater, leading to a higher chance of employer selection. Additionally, to ensure placement success, GulfCorps graduates will be supported and tracked for one year after their term of service at 3, 6, 9, and 12-month intervals.
- Restoration Training: In order to achieve the highest potential efficiency and effectiveness in the work that GulfCorps implements, participants will receive the following basic training: Wilderness First Aid/CPR, Wildland Firefighter Type II (Crewmember) S130/190, Wildland Firefighter Chainsaw Training (S212), Paddle Sport or Boating Safety, OSHA safety and construction training, Plant Identification, Herbicide Application/Safety, and other subject matter trainings based on the projects the crews will implement.

Environmental Benefits:

Total Anticipated Environmental Benefits:

8,000 acres restored or enhanced by conducting the following actions:

- Invasive Species Management: GulfCorps will map, treat, and reduce the coverage and prevalence of invasive plant and animal species on over 1,000 acres.
- Marsh/Wetland/Shoreline Restoration and/or Enhancement: GulfCorps crews will enhance wetlands, shorelines, and marsh on over 4,000 acres through a variety of restoration and conservation projects, including: planting native wetland/marsh species, restoring hydrologic functions, repairing and protecting shorelines, removing debris and trash, improving public amenities, removing overgrown brush, and conducting prescribed fire in wetlands, bogs, prairies and marshes across the Gulf.
- Coastal Upland and Forest Restoration and Conservation: GulfCorps crews will enhance over 3,000 acres of coastal uplands and forests within priority Gulf coast watersheds through a wide array of conservation techniques including: prescribed fire and fire-preparation, vegetation canopy clearing, fuels and brush reduction, debris removal, public amenity maintenance, endangered species habitat enhancements, and collecting ecological data to inform the progression of conservation needs.

Total Anticipated Economic Benefit:

-The program will operate 11 crews across the Gulf (2-3 crews per state). Each crew will support teams of 8 young adults, with 88 total participants a year for 4 years. The length of work season will grow each year, beginning with approximately 9 months in year 1, and expanding to 10-11 months in years 2-3, and 12 months in year 4.

-Over the 4 years, the GulfCorps projects to on-board 352 full-time corpsmember positions, 300 of which are estimated to complete their term based on current GulfCorps attrition rates.

Metrics:

Metric Title: RES005: Recreational improvements - # improvements to recreational infrastructure:
Recreational improvements

Target: 28

Narrative: GulfCorps members' efforts will provide increased access, education, opportunity and improved public experience when members of the public use recreation amenities along the Gulf coast. Each year GulfCorps crews will complete at least 7 improvements to trails, boardwalks or other public use facilities across the Gulf for a total of 28 improvements

Metric Title: COI105: Economic benefits - % costs contracted to existing local organizations:
Capacity, Outreach, Incentives

Target: 86

Narrative: This percentage is calculated by taking the full amount of the award and subtracting NOAA's administrative funds as well as the The Nature Conservancy's anticipated indirect costs.

Metric Title: COI101: Economic benefits - # full-time permanent jobs created: Capacity, Outreach, Incentives

Target: 300

Narrative: GulfCorps crew members will complete the following milestones to be considered a permanent full time job: 1) Full attendance at Orientation or completion of contractor-delivered orientation from the provided handbook, 2) One project-specific training course, 3) One industry certification, 4) Completion of the Individual Development Plan (IDP), and 5) Minimum of 640 hours (approximately 16 weeks) of project-related work experience.

Metric Title: PRM007: Monitoring - Acres being monitored: Planning, Research, Monitoring

Target: 1,000

Narrative: GulfCorps members will gather and record information that allows land managers to evaluate the performance of restoration, tell the 'story' of the project, and provide metrics of success of restoration.

Metric Title: HR008: Removal of invasives - Acres restored: Habitat Restoration

Target: 1,000

Narrative: Invasive plant and animal species often decrease the suitability and productivity of habitat for native organisms by shading out native plants, reducing freshwater availability and otherwise consuming food for native species. GulfCorps members will contribute to the restoration of coastal habitat through the mechanical removal and/or chemical treatment of invasive plant species, and physical removal of invasive animal species such as Apple snails.

Metric Title: HR004: Habitat restoration - Acres restored: Habitat Restoration

Target: 3,000

Narrative: GulfCorps members will contribute to the enhancement of coastal upland habitat through efforts to improve hydrology, increase conservation, increase native vegetation viability, and other restoration techniques

Metric Title: HR013: Wetland restoration - Acres restored : Habitat Restoration

Target: 4,000

Narrative: GulfCorps members will contribute to the restoration of wetland habitat through restoration actions such as revegetation of emergent or submerged marsh vegetation, improvements to hydrology, creation or maintenance of living shorelines and creation or maintenance of reef structures in order to enhance wetland function. GulfCorps crews will restore at least 250 acres of wetland through planting and/or wetland creation, and they will enhance over 3,750 acres of wetland through stewardship, restoration, conservation and resilience activities such as vegetation management and thinning, debris removal and habitat protection.

Risk and Uncertainties:

The GulfCorps program constantly monitors, identifies and mitigates risks before they become elevated issues. The GulfCorps' ability to identify and overcome risks and uncertainties encountered to date has shown the program's unique ability to adapt to changing conditions. No major risks are expected in this continuation of the program.

Some risks and uncertainties that the GulfCorps Program could encounter, and the associated mitigation measures, include:

Catastrophic events - Events such as hurricanes, flooding, or wildfire could impact crew operations or the project partner's ability to work with the crew if they are called to assist with emergency response and relief efforts. Mitigation of this risk was demonstrated during years 1 and 2 of the current program, when the Florida GulfCorps organization received a grant to provide full Community Emergency Response Training (CERT) for both of the Florida GulfCorps crews and the Mississippi GulfCorps crew. This training was completed less than a month before Hurricane Michael hit Mexico Beach, FL as a Category 5 storm. The Apalachicola-based GulfCorps crew sprang into action before the storm hit to evacuate hospital patients and indigent people to places of refuge further inland from the storm. Along with the CERT training, the technical training (first aid/CPR, chainsaw, safety, and prescribed fire) and the soft skills training (operating under duress, conflict resolution) was directly transferable to the skills needed to respond to a disaster. This training allowed crews to safely clear trees from roads, restore access to and repair the homes of the elderly and indigent, distribute supplies, feed and comfort other relief workers and help to coordinate the response efforts of other organizations.

After a disaster the affected project partners are often unable to continue GulfCorps-based work for some time. The proposed GulfCorps program will train members in disaster response, allowing them to be useful to the community and project partners in which they serve when disasters occur and until project-based work can resume.

Climate change - Long-term impacts of climate change could affect the GulfCorps program if sea level rise, changes in rainfall patterns or increases in hurricane intensity damage or impact completed projects. In most cases, the restoration efforts of the GulfCorps Program will buffer the impacts of climate change as they protect and enhance natural systems. Predicting and mitigating the impacts of climate change on GulfCorps projects is a task being addressed by scientists and practitioners from within the land and resource management agencies and organizations that host the crews.

Weather extremes - Elements such as intense heat/cold, droughts, and sustained rainy seasons can negatively impact project work and cause overages in time and reductions to productivity. Staff, crew leaders and project partners consider weather extremes a significant risk to the safety and to the work that crews undertake. Crews are prepared with "rainy-day" activities and are directed to avoid working in potentially dangerous situations.

Working with young adults - The GulfCorps Program works with young adults typically between the ages of 18-25. Challenges associated with working with this age group include behavioral issues, maintaining motivation, and potential work-related injuries. GulfCorps will continue to mitigate these risks by providing an in-depth orientation covering interpersonal and technical skills, expert soft-skills training, and personal/professional development opportunities.

Pre-risk mitigation measures:

Developing trusted relationships - Program staff work closely with the project partners to develop and implement projects. This close-knit relationship allows the parties to establish rapport and trust

facilitating effective communication between them. When challenges do occur, trust is in place to work through and overcome issues associated with a project.

Effectively training members and staff - Thorough training for crew members allows them to safely conduct field work and function as a team. All participants, staff and many partners participate in a comprehensive orientation that provides training how to properly conduct conservation and restoration work, resolve conflict, work well as a team, properly use equipment and tools to conduct field work, and manage relationships and risks in the field. Corps staff and crew leaders receive training on GulfCorps Program reporting and data monitoring.

Diversifying project partners - The GulfCorps Program consists of 11 crews from 6 Conservation Corps, over 140 project sites, and more than 60 agency or nonprofit project partners. Although challenges may arise due to different ways that these entities function, the variety of partners in the Program is one of its greatest strengths. Partners are able to share successes and lessons learned which allows for an unique level of adaptability. The diversity in work also helps to reduce the mundane and keep crew morale high while also providing a broad array of work experience to each member.

Monitoring and Adaptive Management:

The GulfCorps program staff developed the GulfCorps Monitoring and Evaluation Handbook [4] in September 2019, it is built upon the National Academies of Sciences 2017 report “Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico” [12] and a number of other resources [2,11,13]. The Handbook provides a step-by-step monitoring protocol for choosing the most appropriate monitoring methods and walks the user through the process of accurately and consistently collecting data to track the progress and measures the effectiveness of the conservation or restoration work performed. The GulfCorps crews will focus on two types of ecological monitoring during the length of the award.

Implementation Monitoring - The GulfCorps project team created Project Implementation Tracking Sheets to record this type of monitoring data.

Performance Monitoring - Performance monitoring is used to determine whether the management activities are having the desired habitat response. These basic indicators of restoration performance will provide critical understanding of the restoration activity over the short term and will also help establish a foundation of basic monitoring data for individual site locations that can be continued, and/or expanded upon by our project partners in the future. The performance criteria GulfCorps crews use when working on certain project types include:

Invasive Species (flora) Removal - Performance Criteria: Density and/or percent cover of target invasive species per m². Density and/or percent cover of target native species per m².

Flatwoods and Bog Restoration - Performance Criteria: Percent canopy cover of each sampling area. Percent cover of each ground-cover category per m². Leaf litter depth per m². Total basal area (calculated by project sponsor or others) per acre.

Invasive Species (fauna = Apple Snails) Removal - Performance Criteria: Density of snails and egg masses per m². Density and/or percent cover of target species per m².

Shoreline Restoration, Marsh Grass Planting - Performance Criteria: Percent cover of marsh grasses per m². Density of target native species per m².

Shoreline Restoration, Living Shorelines for Erosion Reduction and Shoreline Stabilization -

Performance Criteria: Shoreline position change (positive or neutral depending on project). Percent cover of vegetation per m2.

Data Management:

The Program collects implementation, performance and programmatic data across a wide geographic area and many project/activity types. The diversified nature of the data currently precludes using any one software to meet the data management needs. Program staff manage various types of documents on several systems to track all data generated by the grant, program and crews. Data is analyzed/stored in Microsoft or Google products in restricted folders on protected servers or in restricted Google drives. Program staff will continue to use current methods for data management while continuing to seek a solution to ease the amount of time/effort spent by staff tracking data in multiple systems. Data stored on the Google drive will be preserved for future use. Implementation data will be managed via Project Implementation Tracking Sheets developed from the GulfCorps Monitoring Guidebook while project-specific performance/programmatic data will be managed via electronic documents.

Program staff will submit semi-annual reports to NOAA that will lead to a capstone final report. This data will also be uploaded to NOAA's publicly available DIVER database (<https://www.diver.orr.noaa.gov/>) and the Program's public website (nature.org/gulfcorps) which houses factsheets, project sheets and periodic updates on the Program.

Collaboration:

The GulfCorps was initiated as a collaboration between NOAA, The Nature Conservancy and other project partners. The collaborative nature of the program extends to RESTORE Council members and to project partners. The GulfCorps relies on input from Council members and project partners to identify, plan and implement restoration actions in the Gulf States. NOAA has adaptively managed the program by seeking input from Council members and project partners to identify and implement program improvements including expanded work seasons and accelerated job placement training. Collaboration with internal and external partners has been critical to the development of a robust and GulfCorps program and NOAA intends to maintain this collaboration to implement and adapt the program to meet the Council members' needs.

Public Engagement, Outreach, and Education:

The Program will continue to build on the first 3 years of its public engagement, outreach and education strategy. The Program has an Outreach and Education Coordinator who actively manages and collaborates on the Program's Facebook page (facebook.com/GulfCorps), contributes to substantive updates on the public website (nature.org/gulfcorps), coordinates film crew activities, drafts fact sheets and delivers presentations at regional/state conferences. Program staff also continually seek input from RESTORE Council representatives and staff, corps staff and crews, project partners, NOAA staff and community members on ways to engage Gulf communities in discussions on the importance of restoring and conserving the Gulf of Mexico ecosystems and economies to better serve future generations.

To date, GulfCorps, staff/members have attended/presented at numerous conferences and public meetings: Gulf of Mexico Alliance (GoMA) 2019 All Hands Meeting, Coastal and Estuarine Research Foundation 2020 Conference, 2019 Florida Deepwater Horizon Restoration Summit, the inaugural Alabama Governor's Restoration Summit and RESTORE Council public meetings in all 5 Gulf states. The Program partnered with GoMA on the Embrace the Gulf 2020 campaign to highlight the Gulf community, tourism, economy, education and environment 10 years post Deepwater Horizon. In July 2019 staff collaborated with NOAA's National Marine Fisheries Service on the Habitat Month campaign, posting on Twitter and Facebook. Crews also engaged in local outreach/education programs through project partner events, such as planting and cleanup days. Film crews from TNC,

NOAA and Mary Kay Cosmetics featured crews from all 5 states in film projects that can be found on YouTube and the Program website.

Moving forward Program staff will continue to expand the communication strategy by actively updating the Facebook page and public website with crew member/partner highlights; videos produced by TNC, NOAA, and others; fact sheets; and upcoming events. Staff will explore ways to partner with institutions of higher learning to help members propel their careers post-GulfCorps. Staff will continue to present at conferences, retreats and other public gatherings and collaborate with other NGOs in encouraging communities to support their local Corps.

Leveraging:

Funds: \$200,000.00

Type: Bldg on Others

Status: Proposed

Source Type: Other

Description: Other Federal, State, and Not for Profit project partners will provide trainers for S212 Chainsaw Training and S130/190 Wildland Firefighter Type II including the arduous pack tests, and other training courses for participants. This will save the GulfCorps program the cost associated with these necessary certifications. Additional training will be provided as needed.

Funds: \$2,000,000.00

Type: Co-funding

Status: Proposed

Source Type: Other

Description: AmeriCorps, CNCS (Corporation for National Community Service) and other workforce and conservation corps funding programs will be used to supplement crew stipends through existing grant agreements and programs. As a result these leveraged co-funding sources will provide the operational budget needed to cover up to 25% of the costs needed to support a crew for a full year. Also, many GulfCorps members will be eligible to receive educational award opportunities in the form of scholarships to cover expenses related to higher education or vocational training

Funds: \$9,200,000.00

Type: Bldg on Others

Status: Received

Source Type: Other Federal

Description: The continuation of the GulfCorps program will build upon the infrastructure and experience developed with investment of RESTORE Council FPL1 (and amendment) funding. Due to this previous investment, the GulfCorps would be able to start work immediately upon funding without a ramping up period.

Environmental Compliance:

As the lead federal agency for the GulfCorps Program, NOAA will complete applicable environmental compliance prior to the implementation of any GulfCorps on-the-ground work. Initially, the GulfCorps program will implement priority restoration activities through a series of previously approved, NEPA-authorized conservation, restoration and resilience projects sites throughout the Gulf of Mexico's coastal zone that have already completed required NEPA compliance. These 140 distinct projects (see attachment 1) are NEPA-compliant through 2025. The projects were identified based on input provided by state RESTORE Council representatives during the first four years of the program.

As new projects and sites as recommended for the program, NOAA will utilize Restoration Center's Programmatic Environmental Impact Statement (PEIS) to analyze environmental impacts and comply with NEPA [8]. The GulfCorps program proposes to continue project work at the compliant sites while annually adjusting the scopes of work and NEPA authorizations based on the progress of work and continuing opportunities that may arise.

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8. National Oceanic and Atmospheric Administration Restoration Center. 2015. Final Programmatic Environmental Impact Statement for habitat restoration activities implemented throughout the coastal United States.
9. National Oceanic and Atmospheric Administration. 2015. Guidance for the Use of Living Shorelines. Accessed 27 March 2019. https://www.habitatblueprint.noaa.gov/wp-content/uploads/2018/01/NOAA-Guidance-for-Considering-the-Use-of-Living-Shorelines_2015.pdf
10. St. Joseph Bay State Buffer Preserve. 2016. St. Joseph Bay State Buffer Preserve Management Plan. Accessed 3 March 2020. <http://publicfiles.dep.state.fl.us/cama/plans/St-Joseph-Bay-State-BP-Management-Plan.pdf>
11. Thayer, G.W., T.A. McTigue, R.J. Salz, D.H. Merkey, F.M. Burrows, and P.F. Gayaldo, eds. 2005. Science-Based Restoration Monitoring of Coastal Habitats, Volume Two: Tools for Monitoring Coastal Habitats. NOAA Coastal Ocean Program Decision Analysis Series No. 23. Silver Spring, NOAA National Centers for Coastal Ocean Science.
12. The National Academies of Sciences, Engineering, and Medicine. 2017. Effective Monitoring to

Evaluate Ecological Restoration in the Gulf of Mexico. Washington, DC: The National Academies Press. doi: 10.17226/23476.

13. Woodward, Andrea, and Hollar, Kathy, 2011, Monitoring habitat restoration projects: U.S. Fish and Wildlife Service Pacific Region Partners for Fish and Wildlife Program and Coastal Program Protocol. U.S. Geological Survey Techniques and Methods 2-A11, 36 p.

Budget

Project Budget Narrative:

The requested \$15,000,000 budget includes funding for planning, implementation, monitoring, and data management. Ten percent of the budget will be allocated towards planning activities including the identification of conservation and restoration projects, organizational development, and ensuring environmental compliance. The implementation budget (86% of the total) includes funding for 11 crews across the Gulf (2-3 crews per state). Each crew will support teams of 8 young adults, with 88 total participants a year for 4 years. The length of work season will grow each year, beginning with approximately 9 months in year 1, and expanding to 10-11 months in years 2-3, and 12 months in year 4. The implementation budget also includes personnel time and costs associated with the management and support of crews, crew leaders, and project outcomes. This includes partner personnel communications, management of the project budget, project logistics, performance issues, and other actions in direct support of the Corps team. The monitoring and adaptive management budget will provide for creating and maintaining the GulfCorps monitoring protocols and plans for each metric and project as well as providing comprehensive training on advanced monitoring and data collection techniques. The budget for data management includes maintaining publically available program data on a cloud-based data entry platform and on a public-facing server to make the data accessible to the interested public.

Total FPL 3 Project/Program Budget Request:
\$ 15,000,000.00

Estimated Percent Monitoring and Adaptive Management: 2 %

Estimated Percent Planning: 10 %

Estimated Percent Implementation: 86 %

Estimated Percent Project Management: N/A

Estimated Percent Data Management: 2 %

Estimated Percent Contingency: 0 %

Is the Project Scalable?

Yes

If yes, provide a short description regarding scalability.:

The GulfCorps program can be modified if needed. For example, the number of young adult participants and the length of their work season can be scaled up or down. If required, a reduction in the number of participants would be preferred to shorter work terms, since shorter terms decrease efficiency significantly. The number of acres and amount of work hours are directly proportionate to the size of the crews and their planned duration. Therefore, any scaling down of the program would result in commensurate reductions to the Anticipated Benefits listed above. To maintain program viability, there is a limit to how much the program can be reduced.

Environmental Compliance¹

Environmental Requirement	Has the Requirement Been Addressed?	Compliance Notes (e.g.,title and date of document, permit number, weblink etc.)
National Environmental Policy Act	Yes	All GulfCorps projects have complete NEPA via the NOAA Restoration Center PEIS. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start. Providing an example of NEPA documentation from GulfCorps Year 3 activities in Mississippi.
Endangered Species Act	Yes	As a part of the NEPA compliance process, ESA consultations with USFWS and NMFS have already been completed. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start. Providing an example of ESA documentation from GulfCorps Year 3 activities in Mississippi.
National Historic Preservation Act	Yes	as a part of the NEPA compliance process, NHPA consultations with state SHPOs have already been completed. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start.
Magnuson-Stevens Act	N/A	Note not provided.
Fish and Wildlife Conservation Act	N/A	Conducted in conjunction with the ESA consultation. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start.
Coastal Zone Management Act	N/A	as a part of the NEPA compliance process, CZMA consultations with coastal zone managers have already been completed. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation

¹ Environmental Compliance document uploads available by request (restorecouncil@restorethegulf.gov).

		will have all environmental compliance completed before groundbreaking activities start.
Coastal Barrier Resources Act	N/A	Conducted in conjunction with the ESA. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start.
Farmland Protection Policy Act	N/A	Note not provided.
Clean Water Act (Section 404)	N/A	Note not provided.
River and Harbors Act (Section 10)	N/A	Note not provided.
Marine Protection, Research and Sanctuaries Act	N/A	Note not provided.
Marine Mammal Protection Act	Yes	Conducted in conjunction with the ESA consultation. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start.
National Marine Sanctuaries Act	N/A	Note not provided.
Migratory Bird Treaty Act	Yes	Conducted in conjunction with the ESA consultation. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start.
Bald and Golden Eagle Protection Act	N/A	Conducted in conjunction with the ESA consultation. The projects reviewed in year 3 are the same projects that will be implemented in years 4-8. Any new projects selected for implementation will have all environmental compliance completed before groundbreaking activities start.
Clean Air Act	N/A	Note not provided.
Other Applicable Environmental Compliance Laws or Regulations	N/A	Note not provided.

Maps, Charts, Figures

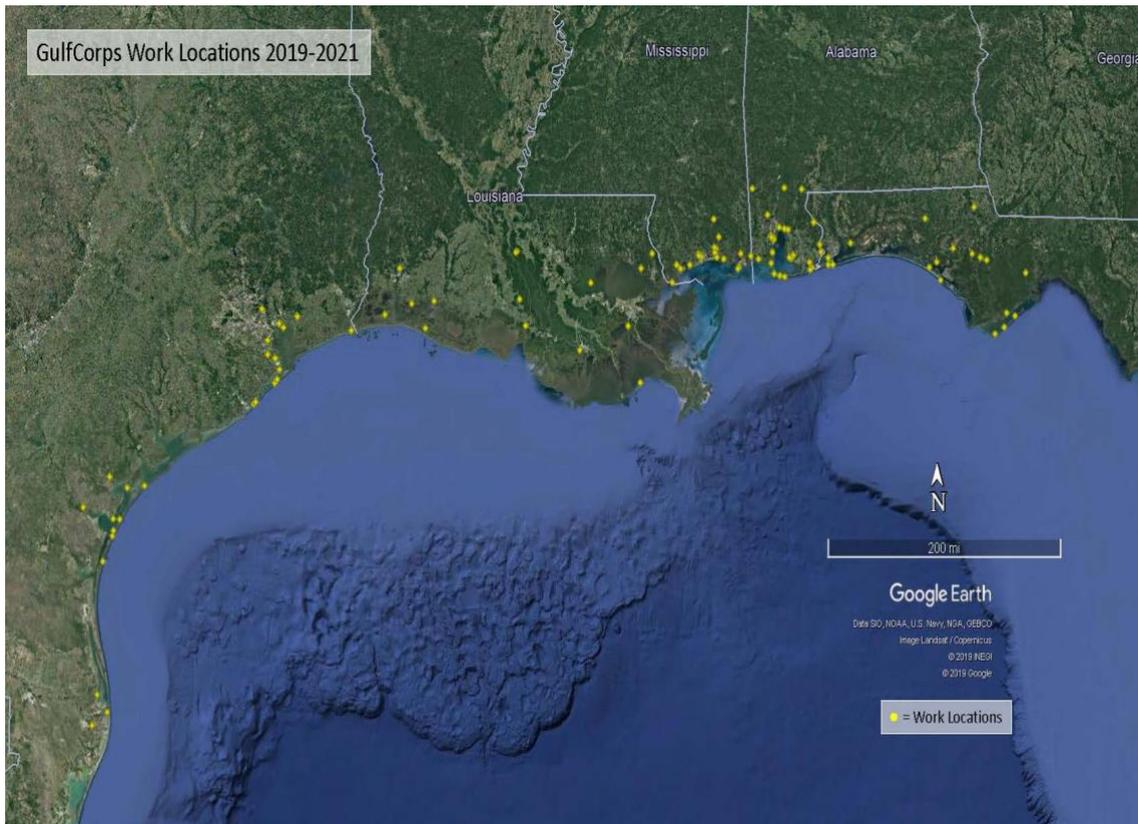


Figure 1: Map of Potential GulfCorps Sites-FPL3b

Other Uploads

Table_1:

Attachment 1-Proposed Project List for GulfCorps.pdf

Table describing GulfCorps project locations with completed environmental compliance. (Note: Table is 62 pages)

[Link to Download](http://www.restorethegulf.gov/apps/piper/web/Uploads/Download/proposal/603/38)

<http://www.restorethegulf.gov/apps/piper/web/Uploads/Download/proposal/603/38>

FPL 3b Internal Staff Review of Proposal Submitted 4/24/2020

Project/Program	Gulf of Mexico Coast Conservation Corps (GulfCorps) Program		
Primary Reviewer	Jean Cowan	Sponsor	DOC
EC Reviewer	John Ettinger	Co-Sponsor	
1. Is/Are the selected Priority Criteria supported by information in the proposal?			Yes
Notes			
2. Does the proposal meet the RESTORE Act geographic eligibility requirement?			Yes
Notes			
3. Are the Comprehensive Plan primary goal and primary objective supported by information in the proposal?			Yes
Notes			
4. Planning Framework: If the proposal is designed to align with the Planning Framework, does the proposal support the selected priority approaches, priority techniques, and/or geographic area?			Yes
Notes	<p>Although the selected priority approaches are supported, the methods listed under each technique are not always placed under the correct technique based on the descriptions set out in the RESTORE Council Planning Framework. For example, "Protecting habitat for nesting shorebirds and sea turtles by educating the public and installing/maintaining signage" belongs under "Habitat management and stewardship" (or "Promote natural resource stewardship and environmental education" rather than "Protect natural shorelines." In addition, if all "Agriculture and forest management" activities are captured by the "Habitat management and stewardship" technique, it is not necessary to include "Agriculture and forest management." Removing redundant techniques helps to avoid implying that additional activities exclusive to one or the other may be performed.</p>		
5. Does the proposal align with the applicable RESTORE Council definition of project or program?			Yes
Notes			
6. Does the budget narrative adequately describe the costs associated with the proposed activity?			Yes

Notes		
7. Are there any recommended revisions to the selected leveraged funding categories?		
		Yes
Notes	Co-funding is described. Consider whether this is true co-funding (meaning that you cannot achieve the stated goals and objectives of the program without this additional funding), or whether it could be described as adjoining.	
8. Have three external BAS reviews been completed?		
		More information needed
Notes	Please see the external BAS review comments, and external reviews summary attached with these review comments.	
9. Have appropriate metrics been proposed to support all primary and secondary goals?		
		More information needed
Notes	<p>If GulfCorps crew members are likely to work for a specific length of time or until a project is completed, Council staff recommend revising the proposal to replace metric "COI101 - # full-time permanent jobs created" with the metric used for previous GulfCorps activities funded by the RESTORE Council: "COI103 - # temporary jobs created."</p> <p>Similarly, if new GulfCorps crew members would be recruited and trained as part of the proposed program, Council staff recommend revising the proposal to include previously used metrics: "COI002 - Outreach/ Education/ Technical Assistance - # people reached" and "COI007 - # of participants that successfully completed training." Based on the methods described in the proposal, additional metrics may be appropriate for supporting the habitat goals of different techniques-- specifically, metrics "HR012 - Miles of living shoreline installed" and "HR014 - Acres of coastal habitat prevented from eroding" for the "Protect natural shorelines" technique; and metrics "HR006 - Acres of oyster reef restored" and "SP001 - Density (# individuals/acre) - Oysters" for the "[Oyster] substrate placement" technique. However, for restoration and management activities that would be accomplished using leveraged funding for all but the labor component, such detailed metrics may be included only as feasible.</p>	
10. Environmental compliance: If FPL Category 1 has been selected for the implementation component of the project or program, does the proposal include environmental compliance documentation that fully supports the selection of Category 1?		
		More information needed
Notes	<p>The proposal should clarify whether DOC intends to use the same approach to environmental compliance as was used for this program in the Initial FPL. Specifically, in the Initial FPL the Council funded conservation corps work on projects and programs that were funded from other sources, and which had separately addressed the applicable environmental compliance requirements. Thus, the Council was able to use its training CE. If the DOC is now proposing that the Council approve funds for stand-alone conservation corps projects (not funded by other sources), then the Council would need to address the laws</p>	

applicable to approval of those specific projects prior to a vote on FPL 3b. Following is the key language on this matter from the Initial FPL: "Individuals trained under the program will help to execute priority restoration projects selected for funding and implementation under Deepwater Horizon-related recovery programs, including other activities funded in the FPL. GCCC workers will work only on projects or activities that are in compliance with all applicable environmental laws and regulations ("compliant")." Please clarify whether this same approach is being proposed in this case.

11. Geospatial Compliance: Have the appropriate geospatial files and associated metadata been submitted along with a map of the proposed project/program area?	Yes
Notes	

FPL3b BAS Review Summary - Gulf of Mexico Coast Conservation Corps (GulfCorps) Program

May, 2020

Overall the external Best Available Science Reviews for the *Gulf of Mexico Coast Conservation Corps Program* proposal are positive. Reviewers note that the proposal objectives, including methods, have been supported using peer reviewed and publicly available information and that the program's objectives and goals are clearly described in detail. They also comment that risks and uncertainties which may affect the program are identified and addressed. Reviewers also note that this proposal builds on the applicant's experience with similar programs and that the applicant incorporates lessons learned from previous iterations in their proposal.

Reviewer 1 notes that the applicant develops relationships as a risk mitigation strategy, including training to communicate risks and uncertainties to participants. They further emphasize the detailed discussion of program vulnerabilities in the application. Reviewer 2 brings up the novel situation of the Coronavirus pandemic as a possible future complication affecting this project: "The unforeseen circumstances created by the Coronavirus, and likely not present at the time this proposal was written, could affect the ability of GulfCorps to complete its work. Safe protocols for Coronavirus prohibit groups which could interfere with many aspects of the training including orientation, the balance of classroom and experiential training, hands-on experience, transportation to restoration sites, and outreach." Reviewer 2 adds that they are supportive of the applicant's adaptive management framework and believe it would be "helpful to see their adaptive management framework and timeline for analyzing monitoring data to further understand their plan for tracking and responding to risk." Reviewer 3 comments that "the applicant considers recent and relevant information in discussing mitigation and monitoring; however, there are no evidence-based sources to validate the reliability of the statements."

Reviewers 1 and 2 note that the GulfCorps Monitoring and Evaluation Handbook linked to in the proposal contains detailed information on methods and supporting citations which bolsters the application. Reviewer 1 writes that the proposal contains a thorough discussion of approaches and techniques, including the statistical monitoring that will be undertaken for the program, and supporting literature is cited throughout. Reviewer 2 comments that "specific criteria such as 'cost effectiveness' or 'scientifically sound' are not directly called out in the proposal" and that more detail would facilitate a better understanding of why certain methods were ultimately chosen. Reviewer 3 adds that methods are backed by details such as the "use of publicly available databases to manage data that are scientifically sound and cost-effective."

Reviewer 3 finds the objectives and methods clearly addressed and supported with evidence but adds that more recent literature may exist for the listed methods, gives some examples, and goes on to add that citations could include "a seminal source to demonstrate where the pivotal or landmark studies of importance or influence presented the idea to determine significance to current work." They further give examples of citations that could be used to strengthen statements made in regards to risks and uncertainties.

Reviewer 1 comments that “[...] there is clear documentation of environmental benefits and related natural stressors that they are trying to offset by this program.” However, Reviewer 2 adds that though this is the case, the applicant could include references to best available science or regional plans when discussing those stressors. Reviewer 3 writes that the environmental benefits are clearly outlined but that the addition of more recent literature could increase stakeholder buy-in.

While Reviewer 1 mentions that this program is a continuation of a previous program and that the applicants incorporate lessons learned from past iterations of this program in their proposal, Reviewer 3 would like to see more details regarding how partners could help to address programmatic failures.

Reviewer 2 ends with two lingering questions which they would like to see addressed: “1. How will the applicant plan to engage low-income and low-opportunity populations? This is mentioned in the ‘Gulf-wide Approaches and Techniques’ methods and appears to be an important part of the project. It would be helpful to understand how they plan to achieve this engagement.” and “2. How will this program collaborate with the ‘Tribal Youth Coastal Restoration Program’ proposed by the U.S. Department of the Interior, Bureau of Indian Affairs?”

NOAA Responses to FLP3b External BAS Proposal Review of the Gulf of Mexico Coast Conservation Corps (GulfCorps) Program

External Best Available Science (BAS) Review:

NOAA was pleased to receive an overall positive BAS review of this project and proposal. This narrative response addresses those comments which were specifically referenced in the Review Summary.

Reviewer 2 brought up the unique situation of the Coronavirus pandemic as a possible future complication affecting this project and stated “The unforeseen circumstances created by the Coronavirus, and likely not present at the time this proposal was written, could affect the ability of GulfCorps to complete its work. Safe protocols for Coronavirus prohibit groups which could interfere with many aspects of the training including orientation, the balance of classroom and experiential training, hands-on experience, transportation to restoration sites, and outreach.” The GulfCorps Program had just passed the halfway mark in Season 3 when stay-at-home orders were issued in many states and communities across the Gulf. The GulfCorps crews had already been required to create and maintain emergency response plans for each project. Since the COVID-19 shutdown, all GulfCorps crews have created and adopted additional protocols for transportation, tool handling, social distancing, and other sanitary mitigation measures to limit the transmission and spread of infectious diseases. The program team adapted to the changing needs of the 11 corps by setting up an emergency fund to provide technology to corps members requiring assistance with connectivity. The highlight of the adaptive management in Year 3 is the creation of a new virtual program. This virtual program is a contactless training program to further GulfCorps program objectives and also provide growth and learning opportunities to GulfCorps members who are working remotely. This virtual program addresses reporting/monitoring, professional development, conservation/restoration training, and orientation for Year 4 crews. The program team worked together, alongside the staff at the Corps and GulfCorps project partners, to compile relevant existing virtual training from multiple agencies and sources, and they worked to create over 30 customized training videos for monitoring and professional development. The program core team is committed to supporting crew members and project partners in safe and healthy ways. GulfCorps management will continue to monitor the situation closely. In many cases on-the-ground work can continue with additional safety measures in place (e.g., increased social distancing, face masks, using personal vehicles to job sites instead of shared vans). Training and work will be adapted as needed to comply with local health guidelines and protect crew members and partners.

Reviewer 2 was supportive of the adaptive management framework and believed it would be “helpful to see their adaptive management framework and timeline for analyzing monitoring data to further understand their plan for tracking and responding to risk.” The GulfCorps Program conducts adaptive management as an iterative process of robust decision making working along with our project partners and in accordance with the GulfCorps Monitoring & Evaluation Handbook. The diversity and variety of crews, projects, and geography makes it difficult to establish a detailed set framework. Instead the team uses existing on the ground restoration knowledge and insights as well as strong relationships to manage risk and uncertainty over time. Adaptive management is accomplished with regular site visits, meetings/calls, partner surveys, orientation surveys, and crew surveys to track the efficiency and efficacy of the program. Regarding the timeline for analyzing monitoring data, the program is committed to making sure monitoring data is accurate and publicly available within one year of collection. Collected data is used to adaptively manage restoration actions in collaboration with our project partners. Data is analyzed on a regular basis as it is received and modifications to methods or techniques are implemented as soon as practicable. For example, when chainsaw training was found to be beneficial for

one crew in Year 1, this training was provided to all crew members in Year 2 which led to a dramatic increase in the number of acres treated/restored.

Reviewer 3 noted that “the applicant considers recent and relevant information in discussing mitigation and monitoring; however, there are no evidence-based sources to validate the reliability of the statements.” The program follows the GulfCorps Monitoring & Evaluation Handbook which is aligned with, and based on, the recommendations presented in The National Academies of Sciences 2017 report “*Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico*” and eight other evidence-based sources. Five of these sources were referenced in the initial proposal. The other four sources are listed in Attachment A and will be included in the revised proposal.

Reviewer 2 comments that “specific criteria such as ‘cost effectiveness’ or ‘scientifically sound’ are not directly called out in the proposal” and that more detail would facilitate a better understanding of why certain methods were ultimately chosen. Program wide, the techniques and specific methods for the projects will be guided by the project partners who have long term knowledge of the projects and will consider personal safety, cost effectiveness, technical feasibility, and scientific integrity as justification for technique selection.

Reviewer 3 finds the objectives and methods clearly addressed and supported with evidence but adds that more recent literature may exist for the listed methods, gives some examples, and goes on to add that citations could include “a seminal source to demonstrate where the pivotal or landmark studies of importance or influence presented the idea to determine significance to current work.” A major theme of Reviewer 3’s evaluation (11 out of 12 comments) was to expand the citation of evidence-based sources with added emphasis placed on citing the most recent sources available. NOAA and its partners appreciate the sources recommended by the reviewer and have also identified numerous other recent sources to validate the proposed methods. These citations are listed in Attachment B and will be included in the revised proposal. Reviewer 3 also noted that evidence-based sources should be included to validate the reliability of statements made regarding risk and uncertainties. NOAA and its partners appreciate the sources recommended by the reviewer and have also identified numerous other recent sources to validate these statements. These citations are listed in Attachment C and will be included in the revised proposal. Given the diverse projects, methods, and geographies associated with crew activities, it is difficult to identify a seminal source that determines the significance of various methods to the current work.

Reviewer 1 comments that “[...] there is clear documentation of environmental benefits and related natural stressors that they are trying to offset by this program.” However, Reviewer 2 adds that though this is the case, the applicant could include references to best available science or regional plans when discussing those stressors. References supporting the statements made regarding natural stressors are provided in Attachment C and will be included in the revised proposal. Reviewer 3 writes that the environmental benefits are clearly outlined but that the addition of more recent literature could increase stakeholder buy-in. References supporting the statements made regarding environmental benefits are provided in Attachment D and will be included in the revised proposal.

While Reviewer 1 mentions that this program is a continuation of a previous program and that the applicants incorporate lessons learned from past iterations of this program in their proposal, Reviewer 3 would like to see more details regarding how partners could help to address programmatic failures. The program’s adaptive management approach is used to address failures that occur during program execution. Through discussions and survey responses with project partners and the three years of

GulfCorps implementation, NOAA and project partners have learned how to best address project challenges and adapt work to changing conditions or needs. The corps teams develop quarterly reports stating the successes and challenges experienced during restoration activities. The reports include lessons learned that are key insights into project work that the program shares with project partners. NOAA also leverages project partners' past experience and related failures to develop current program methods to avoid repeating those failures.

Reviewer 2 asks "How will the applicant plan to engage low-income and low-opportunity populations? This is mentioned in the 'Gulf-wide Approaches and Techniques' methods and appears to be an important part of the project. It would be helpful to understand how they plan to achieve this engagement." GulfCorps crews are contracted to not only carry out the work, but to recruit, hire and further train their members. The program currently contracts with six organizations to operate eleven crews. Each of the six organizations has a different purpose and serves different audiences. The GulfCorps team encourages, but does not require, the Corps to hire people from within their communities, or at least within the state in which they are operating. This is not required due to past difficulties and experiences with a shallow recruiting pool. Three of the six GulfCorps organizations are nation-wide or regional professional conservation corps organizations. These organizations typically recruit nationally and have taken extra steps to ensure their crews include ethnically and socio-economically diverse people. The other three corps organizations are workforce development or community development organizations who have been serving underserved and marginalized people along the Gulf Coast for many years. The conservation corps part of their organizations are one of multiple tracks that the young adults they serve can choose from. These crews, along with the crews operated by the conservation corps organizations make up a very diverse cadre that represent the population of the Gulf of Mexico region. Demographic data is collected on all members at the beginning of each year and is available upon request.

Reviewer 2 also asks "How will this program collaborate with the "Tribal Youth Coastal Restoration Program" proposed by the U.S. Department of the Interior, Bureau of Indian Affairs [(BIA)]?" The FPL1-funded BIA Tribal Youth Conservation Corps were summer programs designed for teenagers (ages 16-19) from 5 area tribes who were interested in natural resource management, and the years of operation were 2016-2018. The GulfCorps Program is a regionally based conservation corps program for young adults (ages 18-25) living in coastal counties of FL, AL, MS, LA and TX. GulfCorps started in early 2018 and is still currently operating. The programs target different age ranges and slightly different geographies, but there are clear connections and opportunities for collaboration. In 2019, project managers from both federal agencies discussed the two efforts and learned of shared interests. The GulfCorps on-the-ground partner organizations that support individual GulfCorps members were introduced to the Tribal Youth Conservation Corps and made aware that tribal corps graduates might be interested in GulfCorps recruiting opportunities and employment as they step forward in their career development. NOAA and its partners are also interested in finding ways to have the two training programs complement one another. Coordination and awareness will continue as the two programs move forward.

Attachment A: Mitigation and Monitoring Sources

Baggett, L.P., S.P. Powers, R. Brumbaugh, L.D. Coen, B. DeAngelis, J. Greene, B. Hancock, and S. Morlock, 2014. Oyster habitat restoration monitoring and assessment handbook. The Nature Conservancy, Arlington, VA, USA., 96pp.

Block, W.M., A.B. Franklin, J.P. Ward, Jr., J.L. Ganey, and G.C. White. 2001. Design and implementation of monitoring studies to evaluate the success of ecological restoration on wildlife. *Restoration Ecology* 9:293-303.

Lippiatt, S., Opfer, S., and Arthur, C. 2013. Marine Debris Monitoring and Assessment. NOAA Technical Memorandum NOS-OR&R-46.

Natural Resource Management, Photopoint Monitoring Fact Sheet. <https://www.nrmsouth.org.au/wp-content/uploads/2014/08/Photo-Monitoring-Fact-Sheet-NRM-South.pdf>

United States Department of Agriculture, Forest Service, Remote Sensing Applications Center. Photo Point Monitoring. A Weed Manager's Guide to Remote Sensing and GIS – Mapping and Monitoring. https://deq.nd.gov/publications/WQ/3_WM/NPS/CBinder/Riparian/Photopoint_monitoringUSFS.pdf

Attachment B: Methods Sources

Recommended by the reviewer:

Goelz, T., Vogt, B., & Hartley, T. (2020). Alternative substrates used for oyster reef Restoration: A Review. *Journal of Shellfish Research*, 39(1), 1-12.

Haywood, B. (2019). Overview of Delaware living shoreline projects. Retrieved from https://digitalcommons.odu.edu/cgi/viewcontent.cgi?article=1006&context=hraforum_24

Roni, P., Hall, J. E., Drenner, S. M., & Arterburn, D. (2019). Monitoring the effectiveness of floodplain habitat restoration: A review of methods and recommendations for future monitoring. *Wiley Interdisciplinary Reviews: Water*, 6(4), e1355.

Waters Jr, P. L., Petrolia, D. R., & Walton, W. C. (2019). Do oyster gardening programs lead to knowledge changes?. *Journal of the NACAA*, 12(2).

Additional sources provided by NOAA and its partners:

DeAngelis, B.; Birch, A.; Malinowski, P.; Abel, S.; DeQuattro, J.; Peabody, B.; Dinnel, P. A Variety of Approaches for Incorporating Community Outreach and Education in Oyster Reef Restoration Projects: Examples from the United States. In *Goods and Services of Marine Bivalves*; Smaal, A. C., Ferreira, J. G., Grant, J., Petersen, J. K., Strand, Ø., Eds.; Springer International Publishing: Cham, 2019; pp 335–354. https://doi.org/10.1007/978-3-319-96776-9_18.

Fischman, H. S.; Crotty, S. M.; Angelini, C. Optimizing Coastal Restoration with the Stress Gradient Hypothesis. *Proc. R. Soc. B* 2019, 286 (1917), 20191978. <https://doi.org/10.1098/rspb.2019.1978>

Fitzsimons, J. A.; Branigan, S.; Gillies, C. L.; Brumbaugh, R. D.; Cheng, J.; DeAngelis, B. M.; Geselbracht, L.; Hancock, B.; Jeffs, A.; McDonald, T.; McLeod, I. M.; Pogoda, B.; Theuerkauf, S. J.; Thomas, M.; Westby, S.; zu Ermgassen, P. S. E. Restoring Shellfish Reefs: Global Guidelines for Practitioners and Scientists. *Conservat Sci and Prac* 2020, 2 (6). <https://doi.org/10.1111/csp2.198>.

Löf, M.; Madsen, P.; Metslaid, M.; Witzell, J.; Jacobs, D. F. Restoring Forests: Regeneration and Ecosystem Function for the Future. *New Forests* 2019, 50 (2), 139–151. <https://doi.org/10.1007/s11056-019-09713-0>.

Mitchell, M.; Bilkovic, D. M. Embracing Dynamic Design for Climate-Resilient Living Shorelines. *Journal of Applied Ecology* 2019, 56 (5), 1099–1105. <https://doi.org/10.1111/1365-2664.13371>.

Pearson, S. H.; Wiebe, J. J. Considering Diamond-Backed Terrapin (*Malaclemys Terrapin*) Nesting Habitat and Reproductive Productivity in the Restoration of Gulf of Mexico Coastal Ecosystems. *Ocean & Coastal Management* 2018, 155, 8–14. <https://doi.org/10.1016/j.ocecoaman.2018.01.017>.

U.S. Fish and Wildlife Service and California Invasive Plant Council. 2018. Land Manager's Guide to Developing an Invasive Plant Management Plan. Cal-IPC Publication 2018-01. National Wildlife Refuge System, Pacific Southwest Region, Inventory and Monitoring Initiative, Sacramento, CA. California

Invasive Plant Council, Berkeley, CA. Available at www.cal-ipc.org and data.gov.

Watson, P. A.; Alexander, H. D.; Moczygemba, J. D. Coastal Prairie Recovery in Response to Shrub Removal Method and Degree of Shrub Encroachment. *Rangeland Ecology & Management* 2019, 72 (2), 275–282. <https://doi.org/10.1016/j.rama.2018.11.005>.

Whalen, L.; Kreeger, D.; Bushek, D.; Moody, J.; Padeletti, A. Practitioner’s Guide to Shellfish-Based Living Shorelines for Salt Marsh Erosion Control and Environmental Enhancement in the Mid-Atlantic. 47. <https://s3.amazonaws.com/delawareestuary/pdf/Living%20Shorelines/DELSI%20Practitioners%20Guide%20v9.7.11.pdf>

Attachment C: Risks, Uncertainties, and Stressors Sources

Recommended by the reviewer:

Bernstein, A., Gustafson, M. T., & Lewis, R. (2019). Disaster on the horizon: The price effect of sea level rise. *Journal of Financial Economics*, 134(2), 253-272.

Dedekorkut-Howes, A., Torabi, E., & Howes, M. (2020). When the tide gets high: a review of adaptive responses to sea level rise and coastal flooding. *Journal of Environmental Planning and Management*, 1-42.

Rypkema, D. C., Horvitz, C. C., & Tuljapurkar, S. (2019). How climate affects extreme events and hence ecological population models. *Ecology*, 100(6), e02684.

Siverd, C. G., Hagen, S. C., Bilskie, M. V., Braud, D. H., Peele, R. H., Foster-Martinez, M. R., & Twilley, R. R. (2019). Coastal Louisiana landscape and storm surge evolution: 1850–2110. *Climatic Change*, 157(3), 445-468.

Spear, K. A., Jones, W., Griffith, K., Tirpak, B. E., & Walden, K. (2019). Potential sea level rise for the Chitimacha Tribe of Louisiana (No. 2019-1030). US Geological Survey.

Zemp, M., Huss, M., Thibert, E., Eckert, N., McNabb, R., Huber, J., ... & Thomson, L. (2019). Global glacier mass changes and their contributions to sea-level rise from 1961 to 2016. *Nature*, 568(7752), 382-386.

Additional sources provided by NOAA and its partners:

Berg, R. Hurricane Michael. https://www.nhc.noaa.gov/data/tcr/AL142018_Michael.pdf

Gordon, J. Dry conditions, wind cause wildfires to spread along Gulf Coast <https://mynews15.com/news/local/dry-conditions-wind-cause-wildfires-to-spread-along-gulf-coast> (accessed Jun 8, 2020).

Kossin, J. P.; Knapp, K. R.; Olander, T. L.; Velden, C. S. Global Increase in Major Tropical Cyclone Exceedance Probability over the Past Four Decades. *Proc Natl Acad Sci USA* 2020, 117 (22), 11975–11980. <https://doi.org/10.1073/pnas.1920849117>.

Lin, C. Y., & Cha, E. J. (2019). Impact of climate change to hurricane loss to the Gulf Coast of the US. Retrieved from <http://s-space.snu.ac.kr/handle/10371/153531>

Russell, B. T.; Risser, M. D.; Smith, R. L.; Kunkel, K. E. Investigating the Association between Late Spring Gulf of Mexico Sea Surface Temperatures and U.S. Gulf Coast Precipitation Extremes with Focus on Hurricane Harvey. *Environmetrics* 2020, 31 (2), e2595. <https://doi.org/10.1002/env.2595>.

Attachment D: Environmental Benefit Sources

Additional sources provided by NOAA and its partners:

Fishery enhancement, coastal protection and water quality services provided by two restored Gulf of Mexico oyster reefs. Kroeger, T., and Guannel, G. IN Ninan, K. N. (ed.) Valuing Ecosystem Services – Methodological Issues and Case Studies (2014)

Gallardo, B.; Clavero, M.; Sánchez, M. I.; Vilà, M. Global Ecological Impacts of Invasive Species in Aquatic Ecosystems. *Global Change Biology* 2016, 22 (1), 151–163. <https://doi.org/10.1111/gcb.13004>.

Hanley, N.; Roberts, M. The Economic Benefits of Invasive Species Management. *People Nat* 2019, 1 (2), 124–137. <https://doi.org/10.1002/pan3.31>.

Shepard, C. C.; Crain, C. M.; Beck, M. W. The Protective Role of Coastal Marshes: A Systematic Review and Meta-Analysis. *PLoS ONE* 2011, 6 (11), e27374. <https://doi.org/10.1371/journal.pone.0027374>.

Kamrath, B. J. W.; Burchell, M. R.; Cormier, N.; Krauss, K. W.; Johnson, D. J. The Potential Resiliency of a Created Tidal Marsh to Sea Level Rise. *Transactions of the ASABE* 2019, 62 (6), 1567–1577. <https://doi.org/10.13031/trans.13438>.

Sutton-Grier, A. E.; Gittman, R. K.; Arkema, K. K.; Bennett, R. O.; Benoit, J.; Blich, S.; Burks-Copes, K. A.; Colden, A.; Dausman, A.; DeAngelis, B. M.; Hughes, A. R.; Scyphers, S. B.; Grabowski, J. H. Investing in Natural and Nature-Based Infrastructure: Building Better Along Our Coasts. *Sustainability* 2018, 10 (2), 523. <https://doi.org/10.3390/su10020523>.

Garner, M. Understanding the Impact of Changes to Coastal Prairie Landscapes on Watershed Response and Urban Flood Mitigation: A Case Study of the Katy Prairie in Houston, Texas. Thesis, Rice University, 2020.

Knapp, E.; Estes, B.; Skinner, C. Ecological Effects of Prescribed Fire Season: A Literature Review and Synthesis for Managers. *JFSP Synthesis Reports* 2009.

Gulf Coast Ecosystem Restoration Council

FPL 3b Internal Best Available Science Review Panel Summary

July 2020

Introduction

On Tuesday, June 30, and Wednesday July 1, 2020 the RESTORE Council convened the Funded Priorities List (FPL) 3b Internal Best Available Science (BAS) Review Panel. The purpose of this internal panel was to use Council member-agency expertise to address external BAS review comments provided for FPL 3b submitted project/program proposals, and potentially identify project/program synergies not identified prior to proposal submission. The ultimate goal of the panel was to provide Council members with substantive best available science content to inform their decision-making.

The internal panel was convened via webinar with representatives from each of the Council's eleven member agencies present. Each BAS Panel member was provided the following:

- 1) Full FPL 3b proposals
- 2) 3 external BAS reviews for each proposal
- 3) Summary of external BAS reviews for each proposal
- 4) Proposal Sponsor's response to the BAS reviews summary
- 5) Any proposed revisions to the proposal

Proposal sponsors provided a brief synopsis of their proposal to the panel, a summary of comments made in external reviews, and discussed their proposed response to the external reviews. Council staff then solicited feedback from the panel on the proposal sponsor's presentation of comments and responses to those comments, and any additional BAS concerns. Council staff also solicited feedback on any existing or future synergies with other Gulf restoration activities. The proceedings of the meeting for this proposal are summarized below.

Sponsor: DOC/NOAA

Gulf of Mexico Coast Conservation Corps (GulfCorps) Program

Feedback from the panel on the proposal sponsor's presentation of comments and responses to those comments, and any additional BAS concerns:

Risks: Coronavirus could affect the ability of GulfCorps to complete its work. Protocols for Coronavirus prohibit groups which could interfere with many aspects of the program.

- The BAS Panel agrees that NOAA has appropriately addressed this comment.

Adaptive management: It would be helpful to see the adaptive management framework and timeline for analyzing monitoring data to further understand plans for tracking and responding to risk.

- The BAS Panel agrees that NOAA has appropriately addressed this comment.

Justification: Specific criteria such as ‘cost effectiveness’ or ‘scientifically sound’ are not directly called out in the proposal when discussing methods/techniques.

- The BAS Panel agrees that NOAA has appropriately addressed this comment.

References: Provide the most recent evidence-based sources for statements made in proposal.

- The BAS panel agrees that the response NOAA has indicated will appropriately address this comment.

Lessons learned: How can partners address past programmatic challenges?

- The BAS Panel agrees that NOAA has appropriately addressed this comment.

Outreach: How will the applicant plan to engage low-income and low-opportunity populations?

- The BAS Panel agrees that NOAA has appropriately addressed this comment.

Coordination: How will this program collaborate with the “Tribal Youth Coastal Restoration Program” proposed by the U.S. Department of the Interior, Bureau of Indian Affairs (DOI BIA)?

- The BAS Panel agrees that NOAA has appropriately addressed this comment.

Other: How will metrics be used to track benefits such that double-counting of acreage will not occur?

- NOAA response: Each project's scope of work/activity list is matched with corresponding techniques, training needs, RESTORE metrics (acres), and monitoring metric codes prior to the team starting the restoration work. Acreage is linked to techniques as it is recorded while activities are being implemented and verified through our internal QA/QC process.

Panel comments on existing or future synergies with proposed activity:

Panel members had no further comments on proposal synergies.



SCIENCE EVALUATION

Bucket 2: Comprehensive Plan Component

Proposal Title: Gulf of Mexico Coast Conservation Corps (GulfCorps) Program
Location (If Applicable): Gulf-wide
Council Member Bureau or Agency: U.S. Department of Commerce, National Oceanic and Atmospheric Administration
Type of Funding Requested: Implementation

Reviewed by: Reviewer 1
Date of Review: April 30, 2020

Best Available Science:

These 4 factors/elements help frame the reviewer's answers to A, B and C found in next section:

Question 1.	
Have the proposal objectives, including proposed methods, been justified using peer reviewed and/or publicly available information?	Yes
Comments:	
Listed 13 references from various agencies and sources dated from 2005-2019. All links provided went directly to the expected resource.	

Question 2.	
If information supporting the proposal does not directly pertain to the Gulf Coast region, are the proposal's methods reasonably supported and adaptable to that geographic area?	Yes
Comments:	
8 of 13 references were directly based on Gulf of Mexico research. Others directly applicable.	

Question 3.	
Are the literature sources used to support the proposal accurately and completely cited? Are the literature sources represented in a fair and unbiased manner?	Yes
Comments:	
Cited in different areas of the proposal. Very clear.	

Question 4.	
Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk in the near- and/or long-term that the project/program will be obsolete or not function as planned?)	Yes
Comments:	
This is a continuation of a previous program. They develop relationships as a pre-risk mitigation measure.	

Based on the answers to the previous 4 questions, and *giving deference to the sponsor to provide within reason the use of best available science*, the following three questions can be answered:

Question A	
Has the applicant provided reasonable justification that the proposal is based on science that uses peer-reviewed and publicly available data?	Yes
Comments:	
All listed items are peer-reviewed and/or publicly available.	

Question B	
Has the applicant provided reasonable justification that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?	Yes
Comments:	
Yes. Literature is cited related to monitoring and adaptive management. Thorough discussion of approaches and techniques includes statistical monitoring of program and includes literature cited throughout.	

Question C	
Has the applicant provided reasonable justification that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects/programs?	Yes
Comments:	
Yes, the scientific documentation is clear and related to the program. There is training involved to communicate risks and uncertainties to the participants.	

Science Context Evaluation:

Question A	
Has the project/program sponsor or project partners demonstrated experience in implementing a project/program similar to the one being proposed?	Yes
Comments:	
Yes, this is a continuation of a successful program. They have learned from the current program to inform this proposal. They discuss 6 Conservation Corps organizations that operate 11 GulfCorps crews currently through a diversity of audiences.	

Question B	
Does the project/program have clearly defined goals objectives?	Yes
Comments:	
The program has varied components based on needs in specific areas, and goals and objectives relating to possible outcomes have been noted. Specific environmental goals are stated. They discuss in detail both primary and secondary goals and objectives relating to restoring and conserving habitat, and enhancing community resilience through natural resource stewardship and environmental education.	

Question C	
Has the proposal provided a clear description of the methods proposed, and appropriate justification for why the method is being selected (e.g., scientifically sound; cost-effectiveness)?	Yes
Comments:	
The program deals with young adults and this demographic has clearly been researched. The methodology is thorough. Proposed restoration methods vary by site and are discussed individually, citing references.	

Question D	
Does the project/program identify the likely environmental benefits of the proposed activity? Where applicable, does the application discuss those benefits in reference to one or more underlying environmental stressors identified by best available science and/or regional plans?	Yes
Comments:	
Yes, there is clear documentation of environmental benefits and related natural stressors that they are trying to offset by this program.	

Question E	
Does the project/program have measures of success (i.e., metrics) that align with the primary Comprehensive Plan goal(s)/objectives? (Captures the statistical information requirement as defined by RESTORE Act)	Yes
Comments:	
They list seven specific metrics which are each discussed in detail. These include: number of recreational improvements – Target 28, economic benefits – Target 86% local contracts, - Target 300 full time jobs created (avg. 16 weeks), monitoring – Target 1000 acres, habitat restoration – Target 1000 acres invasive removal, - Target 3000 acres coastal upland restoration, wetland restoration – Target 4000 acres.	

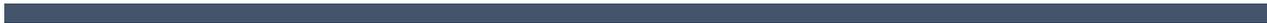
Question F	
Does the proposal discuss the project/program's vulnerability to potential long-term environmental risks (i.e., climate, pollution, changing land use)? (Captures risk measures as defined under best available science by the RESTORE Act)	Yes
Comments:	
Very clear discussion of program vulnerabilities to these risks. Specifically detailed under separate headings: Catastrophic Events (hurricanes, flooding, wildfire), Climate Change, and Weather Extremes. They also cite the land management agency experts they will be working with at each program site.	

Question G	
Does the project/program consider other applicable short-term implementation risks and scientific uncertainties? Such risks may include the potential for unanticipated adverse environmental and/or socio-economic impacts from project implementation. Is there a mitigation plan in place to address these risks? Any relevant scientific uncertainties and/or data gaps should also be discussed. (Captures risk measures as defined under best available science by the RESTORE Act)	Yes
Comments:	
Particular social impacts of working with young adults is explored. Very well documented. Plan to use orientation programs, staff training and training in interpersonal skills among other methods.	

Question H	
Does the project/program consider recent and/or relevant information in discussing the elements above?	Yes
Comments:	
The references cited are recent and relevant to the various projects discussed above.	

Question I	
Has the project/program evaluated past successes and failures of similar efforts? (Captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the RESTORE Act)	Yes
Comments:	
Based on their discussion of Pre-risk mitigation measures they have evaluated potential risks associated with working with young adults. They also have thoroughly researched the methods and metrics for potential projects within their scope of work.	

Question J	
Has the project/program identified a monitoring and data management strategy that will support project measures of success (i.e., metrics). If so, is appropriate best available science justification provided? If applicable, how is adaptive management informed by the performance criteria? (Captures statistical information requirement a defined by the RESTORE Act)	Yes
Comments:	
They have developed and referenced their own handbook based on past experiences The GulfCorps Monitoring and Evaluation Handbook built upon the National Academy of Sciences report from 2017 (also cited). They list five example performace criteria including Invasive flora species removal, flatwoods and bog restoration, invasive species fauna removal (apple snails), marsh grass planting and living shoreline evaluation methods.	



Please summarize any additional information needed below:
Click here to enter text.



SCIENCE EVALUATION

Bucket 2: Comprehensive Plan Component

Proposal Title: Gulf of Mexico Coast Conservation Corps (GulfCorps) Program
Location (If Applicable): Gulf-wide
Council Member Bureau or Agency: U.S. Department of Commerce, National Oceanic and Atmospheric Administration
Type of Funding Requested: Implementation

Reviewed by: Reviewer 2
Date of Review: 05/10/2020

Best Available Science:

These 4 factors/elements help frame the reviewer's answers to A, B and C found in next section:

Question 1.	
Have the proposal objectives, including proposed methods, been justified using peer reviewed and/or publicly available information?	Yes
Comments:	
The authors provide citations to justify the identified methods in support of the project goals. The proposal also includes a link to the "GulfCorps Monitoring and Evaluation Handbook..." which further defines and provides citations for project monitoring methodologies.	

Question 2.	
If information supporting the proposal does not directly pertain to the Gulf Coast region, are the proposal's methods reasonably supported and adaptable to that geographic area?	Yes
Comments:	
Information supporting this proposal is either directly relevant to the Gulf of Mexico and the identified project areas, or has been adapted for the Gulf region.	

Question 3.	
Are the literature sources used to support the proposal accurately and completely cited? Are the literature sources represented in a fair and unbiased manner?	Yes
Comments:	
Relevant and recent literature sources are accurately and completely cited.	

Question 4.	
Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk in the near- and/or long-term that the project/program will be obsolete or not function as planned?)	Yes
Comments:	
The unforeseen circumstances created by the Coronavirus, and likely not present at the time this proposal was written, could affect the ability of GulfCorps to complete it's work. Safe protocols for Coronavirus prohibit groups which could interfere with many aspects of the training including orientation, the balance of classroom and experiential training, hands-on experience, transportation to restoration sites, and outreach.	

Based on the answers to the previous 4 questions, and *giving deference to the sponsor to provide within reason the use of best available science*, the following three questions can be answered:

Question A	
Has the applicant provided reasonable justification that the proposal is based on science that uses peer- reviewed and publicly available data?	Yes
Comments:	
The applicant has sufficiently cited peer-reviewed and publically available data to justify the methods proposed in this proposal. The applicant has also stated that they will work with state agencies to identify projects of greatest need which will further help identify high-priority restoration sites.	

Question B	
Has the applicant provided reasonable justification that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?	Yes
Comments:	
Click here to enter text.	

Question C	
Has the applicant provided reasonable justification that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects/programs?	Yes
Comments:	
Yes, the applicant identified a monitoring and evaluation handbook which details their approach for tracking project success which will allow project managers to identify risks. The applicate also proposes to use an adaptive management framework which I strongly support as a tool to document and adapt to unexpected risks. It would be helpful to see their adaptive management framework and timeline for analyzing monitoring data to further understand their plan for tracking and responding to risk.	

Science Context Evaluation:

Question A	
Has the project/program sponsor or project partners demonstrated experience in implementing a project/program similar to the one being proposed?	Yes
Comments:	
Click here to enter text.	

Question B	
Does the project/program have clearly defined goals objectives?	Yes
Comments:	
Yes, the project has clearly defined goals and quantitative metrics to track those goals.	

Question C	
Has the proposal provided a clear description of the methods proposed, and appropriate justification for why the method is being selected (e.g., scientifically sound; cost-effectiveness)?	Need more information
Comments:	
The proposal includes a clear description of each proposed method and a citation to a plan, document or report that justifies the method will achieve the identified approach. These citation indicate that the methods are scientifically sound, however, specific criteria such as "cost effectiveness" or "scientifically sound" are not directly called out in the proposal. I would need more information to fully understand why the authors selected these specific methods.	

Question D	
Does the project/program identify the likely environmental benefits of the proposed activity? Where applicable, does the application discuss those benefits in reference to one or more underlying environmental stressors identified by best available science and/or regional plans?	Need more information
Comments:	
This needs a yes/no answer. The proposal does a sufficient job of identifying anticipated environmental benefits and targeted stressors. The applicant also includes relevant metrics to track the anticipated benefits. The applicant does not, however, include references to best available science or regional plans when discussing those stressors.	

Question E	
Does the project/program have measures of success (i.e., metrics) that align with the primary Comprehensive Plan goal(s)/objectives? (Captures the statistical information requirement as defined by RESTORE Act)	Yes
Comments:	
Click here to enter text.	

Question F	
Does the proposal discuss the project/program's vulnerability to potential long-term environmental risks (i.e., climate, pollution, changing land use)? (Captures risk measures as defined under best available science by the RESTORE Act)	Yes
Comments:	

Question G	
Does the project/program consider other applicable short-term implementation risks and scientific uncertainties? Such risks may include the potential for unanticipated adverse environmental and/or socio-economic impacts from project implementation. Is there a mitigation plan in place to address these risks? Any relevant scientific uncertainties and/or data gaps should also be discussed. (Captures risk measures as defined under best available science by the RESTORE Act)	Need more information
Comments:	
The unforeseen circumstances created by the Coronavirus, and likely not present at the time this proposal was written, could affect the ability of GulfCorps to complete it's work. Safe protocols for Coronavirus prohibit groups which could interfere with many aspects of the training including orientation, the balance of classroom and experiential training, hands-on experience, transportation to restoration sites, and outreach.	

Question H	
Does the project/program consider recent and/or relevant information in discussing the elements above?	Yes
Comments:	
Click here to enter text.	

Question I	
Has the project/program evaluated past successes and failures of similar efforts? (Captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the RESTORE Act)	Yes
Comments:	
Only briefly in relation to how past programs have been impacted by catastrophic risks.	

Question J	
Has the project/program identified a monitoring and data management strategy that will support project measures of success (i.e., metrics). If so, is appropriate best available science justification provided? If applicable, how is adaptive management informed by the performance criteria? (Captures statistical information requirement a defined by the RESTORE Act)	Yes
Comments:	
Sufficient monitoring and data management strategy is provided, however, it isn't clear to me how adaptive management will be informed by performance criteria. The applicant references an adaptive management framework and the details of this framework would likely answer this questions.	



Please summarize any additional information needed below:
<ol style="list-style-type: none"> 1. How will the applicant plan to engage low-income and low-opportunity populations? This is mentioned in the "Gulf-wide Approaches and Techniques" methods and appears to be an important part of the project. It would be helpful to understand how they plan to achieve this engagement. 2. How will this program collaborate with the "Tribal Youth Coastal Restoration Program" proposed by the U.S. Department of the Interior, Bureau of Indian Affairs?



SCIENCE EVALUATION

Bucket 2: Comprehensive Plan Component

Proposal Title: Gulf of Mexico Coast Conservation Corps (GulfCorps) Program
Location (If Applicable): Gulf-wide
Council Member Bureau or Agency: U.S. Department of Commerce, National Oceanic and Atmospheric Administration
Type of Funding Requested: Implementation

Reviewed by: Reviewer 3
Date of Review: 05/09/2020

Best Available Science:

These 4 factors/elements help frame the reviewer's answers to A, B and C found in next section:

Question 1.	
Have the proposal objectives, including proposed methods, been justified using peer reviewed and/or publicly available information?	Yes
Comments:	
<p>The proposal objectives and proposed methods in the application are clearly addressed with necessary detail and the evidence is thoroughly supported. Documentation and required information are specific. Any weaknesses identified will likely have minor impact on the successful implementation and execution of the proposed project. The only recommendation is to include the most current evidence in each method.</p> <p>For example: Living shoreline restoration including the placement of intertidal oyster reef breakwaters made from oyster shell, rock, concrete, or other modular technologies:</p> <p>Goelz, T., Vogt, B., & Hartley, T. (2020). Alternative substrates used for oyster reef Restoration:</p>	

A Review. Journal of Shellfish Research, 39(1), 1-12.

Haywood, B. (2019). Overview of Delaware living shoreline projects. Retrieved from https://digitalcommons.odu.edu/cgi/viewcontent.cgi?article=1006&context=hraforum_24

Waters Jr, P. L., Petrolia, D. R., & Walton, W. C. (2019). Do oyster gardening programs lead to knowledge changes?. Journal of the NACAA, 12(2).

Roni, P., Hall, J. E., Drenner, S. M., & Arterburn, D. (2019). Monitoring the effectiveness of floodplain habitat restoration: A review of methods and recommendations for future monitoring. Wiley Interdisciplinary Reviews: Water, 6(4), e1355.

Question 2.

If information supporting the proposal does not directly pertain to the Gulf Coast region, are the proposal's methods reasonably supported and adaptable to that geographic area?

Yes

Comments:

The proposal methods in the application are reasonably supported and adaptable to that geographic area.

Question 3.

Are the literature sources used to support the proposal accurately and completely cited? Are the literature sources represented in a fair and unbiased manner?

Yes

Comments:

The application consistently provides citations of data sources. The only recommendation is to ensure the "most recent" evidence is included as well as a seminal source to demonstrate where the pivotal or landmark studies of importance or influence presented the idea to determine significance to current work.

Question 4.	
Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk in the near- and/or long-term that the project/program will be obsolete or not function as planned?)	Yes
Comments:	
<p>The application has strengths related to identification of risks and uncertainties, but with at least one weakness identified that will likely have moderate impact on the successful implementation and execution of the proposed project. The application should include evidence to validate the reliability of the statements.</p> <p>For example, statements related to climate change and sea level rise should include current evidence to effectively guide decisions and the support of stakeholders:</p> <p>Bernstein, A., Gustafson, M. T., & Lewis, R. (2019). Disaster on the horizon: The price effect of sea level rise. <i>Journal of Financial Economics</i>, 134(2), 253-272.</p> <p>Dedekorkut-Howes, A., Torabi, E., & Howes, M. (2020). When the tide gets high: a review of adaptive responses to sea level rise and coastal flooding. <i>Journal of Environmental Planning and Management</i>, 1-42.</p> <p>Siverd, C. G., Hagen, S. C., Bilskie, M. V., Braud, D. H., Peele, R. H., Foster-Martinez, M. R., & Twilley, R. R. (2019). Coastal Louisiana landscape and storm surge evolution: 1850–2110. <i>Climatic Change</i>, 157(3), 445-468.</p> <p>Spear, K. A., Jones, W., Griffith, K., Tirpak, B. E., & Walden, K. (2019). Potential sea level rise for the Chitimacha Tribe of Louisiana (No. 2019-1030). US Geological Survey.</p> <p>Zemp, M., Huss, M., Thibert, E., Eckert, N., McNabb, R., Huber, J., ... & Thomson, L. (2019). Global glacier mass changes and their contributions to sea-level rise from 1961 to 2016. <i>Nature</i>, 568(7752), 382-386.</p>	

Based on the answers to the previous 4 questions, and *giving deference to the sponsor to provide within reason the use of best available science*, the following three questions can be answered:

Question A	
Has the applicant provided reasonable justification that the proposal is based on science that uses peer- reviewed and publicly available data?	Yes

Comments:

The evidence is thoroughly supported. Recommendation is to include the most recent evidence.

Question B

Has the applicant provided reasonable justification that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?

Yes

Comments:

The applicant has provided reasonable justification based on science; however, including more recent evidence will strengthen the decision making and support for the project.

Question C

Has the applicant provided reasonable justification that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects/programs?

Yes

Comments:

The applicant provides reasonable justification utilizing science that the project is achievable with the risks and uncertainties identified in the program. Recommendation is to include more robust current evidence.

Science Context Evaluation:

Question A	
Has the project/program sponsor or project partners demonstrated experience in implementing a project/program similar to the one being proposed?	Yes
Comments:	
The applicant, project sponsor and partners have demonstrated experience through community engagement, conference presentations, outreach and education programs. Documentation and required information for Question A are specific and comprehensive in the application.	

Question B	
Does the project/program have clearly defined goals objectives?	Yes
Comments:	
There are no deficiencies or weaknesses noted for Question B.	

Question C	
Has the proposal provided a clear description of the methods proposed, and appropriate justification for why the method is being selected (e.g., scientifically sound; cost-effectiveness)?	Yes
Comments:	
The applicant presents reasonable sustainability activities specific to proposed methods and appropriate justification with details including the use of publicly available databases to manage data that are scientifically sound and cost-effective.	

Question D	
Does the project/program identify the likely environmental benefits of the proposed activity? Where applicable, does the application discuss those benefits in reference to one or more underlying environmental stressors identified by best available science and/or regional plans?	Yes
Comments:	
The application clearly outlines the environmental benefits from invasive species management to shoreline protection and environmental stressors from hurricanes to sea level rise. Citing current evidence-based sources will create more of a buy-in from stakeholders.	

Question E	
Does the project/program have measures of success (i.e., metrics) that align with the primary Comprehensive Plan goal(s)/objectives? (Captures the statistical information requirement as defined by RESTORE Act)	Yes
Comments:	
The applicant clearly outlines the measures of success. For example Metric Title: PRM007, includes metrics of restoration success.	

Question F	
Does the proposal discuss the project/program's vulnerability to potential long-term environmental risks (i.e., climate, pollution, changing land use)? (Captures risk measures as defined under best available science by the RESTORE Act)	Yes
Comments:	
<p>The proposal includes long-term risk of climate change with intensity of hurricanes, sea level rise, and changes in rainfall patterns. Cite evidence to validate the statements. For example:</p> <p>Lin, C. Y., & Cha, E. J. (2019). Impact of climate change to hurricane loss to the Gulf Coast of the US. Retrieved from http://s-space.snu.ac.kr/handle/10371/153531</p> <p>Rypkema, D. C., Horvitz, C. C., & Tuljapurkar, S. (2019). How climate affects extreme events and hence ecological population models. <i>Ecology</i>, 100(6), e02684.</p>	

Question G	
Does the project/program consider other applicable short-term implementation risks and scientific uncertainties? Such risks may include the potential for unanticipated adverse environmental and/or socio-economic impacts from project implementation. Is there a mitigation plan in place to address these risks? Any relevant scientific uncertainties and/or data gaps should also be discussed. (Captures risk measures as defined under best available science by the RESTORE Act)	Yes
Comments:	
The applicant discusses performance monitoring in the application as applicable short-term implementation risks and scientific uncertainties. Mitigation techniques are discussed in the risks and uncertainties.	

Question H	
Does the project/program consider recent and/or relevant information in discussing the elements above?	Yes
Comments:	
The applicant considers recent and relevant information in discussing mitigation and monitoring; however, there are no evidence-based sources to validate the reliability of the statements.	

Question I	
Has the project/program evaluated past successes and failures of similar efforts? (Captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the RESTORE Act)	Need more information
Comments:	
The applicant indicates that partners are able to provide successes, but there is no evidence of addressing failures.	

Question J	
Has the project/program identified a monitoring and data management strategy that will support project measures of success (i.e., metrics). If so, is appropriate best available science justification provided? If applicable, how is adaptive management informed by the performance criteria? (Captures statistical information requirement a defined by the RESTORE Act)	Yes
Comments:	
The applicant organization clearly identifies a monitoring and data management strategy to support project measures utilizing appropriate science justification. Including more recent and current available science is critical to adaptive management presented in the proposal.	



Please summarize any additional information needed below:
The applicant provides a comprehensive overview of the Restore Act priority criteria, detailing the extent of the project and the work accomplished thus far with sponsors and partners. There are no significant weaknesses in this proposal, but including more up to date evidence can strengthen the proposal