Gulf of Mexico
Hydrological Restoration Criteria for Identifying and Prioritizing Projects

Texas • Louisiana • Florida
Mississippi-Alabama

Definition of hydrological restoration for this Partnership
To remove or modify anthropogenic barriers to restore historic tidal estuarine and freshwater exchange to benefit coastal and marine fisheries habitat.

Scale of Restoration Projects for this Initiative
The primary focus of this effort is on restoration projects that improve five acres of habitat or more and cost less than $1 million to complete. Larger (up to $5 million) or smaller projects may be considered and used by other partners who are interested in supporting hydrological restoration projects.

Examples
Examples of previously funded hydrological restoration sites are available online at:
http://www.habitat.noaa.gov/partners/toolkits/tidal_hydro/download_all_project_portfolio_pages.pdf

Multiphase Projects
Often restoration projects can have multiple phases. Please describe the most basic phase that meets the definition above. For example a restoration project may have three phases which could include 1) removing an obstruction to water flow, 2) dredging the area that had deposition due to the obstruction, and 3) building living shorelines on the banks to either side of the former obstruction area. In this case you would describe only phase one. At the end of this document is an opportunity to describe additional phases.

A. Initial Filter questions

1. Is the site in the Gulf of Mexico between Brownsville, Texas and Key West, Florida?
   A. Yes (continue)
   B. No (stop, this project does not qualify)

2. Does this project fit the definition above?
   A. Yes (continue)
   B. No (stop, this project does not qualify)

3. Is the estimated cost for the restoration project less than $5 million?
   A. Yes (continue)
   B. No (stop, this project does not qualify)

4. Will the restoration project have at least a 20-year lifespan?
   A. Yes (continue)
   B. No (stop, this project does not qualify)

B. Project Submission Information

1. Sea Grant Agent who collected and will submit information.

2. Date project was discussed with participants. This will be the same date that you use to reference the GIS files.

3. People besides you who participated in the discussion to identify this restoration project.
    a. **Name 1**
    b. Organization 1
    c. Email address 1
    d. **Name 2 (if applicable)**
    e. Organization 2
    f. Email address 2
    g. **Name 3 (if applicable)**
    h. Organization 3
    i. Email address 3
    j. **Name 4 (if applicable)**
    k. Organization 4
    l. Email address 4
    m. **Name 5 (if applicable)**
    n. Organization 5
    o. Email address 5
    p. **Name 6 (if applicable)**
    q. Organization 6
    r. Email address 6
    s. **Name 7 (if applicable)**
    t. Organization 7
    u. Email address 7
    v. **Name 8 (if applicable)**
    w. Organization 8
    x. Email address 8

C. Background and Project Description

1. Provide a unique name of the restoration site using local landmarks or similar means.

2. Provide the following location information for the restoration site on a map.
   a. Location where restoration project would be completed (in decimal degrees)
      i. Latitude:

      ii. Longitude (begins with "-"):

   b. Name of the GIS file that you will reference on the Google Earth file and database:

   Sea Grant facilitator: write the name of the GIS files that will be affiliated with this project by using the convention of your last namemonthdayyearletter of site (e.g. smith020711a). Use "0" if single digit for month and/or day and end with "a" for first site described that day, "b" for second site, c for third site, etc.

   Be sure to plot on Google Earth two items related to this project, which are 1) the location where the restoration project would be completed and 2) the extent of the impact from the restoration project.

3. What is the area of the footprint of the restoration activity where the work will be conducted? Please indicate in <u>one</u> of the two options below.
   a. _____feet by _____feet
   b. _____ acres

4. What is the total number of acres that will be positively affected by the restoration project?

5. Of the total number of acres, what is the approximate number that will be positively affected by habitat type. (enter values for all habitats that apply)
   a. Saltwater marsh acres_____
   b. Brackish marsh acres_____
   c. Freshwater marsh acres_____
   d. Submerged aquatic vegetation acres_____
   e. Oyster reef acres_____
   f. Other habitat 1 acres_____
   g. Other habitat 2 acres_____
   h. Other habitat 3 acres_____

6. If identified "Other habitat" above please specify what habitat(s).
   a. Other habitat 1 _____
   b. Other habitat 2 _____
   c. Other habitat 3 _____

Project Description

7. Historical hydrological modification (reason modification was made). (1-2 sentences)

8. Impacts from historical hydrological modification. (1-2 sentences)

9. Explicit goals and objectives of this project. (2-3 sentences)

10. What type(s) of restriction are impeding or preventing historical hydrological flows? (select all that apply)
    a. Undersized culvert
    b. Dike
    c. Road
    d. Railroad
    e. Foot path
    f. Sedimentation
    g. Other (specify)_____

11. What design strategy may address this issue? (select all that apply)
    a. Culvert placement
    b. Culvert replacement or repair
    c. Bridge installation
    d. Barrier breach (i.e., holes in the levee)
    e. Barrier removal (degradation of the entire levee wall)
    f. Water control structures (i.e., gates and weirs)
    g. Other (specify)_____
    h. Tidal creek creation or enhancement
    i. Mosaic habitat creation
    j. Sediment grading and/or elevation alterations
    k. Ditch filling or plugging
    l. Broad-crested earthen weir
    m. Concrete spillway

12. How frequently would this site need maintenance under regular circumstances (e.g. no major hurricanes)? Once every:
    a. 1-5 years
    b. 6-10 years
    c. 11-20 years
    d. 20 years or more
    e. Unknown

13. What is the status of the restoration project? (select all that apply)
    a. Identified location
    b. Conceptual model developed for restoration
    c. Restoration designs completed
    d. Some required permits have been approved
    e. All required permits have been approved
    f. Portion(s) of project has already been completed but there is still more work to be done

14. Is there a monitoring plan already developed so that the impacts of the restoration project could be measured pre- and post-restoration?
    a. Unknown
    b. No
    c. Yes
        i. If yes, identify what is being monitored and performance measures to identify success of the project (1-2 sentences)

15. Is the purpose of the hydrological modification to restore historic/natural salinity regime, increase salinity or decrease salinity in the area?
    a. Restore historical/natural salinity exchange
    b. Increase salinity
    c. Decrease salinity
    d. Unknown

16. What is the estimated cost for the restoration project?
    a. Less than $100,000
    b. $100,000 - $250,000
    c. $250,000 - $500,000
    d. $500,000 - $1,000,000
    e. $1,000,000 - $5,000,000

D. Ownership, Benefits, and Partners

17. Is there private ownership of the property at the restoration site?
    a. Unknown (skip to Question 18)
    b. No (skip to Question 18)
    c. Yes (answer questions in Section 1 below)

Section 1- Private land ownership

1. Are the private owners willing to permit others to conduct the restoration and monitoring on their site?
    a. Unknown
    b. No
    c. Yes

2. Would conservation easements be required?
    a. Unknown
    b. No
    c. Yes (if yes, answer question below)
        a. Are the owners willing to provide permanent conservation easements on their property?
            1. Unknown
            2. No
            3. Yes

3. Would liability be increased or decreased after the restoration project is completed?
    a. Increased
    b. Decreased
    c. Unknown

4. Would sale of property be required to conduct the restoration?
    a. Unknown
    b. No
    c. Yes (if yes, answer question below)
        a. Are the owners willing to sell their property?
            1. Unknown
            2. No
            3. Yes (If yes, answer the three questions below)
                i. How confident are you that they are willing to sell property?
                    a. Complete confidence
                    b. Moderate confidence
                    c. Little confidence

                ii. How long will it take to acquire property?
                    a. Less than one year
                    b. 1-2 years
                    c. More than 2 years
                    d. Unknown

                iii. If actions have already been initiated to obtain property please explain. (1-2 sentences)

18. Is there public ownership of the property at the restoration site?
    a. Unknown (skip to Question 20)
    b. No (skip to Question 20)
    c. Yes (answer questions in Section 2 below)

Section 2- Public land ownership

1. Have the appropriate local or state planning agency(ies) been contacted and approve this restoration project?
    a. Unknown
    b. No
    c. Yes

2. Is the restoration project part of an existing transportation improvement project?
    a. Unknown
    b. No
    c. Yes

19. Will landownership restrict access to the project area, which may make restoration difficult or prevent outreach, monitoring and maintenance post-restoration?
    a. Unknown
    b. No
    c. Yes

20. Is there a potential to negatively impact the built environment?
    a. Unknown
    b. No
    c. Yes

21. Is the project part of a historically or archeologically important site?
    a. Unknown
    b. No
    c. Yes
        i. If yes, describe (1 sentence)

22. Will the project connect to a conservation area (e.g. refuge, state or national park, research reserve, Scenic River)?
    a. Unknown
    b. No
    c. Yes
        i. If yes, name conservation area(s)_____

23. Are there specific species of interest that will benefit from this restoration project?
    a. Unknown
    b. No
    c. Yes
        i. If yes, list which species based on the following categories:
            1. Threatened and endangered species (common names)

            2. Commercially/recreationally valuable species (common names)

24. Identify the top three greatest ecological benefits from this project. (Rank the top three, 1=number one benefit, 2= number two benefit, 3=number three benefit)
    - ☐ Creation/enhancement of fish and wildlife habitat
    - ☐ Enhanced fisheries productivity for commercial/recreational harvest
    - ☐ Improved habitat longevity and sustainability
    - ☐ Reduction of shoreline erosion
    - ☐ Storm surge attenuation and flood mitigation
    - ☐ Adaptation to or accommodation of sea level rise
    - ☐ Storm water management (reducing rate and quantity of runoff)
    - ☐ Reduction / control of invasive species
    - ☐ Improved ground water and surface water quality (dissolved oxygen, nutrient loads, sediment loads, contaminants, salinity, temperature)

25. Identify the top three ecosystem services (human benefits) from this project. (Rank the top three, 1=number one benefit, 2= number two benefit, 3=number three benefit)
    - ☐ Commercial and/or recreational fishing
    - ☐ Hunting
    - ☐ Other recreational activities: camping, hiking, boating and/or wildlife viewing
    - ☐ Flood control/storm protection
    - ☐ Wastewater treatment/water filtration
    - ☐ Erosion control
    - ☐ Protection of property/infrastructure (avoided damages)
    - ☐ Cultural value

26. Is there an opportunity for volunteers to directly conduct the restoration?
    a. Unknown
    b. No
    c. Yes
        i. If yes, estimate the number of volunteer hours

27. What are the other opportunities for community involvement? (select all that apply)
    - ☐ Classroom or public presentations
    - ☐ Stewardship training workshops
    - ☐ Educational signage at site
    - ☐ Educational materials (e.g. handouts)
    - ☐ Adopt a restoration site program for regular maintenance (e.g. adopt a highway)
    - ☐ Other (specify)_____

28. Is there already community support for this project?
    a. Unknown
    b. No
    c. Yes
        i. If yes, describe (1 sentence)

29. Has this restoration site been identified as a priority in local, state, or regional plans?
    a. Unknown
    b. No
    c. Yes
        i. If yes, which plan(s)_____

30. Is there a commitment to financially support this project?
    a. Unknown
    b. No
    c. Yes
        1. If yes, list name of organization, work they are funding and funding amount

Organization 1

a. Name of Organization 1

b. Describe purpose of funding

c. Total funding amount by organization 1

Organization 2

d. Name of Organization 2

e. Describe purpose of funding

f. Total funding amount by organization 2

Organization 3

g. Name of Organization 3

h. Describe purpose of funding

i. Total funding amount by organization 3

31. Is a 1:1 match of non-federal funds currently available if this project was funded within the next year?
    a. Unknown
    b. No
    c. Yes

32. Identify other potential partners for this restoration project (e.g. USACE, university, etc.).

Name of partner(s)	Type of support by partner (permission, technical, permit, construction, evaluation)

33. What is your level of confidence in the following elements regarding the restoration project? (circle a number)

a.	Design strategy	very high confidence	1	2	3	4
	5 very low confidence					
b.	Cost estimate	very high confidence	1	2	3	4
	5 very low confidence					
c.	Anticipated benefits	very high confidence	1	2	3	4
	5 very low confidence					
d.	Completion in 3 years	very high confidence	1	2	3	4
	5 very low confidence					

34. Are there additional phases that would enhance this project but not directly change hydrology?
    a. Unknown
    b. No
    c. Yes

    If yes, describe the phases and estimated costs

    1. **Phase 2**
        a. Provide a brief description and benefits of phase two. (1- 3 sentences)

        b. Provide the estimated cost of implementing phase two

    2. **Phase 3**
        a. If there is a phase three provide a brief description and benefits. (1- 3 sentences)

        b. Provide the estimated cost of implementing phase three

    3. **Phase 4**
        a. If there is a phase four provide a brief description and benefits. (1- 3 sentences)

        b. Provide the estimated cost of implementing phase four

35. Provide final comments not covered elsewhere.

36. Will additional files be attached to this project and submitted separate from this information and the GIS file(s)?
    a. No

b. Yes

Stop Questions (unless time allows to complete optional questions)

E. Optional questions if there is time and interest

1. Are there specific data layers that are available and can be used to inform the restoration project?
   a. Unknown
   b. No
   c. Yes
      i. If yes, identify the data layers and where they reside.

2. Do current hydrological models exist for this project site?
   a. Unknown
   b. No
   c. Yes
      i. If yes, where are they located?

3. Identify key researchers that may have current or recent work that could inform the design of this specific restoration project and monitoring of results.
   a. Water quality
      i. Name

      ii. Affiliation

   b. Ecological
      i. Name

      ii. Affiliation

   c. Hydrological
      i. Name

      ii. Affiliation

   d. Socioeconomic
      i. Name

      ii. Affiliation

4. Is there a reference site located in close proximity to determine appropriate elevation and tidal hydrology?
   a. Unknown
   b. No
   c. Yes
      i. If yes, where is it located?

Thank you for completing this form.