National Estuaries Restoration Project Entry Form Instructions

Estuary

Part of a river or stream or other body of water that has an unimpaired connection with the open sea (based on natural convergence patterns versus manmade structures and obstructions), and where the sea water is measurably diluted with fresh water from land drainage. As defined by the *Estuary Habitat Restoration Strategy 2012*, estuaries are considered to extend from the head of tide to downstream terminus features such as barrier islands, reefs, sand bars, mud flats, or headlands in close proximity to the connection with the open sea. Under the *Estuary Restoration Act*, riparian and nearshore areas adjacent to the drowned mouths of streams entering the Lakes area also considered estuaries.

GENERAL INFORMATION:

This section tracks general information about the project status, implementation dates, and project size. ***= *required***

Question	***1. What is the name of this project?**
Description of Field	Short, descriptive project title that includes the specific location of the project and type of restoration being implemented.
Examples	James Harbor Salt Marsh Restoration
Question	***2. What type of project is this?** (select one) __ Funded under the Estuary Restoration Act (ERA) __ Compensatory (Required by state or federal law) __ All other projects
Description of Field	Select one from "Funded under the Estuary Restoration Act", "Compensatory" (required by state or federal law), or "None of the above".
Examples	Funded under the ERA
Question	***3. Provide a topic sentence(s) summarizing this project**:
Description of Field	➢ 1-2 sentence project description summarizing project goals and restoration activities to be completed. The summary is limited to 50 words. Include a unique fact or measureable outcome (e.g., special benefit to endangered species, recreation/fishery; special technique; and climate change related).
Examples	Example 1: The Virginia Institute of Marine Science restored approximately 40 acres of submerged aquatic vegetation (SAV). The project involved casting seeds rather than sprigs, which is a more cost effective way to re-establish SAV habitat. Example 2: Tide-gate modification and *Phragmites* eradication restored 12

acres of salt marsh habitat within the James Harbor estuarine system.

	***4. Does this project include monitoring to gauge the success of restoration efforts?** (select one)
Question	__ Yes __ No
Description of Field	Select "yes" or "no". Projects must have a monitoring plan to be included in the database.
Examples	Yes

	***5. Does this project's monitoring plan meet ERA Council Monitoring Standards?** (select one)
Question	__ Yes __ No
Description of Field	Select “yes” or “no”.
Examples	Yes

Question	**6. If monitoring data or monitoring reports are available on the web, please provide a URL (web address):**
Description of Field	Provide a URL where monitoring data can be accessed if available.
Examples	http://www.monitoringdata.com

	***7. What is the status of this project?** (select one) __ planning stage __ implementation stage __ implementation complete
Question:	__ project terminated
	Planning Stage — Secured funding commitment with planning/design activities taking place. No on-the-ground restoration activities have begun.
	Implementation Stage — On-the-ground restoration activities have begun (e.g. construction, planting, etc.). On-the-ground implementation activities such as major construction and planting are completed.
	Implementation Complete — Project monitoring, adaptive management, and other project management activities may be ongoing.
	Project Terminated — Project has stopped before completion due to problems with project implementation (e.g., loss of funding, failure to secure permits).
Description of Field	NOTE: The project status should correspond to the dates given below and should be updated as the project progresses. "Terminated" projects may be included in the database only in name.
Examples	Implementation complete/monitoring ongoing

Question	**8. Provide the dates for each stage of this project as it occurs. Note: for projects in the planning stage, provide estimated implementation stage**

	start date. Planning stage start date: *(month and year)* *Actual implementation start date: *(month and year)* **Implementation complete date: *(month and year)*
Description of Field	**Planning stage start date:** Provide the date that project planning began. Actual start date for on-the-ground restoration activities in format mm/yyyy. ***Actual implementation start date:** Projects implemented after November, 2000 can be entered in the database for informational purposes. Start date for monitoring and maintenance activities (i.e., completion of implementation stage/primary on-the-ground restoration activity). ****Implementation complete date:**
Examples	Planning stage start date: 05/2001 Actual implementation start date: 03/2002 Implementation complete date: 03/2002

*** QUESTIONS FOR ERA-FUNDED PROJECTS ***

This section is only required for projects receiving Estuary Restoration Act funds.

NOTE: All fields are required**

Question	**9. What is the size of the area which was/will be directly manipulated in acres?**
Description of Field	Specific area (in number of acres) where on-the-ground restoration occurs. This area may be smaller than the entire area restored e.g., the area of dam removal (versus entire upstream area opened to migratory fish).
Examples	5 acres
Question	**10. What is the overall size of the area being monitored in acres?**
Description of Field	Area in acres where monitoring occurs. This area should be greater than or equal to the area reported as restored in the Habitat Types and Acreage Restored section.
Examples	12 acres
Question	**11. How were the measurements in questions 9 & 10 obtained?** (e.g. aerial photography, GIS, land surveys, etc.)
Description of Field	Techniques used for measuring quantity of acres manipulated and monitored. (text field 250 character limit) Autonomous GPS, Differentially Corrected GPS, Geodetic Quality GPS, GPS with Wide-Area Augmentation Service Correction, LORAN-C Navigational Device, Cadastral Survey, Digital Map Interpolation, Digital Aerial Photography With Ground Control, Satellite Imagery With Ground Control, Manual Map Interpolation, Manual Aerial Photography With Ground Control,
Examples	Zip Code Centroid
Question	**12. Provide the name of project's non-federal sponsor:**
Description of	Name of the non-federal organization that applied for and accepted Estuary

Field Examples	Restoration Program assistance for this project through the USACE or NOAA. Chesapeake Bay Foundation
Question	**13. Provide the name of the lead federal agency:** (select one) __ U.S. Army Corps of Engineers (USACE) __ National Oceanic and Atmospheric Administration (NOAA) __ U.S. Department of Agriculture (USDA) __ U.S. Environmental Protection Agency (EPA) __ U.S. Fish and Wildlife Service (FWS)
Description of Field	Federal agency sponsoring project. Select one from the list above.
Examples	National Oceanic and Atmospheric Administration (NOAA)
Question	**14. Provide the date of ERA funding agreement:** *(enter month and date)*
Description of Field	Date ERA funding agreement was signed. Formatted MM/YYYY
Examples	10/2003
Question	**15. Has this project qualified as an innovative technology project as defined by the Council's 2012 Estuary Habitat Restoration Strategy?** (select one) __ Yes__ No
Description of Field	For ERA-funded projects only: Select "yes" or "no". An innovative technology project uses a new process, technique, or material; an existing processes, techniques, or materials in a new application or habitat type; and not just in a new region. Innovative projects are selected by the ERA Council and therefore are eligible for up to an 85% federal cost-share for the incremental cost of including such technology in the project.
Examples	Yes
Question	**If yes, please describe the innovative technology:**
Description of Field	Description of the innovative technology used in the project, including methods and materials (250 word limit)
Examples	A porous, organic baffle will be used to reduce damage to newly restored salt marshes from physical exposure and reduce re-suspension of sediments in the estuary. The baffles are designed to enhance filtration and intercept erosional sediments. They also may stimulate plant and animal productivity at marsh edges. A key feature of the completely biodegradable baffles is that they become filled and covered with sediment so they become an erosion-resistant, self-maintaining feature in salt marshes.
Question	**16. Provide ERA project number**
Description of Field	Project number for ERA-funded project (10 character limit)
Examples	ERA 04 0001

ABSTRACT

This section includes a detailed description of the restoration project. The project abstract will be used to generate a project profile available as part of a National Estuaries Restoration database available to the public.

Question ***Provide a project abstract:**

CONTENT: Abstracts are limited to 2,500 words and should contain the following elements:

A. Background about the project site:

1. Why is the habitat important, include a description of the habitat and wildlife species that benefit from the project?
2. If the project is part of an ongoing or larger effort, name and describe the connection to the larger effort.

- B. Describe the problem the project will address.
    1. Impacts and causes
    2. Degradation trend (e.g., increased development in area will increase threat or occurrence of invasive species is increasing annually)

C. What are the goals of the restoration project?

1. What will be done?
2. Describe restoration actions completed, techniques used, and acreage restored by habitat.

D. What are the benefits? Summarize ecosystem, community, and socio-economic benefits realized as a result of the project.

E. Brief project description (and description of individual phases if applicable)

F. Additional information (where applicable)

1. Roles of major project partners
2. Unique fact or specific measurable outcomes, if applicable (e.g., special benefit to endangered species, recreation/fishery; special technique; and climate change related)
3. Project timeline
4. Activities occurring outside project scope which may improve long-term success of the project (e.g., a program to reduce non-point source pollution)

Description of Field Examples

[Title]

This restoration project restored approximately 12 acres of salt marsh community in James Harbor, part of the Chesapeake Bay watershed. Prior to restoration, this site was a degrading salt marsh habitat characterized by invasive Phragmites and limited tidal influence, resulting from a poorly functioning tide-gate structure. It consisted of soft substrate material and was inhabited by a small number of invertebrate species.

As part of an estuarine system with great ecological importance, it was vital to address the problems occurring in the marsh and restore its full habitat functions. As a combined effort between NOAA and the Town of James, planning began in

May 2001 and implementation took place during March 2002. The goals of the project were to eradicate the Phragmites and modify the existing tide-gate structure in order to achieve better management of the tidal regime. These techniques would then encourage the natural propagation of Spartina and greatly improve the value of the habitat for many invertebrate, fish, bird, and other wildlife species.

The first step in the restoration process called for the eradication of the invasive species. This goal was achieved through a herbicide application and a prescribed burn. These techniques proved to be successful as nearly all Phragmites was eliminated. Next, the existing tide-gate was modified in the following ways to allow for proper management of water levels within the salt marsh – the revised structure has automated vertical lift gates to control tidal inflows; rapid adjustments of the direction, frequency, and duration of tide waters into and out of the system are now possible; and there are override features so the tide-gates can be manually operated if necessary. It was intended that as the overall water level of the habitat increased, Spartina would naturally propagate and Phragmites would be limited.

Monitoring has shown that these expectations have been met. In fact, not only has Spartina returned to the marsh but several other desirable species have as well, giving the salt marsh a more diverse vegetative composition. The return of Phragmites has been minimal, with the last report showing less than 5% cover, which is below the pre-determined 10% limit.

The work implemented as part of this project has restored a 12-acre area of salt marsh habitat that is developing successfully and being used by a wide variety of wildlife. The tidal regime is under proper management, invasive species have been controlled, invertebrate populations have greatly increased, vegetation is growing strong, and the ecosystem as a whole has received a great benefit.

CONTACT INFORMATION

This section collects information on the primary project contacts for this project. Up to two contacts can be provided.

WARNING: Contact information may be displayed on-line in project queries and reports. If you do not wish to share your information, please leave the field blank. ***If you are adding another person to the contact list***, *make sure they are aware that his/her information may be available on-line*.

Question Description of Field	***1. Provide information for up to two primary project contacts:**	
	First Name:	First name of contact person
	Last Name:	Last name of contact person
	Position Title:	Title of contact person within organization
	Office:	Contact's organization (e.g., agency, company or nonprofit group)
	Address 1:	First line of contact's address
	Address 2:	Second line of contact's address (optional)

	City:	Contact's city
	State/Territory/ Province:	Contact's state, territory, or Canadian province:
	Zip Code:	Contact's Zip Code (+4 if known)
	Phone:	Contact's phone number
	Fax:	Contact's fax number
	E-mail:	Contact's E-mail address
	Project/organization Web site address:	URL for project or organization
	First Name:	Joe
	Last Name:	Smith
	Position Title:	Project Manager
	Office:	Chesapeake Bay Foundation
	Address 1:	123 Chesapeake Drive
	Address 2:	
	City:	Annapolis
	State/Territory/ Province:	MD
	Zip Code:	20896
	Phone:	123-456-7890
	Fax:	123-456-7890
	E-mail:	joe.smith@chesapeake.org
Examples	**Project/organization Web site address:**	www.chesapeakebay.net

GEOGRAPHIC LOCATION

This section collects general location information on each restoration project.

1. Where is this project located?
*State/Territory/ Province:
*County/ Parish:
*City:
Tribe:
*Region:
Zip Code (+4 if known):
USGS 8-digit HUC:
Latitude/Longitude (center of project site in decimal degrees):
*X coordinate (longitude)
*Y coordinate (latitude)
USGS Topographic Quadrangle:
*Congressional District:

Question Description of Field		
	State/Territory/Province:	State/Territory/Province where the project is located.
	County/ Parish:	County/parish where project is located.
	City:	City where project is located
	Tribe:	Tribal jurisdiction where project is located (if applicable)

	Region: (select one) **__ North Atlantic** **__ Mid-Atlantic** **__ Great Lakes** **__ South Atlantic** **__ Gulf of Mexico** **__ Pacific** **__ Alaska** **__ Hawaii** **__ Caribbean**	Go to the Map Gallery - "Estuarine/ Coastal Watershed Regional Reference Maps"
	Zip Code (+4 if known):	Description of Field: Zip code (+ 4, if known) where project is located. (text field)
	USGS 8-digit HUC:	8-digit USGS Hydrologic Unit Code (HUC) (watershed) where project is located. If not known, click on link to EPA's Surf your watershed site to find HUC Code: http://cfpub.epa.gov/surf/locate/index.cfm
	Longitude:	**X coordinate (longitude) (for center of project site in decimal degrees):** Longitudinal coordinate of the project in decimal degrees (to a minimum of 4 decimal places). If not known, click on link to Topozone site to determine coordinates: http://www.topozone.com
	Latitude:	**Y coordinate (latitude) (for center of project site in decimal degrees):** Latitudinal coordinate of the project in decimal degrees (to a minimum of 4 decimal places). If not known, click on link to Topozone site to determine coordinates: http://www.topozone.com
	USGS Topographic Quadrangle:	USGS topographic quadrangle that the project lies within at the 1:24,000 scale (7.5 min). Topographic quadrangle names can be found on the Topozone site: http://www.topozone.com
	Congressional District:	Congressional district where the project is located. To find the congressional district for a project, use the House of Representatives site: http://www.house.gov. This number should be two digits, with a leading zero if necessary. If the project occurs in more than one district, then list all districts in numerical order separated by commas without additional spaces or punctuation. If the project occurs in AK, DE, or VT, use the term "At Large".
Examples	**State/Territory/ Province:**	MD
	County/ Parish:	Baltimore County

City:	Cape May
Tribe:	Nanticoke
Region:	Mid-Atlantic
Zip Code (+4 if known):	20910
USGS 8-digit HUC:	02060003
Longitude:	-76.4189
Latitude:	39.2983
USGS Topographic Quadrangle:	Middle River
Congressional District:	02

	2. What method was used to obtain the latitude and longitude for the project site? (e.g. GPS, topographic map, datums, etc.)
Question Description of Field	Techniques used to obtain the latitude and longitude for the project site.
Examples	**Datums:** World Geodetic Survey 1984 (WGS84), North American Datum 1927 (NAD27), North American Datum 1983 (NAD83), High Precision GIS Network (HPGN), High Accuracy Reference Network (HARN) **Techniques:** Address Matching, Autonomous GPS, Differentially Corrected GPS, Geodetic Quality GPS, GPS with Wide-Area Augmentation Service Correction, LORAN-C Navigational Device, Cadastral Survey, Digital Map Interpolation, Digital Aerial Photography With Ground Control, , Satellite Imagery With Ground Control, Manual Map Interpolation, Manual Aerial Photography With Ground Control, Zip Code Centroid, Topozone website.

	3a. Is there a GIS data layer (polygon) showing the boundaries of the area (to be) restored? (Select one)
Question Description of Field	__ Yes __ No Select yes or no.
Examples	Yes

	3b. If yes and GIS contact is not listed as primary project contact, please provide: Contact first name: Contact last name: Contact phone number:
Question Description of Field	Contact e-mail: If response to Question #3a was “Yes” and GIS contact is not the project contact, provide GIS contact information.
Examples	Jane Smith, 301 555 5555, jane.smith@myemail.org

BENEFITS

This required section tracks the expected and realized species and ecosystem benefits of the project.

Question	**1. Select the benefits (e.g., species, habitat, ecosystem, and/or socio-economic) the project provides from the list below or write-in a more accurate benefit.**
Description of Field	Make sure to identify all of the benefits the project will achieve. Use the list of benefits below as a guide to select benefits this project is expected to achieve. For each benefit entered, you will need to respond to the questions 2-4 for each benefit separately. List of potential project benefits: - improve/provide habitat for migratory birds - improve/provide habitat for fish/shellfish - improve/provide habitat for T&E species - improve/provide habitat for other wildlife (general) - wildlife corridors/benefit to nearby habitat areas - improve/restore natural hydrology - improved water quality - increased water quantity - erosion control - flood control - increase/improve recreational opportunities - community revitalization/citizen participation - compensation for injuries to natural resources
Examples	improve/restored natural hydrology

Question	**2. Provide a brief description of this benefit.**
Description of Field	Describe each project goal and how it will be met.
Examples	One goal was to increase the water levels within the salt marsh, and the changes to the existing tide-gate structure were planned to meet this purpose. With greater control capabilities possible with the new tide-gate, water levels could be easily regulated to incorporate an overall increase in water quantity while still allowing for adjustments in case of a flood or other event. Greater tidal influence was desired to discourage *Phragmites* invasion and encourage the natural reoccurrence of favorable salt marsh vegetation.

Question	**3. Has this benefit been achieved?** (select one) __ yes __ no __ not yet known
Description of Field	Indicate whether this benefit has been achieved or whether it is too early to determine.
Examples	yes

Question	**4. Comments**
Description of Field	If desired, provide comments on progress in meeting the selected project benefit.
Examples	With the modifications to the tide-gate, water levels soon rose as increased tidal

waters were allowed to influence the salt marsh habitat. Better management of the wetland is now possible with the tide-gate's additional functions.

HABITAT TYPES and ACREAGE RESTORED

This section requests information on the habitats and acreage restored for restoration projects.

Question

***1. Select a habitat type restored (or to be restored) by this project:** (select one from list below, repeat for all that apply)

Select a habitat type which will be or was already restored by this project.

List of Potential Habitat Types to be Restored: (see definitions in Appendix I).

- Beach
- Coral
- Dune
- Freshwater Wetland
- Hard Bottom
- In-stream
- Kelp
- Mangrove
- Oyster Reef/Shell Bottom
- Pond
- Riparian Zone (non-wetland)
- Rocky shoreline
- Tidal Wetland
- Soft bottom/mud/sand
- Submerged aquatic vegetation (SAV)
- Upland
- Water column

Description of Field

Examples

Salt marsh

Question

2. What is the tidal influence of this habitat type?

__ inundated

__ intertidal

__

__ not applicable

Tidal exposure of the habitat type:

Inundated	Below the level of extreme low tide.
Intertidal	The zone from extreme high water to extreme low water.
not applicable	Select if habitat type is not influenced by the tide.

Description of Field

Examples

intertidal

Question

3. If appropriate, please provide a specific description of this habitat type (e.g. tidal influence, photic/aphotic, location in estuary, regional habitat name/sub-type):

Description of Field

If appropriate, provide additional information on the specific physical and biological characteristics of this habitat, including its location in the estuary, light regime, local habitat name, etc.

Examples

Local name for this salt marsh habitat is saltern. Salterns in the project area are surrounded by mangrove forest.

Question

***4. Estimated acreage <u>to be</u> restored:**

Description of

Acres planned to be restored by this project.

Field Examples	12
Question	****5. For acres already restored, indicate how many acres were:** Created Re-established Rehabilitated
Description of Field	**Created** Acres of habitat that were created. Creation is the manipulation of the physical, chemical, and/or biological characteristics present to develop a type of habitat that did not previously exist on the site. **Re-established** Re-establishment is the manipulation of the physical, chemical, and/or biological characteristics of a site with the goal of restoring the natural/historic functions to a habitat type that previously existed on the site, but no longer exists at the time restoration activity is initiated. Re-establishment is the rebuilding of a habitat that has been destroyed. **Rehabilitated** Rehabilitation is the manipulation of the physical, chemical, and/or biological characteristics of a degraded habitat with the goal of repairing natural/historic functions. Rehabilitation is the restoring of a habitat that has been degraded, but not destroyed.
Examples	Created: 0 Reestablished: 12 Rehabilitated: 0.75
Question	**6. Indicate how many additional acres benefited (e.g. enhanced or protected) from this project:** *Enhanced or Protected*
Description of Field	**Enhanced** Acres of habitat that were enhanced. Enhancement is the manipulation of the physical, chemical, and/or biological characteristics of a site to heighten, intensify, or improve specific function(s) or to change the growth stage or composition of the vegetation present, often for purposes of human use versus ecosystem restoration. This term includes activities commonly associated with the terms enhancement, management, manipulation, directed alteration. **Protected** Acres of habitat that have been protected. Includes purchase of land easements, or other designation to prevent alteration of the site.
Examples	Enhanced: 0 Protected: 0
Question	**7. What method (e.g. aerial photography, GIS, land surveys) was used to determine the number of acres reported above as created, re-established, rehabilitated, enhanced, and/ or protected?**

Description of Field	Techniques used for measuring acres and stream miles. (250 character limit) Autonomous GPS, Differentially Corrected GPS, Geodetic Quality GPS, GPS with Wide-Area Augmentation Service Correction, LORAN-C Navigational Device, Cadastral Survey, Digital Map Interpolation, Digital Aerial Photography With Ground Control, , Satellite Imagery With Ground Control, Manual Map Interpolation, Manual Aerial Photography With Ground Control,
Examples	Zip Code Centroid.

	*** In-Stream (fish passage) projects only ***
Question	**8. If this project provided fish passage, how many stream miles were opened to anadromous fish?**
Description of Field	Provide the stream miles opened to anadromous fish.
Examples	7

Question	**9. For the stream miles reported in #8 above, please provide an estimate of the acres (based on surface area) made accessible to anadromous fish.**
Description of Field	Provide the acres (based on surface area) made accessible to anadromous fish.
Examples	2

RESTORATION TECHNIQUES

This section requests information regarding restoration techniques. The information obtained in this section will be used to determine the success of various restoration techniques.

Question	****1. Select a restoration technique used in this project**. (see Appendix II)
Description of Field	Select one of the techniques from the appendix that was used in this project. More than one technique can be entered for each project, but you will need to respond to questions 2-4 for each technique separately.
Examples	hydrological manipulation: tide gate modification

Question	**2. Specifically describe this technique (e.g., materials used, plant spacing):**
Description of Field	Detailed description of the technique selected from the Appendix II, as it has been used in this project.
Examples	The existing tide-gate was modified in the following ways: the revised structure has automated vertical lift gates to control tidal inflows; rapid adjustments of the direction, frequency, and duration of tide waters into and out of the system are now possible; there are also override features so the tide-gates can be manually operated if necessary. These additional features allow for a much better management of tidal waters within the marsh.

Question	**3. How would you rate the success of this technique?** (select one) __ Very successful

	__ Somewhat successful __ Not successful __ Not Yet Known
Description of Field	Based on the judgment of project managers, select the efficacy of this technique in this project: "Very successful", "Somewhat successful", "Not successful", or "Not yet known".
Examples	very successful
Question	**4. Please provide comments on the basis for the success rating.**
Description of Field	Description of why technique was rated as "Very successful", "Somewhat successful", or "Not successful", and/or other comments.
Examples	The previously existing tide-gate structure was modified and reconfigured successfully, and the changes now allow for proper management of tide waters into and out of the marsh.

MONITORING & SUCCESS CRITERIA

The purpose of this section is to obtain information on monitoring parameters and success criteria, to measure the success of restoration efforts.

Question	****1. Select a parameter being monitored to measure restoration success for this project (select from Appendix III).**
Description of Field	Choose a parameter being monitored in this project .More than one parameter can be entered for each project, but you will need to respond to questions 2-7 for each parameter separately.
Examples	invasive species % cover
Question	**2. Briefly describe the monitoring frequency and basic monitoring methods used for monitoring. If appropriate, also provide information on the specific parameters monitored.**
Description of Field	Additional monitoring information, including specific parameters monitored
Examples	Monitor any invasive *Phragmites* that may return. The site will be tracked quarterly for the first 2 years and semiannually up to a minimum of 10 years. Percent cover will be estimated through visual observations and will be recorded. If significant invasion occurs to a point over the designated acceptable level, additional response measures will be considered.
Question	**3. Enter the start date for monitoring this parameter.** (If monitoring has not yet begin, provide planned start date)
Description of Field	Date monitoring was initiated (or will be initiated) for each parameter in the format mm/yyyy
Examples	07/2002
Question	**4. Enter the end date for monitoring this parameter.** (If monitoring has not been completed, provide planned end date)

Description of Field	Date monitoring was completed (or will be completed) for each format in the format mm/yyyy
Examples	07/2012
Question	**5. Provide all quantitative success criteria for this parameter: (for example, water depth > x for at least x hours per day)**
Description of Field	Numeric standards for measuring success
Examples	> 70% native plant species, 25 acres of emergent wetland plants, >75% species index similarity to reference site, >5.0 dissolved oxygen, *Phragmites* cover not to exceed 10% at any time.
Question	**6. Have the success criteria for this parameter been met?** (select one) __ All __ Some __ None __ Not Yet Known
Description of Field	If all success criteria listed for this parameter have been met, select "all"; if one or more criteria have been met but some have not been met, select "some"; if none of the success criteria were met, select "none"; if the project has not reached a point where success criteria have been evaluated, select "not yet known".
Examples	All
Question	**7. Comments. Please use the space below to provide details on which success criteria were met for this parameter, and/or explanation as to why some criteria were not met.**
Description of Field	Provide any comments re: success criteria for this parameter, e.g., why it is believed some criteria were not met, whether the criteria were unrealistic, etc.
Examples	The success criteria have been met thus far. The monitoring reports have shown minimal *Phragmites* return, estimated at 5%, which is below the acceptable 10%. *Phragmites* has appeared only along the perimeter of the marsh and doesn't seem to be creeping inward, but this will continue to be monitored as planned.

NOTE: Submit monitoring results and reports to the NOAA Estuary Habitat Restoration Program manager. Results should include the project objectives, how the project area changed after restoration, and a prediction of the ability of the project to continue its success trend. If the project was not successful in meeting its objectives, please describe what will be done to improve the success of the project.

REGIONAL RESTORATION PLANS (including state and federal plans)

This section tracks whether a restoration project supports the goals of habitat restoration plans.

Question	**1. What is the name of the restoration plan?**

Description of Field	If applicable, provide the official name of a regional restoration plan that this project supports. More than one plan can be entered, but information for each plan must be entered separately.
Examples	San Francisco Estuary Project Comprehensive Conservation and Management Plan
Question	**2. Who is the lead organization that developed the plan.**
Description of Field	Names of federal, state or local government agencies, national partnership (e.g. Migratory Bird Joint Ventures) and nonprofit groups involved in writing the plan.
Examples	San Francisco Project

3. What type of plan is this?

__ federal
__ state/territory/province
__ multi-state/regional
__ local government
__ nonprofit
__ business/industry
__ other

Question	
Description of Field	Check the type of plan on the form. For example, if a plan was made official by approval of a federal entity, the plan is considered federal.
Examples	federal

4. What is the date of this restoration plan?

Question	
Description of Field	Date the restoration plan was adopted in mm/yyyy.
Examples	11/1993
Question	**5. What is the URL for this restoration plan (if available)?**
Description of Field	Web site for restoration plan (if available).
Examples	http://www.restorationplan.com

PARTNER INFORMATION

This section requests information for each project partner. Information on all partners (federal, state, and local agencies and programs, non-profit organizations, businesses, community groups, or educational institution) involved in the project should be provided as well as details on their involvement, web site URL, and other relevant pieces of information.

Question	***1. Project partner name.**
Description of Field	Name of each partner involved with the project.
Examples	National Oceanic and Atmospheric Administration (NOAA)

	2. What type of partner is this?(check one) __ Federal __ State/Territory/Province __ Local Government __ Tribal __ Non-profit __ Academic __ Business/Industry __ Private Citizen
Question Description of Field	Select the type of partner from the list.
Examples	Federal
Question	**3. Provide partner's web site address (if available):**
Description of Field	Project partner's web site, if available. The URL may be used to provide links to the partner's web site from the project profile.
Examples	http://www.nmfs.noaa.gov/habitat/restoration/
Question	**4. If desired, provide additional information for this partner (e.g. amount of funding, description of roles, etc.)**
Description of Field	Additional information may include details on the roles taken by each partner such as the amount of funding provided, role in the development of the restoration plan, number of volunteers and volunteer hours provided for project implementation or monitoring, or a description of "Other" contributions not specified in the picklist, etc.
Examples	NOAA provided funding in the amount of $50,000 and provided technical expertise.

BUDGET INFORMATION

This section requests general budget information on the restoration project.

Question	**1. Provide the original proposed project cost estimate:**
Description of Field	Original cost estimate for project (numeric field in format $##,###,###)
Examples	$40,000
Question	**2. Of the total cost estimate, how much will go towards project monitoring:**
Description of Field	Estimate of cost for monitoring (numeric field in format $##,###,###)
Examples	$30,000
Question	**3. List amount(s) for all applicable funding sources: (answer all that apply, numeric fields)**

Federal:	**Non-federal:**
Cash	Cash
In-kind	In-kind

	Lands, easements, etc. Lands, easements, etc.
Description of Field	**Cash** - Cash provided by federal and non-federal sources for the project. **In-kind** - In-kind funding provided by federal and non-federal sources for the project. **Lands, easements, etc.** - Other project support provided by federal and non-federal sources
Examples	$30,000 Federal Cash, $7,500 Non-federal Cash, $7,500 Non-federal In-kind

Question	**4. If desired, provide additional information on the project budget below (e.g. operations and maintenance costs, specifics on in-kind contributions, etc.)**
Description of Field	Describe specific components of the project budget such as costs, funding sources, donations, reasons the final cost of the project exceeded the proposed cost, etc.
Examples	The project received funding from NOAA and EPA which was used for supplies to implement the restoration project. Volunteers from a local high school also provided $7,500 worth of in-kind donations.

*** QUESTIONS FOR ERA-FUNDED PROJECTS ***

Question	****5. If project implementation is complete, provide the <u>total actual cost</u> (planning and implementation only) for this project:**
Description of Field	Actual cost of the project (once primary on-the-ground activity has been completed) (numeric field in format $##,###,###)
Examples	$37,500

PHOTOS and VIDEOS

For each project entry, the implementing partner may submit up to 5 photos and 5 videos from their restoration sites. These photos and videos may be displayed on project profiles on the web. These photos and videos might depict the restoration site before, during, and after restoration, and would be best understood if they tell a visual story of the restoration, using the captions to explain each photo.

Question	**1. Filename of photo:**
Description of Field	Filename of image uploaded. Image file must be in JPG format and filenames cannot contain spaces or special characters. Files should also be at least 250 pixels in width for viewing on the web (but no larger than 800 pixels).
Examples	post_restoration.jpg

Question	**2. Date of photo: (mm/yyyy)**
Description of Field	Date photo was taken.
Examples	07/2003

Question	**3. Caption for photo:**
Description of Field	A 1-2 sentence description of the photo that summarizes the events captured by the image. May include a description of the site, people involved, and/or actions taking place.
Examples	Photo of the degraded marsh prior to restoration.

Question	**4. Photo credit:**
Description of Field	Photographer or owner of photo.
Examples	Chesapeake Bay Foundation

Question	**5. Child in Photo:** __ yes __ no
Description of Field	NOTE: Photos with children's faces require release forms from their parents. If you submit a photo with a child in it, please check this box and the NOAA Program manager will send you a photo release form prior to using the photo in any outreach documents or web stories.
Examples	yes

Appendix I: Habitat Types

Estuary Habitat includes the estuary and its associated ecosystems, such as: salt, brackish, and fresh water coastal marshes, coastal forested wetlands and other coastal wetlands, maritime forests, coastal grasslands, tidal flats, natural shoreline areas, shellfish beds, sea grass meadows, kelp beds, river deltas, and river and stream corridors under tidal influence.

Habitat	Inundation	Definition- Selection Guidance
Beach	Intertidal	**Unstable sediment (frequently sand) transported by waves along a shoreline.** Above tidal influence (or the littoral zone in freshwater) it becomes either *dune* or *upland*. Below wave influence it becomes *soft bottom sand/mud*. Unstable shell-based sediment should be recorded as *oyster reef/shell bottom*. Beach can be used for open ocean shorelines or nearshore/estuarine shorelines.
Coral reef	Inundated	**Areas where habitat function is expected to be strongly affected by coral colonies.** In most cases, this habitat will be in shallow, tropical and subtropical ocean environments. Reefs created to support sponges, or projects which change habitat conditions with the intent to enable coral to survive should also be recorded as coral reefs, regardless of the density of coral colonies.
Dune	Upland	**Unstable upland sediment transported by wind.** This is an upland habitat commonly adjacent to *beach*, but above tidal influence (or the littoral zone in freshwater).
Freshwater wetland	Inundated	**Wetlands without salt or tidal influence.** This includes forested, scrub-shrub and emergent wetlands. The exception is tidal freshwater wetlands should be classified as *tidal wetland*. Areas of un-vegetated fresh water will generally be recorded as *pond or in-stream*.
Hard bottom	Inundated	**Permanently inundated ocean or lake bottom composed of rock, but lacking vegetation.** This habitat should be used for projects that create reef which is not intended to support shellfish or corals (which have their own habitats), including reefs created to enhance recreational fishing or fish spawning. Where floating *kelp* is present use that class. Where influenced by wave energy, use *rocky shoreline*. Where non-kelp vegetation is present, use *submerged aquatic vegetation*.
In-stream	Inundated	**Area associated with an active stream or river channel.** This habitat is primarily used to record stream miles opened to fish passage, or projects which increase riverine habitat quality/quantity, such as additions of large wood, or creation of fish habitat adjacent to the main channel, or reconnection to a historic channel. ALL stream miles should be counted under this habitat, as well as freshwater habitat enhancement actions In tidal or saltwater areas, habitat enhancement in stream channels is considered part of *tidal wetland*. Habitats above ordinary high water should be recorded as *riparian zone*, *freshwater wetland,* or *upland*. Where neither velocity nor vegetation are present, record habitat as *pond*.

Kelp	Inundated	**Areas where habitat functions are expected to be strongly affected by floating kelp.** Where kelp restoration is not the intent these typically become either *rocky shoreline* or *hard bottom.*
Mangrove	Intertidal	**Areas where habitat functions are expected to be strongly affected by mangrove species.** Typically, mangrove restoration occurs in saline, intertidal areas.
Oyster reef/shell bottom	Intertidal/ Inundated	**Areas where habitat functions are strongly affected by presence of shell.** This biogenic habitat typically occurs in areas that would otherwise be classed as *beach*, *tidal wetland*, or *soft bottom mud/sand*. If non-reef forming shellfish are added to the habitat, record the area restored as *soft bottom mud/sand*.
Pond	Inundated	**Open, freshwater, non-tidal wetlands with or without emergent vegetation.** Pond habitat is frequently recorded under projects which increase access to fish spawning and rearing habitat. With emergent vegetation present and dominated by shallow water, these become *freshwater wetlands*. In the presence of tidal or salinity effects (such as New England coastal salt ponds) record acres restored under *tidal wetlands*. Ponds with SAV will typically be recorded as *SAV* if that was the purpose of the project.
Riparian zone (non-wetland)	Upland	**Non-wetland habitats, adjacent to rivers or coastal shorelines, that either influence or are influenced by aquatic ecosystems.** Riparian is frequently used when the restored area is a shoreline "buffer" and the upland area has some influence by aquatic ecosystems, or the restoration activity is designed to enhance the functions of adjacent aquatic ecosystems.
Rocky shoreline	Intertidal	**Stable intertidal (or littoral in freshwater) rocky shorelines.** Below tidal influence (or below the littoral zone in freshwater), this habitat should be recorded as *hard bottom.* In riverine freshwater systems use *riparian.* Where*SAV* or *kelp* are present use those classes.
Soft bottom mud/sand	Inundated	**Submerged (marine, brackish, or freshwater), unvegetated soft bottom composed of silts, clays, or sands.** This habitat should be recorded when non-reef forming shellfish are added to the habitat. It is also used when re-flooding areas completely cut off from tidal influence, and where emergent vegetation could eventually form. Where influenced by wave energy, use *beach*. Use *SAV* when it is present.
Submerged	Inundated/	**Vegetated, mostly sub-tidal wetlands, commonly called sea**

aquatic vegetation (SAV)	Intertidal	**grasses.** This captures a range of vegetated low intertidal to sub-tidal vegetation including sea grasses and macroalgae. The exception is *kelp* which has its own classification. This can also include freshwater vegetated habitats within and below the littoral zone.
Tidal wetland	Intertidal	**Vegetated or sediment flats subject to tidal inundation**. Tidal wetlands may include channels. Where mangrove, shellfish, or SAV species are important use those classes.
Upland	Upland	**Any habitat that is not flooded during part of the year/ does not show the characteristics of wetland habitat.** The only upland habitats that are characterized separately are *dune* and *riparian*.
Water column	Inundated	**Any habitat where the quality or quantity of habitat services gained through restoration does not depend on substrate, but rather the condition of the water column.** While there is a gray area between *soft bottom mud/sand* and *water column*, use this habitat primarily when improvements to water quality will be measured as an indicator of project success, and *soft bottom* when increases in benthic productivity or vegetation are to be measured. Use *SAV* when it is present.

Appendix II: Restoration Techniques

Technique - Category	Definition - Guidance
Fish and Wildlife Management	
coral reattachment	Reattachment of corals which they have been damaged, dislodged, or fractured, at the same site as the injury. Note that projects which harvest coral for use in a nursery should include the "coral nursery" technique, and that coral transplant to another location is considered "species enhancement."
disease control: fauna	Actions taken to eradicate or prevent the spread of disease in fauna.
invasives removal: fauna	Physical removal or eradication of organisms from the habitat, which are non-native or native but overabundant This can also be used for preventive measures such as biological controls. Note that fencing to restrict access is a separate technique ("fencing/netting").

oyster gardening	Growing oysters to mature size in floating structures. Oyster gardening is frequently implemented as an educational activity at private residences. Projects that use shells from oyster gardening in a reef or bed structure should also include “oyster reef construction.” Note that oyster planting (such as “spat on shell” placement) is considered “species enhancement.”
species enhancement	Addition of native animals to a restoration site. This can be used for oyster planting (such as “spat on shell” placement), coral transplant, other species reintroduction, or stock enhancement. Note that support for the actual facilities used to raise native animals are considered separate techniques (i.e. “oyster gardening,” “coral nursery,” “native plant nursery,” or “fish hatchery”), as are techniques involving the introduction of substrates (e.g. “oyster reef construction” or “coral reef construction”).
Hard Structural Techniques	
fish exclusion devices	Installation of structures or other devices (e.g. audio or electrical) to exclude fish from a target area.
fishway	Building or maintenance of a structure to enhance fish passage. This may be a concrete or metal fish ladder, or be a "nature-like" fishway made of rock and other natural bottom substrate. This project type may include modifying the dam during installation.
berm/dike modification (including replacement)	Modification of a man-made earthen water retention structure. This can include partial removal, adding to an existing structure, or building a new structure to restrict water at a setback location.
berm/dike removal	Permanent removal of a man-made earthen water retention structure.
bulkhead removal	Permanent removal of a man-made structure, typically made of wood or metal, directly adjacent to a water body.
culvert modification (including replacement)	Modification of a culvert to increase the size, decrease the slope, or otherwise enhance the flow of water and fish through the culvert.
culvert removal	Permanent removal of a culvert. Culvert removal may sometimes include the installation of a bridge structure. This also includes daylighting culverts.
dam modification	Modification of a dam without actual dam removal, or by

(including replacement)	recreating the dam in a different location. Do not use this for fish ladders (which fall under "fishways"). Use this only for projects where the primary activity is to make changes to the dam itself.
dam removal	Permanent removal of a dam.
tide gate installation	Installation of new structures to regulate the tidal flow regime. This includes manually-operated tide gates (using flash boards), or those that are self-regulating.
tide gate modification (including replacement)	Modification of tide gates to alter the current flow regime, or replacing the existing tide gate with a new gate.
tide gate removal	Permanent removal of an existing tide gate.
weir construction	Creation of a low structure for the purpose of creating greater ease of fish passage, enhancing grade control or habitat enhancement such as pool creation.
weir removal	Permanent removal of a low structure that is impairing fish passage or stream function. Weir removal may be used to create greater ease of fish passage, enhance grade control, or enhance habitat (e.g. through pool creation).
Other Habitat Modifications	
bird habitat enhancement	Creation, restoration, and/or enhancement of nesting and roosting habitat for birds.
contaminant removal/remediation	Removal of contaminants from soil, sediment, waste, or water.
debris removal	Removal of on-shore or off-shore debris such as trash, fishing gear, vessels, or other man-made objects.
fencing/netting	Erection of permanent or temporary fences, nets, or strings to prevent or reduce herbivory, predation, or other forms of habitat degradation.
large woody debris/ structure placement	Addition of large wood or rock structures to increase habitat diversity, including pool creation, for fish and wildlife within streams and other waterways, including their banks.
storm water/runoff controls	Decommissioning of roads or implementation of road upgrades, swales, storm drains, etc. for either roads or trails. In general, any project meant to control

	stormwater/sediment runoff in order to protect marine, estuarine, aquatic, or diadromous habitat.
stream channel reconnection/creation	Any project that increases the length of a stream channel, but NOT one that increases the habitat quality within the channel. Project types include re-connecting oxbows or side channels or otherwise adding off-channel habitat as well as main-stem channel. If improving the habitat quality, use "weir construction," "large woody debris/structure placement" or "stream flow modification."
stream flow modification	Modification of stream flow through physical (not legal) measures to reduce water usage permanently, or provide water storage for later availability. This includes projects that install water catchment systems and/or tanks for water storage, etc.
Protection	
land acquisition	Acquisition of fee simple ownership or permanent conservation easements.
signage	Placement of signage on-site to inform the public regarding restoration and ecologically appropriate activities. This technique may include projects that develop or install educational/interpretive signage or signage to delineate restricted access zones, no-motor zones, etc.
water rights acquisition	Acquisition of permanent water rights or establishment of temporary forbearance agreements to enhance stream flow.
Restoration Infrastructure	
coral nursery	Growing corals to a size suitable for transplant at restoration sites. Note that coral transplant back to reef locations is considered "species enhancement" and should be added as an additional technique if necessary.
fish hatchery	Building or maintaining facilities to spawn and rear aquatic organisms such as finfish or shellfish, including the installation of piping and tanks for fish hatcheries or shellfish setting. This technique also includes rearing organisms in previously built facilities.
native plant nursery	Building or maintaining a structure to grow native plants. The structure may be wood, glass, metal, plastic or other

	construction materials. This technique also includes raising plants at the facility.
Sediment/Substrate Modification	
artificial fish habitat reef construction	Creation of man-made durable structure(s) to enhance fish habitat. Note that coral and oyster reef construction have their own techniques.
coral reef construction	Recreation of the structure of coral reef habitat following groundings or other destruction.
oyster reef construction	Placement of durable structure(s) to enhance the potential for oyster spat settlement. This can include shell, rock, or man-made materials such as “Baycrete”. Projects that utilize shells collected from oyster gardening should also include the “oyster gardening” technique, and those that include supplementation through spat on shell should also include “species enhancement”.
terracing	Creation of linear marshes in open-water areas for the purpose of slowing water velocity to create additional marsh habitat over time.
erosion control	Use of soft erosion control methods, such as installing coconut fiber, rock, large wood, breakwaters etc. This technique should be used for shorelines or banks, including living shoreline or bioengineering projects.
fill removal	Removal of sediment to reach the desired project elevation.
placement of fill/dredge material	Placement of sediment to reach the desired project elevation.
beach nourishment	Addition of sand to sandy shorelines, regardless of whether the shoreline is in-shore or open ocean (beach) shoreline
Vegetation Management	
disease control: vegetation	Actions taken to eradicate or prevent the spread of a disease.
invasives removal: vegetation	Removal of non-native or nuisance plant species from the restoration site. This can be used for any prevention methods, such as biological controls.

planting	Addition of native plants to a restoration site.
prescribed burn	Use of managed fire(s) to restore site ecology.

Appendix III: Monitoring Parameters

Physical Characteristics	Birds	Mammals
• Channel characteristics • Hydrology • Light penetration/secchi • Temperature • Topography/ Geomorphology • Turbidity • Pool/riffle ratio	• Abundance • Biomass • Density • Disease • Distribution • Diversity • Growth • Population age composition • Predation • Recruitment • Size • Survival	• Abundance • Biomass • Density • Disease • Distribution • Diversity • Growth • Population age composition • Predation • Recruitment • Size • Survival
Water Column Characteristics	**Fish**	**Mixed Assemblage**
• Chlorophyll concentration in water • Dissolved Oxygen • Fecal coliforms • Nitrogen • Nutrient cycling • Phosphorus • Silicon • pH • Salinity • Toxics	• Abundance • Biomass • Density • Disease • Distribution • Diversity • Growth • Population age composition • Predation • Recruitment • Size • Survival	• Abundance • Biomass • Density • Disease • Distribution • Diversity • Growth • Population age composition • Predation • Recruitment • Size • Survival
Soil and Substrate Characteristics	**Invasive Species (Fauna)**	**Reptiles**
• Bulk density • Moisture levels and	• Abundance	• Abundance

drainage • Nitrogen (pore water) • Nutrient cycling • Phosphorus (pore water) • Silicon • Organic content pH (pore water) • Salinity (pore water) • Sediment texture • Sedimentation rate and quality	• Biomass • Density • Disease • Distribution • Diversity • Growth • Population age composition • Predation • Recruitment • Size • Survival	• Biomass • Density • Disease • Distribution • Diversity • Growth • Population age composition • Predation • Recruitment • Size • Survival
Vegetation	**Invasive Species (Vegetation)**	**Other**
• Abundance • Composition • Basal area • Biomass • Canopy areal extent and structure • Density • Diversity • Edge to area ratio • Herbivory/disease • Litter fall • Growth rate • Percent cover • Productivity rate • Ratio of vegetation to open water • Recruitment • Survival • Woody debris	• Abundance • Biomass • Distribution • Growth • Population age composition • Recruitment • Size	• Debris • Qualitative assessment
Amphibians	**Invertebrates**	
• Abundance • Biomass • Density • Disease • Distribution • Diversity	• Abundance • Biomass • Density • Disease • Distribution • Diversity	

• Growth • Population age composition • Predation • Recruitment • Size • Survival	• Growth • Population age composition • Predation • Recruitment • Size • Survival