# WETLAND AND RIPARIAN PROJECT FORM and HABITAT MAPS

for Mitigation and Restoration Projects in the San Francisco Bay Region of the California Water Board

Two brackets [ ] represent a checkbox; check a checkbox like this: [x]. For text responses, add text after the colon, on the next line if necessary. Provide all dates as mm/dd/yyyy. See the companion Form Instructions for more information.

Note: Maps should be submitted with this form; see instructions below under "Habitat Maps).

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Form completed by [ ] Applicant [ ] Other (specify) ________________</td>
<td>2. Date of submission: ___________________________</td>
</tr>
<tr>
<td>Name __________________________ Phone/email ___________________________</td>
<td></td>
</tr>
</tbody>
</table>

## PROJECT IDENTIFICATION

Complete all that apply. Enter "pending" for pending actions. See instructions for a key to abbreviations.

| 3. Corps File No: | 5. Water Board CIWQS Place No: |
| 7. Date of letter/order: |   |
| 12. USFWS File No: | 14. NMFS No: |
| 13. Date of action: | 15. Date of action: |
| 16. SCC Record No: | 17. Date of action: |
| 18. State Clearinghouse number: |   |

## GENERAL INFORMATION

19. Project name (include any alternative names):

20. Brief project description

21. Project type (see definitions to right)

   Check one:   [ ] Compensatory mitigation   [ ] Non-mitigation

   Definitions for project type

   **Compensatory mitigation:** Project includes legally required work to compensate for unavoidable impacts to existing wetland/riparian habitat.

   **Non-mitigation:** Project does not include any legally required mitigation work.

## APPLICANT INFORMATION

22. Applicant name and/or organization:

23. Mailing Address:   24. Email:   25. Phone:

## CONTACT FOR TECHNICAL INFORMATION

26. Contact Name:   27. Organization Name:

28. Mailing Address:   29. Email:   30. Phone:

## FUNDERS/ CONTRIBUTORS

31. Please indicate project funders or in-kind contributors, other than permitee, if any.

   [ ] State Coastal Conservancy   [ ] CA Resources Agency

   [ ] Regional Water Board   [ ] CalTRANS

   [ ] Wildlife Conservation Board   [ ] US Fish and Wildlife

   [ ] National Oceanic and Atmospheric Admin.   [ ] US Army Corps

   [ ] State Parks   [ ] Natural Resource Conservation Service

   [ ] Department of Fish and Game   [ ] OTHER ___________________________
### RESTORATION/MITIGATION SITE INFORMATION

See also “Development or Impact Site Information,” below

<table>
<thead>
<tr>
<th>32. Restoration/mitigation site name (if different than Project name):</th>
<th>33. Restoration/mitigation site county(ies):</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>34. Restoration/mitigation site location</th>
<th>Latitude:</th>
<th>Longitude:</th>
<th>Datum (if known):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal degrees of approximate center of restoration/mitigation area</td>
<td>NAD83 datum if possible</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 35. Mitigation is (check all that apply): | [] on site | [] off site | [] mitigation bank |

<table>
<thead>
<tr>
<th>36. Estimated dates for groundwork and monitoring</th>
<th>Estimated groundwork start date:</th>
<th>Estimated groundwork end date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[If construction [or groundwork] is delayed by more than 3 months, the applicant should notify the Water Board within 30 days.</td>
<td>Estimated monitoring start date:</td>
<td>Estimated monitoring end date:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>37. Is a wetland delineation planned for the restoration/mitigation area?</th>
<th>[ ] Yes</th>
<th>[ ] No</th>
</tr>
</thead>
<tbody>
<tr>
<td>38. Is a wetland/riparian assessment planned for the restoration/mitigation area?</td>
<td>[ ] Yes</td>
<td>[ ] No</td>
</tr>
</tbody>
</table>

| 39. Water sources for restoration/mitigation site (Check all that apply) | [ ] Tidal | [ ] Natural Runoff | [ ] Stream or River Overflow | [ ] Groundwater | [ ] Agricultural Runoff | [ ] Treated Wastewater | [ ] Urban Runoff | [ ] Raw Water Pipeline |

### DEVELOPMENT OR IMPACT SITE INFORMATION (if applicable)

<table>
<thead>
<tr>
<th>40. Development project /impacted site name (if different than Project name):</th>
<th>41. Development project /impacted site county(ies):</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>42: Impacted site location</th>
<th>Latitude:</th>
<th>Longitude:</th>
<th>Datum (if known):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal degrees of approximate center of impacted site, IF separate from mitigation site</td>
<td>NAD83 datum if possible</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>43: Type of work causing impacts</th>
<th>Check all that apply</th>
<th>[ ] New construction</th>
<th>[ ] Repair</th>
<th>[ ] Maintenance</th>
<th>[ ] Replacement</th>
<th>[ ] Other (specify):</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>44. Is a wetland delineation planned for the impacted site?</th>
<th>[ ] Yes</th>
<th>[ ] No</th>
</tr>
</thead>
<tbody>
<tr>
<td>45. Is a wetland/riparian assessment planned for the impact area?</td>
<td>[ ] Yes</td>
<td>[ ] No</td>
</tr>
</tbody>
</table>

### PERFORMANCE CRITERIA

| 46. Performance Criteria | Paste into this area the criteria by which the performance and success of the restoration/mitigation project will be judged. Criteria can be extracted from final mitigation plan or permit; table formats are preferred. Attach separate file if necessary; can include time-based criteria such as percent plant cover by year, or duration and extent of soil saturation. See the Form instructions document for a full example. |

| 47. Vegetation Planting List | Paste from mitigation plan or permit, if available, into this area a list of any plant species that will be planted as part of this project. If no planting will occur, list species by habitat type expected to develop. Note that target vegetation should be native species. Attach a separate file if necessary. |

| 48. List reference sites or reference datasets to be used, if any |

| 49. Other project conditions in permit (Add as necessary) |

### REPORTING

<table>
<thead>
<tr>
<th>50. Reporting requirements</th>
<th>Monitoring reports are required every: [ ] year</th>
<th>[ ] 2 years</th>
<th>[ ] _____ years, over a total required monitoring period of _____ years.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other reports required:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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2
HABITAT MAPS REQUIREMENT

51. You must submit with this form the following maps of your project:
    1) a map indicating present habitats at all project locations and
    2) a map indicating planned habitat changes (gain/improvement/loss) at all project locations
    • Maps must use the habitat list provided on this form (see "Habitat Definitions" below)
    • Submittal must clearly identify the "Present Habitats" and "Planned Habitat Changes" maps respectively.
    • For mitigation projects, include both the impacted site and the mitigation site, on separate maps if necessary.
    • Include planting details and structural/hydro modifications if appropriate.
    • Examples of habitat maps can be found at http://www.wetlandtracker.org/tracker/map-examples

Indicate the map format used (listed in order of preference):
[ ] (Recommended) Google KML files saved from Google Maps: My Maps (free) or Google Earth Pro (not free). Maps must show the boundaries of all project habitats, using the habitat list provided on this form. See http://www.wetlandtracker.org/tracker/map-examples
[ ] GIS shapefiles. The shapefiles must depict the boundaries of all project habitats, using the habitat list provided on this form. Each shape should be attributed with the habitat name. Features and boundaries should be accurate to within 33 feet (10 meters). If possible, provide map in NAD83/WGS84 datum, UTM Zone 10 projection; identify datum/projection used.
[ ] Other electronic format (CAD or illustration format) that provides a context for location (inclusion of landmarks, known structures, geographic coordinates, or USGS DRG or DOQQ). Maps must show the boundaries of all habitats, using the habitat list provided on this form.
[ ] Habitats maps marked on paper USGS 7.5 minute topographic maps or DOQQ printouts. Maps must show the boundaries of all habitats, using the habitat list provided on this form.

52. If using Google Maps: My Maps or similar, provide URL(s) of habitat maps:

EXISTING HABITAT TOTAL
Consider all areas in both the mitigation/restoration project and the development project/impacted site. Provide the total area of all existing habitats (including habitat to be lost) in acres; provide also the total existing riparian habitat in linear feet.

53. Total existing wetland/riparian habitat (including habitat to be lost) acres (all habitats): linear ft (riparian):

PLANNED HABITAT CHANGES
54. Area or length gained, improved and lost, by habitat and project activity
—Consider all areas in both the mitigation/restoration site and the development project/impact site
—Fill out table items to the nearest 0.1 acre —For riparian areas, describe the size in both acres and linear feet
—See definitions below table —See form instructions for policy & guidance on mitigation projects
—If project maintains or repairs a stream channel or bank, enter the amount of linear feet and acres under "Stream and Rivers" (either "channel" or "riparian area") under "Improved—Enhanced".

<table>
<thead>
<tr>
<th>Habitat type</th>
<th>Gained</th>
<th>Improved</th>
<th>Lost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Created</td>
<td>Restored</td>
<td>Enhanced</td>
</tr>
<tr>
<td>Estuarine—marsh</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Estuarine—mudflat</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Estuarine—open water</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Estuarine—submerged aquatic vegetation</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Vernal pools &amp; swales</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Depressional wetlands except vernal pools &amp; swales—marsh and unvegetated flats</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Depressional wetlands except vernal pools &amp; swales—open water</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Seeps and springs wetlands</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Playas—marsh</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Playas—open water</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Lakes—marsh</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Lakes—open water</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Streams and rivers—channel</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Streams and rivers—riparian area</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Unknown wetland habitat</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Totals</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

1 Note that open water generally cannot compensate for wetland fill. See form instructions document for more information.
2 Created: Establishment of wetland/riparian where previously none existed. Restored: Establishment of wetland/riparian where some did previously exist. Enhanced: Improvement of functions of existing wetland/riparian habitat; habitat size and type does not change. Preserved: Protection of existing wetland/riparian habitat without physically changing it.
3 this habitat type can contain seasonal (ephemeral) wetlands
4 lost includes both destruction and conversion to another habitat
HABITAT DEFINITIONS

Estuarine wetlands consist of three main parts: the vegetated marsh plain that is above the average high tide (Estuarine—marsh), the area of open water that is apparent during an average low tide (Estuarine—open water), and the area lacking vegetation that exists below the marsh plain that is exposed during the average low tide (Estuarine—mudflat). The open water area includes the pannes and ponds on the vegetated marsh plain. Open water and non-vegetated areas have less than 5% absolute cover of vegetation. In addition to these three main parts, some estuarine wetlands have submerged aquatic vegetation, such as eel grass, that is partially exposed during the average low tide. The minimum size of open water areas, non-vegetated areas, vegetated marsh plain, and submerged vegetation is 0.25 acres (0.1 hectares).

Vernal Pools are ephemeral, depressional wetlands that typically support at least 30% relative cover of indicative plant species. The shallow depressions are underlain by bedrock or impervious soil. They fill with rainwater and runoff during the winter and may remain inundated until spring or early summer, sometimes filling and emptying repeatedly during the wet season. Vernal pools often occur together with vernal swales as vernal pool systems that have many pools of various sizes and shapes, varying floral and faunal composition, and various hydroperiods. Water can move between adjacent pools and swales through the thin soils above the underlying impervious substrate.

Depressional Wetlands are places where runoff accumulates in a topographic depression. Water either does not flow through the wetland or the flow is essentially imperceptible. Depressional wetlands are smaller than lakes, lack the indicative plant community of vernal pools, and are neither saline nor alkaline like playas. Stock ponds, irrigation ponds, and treatment ponds that are smaller than lakes are examples of unnatural depressional wetlands. Ponds on fault traces, valley bottoms, and on broad saddles along ridge are examples of natural depressional wetlands. A depressional wetland can have three main parts: an area of open water (Depressional wetlands—open water), a non-vegetated area that is exposed when the wetland is not full, and an area of marsh vegetation that borders either the open water area or the non-vegetated area. The open water areas and non-vegetated areas have less than 5% absolute cover of vegetation; count these both as “Depressional wetlands—marsh and unvegetated flats.” Some depressional wetlands lack the open water area and/or the non-vegetated area. Depressional wetlands can be perennial or seasonal. Seasonal depressional wetlands have some amount of standing water for at least 9 months during most years. Seasonal depressional wetlands have no standing water or it lasts for less than 9 months during most years.

Seeps and springs wetlands are also known as Slope Wetlands. They are formed by groundwater emerging onto the ground surface or into the root zone of wetland vegetation. They naturally occur on hillside or at the bases of dunes, hills, alluvial fans, etc. In some cases, the emerging groundwater flows downhill through very small channels called rivulets or runnels that lack the banks, beds, and floodplains of larger streams. Many seeps and springs adjoin rivers, streams, lakes, and other kinds of wetlands.

Playas consist of the three main parts: the area of open water that is apparent when the playa is full, the non-vegetated area that is exposed when the playa is not full, and the area of marsh vegetation that borders either the open water or the non-vegetated area (Playas—marsh vegetation). Open water and non-vegetated areas have less than 5% absolute cover of vegetation; count these both as “Playas—open water.” The central feature of a playa is a seasonal or perennial body of very sodic (i.e., strongly alkaline) or saline water with an average depth less than 6 feet (1.8 meters) during the dry season. The benthic sediments of a playa are mostly very fine-grain clays and silts. The fringing wetlands are characterized by grasses and herbaceous plants tolerant of the soluble salts that accumulate along the shoreline. The shallowness of the open water areas of playas distinguishes them from lakes. Playas differ from vernal pools by having little or no vascular vegetation within the area that is seasonally saturated or inundated.

Lakes are at least 20 acres (8 hectares) large and have an average depth of at least six feet during the dry season. A lake consists of the three main parts: the area of open water that is apparent when the lake is full, the non-vegetated area that is exposed when the lake is not full, and the area of marsh vegetation that borders either the open water or the non-vegetated area (Lakes—marsh). Open water and non-vegetated areas have less than 5% absolute cover of vegetation; count these both as “Lakes—open water.” The minimum size of open water areas, non-vegetated areas and vegetated areas is 0.25 acres (0.1 hectares).

Streams and rivers can consist of two main parts: the channel (Streams and rivers—channel) and its riparian area (or active floodplain); count this as “Streams and rivers—riparian area.” The active floodplain is defined as the relatively level area that tends to be flooded every 1.5 to 2.0 years. It can be represented by a contour line on a steep bank, a very narrow flat area, or by broad areas of vegetated and non-vegetated bars, flats, and low benches. The channel consists of its banks and bed below the active floodplain. Channels can be perennial, intermittent, or ephemeral. Perennial channels have surface water flowing through them all year during most years. Ephemeral channels have flowing water only during the wet season. Intermittent channels have flowing water only during rains, or when water is released from upstream reservoirs, treatment ponds, etc. Braided channels have multiple sub-channels that diverge and converge.

Buffer areas protect streams and other wetlands from potential problems or stresses that originate in the uplands. Whether or not an area adjoining a wetland functions as a buffer depends on its extent, width, and the kinds of land uses to which it is subjected. In general, for an area to serve as a buffer, it must be at least 16 feet (5 meters) wide.

55. Habitat types were determined by [ ] aerial/satellite photos [ ] field survey [ ] other (specify)

ADDITIONAL INFORMATION

56. Comments and/or additional information on the project
## Project Monitoring

**Parameter**

<table>
<thead>
<tr>
<th>Sample Frequency</th>
<th>Annual</th>
<th>Seasonal</th>
<th>Quarterly</th>
<th>Monthly</th>
<th>Continuous</th>
<th>Total Time Span</th>
<th>Comments</th>
</tr>
</thead>
</table>

### 57. CRAM (California Rapid Assessment Method) or other method

### 58. Hydrology

- Tide Levels (select datum)
  - [ ] NAVD 88
  - [ ] Local MHW
  - [ ] Local MLW
  - [ ] arbitrary

- Frequency & duration of inundation
- Sedimentation Rates
- Flow
- Tidal Prism
- Hydraulic Geometry
- Thalweg Profile
- Channel Length
- Channel Density
- Shoreline or Bank Stability
- Other

### 59. Vegetation

- Percent Cover
- Plant Height
- Plant Vigor
- Standing Crop
- Productivity
- Native Species Richness
- Non-native Species Richness
- Survival of Vegetation
- Other

### 60. Water Chemistry

- pH
- Conductivity
- Total Suspended Solids
- Turbidity
- Dissolved Oxygen
- Temperature
- Salinity
- Biological Oxygen Demand

- Metals (select)
  - [ ] Hg
  - [ ] MeHg
  - [ ] Pb
  - [ ] Cu
  - [ ] Se
  - [ ] Zn
  - [ ] other (list)

- Organic Contaminants (select)
  - [ ] PCB
  - [ ] OC
  - [ ] PAH
  - [ ] other (list)

- Chlorophyll A
- Ammonia
- TOC
- Other

### 61. Sediment Chemistry

- Grain Size
- Nitrogen
- Phosphorus

- Metals (select)
  - [ ] Hg
  - [ ] MeHg
  - [ ] Pb
  - [ ] Cu
  - [ ] Se
  - [ ] Zn
  - [ ] other (list)
### Organic Contaminants (select)
- [ ] PCB
- [ ] OC
- [ ] PAH
- [ ] Other (list)

### Bulk Density

### TOC

### Other

### 62. Wildlife

#### Mammals (select)
- [ ] Spp. richness
- [ ] Pop. size
- [ ] Survival
- [ ] Evidence Of Use

#### Amphibians/Reptiles (select)
- [ ] Spp. richness
- [ ] Pop. size
- [ ] Survival
- [ ] Evidence Of Use

#### Birds (select)
- [ ] Spp. richness
- [ ] Pop. size
- [ ] Survival
- [ ] Evidence Of Use

#### Fish (select)
- [ ] Spp. richness
- [ ] Pop. size
- [ ] Survival
- [ ] Evidence Of Use

#### Benthic Invertebrates (select)
- [ ] Spp. richness
- [ ] Pop. size
- [ ] Survival
- [ ] Evidence Of Use

#### Aquatic Invertebrates (select)
- [ ] Spp. richness
- [ ] Pop. size
- [ ] Survival
- [ ] Evidence Of Use

#### Terrestrial (select)
- [ ] Spp. richness
- [ ] Pop. size
- [ ] Survival
- [ ] Evidence Of Use

- Zooplankton
- Phytoplankton

### 63. Other Monitoring
(identify parameters, frequency and time span of data collection)