

**Table of Performance Criteria, Monitoring Methods, and Monitoring Schedule
MLK Marsh Restoration**

Objectives, Performance Criteria, Stressor Indicators	Monitoring	
	Protocol	Schedule
Ecological Objective 1: Provide Suitable Breeding Habitat for California Clapper Rail		
Performance criterion 1-1: Positive trend in vegetation measurements, with CCR habitat defined as salt marsh plain dominated by a dense tall cover of pickleweed (<i>Salicornia virginica</i>) and/or cordgrass (<i>Spartina foliosa</i>)	Transects, veg map	Annual
Stressor indicator 1-1: Alkali bulrush (<i>Scirpus maritimus</i>) should not be present in large continuous patches	Transects, veg map, walk around site	Annual
Ecological Objective 2: Support Waterfowl and Shorebirds		
Performance criterion 2-1: Comparable numbers and species of shorebirds between the existing “loafing peninsula” near the Site, and the resting areas on the Site.	Avian surveys	4x/month, Oct-Apr
Performance criterion 2-2: Comparable numbers and species of shorebirds and waterfowl between the Site and nearby waterfowl and shorebird habitats.	Avian surveys	4x/month, Oct-Apr
Ecological Objective 3: Support Intertidal Plant Communities		
Performance criterion 3-1: The high marsh plain should develop a 50 percent cover of salt-marsh plant (generally dominated by pickleweed, saltgrass, jaumea, or alkali heath) within five years of Project construction	Transects, veg map	Annual
Performance criterion 3-2: The low marsh plain should demonstrate a positive trend increasing toward a 50 percent cover of salt marsh plants dominated by cordgrass (<i>Spartina</i> spp.)	Transects, veg map	Annual
Performance criterion 3-3: Over a period of five years, sedimentation should raise the average elevation of the low marsh plain from 5.5 to 5.75 ft Port Datum	Sediment pins (failed), cross section/marsh plain topo surveys, probing	Annual
Stressor indicator 3-1: Within the tidal marsh areas, there should be no large (greater than 10 square meters), continuous patches of exotic, invasive species, or bare patches of ground present	Transects, veg map; Invasive <i>Spartina</i> Project site	Annual
Ecological Objective 4: Support Seasonal Ponds and Seasonal Vegetated Wetlands		
Performance criterion 4-1: Seasonal ponds 1 and 2 should develop a vegetation cover during the wet season (December through April) of less than 20 percent cover and consisting of annual species	Transects	Annual
Performance criterion 4-2: The seasonal ponds should maintain 3 to 18 inches (10 to 59 cm) of water lasting 10 days after each of four storm events during the months of December through April in average rainfall years	Read staff gauges	4x/winter

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Performance criterion 4-3: The total seasonal pond acreage should average 4.5 acres during the months of December through April	GPS pond perimeter; develop stage-area curve and measure stage only at gauge	4x/winter
Performance criterion 4-4: The seasonal ponds should have no significant erosion or sedimentation	Visual	4x/winter; Park staff routine observations
Performance criterion 4-5: The drainage basin divides should remain intact and not wash out during extreme storm events	Visual	4x/winter; Park staff routine observations
Performance criterion 4-6: The seasonal vegetated wetlands surrounding the ponds should demonstrate, over the first five years, a positive trend increasing toward the long-term goal of at least 80 percent cover for two-thirds of the seasonal wetlands and 20 to 80 percent cover for the remaining one-third of the seasonal wetlands	Transects	Annual
Performance criterion 4-7: Seasonal wetland vegetation surrounding ponds 1 and 2 should total at least 4.7 acres during average rainfall years	Transects	Annual
Stressor indicator 4-1: There should be no large (greater than 10 square meters), continuous patches of exotic, invasive species, or bare patches of ground (defined as having less than 10 percent cover of vegetation) present.	Transects	Annual
Ecological Objective 5: Provide Upland Buffer and Upland Drainage Divide Habitat		
Performance criterion 5-1: Vegetation cover of the upland buffer and drainage divide areas should have values of at least 40 percent, measured at the end of the growing season	Transects	Annual
Performance criterion 5-2: The shrub plantings should have a survival rate of at least 70 percent during the first five years	Visual	Park staff routine observations
Engineering Objective 1: Maintain Required Hydraulic and Tidal Circulation within the Restored Tidal Marsh		
Performance criterion 6-1: Monitor and evaluate the hydraulic circulation within the marsh	Deploy recording tide gauge in channel	4-6wk period annually at spring tides
Maintenance Objective 1: Prevent Excessive Levee Erosion		
Performance criterion 7-1: Erosion of the perimeter levee shall result in a levee slope no greater than 1.5:1	Visual	Annual; Park staff routine observations
Maintenance Objective 2: Maintain Plantings and Habitat Features		
Performance criterion 8-1: Monitor, adjust water supply, and repair or replace damaged drip irrigation system components	Visual	Park staff routine observations
Stressor indicator 8-1: Replace dead or dying shrubs promptly	Visual and replacements	Park staff routine observations

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Stressor indicator 8-2: Replace cordgrass if survival rates drop below 70 percent	Visual (abandoned)	NA
Stressor indicator 8-3: Prune shrubs as needed	Visual and pruning	Park staff routine observations
Stressor indicator 8-4: The Site will be kept free of invasive vegetation with the following species targeted for removal: peppergrass (<i>Lepidium latifolium</i>), pampas grass (<i>Cortaderia selloana</i>), french broom (<i>Genista monspessulana</i>), star thistle (<i>Centaurea solstitialis</i>), and smooth cordgrass (<i>Spartina alterniflora</i>)	Visual and removal	Park staff routine observations
Maintenance Objective 3: Routine Park Operation		
No criteria or stressors stated	Regular maintance	Park staff routine observations
Maintenance Objective 4: Control Mosquito Breeding		
No criteria or stressors stated	ACMAD periodic monitoring and treatment as needed	Per ACMAD
Maintenance Objective 5: Control Predators on California Clapper Rail		
No criteria or stressors stated	Capture and remove	Park staff routine observations