

Term and Conditions 5a

5. In order to minimize the likelihood of incidental take through implementation of ecosystem restoration features (see Table 8-2 of the 2001 BA), the Corps shall:

a. Conduct all shallow water ecosystem restoration in-water construction activities, including excavation and dredge material placement, during approved in-water construction windows. The pipeline dredge in-water construction window for ecosystem restoration projects in the Lower Columbia River and estuary is November 1 to February 28. Hopper dredge disposal in deep water temporary storage sump locations, does not have an in-water construction window. The in-water construction window for Columbia River tidegate retrofit projects is July 1 to September 15.

Action Plan: The in-water work periods specified will be met during construction. See the following two sheets for details.

Schedule: To be developed for each restoration project for construction contracts.

Table 8-2: Ecosystem Restoration Features for the Project

Feature	Area Affected by Restoration	Type, Function, and Value
Lois Island Embayment Habitat Restoration	389 acres	Type: Tidal marsh and swamp; shallow water and flats habitat Function: Provide rearing habitat for ocean-type salmonids; increase detrital export Value: High
Purple Loosestrife Control Program	<u>Columbia River mile 18-52</u>	Type: Tidal marsh and swamp Function: Maintain native Tidal marsh plant community; increase detrital export Value: High
Miller/Pillar Habitat Restoration	161 acres	Type: Shallow water and flats habitat Function: Provide rearing habitat for ocean-type salmonids; increase benthic invertebrate productivity Value: High
Tenasillahe Island Interim Restoration ¹ (Tidegate/Inlet Improvements)	92 acres	Type: Backwater/side channel reconnection to Columbia River Function: Increase access/egress for ocean-type salmonids Value: Moderate
Tidegate Retrofits for Salmonid Passage	38 miles	Type: Tributary reconnection to Columbia River Function: Increase access/egress for ocean-type salmonids; improve access for adult salmonids to headwaters for spawning Value: High
Walker/Lord and Hump/Fisher Islands Improved Embayment Circulation	335 acres	Type: Marsh and swamp; shallow water and flats habitat Function: Provide rearing habitat for ocean-type salmonids; increase benthic invertebrate productivity Value: Moderate
Martin Island Embayment	32 acres	Type: Tidal marsh and swamp (wildlife mitigation) Function: Increase detrital export; provide rearing habitat for ocean-type salmonids Value: Moderate (salmonids); high (wildlife)
Cottonwood/Howard Island Proposal ² Columbia White-Tailed Deer Introduction	1,000 acres	Type: Translocation of Columbia white-tailed deer Function: Establish secure, viable subpopulation of Columbia white-tailed deer Value: High
Tenasillahe Island Long-Term Restorations ³ (Dike Breach)	1,778 acres	Type: Tidal marsh and swamp; shallow water and flats habitat Function: Provide rearing habitat for ocean-type salmonids; increase detrital export Value: High
Bachelor Slough Restoration ⁴	<u>~100 acres (instream restoration); 6 acres (Bachelor Slough shoreline riparian restoration); 27 acres (riparian restoration using Bachelor Slough sediments – old disposal location and/or 2 upland locations)</u>	Type: Shallow water and flats habitat; riparian forest Function: Provide rearing habitat for ocean-type salmonids; increase detrital export Value: Moderate (side channel); high (riparian forest)
Shillapoo Lake Restoration ⁵	<u>470-1055 (acreage restored depends upon private land acquisition and prior restoration by others)</u>	Type: Managed wetlands Function: Increase waterfowl, shorebird, wading bird, and raptor habitat Value: High
Notes: The Tidegate Retrofits for Salmonid Passage, Walker/Lord and Hump/Fisher Islands Improved Embayment Circulation, and Shillapoo Lake Restoration features were proposed in the original FEIS (Corps, 1999a). The remaining restoration features were added during the BA reconsultation process.		
¹ This restoration is contingent on hydraulic analysis results.		
² This restoration primarily benefits Columbia white-tailed deer.		
³ This restoration feature is contingent on the delisting of Columbia white-tailed deer.		
⁴ This restoration feature is contingent on sediment testing and approval by WDNR.		
⁵ This restoration primarily benefits waterfowl, but would create detrital input to the Columbia River.		

Table 3-1: Dredging Timing

Construction Features	Type of Dredging	Timing
Navigation channel, including overdepth and over width dredging at depths greater than 20 feet	Hopper Pipeline Mechanical excavation	No timing windows No timing windows No timing windows
Turning basins at depths greater than 20 feet	Hopper Pipeline	No timing windows No timing windows
Rock removal with blasting	Mechanical excavation	November 1 to February 28
Rock removal at depths greater than 20 feet	Mechanical excavation	No timing windows
Berths	Mechanical excavation	November 1 to February 28
Ecosystem Restoration Features		
Lois Island Embayment Habitat Restoration	Mechanical excavation Pipeline Hopper	No timing windows
Purple Loosestrife Control Program		July 1 – October 31 (no dredging required; represents application timeframe)
Miller/Pillar Habitat Restoration	Pipeline	No timing windows
Tenasillahe Island Interim Restoration ¹ (Tidegate/Inlet Improvements)	Mechanical excavation	July 1 – September 15
Tidegate Retrofits for Salmonid Passage	Mechanical excavation	July 1 – September 15
Walker/Lord and Hump/Fisher Islands Improved Embayment Circulation	Mechanical excavation	July 1 – September 15
Cottonwood/Howard Island Proposal ² Columbia White-Tailed Deer Introduction	Not Applicable	No timing window (no dredging required)
Tenasillahe Island Long-Term Restorations ³ (Dike Breach)	Mechanical excavation	July 1 – September 15
Bachelor Slough Restoration ⁴	Pipeline	July 1 – September 15
Shillapoo Lake Restoration ⁵	Mechanical excavation	July 1 – September 15 (inwater work only); balance of work behind flood control levees and thus no timing window
Mitigation Action		
Martin Island Embayment	Pipeline	No timing window