

INTRODUCTION

Lewis and Clark National Historical Park is comprised of 12 sites along 40 miles of the Pacific Coast in Oregon and Washington. Otter Point is located within the Fort Clatsop site along the Lewis and Clark River.

This site was added to the National Park System in 2002, under the authority of the 2002 Fort Clatsop Memorial Expansion Act. The purpose of this acquisition was to implement the park's 1995 General Management Plan/Environmental Impact Statement (EIS).



Figure 1-1. Otter Point Project Location



Figure 1-2. Aerial View of Otter Point Project Site

Purpose

The National Park Service (NPS) proposes to work with Clatsop Diking District 11 (District), the Bonneville Power Administration, the US Army Corps of Engineers (USACE) and other partners to restore salmon habitat, freshwater wetlands, and the historic landscape at a location known as Otter Point within Lewis and Clark National Historical Park.

At the time of the Lewis and Clark Expedition, the site of Fort Clatsop was a hill above the river surrounded by tidal marsh on both the north and south. These tidelands were diked in the 19th and early 20th centuries and converted from wetland to pastureland. In 1995, the park worked with partners and the public to complete a General Management Plan/Environmental Impact Statement. This plan recommends restoring diked pasturelands to tidal wetland by modifying dikes, where feasible. The area south of the Fort Clatsop hill, called South Clatsop Slough, was restored to tidal slough and wetland in 2007. Otter Point, the subject of this project, is north of the fort hill. Completing this project would re-create the historic riverine setting of Fort Clatsop.

A second purpose of this project is to restore historic salmon habitat in the Columbia River estuary. The Otter Point Restoration Project will not only improve salmonid habitat within the wetland site itself, it will also have cumulative benefits as part of a larger-scale effort to improve the habitat value and overall function of the Lewis and Clark River basin. Several projects have already been completed on the Lewis and Clark River including 2 dike breaches further upstream on City of Seaside property, and the South Clatsop Slough wetland restoration located within the Lewis and Clark National Historical Park immediately upstream from Otter Point. The South Clatsop Slough restoration project showed that juvenile salmon return to wetlands in the Lewis and Clark basin immediately after tidal barriers are removed. Together these projects create more contiguous salmonid habitat and help improve the overall water quality of the river.

Need

This project is needed now to help the Federal government satisfy its legal responsibility to restore anadromous fish in the Columbia River Basin. The 2008 Biological Opinion for the Federal Columbia River Power System (2008 Bi-Op) requires the federal government to take actions to restore salmon throughout the Columbia River basin, when feasible.

Though this project has been contemplated since 1995, federal funds were not available for design and compliance until the completion of 2008 Bi-Op and a corresponding legal obligation.

Other Project Goals

In addition to restoring the historic conditions of Fort Clatsop and anadromous fish habitat, flood protection is a major objective of this project. Restoring Otter Point would require realigning the levees within the national park. These levees are part of a flood control system built by the US Army Corps of Engineers and operated and maintained by Clatsop

Diking District 11. USACE requires that the realigned diking system provides the same flood protection for which it was designed.

Improved drainage is also an important factor that was taken into consideration when developing the Otter Point project. This project will allow NPS and Diking District 11 to work together to replace and improve drains and tide gates in the project area and to solve longstanding drainage problems on lands served by the drainage works.

No undue burden to local communities was another major objective NPS included in the development of the Otter Point project design. The Federal Emergency Management Agency (FEMA) plans to issue new floodplain maps and designation in the coming months. These maps might redefine the areas protected by federal flood insurance, leaving many properties without protection. Solving this problem might require improvements to the regional levee system, of which the park is a part. It is our goal to put in place mechanisms, such as legal agreements and commitments, to assure that levees within the national park are not the reason for changes to floodplain maps or flood insurance requirements.

Project Background

The park desires to complete the Otter Point Restoration project in order to meet the goals of the General Management Plan/ EIS, as well as the 2008 Bi-Op. In doing so, the park will achieve common goals for cultural restoration, salmon recovery and preservation of watershed health.

Cultural Resources Restoration

Fort Clatsop National Memorial, the precursor to today's Lewis and Clark National Historical Park was originally created by congress to "commemorate the culmination, and the winter encampment of the Lewis and Clark expedition" (Deur 2008:1). This mandate helps to define the park's natural and cultural resource planning objectives. As a historically zoned park, the park's landscape has been defined as a "cultural landscape" under NPS Management Policies. These policies call, among many other things, for the management of the landscape to reflect the scene that prevailed during the historic period. In the case of Lewis and Clark National Historical Park, that "historic period" is principally defined as the time of the Lewis and Clark Expedition, in the winter of 1805-06. Park managers are thus compelled to recreate, to the extent possible, landscape features, and plant and animal communities comparable to those found there in 1805-06 as they undertake major restoration projects of the sort now considered at Otter Point (NPS 1995). With landscapes restored to their original condition, visitors are able to envision the experiences of the Corps of Discovery more clearly. Moreover, the landscape, itself, becomes an interpretive medium in this context, with park staff using key landmarks and habitats as part of their ongoing retelling of the Lewis and Clark story to park visitors (Deur 2008:1).

The journals of the Lewis and Clark Expedition refer to “extensive marshes” at the place chosen to build Fort Clatsop, encompassing a high point that projected into the estuary. Clark noted that the Fort was built on

“the first point of high land on the West side...this situation is on a rise about 30 feet higher than the high tides...this is certainly the most eligible Situation for our purposes of any in its neighborhood” (Clark in Moulton 1990: 114).

Maps in the journals clearly show the fort in a point protruding into the Lewis and Clark River between two broad wetland areas sitting just north and south of the point, sited adjacent to the small spring-fed stream emptying between Otter Point and the fort site. Visiting the site a few years after Lewis and Clark’s departure, Astorian Robert Stuart complained that Fort Clatsop was “very disagreeably situated, being surrounded with swamps and quagmires” (Spaulding 1953: 28). The prevalence of shallow salt marshes immediately north and south of Fort Clatsop contributed to that site being rejected in favor of the modern-day site of Astoria by Stuart and his fellow fur traders, who envisioned a day when big ships would regularly visit their tradition post (Deur 2008:3).

The site originally chosen for the construction of Fort Clatsop, then, can be thought of as a promontory – almost a peninsula – jutting out into tidal wetlands extending north and south, with open water to its east. For the Lewis and Clark Expedition, this point would have been defensible, accessible by water, and characterized by commanding views of waterborne traffic along Lewis and Clark River as well as of landmarks like Saddle Mountain. Available U.S. Coast Survey maps from the 1870s suggest that this marsh was probably almost impassable by foot, being dissected by meandering, dendritic tidal channel networks, with expanses of mud flats and patchy, salt-tolerant scrub-shrub margins (U.S. Coast Survey 1876). During extreme high water events, the visual appearance of this point as a “peninsula” jutting out into the tidelands would have been especially pronounced. The sharp upland-wetland interface would have been a clearly discernible shoreline during high tide events, and opened to a salt marsh meadow during moderate to low tides (Deur 2008:3).

This location was chosen for a variety of reasons that are fundamental to aspects of the Lewis and Clark story that are interpreted to the public today, such as its defensibility and its access to water. Yet, the look of the cultural landscape has been largely lost due to diking of the marshes and the establishment of shrubs, trees, and other vegetation along the diked shoreline. The shoreline now appears relatively straight and uniform, rather than being a deeply indented series of points and tidal marshes. Moreover, the distinct natural shoreline, along the upland-wetland interface, has been dramatically impacted by the historical construction of the county road along the tidewater edge. The landscape reveals little to park visitors as to the historical condition of the shoreline, or of the attributes of the site that made it appealing to the Lewis and Clark Expedition (Deur 2008:3).

A review of the relevant planning documents at the park demonstrates this consistent attention to the restoration of historic vegetation and scenic conditions. The look of the landscape is key, and “viewsheds” from visitor facilities are identified as some of the “primary features contributing to the cultural landscape” (NPS 1995: 75). For these reasons, dike removal and wetland restoration has been supported by the park. “Water and wetland

resources are a significant part of the historic scene at the encampment site” (NPS 1995: 75). Park planners thus have recommended protecting or enhancing wetlands in the park, as much to maintain the “historic scene,” as to meet the park’s other compliance mandates. Planners have consistently noted that most of the wetlands in Fort Clatsop have been altered by diking, however, and so wetland restoration in the park would often require more than simple hydrological fixes – instead, this restoration would require the reconstruction of entire wetland landscapes, perhaps to their early 19th century condition (Deur 2008: 3).

Based on the Preliminary Cultural and Historical Assessment conducted in 2008, project designers were recommended to:

- 1) Restore, to the extent possible, the open salt marsh landscape and associated channel morphology that will, in turn, accentuate the promontory of the Fort Clatsop site from the vantage point of current or proposed visitor access (Deur 2008: 5).
- 2) Restore, to the extent possible, the historical shoreline along the upland-wetland interface through such actions as road decommissioning and contouring at the conclusion of restoration earthwork (Deur 2008: 5).
- 3) Retain, where possible, visual barriers from points of current or proposed visitor access, so that the development north and northeast of the park is shielded from view, but landmarks from Saddle Mountain southward are equally or more visible than today (Deur 2008: 5).

In addition to historic vegetation and scenic conditions, NPS management policies also call park managers to preserve and restore animal communities comparable to those found during the 1805- 1806 Corps of Discovery encampment of Fort Clatsop. Upon arrival at the Pacific Coast, Lewis and Clark chose to camp at the Fort Clatsop site, in part, because of the abundant supply of elk found in the region. Resident elk herds sustained the Corps of Discovery throughout their winter encampment, and allowed them to replenish their depleted supplies.

Currently, 2 herds of Roosevelt elk utilize the Otter Point wetland as seasonal habitat. Preserving the native willow and upland spruce habitat of this historically important species, is considered part of maintaining the historic conditions of the park.

2008 Biological Opinion

In 2008, The Bonneville Power Administration was required by law to enter into an agreement with the Army Corps of Engineers, Department of the Interior, several tribes, and other government agencies to partner together to implement projects that benefit Columbia River Basin salmon over a ten year period. The Biological Opinion includes an Implementation Plan that outlines a comprehensive program of habitat improvements, hatchery reforms and hydrosystem operations and improvements to protect Columbia and Snake River fish. The plan outlines a broad array of projects to improve spawning and rearing habitat to boost the survival rates of fish listed under the Endangered Species Act. One of the key methods recommended for improving rearing habitat within the document is dike breaching. The Biological Opinion also states that Federal agencies are required to

comply with the recommendations of the document unless there is valid evidence as to why restoration efforts cannot be executed.

Restoration Efforts

Restoring the Otter Point wetland will not only improve the cultural landscape of the park and help to restore salmon populations in the Columbia River Basin, it will also have cumulative benefits as part of a larger-scale effort to improve the habitat value and overall function of the Lewis and Clark River. Several projects have already been completed on the Lewis and Clark River including a wetland restoration immediately upstream from Otter Point, also within the park (See Figure 1-3). This restoration project, entitled the South Clatsop Slough Restoration, was completed in 2007 and entailed reconnecting 45 acres of historic pasture with the Lewis and Clark River by replacing a failing tide gate with a bridge to reestablish tidal connection. Post-project fish presence surveys at the South Clatsop Slough site have indicated a 10-fold increase of juvenile salmonids utilizing the wetland habitat.

Further upstream on the Lewis and Clark River, in 2006, the City of Seaside breached 2 dikes on their property, effectively reconnecting 25 acres of wetland with the mainstem of the river. Together, these projects increase the habitat benefit for Lower Columbia River salmonids by providing contiguous off-channel refugia within the same river basin.

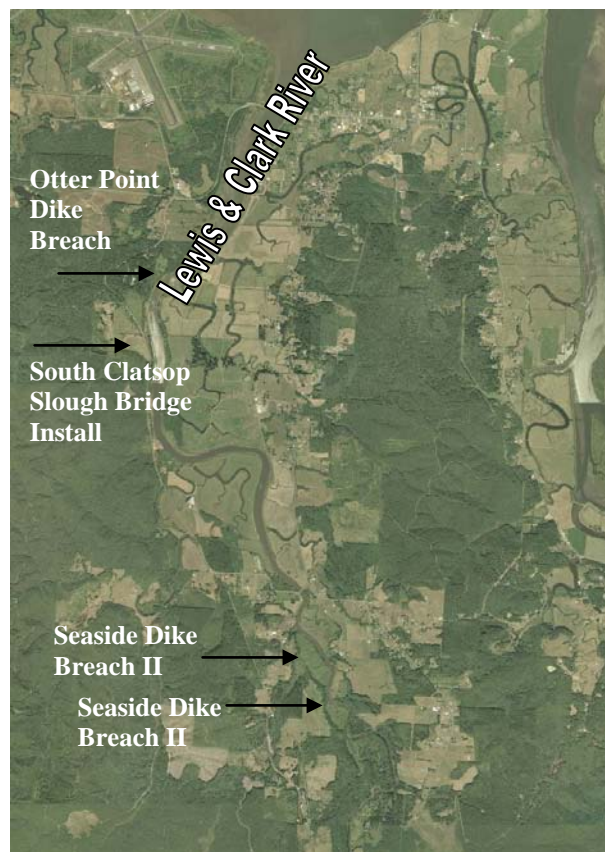


Figure 1-3. Restoration Projects on the Lewis and Clark River

In addition, to the cumulative restoration efforts within the Lewis and Clark River Basin, these individual restoration projects are part of an even larger scale effort to restore salmon habitat and floodplain function within the Youngs Bay Watershed, and greater yet the Columbia River Estuary. Numerous projects have been accomplished over the past decade to improve fish passage to upstream spawning and rearing habitat, restore off-channel refugia, and improve the quality of instream habitat and riparian condition.

Examples of projects recently completed within the Youngs Bay Watershed include a 2006 project on the Walluski River that restored 4,800 feet of stream by placing 295 pieces of large woody debris within the river for in-stream habitat complexity. Also, during the 2008-2009 planting seasons, the Youngs Bay Watershed Council utilized grant funding to replant over 6 acres of riparian area on the North Fork Klaskanine River.

Examples of recently implemented projects within the Columbia River Estuary include a 2002 project on Blind Slough to reopen fish passage by replacing 2 undersized culverts with 5 60- inch culverts; as well as a 2008 project on the Alderbrook Slough to remove invasive plants and revegetate the slough with native wetland plants.

Wetland Statement of Findings

According to National Park Service Procedural Manual #77 – 1: Wetland Protection, the Otter Point Restoration project is an “exception” to the required Wetland Statement of Findings. Defined in the Procedural Manual actions designed specifically for the purpose of restoring degraded natural wetland, stream, riparian, or other aquatic habitats or ecological processes are exceptions and therefore exempt.

Section 408 Process

Section 408 regulation authorizes the Secretary of the Army to permit alterations/modifications to existing U.S. Army Corps of Engineers (USACE) projects in certain circumstances. The types of projects that require approval by the Chief of Engineers include degradations, raisings, and realignments, such as the proposed Otter Point Restoration. The Section 408 process involves risk analysis to determine whether the project will result in “adverse impacts” that will increase risk to public safety. Variables in a risk analysis include geotechnical and structural analysis, as well as evaluation of hydraulic and hydrologic parameters. USACE has provided technical guidance for this process in the EM 1110-2-1619 document, but has yet to fully develop the guidance needed to analyze risk and uncertainty for the geotechnical and structural performance of a system. Until such guidance is developed, deterministic procedures are appropriate for demonstrating geotechnical and structural integrity under full range loading conditions (U.S. Army Corps of Engineers 2008).

Required documents for the Section 408 review include a geotechnical evaluation, structural analysis, hydraulic and hydrologic analysis, operations and maintenance requirements, real estate analysis, discussion of residual risk, administrative record for key decisions, discussion

of Executive Order 11988 Considerations which include justification to construct in a floodplain, and environmental protection compliance. After a complete application is submitted, it is subject to an Agency Technical Review, as well as a Type II Independent External Peer Review for Safety Assurance (U.S. Army Corps of Engineers 2008).

Impact Topics

In addition to the impact topics analyzed in this document, other project components were discussed during the external scoping process for the Otter Point Restoration Project. Topics discussed during the project scoping meetings included post-construction effectiveness monitoring, acknowledgment of existing easements and maintenance responsibilities of realigned enhanced levee.

Questions and concerns related to these topics were addressed by NPS staff during the scoping meetings. The active restoration alternative (Alternative 2) incorporates extensive post-construction effectiveness monitoring into the restoration plan. Long-term monitoring would be a collaborative effort between NPS, the Columbia River Estuary Study Taskforce and Astoria High School students. The monitoring plan would include fish presence surveys, plant community surveys, water quality analysis, and topographic surveys to track channel morphology. Post-project monitoring data would be compared to data recorded prior to completion of active restoration methods to determine long-term impacts at the site.

All existing easements located within the Otter Point project site will be upheld under both Alternative 1 and Alternative 2. Existing easements include the Diking District 11 management easement and the Power and Light maintenance easement for the utility poles that transect the Otter Point site. Under the active restoration alternative, the diking district easement on the levee proposed for breaching would be nullified by the alteration activities. However, the easement would be transferred to the realigned enhanced levee, and the enhanced levee will become part of Diking District 11.

Maintenance of the realigned levee will remain under the jurisdiction of Diking District 11. However, NPS will actively partner with the diking district to maintain the levee as specified in the NPS- Diking District 11 Memorandum of Understanding.

Issues and Impact Topics Included for Analysis

The impact topics that have been included in this assessment are:

Physical Environment (geology, water quality, hydrology, vegetation and soils)—The park's physical resources are key components of its environment, and are essential to the health of the Otter Point wetland system. Changes to the physical environment could potentially affect biological and physical components of the wetland, and the organisms that inhabit it. The alternatives and restoration methods analyzed in this environmental assessment may affect the physical environment of the wetland ecosystems, specifically geology, water quality, hydrology, vegetation and soils. The analysis described in this assessment considers the impacts of both of the alternatives on these physical components of the wetland system.

Fish and Wildlife (Roosevelt Elk) — Native wildlife species are an integral part of the park’s environment. It is the park’s purpose to protect these resources, and therefore important to identify and analyze any potential impacts (adverse or beneficial) that could affect these resources. The alternatives and restoration methods analyzed in this environmental assessment may affect the biological and natural resources of the wetland system, specifically the Roosevelt Elk herd that seasonally inhabits Otter Point. The analysis described in this assessment considers the impacts of each of the alternatives on fish and wildlife species within the Lewis and Clark National Historical Park.

Threatened or Endangered (T&E) Species (coho salmon, Chinook salmon, chum salmon, and steelhead trout)—The NPS Management Policies require that potential effects of agency actions on federal, state, or locally listed species be considered. NPS is required to control access to important habitat for such species and to perpetuate the natural distribution and abundance of these species and the ecosystems upon which they depend. The analysis described in this assessment considers the impacts of each of the alternatives on T&E habitat and species within the Lewis and Clark National Historical Park.

Historical and Cultural Resources—Through legislation, the NPS is charged with the protection and management of historical and cultural resources in its custody. Impacts to these resources therefore are identified and analyzed in this document.

Recreation and Visitor Experience—The NPS Management Policies state that the “enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks” (NPS 2006). Aesthetics is considered part of the visitor experience. Maintaining scenery of great natural beauty is a key component in enhancing visitor experience. Analysis of all potential impacts to recreation and visitor experience, including aesthetics, is provided in this document.

Land Use—The NPS DO-12 Handbook requires an analysis of impacts due to land-use conflicts between the proposed action and land-use plans in the affected area. The project area is entirely within the boundaries of the Lewis and Clark National Historical Park; however, it does have the potential to impact non-NPS lands. Since the proposed action could create a land-use conflict, it was analyzed in this assessment.

Issues Eliminated from Further Analysis

NEPA and the CEQ regulations direct agencies to “avoid useless bulk and concentrate effort and attention on important issues” (40 CFR 1502.15). Resource issues judged irrelevant to the proposed actions or the alternatives considered in this environmental assessment are listed below along with the reasons they were eliminated.

Socioeconomics—NEPA requires an analysis of impacts to the “human environment,” which includes economic, social, and demographic elements in the affected area. Because many Clatsop County residents use the park for recreational purposes, they would directly benefit from the restoration of park habitats to their historic natural condition. The cost of the restoration actions would not be enough to create a significant number of jobs for Clatsop County residents. The alternatives would not significantly impact fishing practices

on the Lewis and Clark River. Furthermore, the proposed restoration activities would not affect socially or economically disadvantaged populations. As a result, this issue is not included for further analysis in this environmental assessment.

Environmental Justice— Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, requires all federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. Wetland restoration projects at the Lewis and Clark National Historical Park are expected to have no direct or indirect impacts on minority or low-income populations or communities. Environmental justice considerations, therefore, were not included for further analysis in this environmental assessment.

Scoping

Internal and external scoping occurred prior to preparation of this environmental assessment. Internal scoping involved an interdisciplinary process to identify issues, alternatives, and data needs. The project planning team held several internal scoping meetings at the park in 2010.

External scoping included coordination with interested federal and state agencies along with associated Indian tribes. Scoping letters were sent to associated Indian tribes, resource and regulatory agencies, interest groups, and the public (See Appendix B).

The public was also given the opportunity to comment and provide feedback throughout development of the environmental assessment. Scoping letters were sent in June 2010 to local, state, and federal regulatory and resource agencies; interested citizens; tribes; and other organizations. A press release was issued in June 2010 describing the project and announcing the June 24, 2010 public meetings.

Planning Issues and Concerns

Additional issues related to land use planning, drainage and flooding were considered throughout the design phase of this project. Management actions taken by NPS are expected to be conducted in such a manner as to create no negative impact on the land use and value of adjacent properties. These issues were analyzed in this assessment and were incorporated within the selection of an alternative and finding of no significant impact. All of the alternatives analyzed that involve alteration of the existing dike structure are subject to the Army Corps of Engineers Section 408 process. By adhering to the regulations set by the Army Corps of Engineers in partnership with FEMA, NPS is ensuring that all flood protection structures that are altered in this process will provide flood protection that equals that which currently exists at the Otter Point wetland site.

Several additional questions regarding the existing and proposed conditions of the Otter Point wetland were discussed at the scoping meetings held on June 24, 2010. Results of the meetings determined that the existing management easement with Diking District 11 on NPS property will be honored following a levee realignment. However, NPS will draft a

Memorandum of Understanding with Diking District 11 pledging maintenance assistance of the levee and tide gates on their property. In addition to the Diking District easement, there is also a Pacific Power and Light maintenance easement for the utility poles that transect the wetland site. The conditions of this easement will not change due to implementation of restoration actions at the Otter Point site.

Scoping meeting attendees also discussed questions regarding aspects of the proposed restoration project design. For example, restoration at the project site will involve installing a new culvert and tide gate in the northwestern corner of the property under the realigned levee, in addition to replacing the existing culvert and tide gate in the northeastern corner of the property. The addition of another culvert and tide gate is to ensure that the goal of no negative impacts to adjacent property is met by providing additional drainage to the neighboring pasture. Also, the proposed restoration designs specify excavating two separate stream channels instead of connecting the channels into a single network. Designs were created in this manner because NPS desires to recreate the historic conditions of the wetland site. LiDAR data as well as ground surveys revealed that the channels proposed for tidal channel creation previously existed prior to disturbance of the site. Finally, the native plants that will be used to revegetate the Otter Point wetland will come from a variety of sources including NPS grown stock, salvaged plant material from local sources, and local nurseries.