

**Final Natural Resource Restoration Plan**  
**for the**  
**Cokers Sanitation Service Landfill Superfund Site**

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# Natural Resource Restoration Plan and Environmental Assessment (RP/EA) for the Cokers Sanitation Service Landfill Superfund Site

## INTRODUCTION

Under the authority of the Comprehensive Response, Compensation and Liability Act of 1980, as amended (CERCLA), the designated Natural Resource Trustees (Trustees) are restoring natural resources which were injured by releases of hazardous substances from the Cokers Sanitation Services Landfill Superfund site in Kent County, Delaware. The Trustees are the National Oceanographic and Atmospheric Administration (NOAA), and the U.S. Department of the Interior.

As part of a Consent Decree requiring remedial actions at the Cokers site, the Trustees agreed to a monetary settlement with certain responsible parties for natural resource damages. A consent decree was issued on April 10, 1992 requiring payment of \$80,000 in natural resource damages. Distribution and use of these funds was set forth by a Memorandum of Agreement between trustees which provided \$65,850 for use on nearby Fish and Wildlife Service lands, as well as \$7,500 to NOAA and \$6,650 to FWS for assessment costs and oversight of the restoration process.

The DOI agreed to develop and implement restoration efforts at Bombay Hook National Wildlife Refuge in consultation with NOAA. This document presents the alternatives and the proposed action which were considered by trustees while planning the restoration required for this settlement. The goal of the restoration plan is to enhance and provide for biodiversity of the wetland habitats within the Leipsic River watershed which are similar to wetlands destroyed at the Cokers site.

### **1. Purpose and Need**

The purpose of this RP/EA is to describe the steps necessary to restore or replace wildlife habitat functions equivalent to three acres of wetlands lost as a result of remediation of the Cokers Sanitation Service Landfill Superfund Site (Site) in Cheswold Township, Kent County, Delaware. The Memorandum of Agreement between trustees guiding use of settlement funds placed priority on undertaking restoration efforts at the nearby U.S. Fish and Wildlife Service (Service) Bombay Hook National Wildlife Refuge (Refuge). The RP/EA will encompass the requirements of both 516 DM 3.4 and 43 CFR 11.82.

### **2. Overview of the Planning Process**

The Cokers site consists of two closed former landfills known as Cokers Landfill Number 1 and Cokers Landfill Number 2. The closed landfills are 10 and 15 acres in size, respectively, and are located 1.3 miles northwest of Cheswold, Delaware. Landfill Number 1 was operated by Cokers Sanitation from 1962 to 1976 and was a repository for latex rubber production wastes. Landfill Number 2 was operated by Cokers Sanitation from 1977 to 1980 and was a

repository for dewatered latex sludge. Contaminants found in leachates associated with the site included acrolein, and ethylbenzene (Landfill Number 2), Bis-2-chloroethyl ether (Landfill Number 1), and zinc (both sites). During CERCLA remediation, EPA and trustees identified the potential for contaminants to migrate off-site to the Willis Branch, a tributary to the Leipsic River. The Leipsic River discharges into the Delaware Bay at Bombay Hook National Wildlife Refuge approximately 11 miles downstream from the mouth of the Willis Branch.

During the remediation, a total of three acres of wetland on site were destroyed. These wetlands provided valuable habitat for waterfowl and other wildlife as well as important buffering functions for the Leipsic River watershed. The cap constructed to encapsulate landfill wastes eliminated the option of restoring wetlands on site. The Department chose public lands near the Superfund site to perform the necessary restoration activities. The proposed action will restore or replace the equivalent of the destroyed wetland services in the Leipsic River drainage by providing for improved water quality and hydrologic processes of wetlands and for improved fish and wildlife values in the drainage. The Fish and Wildlife Service is combining funds from Ducks Unlimited with damages awarded from the Cokers Superfund site settlement which will provide benefits which exceed those necessary to restore natural resources injured at the Cokers site.

### **3. Alternatives including the Proposed Action**

Alternatives were identified after considering the amount of restoration funds available from settlement and from sources of matching funds such as other agencies or organizations. Probability of successfully restoring natural resource services to the Leipsic River and to provide restoration equivalent to the level of resources lost at the Cokers site were also considered.

#### **Alternatives considered:**

1. No Action;
2. Convert farmed acreage on the refuge to wetland habitat; and
3. PROPOSED ACTION Enhance water management of Shearness Pool.

#### **Summary of Alternatives**

1. No Action No wetland habitat restoration would occur to replace the value and function of that which was destroyed. The settlement from this site would not be spent at this time.
2. Convert farmed acreage on the refuge to wetland habitat In this alternative, the Refuge considered removing acres of refuge lands from a contract with farmers who produce food for waterfowl. This acreage would be converted to wetland

habitats using standard wetland restoration techniques in order to increase wetland acreage for wildlife using the refuge

3. **PROPOSED ACTION Enhance water management of Shearness Pool** This alternative involves the enhancement of wetland habitat value in Shearness Pool, a large (560 acre) water body adjacent to the Leipsic River on the refuge. The current control gate is badly deteriorated. This alternative would eliminate a problem of the imminent failure of the water control structure. The proposed action is the first phase of a project to create two smaller pools in Shearness Pool, each of which could be managed independently to supply greater habitat diversity and sustain a larger population of migratory birds and other wildlife at the refuge. The control structure gives the refuge the ability to adjust and manage water level in the pool to promote growth of plant species which serve as food for migratory waterfowl. Loss of the control gate will result in the loss of Shearness Pool and the important function that it supplies for waterfowl and other wildlife. Failure of the control structure at Shearness Pool will result in loss of the quality habitat available to migratory birds and fish in the Leipsic River.

#### **4. Affected Environment**

Bombay Hook National Wildlife Refuge is located in Kent County, Delaware along the western shore of the Delaware Bay. The refuge comprises 15,975 acres of which 13,000 acres consists of brackish tidal marsh, mud flats, and tidal creeks and rivers (including the Leipsic River). Natural tidal rivers and smaller tidal creeks form an extensive network throughout the refuge. The refuge also contains 1,100 acres of agricultural lands, four freshwater impoundments (including Shearness Pool) which provide 1,100 acres of aquatic habitat, and wooded upland habitat and brushland. In addition to waterfowl, the refuge supports populations of white-tailed deer, cottontail rabbits, muskrat, otter, and beaver as well as large numbers of shore, wading, raptorial, and passerine birds and their food species including invertebrates. The tidal waters within the marsh supply important habitat for the blue crab, white perch, and eels as well as many marsh and estuarine fish species. A pair of Federally threatened southern bald eagles nest in a woodlot adjacent to one of the fresh water pools.

These lands were set aside as a refuge for migratory and wintering waterfowl in 1937. In recent years emphasis has been placed on management of habitat for the American black duck to meet goals of the North American Waterfowl Management Plan. Habitat enhancement at Shearness Pool will produce a better food supply for waterfowl and improve water quality of the Leipsic River.

## **5. Environmental Consequences**

### Alternative 1 - No Action

In this alternative, no restoration is proposed. Wetland habitat functions that were lost at the Cokers site would not be replaced. Wildlife habitat value and wetland water buffering functions were destroyed at the Cokers site which degraded water quality in the Willis Branch. If trustees take no action, no replacement of these lost functions will occur in any portion of the Leipsic River drainage. This alternative is unacceptable because wetland values lost because the Cokers site as a landfill and subsequent remediation would not be recovered. This alternative is unacceptable because it will not meet the intent of CERCLA which mandates that natural resource damages be used to restore, rehabilitate, or replace the wetland habitat services lost and degraded by the actions of the parties responsible for the Cokers site.

### Alternative 2 Convert farmed acreage on the refuge to wetland habitat.

This alternative will remove 30.5 acres of land for a fifteen year period from lands which currently produce a food crop for waterfowl. Plans in this alternative would be scaled to provide wetland services equivalent to those destroyed at the Cokers site for use by wildlife on the refuge. This alternative increases the amount of wetland habitat at the refuge with characteristics similar to habitat lost at the Cokers site. However, implementing this alternative reduces the amount of food which is made available for wintering waterfowl. A decrease in quantity and quality of food on the refuge at a time when waterfowl numbers are decreasing dramatically in the Atlantic flyway will offset part of the benefits which accrue if this proposal is implemented. The wetlands created by this action are not expected to achieve the level of productivity and function of a natural wetland for several years. However, over a fifteen year period wetland services are expected to provide an level of services in the Leipsic River drainage equivalent to those lost at the Cokers site.

### PROPOSED ACTION Enhance water management of Shearness Pool

In this alternative, the refuge considered the management history of the site and the benefits which could be produce by altering Shearness Pool, a 560 acre impoundment. Through active water management, wetland vegetation is encouraged to grow while the pool is drained during the growing season. The pool is filled by rain at the end of the summer and serves as a source of high quality food for waterfowl and wading birds. Through active water management, Shearness Pool provides forage and resting areas for waterfowl, predominantly green winged teal and pintail ducks; as well as other migratory birds (herons, egret, shore birds, etc.). The refuge can improve the habitat values of Shearness Pool and wildlife services produced by this pool by forming two impoundments in Shearness Pool with a dike. Construction of the dike would provide natural resource managers with the option of managing each impoundment separately as 250 - 300 acre pools, producing both vegetation for waterfowl and an aquatic forage base of fish and invertebrates for wading birds.

The refuge cannot proceed with improvements to the impoundment without ensuring the integrity of the water control structure. Water levels in the pool are controlled by a forty year old structure which is expected to fail soon because it is badly deteriorated. After the water

control structure is improved, implementation of phase 2 can begin which will divide Shearness Pool into two, separately controlled impoundments, and will allow manipulation of both pools to enhance both waterfowl and aquatic habitats.

This alternative will enhance existing wetland habitat and water quality in the Leipsic River watershed and Delaware Bay by improving wetland habitat produced by 560 acres of Bombay Hook National Wildlife Refuge. Without this proposed action, control of water levels in Shearness Pool will be lost when the current structure fails. Without this alternative, the proposal to create two separate pools for better management of ponded water at the refuge will be delayed for a significant period of time.

## **6. Cost Analysis**

### Alternative 1 - No Action

No wetland habitat restoration would occur. Therefore, no costs would be incurred. According to a Memorandum of Agreement (MOA) between the Service and the National Oceanographic and Atmospheric Administration (NOAA), wetland restoration funds will be used at Bombay Hook National Wildlife Refuge. From a natural resources perspective, there will be no benefit to wildlife or rehabilitation of habitat if this alternative is selected. There would be no economic benefit for the surrounding area if this benefit is selected.

### Alternative 2 - Convert farmed acreage on the refuge to wetland habitat.

Creation of wetlands under this alternative will follow standard techniques which are very effective in Delaware for converting farmland to wetland. Implementing these techniques incurs construction costs of \$1,500 to \$2,000 per acre with a small amount of maintenance and operating costs needed during the lifetime of the action. The restoration funds available in this award (\$65,850) will support development of 30.5 acres of wetland on the refuge. No matching funds are available for wetland conversion on refuge lands. The economic benefits for the local contract farmers are reduced because the total farmed acreage for the 15 year period that these lands are out of production. The economic benefits from this alternative will be derived from increased hunting opportunities which will develop as the wetlands begin to attract and support more waterfowl.

### PROPOSED ACTION Enhance water management of Shearness Pool.

The cost to enhance Shearness Pool is estimated to be \$594,000. This project will be done in phases in order to: a) improve the water control structure for the pool (\$144,000) and b) divide Shearness Pool into two with control of water level in both of these pools (\$450,000). There are \$50,000 in matching funds available at this time from Ducks Unlimited and a refuge management account to combine with the settlement at the Cokers site which provides for the Shearness Pool enhancement to begin. In addition, \$25,000 has been requested from the National Fish and Wildlife Foundation which would be used to completely fund Phase 1. The cost of Phase 2 which will construct a 1,980 foot long five feet high earthen dike across Shearness Pool at Bombay Hook would be \$450,000. Based on the restoration funds and matching funds available for this site in the current budget, the first phase of project wetland

improvement project can be completed. Funds for the second phase are included in the budget proposal for the refuge. Without improvement of the control structure, the project will not be undertaken.

**7. Consultation and Coordination**

Public Involvement - This RP/EA will be made available for public review and comment.

List of Agencies and Individuals Consulted:

Dan Murphy, Bob Foley, Al Rizzo, Chris Victoria, U.S. Fish and Wildlife Service,  
 Chesapeake Bay Field Office  
 Paul Daly, Bombay Hook National Wildlife Refuge  
 Mark Barash, Office of the Solicitor, Newton Corner, Massachusetts

**8. Budget for Phase 1, Shearneck Pool Enhancement**

Task	Date	Approximate Cost
Engineering Design/Drawings	1/1-2/1/96	\$26,000
Contracting/General Services Bid Preparation	2/1-3/1/96	included
Invitation for Bid Issued	3/1/96	"
Bid Acceptance	4/1/96	"
Notice to Proceed to Successful Bidder	4/20/96	"
Project Initiation	5/1/96	"
Project Completion	8/1/99	"
Final Acceptance	8/10/96	<u>\$118,000</u>
	Total	\$144,000

Budget of restoration planning and oversight:

Restoration Plan preparation	10/95 - 3/96	\$1,500
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Oversight	1996	\$2,000
	1997	\$900
	1999	\$900
	2001	\$900
	2003	\$450
	Total	\$6,650

Preparation of the restoration plan and oversight of restoration actions will be carried out by Chesapeake Bay Field Office.

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ccmailed to Paul Daly at Bombay Hook NWR