

## The Blue Heron Slough Conservation Bank (Washington)

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### I. OVERVIEW & BACKGROUND:

Location:	Snohomish River basin, Washington
Date established:	June 2008
Size of bank:	354 acres (conservation easement covers 344 acres)
Species:	Chinook salmon ( <i>Onchorhynchus tshawytscha</i> ), Steelhead ( <i>O. mykiss</i> ), Bull trout ( <i>Salvelinus confluentus</i> )
	Although salmon, steelhead, and bull trout may be present in the waters adjacent to the bank, these three species are not currently present at the bank site as restoration efforts are ongoing and dikes have yet to be removed. (The bank site will provide juvenile rearing habitat for salmon when the restoration is completed.)
Credits available:	350 (25 preservation, 325 restoration)
Method of credit generation:	Habitat preservation and restoration
Number of credits used/sold to date:	In development (Phase I)
Interesting features:	NOAA's DSAY credit methodology; preserved and restored habitat; both a conservation bank <i>and</i> a wetland mitigation bank

### II. INTRODUCTION / SITE SELECTION

In June 2008, NOAA's National Marine Fisheries Service (NMFS) and U.S. Fish & Wildlife Service (USFWS) approved the Blue Heron Slough Conservation Bank (bank) within Snohomish County, Washington as the first banking site of the Puget Sound Salmon, Steelhead and Bull Trout Umbrella Conservation Bank (umbrella bank). Initial planning began in 1994 when the Port of Everett (Port) recognized a need to secure mitigation properties for future projects. In response, the Port purchased the Biringier Farm, located in the Snohomish River estuary. In 2006, Wildlands, Inc. partnered with the Port to manage the site as a conservation bank, with the understanding that the Port would serve as a large consumer of bank credits.

In choosing a strategically important bank site within the Puget Sound, Wildlands aims to create a large, contiguous piece of highly functioning salmon habitat to support juvenile

salmonid rearing and growth. The construction of the bank is scheduled to occur in three phases, with each phase spaced approximately one year apart to allow habitat restoration activities and vegetation to stabilize prior to additional phase implementation.

According to NMFS, recovery of Chinook salmon in the Snohomish River basin is crucial to overall success of salmonid conservation efforts in the Puget Sound region of Washington State. A June 2008 Endangered Species Act Section 7 Consultation Biological Opinion issued by NMFS reports the following features as reasons for siting a conservation bank in the Snohomish River basin: the number of salmonid species living in the basin (nine); the size of the basin in relation to other basins draining into the Snohomish River (second largest); the number and length of tributary rivers and streams draining into the basin (1,730 tributary rivers and streams, approx. 2,718 miles in length); the number of populations of Chinook salmon in the basin (two); and the number of local Bull trout populations (four).

The primary goal of the bank is to restore intertidal wetland and mudflat habitat through the restoration of natural ecological processes at the bank site. Specific ecological goals include: restoration and enhancement of approximately 344 acres of disturbed habitat in the lower Snohomish River Estuary (to include high quality, sustainable mudflats, intertidal marshes and riparian areas), reconnection of refuge and off-channel rearing habitat to the Snohomish River Estuary, and permanent protection and management of the improved, enhanced, and restored habitats of the bank.

The bank is anticipated to restore approximately 100 acres of intertidal marsh, 8 acres of uplands, 230 acres of mudflat, 16 acres of subtidal slough, 18,400 linear feet of riverine habitat, and 24,000 linear feet of off-channel habitat in the Snohomish River Estuary. However, prior to the construction of this habitat (which will ultimately create conservation credits for salmonid species), the U.S. Army Corps of Engineers required a Clean Water Act (CWA) section 404 permit. Examples of the Chinook salmon, steelhead, and bull trout are shown in Figures 1 – 3 below.



**Figure 1. The Chinook salmon (*Onchorhynchus tshawytscha*).**



**Figure 2. The steelhead (*O. mykiss*).**



**Figure 3. The bull trout (*Salvelinus confluentus*)**

### **III. SERVICE AREA DETERMINATION**

To date, NMFS has identified 17 evolutionarily significant units (ESUs) of Chinook salmon in Washington, Oregon, Idaho and California. Each ESU is treated as a separate species under the Endangered Species Act (ESA). Thus, the conservation service area for this bank includes ESUs for all naturally spawned populations of Chinook salmon and Steelhead trout from rivers and streams flowing into Puget Sound as well as twenty-six artificial propagation programs (see Appendix E).

Although the bank is currently still in the initial phases of construction, Wildlands plans to use the site as both a conservation bank and a wetland mitigation bank. However, the service areas for the wetland bank will be slightly different.

#### **IV. CREDIT DETERMINATION/METHODOLOGY (DSAY UNITS)**

Credit determinations for the bank itself were based on a 1:1 ratio (e.g. one credit for one acre of habitat). Because bank habitat includes habitat preservation *and* restoration areas, credits based on the *preserved* habitat acreage were available after the bank agreement was signed and the conservation agreement was properly recorded, while credits based upon *restoration* activities are subject to a release schedule within the bank agreement. Further, certain credits can also be applied toward Shaded Riverine Aquatic Habitat (SRA) based on their proximity to the water (e.g. one linear foot of SRA will be the equivalent of 80 square feet or .0018 Acres/Credits).

NMFS has implemented a credit methodology known as Discounted Service Acre-Years (DSAY) which will be applied to customers of the bank. DSAY units are derived from the results of Habitat Equivalency Analysis (HEA), which is NOAA's methodology for determining compensation for resource injuries. The HEA framework has three requirements: resource/service losses must equal the resource/service gains; injured and restored resources must be of similar type, quality, and value; and a case-by-case determination of what type of valuation will be used (e.g. resource to resource, service to service, or value to value).

NMFS requires each credit purchaser to undergo ESA section 7(a)(2) consultation to ensure that the project is subject to an analysis of impact minimization measures prior to the allowance of credit purchases. As established in the umbrella bank agreement (allowing for the establishment of this bank), Wildlands has the exclusive right to determine the price of credits.

#### **V. FINANCIAL ASSURANCES**

The bank site comprises a total of 354 acres. The Port purchased the majority of the site in 1994, while Wildlands of Washington, LLC owns approximately 12 acres at the center of the site. Wildlands currently acts as the bank's financial manager and has estimated the endowment needed to fund the management of the site at approximately \$554,000 (with a ten year target date). This endowment will be funded through the sale of credits and managed by a qualified third-party organization. At the conclusion of short-term monitoring in the fifth year of operation (and beyond), the bank's endowment is designed to fund monitoring of basic protections and habitat maintenance needs in perpetuity.

#### **VI. MANAGEMENT (CURRENT AND LONG-TERM)**

Wildlands currently acts as the bank manager pursuant to the Management Plan approved by NMFS as part of the Conservation Bank Instrument. To ensure long-term protection, Wildlands and the Port recorded a conservation easement that protects the site in perpetuity.

Prior to bank-related habitat restoration activities, manmade changes disconnected the site from the flow of the Snohomish River, which directly prevented the functional processes that allow for habitat conditions that support Chinook salmon life cycles. NMFS reports the loss of salmon rearing habitat, in both quantity and quality, as the primary factor in the decline of Snohomish River basin Chinook salmon. Accordingly, protection and restoration activities along the nearshore and estuarine regions of the Snohomish River basin are considered to be most effective in improving Chinook salmon population numbers.

Wildlands has set a management and monitoring plan that involves both initial and long-term goals (see Appendix A). The plan initially covers a 5-year period, but also includes supplemental monitoring occurring at years 7 and 10 to assess long-term bank objectives (such as the progress of marsh expansion and the development of riparian forests). Short-term monitoring is focused on tracking the progress of establishing hydrologic connections; functioning riparian, mudflat and intertidal marsh habitat; recruiting and retaining large woody debris; and controlling invasive plant species. Fish and wildlife distributions are set to be mapped seasonally from ground surveys. Fish are scheduled to be monitored seasonally at a minimum of five beach netting stations within the bank. Wildlands has set increases in habitat area and quality as important indicators of success.

Long-term monitoring is less intensive, and consists of annual observations of the bank's varied habitats to track habitat health and development and providing NMFS and USFWS with sufficient information to determine whether the bank is functioning as planned.

## **VII. LESSONS LEARNED**

Although credit sales are still in the works, Wildlands gained NMFS's approval for this Chinook salmon bank over an 18-month period. According to Wildlands, the relatively short (and efficient) approval process of this bank has been streamlined as a result of successful agency coordination between the Corps, USFWS, and NMFS. In contrast, the Nookachamps Wetland Mitigation Bank, another Wildlands bank in Washington, is seven years in the making, and has had numerous delays at the local and state government level. As compared to California, the state of Washington has generally provided stiffer resistance to the idea of market-based environmental mitigation.

The Blue Heron Slough Conservation Bank is also noteworthy because it signifies how the siting and creation of a conservation bank should not be strictly reserved for locations that are currently housing existing, healthy populations of endangered or threatened species. This bank serves as an example of how well thought-out restoration techniques (e.g., restoring breeding habitat) can revive previously valuable aquatic habitat as a means to aid in the recovery of a species.

## **VIII. APPENDICES**

Appendix

Monitoring Elements ..... A

Vicinity Map ..... B  
Aerial Map ..... C  
Parcel Map ..... D  
Puget Sound Chinook Salmon ESU Map ..... E