

Habitat Conservation Plan for  
Streaked Horned Lark  
(*Eremophila alpestris strigata*)  
on Port of Portland Properties  
in Portland, Oregon

**DRAFT**

Prepared for

**Port of Portland**

Prepared by

**SWCA Environmental Consultants**

DRAFT September 9, 2016





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STRIGATA*) ON PORT OF PORTLAND PROPERTIES  
IN PORTLAND, OREGON**

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## CONTENTS

<b>Executive Summary .....</b>	<b>iv</b>
<b>1. Introduction .....</b>	<b>1</b>
1.1. Overview .....	1
1.2. Regulatory Framework .....	4
1.2.1. Endangered Species Act.....	4
1.2.2. Federal Aviation Administration Regulations .....	6
1.3. Coordination Efforts .....	7
<b>2. Plan Area.....</b>	<b>8</b>
2.1. Rivergate Project Area .....	8
2.2. PDX Intermediate Zone and the SW Quad Project Area .....	11
2.2.1. SW Quad.....	11
2.3. Sandy Island Conservation Area.....	15
<b>3. Covered Species .....</b>	<b>17</b>
3.1. Streaked Horned Lark .....	17
3.1.1. Biology and Life History .....	17
3.1.2. Habitat.....	17
3.1.3. Status and Threats .....	18
3.1.4. Occurrence in the Plan Area .....	20
3.2. Other Federally Listed Species .....	22
<b>4. Covered Activities.....</b>	<b>23</b>
4.1. Rivergate .....	23
4.2. SW Quad.....	23
4.3. PDX Intermediate Zone .....	25
4.4. Sandy Island Conservation Area.....	25
<b>5. Incidental Take and Impacts.....</b>	<b>26</b>
5.1. Potential for Take.....	26
5.1.1. Habitat Loss .....	27
5.1.2. Interim Conservation Measure - Nesting Habitat Modification.....	29
5.1.3. Noise and Activity Disturbances.....	29
5.1.4. Impact Summary .....	31
5.2. Incidental Take Request.....	32
5.2.1. Nesting Pairs as a Surrogate Measure for Take of Individuals.....	33
5.2.2. Take Estimate.....	35
5.2.3. Requested Take .....	40
5.3. Impact of the Requested Taking .....	41
5.3.1. Comparison to Regional and Range-wide Population .....	42
5.3.2. Consideration of Natural Habitat Loss.....	43
5.3.3. Comparison with Cumulative Bird-Years.....	43
<b>6. Conservation Program.....</b>	<b>48</b>
6.1. Biological Goals and Objectives.....	49

6.2.	Avoidance and Minimization Measures.....	50
6.2.1.	Seasonal Vegetation Management Restrictions .....	50
6.3.	Mitigation Measures .....	50
6.3.1.	Interim Conservation Measures .....	50
6.3.2.	Sandy Island Conservation Area .....	51
6.4.	SHLA Research Program.....	56
6.4.1.	Sandy Island Research Access.....	56
6.4.2.	Fledgling SHLA Banding at Rivergate and SW Quad.....	57
6.5.	Conservation Benefits .....	58
6.5.1.	Sandy Island Conservation Area .....	58
6.5.2.	Net Conservation Benefit Across the Plan Area .....	59
6.6.	Monitoring .....	60
6.6.1.	Nesting Season Surveys.....	60
<b>7.</b>	<b>Plan Administration .....</b>	<b>62</b>
7.1.	Permit Term and Renewals .....	62
7.2.	Permit Amendments.....	62
7.2.1.	Minor Amendment.....	62
7.2.2.	Major Amendment .....	63
7.3.	Reporting.....	63
7.4.	Coordination .....	64
7.4.1.	Changed Circumstances .....	64
7.5.	Unforeseen Circumstances.....	66
<b>8.</b>	<b>Funding Plan.....</b>	<b>67</b>
<b>9.</b>	<b>Alternatives Analysis.....</b>	<b>69</b>
9.1.	No Take Alternative.....	69
9.2.	No Interim Conservation Measures .....	70
<b>10.</b>	<b>Literature Cited.....</b>	<b>71</b>

## FIGURES

<b>Figure 1.</b> Location of the Plan Area, including the proposed Rivergate and PDX Intermediate Zone Project Areas and the proposed Sandy Island Conservation Area .....	3
<b>Figure 2.</b> Parcels of the Rivergate Project Area .....	10
<b>Figure 4.</b> The SW Quad within the PDX Intermediate Zone .....	14
<b>Figure 5.</b> Proposed Sandy Island Conservation Area .....	16
<b>Figure 6.</b> SHLA critical habitat within the lower Columbia River region .....	19
<b>Figure 7.</b> Suitable SHLA nesting habitat within Rivergate .....	38
<b>Figure 8.</b> Suitable SHLA nesting habitat within the SW Quad .....	39
<b>Figure 9.</b> Projected SHLA nesting pairs at Rivergate through Permit Year 30 .....	44
<b>Figure 10.</b> Estimated cumulative bird-years at Rivergate through the ITP term .....	45
<b>Figure 11.</b> Projected SHLA nesting pairs at the SW Quad through the ITP term .....	46
<b>Figure 12.</b> Estimated cumulative bird-years at the SW Quad through the permit term .....	47
<b>Figure 12.</b> Suitable SHLA Habitat within the Sandy Island Conservation Area .....	54
<b>Figure 13.</b> Projected SHLA nesting pairs at Sandy Island through the ITP term .....	59
<b>Figure 14.</b> Estimated cumulative bird-years at the Sandy Island Conservation Area through the ITP term .....	59

## TABLES

<b>Table 1.</b> Parcels of the Rivergate Project Area .....	9
<b>Table 2.</b> SHLA Abundance within the Plan Area .....	21
<b>Table 3.</b> Estimated Amount of Take from the Covered Activities .....	40
<b>Table 4.</b> Anticipated Impact in Cumulative Bird Years of the Covered Activities .....	48
<b>Table 5.</b> Anticipated Impact in Cumulative Bird Years on SW Quad .....	48
<b>Table 6.</b> Net Conservation Benefit of the HCP and ITP .....	60
<b>Table 7.</b> SHLA Nesting Season Survey Date Ranges .....	61
<b>Table 8.</b> Estimated HCP Implementation Budget .....	67

## APPENDICES

Appendix A List of Contributors	
Appendix B DSL Sandy Island SHLA Conservation Easement submittal (2016–2046)	
Appendix C DSL Sandy Island Dredge Spoils Disposal Site Easement (2005–2030)	
Appendix D Special Status Species Occurrence Table	
Appendix E Estimated Conservation Benefits: Bird-year Data	
Appendix F SHLA Working Group’s 2015–2016 Action Plan	

## EXECUTIVE SUMMARY

The U.S. Fish and Wildlife Service (USFWS) listed the streaked horned lark (*Eremophila alpestris strigata*; SHLA) as threatened under the Endangered Species Act (ESA) in October 2013. The Port of Portland (Port) owns and manages lands occupied by nesting and wintering SHLA, including undeveloped lands within the Rivergate Industrial District (Rivergate) and at the Portland International Airport (PDX), including the PDX Intermediate Zone and Southwest Quadrant (SW Quad), collectively, the Project Areas. The Port proposes to apply for an Incidental Take Permit (ITP) under Section 10(a)(1)(B) of the ESA to address incidental take of up to 46 SHLA nesting pairs, over a 30-year permit term (Section 5.2.3 of this HCP; Table 3), related to future commercial and industrial land development within the Project Areas, as well as aviation wildlife hazard management activities within the PDX Intermediate Zone and SW Quad. While not requested under the ITP application, the Port also evaluated the impacts from the take of an additional seven SHLA nesting pairs, to account for effects from future projects with a Federal nexus requiring consultations under Section 7(a)(2) of the ESA (Section 7 consultation). As part of the terms of the ITP, the Port would create the Sandy Island Conservation Area to mitigate for the anticipated take of SHLA from the implementation of the following Covered Activities under the take request, as well as in anticipation of projects subject to future Section 7 consultation:

- **Rivergate:** 1) conduct routine site management activities to control vegetation and provide interim SHLA habitat prior to development, collect garbage, deter trespassing, and similar activities; 2) develop the parcels over time (Permit Years 1 to 3) with the construction of buildings, parking areas, stormwater controls, utilities, and similar facilities related to industrial use; and 3) continue to use and maintain developed parcels for industrial purposes.
- **SW Quad:** 1) replace the existing drainfield system (Permit Year 1); 2) prepare the site for eventual development between Permit Years 25 to 30, while incidentally providing interim SHLA habitat prior to development as a result of implementing the PDX Wildlife Hazard Management Plan (WHMP); and 3) continue aviation wildlife hazard management activities in accordance with the PDX WHMP, including routine annual discing. With respect to Covered Activities at SW Quad, all actions proposed by the Port will be undertaken in strict compliance with the FAA's regulations regarding airport wildlife hazards.
- **PDX Intermediate Zone:** implement the PDX WHMP aviation wildlife hazard management activities, which are under an exemption from the prohibitions on take provided by a Special Rule issued by the USFWS under Section 4(d) of the ESA. The Port is including these activities as Covered Activities to obtain additional assurances that take of the SHLA is authorized in the event the 4(d) Special Rule is modified or revoked.
- **Sandy Island Conservation Area:** 1) implement conservation measures including vegetation management and signage for the SHLA at the proposed Sandy Island Conservation Area for a 30-year permit term providing for the creation of 32.0 acres of suitable SHLA habitat, and 2) provide access to the conservation area for ongoing SHLA research efforts.

Potential take as a result of the Covered Activities would occur via the permanent loss of 40.7 acres of currently suitable and managed SHLA habitat at Rivergate from industrial development,



and the permanent loss of 127.9 acres of incidental habitat suitable for SHLA based on the ultimate development of the SW Quad. Although effects of the take anticipated for the ultimate development of SW Quad are considered in this HCP, Section 7 consultation would be initiated for these effects and therefore the associated take is not included this Section 10 ITP request. Take is also possible, but less likely, to occur via the direct killing or wounding of SHLA eggs or young associated with reconstruction of the drainfield system at the SW Quad, implementation of the PDX WHMP, or ongoing site use. It should be noted that current suitable habitat within Rivergate and SW Quad is not a natural occurrence, and is maintained inadvertently by site management activities implemented by the Port in preparation for development or as a component of the PDX WHMP. In the event the Port were to cease site management activities such as vegetation management, current SHLA habitat would naturally transition out of suitability.

Current SHLA population densities at each Project Area, along with the estimated habitat loss associated with the Covered Activities, are used to quantify the number of nesting pairs that would be taken as a result of the Covered Activities (see Section 5). To quantify the cumulative effect to SHLA nesting pairs over the permit term, cumulative bird-years are used as a conceptual metric to describe the projected number of each year's SHLA nesting pairs at a particular site over time, based on projected changes in annual abundance due to changes in habitat area, habitat quality, or other factors. Using this model, the Port estimates that an increase of 275 cumulative bird-years would be the result of the implementation of the Covered Activities. The net conservation benefit of this increase more than compensates for the loss of up to 46 SHLA nesting pairs over the 30-year permit term, and also compensates for the additional take of seven SHLA nesting pairs for future development that would be evaluated under future Section 7 consultations. The ITP application requests take of 46 SHLA nesting pairs.

As part of this habitat conservation plan (HCP), the Port proposed a conservation program including biological goals and objectives, avoidance, minimization, and mitigation measures, adaptive management, an SHLA Research Program, and nesting season monitoring. The biological goals and objectives are:

1. to minimize the impact of the displacement and possible (albeit unlikely) loss of up to 53 SHLA nesting pairs (46 nesting pairs under the ITP, and seven nesting pairs in anticipation of future development under Section 7 consultations) from the Project Areas over 30 years by promoting the short-term persistence of SHLA at Rivergate and the SW Quad with routine site management activities (interim conservation measures) that maintain suitable SHLA habitat conditions until development occurs;
2. to minimize the potential for directly killing or wounding individual SHLA by restricting most Covered Activities, with the exception of the implementation of the PDX WHMP, to the non-nesting (i.e., wintering) season or to periods when the SHLA is not present, until development occurs; and
3. to mitigate the impacts of the taking by protecting and managing approximately 32 acres of SHLA designated critical habitat at the proposed Sandy Island Conservation Area for a term of 30 years, and by removing avoidance features from the SW Quad to expand the areas of suitable nesting habitat.

Comprehensive efforts by the Center for Natural Lands Management and USFWS to monitor SHLA abundance, distribution, and habitat in the lower Columbia River are ongoing. The Port's

proposed monitoring program is intended to align with this effort and will include nesting season and winter and fall surveys for SHLA according to accepted survey protocol. The Port will provide the USFWS with an annual monitoring report of HCP-related activities by December 31 of each year during the ITP term and will coordinate with the USFWS regularly to provide updates regarding implementation of the Covered Activities, annual monitoring and reporting, site maintenance needs, and adaptive management. As necessary, the Port will engage in adaptive management by updating the management and monitoring program to protect the SHLA and its habitat. Additional funding for adaptive management activities may also be provided.

At this time, the estimated budget for implementation of the HCP is approximately \$850,594.00 over 30 years, which will be provided by the Port as an annual operating expenditure of approximately \$28,000 per year.

To the extent that any such activities evaluated in this HCP require subsequent approval by the Federal Aviation Administration (FAA) (such as full development at SW Quad), or involve federal funds such as those from the FAA's Airport Improvement Program, a federal nexus would exist and consultation under Section 7 of the ESA would be required. This HCP has been designed to address anticipated take as a result of the covered activities in an effort to assist the FAA in future consultations at PDX by providing a convenient mitigation option, should the FAA need to mitigate for and/or minimize effects to SHLA. In the case of SW Quad future development, in an effort to prepare for a Section 7 consultation, take of seven nesting pairs as a result of this development is evaluated in this HCP (Section 5.2.3 of this HCP; Table 3), though not included in the take permit request. Additionally, it is also the intent of this HCP to account for other circumstances affecting SHLA on PDX property, such as a change in the 4(d) rule or a change in the required review for WHMPs. Additional examples of changed circumstances are provided for in this HCP.

# 1. INTRODUCTION

## 1.1. Overview

The U.S. Fish and Wildlife Service (USFWS) listed the streaked horned lark (*Eremophila alpestris strigata*; SHLA) as threatened under the Endangered Species Act (ESA) in October 2013 (USFWS 2013a). The Port of Portland (Port) owns and manages lands occupied by nesting and wintering SHLA, including undeveloped lands within the Rivergate Industrial District (Rivergate) and at the Portland International Airport (PDX) (Figure 1). The Port proposes to apply for a 30-year Incidental Take Permit (ITP) under Section 10(a)(1)(B) of the ESA to address incidental take of SHLA related to land development and aviation wildlife hazard management activities at Rivergate and PDX (the “Proposed Activities”) that specifically include:

- 1) the Port’s immediate need to maintain, develop, and use currently undeveloped land within Rivergate;
- 2) the replacement of a drainfield system and berm removal specifically as a component of the PDX Wildlife Hazard Management Plan (WHMP) to deter aviation species of concern;
- 3) the implementation of aviation wildlife hazard management activities in accordance with its WHMP for lands within the PDX airfield perimeter fence and other Port-owned airport lands under the approach or transitional surface of the runways (the “PDX Intermediate Zone,” as defined in Port [2009]).

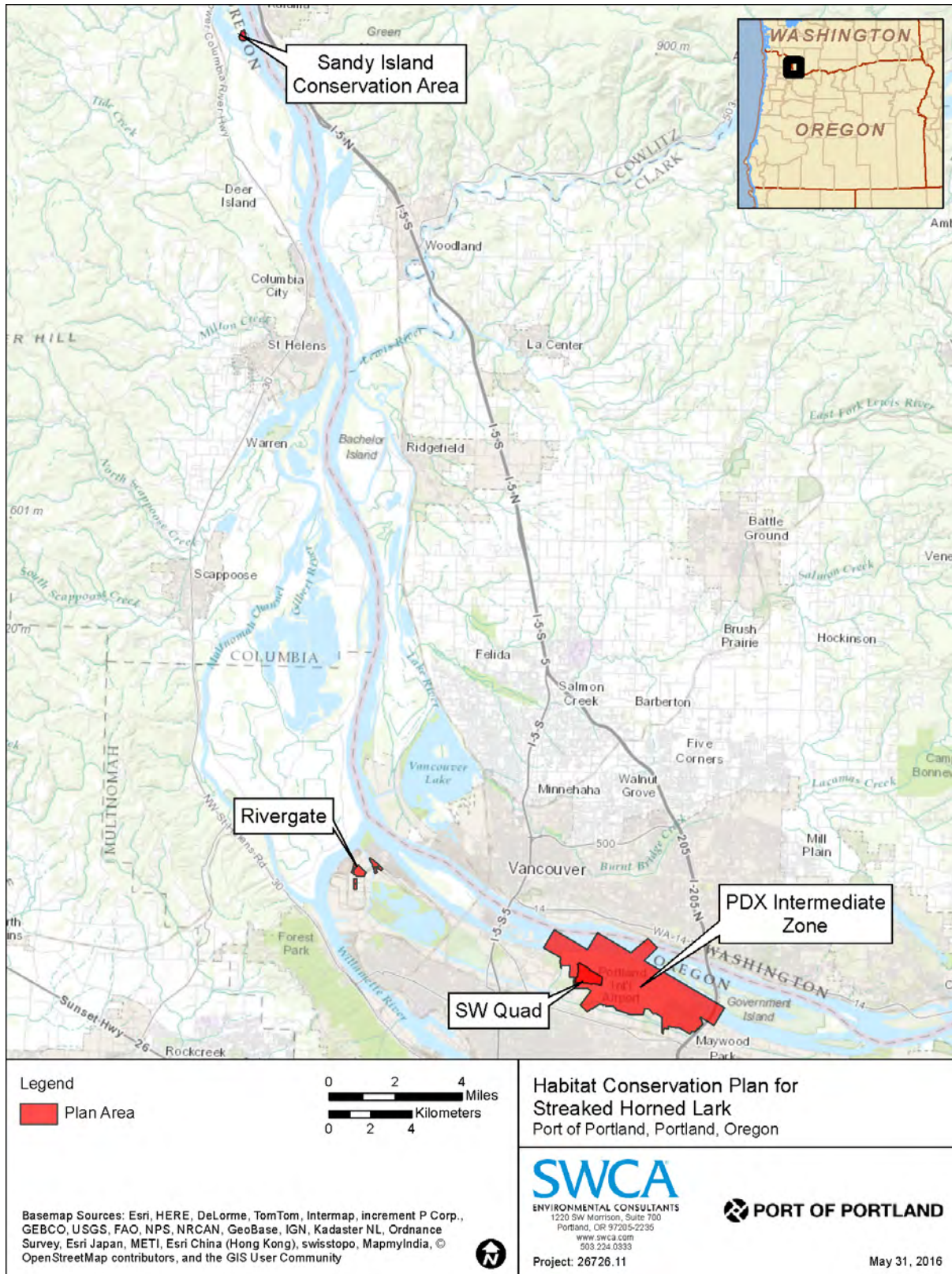
Future development of an area within the PDX Intermediate Zone known as the Southwest Quadrant (SW Quad) is also evaluated in this habitat conservation plan (HCP), though not included as a Covered Activity. Development of the SW Quad would be subject to a consultation under Section 7(a)(2) of the ESA (Section 7) (as discussed in Section 1.2.2 of this HCP), and take associated with this development would be addressed in that consultation. However, in an effort to structure the HCP to anticipate future consultation and provide a convenient mitigation option, the Port has evaluated the take requested in this HCP, as well as additional take estimated for the future development at SW Quad.

Together, the undeveloped lands at Rivergate and the PDX Intermediate Zone (which is inclusive of the SW Quad) are the Port’s “Project Areas” (see Figure 1). The Port acknowledges that its Proposed Activities may cause take of the SHLA, primarily via harm from the loss of nesting habitat, but also potentially by directly harassing, killing, or wounding individual birds or eggs. Therefore, the Port seeks an ITP that provides authorization for incidental take of the SHLA arising from each of these Proposed Activities.

Currently, incidental take of the SHLA arising from the Port’s implementation of the PDX WHMP is exempted from the prohibitions on take by a Special Rule issued by the USFWS under Section 4(d) of the ESA (USFWS 2013a). Therefore, the Port does not currently need an ITP to provide take authorization for its aviation wildlife hazard management activities. However, it is possible, albeit unlikely, that a changed circumstance could occur wherein the SHLA 4(d) Special Rule either is withdrawn or is modified or interpreted to not fully address the Port’s implementation of

the PDX WHMP. The Port wishes to structure its ITP so that a portion of the take authorization (i.e., the amount deemed necessary to address implementation of the PDX WHMP) would only become effective upon the occurrence of this changed circumstance. By fully addressing the potential impacts of the full take request up front, this allows for the amount of authorized take to address both the activities that need it and the need to allow for take due to the Port's necessary aviation wildlife hazard management activities, if applicable, as a result of changed circumstances.

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**Figure 1.** Location of the Plan Area, including the proposed Rivergate and PDX Intermediate Zone Project Areas and the proposed Sandy Island Conservation Area.

To address the impacts of its anticipated taking (including take authorized by the ITP for aviation wildlife hazard management activities, and anticipating future take under a Section 7 consultation), the Port proposes to implement conservation measures for the SHLA at the proposed Sandy Island Conservation Area. The proposed Sandy Island Conservation Area is a 32-acre dredged material placement site located approximately 30 miles north of Rivergate and the SW Quad on the Columbia River (see Figure 1). Sandy Island is designated critical habitat for SHLA (USFWS 2013b) and occupied by nesting SHLA. However, habitat at the Sandy Island Conservation Area is unmanaged and rapidly becoming unsuitable for use by SHLA due to the natural succession of vegetation.

The Port also proposes to implement interim conservation measures at Rivergate to maintain suitable habitat for nesting SHLA until these lands are actually developed.

At SW Quad, the drainfield replacement, berm removal, and other site management activities implemented under the PDX WHMP would incidentally result in habitat conditions suitable for SHLA. However, while inadvertent habitat remains and becomes suitable, these activities are employed strictly to manage for aviation species of concern under the WHMP, though SHLA may benefit.

Ultimately, the combination of SHLA habitat intentionally maintained at Rivergate and the inadvertent habitat maintained at SW Quad as a result of PDX WHMP implementation would result in a temporal conservation benefit to SHLA until development occurs.

This HCP describes the expected impacts of the Port's Proposed Activities on the SHLA; assesses the amount and extent of take resulting from these impacts; proposes a conservation program that minimizes and mitigates, to the maximum extent practicable, the impacts of the proposed taking; and demonstrates a net conservation benefit to the subspecies. The HCP also includes other content specified by the ESA and USFWS policy, including the HCP Handbook (USFWS and National Marine Fisheries Service [NMFS] 1996) and the five-point policy addendum to the HCP Handbook (USFWS and the National Oceanic and Atmospheric Administration [NOAA] 2000). At the time of this HCP, the USFWS released an update to the 1996 HCP Handbook for public comment. Because this update was not finalized prior to the release of the HCP, the Port is operating under guidance and requirements of the 1996 version.

The Project Areas and the Sandy Island Conservation Area are the "Plan Area" for this HCP (see Figure 1).

## **1.2. Regulatory Framework**

### **1.2.1. Endangered Species Act**

Section 9 of the ESA prohibits *take* of federally endangered wildlife species. The ESA defines *take* as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 United States Code [USC] 1532(19)). *Harm* is defined by USFWS regulations as "an act which actually kills or injures wildlife and may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding or sheltering" (50 Code of

Federal Regulations [CFR] 17.3). Similarly, the term *harass* is defined in USFWS regulations as an “intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering” (50 CFR 17.3). Section 10(a)(1)(B) of the ESA authorizes the USFWS to issue permits allowing take that is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.”

Section 10(a)(2)(A) of the ESA provides that the USFWS shall not issue an ITP unless the applicant provides a conservation plan that specifies:

- 1) the impact that will likely result from the taking;
- 2) the steps the applicant will take to minimize and mitigate such impacts and the funding that will be available to implement those steps;
- 3) the alternative actions to the taking that the applicant considered and the reasons why such alternatives are not being utilized; and
- 4) other measures that the USFWS may require as being necessary or appropriate for the purposes of the conservation plan.

The USFWS’s HCP Handbook also provides guidance on the elements of an HCP (USFWS and NMFS 1996). The USFWS published additional policy guidance for HCPs (the “five-point policy”) as an addendum to the HCP Handbook on July 3, 2000 (USFWS and NOAA 2000). The policy is intended to increase the effectiveness of HCPs by emphasizing the use of biological goals and objectives, adaptive management strategies, monitoring provisions, permit duration considerations, and public participation.

This HCP addresses each of the criteria for ITP issuance that are specified in Section 10(a)(2)(B) of the ESA. These issuance criteria state:

If the Secretary finds, after opportunity for public comment, with respect to a permit application and the related conservation plan that — (i) the taking will be incidental; (ii) the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; (iii) the applicant will ensure that adequate funding for the plan will be provided; (iv) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and (v) the measures, if any, required under subparagraph (A)(iv) will be met; and he has received such other assurances as he may require that the plan will be implemented, the Secretary shall issue the permit. The permit shall contain such terms and conditions as the Secretary deems necessary or appropriate to carry out the purposes of this paragraph, including, but not limited to, such reporting requirements as the Secretary deems necessary for determining whether such terms and conditions are being complied with.

As stated above, at the time of this HCP, the USFWS released an update to the 1996 HCP Handbook for public comment. Because this update was not finalized prior to the release of the HCP, the Port is operating under guidance and requirements of the 1996 version.



### **1.2.2. Federal Aviation Administration Regulations**

The Federal Aviation Administration (FAA) mandates that airport sponsors maintain a safe operating environment. This includes conducting a wildlife hazard assessment (WHA) and preparing a WHMP when there has been a significant wildlife strike or other triggering event (14 CFR 139.337). A WHMP identifies the specific actions an airport sponsor, like the Port, will take to mitigate the risk of wildlife strikes at or near the airport.

The overall objective of the Port's FAA-approved PDX WHMP (Port 2009) is to effectively manage the risk to safe operations at PDX by reducing the probability of wildlife/aircraft collisions by implementing an integrated and adaptive wildlife hazard management program. The PDX WHMP identifies management strategies that address the aviation wildlife hazards unique to PDX. These strategies include, but are not limited to, hazing or harassment of species of concern to aviation safety; trapping and translocating problem wildlife; modifying habitat; and managing food, water, and vegetation.

The FAA conducts an annual certification inspection to ensure that the Port is in compliance with the approved Airport Certification Manual that includes the WHMP. Potential wildlife hazards at PDX are monitored daily. The WHMP is reviewed at least annually or whenever an air carrier aircraft experiences a triggering event such as a multiple wildlife strike, a damaging collision with wildlife, or an engine ingestion of wildlife. An annual status report and confirmation of WHMP review is filed with the FAA prior to the annual 14 CFR Part 139 certification inspection. The PDX WHMP will be revised as necessary, when either the program or the hazards and issues at the airport change significantly, or every 5 years, whichever comes first (Port 2009).

FAA Order 5050.4B: National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions Section 209a. states: "To implement section 44706, 14 CFR Part 139 prescribes rules governing the certification and operation of airports. Section 139.337 discusses the need to manage wildlife hazards on or near airports when aircraft collide with wildlife or birds or the size of wildlife or bird populations could cause collisions. When the FAA Administrator determines that an airport sponsor operating a certificated airport must prepare a WHMP to address these wildlife hazards, the sponsor must submit the WHMP to the Administrator for approval prior to implementation." Section 209b. states that preparation of a WHMP or approval of that plan normally qualifies for categorical exclusion and that those measures that will result in a subsequent federal action (airport layout plan [ALP] approval or funding) may be subject to additional environmental analysis pursuant to NEPA.

At the time of this HCP, the current PDX WHMP is undergoing revision with an estimated completion date in Fall/Winter 2016. It is currently under review by Port staff.

With respect to PDX, this HCP is intended to address incidental take associated with the implementation of the WHMP, which is currently covered by a 4(d) rule and does not involve federal action. Activities beyond those associated with the implementation of the PDX WHMP, such as future development of the SW Quad, are not covered by the 4(d) rule, but are evaluated in this HCP.

To the extent that any such activities require approval by the FAA, or involve federal funds such as the FAA's Airport Improvement Program (AIP), a federal nexus would exist and consultation



under Section 7 of the ESA would be required. For example, development of the SW Quad would require a modification to the Port's existing ALP and would likely involve AIP grant funds. These FAA actions would trigger the requirement for Section 7 consultation for the SHLA at the SW Quad.

When a project involves a federal nexus, an existing HCP may assist the responsible federal agencies by providing conservation options to address incidental take. This HCP has been designed to address anticipated take from the development of SW Quad in an effort to assist the FAA in future consultations at PDX by providing a convenient mitigation option, should the FAA need to mitigate for and/or minimize effects to threatened or endangered species covered by this HCP. Although mitigation through an appropriately implemented HCP may expedite a consultation, there is no guarantee of expedited review or of any particular outcome. Future conservation strategies for dealing with FAA consultations under Section 7 are not bound by those in this HCP.

### **1.3. Coordination Efforts**

The Port works with the USFWS, the FAA, other federal and state natural resource agencies, scientists, conservation organizations, and various stakeholders to protect the SHLA. The Port has been an active member of the SHLA Working Group since 2007. Key coordination efforts related to the preparation of this HCP are noted below.

To prepare this HCP, the Port obtained the assistance of environmental consultants from SWCA Environmental Consultants (SWCA) and AKS Engineering & Forestry, LLC (AKS). The Port also assembled a Science Advisory Team (SAT) composed of SHLA experts from the American Bird Conservancy (ABC), the Center for Natural Lands Management (CNLM), and the Nature Conservancy (TNC). The SAT provided technical guidance to the Port on matters relating to the scientific adequacy of the impact assessment and conservation strategy proposed in this HCP. Appendix A lists the entities and people involved in the preparation of this HCP.

The SAT provided technical guidance to the Port on matters relating to the scientific adequacy of the impact assessment and conservation strategy proposed in this HCP. The SAT participated in HCP development meetings, made a site visit to Sandy Island in August 2015, and has remained engaged in advising the Port on the development of this HCP.

The USFWS provided technical assistance to the Port via correspondence and participation in coordination meetings held in July, August, and October 2015 and February, May, July, and August 2016 to discuss proposed conservation program elements and to help develop appropriate avoidance and minimization measures and other conservation actions. The USFWS also participated in the field visit to Sandy Island in August 2015.

The Port also coordinated with the Oregon Department of State Lands (DSL) to negotiate a conservation easement on the proposed Sandy Island Conservation Area (Appendix B) and with Columbia County for their review of the Land Use Compatibility Statement (LUCS) for the conservation easement. The Port currently holds an unrelated 25-year easement on the proposed Sandy Island Conservation Area (in effect through 2030) that allows the U.S. Army Corps of Engineers (USACE) to deposit dredged material on the site (Appendix C). The Port coordinated

with the USACE to determine its plans for future use of the proposed Sandy Island Conservation Area.

## **2. PLAN AREA**

The Plan Area for this HCP includes the Rivergate and PDX Intermediate Zone Project Areas (which are inclusive of the SW Quad) and the proposed Sandy Island Conservation Area, and are defined in the subsections below (see Figure 1). These three sites constitute the area where the Port's Proposed Activities and its proposed conservation actions will occur. The Plan Area will be the permit area for the ITP. The Plan Area covers approximately 5,019.2 acres, including approximately 120.5 acres at Rivergate, 4,866.7 acres within the PDX Intermediate Zone, and 32.0 acres at the proposed Sandy Island Conservation Area. The specific site characteristics of each part of the Plan Area are described below.

At a general level, the Plan Area is located within the Willamette Valley Level III Ecoregion near where the Willamette River flows into the Columbia River Gorge (Thorson et al. 2003). The ecoregion is characterized by fluvial terraces and floodplains of the Willamette River system, with scattered hills, buttes, and adjacent foothills near the edges. Historically, the region was covered by rolling prairies, oak savanna, coniferous forests, extensive wetlands, and deciduous riparian forests. Today, it contains the majority of Oregon's human population, industry, commerce, and agriculture (Thorson et al. 2003).

### **2.1. Rivergate Project Area**

The Rivergate Project Area is located within the Rivergate Industrial District in Portland, Oregon, on the peninsula in north Portland bordered by the Columbia River, the Willamette River, and their confluence. The Rivergate Industrial District is Oregon's primary gateway for international trade, and is Portland's largest industrial park including 2,800 acres of warehousing, distribution, manufacturing, and processing facilities with more than 13 million square feet of buildings (Mackenzie 2014). The land itself was created or improved for development by the Port with the placement of fill material (mostly sandy dredged material) to elevate building sites to the surrounding grade and provide a substrate suitable for development.

The Rivergate Project Area consists of approximately 120.5 acres across six undeveloped parcels that are scattered among other developed parcels within the industrial district (Figure 2; Table 1). The Rivergate parcels are bordered by roads, rail lines, parking lots, industrial buildings, and the Columbia Slough—in a largely human-made and heavily industrial setting.

**Table 1.** Parcels of the Rivergate Project Area

Parcel Identifier	Acreage
A1	54.5
A2	10.6
A3	17.0
B1	22.1
B2	7.9
B3	8.5
<b>Total</b>	<b>120.5</b>

Current conditions at Rivergate are the result of extensive historical fill, recurring human disturbance, and the historic development of the original floodplain and associated wetlands, sloughs, lagoons, and wet prairies of the Willamette and Columbia Rivers. The Rivergate parcels have well-drained, coarse, sandy dredged fill material substrate with sparse to moderate vegetation cover. This vegetation includes cheatgrass (*Bromus tectorum*), hare’s foot clover (*Trifolium arvense*), miniature lupine (*Lupinus bicolor*), rush skeletonweed (*Chondrilla juncea*), and willows (*Salix* spp.). Approximately 25% of the Rivergate parcels’ area is bare ground (Galen 2013a). Vegetation on Rivergate had previously been maintained by routine mowing, but this practice was discontinued in 2013. The installation of Jersey barriers along the roadside at Rivergate in 2014 has limited trespassing and illegal vehicular access. The Port also regularly mows the outer roadside perimeter of undeveloped parcels. These practices were implemented by the Port to prevent illegal site access and fires caused by vehicles and pedestrians.

The creation of suitable habitat for SHLA at Rivergate, and subsequent occupancy by the subspecies, was an unintended consequence of the development of the Rivergate Industrial Park and the Port’s ongoing use and maintenance of the site. The Port’s preparation of building sites within the Rivergate Industrial Park, including the parcels of the Rivergate Project Area, created large open areas with exposed soils that have proved to be attractive to the SHLA. These conditions have been largely maintained by routine site management, such as occasional mowing and discing, to keep parcels ready for development and to generally reduce seasonal fire hazards within the industrial district.

The Port ceased routine site management of the Rivergate parcels in 2013. Since then, herbaceous vegetation within these undeveloped parcels has become denser and woody shrubs are encroaching at a rapid rate. Without the reinstatement of routine site management, it is expected that natural vegetation succession will result in the loss of suitable SHLA habitat at Rivergate by 2019 (i.e., 6 to 7 years after the routine site management ceased) (Anderson 2013).



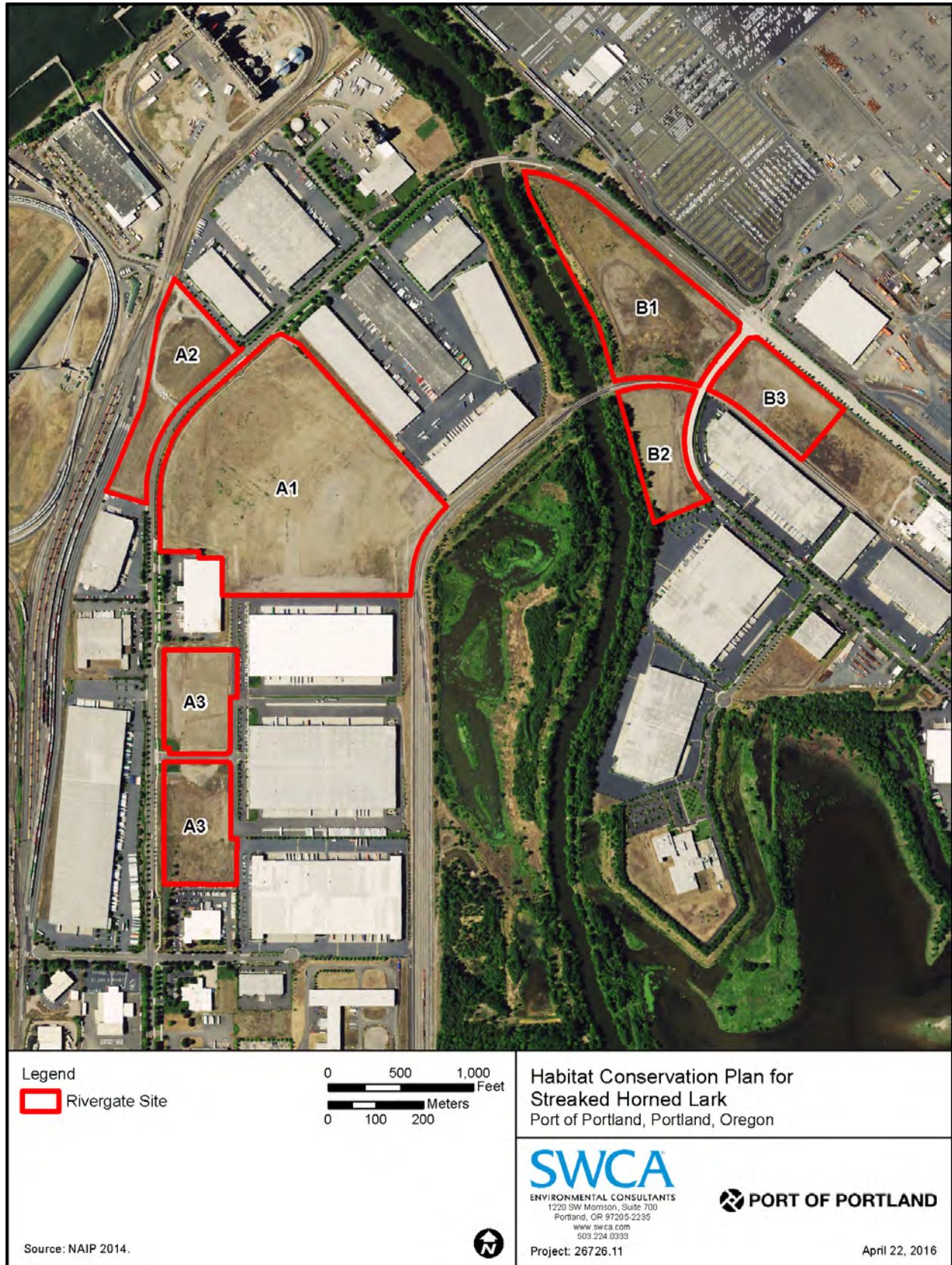


Figure 2. Parcels of the Rivergate Project Area.

## 2.2. PDX Intermediate Zone and the SW Quad Project Area

Most of the Port's aviation wildlife hazard management activities occur within the PDX Intermediate Zone, considered herein as being inclusive of the PDX Primary Zone delineated in Port (2009). Therefore, for the purposes of this HCP, the PDX Intermediate Zone includes approximately 4,866.7 acres comprising (Port 2009):

- the area within the airfield perimeter fence, a 300-foot buffer around the perimeter fence, and runway protection zones (together, the Primary Zone); and
- Port-owned airport land outside of the Primary Zone, much of which is under the approach or transitional surfaces of the runways.

For the purposes of the HCP, the limits of the PDX Intermediate Zone are shown in Figure 3.

As described in Port (2009), "land management decisions within the Primary Zone are subject to the single dedicated land use of operating an airport and the associated public aviation safety concerns." The Port's land management objectives for the remainder of the PDX Intermediate Zone are similar, as these areas (for the most part) are under the direct control of the Port and land uses in this area are intended to be compatible with aviation public safety (Port 2009). Throughout the PDX Intermediate Zone, wildlife management is critical to airport safety and the Port designs and implements its WHMP with the objective of eliminating or reducing to the extent practicable all attractants for wildlife species of aviation concern.

As apparent from Figure 3, most of the PDX Intermediate Zone is either developed or paved or is regularly mowed or disced to maintain low, sparse herbaceous cover or bare ground. This regular maintenance to eliminate or reduce aviation wildlife hazards, in accordance with the FAA-approved PDX WHMP (Port 2009), promotes conditions consistent with suitable SHLA habitat. Most of the undeveloped upland portions of the PDX Intermediate Zone have the potential to be used by SHLA, although the specific extent of currently suitable SHLA habitat within the PDX Intermediate Zone is unknown.

### 2.2.1. SW Quad

The SW Quad is an approximately 204.7-acre open field within the PDX Intermediate Zone, located between Elrod Slough and the PDX south runway (Figure 4). The SW Quad is immediately adjacent to PDX runways and taxiways. For this reason, the SW Quad is an optimal location for future PDX airport infrastructure. The SW Quad is also bordered by paved roads, other PDX commercial buildings, and open space lands associated with the Riverside Country Club and the Broadmoor Golf Course (see Figure 4).

Historically, the SW Quad contained extensive wetlands. However, the Port filled these wetlands (in accordance with applicable regulations) between 1994 and 2005 and installed a perforated pipe drainfield to prevent the recurrence of wetland habitat attractive to wildlife species of concern to aviation safety. The SW Quad is currently an open expanse of mostly barren fill material with sparse herbaceous weedy plants. Vegetation is managed in accordance with the



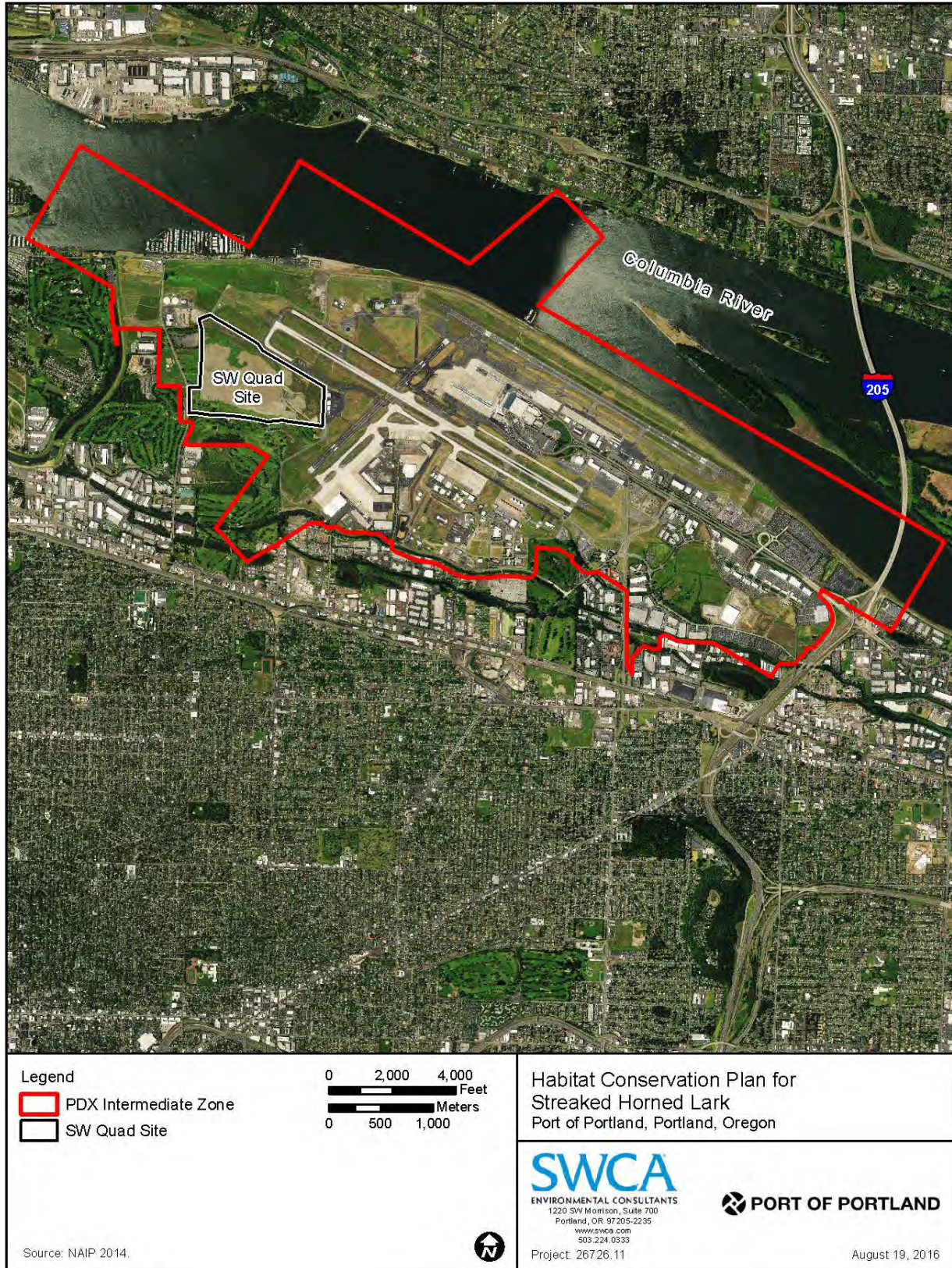


Figure 3. Limits of the PDX Intermediate Zone.



PDX WHMP (Port 2009), to deter and discourage avian species of concern to aviation safety from the airfield and surrounding properties and to reduce the risk of wildlife/aircraft collisions. Consistent with the current implementation of the PDX WHMP (Port 2009), much of the SW Quad is mowed or disced annually. This management regime is subject to change at any time, consistent with PDX WHMP (Port 2009). The Port inadvertently created and currently maintains suitable SHLA habitat at the SW Quad as a consequence of mitigating other aviation wildlife hazards at PDX.

Vegetation on the SW Quad is similar to that at Rivergate and is characterized by mostly barren fill material with sparse herbaceous weedy plants (Port 2013). The SW Quad has the following features (see Figure 4) (Port 2013; Nick Atwell, Port Environmental Project Manager, pers. comm.):

- a 4-foot-tall sandy berm along the northern boundary;
- an approximately 45-acre fenced stockpile area currently housing unplaced fill material along the eastern boundary; and
- a vegetated strip of dense grasses and scattered trees along the southern boundary.

These features of the SW Quad do not currently provide suitable habitat for the SHLA. Of the 204.7 acres at the SW Quad, only approximately 77.0 acres are suitable habitat for the SHLA (Nick Atwell, Port Environmental Project Manager, pers. comm.).



Figure 4. The SW Quad within the PDX Intermediate Zone.



## 2.3. Sandy Island Conservation Area

Sandy Island is located in the Columbia River at River Mile 75.8, directly across from the public boat ramp at the Port of Kalama in unincorporated Columbia County, Oregon (Figure 5). Sandy Island, as a whole, is approximately 340 acres. Approximately 312 acres of Sandy Island is human-made by historic and current dredged material placement. This portion of the island is owned by DSL. The original island landform is approximately 28 acres and is in private ownership. Because Sandy Island is within waters of the state, DSL regulates the natural resources of the island. Sandy Island is open to the public and accessible by boat, attracting recreational users who use the site primarily for shoreline camping and recreational fishing.

The Port holds an easement from DSL for dredged material placement over approximately 32.0 acres of the DSL-owned portion of Sandy Island (Easement No. 33472-EA; Appendix B). This existing easement, valid through 2030, allows the Port to manage the site for dredged material deposition by the USACE, as part of the USACE's maintenance of the Columbia River Federal Navigation Channel. The proposed Sandy Island Conservation Area is the portion of Sandy Island subject to the existing 32-acre dredged material placement easement (see Figure 5).

The proposed Sandy Island Conservation Area consists of piled dredged sand with a relatively flat, sparsely vegetated plateau. The plateau is perched 40 to 50 feet above the shoreline and includes a small grove of approximately 20 black cottonwood (*Populus trichocarpa*) trees and a small depression along the northern portion of the site (see Figure 5). Vegetation is sparse and the land cover is a mosaic of bare sand, grasses, forbs, invasive Scotch broom (*Cytisus scoparius*) shrubs, mosses, and lichens. The land slopes steeply to the Columbia River on the east and south boundaries, and transitions abruptly to forested wetlands and riparian habitat to the west and north (see Figure 5). Scotch broom lines the steep slopes to the shoreline. The repeated placement of dredged material at the proposed Sandy Island Conservation Area, with the most recent depositions occurring between 1997 and 2011 (Anderson 2010; Anderson and Slater 2015), created habitat for the SHLA.

The USACE considers the Port's Sandy Island dredged material placement site (i.e., the proposed Sandy Island Conservation Area) to be full and the USACE does not intend to place additional dredged material there. Neither the USACE nor the Port is obligated to manage vegetation at the site (USFWS 2015a). Without recurring site disturbance and/or vegetation management, natural succession of the vegetation (including encroachment by Scotch broom) will degrade SHLA habitat and is expected to cause the loss of suitable habitat at this site in the near future (Anderson 2013).

The 32.0 acres of the proposed Sandy Island Conservation Area is designated critical habitat for the SHLA and part of the 37-acre SHLA critical habitat Subunit 3-M (USFWS 2013b).



Figure 5. Proposed Sandy Island Conservation Area.

### **3. COVERED SPECIES**

The SHLA occurs within the Rivergate and PDX Intermediate Zone Project Areas, including the SW Quad, and may be taken by the Port's Proposed Activities. No other federally listed species or species proposed for such listing is likely to be taken by the Proposed Activities (Appendix D). Therefore, the SHLA is the only Covered Species in this HCP and the only species for which the Port seeks incidental take authorization.

#### **3.1. Streaked Horned Lark**

##### **3.1.1. Biology and Life History**

The SHLA is one of 21 recognized subspecies of the horned lark (American Ornithologists' Union 1957). An endemic species of the Pacific Northwest, this small ground-dwelling bird is approximately 16 to 20 cm in length and is distinguishable from other larks due to its distinctive black feather tufts. Male SHLAs have a yellow face and throat and adult birds have a black bib covering the chest area.

Breeding occurs in late February and nesting can start as early as late March and continues into August (Pearson and Hopey 2004). For example, clutch initiation in the Columbia River and Washington Coast populations has been observed as early as April 6 and as late as August 9 (Pearson et al. 2016). Typically, SHLA form nesting pairs in the spring (Beason 1995). In the Columbia River region, SHLA establish territories approximately 3.3 to 8.5 acres in size, which may overlap (Slater and Anderson 2016). Adult SHLAs exhibit high site fidelity to their nesting site (Pearson et al. 2008). SHLA may make several nest attempts throughout the nesting season (Stinson 2005; Pearson et al. 2008; Anderson 2010; Camfield et al. 2010; Moore 2012). The female typically lays four eggs with a short incubation time of approximately 11 days. Young SHLA leave the nest by the end of the first week after hatching and rely on their parents for up to 4 weeks before becoming independent (Beason 1995). By mid- to late August, SHLA disperse from their nesting territories and flocking begins. SHLA can move to nearby suitable habitat when previously used habitat becomes unavailable (Moore 2011).

##### **3.1.2. Habitat**

Suitable SHLA wintering and nesting habitat consists of areas with short, sparse herbaceous vegetation (bare ground ranging from 11% to 79%) with little or no woody vegetation (Dinkins et al. 2003; Pearson and Hopey 2005; Anderson and Pearson 2015). SHLA tend to avoid engaging in nesting activities along the hard edge of otherwise suitable nesting habitat, such as the large cottonwood trees that form the southern and western boundary of SHLA habitat at the Sandy Island Conservation Area (Anderson and Pearson 2015). In the Puget Lowlands, SHLA tend to occur on some native prairies and on managed airport lands. Along the Washington coast, they are found on dunes with limited vegetation cover, which is also the only remaining site where natural disturbance regimes maintain suitable early successional habitat. Along the lower Columbia River, SHLA often occupy dredged material placement sites. In the Willamette Valley, SHLA primarily occupy agricultural sites and airports (Altman 2011). Most sites currently used by SHLA require some level of disturbance or management to maintain the habitat structure they require.

The majority of SHLA habitat across its range occurs where human activity provides open habitat, such as airport maintenance and mowing, agricultural activities, dredged material deposition, artillery detonations, beach strands, and areas where vegetation has been cleared and graded for site development (Anderson and Pearson 2015). Airports present some of the best remaining open grassland habitat for the SHLA (Lassen 2011). SHLAs prefer to use large areas dominated by grasses, forbs, and bare ground; these preferred landscapes can include roads, signs, and even some tall features, such as power or telephone lines and airfield instrument towers (Anderson and Pearson 2015).

By October, SHLA have gathered in winter flocks. SHLA spend the winter in large groups of mixed subspecies of horned larks in the Willamette Valley, and in smaller flocks along the lower Columbia River and Washington Coast (Pearson et al. 2005b; Pearson and Altman 2005). Most SHLA winter in the Willamette Valley (72%) and on the islands in the lower Columbia River (20%); the rest spend the winter on the Washington coast (8%) or in the south Puget Sound (1%) (Pearson et al. 2005b). Wintering SHLAs use habitats that are very similar to their breeding habitats (Pearson et al. 2005b).

### **3.1.3. Status and Threats**

The USFWS listed the SHLA as threatened under the ESA on October 3, 2013 (USFWS 2013a). The USFWS also designated critical habitat for the SHLA, including a critical habitat subunit on Sandy Island (Subunit 3-M). The Sandy Island critical habitat subunit includes 37 acres and encompasses the proposed Sandy Island Conservation Area (USFWS 2013b; Figure 6). Of the total 37 acres, only the approximately 32-acre dredged material placement easement site currently provides suitable habitat for SHLA nesting and wintering (USACE 2014). However, vegetation at the site is rapidly transitioning out of suitability for SHLA as a consequence of natural ecological succession.

Historically, SHLA bred from southern British Columbia, Canada, south through the Puget Lowlands and outer coast of Washington, along the lower Columbia River, through the Willamette Valley, the Oregon coast, and into the Umpqua and Rogue River Valleys of southwestern Oregon (Altman 2011). SHLA has been extirpated throughout much of its range, including all of British Columbia, the San Juan Islands, the northern Puget Trough, the Washington coast north of Grays Harbor County, the Oregon coast, and the Rogue and Umpqua Valleys in southwestern Oregon (Pearson and Altman 2005).

The current range and distribution of the SHLA is divided into three regions: the south Puget Sound in Washington, the Washington coast and lower Columbia River islands, and the Willamette Valley in Oregon (USFWS 2013a). The Plan Area is located within the lower Columbia River Islands region.



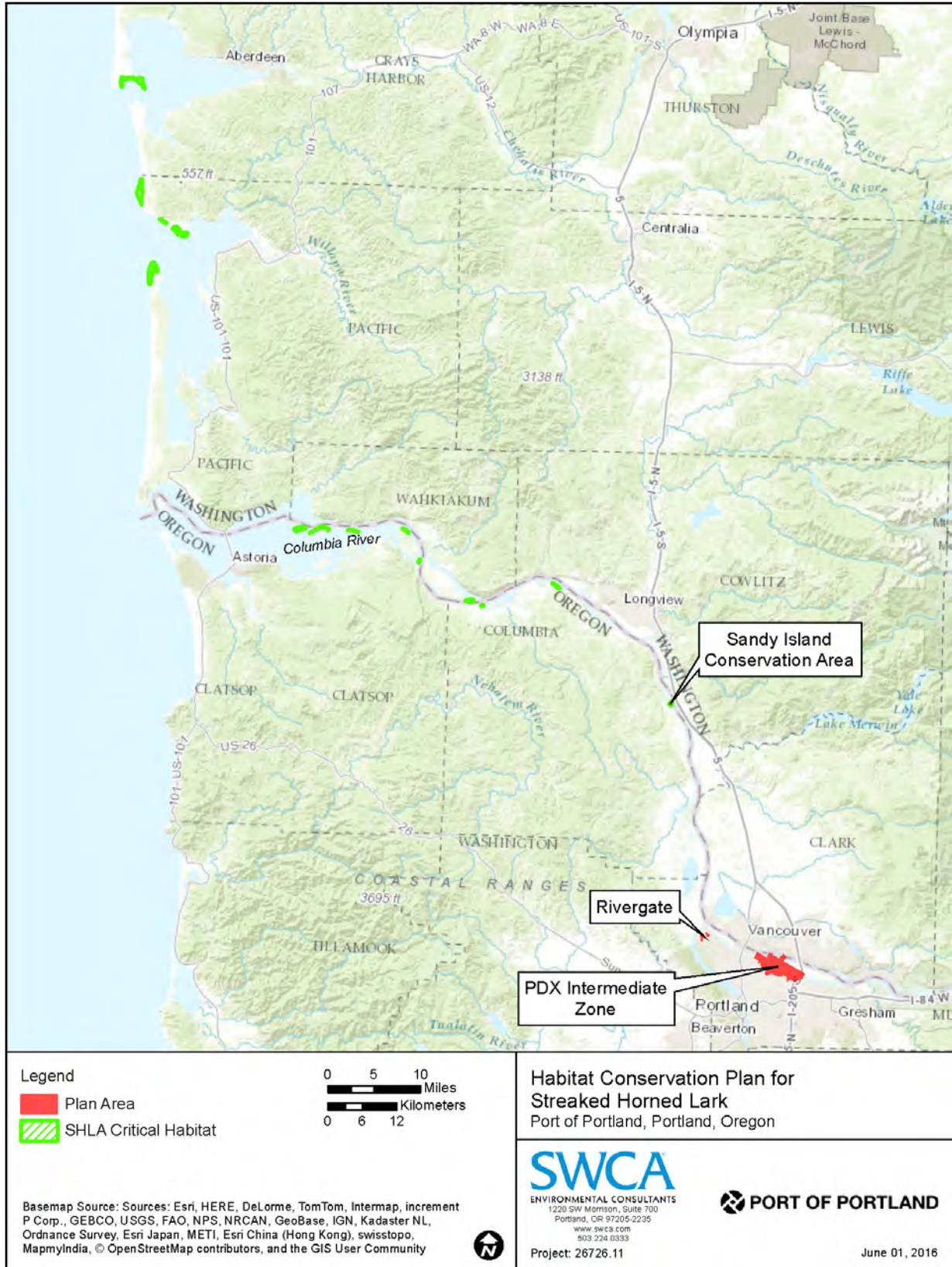


Figure 6. SHLA critical habitat within the lower Columbia River region.

Direct threats to SHLAs include loss of critical habitat, human disturbance that can lead to increased subsidized predation, and low reproductive success (i.e., genetic bottlenecks). The loss of historic ecological processes in habitats occupied by SHLA (e.g., fire, flooding, accretion), removes the natural dynamic process that creates SHLA habitat through repeated natural vegetation succession (Pearson and Altman 2005). Upland placement of dredged material in the Columbia River navigation channel has taken the place of this natural process, to a certain extent. For many decades, dredging activity has successfully created and maintained habitat conditions that have supported substantial SHLA populations, even though that activity was conducted without regard for SHLA presence. The USACE is now working to better manage the timing of dredged material placement to avoid inadvertent impacts, particularly during the nesting season (USFWS 2015a).

Predation of SHLA nests is a primary source of nest failure (Pearson and Hopey 2005; Altman 1999). Primary predators are most likely avian, corvids in particular (Anderson 2006). Small population sizes of SHLA provide little or no genetic variability, suggesting that inbreeding depression or population bottlenecks may be occurring or could occur, thereby potentially reducing overall population fitness (Drovetski et al. 2005). SHLA populations using human-made habitats that experience frequent disturbance may have low nesting success and these areas may actually be population sinks (Stinson 2005; USFWS 2010). However, relatively high levels of reproductive success have been observed at Joint Base Lewis-McChord (JBLM) airfields, even higher than observed at the native grassland site at JBLM (Wolf et al. 2015). At the Rivergate Project Area, SHLA pairs consistently have had higher nest success rates (near 100% success) than any other monitored sites throughout the range of the SHLA, despite their location within a busy industrial district (Moore 2011).

SHLA populations remain strongest in the Willamette Valley. This subspecies, which prefers sparsely vegetated grasslands for nesting, now substitutes grass seed farms, airports, undeveloped industrial sites, and dredged material placement sites for once-common prairies. The largest known SHLA breeding population occurs at the Corvallis Airport. On the lower Columbia River, SHLAs breed on several islands composed of sandy Columbia River dredged material located downstream of Portland, Oregon. Island sites currently used for dredge placement activities may mimic sandy areas that were historically cleared of vegetation during the spring freshet and annual high flow events in the Columbia River basin (Stinson 2005). Surveys conducted in 2015 documented nesting pairs of SHLAs at Rice Island, Miller Sands, Pillar Rock, Tenasillahee, Brown Island, Crims Island, Dibblee Point, Sandy Island, and Sand Island monitoring sites in Wahkiakum and Cowlitz Counties in Washington, and Columbia and Clatsop Counties in Oregon (Anderson 2015). SHLA also breed at the Rivergate and SW Quad Project Areas, which are former dredged material placement sites (Galen 2015; Nick Atwell, Port Environmental Program Manager, pers. comm.).

### **3.1.4. Occurrence in the Plan Area**

All three sites within the Plan Area are currently occupied by nesting SHLA. Wintering SHLA have also been documented at Rivergate, the proposed Sandy Island Conservation Area, and (to a limited extent) the SW Quad (Nick Atwell, Port Environmental Program Manager, pers. comm.). The Project Areas are the only two sites known to be occupied by nesting SHLA in Multnomah County, Oregon; however, SHLA are known to utilize lands across the Columbia River at the Port of Vancouver in Washington.

Available survey data for the SHLA within the Plan Area date back to 2004. A summary of SHLA abundance in the Plan Area is provided in Table 2. However, survey objectives, level of effort, and methods have not been consistent across sites or years and the area included in the Rivergate surveys has changed overtime (i.e., earlier surveys included lands that are now developed).

Except for the SW Quad, consistent or reliable occupancy data for the PDX Intermediate Zone are not available, although SHLA have been occasionally observed elsewhere within the PDX Intermediate Zone during WHMP inspections. One such inspection in May 2016 documented SHLA use, including a nesting attempt immediately adjacent to an active runway and densely vegetated road shoulder that are surfaces not generally considered suitable SHLA habitat (Nick Atwell, Port Environmental Program Manager, pers. comm.).

Additional discussion of SHLA occupancy within the Plan Area is presented below.

**Table 2.** SHLA Abundance within the Plan Area

Year	Rivergate		SW Quad		Sandy Island	
	NS/WS	NP	NS/WS	NP	NS/WS	NP
2004	-/61 <sup>a</sup>	-	-/-	-	-/-	-
2005	38 <sup>b</sup> /-	19 <sup>*</sup>	-/-	-	6 <sup>c</sup> /-	3 <sup>*</sup>
2006	14 <sup>d</sup> /-	7 <sup>*</sup>	0 <sup>b</sup> /-	0	8 <sup>d</sup> /-	4 <sup>*</sup>
2007	28 <sup>b</sup> /-	14 <sup>*</sup>	0 <sup>b</sup> /-	0	-/-	-
2008	14 <sup>b</sup> /-	7 <sup>*</sup>	8 <sup>b</sup> /-	4 <sup>*</sup>	-/-	-
2009	10 <sup>e</sup> /-	5 <sup>o</sup>	4 <sup>e</sup> /-	2 <sup>*</sup>	2 <sup>l</sup> /-	1 <sup>*</sup>
2010	10 <sup>e</sup> /-	5 <sup>o</sup>	6 <sup>e</sup> /-	3 <sup>*</sup>	2 <sup>l</sup> /-	1 <sup>*</sup>
2011	12 <sup>e</sup> /-	6 <sup>o</sup>	8 <sup>e</sup> /-	4 <sup>*</sup>	4 <sup>l</sup> /-	2 <sup>*</sup>
2012	6 <sup>g</sup> /40 <sup>g</sup>	3 <sup>*</sup>	-/-	3 <sup>h</sup>	2 <sup>l</sup> /-	1 <sup>*</sup>
2013	10-12 <sup>h</sup> /40 <sup>l</sup>	5-6 <sup>o</sup>	-/-	3 <sup>h</sup>	6 <sup>m</sup> /-	3-4 <sup>*</sup>
2014	12/19 <sup>r</sup>	4 <sup>r</sup>	-/-	3 <sup>h</sup>	14 <sup>m</sup> /-	5 <sup>*</sup>
2015	-/17 <sup>n</sup>	5 <sup>q</sup>	-/-	3 <sup>h</sup>	6 <sup>n</sup> /-	3 <sup>n</sup>

NS = maximum number of individuals observed or estimated during nesting season.

WS = maximum number of individuals observed during winter season (based on when season began, e.g., winter 2004–2005 is reported in 2004),

NP = nesting pairs

\*Estimated based on number of SHLA observed based on the high count of males detected, assuming all males are paired. A dash represents seasons where data were not collected.

<sup>a</sup> Pearson et al. 2005a; <sup>b</sup> Moore 2008; <sup>c</sup> Pearson et al. 2005b; <sup>d</sup> Pearson et al. 2008; <sup>e</sup> Moore 2012; <sup>f</sup> Anderson 2011; <sup>g</sup> Galen 2013a; <sup>h</sup> Nick Atwell, Port Environmental Program Manager, pers. comm. and Port 2015; <sup>i</sup> Anderson 2012; <sup>j</sup> Moore 2014; <sup>k</sup> Galen 2013b; <sup>l</sup> Audubon Society of Portland 2014; <sup>m</sup> Anderson and Slater 2015; <sup>n</sup> Anderson 2015; <sup>o</sup> Moore 2013; <sup>p</sup> Moore 2010; <sup>q</sup> Galen 2015b; <sup>r</sup> Galen 2014.

### 3.1.4.1. RIVERGATE

The Rivergate Industrial District hosted an estimated 19 SHLA nesting pairs when large portions of Rivergate were largely undeveloped (see Table 2). The SHLA population has declined as parcels have been developed. Since 2009, the parcels of the Rivergate Project Area have maintained approximately three to six SHLA nesting pairs.

Wintering season surveys of SHLA within the Rivergate Industrial District have been conducted sporadically over the last 10 years. In the years that they were conducted (2004, 2012, 2013, and 2015), flocks of SHLA including 40 to 61 individuals were observed. The most recent wintering season survey detected 17 SHLA using Rivergate (see Table 2).

### 3.1.4.2. SW QUAD

The SW Quad has consistently hosted a small number of SHLA nesting pairs since observations began in 2008, ranging from two to four pairs each year. This consistency may be due to the consistent management of this site under the PDX WHMP (i.e., annual discing and mowing) that maintains vegetation in an early successional state and suitable for use by SHLA. Wintering SHLAs have not been recorded on the SW Quad Project Area, but have been documented elsewhere within the PDX airfields (Port 2015; Nick Atwell, Port Environmental Program Manager, pers. comm.). Wintering SHLA have also been detected on other adjacent lands, such as Broughton's Beach located along the Columbia River immediately to the north of PDX (Galen 2015a).

### 3.1.4.3. SANDY ISLAND

The number of SHLA observed on the proposed Sandy Island Conservation Area during the nesting season was very low from 2009 to 2012, and involved only one or two nesting pairs. However, since placement of additional dredged material at the site in 2011, the number of SHLAs has increased to between three and five nesting pairs each year. The population of SHLA at the proposed Sandy Island Conservation Area had a similar abundance between 2005 and 2006, which was also a period following the placement of dredged material in 2004. The low abundance of SHLA from 2008 to 2011 could be explained by natural vegetation succession degrading the suitability of SHLA habitat. The low abundance of SHLA during the 2012 nesting season may have been too soon after the deposition in late 2011 to adequately recreate suitable SHLA habitat.

Even though the amount of suitable SHLA habitat on the proposed Sandy Island Conservation Area is relatively small, the dredged material deposition in late 2011 likely improved the condition of the habitat and increased the number of SHLA occupying the site (Anderson and Slater 2015). This information suggests that active management at the proposed Sandy Island Conservation Area could be a viable long-term strategy for maintaining or increasing the number of SHLA that nest at the site.

## 3.2. Other Federally Listed Species

The USFWS identifies 18 species occurring or having the potential to occur in Multnomah and Columbia Counties, Oregon, and nearby Clark and Cowlitz Counties, Washington, that are federally protected or that are under consideration for such protection (Appendix D; USFWS 2015b). In addition, the NMFS identifies five species of salmonids and two other fish species in the lower Columbia River near Sandy Island (Appendix D; NOAA Fisheries 2012, 2014). Except for the SHLA, none of the terrestrial species listed in Appendix D are known to occur within or adjacent to the Plan Area. The yellow-billed cuckoo (*Coccyzus americanus*), Columbian white-tailed deer (*Odocoileus virginianus leucurus*), bull trout (*Salvelinus confluentus*), Chinook salmon (*Oncorhynchus tshawytscha*), chum salmon (*O. keta*), coho salmon (*O. kisutch*), sockeye salmon (*O. nerka*), steelhead (*O. mykiss*), eulachon (*Thaleichthys pacificus*), and green sturgeon (*Acipenser medirostris*) may occur in the general vicinity, but take of these species as a result of the Port's Proposed Activities or the implementation of the HCP's conservation program is not expected. Therefore, the Port is not seeking incidental take authorization for these other federally listed, proposed, or candidate species.



Refer to Appendix D for an assessment of the likelihood of take of special status species, including federally and state-listed species, occurring in Multnomah and Columbia Counties.

## **4. COVERED ACTIVITIES**

The “Covered Activities” for this HCP are the Port’s Proposed Activities that have the potential to result in take of SHLA. The Port is also including as a Covered Activity its proposed interim conservation measures at Rivergate, incidental interim measures at the SW Quad, and its proposed management activities at the Sandy Island Conservation Area. While these activities are part of the HCP’s conservation program and are expected to have a beneficial impact on the SHLA, some management activities (such as occasional vegetation management) could result in take. All Covered Activities will occur within the limits of the Plan Area.

### **4.1. Rivergate**

At Rivergate, the Port’s Covered Activities are to: 1) conduct routine site management activities to control vegetation, collect garbage, deter trespassing, and similar activities; 2) develop the parcels over time with the construction of buildings, parking areas, stormwater controls, utilities, and similar facilities related to industrial use; and 3) continue to use and maintain developed parcels for industrial purposes. The proposed routine vegetation management is also an interim conservation measure for the SHLA that is intended to extend the duration of its occupancy at Rivergate until habitat is permanently lost to development. These Covered Activities include the occasional presence of people and vehicles on Rivergate parcels; annual or as-needed vegetation modification and ground disturbance by mowing or discing outside of the SHLA nesting season; temporary placement and storage of equipment, construction materials, and excavated material or clean fill material; use of vehicles, machinery, and equipment; construction of commercial or industrial facilities and infrastructure; and continued occupancy and use of the parcels for industrial purposes.

The Port proposes to conduct routine site management activities, including the interim conservation measures, as soon as practicable after ITP issuance. However, these activities will be subject to the seasonal restrictions specified in the HCP’s conservation program (i.e., vegetation control limited to the period outside of the SHLA nesting season). The Port will continue these routine activities on Rivergate parcels until each parcel is developed. The Port anticipates that development of the Rivergate parcels will occur within 3 years of ITP issuance, although the actual development of any particular parcel will be determined by market conditions and other business considerations. After development of Rivergate is complete, the Port will continue to use and maintain these developed parcels through the end of the ITP term; however, the Port expects that SHLA will no longer use Rivergate and the possibility of take will no longer be a concern.

### **4.2. SW Quad**

At the SW Quad, the Port’s Covered Activities are to: 1) replace the existing drainfield system; 2) remove the berm to increase visibility of wildlife hazards; 3) prepare the site for eventual development; and 4) continue aviation wildlife hazard management activities in accordance with the PDX WHMP. These Covered Activities include the occasional presence of people and vehicles

within the SW Quad; annual or as-needed vegetation removal and ground disturbance by mowing or discing; temporary placement and storage of equipment, construction materials, and excavated material or clean fill material; use of vehicles, machinery, and equipment; replacement and maintenance of subsurface drainfield infrastructure; and performance of other aviation wildlife hazard management activities. The routine vegetation management implemented as part of the PDX WHMP activities also serve as an incidental conservation measure for SHLA. These Covered Activities would occur in accordance with the measures specified in the HCP's conservation program, including seasonal restrictions on the timing of certain Covered Activities (see Section 6).

Aviation wildlife hazard management activities may include bird hazing using vehicles, horns, sirens, lasers, dogs, and pyrotechnics; physically removing nests; performing nest intervention; and modifying habitat by reducing ponding, installing silt fencing or other visual barriers, and controlling vegetation. The Port currently implements these aviation wildlife hazard management activities under an exemption from the prohibitions on take provided by the USFWS's 4(d) Special Rule (USFWS 2013a).

The proposed drainfield system replacement is also an aviation wildlife hazard management activity under the PDX WHMP, covered by the SHLA 4(d) Special Rule. The Port proposes to begin work on the drainfield system in 2018 or 2019 (which is expected to be Permit Year 2 or 3 of the ITP), subject to seasonal restrictions specified in the HCP's conservation program. Replacement of the drainfield system is anticipated to begin in late August to take advantage of the driest soil conditions possible and with as little intrusion on the SHLA nesting season as possible. Construction is expected to be complete prior to the start of the following SHLA nesting season. This activity will result in a similar level and duration of vegetation and soil disturbance as the routine discing that occurs annually during the winter months on this site.

Additionally, the removal of the berm is covered under the PDX WHMP, and would follow the same schedule as the drainfield replacement, and result in a similar level and duration of vegetation and soil disturbance.

Because take resulting from aviation wildlife hazard management activities at the SW Quad is already addressed by the 4(d) Special Rule, the Port is continuing to implement these activities while it seeks an ITP from the USFWS and intends to continue these activities until the site is developed. Notwithstanding the above, the Port is including these aviation wildlife hazard management activities as Covered Activities to obtain additional assurances that take of the SHLA is authorized in the event the 4(d) Special Rule is no longer active.

The Port foresees a need to develop the SW Quad within the 30-year time period of the ITP. At this time, the Port anticipates development at the SW Quad to include the construction of either a ramp-side air cargo facility or an aircraft maintenance hangar facility. Any such development would occur in accordance with the seasonal restrictions described in the conservation program (see Section 6). Development of the SW Quad would require a modification to the Port's existing ALP and would likely be funded by an FAA AIP grant. This modification to the ALP and the issuance of an AIP grant would have to be approved by the FAA and are considered federal actions (i.e., have a federal nexus). At that time, the FAA would initiate Section 7 consultation for the effects to SHLA at the SW Quad if necessary.

As discussed in Section 1.2.2, this existing HCP may assist the FAA by providing a convenient mitigation option, should the FAA need to mitigate for and/or minimize effects to threatened or endangered species covered by the HCP. However, this does not negate the requirement for FAA to consult with the USFWS pursuant to Section 7. Additionally, while voluntary mitigation through an appropriate HCP may expedite a consultation, it is no guarantee of such. Impacts and conservation measures in future Section 7 consultations are not bound by those in this HCP; however, the Port has evaluated estimated take as a result of the development at SW Quad in this HCP to provide a framework for future potential mitigation options under Section 7 consultation.

### **4.3. PDX Intermediate Zone**

Outside of the SW Quad, the Port's Covered Activities within the PDX Intermediate Zone are limited to the implementation of the PDX WHMP. These Covered Activities include the occasional presence of people, vehicles, and equipment within the PDX Intermediate Zone; annual or as-needed vegetation removal and ground disturbance by mowing or discing; wildlife hazing using vehicles, horns, sirens, lasers, dogs, and pyrotechnics; physically removing nests; performing nest intervention; and modifying habitat by reducing ponding, installing silt fencing or other visual barriers, and controlling vegetation.

The specific aviation wildlife hazard management activities implemented within the PDX Intermediate Zone at any given time and place may vary based on the specific threats identified by routine monitoring, the demonstrated effectiveness of different activities, and the availability of new or different control strategies. As described in Port (2009), potential wildlife hazards at PDX are monitored daily and the WHMP is reviewed at least annually or whenever an air carrier aircraft experiences a triggering event such as a multiple wildlife strike, a damaging collision with wildlife, or an engine ingestion of wildlife. The PDX WHMP is revised as necessary, when either the program or the hazards and issues at the airport change significantly, or every 5 years, whichever comes first (Port 2009). The Covered Activities are intended to include activities implemented in accordance with the current version (Port 2009) and any future revisions of the PDX WHMP.

The Port currently implements these aviation wildlife hazard management activities under an exemption from the prohibitions on take provided by the USFWS's 4(d) Special Rule (USFWS 2013a). Because take resulting from aviation wildlife hazard management activities within the PDX Intermediate Zone is already addressed by the 4(d) Special Rule, the Port is continuing to implement these activities while it seeks an ITP from the USFWS. Notwithstanding the above, the Port is including these aviation wildlife hazard management activities as Covered Activities to obtain additional assurances that take of the SHLA is authorized in the event of changed circumstances for the 4(d) Special Rule (see Section 7.4 in this HCP).

### **4.4. Sandy Island Conservation Area**

Conservation measures will be implemented on the Sandy Island Conservation Area, as described in Section 6. These conservation activities include the occasional presence of people and equipment on the Sandy Island Conservation Area and annual or 'as needed' vegetation modification or ground disturbance, among other activities. Some of the conservation measures at the Sandy Island Conservation Area could result in take. Therefore, the Port is including management of the Sandy Island Conservation Area as a Covered Activity. These management

activities are described in Section 6 and are expected to have an overall beneficial impact on the SHLA.

## **5. INCIDENTAL TAKE AND IMPACTS**

This section: 1) explores the ways in which the Covered Activities could directly or indirectly affect SHLA and assesses the degree to which these effects may cause take of the SHLA; 2) establishes the metric used to measure take and estimates amount and extent of anticipated take to be authorized by the ITP; 3) describes impacts of the requested taking on the SHLA at local, regional, and range-wide levels; and 4) addresses impacts from take as a result of future development at SW Quad to be addressed under future consultations under Section 7 (see Section 1.2.2 of this HCP).

### **5.1. Potential for Take**

The Covered Activities could affect the SHLA by creating noise and activity disturbances that could disrupt the activities of SHLA if they are conducted when SHLA are present during the conduct of Covered Activities (e.g., wintering SHLA are foraging on a Project Area when the Port makes an inspection to pick up trash from the site). The Covered Activities could also affect the SHLA through the loss of suitable habitat that is at least seasonally occupied by the subspecies (e.g., the Port initiates development activities at a time when the site provides suitable SHLA habitat used for nesting or wintering in the prior season, even if SHLAs are not actually present when development begins). However, suitable habitat for the SHLA within the Plan Area is not a natural condition, but was created and maintained as an unintended result of the Port's WHMP activities. The Port is not obligated to continue the activities that created and maintained suitable SHLA habitat in the Plan Area and the Port expects that without continued intervention vegetation within the Plan Area would naturally become unsuitable for continued use by the SHLA.

If the Covered Activities occur after the SHLA abandons use of the Project Areas or the Sandy Island Conservation Area, either due to the natural transition of vegetation into a state unsuitable for use by the subspecies or other natural or human-caused factors, then the Covered Activities would not affect the SHLA at that location. Nevertheless, the Port desires the flexibility to conduct the Covered Activities, including development at a time of its choosing, and to not wait for the SHLA to abandon the Project Areas before it proceeds. Also, the Port does not wish to rely solely on the 4(d) Special Rule to address potential take of the SHLA related to its aviation wildlife hazard management activities. The following discussion assumes that the Covered Activities are conducted at a time when the Plan Area contains suitable SHLA habitat that is used by the SHLA at least seasonally for nesting or wintering, or both. The impending loss of suitable habitat within the Plan Area (including both the Project Areas and the Sandy Island Conservation Area) without recurring vegetation management provides a fortuitous opportunity to offset the impacts of potential take with a substantial net conservation benefit to the subspecies.

Under these conditions, the Covered Activities could have direct and indirect effects on the SHLA. Generally, direct effects are those that occur at the same time and place as the Covered Activities, while indirect effects occur later in time or at a distance removed from the Covered Activities. Some of the potential effects could be long term, while others would be expected to have only a short-term influence on SHLA. The magnitude of the potential effects on the SHLA will also vary

based on the timing or duration of the Covered Activity in relation to the seasonal presence of the subspecies. Finally, as the presence of suitable SHLA habitat in the Plan Area is a result of the Port's prior actions, the continuation of these actions as part of the Covered Activities may even have a beneficial effect on the SHLA in the short term at Rivergate and in the long term at the SW Quad pending eventual site development by Permit Year 30.

If the effects of the Covered Activities are likely to kill or wound SHLA, or would significantly disrupt essential breeding, feeding, or sheltering activities of SHLA such that the affected individuals would be killed or injured (i.e., harmed or harassed), then take may occur.

### **5.1.1. Habitat Loss**

For purposes of this discussion, the loss of habitat within the Project Areas is attributed to the anticipated development of the Project Areas, though in fact currently suitable habitat at Rivergate and the SW Quad is present only because of intervention by the Port. Without repeated vegetation management, suitable habitat conditions for the SHLA would be "lost" simply by natural vegetational succession.

Covered Activities at Rivergate include the development of currently vacant parcels, which would permanently replace suitable SHLA habitat with buildings and surfaces (such as pavement, concrete, or landscaping) that are not suitable for use by the subspecies. Suitable habitat at Rivergate currently covers approximately 40.7 acres and development will ultimately cause the loss of all of this suitable habitat. On parcels subject to development, this habitat loss would be a direct effect of the Covered Activities. However, it is also possible that development of one or more of the Rivergate parcels could indirectly render otherwise suitable vegetation conditions on other parcels unfit for use by the subspecies, thereby resulting in indirect habitat loss. In any case, it is not expected that the SHLA would continue to utilize Rivergate after development of some or all of the parcels. The Port expects that this habitat loss would occur within 3 years of ITP issuance, but it is possible that development of some or all of Rivergate parcels could be delayed beyond this timeframe.

At the SW Quad, the Covered Activities to prepare for and complete development would cause permanent habitat loss between Permit Year 25 and 30. In the near term, the proposed drainfield replacement under the PDX WHMP involves the replacement of subsurface infrastructure, not the installation of aboveground structures or surfaces that would be incompatible with the continued use of the SW Quad Project Area by SHLA. The drainfield replacement will be scheduled toward the end of the summer to take advantage of the season's lowest water table levels and to avoid potential impacts during the SHLA nesting season. Consequently, the site disturbance from the drainfield replacement will be similar to the disturbance resulting from current annual discing of the site in the fall to deter Canada geese (*Branta canadensis*) and other wildlife species of aviation concern. The removal of the berm would also follow the drainfield replacement schedule. Consequently, neither the drainfield replacement or the berm removal is expected to have an adverse effect on SHLA in the following nesting season.

At the SW Quad, approximately 77.0 acres of suitable habitat currently occupied by three SHLA nesting pairs will be temporarily removed late in the nesting season and into the wintering season during the replacement of the drainfield system. Replacement of the drainfield and continued

implementation of the WHMP at SW Quad will also require the removal of the berm that currently exists on site. While removal of the berm would result in disturbed ground that is consistent with SHLA preferred habitat, this action would be completed specifically to deter aviation wildlife hazards and not to manage for SHLA on PDX property. Following drainfield construction, the Port will manage vegetation on the entire drainfield, including the berm area, as allowed under the PDX WHMP. This management strategy inadvertently results in habitat conditions that are potentially suitable for SHLA.

It is not the intent of the Port to create and manage for SHLA habitat on PDX by removing the existing berm. However, aviation wildlife hazard management activities (i.e., mowing or discing) associated with this action are expected to incidentally result in an additional 50.9 acres of ground-disturbed habitat suitable for SHLA. Upon completion of the drainfield system replacement, both the 77.0 acres of current SHLA habitat and the incidental 50.9 acres of habitat resulting from removal of the berm would could potentially be used by SHLA in the following nesting season. These 127.9 acres would be maintained according to the Port's WHMP for wildlife hazards through ongoing mowing or discing until either the wildlife management strategy changes or the site is developed. Therefore, the drainfield system replacement, berm removal, and the continued application of mowing or discing is expected to inadvertently increase the amount of suitable habitat on the SW Quad above current conditions until development occurs. Development would then cause the permanent loss of 127.9 acres of potentially suitable SHLA habitat. Take as a result of this development and habitat loss is not requested under this ITP; however, in an effort to anticipate under future Section 7 consultation, this take is evaluated in this HCP. See Section 4.2 of this HCP for a discussion on this development and how it relates to future Section 7 consultations.

Habitat loss elsewhere within the PDX Intermediate Zone may also be possible if silt fencing or similar devices are installed to modify wildlife habitat under the WHMP. However, this form of habitat loss is likely to be temporary and the extent to which such measures would be implemented on the PDX Intermediate Zone is uncertain at this time.

The loss of suitable SHLA habitat at the Rivergate and SW Quad Project Areas would compel any individual SHLAs that previously used this habitat for breeding, feeding, or sheltering to find alternate habitat. Currently, the Rivergate and SW Quad Project Areas are the only two known locations of nesting SHLA in the immediate vicinity. However, habitat availability does not appear to be limiting within the lower Columbia River and it is assumed that SHLA displaced from the Project Areas would move to another site (Pearson and Hopey 2004).

This displacement would likely occur at some cost to the affected individuals, but displacement is a normal SHLA response to natural vegetation succession. SHLA are known to migrate distances of 80 to 250 miles one way between nesting and wintering seasons (Pearson et al. 2005b). Given this annual migration distance, it is expected that SHLA could locate suitable habitat elsewhere on the Columbia River after being displaced from the Project Areas. SHLA have been observed nesting successfully after being displaced from previously used habitat at Brown Island in 2011 (Anderson 2013). However, this outcome is not certain and it is also possible that displaced SHLAs would fail to find alternate habitat and would not be able to conduct their essential life history behaviors. In such a case, this habitat loss could take SHLA via harm. Ultimately, the fate of any

SHLA permanently displaced from the Project Areas, either by the Covered Activities or by natural vegetative succession, would be unknown.

### **5.1.2. Interim Conservation Measure - Nesting Habitat Modification**

The Covered Activities include the interim conservation measure of annual mowing or discing at Rivergate, most likely on an annual basis or ‘as needed’ over the duration of the ITP. The Port would use machinery and equipment to modify the vegetation and, in some cases, the ground surface at Rivergate to retard the growth or accumulation of vegetative material in an effort to maintain suitable SHLA habitat. At Rivergate, this type of occasional habitat modification would only occur on those parcels that still remain undeveloped. The Port anticipates that all parcels of Rivergate will be developed within 3 years of ITP issuance; although, the actual timeline for development is uncertain and subject to market conditions and other business considerations.

Mowing or discing in the undeveloped parcels of Rivergate during the winter season would directly and repeatedly modify suitable SHLA habitat at Rivergate. However, unlike permanent habitat loss, the resulting habitat modification would likely benefit the SHLA by maintaining the sparsely vegetated conditions favored by the subspecies. The proposed mowing and discing would be implemented outside of the SHLA nesting season and is not expected to displace individual SHLAs. Wintering individuals would be able to return to the site immediately following mowing or discing activities and new vegetation would regrow by the time of the following nesting season and once again provide the mix of sparse vegetation and bare ground preferred by nesting SHLA (Pearson and Hopey 2005). Suitable habitat would be maintained at Rivergate until development occurs.

At the SW Quad, site management as a component of the PDX WHMP would include mowing or discing on an annual or as-needed basis until the site is developed for the duration of the ITP. These site management activities are meant to address hazards associated with aviation wildlife species of concern, but could incidentally result in the maintenance of suitable SHLA habitat. Once developed, estimated to occur in Permit Years 25 through 30, potentially suitable habitat would be removed.

### **5.1.3. Noise and Activity Disturbances**

The Covered Activities include the occasional presence of people, vehicles, and equipment within the Plan Area throughout the year (depending on the specific activity) to inspect the property, pick up trash, deter trespassing, haze birds and other wildlife of aviation concern, and manage vegetation. This human activity may cause noise and activity that could influence the behavior of SHLA that may be present at the same time and place as the human activity. Encounters with these individuals would be a direct effect of the Covered Activities. Depending on the location and year, the Plan Area could be actively used by wintering adults, nesting adults, nests, eggs, chicks, or fledged young. SHLA have been observed flushing in response to human activity, although they do not always do so (Pearson and Hopey 2004). Pearson and Hopey (2004) suggest that activities occurring within 30 meters of a SHLA are more likely to cause the individual to flush than activities that are more distant.

Flushing events could decrease the overall fitness of the affected individuals, as energy is expended or foraging is interrupted to flee from the disturbance. It is possible that severe or repeated flushing could disrupt the behavior of SHLAs to the extent that they become harassed by the Covered Activity (i.e., annoying a SHLA to such an extent as to significantly disrupt normal behavioral patterns so that it creates the likelihood of injury). However, the magnitude of this potential effect on the fitness of the SHLA within the Plan Area is unknown and would likely vary with the intensity and frequency of the disturbance and the habituation of the birds to human activity. For wintering SHLA that may be foraging on within the Plan Area, occasional flushing is not expected to have more than minor effects on the SHLA because the individuals are not defending territories or nests and alternate foraging or resting habitat is available while the disturbance is going on. Until development occurs, flushed SHLA would be free to return to the site once the temporary disturbance has abated. During the nesting season, routine management activities and use of the Project Areas could also flush nesting SHLA from the Plan Area, but the seasonal restrictions in the HCP's conservation program would restrict the most potentially disruptive activities (i.e., annual mowing or discing for vegetation control, or initiation of development activities) to the period outside of the nesting season.

In any case, the SHLA that use the Plan Area (particularly the Project Areas) are already accustomed to human disturbances, because these sites are in an urbanized environment. That SHLA choose to return to the Project Areas year after year (see Table 2) and have very high nesting success (USFWS 2013a) indicates that the current level of human disturbance may not be significant enough to injure these individuals.

#### **5.1.3.1. WINTERING SEASON**

The Port would conduct occasional mowing or discing as an interim conservation measure within Rivergate and as a component of the PDX WHMP at the SW Quad during the SHLA wintering season or when nesting season abundance and trend surveys demonstrate that nesting pairs are not present. This seasonal or survey-based restriction on mowing or discing avoids flushing SHLA from their nests, destroying nests, or physically colliding with newly hatched chicks or fledged young that are unable to avoid machinery or equipment. The initiation of development activities on the parcels of Rivergate would occur either outside of the nesting season or when nesting SHLA are demonstrably not present.

Implementation of the PDX WHMP generally within the PDX Intermediate Zone and the general use of Rivergate and the SW Quad may also include the occasional presence of people and/or vehicles during the wintering season. Therefore, it is possible that fully mobile, wintering SHLA (i.e., not eggs, chicks, or newly fledged young) would be present when some Covered Activities occur. Any such individuals could be disturbed and flush from people and operating machinery, equipment, or vehicles. SHLA are not known to over-winter at the SW Quad, and therefore impacts to this subspecies during the winter are not expected to occur.

Indirect impacts would be likely to occur during implementation of Covered Activities in the winter when SHLA are flushed from the sites or when returning wintering or nesting SHLA are displaced to other sites in the region in the season following site development at Rivergate. Flush distances depend on breeding stage and type of disturbance. In general, activities that occur within 100 feet are most likely to cause a SHLA to flush (Pearson and Hopey 2004). Although flushing



events during the wintering season could lead to a decrease in overall fitness of individuals, as energy is expended or foraging is interrupted to flee from the source of the disturbance, these effects are likely minor as SHLA will not be defending territories or nests and there will always be refugial habitat (suitable undisturbed habitats) on the site at Sandy Island or elsewhere in the vicinity of Rivergate and SW Quad.

### **5.1.3.2. NESTING SEASON**

The Covered Activities related to the replacement of the drainfield system and the berm removal at the SW Quad may begin at the tail end of the SHLA nesting season when nesting pairs, nests, chicks, or fledged young may be present. However, it is expected that any SHLA young would be at or near fledging. The Port will make every reasonable effort in accordance with the PDX WHMP to avoid disrupting active SHLA nests or newly fledged young at the SW Quad. Therefore, it is expected that the direct effects on any SHLA will be similar to those on wintering individuals—the disturbed individuals would simply move to other nearby habitat. However, in the possible but unlikely circumstance that nesting SHLA are present when initiation of the drainfield system replacement or berm removal occurs, encountering an active nest could result in the destruction of eggs or death or injury of immobile or poorly mobile young. The adult nesting pair would likely flush and avoid a direct physical encounter with people, machinery, equipment, or vehicles. Available information on the occupancy of the SW Quad suggests that approximately two to four nests could be present at the site and could be directly affected by the Covered Activities. The potential for encountering active nests at the SW Quad would only exist for a single nesting season, because reconstruction of the drainfield system and berm removal would be actively underway (representing a continuous activity into the start of the following nesting season that would likely discourage SHLA from using the site) or would be completed by the following nesting season.

Implementation of the PDX WHMP at the SW Quad and the general use of Rivergate may also include the occasional presence of people and or vehicles during the nesting season. These activities inadvertently result in the direct killing or wounding of an individual SHLA—adults, young, or eggs—if wildlife hazing or vegetation/habitat management activities occur when individuals are present. For example, it is possible (albeit unlikely) that an active SHLA nest could be unintentionally crushed by a vehicle driving across an open field during the conducting of Covered Activities. The number of individuals that could be directly, but unintentionally, killed or injured by such activities is unknown. The Port assumes that the number will be minimal since adults and fledged young are capable of flushing or otherwise moving out of the way. Port personnel responsible for implementing the PDX WHMP are also trained to be observant of wildlife locations and behaviors and would, in most cases, be able to detect and avoid active nests. Overall, these activities are expected to have only minor impact on SHLAs, as indicated by the high nesting success observed at Rivergate and their continued presence at the SW Quad despite ongoing airport activity.

### **5.1.4. Impact Summary**

The impacts of the Covered Activities may rise to the level of take, as defined by the ESA and its implementing regulations, via killing, wounding, harming, or harassing SHLA within the Plan Area. The Port seeks incidental take authorization for SHLA for take that is reasonably certain to result from performance of the Covered Activities. Take is most likely to be realized as harm via

the permanent loss of 40.7 acres of currently suitable nesting and wintering habitat at Rivergate. Outside of the Covered Activities, the permanent loss of 127.9 acres of both currently occupied and potential future SHLA habitat due to ultimate development of the SW Quad is evaluated in anticipation of future Section 7 consultations. Again, with respect to habitat loss, this discussion attributes loss to development and other Port activities, when in fact, the habitat loss could otherwise occur, in whole or in part, as a result of natural vegetative succession over time without regular recurring vegetation management.

Take is also possible, but less likely, to occur via the direct killing or wounding of SHLA eggs or young associated with reconstruction of the drainfield system and berm removal at the SW Quad, by implementation of the PDX WHMP, and by ongoing site use. Recurring habitat modification by annual mowing or disking within the Plan Area during the wintering season is not expected to significantly impair essential breeding, feeding, or sheltering activities of the SHLA and should ultimately benefit the subspecies by maintaining suitable habitat at the Project Areas until development occurs. Similarly, the noise and activity disturbances associated with the ongoing use of the Project Areas (including WHMP activities within the PDX Intermediate Zone) should not significantly impair essential breeding, feeding, and nesting activities, because SHLA at the Project Areas already occur in a landscape subject to substantial human activity. Therefore, the occasional mowing or disking and the continued occasional presence of people and vehicles within Plan Area may not always rise to the level of take.

## **5.2. Incidental Take Request**

The Covered Activities related to development of the Rivergate and SW Quad Project Areas are likely to result in take by harming SHLA at the Project Areas via habitat loss that displaces the individuals that used these habitats. It is also possible that the Covered Activities, including the implementation of aviation wildlife hazard management activities, could directly harass, kill, or wound SHLA by encountering nesting or wintering adults, active nests, or recently fledged young.

The Port assumes that take related to habitat loss will occur between Permit Years 1 and 3 at Rivergate (requested under this ITP application) and between Permit Years 25 and 30 at the SW Quad (covered under future Section 7 consultations), although the actual timing may vary. Permanent habitat loss is expected to displace individuals that previously used the habitat. While the ultimate fate of displaced individuals will not be known, it is possible that the loss of habitat could significantly impair their breeding, feeding, or sheltering activity. Take related to the interim conservation measures, the ongoing use of Rivergate, and the implementation of aviation wildlife hazard management activities (resulting in the possibility of harassment or killing/wounding individuals), while unlikely, is also occasionally possible throughout the term of the ITP on Rivergate and the PDX Intermediate Zone.

As described below, the actual number of individual nesting or wintering SHLAs that are likely to be taken by the Covered Activities is unknowable. Therefore, the Port requests incidental take authorization for SHLA in an amount equal to the estimated number of SHLA nesting pairs that would be displaced by the Covered Activities at the time suitable habitat is lost. The following discussion explains how the number of SHLA nesting pairs is an appropriate surrogate measure for the amount of take.

### **5.2.1. Nesting Pairs as a Surrogate Measure for Take of Individuals**

Take is ideally quantified in HCPs in terms of the number of individuals of a listed species expected to be taken by a proposed activity. The USFWS recently released guidance addressing the usage of surrogate measures for quantifying the amount and extent of take in incidental take statements (which serve a similar function as ITPs) in cases where an exact numerical value was not available (USFWS and NMFS 2015). Use of surrogate measures was made subject to demonstration of the following conditions: 1) that it is impractical to establish the numerical number of individual animals to be taken; 2) that the proposed ecological surrogate is rationally linked to actual take of the listed species by the proposed action; and 3) that the surrogate provides measurable guidelines to determine when authorized incidental take would be exceeded (USFWS 2015b). The use of SHLA nesting pairs as a surrogate for the take of individuals is a practical means for quantifying take of SHLA.

**Condition 1:** *It is impractical to establish the number of individual animals to be taken.*

In recent years, survey data indicate that the Rivergate Project Area has been used by approximately three to six nesting pairs and the SW Quad Project Area has been used by two to four nesting pairs (see Table 2). Available data also indicated that the number of wintering SHLA that use the Plan Area is variable, but complete data on winter use are lacking.

Surveys for SHLA conducted over the course of one or even several years have a high level of variability in observations of individuals and may not truly represent a census of unique individuals (Keren and Pearson *in prep*). Individual SHLA observed during surveys may not always be paired for mating during the nesting season; both paired and unpaired males are often observed simultaneously (Anderson 2015). Similarly, the number of eggs or young that may be present at a site during the latter part of the nesting season is also not captured in abundance estimates from breeding season or wintering season SHLA surveys.

The reinstatement of occasional mowing or discing of the Rivergate Project Area could improve habitat conditions at this site before development occurs (this activity already occurs over most of the SW Quad Project Area). It is possible that additional SHLA could begin using the Rivergate Project Area before development occurs and increase the number of SHLAs that use the site before development activities result in direct or indirect habitat loss. It is also possible that the population of SHLA at the Project Areas could increase or decrease for other reasons unrelated to the Covered Activities before habitat is permanently or temporarily lost.

Permanent habitat loss at the Rivergate Project Area is anticipated to occur within 3 years of ITP issuance and the Covered Activities include actions that are expected to modify habitat in ways that could increase the number of SHLA that use the site. At the SW Quad, the Covered Activities would cause permanent habitat loss due to development of the site likely between Permit Years 25 and 30. However, there is uncertainty regarding the actual timing of development at the Project Areas and the use of the Project Areas by the SHLA for reasons unrelated to the Covered Activities that could affect the number of SHLA that may be taken.

For these reasons, establishing take using the number of individual SHLA to be taken is impractical. Recent survey data do not give a complete census of the number of SHLA that use either of the Project Areas, the number of individuals that use the Project Areas is subject to

seasonal and year-to-year variation, and the limitations of survey methods and observer ability make knowing the precise number of SHLA to be taken impractical.

Instead, the Port proposes to measure take of the SHLA in terms of the number of SHLA nesting pairs that are likely to be displaced by permanent or temporary habitat loss.

**Condition 2:** *The proposed ecological surrogate is rationally linked to actual take of the listed species by the proposed action.*

The number of SHLA nesting pairs that use a particular site is a rational surrogate for the number of individual SHLA that may use that site in a particular year.

The number of nesting SHLA pairs documented at Rivergate and the SW Quad has remained relatively consistent in recent years and correlates closely to the number of breeding season individuals observed in a particular survey year (see Table 2). While recent data suggest that the range-wide male SHLA population appears to be increasing and the female population appears to be decreasing, resulting in more unpaired males during the breeding season (Stinson 2016; Hannah Anderson, pers. comm., February 9, 2016), this trend has not been observed at the Plan Area (Table 2). Therefore, the number of nesting pairs that use the Plan Area is rationally linked to the number of individual adult SHLA that use the Plan Area during the breeding season.

Nesting pairs is also a rational ecological surrogate for the number of fledgling SHLA or SHLA eggs that might be present on the Plan Area in any given year. SHLAs at Columbia River sites are some of the most productive throughout the range of the species (Pearson and Hopey 2005), including near 100% nesting success at Rivergate and high success at the SW Quad despite their location within urbanized areas (Moore 2011). At each of the Project Areas, SHLA pairs make multiple nest attempts, with successful attempts averaging two to three fledglings produced per nest as was observed in 2009 through 2011 (when fledgling data was last collected) (Moore 2011). The relatively consistent nest success and productivity rates for SHLA on the Plan Area means that the number of nesting pairs is rationally linked to the number of eggs or fledglings that may be present during the nesting season.

The Port considered using nesting pairs as a surrogate for wintering SHLA. However, while SHLA nesting pairs use habitats that are very similar to the habitats used by wintering SHLAs (Pearson et al. 2005a, 2005b), the number of wintering SHLA at any particular location can be highly variable within and between years (Pearson and Altman 2005; Pearson et al. 2005a, 2005b). For example, the number of SHLA observed utilizing Rivergate has varied between observations made during only two surveys in the fall (the early part of the wintering season) compared to only two surveys conducted in the later part of the wintering season (Galen 2013b, 2015b). Between-year variation in the detections of wintering SHLA on Rivergate has also been great (Table 2). Over-wintering adults could likely be flushed from the Plan Area as a result of Covered Activities. Although flushing events during the non-breeding season could lead to a decrease in overall fitness of individuals, these effects are likely minor as SHLA will not be defending territories or nests, and can relocate to adjacent suitable habitat.

**Condition 3:** *The surrogate provides measurable guidelines to determine when authorized incidental take would be exceeded.*

The surrogate proposed for the authorized level of take is the number of SHLA nesting pairs that would be displaced by the loss of habitat at the Project Areas. This proposed surrogate provides a reasonable method for determining if the authorized level of take is exceeded. The number of nesting pairs using each of the Project Areas is readily determined by conducting annual nesting season surveys of the Project Areas until development that would result in permanent habitat loss occurs. The Port commits to conduct this monitoring as part of its conservation program and report the results to the USFWS each year. Therefore, based on survey data collected in the nesting season immediately preceding the initiation of development activities or as a consequence of aviation wildlife hazard management activities, the Port and the USFWS will be able to determine how many nesting pairs would be displaced by habitat loss within the Project Areas. This number can be easily compared to the amount of authorized incidental take before the actual commencement of development activities to determine if the amount of authorized take would be exceeded.

### **5.2.2. Take Estimate**

The number of nesting pairs that may use the Project Areas is expected to change over time. At both Project Areas, currently suitable SHLA habitat will be lost due to natural vegetation success in the absence of the Port's Covered Activities and the interim conservation measures. Nevertheless, the Port desires take authorization so that it can 1) develop Rivergate and the SW Quad at a future time of its choosing, without having to wait for SHLA to naturally abandon the site; 2) continue to safely operate PDX without interruption related to its aviation wildlife hazard management activities; and 3) develop conservation measures that could be used for Section 7 consultation when SW Quad is ultimately developed.

In this context, take would occur at the time that suitable habitat within the Project Areas is permanently lost to development or at the time WHMP activities caused the direct harassment, killing, or wounding of an individual. Because this take would occur over time—within the first few years following permit issuance at Rivergate, again with the ultimate development of the SW Quad near the end of the ITP term, and to some extent throughout the ITP term within the PDX Intermediate Zone—the actual number of nesting pairs that would be taken is difficult to determine with precision. To estimate the number of SHLA nesting pairs that might be taken over time, the Port (with input from the SAT) developed a framework for projecting the number of nesting pairs likely to be present at each site based on existing survey data (see Table 2) and assumptions about the amount and quality of suitable habitat that may be present.

The Port first estimated the amount of suitable SHLA nesting habitat within the Rivergate and SW Quad Project Areas. The area of “suitable nesting habitat” excludes those areas of suitable vegetation within Rivergate and the SW Quad that occur next to habitat edges and other landscape features that SHLA tend to avoid. Next, the Port estimated the total number of territories that this suitable nesting habitat is likely to support in any given year, based on recently observed densities of SHLA nesting pairs at the Project Areas (which implicitly incorporates considerations of the general quality of the habitat at each site) and the professional opinion of the SAT.

The formula for calculating the projected number of nesting pairs at Rivergate and the SW Quad in any given year is:

$$\text{Number of Nesting Pairs} = \text{Total Suitable Habitat} / \text{Site-specific Territory Density}$$

### 5.2.2.1. PROJECTIONS FOR SUITABLE HABITAT AREA

Nesting SHLA in the Columbia River tend to avoid hard edges by distances of up to 250 m (820 feet) and typically do not construct nests within 100 m (328 feet) of a hard edge (Anderson 2015). However, the actual distance of avoidance varies based on the habitat patch size and other site-specific conditions. For the purpose of this HCP, 150 feet is assumed to be an adequate buffer distance based on recent data collected at Sandy Island and at Rivergate (Moore 2014; Galen 2015; Slater and Anderson 2016). Therefore, the amount of suitable SHLA habitat available at each site within the Plan Area was estimated based on consideration of the degree of open landscape on or adjacent to the site and buffers from habitat edges created by roads, buildings, and rail lines; tall vegetation; and berms that interrupt the open landscape context.

Recent survey data indicate that, under current conditions, Rivergate supports between three and six nesting pairs in any given year (see Table 2). At present, this nesting population occurs within approximately 40.7 acres of suitable nesting habitat on Parcels A1 and A3; the other parcels are not currently suitable for nesting, but could become suitable in the short term with the implementation of annual mowing as an interim conservation measure in Permit Years 1 through 3. The current density of SHLA nesting pairs in suitable nesting habitat at Rivergate is approximately 8.1 acres per pair, with a historical density ranging from between 6.8 and 13.6 acres per pair.

At Rivergate, the 40.7 acres of suitable SHLA habitat is heavily fragmented by hard edges formed by paved roads and parking lots. Developed features of the industrial landscape include buildings, rail lines, trees, and vertical features (Figure 7). An additional 9.5 acres of suitable habitat could become available with the implementation of interim conservation measures at Rivergate. So the total amount of current and potential suitable SHLA nesting habitat at Rivergate after ITP issuance is estimated to be 50.2 acres (Table 3).

The SHLA population at the SW Quad may be constrained by collisions with aircraft or vehicles, sterility of the soil's seedbank that results from annual tilling that inhibits vigorous regrowth of vegetation, and predation (FAA 2015; Port 2015; Nick Atwell, Port Environmental Project Manager, pers. comm.). Though SHLA habitat has been inadvertently maintained by the Port in early successional conditions favorable to SHLA under the PDX WHMP, the nesting population has remained relatively consistent between two to four nesting pairs per year (Nick Atwell, Port Environmental Project Manager, pers. comm.). Using the higher end of this range of observed occupancy (four nesting pairs), the estimated density of SHLA nesting pairs in the current 77.0 acres of suitable nesting habitat is approximately 19.3 acres per pair.

Currently, 77.0 acres of suitable SHLA habitat is occupied at the SW Quad, limited to the portion of the site that is regularly managed for aviation wildlife hazards (Figure 8). The berm and the stockpile areas create hard edges that SHLA avoid during the nesting season. The vegetated strip of land is relatively open with a few scattered trees along the far southwestern boundary that are sufficiently removed from the suitable habitat in the interior of the SW Quad Project Area that they are not expected to detract from the open landscape context of the site. Therefore, a buffer was not placed around this "soft" edge. A 150-foot avoidance zone was applied to the hard edges created by the berm and the stockpile area. By removing the berm during construction of the drainfield, an additional 50.9 acres of potentially suitable habitat would be inadvertently created,

though not intentionally for the benefit of SHLA. At approximately Permit Year 3, the currently occupied SHLA habitat and the potentially suitable habitat managed after the berm removal provide for a total of 127.9 acres at the SW Quad during Permit Years 3 through 30 or until development occurs (see Figure 8; Table 3).

SHLA are not known to consistently nest on other portions of the PDX Intermediate Zone outside of the SW Quad. Accurate estimates of the extent of suitable habitat on the remainder of the PDX Intermediate Zone are not available. In any case, these areas are not expected to experience habitat loss or gain as a result of the Covered Activities. Take from WHMP activities on the remainder of the PDX Intermediate Zone, if any, would most likely arise from harassment from noise and activity disturbances or by the unlikely direct killing or wounding of individuals.

#### **5.2.2.2. PROJECTIONS FOR BIRD USE**

When habitat conditions remain suitable, sites remain occupied from year to year (Pearson et al. 2005a). However, when landscape conditions change, the abundance and distribution of SHLA can shift both within and between seasons and it is possible that SHLA that are displaced from PDX would relocate to new sites in the region (Moore 2011; Anderson 2013).

Rivergate contains approximately 40.7 acres of suitable habitat for SHLA and in recent years (i.e., since 2009) has supported as many as six nesting pairs (see Table 2). Similarly, the SW Quad contains approximately 77.0 acres of suitable habitat and supported as many as four nesting pairs in recent years (see Table 2). This level of occupancy translates into a territory density of approximately 6.8 acres/nesting pair at Rivergate and approximately 19.3 acres/nesting pair at the SW Quad. These territory densities account, to some degree, for whatever site-specific variations in habitat quality or suitability and other factors that contribute to how SHLA actually use each of these sites.

Displacement of individual SHLA from Covered Activities would result in take in the form of harm and would likely be non-lethal. To account for the possibility of take from implementation of the WHMP on the PDX Intermediate Zone, the Port estimates that on average no more than one nesting pair would be taken in any given year of the ITP term (i.e., a maximum of 30 nesting pairs over 30 years). The Port believes this estimate is reasonable because its WHMP activities are intended to avoid creating potential aviation wildlife hazards and the Port generally wishes to discourage SHLA from nesting on the PDX Intermediate Zone. If nesting SHLA are detected in this area in the future, it is expected that the Port would take measures to discourage further nesting use. Therefore, take of SHLA within the PDX Intermediate Zone outside of the SW Quad is likely to involve only pioneering individuals and not a large or persistent nesting colony. Therefore, an estimated take of no more than one nesting pair per year of the ITP term is a reasonable assumption that accommodates uncertainty regarding the use of this site in the future.





Figure 7. Suitable SHLA nesting habitat within Rivergate.



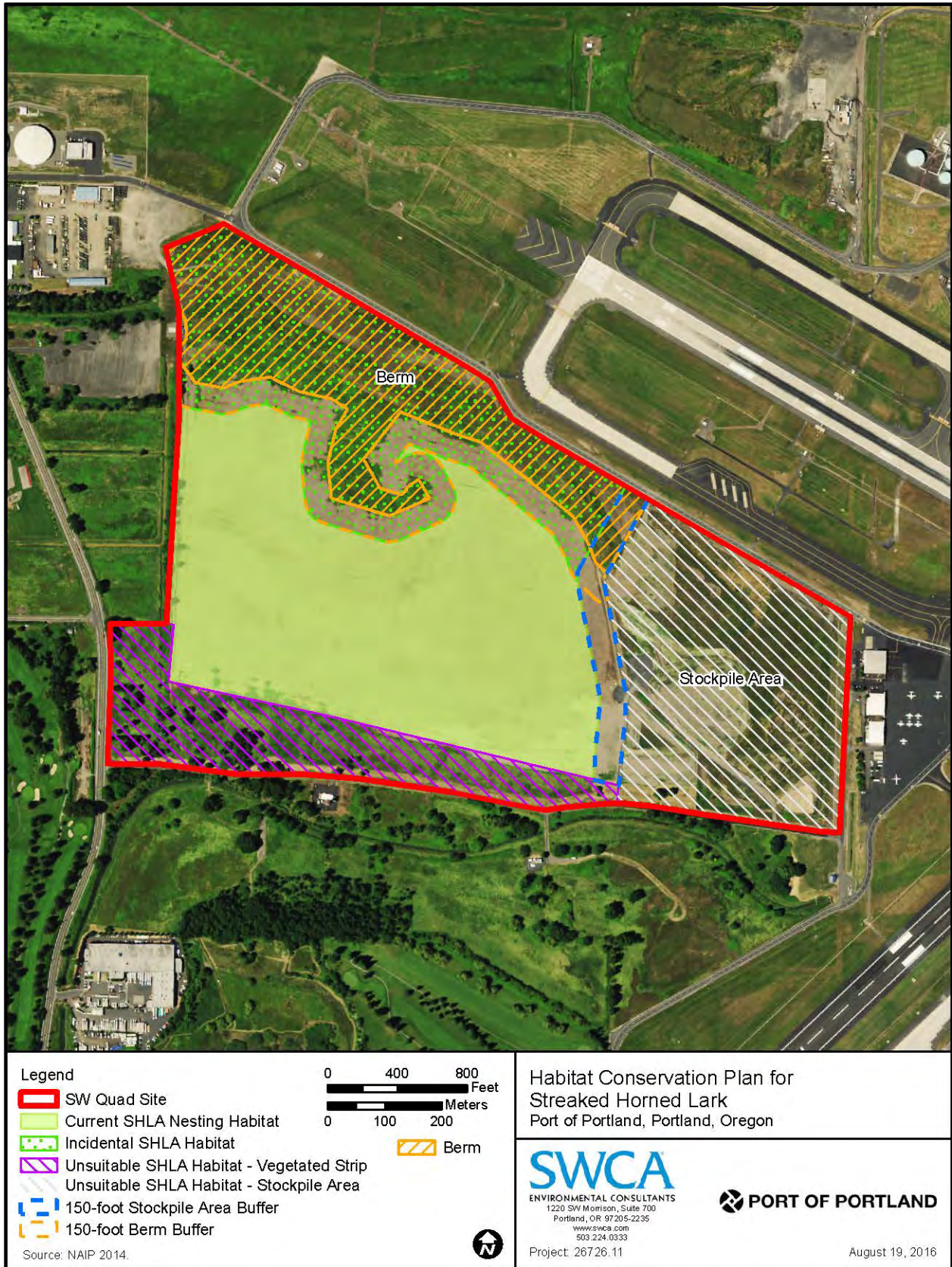


Figure 8. Suitable SHLA nesting habitat within the SW Quad.

### 5.2.3. Requested Take

#### 5.2.3.1. RIVERGATE AND SW QUAD

As shown in Table 3, current information regarding territory density and the amount of suitable SHLA habitat at the Project Areas suggests that approximately eight SHLA nesting pairs may be taken by the Covered Activities at Rivergate related to permanent habitat loss from development. Additionally, while not requested under the ITP application but evaluated for in this HCP, seven SHLA nesting pairs are estimated to be taken as a result of the future development SW Quad. However, these projections are uncertain and could be influenced by changes in the timing of actual development activities, the response of SHLA to the presumed benefits of the interim conservation measures, and other natural or human-made factors (possibly unrelated to the Covered Activities) that could increase or decrease the number of SHLA that use Rivergate and the SW Quad in the future.

To help ensure that the actual amount of take that will occur as a result of these Covered Activities is fully covered by the ITP, the Port requests an additional allowance of eight nesting pairs in its requested take authorization. This additional allowance represents 50% of the total estimated take from the loss of habitat at Rivergate (estimated at eight nesting pairs) and the loss of habitat at SW Quad to be evaluated under future Section 7 consultations (estimated at seven nesting pairs), for a total of eight nesting pairs. The size of this “uncertainty allowance” is well within the magnitude of the fluctuation in the occupancy data for the Plan Area (see Table 2). For example, the number of SHLA nesting pairs on Rivergate increased from three in 2012 to six in 2013 (a 100% increase), and the number of nesting pairs on the SW Quad increased by 50% between 2009 and 2010 and again between 2010 and 2011.

**Table 3.** Estimated Amount of Take from the Covered Activities

Project Area/Activity	Total Site Acreage	Estimated Acreage of Suitable SHLA Nesting Habitat	Site-specific Territory Density	Estimated Take <i>(rounded up to nearest whole number)</i>
Rivergate Development <i>(permanent habitat loss anticipated in Permit Years 1–3)</i>	120.6 acres	50.2 acres <i>(40.7 acres of existing habitat plus 9.5 acres of additional habitat created by interim conservation measures)</i>	6.8 acres/pair	8 nesting pairs
SW Quad Development <i>(permanent habitat loss anticipated in Permit Years 20–30)</i>	204.7 acres	127.9 acres <i>(77.0 acres of existing habitat plus 50.9 acres of incidental habitat)</i>	19.3 acres/pair	0 nesting pairs*
Uncertainty Allowance for Development Activities		estimated as 50% of the anticipated taking on Rivergate and the SW Quad <i>(15 nesting pairs × 0.5 = 8 nesting pairs)</i>		8 nesting pairs
PDX Intermediate Zone WHMP Implementation <i>(subject to changed circumstances, take of 1 nesting pair each year of ITP term, on average, or up to 30 pairs over 30 years)**</i>	4,866.7 acres	unknown	unknown	30 nesting pairs
<b>Total Take Request</b>				<b>46 nesting pairs</b>



\* This amount of take is estimated to be seven SHLA nesting pairs at the time of this HCP. However, since this take would be evaluated under future consultations under Section 7 for the ultimate development of SW Quad (based on data available at that time), it is not included in this take request. Impacts as a result of this take are evaluated in this HCP to prepare for future Section 7 consultations.

\*\* This amount of take is only applicable if the SHLA 4(d) Special Rule no longer addresses take related to the Port's aviation wildlife hazard management activities within the PDX Intermediate Zone.

### **5.2.3.2. PDX INTERMEDIATE ZONE UNDER CHANGED CIRCUMSTANCES**

The Port's implementation of the PDX WHMP is currently covered by the 4(d) Special Rule and any take of the SHLA related to these aviation wildlife hazard management activities is exempt from the ESA's prohibition on take. Therefore, at this time, the Port does not need to rely on the ITP to authorize take of the SHLA related to the implementation of the PDX WHMP. However, the Port desires additional regulatory assurances that its implementation of aviation wildlife hazard management activities within the PDX Intermediate Zone is addressed and is seeking ITP coverage for these activities in the possible, but unlikely, event that the 4(d) Special Rule is withdrawn or is deemed to no longer cover the Port's activities.

In response to the changed circumstance that the SHLA 4(d) Special Rule no longer covers the Port's implementation of the PDX WHMP, the Port requests incidental take authorization for aviation wildlife hazard management activities in the ITP. This allocation of take authorization would only become available for the Port's use if this changed circumstance is triggered. However, to ensure that the Port is able to continue its essential aviation wildlife hazard management activities unabated, this HCP fully contemplates and addresses the impacts of take arising from the PDX WHMP. Therefore, simple written acknowledgement of the changed circumstance by both the Port and the USFWS will be sufficient to administratively amend the ITP and release the WHMP-related take authorization.

As previously described, the Port estimates that its WHMP-related activities within the PDX Intermediate Zone could take approximately one SHLA nesting pair each year over the term of the ITP, for an estimated total of 30 nesting pairs over 30 years. Therefore, subject to the changed circumstance where the 4(d) Special Rule no longer covers the Port's activities, the Port requests authorization to take an additional 30 SHLA nesting pairs over the term of the ITP. However, unless and until this changed circumstance occurs, the Port would not need to rely upon this take authorization.

### **5.2.3.3. SUMMARY**

In summary, the Port requests incidental take of the SHLA in an amount equivalent to the loss of up to 46 nesting pairs over the 30-year duration of the ITP (see Table 3). To be clear, it is not expected that the Covered Activities will result in the actual death of these 46 nesting pairs, although that outcome is possible. Rather, it is more likely that these taken nesting pairs will be displaced to different habitats with relatively little disruption of essential breeding, feeding, or sheltering behaviors.

## **5.3. Impact of the Requested Taking**

This section assesses the anticipated impact of the Port's requested take authorization of 46 nesting pairs over 30 years, although the Port acknowledges that not all of this take authorization may be

needed due to the current coverage of the SHLA 4(d) Special Rule and future uncertainty about the level of occupancy of SHLA habitats at Rivergate and the SW Quad at the time development actually occurs. The Port believes that its take request of 46 nesting pairs is reasonable to provide adequate regulatory assurances for its Covered Activities over the next 30 years. Additionally, the foresight in evaluating impacts as a result of full development at SW Quad for anticipated take of seven SHLA nesting pairs seeks to provide adequate regulatory assurances for future Section 7 consultation.

### **5.3.1. Comparison to Regional and Range-wide Population**

The number of taken SHLA nesting pairs can be compared to the size of the total population of SHLA in the near term (i.e., Permit Years 1 through 3). In this respect, recent population surveys estimate the range-wide population of SHLA to total approximately 1,170 to 1,600 individuals (Altman 2011; Anderson 2013). If it is assumed that this population is composed of equal numbers of males and females and all individuals are paired, this range-wide population could include a maximum of 585 to 800 nesting pairs (the true number is likely lower, because not all individuals are paired). Within the lower Columbia River and Washington Coast region of the SHLA range (the region that contains the Plan Area), there are approximately 120 to 140 adults and perhaps 60 to 70 breeding pairs (Altman 2011; Anderson 2013).

In the near term, the amount of take authorized through the ITP is likely to be eight nesting pairs at Rivergate (see Table 3 for take associated with development at Rivergate). These eight nesting pairs are between 1.0% and 1.4% of the current range-wide population and 11.4% to 13.3% of the regional population. SW Quad hosts three nesting pairs which represent between 0.4% and 0.5% of the current range-wide population and 4.3% and 5.0% of the regional population. Drainfield construction is expected to start in the near term and at the tail-end of the nesting season when the possibility of take occurring is low and the habitat would be available for SHLA use by the following nesting season. This take estimate is accounted for in the uncertainty allowance (see Table 3). Additionally, without recurring interim site disturbance and/or vegetation management at Rivergate and SW Quad, natural succession of the vegetation would cause the loss of suitable habitat for SHLA at these sites in the near future (Anderson 2013). In this case, benefits to the species from interim conservation measures proposed in this HCP (see Section 5.1.2) would not be achieved. Take of nesting pairs in the near term within the PDX Intermediate Zone will be covered under the SHLA 4(d) Special Rule. Beyond the implementation of Covered Activities in the near term of Permit Years 1 to 3 (during development of Rivergate and the drainfield construction project), impacts to the range-wide and regional populations from take exceeding this initial timeframe (during SW Quad site development, WHMP implementation in the absence of the 4(d) Special Rule, or incidental site maintenance in winter or other unforeseen circumstances) is unknowable.

In general, recovery efforts, stochastic events, or other factors may result in positive or negative changes to the population as a whole over time. The natural ecology of the SHLA suggests that the subspecies is adapted to the occasional loss of suitable habitat, because much of its habitat is composed of recently disturbed, early successional vegetation with a substantial amount of bare ground. This type of habitat is not naturally present for long periods of time at any particular location in the absence of frequent disturbance. The SHLA is adapted to the shifting mosaic of suitable habitat, with the ability to disperse long distances in search of suitable conditions within

and between years (Pearson et al. 2005b). Therefore, it is not expected that the permanent loss of habitat at Rivergate or the SW Quad would cause a reduction in the total population of the subspecies. Instead, suitable habitat for the subspecies appears to be stable across the region (Stinson 2016) and it is likely that the displaced SHLA would simply conduct breeding, feeding, and sheltering activities in a different location.

Assuming that displaced SHLA are able to utilize other suitable habitat in the region, it is not known how well the displaced individuals would thrive. Rates of nest success, predation, and other life history parameters vary across sites (Pearson and Hopey 2005). SHLAs at Columbia River sites are some of the most productive throughout the range of the species (Pearson and Hopey 2005). This high nest success rate occurs despite the disruptive nature of dredged material site management activities and the heavily urbanized environment with intense human activity. The continuity and productivity of SHLA populations, prior to listing, at the Columbia River dredged material placement sites suggests that SHLA can and regularly do successfully relocate within the landscape. At Rivergate, SHLA pairs consistently have had higher nest success rates (near 100% success; Moore 2014) than at other known nesting locations. Displaced individuals from Rivergate and the SW Quad may suffer reduced nest success as a consequence of the requested taking. However, the occurrence and magnitude of the impact on these individuals or the subspecies as a whole is not knowable.

### **5.3.2. Consideration of Natural Habitat Loss**

Suitable SHLA habitat at Rivergate and the PDX Intermediate Zone is not a natural condition. These habitats were created and maintained by the actions of the Port, first by creating uplands for building sites and to remove potential wildlife attractants for wildlife species of concern to aviation safety and then by maintaining these areas in a manner that favored short, sparse vegetation. In the absence of continued mowing or discing by the Port, vegetation at Rivergate would become too tall and dense for use by SHLA. At the SW Quad, not replacing the existing drainfield system will eventually cause suitable SHLA habitat to become too moist or flooded for continued use by the species. The same result could be seen if a different wildlife deterrent approach were implemented, such as allowing woody vegetation to become established instead of recurring vegetation management. In either case, suitable habitat at Rivergate and the SW Quad would naturally be lost to the subspecies and the SHLA population of Rivergate and the SW Quad would be displaced. Neither the Port nor any other entity has an obligation to conduct activities at Rivergate or the SW Quad that purposefully or incidentally maintain suitable habitat for the SHLA.

In this context, the impact of the requested take is more appropriately described in terms of 1) the length of time that Rivergate and the SW Quad remain suitable for use by SHLA, and 2) the projected number of SHLA nesting pairs using Rivergate and the SW Quad over time—with and without the Covered Activities. To measure the potential impact of the taking in a manner that considers the inevitability of natural habitat loss in the absence of active intervention, the Port (with input from the SAT and the USFWS) developed the concept of “cumulative bird-years.”

### **5.3.3. Comparison with Cumulative Bird-Years**

Cumulative bird-years is a conceptual metric to describe the cumulative total of each year’s SHLA nesting pairs at a particular site over time, based on projected changes in annual abundance due to

changes in habitat area, habitat quality, or other factors. Another way to describe the impact of the requested take is the difference in the number of cumulative bird-years over the 30-year term of the ITP between a scenario where the Port implements the Covered Activities and a scenario where the Port does nothing to create or maintain suitable SHLA habitat at the Project Areas (see Appendix E). This concept is also useful to describe the conservation benefit of the implementation of the proposed conservation program and interim conservation measures.

### 5.3.3.1. RIVERGATE

Rivergate supported five SHLA nesting pairs in 2015. The observed decline in nesting pairs from the recent high count of six nesting pairs in 2013 is likely due to the cessation, in 2013, of the occasional mowing or discing that has historically maintained suitable SHLA habitat at Rivergate. Based on Anderson (2013) and in the absence of the Covered Activities to maintain suitable SHLA conditions at Rivergate, the Port anticipates that SHLA would naturally discontinue use of the Rivergate parcels by 2019 (Permit Year 3).

The Port assumes that reinstating occasional mowing or discing as part of the Covered Activities will provide conditions suitable for supporting the recent maximum count of six SHLA nesting pairs on Rivergate in Permit Year 1. With the development of Rivergate parcels immediately following ITP issuance, the number of nesting pairs would decline from six to zero by Permit Year 3 as the area of suitable habitat gradually decreases (Figure 9). By Permit Year 3, the Port anticipates that most or all of Rivergate will be fully developed. Because additional development will either completely remove or further fragment suitable SHLA nesting habitat at Rivergate, the Port assumes that SHLA nesting pairs will not persist at Rivergate by Permit Year 3 (see Figure 9).

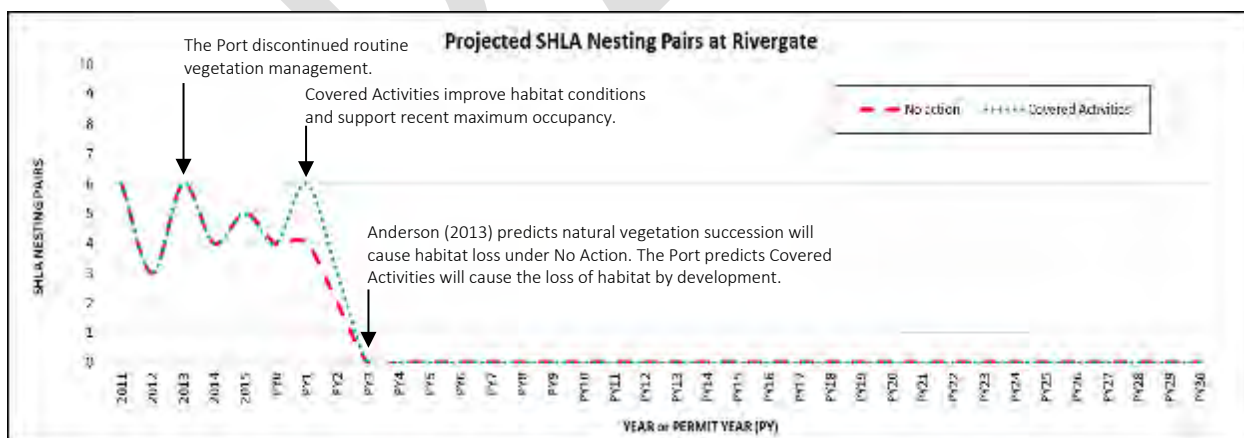


Figure 9. Projected SHLA nesting pairs at Rivergate through Permit Year 30.

Under both scenarios, Rivergate ceases to support nesting SHLA by Permit Year 3. However, the number of cumulative bird-years that would be supported under No Action is less than the number that could be supported with the Covered Activities. Between Permit Year 1 and Permit Year 3, the Port estimates that Rivergate would support a total of six cumulative bird-years with No Action (i.e., occupancy declines to four nesting pairs in Permit Year 1, two nesting pairs in Permit Year 2, and zero nesting pairs in Permit Year 3). In contrast, with the Covered Activities that reinstate

routine vegetation maintenance as an interim conservation measure, the Port assumes that Rivergate would be able to once again support its recent maximum of six nesting pairs in Permit Year 1. The Port anticipates a gradual decline SHLA nesting pairs as suitable habitat is lost to development, with an estimated three nesting pairs in Permit Year 2 and zero nesting pairs in Permit Year 3. Therefore, the Port estimates that with the Covered Activities, Rivergate could support nine cumulative bird-years until anticipated development causes the complete loss of habitat at this site in Permit Year 3 (Figure 10). Since SHLA are not expected to occur at Rivergate on or after Permit Year 3, the cumulative bird-years for this site remains at six for No Action and nine for the Covered Activities through the remainder of the 30-year ITP term (see Figure 10).

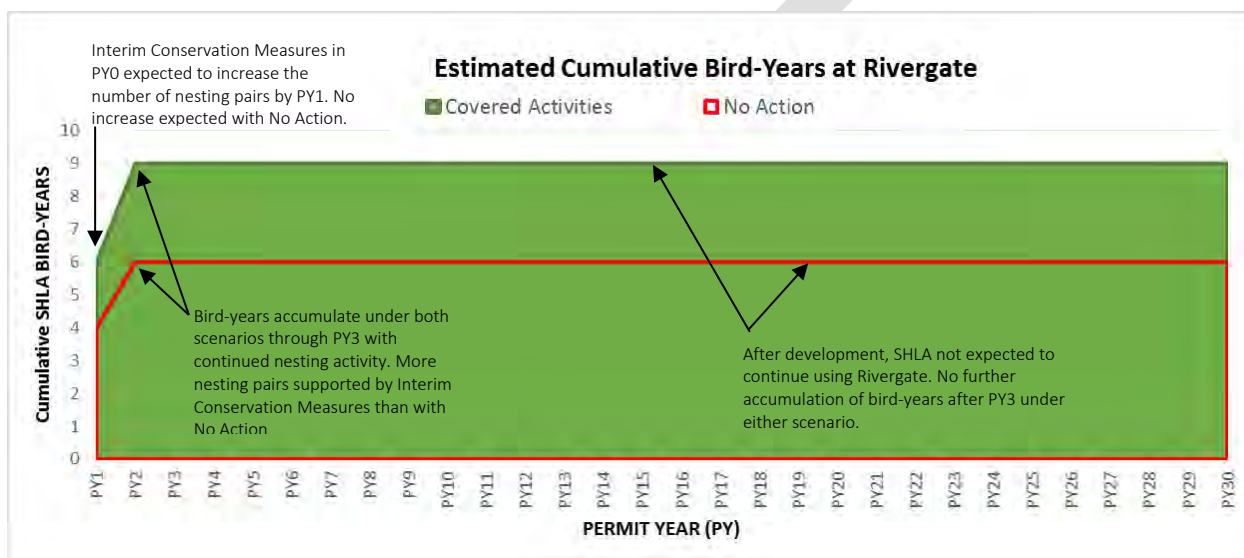


Figure 10. Estimated cumulative bird-years at Rivergate through the ITP term.

### 5.3.3.2. SW QUAD

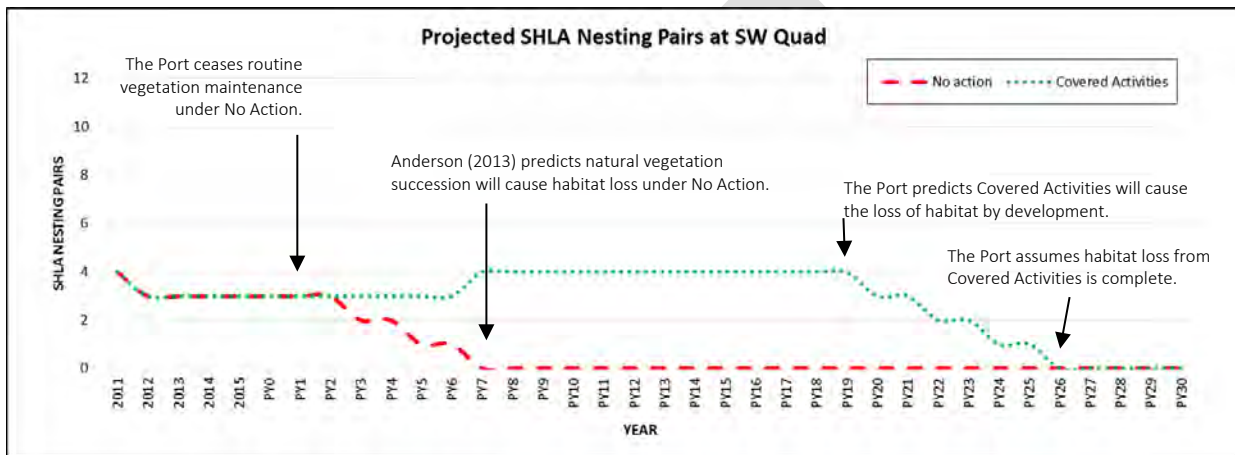
The SW Quad supported three SHLA nesting pairs in 2015. The observed number of nesting pairs has been consistently between two and four nesting pairs for the last several years due to annual discing that historically maintained suitable SHLA habitat. The Port assumes that approximately three SHLA nesting pairs will continue to use the SW Quad until completion of the drainfield replacement in Permit Year 3. With the drainfield replacement, the Port will also remove the berm along the northern edge of the SW Quad that currently creates an avoidance zone that makes a portion of this site unsuitable for use by nesting SHLA. The berm removal would result in habitat conditions favorable for SHLA, though the intent is to manage for aviation species of concern. The Port anticipates that this area may support additional SHLA nesting pairs. With the consistent application of the WHMP site management activities resulting in interim conservation measures prior to development of the SW Quad, the Port anticipates that the SW Quad will support approximately four SHLA nesting pairs between Permit Years 7 and 20 (with a gradual ramp-up over Permit Years 4, 5, and 6; Figure 11).

Between Permit Years 25 and 30, the Port assumes that the SW Quad will become developed. Because the precise timing of this anticipated development and the related permanent habitat loss is unknown, the Port assumes that there will be a gradual decline in nesting pairs at the SW Quad



during this period (see Figure 11). By Permit Year 26, the Port assumes that SHLA will no longer use the SW Quad. Take as a result of this development would be evaluated and requested under Section 7 consultation (see Section 1.2.2 of this HCP), and is not requested for in this ITP. However, impacts as a result of this take are evaluated in this HCP to prepare for future consultation.

In contrast, the Port assumes that without the Covered Activities (the No Action scenario), the SW Quad will naturally progress out of suitability for the SHLA by Permit Year 7 (i.e., 7 years after cessation of activities that currently maintain suitable habitat, based on Anderson [2013]). In Permit Year 7, the Port expects that SHLA would be naturally extirpated from the site. The Port would then implement alternate aviation wildlife hazard management practices on the SW Quad that do not favor the SHLA.



**Figure 11.** Projected SHLA nesting pairs at the SW Quad through the ITP term.

Under these assumptions, the Port estimates that the SW Quad could support 82 cumulative bird-years over the 30-year ITP term with implementation of the Covered Activities, although this number would decrease if development happened sooner or increase if it happened later. Without the Covered Activities, the SW Quad would only support 12 cumulative bird-years because the site would no longer support nesting SHLA by Permit Year 7 (Figure 12).

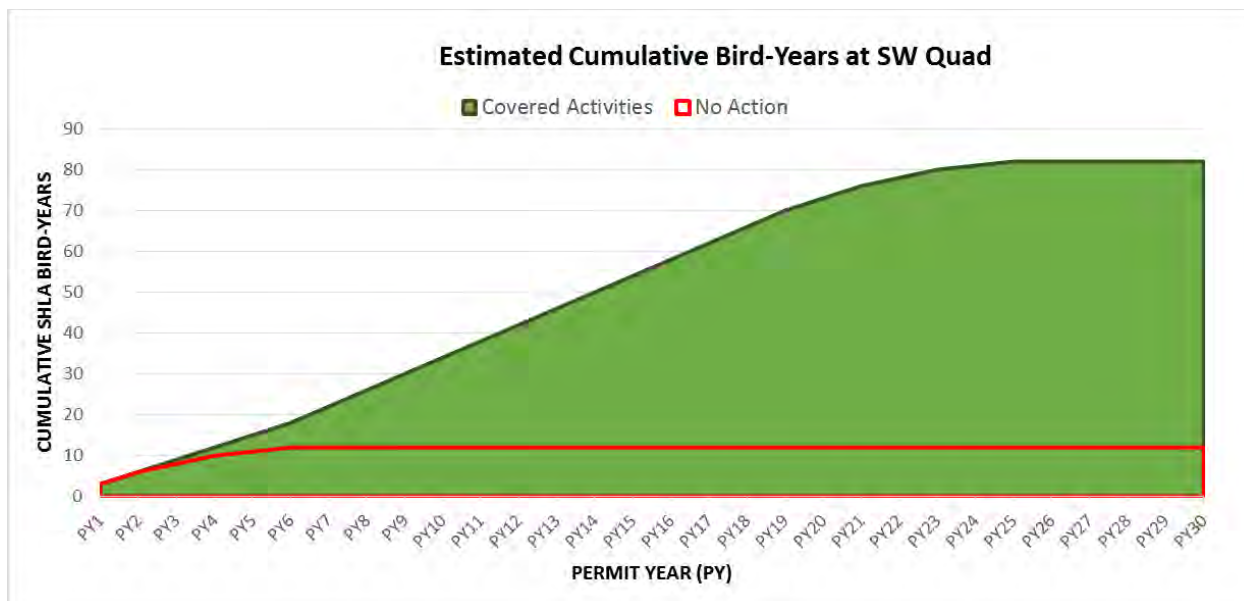


Figure 12. Estimated cumulative bird-years at the SW Quad through the permit term.

A total of 50.9 acres of potential habitat may become suitable for SHLA as a result of the berm removal and site management under the WHMP at SW Quad. If SHLA utilized this area, and using the same population density as for the current 77.0 acres of SW Quad that are presently used by SHLA, the 50.9 acres of berm removal may allow for an additional three nesting pairs each year—a total of 54 additional cumulative bird-years. However, while inadvertent habitat may become suitable and SHLA may benefit, the berm will be removed strictly to manage for aviation species of concern under the WHMP. Therefore, the Port is not including this acreage as an interim conservation benefit, though take associated with the incidental habitat removed as a result of development at SW Quad is evaluated for and included in the conservation program for future consultation under Section 7.

### 5.3.3.3. PDX INTERMEDIATE ZONE OUTSIDE OF SW QUAD

The Port does not intend to implement interim conservation measures on the remainder of the PDX Intermediate Zone that would promote the establishment of a nesting colony of SHLA outside of the SW Quad. However, the Port recognizes that its WHMP activities might inadvertently create conditions where pioneering SHLA could attempt to establish nesting territories from time to time. Therefore, the Port assumes that on average no more than one SHLA nesting pair would use the remainder of the PDX Intermediate Zone in any given year over the duration of the ITP. Without interim conservation measures, the Port does not anticipate that there will be a difference in cumulative bird-years over the ITP term with the Covered Activities or with No Action. With the Covered Activities, any SHLA nesting pairs that appear in a given year would likely be taken that same year by WHMP activities. Without the Covered Activities, the Port would simply modify its WHMP activities to promote conditions that naturally discourage use by SHLA.

### 5.3.3.4. CUMULATIVE BIRD-YEAR SUMMARY

Using the cumulative bird-year concept, the potential impact of the Covered Activities would actually have a net positive benefit on the SHLA as a whole by providing (and in some cases maintaining or enhancing) suitable habitat at the Project Areas prior to their development. For the Project Areas together, the Covered Activities would increase the number of cumulative bird-years through the ITP term from approximately 18 with no action by the Port to approximately 91—a clear benefit to the subspecies of 73 cumulative bird-years (Table 4).

For each additional cumulative bird-year, the SHLA population of the Project Area would continue to nest and produce young that may be recruited into the total population. SHLA using the Project Areas are known to have exceptionally high nesting success, and the loss or displacement of these nesting pairs from the Project Areas could contribute to the declining trend in abundance of the species. Therefore, increased cumulative bird-years on the Project Areas are likely to have a substantial benefit to the subspecies overall.

Although the actual number of cumulative bird-years at Rivergate and the SW Quad under any of the scenarios may be different than modeled, the assumptions used by the Port herein are based on the best available science and were developed in collaboration with the SAT and the USFWS.

**Table 4.** Anticipated Impact in Cumulative Bird Years of the Covered Activities

Project Area	Covered Activities and Interim Conservation Measures	No Action	Impact of the Covered Activities Compared to No Action
Rivergate	9	6	+3
SW Quad	82	12	+70
Other PDX Intermediate Zone	0	0	0
<b>TOTAL</b>	<b>91</b>	<b>18</b>	<b>+73</b>

As discussed in Section 5.3.3.2, an additional benefit may result from the removal of the berm at SW Quad (Table 5).

**Table 5.** Anticipated Impact in Cumulative Bird Years on SW Quad

Project Area	Cumulative Bird-Years with HCP and ITP	Cumulative Bird-Years with No Action	Impact of the HCP and ITP (Cumulative Bird-Years)
SW Quad (127.9 acres)	136	12	+124
SW Quad (77.0 acres)	82	12	+70
SW Quad (50.9 acres)	54	0	+54

## 6. CONSERVATION PROGRAM

Applicants for an ITP must demonstrate to the USFWS that they will “minimize and mitigate the impacts of the taking to the maximum extent practicable” (16 USC 1539). When determining

whether or not an applicant has met this statutory issuance criteria, the USFWS typically considers both the adequacy of the proposed conservation measures and whether or not the proposed measures are the maximum that can be practically implemented by the applicant (USFWS and NMFS 1996).

Rivergate and the PDX intermediate Zone are highly urbanized and, in the absence of voluntary routine site management practices, are not sustainable locations for SHLA. The proposed conservation measures achieve the ESA's statutory objectives by: 1) preventing the natural degradation of designated critical habitat for SHLA at the proposed Sandy Island Conservation Area; 2) expanding the amount and improving the quality of suitable nesting habitat at the proposed Sandy Island Conservation Area; 3) implementing conservation measures within Rivergate; and 4) implementing the WHMP, which results in incidentally maintaining suitable SHLA habitat at SW Quad. Each of these measures contribute to the minimization of impacts to the take of SHLA. The Port has secured a 30-year term conservation easement from the DSL for the proposed Sandy Island Conservation Area.

The proposed conservation program on Sandy Island is consistent with the SHLA Working Group's 2015–2016 action plan (Appendix F) to support SHLA recovery and address the top two priority action plan items:

- 1) Secure sites dedicated to SHLA conservation.
- 2) Secure protection commitment on priority occupied sites.

The HCP also supports USFWS conservation recommendations for SHLA presented in the USACE Columbia River Federal Navigation Channel Maintenance Dredging biological opinion (USACE 2014) for dredged material placement network sites within the Columbia River:

- 1) Seek funding and authority to implement alternate methods of creating and maintaining suitable habitat for SHLAs at network sites that are transitioning to unsuitable habitat, and that are not slated for deposition. This could increase the availability of suitable habitat for the lark, and would allow the USACE more flexibility in its use of the sites in the Network.
- 2) Fund research to fill critical knowledge gaps regarding the ecology of the SHLA in the area, including a study of lark demography and movement among the sites in the network.

The following conservation program components are practical for the Port to implement and have been developed by the Port in coordination with the USFWS and the SAT to adequately address the impacts of the requested taking, as well as anticipated future taking as a result of development at SW Quad covered under Section 7 consultations.

## **6.1. Biological Goals and Objectives**

The biological goals and objectives of this HCP are:

- 1) to minimize the impact of the displacement and possible (albeit unlikely) loss of up to 53 SHLA nesting pairs from the Plan Area over 30 years by promoting the short-term persistence of SHLA at Rivergate and the SW Quad with routine site management activities

(interim conservation measures) that maintain suitable SHLA habitat conditions until development occurs;

- 2) to minimize the potential for directly killing or wounding individual SHLA by restricting most Covered Activities to the non-nesting (i.e., wintering) season or to periods when the SHLA is not present—until development occurs; and
- 3) to mitigate the impacts of the taking by protecting and managing approximately 32 acres of SHLA designated critical habitat at the proposed Sandy Island Conservation Area for a term of 30 years, and by removing avoidance features from the SW Quad that expand the areas of suitable nesting habitat.

## **6.2. Avoidance and Minimization Measures**

### **6.2.1. Seasonal Vegetation Management Restrictions**

The Port will refrain from conducting vegetation management within Rivergate, the SW Quad, and the proposed Sandy Island Conservation Area during the SHLA nesting season (April 1 to August 31) to avoid directly killing or wounding individuals or causing nest abandonment. This seasonal restriction applies to conducting occasional mowing or discing proposed as routine site management at Rivergate and the SW Quad, to the similar management of vegetation at the proposed Sandy Island Conservation Area, and to vegetation clearing that may be necessary to prepare sites for actual development at Rivergate. However, vegetation management that may be necessary to prepare for the drainfield system replacement and berm removal at the SW Quad and that is related to WHMP implementation within the PDX Intermediate Zone is not subject to this restriction.

## **6.3. Mitigation Measures**

### **6.3.1. Interim Conservation Measures**

The Covered Activities include the interim conservation measure consisting of the reinstatement or continuation of occasional mowing or discing at Rivergate and continued implementation of similar activities under the WHMP at SW Quad for existing SHLA habitat. These activities would be performed outside of the SHLA nesting season at both locations. The Port will also continue to mow roadside perimeters and will maintain Jersey barriers currently in place as an interim conservation measure at Rivergate to prevent unwarranted site access and to reduce the risk of fire. These activities satisfy the Port's needs to properly maintain its properties, but incidentally benefit the SHLA by maintaining the characteristics of suitable habitat at Rivergate and the SW Quad until development occurs. The conservation benefit of this routine site management allows Rivergate and the SW Quad to maintain more cumulative bird-years over the duration of the ITP than would likely be achieved in the absence of these activities (see Section 5.3.3). Therefore, as part of the conservation program for this HCP, the Port commits to conduct routine site management by mowing or discing the areas of suitable SHLA habitat within Rivergate each year until development occurs. Additionally, activities associated with the implementation of the WHMP on potentially suitable SHLA habitat at SW Quad, prior to and after the drainfield



replacement and berm removal, could inadvertently benefit SHLA. The WHMP implementation will occur on SW Quad on an as-needed or annual basis, whichever is applicable.

The USFWS is currently working with other conservation partners to develop opportunities for SHLA habitat conservation in Multnomah County, including potential conservation opportunities on Sauvie Island and at the St. Johns Landfill (Cat Brown, USFWS, pers. comm.). These other sites may be able to receive the SHLA displaced from Rivergate and the SW Quad. Therefore, delaying the displacement of SHLA from Rivergate and the SW Quad improves the chance that one or more of these additional sites will be in place. This conservation measure could be important for helping to ensure that local SHLAs remain in the vicinity and to minimize disruption to the current range and distribution of the subspecies.

### **6.3.2. Sandy Island Conservation Area**

While the Port believes that the Covered Activities will actually have a net positive impact on the SHLA by substantially increasing the number of cumulative bird-years that the Project Areas will be able to support SHLA nesting pairs, the Port nonetheless proposes to provide additional conservation for the subspecies. Immediately following the issuance of an ITP, the Port will provide for the protection, management, and monitoring of approximately 32.0 acres of currently suitable and restorable SHLA habitat at the proposed Sandy Island Conservation Area as additional mitigation for the impacts of the requested taking of SHLA.

The proposed Sandy Island Conservation Area is designated critical habitat for the SHLA (i.e., part of critical habitat Subunit 3-M; USFWS 2013b) and has hosted a population of approximately one to four nesting pairs of SHLA since at least 2005 (see Table 2). The USACE does not intend to place more dredged material at the Sandy Island Conservation Area, which will end the occasional disturbances that maintain suitable SHLA habitat at the site. The last placement of dredged material occurred in 2011. Without recurring site disturbance or vegetation management, the natural succession of vegetation will result in a loss of suitable habitat for SHLA in the near future and degrade the ability of this critical habitat to support the conservation of the species.

The Port's proposed conservation measures at the Sandy Island Conservation Area will expand the current area of suitable habitat at the site and will maintain and improve this habitat for a period of 30 years. These conservation measures are expected to have a net benefit for the number of cumulative bird-years that the Sandy Island Conservation Area can support over the term of the ITP as well as provide conservation benefit for anticipated take at SW Quad. Therefore, they will contribute to the recovery of the subspecies in ways that are consistent with previously stated conservation objectives.

#### **6.3.2.1. SANDY ISLAND CONSERVATION EASEMENT**

The Port will enter into a 30-year term conservation easement with DSL, the entity that owns the dredged material that comprises the Sandy Island Conservation Area (Appendix B). As established through extensive discussions between the Port and DSL, the 30-year term is the maximum term allowed by DSL. The proposed conservation easement overlaps in time and space with an existing dredged material placement easement held by the Port that expires in 2030 (Appendix C). These two easements are compatible with one another and are not mutually exclusive.

Under the proposed conservation easement, mining or deposition of sand (a commodity owned by DSL) would be an acceptable use of the proposed Sandy Island Conservation Area provided that any such activities occurs outside of the SHLA nesting season (i.e., is restricted to the period between September 1 and April 14) and are otherwise compatible with SHLA conservation. DSL has the right to grant additional easements that do not interfere with the Port's permitted uses under the conservation easement (Oregon Administrative Rule 141-122-0010 to 0120). A copy of the proposed conservation easement is provided in Appendix B.

Any decision to renew the conservation easement rests solely with DSL. The Port is committed to working with DSL regarding future conservation opportunities on Sandy Island, and will address future efforts with relevant parties and key stakeholders when appropriate.

### **6.3.2.2. INITIAL MANAGEMENT AND MONITORING PROGRAM**

#### **Recurring Mechanical Vegetation Management**

SHLA habitat on the Columbia River islands declines rapidly with the natural regrowth of vegetation. Habitat on these islands becomes suitable within 1 to 2 years following deposition of dredged material and may remain suitable up to 6 or 7 years without additional dredged material placement or vegetation management (Anderson 2013). On the Columbia River islands, discing exposes the sand and puts vegetation into a state similar to habitat used by SHLA (Anderson 2011).

The Port will disc or scrape approximately 50% of the area of the proposed Sandy Island Conservation Area (approximately 16 acres) every 3 years to maintain a mosaic of vegetation in various stages of early succession. Alternate methods for managing vegetation that the Port may explore as part of the adaptive management program may include, at the Port's discretion, disturbing vegetation by using all-terrain vehicles to drag rakes or other attachments across the ground surface. This schedule of partial coverage ensures that a portion of the proposed Sandy Island Conservation Area remains in a state that is suitable for use by the subspecies each year. The Port will only implement this management activity outside of the SHLA nesting season, but no later than early March (i.e., this management activity will occur between September 1 and March 14) (Anderson 2011).

#### **Scotch Broom Control**

Scotch broom currently occurs along the steep eastern and southern shoreline banks of the Sandy Island Conservation Area and in the shallow basin at the northern end of the site (Figure 12). The Port will remove the stand of Scotch broom in the basin during Permit Year 1. The removal of this stand of Scotch broom will reclaim approximately 1.5 acres suitable SHLA habitat within the proposed Sandy Island Conservation Area.

Currently accepted control methodologies for Scotch broom include: 1) mechanical removal by mowing or shredding; 2) hand pulling of seedlings and smaller/younger plants up to 3 feet in height when it is possible to remove the entire root crown to discourage resprouting; 3) the use of hand tools such as weed wrenches, root jacks, adz hoes, claw mattocks, and Pulaskis for pulling large Scotch broom plants; 4) manually operated tools such as brush cutters, chainsaws, axes, machetes, loppers, and clippers used to cut larger Scotch broom plants prior to removal to provide access to the stem for uprooting; or 5) selective application of herbicide (preferably glyphosate-based

herbicides approved for use near water) to individual plants by a licensed applicator in accordance with the manufacturer's label. The key to long-term control is prevention of seed set after the initial clearing takes place. Annual follow-up treatment over many years will be necessary to control encroachment of this plant.

After initial removal in Permit Year 1, the Port will conduct follow up treatments annually across the flat plateau of the Sandy Island Conservation Area. As with other routine vegetation management, Scotch broom removal will occur outside of the SHLA nesting season (i.e., this management activity will occur between September 1 and April 14).

Scotch broom occurring on the steep banks of the Sandy Island Conservation Area will not be removed. While these shrubs will continue to be an unwanted source of seed, they will also deter pedestrian intrusion from the shoreline.

### **Tree Removal**

To further increase the amount of suitable SHLA habitat within the Sandy Island Conservation Area, the Port will remove the 0.83-acre grove of cottonwood trees located within the site during Permit Year 1 (see Figure 12). Cut stems would be placed in piles along the forested boundary of the proposed Sandy Island Conservation Area so that they do not become an avoidance feature. Tree removal will occur outside of the SHLA nesting season (i.e., this management activity will occur between September 1 and April 14). The removal of these trees will reclaim approximately 6.5 acres of suitable SHLA habitat by eliminating the cottonwood grove and reducing the extent of avoidance buffers.

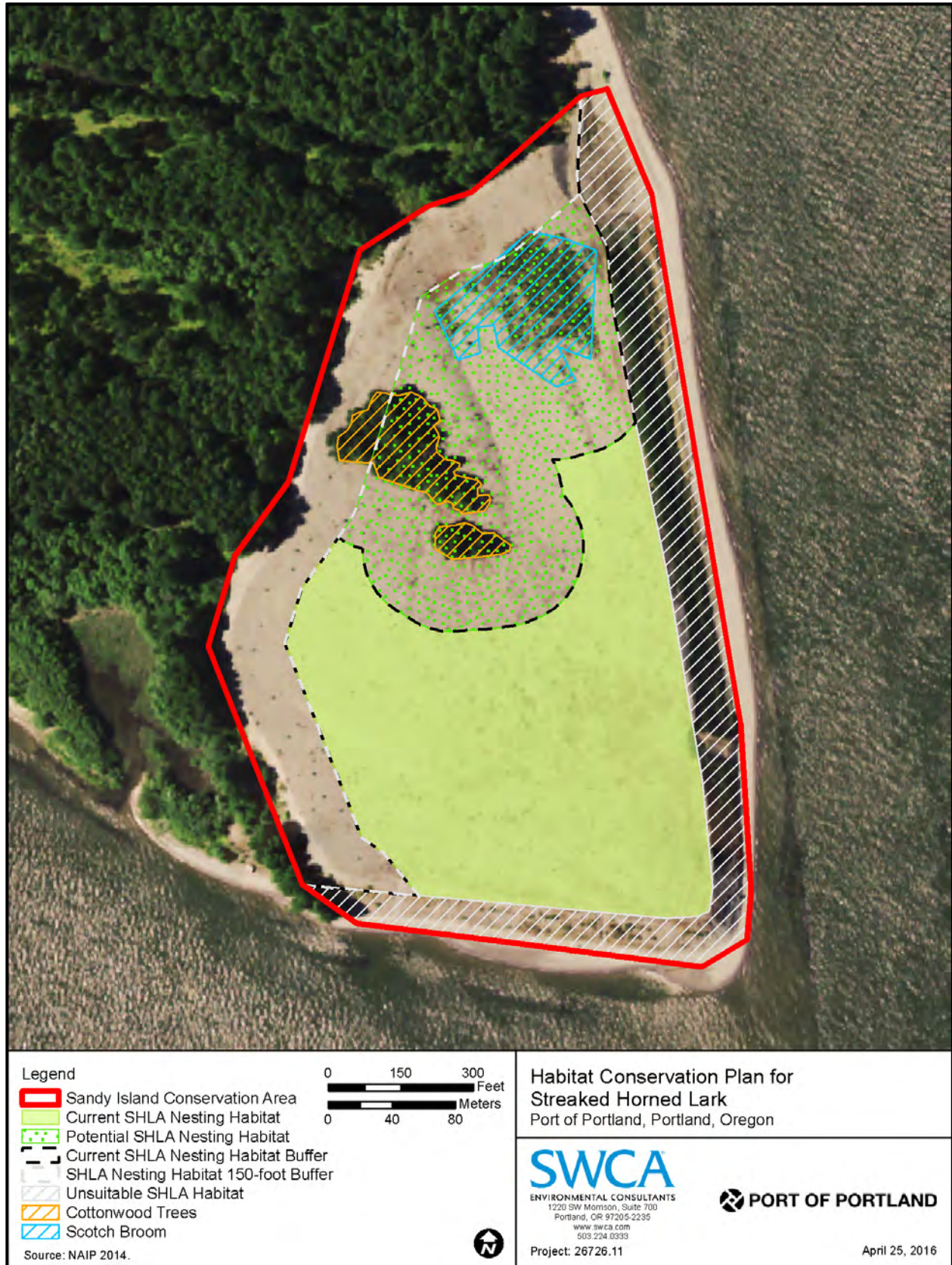


Figure 12. Suitable SHLA Habitat within the Sandy Island Conservation Area

## **Signage**

The proposed Sandy Island Conservation Area is located directly across from the Port of Kalama public boat ramp and is visited by recreational boaters who use the island mostly for shoreline camping and recreational fishing. Sandy Island is reported to have high habitat quality supporting a large density of SHLA under ideal vegetation conditions (Anderson and Slater 2015) without any recreation use restrictions or site access enforcement imposed on the island. Though existing recreational activities may disturb SHLA, effects from the current baseline recreation pressures on the SHLA population on Sandy Island are likely very low as is evidenced by SHLA densities reported in recent survey data.

The Port will install signs around the boundary of the Sandy Island Conservation Area that will mark the boundary of the mitigation site, identify the area as important to the conservation of the SHLA, and encourage recreational users to minimize impacts on the subspecies. The Port will install the signage on the mid-slope of the banks of the Sandy Island Conservation Area so that they do not provide perch sites for potential predators. The Port will inspect the signage annually and repair or replace signs as needed.

### **6.3.2.3. ADAPTIVE MANAGEMENT**

The Port will implement or otherwise provide for an adaptive management and monitoring program for the Sandy Island Conservation Area. The USFWS published the final “five-point policy guidance” on June 1, 2000, as an addendum to the HCP Handbook (USFWS and NOAA 2000). This policy established the USFWS’s intent, where appropriate, to include adaptive management principles in the operating conservation program for an HCP to address uncertainty regarding natural resource management. The USFWS encourages the use of a robust adaptive management program to address the inherent uncertainties associated with HCP development. The USFWS defines adaptive management as “...a method for examining alternative strategies for meeting measurable biological goals and objectives, and then, if necessary, adjusting future conservation management actions according to what is learned.” The USFWS is committed to allowing flexibility within the management structure of an approved HCP as long as the applicant continues to contribute to the fulfillment of the biological goals and objectives and maintain an ongoing commitment to the success of the HCP.

The Port proposes the following management and monitoring program for the Sandy Island Conservation Area to guide its efforts over the 30-year term of the conservation easement. It is expected that some of the measures implemented on the ground to achieve the goals of the HCP may change over time through the adaptive management process. However, the initial management and monitoring program described herein provides the basis for establishing a practicable budget for these activities that the Port commits to providing in support of the adaptive management and monitoring of the Sandy Island Conservation Area. This budget (see Section 9) will also include a contingency fund of 10% of the anticipated annual costs. Unused portions of the contingency fund will be rolled forward for use in later years.

As the Port’s commitment to management and monitoring at the Sandy Island Conservation Area extends for three decades, it is likely that scientific advances and natural ecological processes will warrant the use of adaptive management measures over time. The Port will annually monitor and report on environmental conditions within the Sandy Island Conservation Area and will adjust the



management and monitoring program as necessary to protect the SHLA and its habitat. The Port will review management and monitoring data every 5 years and propose revisions as needed to help ensure that available funding is spent effectively toward achieving the biological goals and objectives of this HCP. The Port will submit to the USFWS any proposed changes to the management and monitoring activities described below for review and approval prior to implementation, such approval shall not be unreasonably withheld.

To ensure that management actions remain focused on the biological goals and objectives specified in the conservation program, the Port anticipates the following adaptive changes to the conservation program may be warranted if monitoring indicates that the goals and objectives are not being met:

- If biological monitoring reports indicate a consistent SHLA population decline at Sandy Island when compared to population numbers provided in previous biological monitoring reports, the Port and USFWS would work together to determine if management actions implemented by the Port are the cause, in whole or in part, of such population decline. If it is determined by USFWS and the Port that actions outside of the Port's control are negatively impacting the SHLA population (e.g., recreation use), the Port may re-evaluate their management actions in an effort to address those actions. If new techniques become available to more effectively implement management actions, then revisions to the management prescriptions associated with the HCP would be incorporated to the maximum extent practicable after consultation and agreement between the Port and USFWS.
- SHLAs are expected to occupy the approximately 280- by 400-foot basin at Sandy Island once the Scotch broom and cottonwood trees have been removed. If, over time, monitoring indicates that nesting SHLA do not occupy this basin area, the Port will coordinate with the USFWS, USACE, and DSL to develop adaptive management measures. The need for this action would be determined as a result of this coordination and based on observations of site use by SHLA. Measures may include filling in of the basin using existing sand to recontour the large depression to create additional available suitable habitat with an open setting. Due to the high costs of mobilizing dredging efforts, importing dredged material on to the site is not economically feasible unless dredged material placement is planned for the deposition site immediately adjacent to the Conservation Area on Sandy Island.
- If, during the Port's annual monitoring activities, excessive unauthorized human access or activities are found to occur on the conservation site, resulting in significant disturbance to nesting SHLA at the Sandy Island site, the Port will install additional signage delineating property boundaries with trespass warnings. If these activities continue, the Port may install fencing intended to restrict human access, or other means may be used to prevent human entry. Costs to patrol the site are in excess of the scope of this HCP and are not proposed.

## **6.4. SHLA Research Program**

### **6.4.1. Sandy Island Research Access**

The Port is committed to making the Sandy Island Conservation Area available for research opportunities during the term of the conservation easement. Making the Sandy Island Conservation

Area available for research offers opportunities to fill critical knowledge gaps regarding the ecology and management of SHLA in the Columbia River region that could support the recovery of the subspecies. Because SHLA were recently listed and this is the first HCP of its kind, information resulting from research may help to inform future management and mitigation actions that support recovery of SHLA using the best available science. Understanding the effectiveness of conservation strategies will also inform future HCPs or other programs that contribute to the conservation of SHLA and their habitat. The Port evaluated similar research activities and access for Rivergate and the PDX Intermediate Zone, but such activities are not compatible with airfield operations and industrial development.

The Port is also willing to engage local research organizations in this effort through collaborative funding and research partnerships with the USFWS, CNLM, TNC, ABC, local universities, or other entities if a suitable opportunity arises.

Additionally, a variety of tools are available under the ESA to help states and landowners plan and implement projects to conserve species. One of the tools, the Cooperative Endangered Species Conservation Fund (Section 6 of the ESA), provides grants to states and territories to participate in a wide array of voluntary conservation projects for candidate, proposed, and listed species. Conservation Grants provide financial assistance to states and territories to implement conservation projects for listed species and at-risk species. Funded activities include habitat restoration, species status surveys, public education and outreach, captive propagation and reintroduction, nesting surveys, genetic studies, and development of management plans. The Port would be willing to work with the USFWS, the State of Oregon, and researchers to implement projects that support recovery goals of SHLA funded by these grant opportunities.

#### **6.4.2. Fledgling SHLA Banding at Rivergate and SW Quad**

To support ongoing research efforts, the Port commits to banding fledgling SHLA that are born on Rivergate and the SW Quad in the nesting season immediately prior to anticipated habitat loss from development or drainfield system replacement. At Rivergate, any parcels developed in Year 1 would be cleared prior to the nesting season and bird banding would not occur at those sites. However, surveys will be done in remaining undeveloped parcels and any nestlings encountered would be banded at that time. Banding of fledgling SHLA provides estimates of annual adult and juvenile return rates, juvenile post-fledging survival, and dispersal patterns (Wolf et. al. 2015), especially after a site is developed. Therefore, banding of adult SHLA at Rivergate and SW Quad is not proposed. At the Sandy Island Conservation Area, banding of SHLA is not proposed because the habitat will not be lost, thus allowing individuals to utilize this habitat in successive years.

Banded individuals may be detected by other research efforts for the SHLA not associated with the HCP and these efforts may help fill critical knowledge gaps regarding the ecology and management of SHLA in the Columbia River region.

The Port will conduct up to six nest search surveys in the season immediately prior to construction to locate nests at Rivergate and the SW Quad. Once nests have been located, monitoring of nests will dictate timing for banding of fledglings. Banding of fledglings at the Project Areas will be conducted by a qualified avian biologist and in accordance with all applicable permit requirements.

At Rivergate, only one season of nest search surveys and banding will be completed across the site. At the SW Quad, nest search surveys and banding will be completed in the season prior to replacement of the drainfield system.

Re-sighting surveys of banded birds is not proposed under this HCP. The USFWS is currently working on developing a survey method for Oregon and it is assumed that banded SHLA that are re-sighted and reported by local birders or researchers would be documented in this database. Also, incidental sighting of banded SHLA made by the Port during annual monitoring will be reported to the USFWS.

## **6.5. Conservation Benefits**

### **6.5.1. Sandy Island Conservation Area**

The SHLA population at the proposed Sandy Island Conservation Area was at its peak two seasons after dredged material placement in 2011, which created optimal habitat conditions with a high percentage of bare ground and supported three to five SHLA nesting pairs (see Table 2). As a conservation measure, recurring vegetation maintenance will occur once every 3 years over half of the Sandy Island Conservation Area, thereby maintaining the site in varying degrees of suitability. Under this management prescription, it is unlikely that the entire site will be at optimal habitat condition at the same time. Typically, SHLA avoid nesting within an approximately 150-foot distance of a hard edge of habitat, such as the large cottonwood trees that form the southern and western boundary of SHLA habitat at the Sandy Island Conservation Area (Anderson and Pearson 2015). Current suitable habitat on the Sandy Island Conservation Area includes approximately 12.1 acres. With the removal of cottonwood trees and Scotch broom, the Sandy Island Conservation Area is expected to provide approximately 18.6 acres of suitable habitat for SHLA.

The current density of SHLA nesting territories on the Sandy Island Conservation Area is approximately 4.0 acres/nesting pair (i.e., 12.1 acres of suitable habitat divided by three nesting pairs observed in 2015). Because the Sandy Island Conservation Area does not receive routine vegetation management, the quality of the habitat is decreasing and the Port expects that the number of nesting pairs that use the site will decrease to approximately two at ITP issuance (Permit Year 0).

With the management and expansion of suitable habitat to 18.6 acres in Permit Year 1, the Port expects that the SHLA population will also expand. Therefore, the Port assumes that the Sandy Island Conservation Area will support approximately three nesting pairs in Permit Year 1 and up to five nesting pairs by Permit Year 2. With the implementation of the proposed management program for the Sandy Island Conservation Area, the Port assumes that the site will continue to maintain five nesting pairs for the duration of the ITP. These projections maintain a similar long-term territory density as currently observed (i.e., 4.0 acres/nesting pair applied to 18.6 acres of suitable habitat).

Without the implementation of the HCP, the Port anticipates that the number of nesting pairs on the Sandy Island Conservation Area will gradually decline to zero by Permit Year 1 (i.e.,

approximately 7 years after the last major disturbance from dredged material placement). Figure 13 shows the Port’s protections for SHLA use of the Sandy Island Conservation Area.

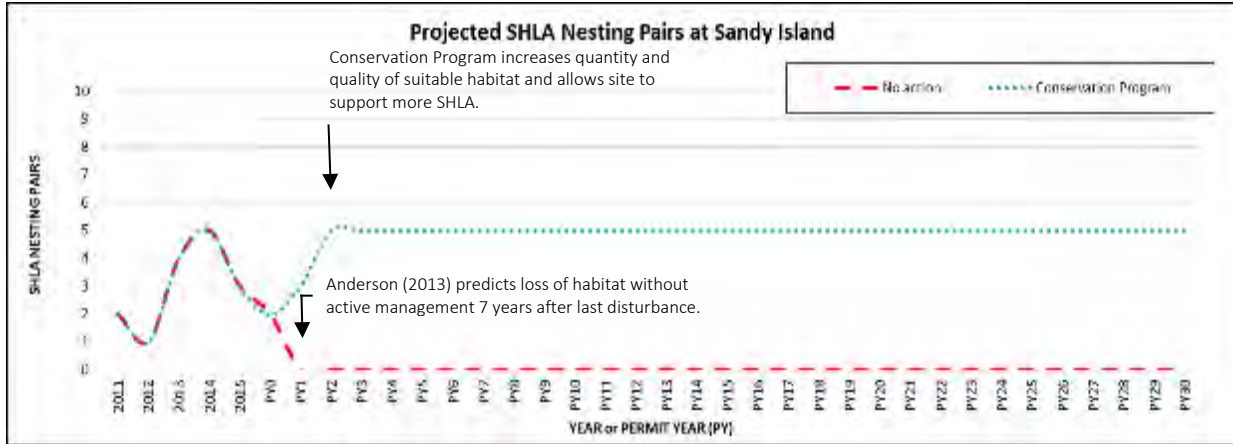


Figure 13. Projected SHLA nesting pairs at Sandy Island through the ITP term.

Since the Sandy Island Conservation Area is expected to naturally progress out of suitability for the SHLA by Permit Year 1, the site has little or no conservation value to the SHLA without the Port’s proposed conservation program. Implementation of the conservation measures described in this HCP would increase the estimated number of cumulative bird-years at Sandy Island from 0 to 148 over the term of the ITP (Figure 14).

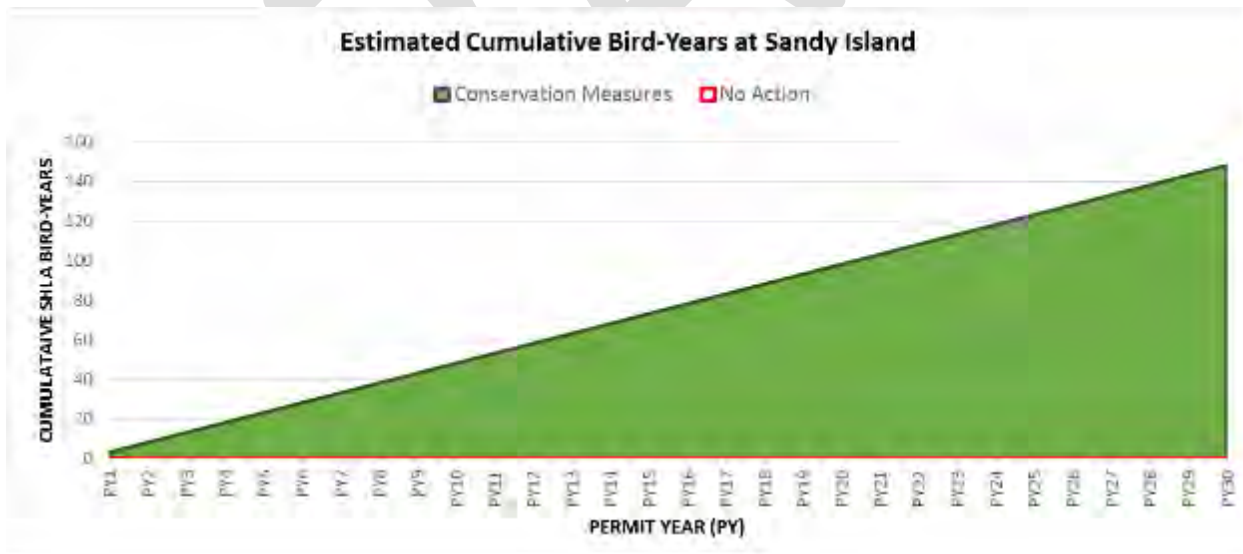


Figure 14. Estimated cumulative bird-years at the Sandy Island Conservation Area through the ITP term.

### 6.5.2. Net Conservation Benefit Across the Plan Area

The downward trajectory of suitable habitat conditions within the Plan Area in the absence of this HCP and the related ITP would eventually lead to the loss of most of the suitable habitat in the

Plan Area and the displacement of any SHLA that use this habitat. Marginal habitat may still exist within the PDX Intermediate Zone, but activities related to the implementation of the WHMP would likely result in the take of SHLA. Without the implementation of this HCP, the Plan Area may be expected to support only 18 cumulative bird-years. The SHLA would be naturally displaced from the Plan Area within a few years.

Therefore, as described above, conservation benefits of this HCP are significant. The interim conservation measures at Rivergate, the existing habitat benefit as a result of the WHMP activities at SW Quad, and the protection and management of the Sandy Island Conservation Area for 30 years would extend and expand the availability of suitable SHLA habitat within the Plan Area. These measures are expected to provide for a combined 239 SHLA cumulative bird-years within the Plan Area (Table 6). This is a substantial increase of 221 cumulative bird-years compared to “no action” by the Port (Table 6). The net conservation benefit of the Port’s HCP is clear and more than compensates for the loss of up to 46 SHLA nesting pairs over 30 years, as well as the additional seven SHLA nesting pairs as a result of future development at SW Quad.

**Table 6.** Net Conservation Benefit of the HCP and ITP

Project Area	Cumulative Bird-Years with HCP and ITP	Cumulative Bird-Years with No Action	Impact of the HCP and ITP (Cumulative Bird-Years)
Rivergate	9	6	+3
SW Quad	82	12	+70
PDX Intermediate Zone	0	0	0
Sandy Island Conservation Area	148	0	+148
<b>Total Plan Area</b>	<b>239</b>	<b>18</b>	<b>+221</b>

## 6.6. Monitoring

Comprehensive efforts by CNLM and USFWS to monitor SHLA abundance, distribution, and habitat in the lower Columbia River are ongoing (Anderson 2015; Keren and Pearson 2016; USFWS 2015a). The proposed monitoring program below is intended to be reasonably consistent with the level of effort found in *Survey Protocols and Strategies for Assessing Streaked Horned Lark Site Occupancy Status, Population Abundance, and Trends* (Pearson et al. 2016). All surveys for SHLA (nesting pairs, wintering individuals, or nests) will be performed by a qualified biologist permitted by USFWS to conduct such surveys.

### 6.6.1. Nesting Season Surveys

The Port will perform annual monitoring at Rivergate and the SW Quad until these sites are developed and at the proposed Sandy Island Conservation Area through the term of the ITP. The Port will use standard nesting season survey protocols for SHLA abundance and trend data (Pearson et al. 2016). Concurrent with these surveys, the Port will also perform modified vegetation cover point intercept surveys to collect data on the amount of vegetation, moss, and bare ground at the Project Areas (Bonham 1989). All SHLA surveys will occur under optimal field



conditions between late April and mid-July. Vegetation cover monitoring will be conducted between late May and early June to ensure that plants are mature. The specific time period for each type of proposed monitoring is provided in Table 7.

**Table 7.** SHLA Nesting Season Survey Date Ranges

Survey Season	Survey Protocol
Mid-April to Mid-May	Site Occupancy, Abundance and Trend
Late May / Early June	Site Occupancy, Abundance and Trend, Vegetation Cover
Late June	Abundance and Trend
Mid-July	Site Occupancy

In Permit Year 1, the Port will estimate the abundance of nesting SHLA across the entire Plan Area. Abundance surveys will be repeated annually during Permit Years 2 through 5 on portions of the Plan Area that have not been developed, including the SW Quad, and any remaining undeveloped parcels at Rivergate (Pearson et al. 2016). After Permit Year 5 and through the end of the ITP term, the Port will reduce the frequency of abundance surveys on undeveloped portions of the Plan Area to once every 3 years. Following completion of the drainfield system replacement, the Port will add the SW Quad back to the area subject to abundance survey.

Should a parcel of Rivergate, the SW Quad, or the Sandy Island Conservation Area be found to be unoccupied in any particular year, the Port would consult with the USFWS for guidance on standard monitoring protocols to detect the presence of SHLA.

On each site, vegetation surveys will be performed in the same year as abundance and trend surveys.

Field data will be collected using standardized data collection forms. SHLA observations will be recorded on field maps and with global positioning system (GPS) units. Survey results will be submitted to the USFWS as part of the annual report.

#### **6.6.1.1. WINTER AND FALL SURVEYS**

The Port will perform winter and fall season surveys at the Sandy Island Conservation Area annually for the entire ITP term. To date, there are no formal survey protocols for SHLA winter and fall season surveys. Until such protocols are developed and approved by the USFWS, the Port will conduct winter and fall season surveys using an area search method (Ralph et al. 1993). The area search is a quantitative, habitat-specific survey method that is useful for assessing the relative abundance of non-nesting SHLA. Area search surveys are time constrained and will be conducted when wind is less than 20 miles per hour with little to no precipitation and temperatures are at or above 30°F. One winter survey will be conducted in January and one fall survey will be conducted between September 10 and October 15. Survey data and related information will be provided to the USFWS in the annual report.

## **7. PLAN ADMINISTRATION**

### **7.1. Permit Term and Renewals**

The Port requests an ITP with a renewable 30-year term. While the Port anticipates development of Rivergate within 3 years of ITP issuance, the actual schedule for development could extend beyond that timeframe depending on market conditions. Similarly, the Port anticipates that replacement of the drainfield system and berm removal at the SW Quad will occur within a year or two of ITP issuance, but aviation wildlife hazard management activities will continue indefinitely. The requested 30-year ITP duration is also consistent with the maximum term of the conservation easement agreement allowable by DSL at the proposed Sandy Island Conservation Area. Therefore, the 30-year ITP term is expected to provide a sufficient timeline for implementation of Port's Proposed Activities and the conservation program of the HCP.

At the end of the ITP duration, the Port may request an ITP renewal to extend the ITP term. To request an ITP renewal, the Port must:

- have complied with the terms and conditions of the original permit, including reporting requirements;
- file a written request for a permit renewal, referencing the permit number, with the USFWS at least 30 days prior to the permit expiration date;
- certify that all statements and information presented in the original permit application are still correct or include a list of changes;
- provide specific information concerning the amount of incidental take that has occurred under the original permit and the amount of incidental take that remains unused; and
- submit a new easement request to DSL in coordination with USFWS.

If the Port files an ITP renewal request at least 30 days prior to the permit expiration date, then the ITP will remain valid while the USFWS processes the request. If the Port fails to file a request at least 30 days prior to permit expiration, then the ITP will become invalid on the original expiration date.

### **7.2. Permit Amendments**

#### **7.2.1. Minor Amendment**

Minor amendments include changes to the HCP that do not result in substantive changes to the ITP (administrative changes to the ITP would also be considered "minor"). Because these amendments do not require formal amendment of the ITP, they can be processed more quickly than amendments requiring modification of the ITP.

Pursuant with the HCP Handbook (USFWS and NMFS 1996), minor amendments are recommended only when:

(1) the amendment has the unanimous consent of the Permittee and FWS; (2) the original HCP established specific procedures for incorporating minor amendments so that the public had an opportunity to comment on the process, and such amendments are consistent with those procedures; (3) the HCP defines what types of amendments are considered minor; (4) a written record of any such amendments is prepared; and (5) the net effect on the species involved and level of take resulting from the amendment is not significantly different than analyzed under the original HCP and the Service's decision documents.

For the purpose of this HCP, minor administrative amendments are defined as amendments to the HCP that do not result in any change to the biological goals and objectives outlined in the HCP or result in any additional take or impacts to the SHLA.

The process for incorporating minor amendments will include written notification from the Port to the USFWS describing the proposed amendment with a rationale describing why the amendment is being requested and biologically supported evidence that the amendment will not result in any additional effects to the species. The USFWS will then review the amendment and if it concurs, it will provide written authorization to that effect to the Port. On the date the USFWS provides authorization approving the amendment, it will automatically go into effect, unless an alternative effective date is expressly identified in the authorization.

### **7.2.2. Major Amendment**

Section 10(a)(1)(B) of the ESA permits can be amended. An amendment is required when “the Permittee wishes to significantly modify the project, activity, or conservation program as described in the original HCP” (USFWS and NMFS 1996). Amendments may be required to accommodate “significant boundary revisions, alterations in funding or schedule, addition of a species to the permit that was not addressed in the original HCP, or adjustments to the HCP necessitated by unforeseen circumstances” (USFWS and NMFS 1996). A major permit amendment requires an addendum amendment to the HCP, a Federal Register notice, a public comment period of at least 30 days, compliance with NEPA including environmental review, and intra-agency consultation for Section 7 compliance.

The HCP will not be amended or modified in any way without written concurrence of both the Port and the USFWS.

## **7.3. Reporting**

The Port will provide the USFWS a report of HCP-related activities by December 31 of each year during the ITP term, including the year of expiration. The annual report will include at a minimum a discussion of:

- 1) Activity and date of conservation actions since last monitoring report.

- 2) Current on-site conditions that are or may be adversely affecting SHLA and their habitat, as well as any actions being undertaken or contemplated to address such conditions.
- 3) An evaluation of how conservation goals and performance standards are being met, what activities need to be undertaken to meet them in future year, or recommendations for revisions to goals and performance standards if changed circumstances have occurred.
- 4) Conservation actions anticipated prior to the next monitoring report submission.
- 5) HCP expenditures for the year.

## **7.4. Coordination**

The Port will coordinate with the USFWS regularly to provide updates regarding implementation of the Covered Activities, annual monitoring and reporting, site maintenance needs, and adaptive management. The Port will coordinate with the USFWS following submittal of the annual report to review the results and discuss future mitigation and monitoring measures.

The Port will notify the USFWS in writing of the initiation of development activities on the Project Areas at least 10 business days prior to the start of work.

### **7.4.1. Changed Circumstances**

Under the No Surprises Rule (63 FR 8859, codified at 50 CFR 17.22, 17.32, 222.2), the USFWS assures incidental take permittees that, so long as an approved HCP is being properly implemented, no additional land use restrictions or financial compensation will be required of the permittee with respect to the covered species (in this case, the SHLA). These assurances hold even if unforeseen circumstances arise after the permit is issued, indicating that additional mitigation is needed. To the extent that changed circumstances are provided for in the HCP, the permittee must implement the appropriate measures in response to the changed circumstances if and when they occur. The No Surprises Rule defines “changed circumstances” as “circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by plan developers and the USFWS and that can be planned for (e.g., the listing of new species, or a fire or other natural catastrophic event in areas prone to such events).”

#### **7.4.1.1. NO 4(d) SPECIAL RULE COVERAGE**

Currently, any incidental take of the SHLA that arises from the Port’s implementation of the PDX WHMP is exempted from the prohibitions on take by a Special Rule issued by the USFWS under Section 4(d) of the ESA (USFWS 2013a). Therefore, the Port does not currently need an ITP to provide take authorization for its aviation wildlife hazard management activities. However, it is possible, albeit unlikely, that the SHLA 4(d) Special Rule could be either withdrawn or modified or interpreted to not fully address the Port’s implementation of the PDX WHMP.

A changed circumstance will have occurred if the SHLA 4(d) Special Rule is either withdrawn or is modified or interpreted to not fully address the Port’s implementation of the PDX WHMP. In response to this changed circumstance, the Port has designed this HCP to address the full amount

of take authorization and impacts to SHLA, including if the 4(d) Special Rule is revoked or changed.

#### **7.4.1.2. SECTION 7 CONSULTATION FOR NEW DEVELOPMENT ON PDX**

As discussed in Section 1.2.2, to the extent that any such activities require approval by the FAA, or involve federal funds such as the FAA's AIP, a federal nexus would exist and consultation under Section 7 would be required. For example, development of the SW Quad would require a modification to the Port's existing ALP and would likely involve AIP grant funds. These FAA actions could trigger the requirement for Section 7 consultation for the SHLA at the SW Quad.

In response to this circumstance, this HCP has been designed to address anticipated take (seven SHLA nesting pairs) from the ultimate development of SW Quad in an effort to assist the FAA in future consultations at PDX by providing convenient mitigation options, should the FAA need to mitigate for and/or minimize effects to threatened or endangered species covered by this HCP. Although mitigation through an appropriately implemented HCP may expedite a consultation, there is no guarantee of expedited review or of any particular outcome. Future conservation and mitigation strategies for dealing with FAA consultations under Section 7 are not bound by those in this HCP.

#### **7.4.1.3. WHMP ESA CONSULTATION**

The FAA mandates that airport sponsors, such as the Port, maintain a safe operating environment. This includes conducting a WHA and preparing a WHMP when there has been a significant wildlife strike or other triggering event (14 CFR 139.337). A WHMP identifies the specific actions an airport sponsor will take to mitigate the risk of wildlife strikes at or near the airport and includes strategies to address aviation wildlife hazards specific to the airport location. These strategies can include, but are not limited to, hazing or harassment of species of concern to aviation safety; trapping and translocating problem wildlife; modifying habitat; and managing food, water, and vegetation. A WHMP is reviewed and revised as necessary based on hazards presented, or every 5 years (as required by the Port), whichever comes first.

A changed circumstance will have occurred if the consultation process for revising an existing WHMP requires additional agency consultation outside of the FAA, such as the USFWS. In this HCP, the Port demonstrates that it has and will maintain a strong working relationship with applicable agencies, such as the USFWS, to ensure the consistent exchange of information regarding impacts to SHLA on PDX property. While this HCP cannot fully address new consultation requirements should the WHMP revision and approval process change, it reinforces the Port's commitment to assisting in the conservation of SHLA by incorporating strategies that meet both the FAA and ESA requirements.

#### **7.4.1.4. LISTING OF A NEW SPECIES**

If a currently unlisted species is federally listed as endangered or threatened pursuant to the ESA after the ITP has been issued, the Port will determine if there is a potential for incidental take of the newly listed species to occur while conducting activities covered by the HCP. If so, the Port can choose to modify its actions to ensure incidental take of the species will be avoided, request



that the USFWS add the newly listed species to the ITP with a major amendment, or prepare a separate HCP for a new ITP covering the newly listed species.

#### **7.4.1.5. GLOBAL CLIMATE CHANGE**

A growing body of research has documented changes in the biotic and abiotic environment that are a result of an increase in global temperature and the continued concentration of greenhouse gases in the Earth's atmosphere (Intergovernmental Panel on Climate Change [IPCC] 2014). In coastal areas, one of the primary concerns associated with global climate change is the potential for sea levels to rise and for the frequency and intensity of storm events to increase (Tebaldi et al. 2012), ultimately resulting in changes in the tidal riverine environment of the Columbia River at Sandy Island. In the event that climate change impacts result in a net loss of SHLA habitat or individuals at Sandy Island over the term of the ITP, the Port will confer with the USFWS to identify possible measures addressing these changes. Future actions responding to this changed circumstance will be agreed upon by the Port and the USFWS, and will be based on the nature and extent of the effects associated with these impacts.

#### **7.4.1.6. CATASTROPHIC NATURAL EVENTS**

Catastrophic natural events that have the potential to occur in the Plan Area (fire, flood, new species invasions, disease, etc.) could affect the Port's ability to meet the biological goals and objectives described in this HCP. If such events occur at any of the monitored sites, then affects to SHLA will be documented and relayed to the USFWS and will be covered in the annual monitoring report. These events would be unplanned and would only be addressed if management actions are compliant with the conservation program and if required by USFWS.

Typical annual flooding and persistence of the spring freshet is unlikely to directly affect the Conservation Area and Rivergate, due to their high elevations, or the SW Quad, because it is protected from the Columbia River by an earthen levee. An extreme flooding event may result in a breach or disruption of the levee system or flooding of the sloughs that provide drainage for north Portland, thereby resulting in widespread flood damage, including SHLA habitat at the SW Quad. Earthquakes may also result in damage to the levee system, liquefaction of floodplain soils, or other related effects that adversely impact SHLA habitat within the Plan Area. Extreme flooding may also cause accelerated active erosion of the Sandy Island shoreline in excess of the continual erosion of the shoreline by normal river flows. If such stochastic events result in erosion of the Conservation Area acreage or somehow adversely impact the habitat in the Plan Area, the Port will take steps to address the issue if such is within the Port's control. The Port will consult with the USFWS to determine if such actions could result in take and therefore whether an amendment to the ITP would be required to provide take coverage before implementing any such actions.

### **7.5. Unforeseen Circumstances**

"Unforeseen circumstances" are changes in circumstances affecting a species or geographic area covered by a habitat conservation plan that could not reasonably have been anticipated by plan developers and the USFWS at the time of the conservation plan's negotiation and development, and that result in a substantial and adverse change in the status of any covered species. The USFWS will have the burden of demonstrating that unforeseen circumstances exist and must base the

determination on the best scientific and commercial data available. The USFWS shall notify the Port in writing of any unforeseen circumstances the USFWS believes to exist.

The No Surprises Rule states that the USFWS may require additional conservation measures of an incidental take permittee as a result of unforeseen circumstances “only if such measures are limited to modifications within conserved habitat areas, if any, or to the conservation plan’s operating conservation program for the affected species, and maintain the original terms of the conservation plan to the maximum extent possible.” The USFWS shall not require the commitment of additional land or financial resources by the permittee without the consent of the permittee, or impose additional restrictions on the use of land, water, or other natural resources otherwise available for use by the permittee under the original terms of the ITP. No Surprises assurances apply only to the species adequately covered by the habitat conservation plan (i.e., the SHLA), and only to those permittees who are in full compliance with the terms of their plan, permit, and other supporting documents, as applicable.

## 8. FUNDING PLAN

The Port will provide all funds necessary for the continued management and monitoring of the proposed Sandy Island Conservation Area, at a level consistent with the budget shown in Table 8, for 30 years. The Port is not proposing the establishment of an endowment fund at this time because the USFWS has not typically required management endowments when the property holder is a public agency.

Table 8 identifies the currently expected costs needed to adequately fund the activities described in the conservation program. At this time, the estimated budget for implementation of the HCP is approximately \$850,594.00 over 30 years. If applicable, additional funds may be set aside within the Applicant’s annual operating budget for implementation of adaptive management strategies such as filling the basin or additional signage.

As a local agency, the Port guarantees that funding for the implementation of the HCP will be provided as an annual operating expenditure (operation and maintenance costs, insurance, payroll, monitoring and maintenance costs, audit costs, and agency fee costs). Mitigation measures, including the establishment of the conservation easement on Sandy Island and initial vegetation management mitigation measures will be completed prior to activities resulting in take of SHLA.

**Table 8.** Estimated HCP Implementation Budget

TASK	DURATION	DESCRIPTION	ANNUAL COST	TOTAL COST (1.5% annual inflation)
<b>Rivergate Project Area (120.6 acres, buildout Year 3)</b>				
Initial vegetation management	Year 1	Removal of woody vegetation and Year 1 mowing	\$ 6,294.80	\$ 6,294.80
Recurring vegetation management	Years 2–3	Mowing annually, ceases once all parcels are developed	\$ 3,882.80	\$ 7,940.33
Bird banding – nest search and monitoring	Year 1	6 6-hour surveys, 1 biologist, in season immediately prior to construction of Rivergate parcel A1	\$ 4,352.80	\$ 4,352.80

TASK	DURATION	DESCRIPTION	ANNUAL COST	TOTAL COST (1.5% annual inflation)
Bird banding	Year 1	2 6-hour banding sessions, 2 biologists	\$ 3,059.60	\$ 3,059.60
Nesting season surveys	Years 1–3	3 6-hour surveys, 1 biologist	\$ 2,176.40	\$ 6,627.14
Winter and fall surveys	Years 1–3	2 6-hour surveys, 1 biologist	\$ 1,535.60	\$ 4,675.90
Annual report	Years 1–3	Ceases once all parcels are developed	\$ 3,111.00	\$ 9,473.00
<b>Rivergate Total</b>			<b>\$</b>	<b>42,423.56</b>
<b>SW Quad Project Area (204.7 acres, approx. 124 acres for annual discing, drainfield project in Year 1, development in Year 25)</b>				
Recurring vegetation management	Years 1–25	Discing of 124 acres for 25 years (annually)	\$ 3,984.80	\$ 117,551.60
Bird banding - nest search surveys and monitoring	Year 1	6 6-hour surveys, 1 biologist, in season immediately prior to drainfield construction	\$ 4,098.80	\$ 4,098.80
Bird banding	Year 1	2 6-hour banding sessions, 2 biologists	\$ 3,059.60	\$ 3,059.60
Nesting season surveys	Years 1–25	3 6-hour surveys, 1 biologist, Years 1-5 and then every 2-3 years (12 survey years)	\$ 2,176.40	\$ 30,066.97
Winter and fall surveys	Years 1–25	2 6-hour surveys, 1 biologist, Years 1-5 and then every 2-3 years (12 survey years)	\$ 1,535.60	\$ 19,586.58
Annual report	Years 1–25	Ceases when site is fully developed	\$ 3,111.00	\$ 91,774.50
<b>SW Quad Total</b>			<b>\$</b>	<b>266,138.04</b>
<b>Sandy Island Conservation Area (32 acres; 30 years)</b>				
Conservation management plan	Year 1	Prepare plan in Year 1	\$ 6,813.00	\$ 6,813.00
Conservation management plan - 5-year review and updates	Years 5–25	Every 5 years (5 updates over 30 years)	\$ 3,028.00	\$ 22,664.58
Initial vegetation management	Year 1	Initial tree removal, Scotch broom removal, and discing/scraping of vegetation over half of site	\$ 45,264.80	\$ 45,264.80
Signage	Year 1	Design, fabrication, installation, maintenance (during monitoring visits); to be installed during initial clearing; 5 signs	\$ 2,754.00	\$ 2,754.00
Recurring vegetation management	Years 1–30	Discing/scraping of vegetation over half of site and Scotch broom control once every 3 years (10 events total)	\$ 3,054.00	\$ 38,052.84
Nesting season surveys	Years 1–30	3 8-hour surveys, 2 biologists, Years 1–5 and then every 2–3 years (13 survey years)	\$ 7,467.80	\$ 113,883.95

TASK	DURATION	DESCRIPTION	ANNUAL COST	TOTAL COST (1.5% annual inflation)
Winter and fall surveys	Years 1–30	2 8-hour surveys, 2 biologists, Years 1–5 and then every 2–3 years (13 survey years)	\$ 5,063.20	\$ 77,213.80
Annual report	Years 1–30	Years 1-30	\$ 4,034.00	\$ 147,341.85
<b>Sandy Island Total</b>				<b>\$ 453,988.82</b>
<b>Administrative</b>				
Annual coordination with USFWS, project management	Years 1–30	15 hours per year over 30 years	\$ 1,905.00	\$ 69,580.13
Conservation easement	Year 1	Flat fee payable to DSL	\$ 9,546.00	\$ 9,546.00
<b>Administrative Total</b>				<b>\$ 79,126.13</b>
<b>Contingency Fund</b>				
Total Contingency fund		10% of total project cost annually	\$ -	\$ 8,916.77
<b>GRAND TOTAL</b>				<b>\$ 850,593.32</b>

## 9. ALTERNATIVES ANALYSIS

Section 10(a)(2)(A) of the ESA requires that HCPs include a description of the “alternative actions to such taking the permittee considered and the reasons why such alternatives are not being utilized.” The following is an analysis of the Port’s reasoning for not selecting the alternatives.

### 9.1. No Take Alternative

Under a no take alternative, the Port would not seek an ITP under Section 10(a) of the ESA. The Port would not use the Project Areas in ways that would result in an incidental taking of SHLA. For the purposes of this analysis, the Port would allow the Project Areas to naturally transition out of suitability of the SHLA. The Port would suspend all activities on Rivergate until SHLA are naturally displaced from the site, after which the Port would develop the Rivergate parcels without the risk of taking SHLA. At the SW Quad, the Port would rely on the authority of the SHLA 4(d) Special Rule to continue aviation wildlife hazard management activities on the site, likely changing the type of management strategies to those that do not favor the creation or maintenance of SHLA habitat. The Port expects that the SHLA would leave the site before development of the SW Quad occurs.

The Port expects that given the continuous threats of mortality resulting from surrounding land uses or predation at both Rivergate and the SW Quad, the increasing levels of encroaching vegetation at Rivergate in spite of high levels of reproductive success observed there, and the transition of upland conditions to wetland and subsequent installation of silt fencing or other visual barriers to dissuade wildlife species of concern to aviation safety at the SW Quad (which are airport maintenance activities permissible per the 4(d) Rule), SHLA will eventually abandon these properties. There is no mandate for continued maintenance of vegetation of these sites to ensure that vegetation remains suitable for SHLA habitat, and intervention at these locations may give rise to take liability. In the absence of SHLA, there would be no impediment to Port activities at these sites.

The no take alternative would also mean that the Sandy Island Conservation Area would not be placed under conservation. Because there are currently no mandates for vegetation management there, currently suitable and occupied critical habitat there would also transition out of suitability.

The no take alternative would not provide any benefits described for the proposed conservation program, while resulting in the loss of existing habitat through natural processes. The no-take alternative thus represents a net loss in conservation. This alternative does not provide sufficient certainty with respect to the Port's ongoing operations or timing of other desired activities, even though the Port would likely be spared the mitigation costs. For these reasons, this alternative was rejected.

## **9.2. No Interim Conservation Measures**

Under this alternative, the Port would only implement conservation measures at the Sandy Island Conservation Area. Interim conservation measures would not be implemented at Rivergate or the SW Quad. Therefore, the routine site management that promotes the persistence of suitable habitat for the SHLA would not occur and the overall net benefit of the HCP would be reduced from 236 cumulative bird-years to only 125 cumulative bird-years (a 47% reduction in conservation benefit). Additionally, the Port would exclude from the Plan Area boundary those Rivergate parcels that are not currently known to be occupied by the SHLA. Development on these currently unoccupied parcels would continue at the Port's discretion.

This alternative was not chosen because:

- 1) the conservation measures at Rivergate and the SW Quad exemplify the Port's commitment to ensuring the optimal conservation benefit to the subspecies;
- 2) SHLA's strong fidelity for nesting sites (Pearson et al. 2008) may prompt nesting pairs to occupy other lands within the vicinity for which the Port would not have ESA Section 10 assurances;
- 3) winter and nesting habitat would not be available in the interim as parcels at Rivergate are developed, thereby reducing the potential for these individuals to persist in the area; and
- 4) the maintenance of field conditions as suitable habitat for SHLA also satisfies vegetation standards for aviation wildlife hazard management at the SW Quad and the standard maintenance regime for much of the Port's vacant industrial land. The Port desires to conduct these activities for reasons other than the presence or absence of SHLA.



## 10. LITERATURE CITED

- Altman, B. 1999. Status and conservation of state sensitive grassland bird species in the Willamette Valley. Report to Oregon Department of Fish and Wildlife. Corvallis, Oregon.
- . 2011. Historical and Current Distribution and Populations of Bird Species in Prairie-Oak Habitats in the Pacific Northwest. *Northwest Science*, 85(2):194–222.
- American Ornithologists' Union. 1957. Check-list of North American birds. 5th edition. American Ornithologists' Union, Washington, D.C.
- Anderson, H. 2006. Streaked Horned Lark (*Eremophila alpestris strigata*) Nest Predation on Lowland Puget Prairie Remnants, Washington State – The Effects of Internal Edges and Scot's Broom (*Cytisus scoparius*). M.S. Thesis, The Evergreen State College, Olympia, Washington. 37 pp.
- . 2010. Columbia River Streaked Horned Lark Habitat Analysis and Management Recommendations. The Nature Conservancy, Seattle, Washington
- . 2011. Columbia River Streaked Horned Lark Restoration Trial Final Report. Center for Natural Lands Management, Olympia, Washington.
- . Streaked Horned Lark Literature Review. Report to the Port of Portland. Center for Natural Lands Management, Olympia, Washington.
- . 2013. Streaked Horned Lark Habitat Analysis and Dredged Material Deposition Recommendations for the Lower Columbia River. Report to the U.S. Fish and Wildlife Service, Lacey, Washington. Center for Natural Lands Management, Olympia, Washington.
- . 2015. Columbia River Streaked Horned Lark Surveys and Monitoring. 2015 Interim Report #1. Unpublished Technical Document. Center for Natural Lands Management, Olympia, Washington.
- Anderson, H., and S. Pearson. 2015. Streaked Horned Lark Habitat Characteristics. Report to the U.S. Fish and Wildlife Service, Lacey, Washington. Center for Natural Lands Management, Olympia, Washington.
- Anderson, H., and G. Slater. 2015. Columbia River Streaked Horned Lark Surveys and Monitoring Final Report 2014. Unpublished Technical Document. Center for Natural Lands Management, Olympia, Washington.
- Audubon Society of Portland. 2014. Winter Surveying for Streaked Horned Larks in the Portland Region: A Summary of 2014 Effort. Audubon Society of Portland, Portland, Oregon.
- Beason, R.C. 1995. Horned lark (*Eremophila alpestris*). In *The Birds of North America*, No. 195, A. Poole and F. Gill, editors. The American Academy of Natural Sciences, Philadelphia and the
- Bonham C. D. 1989. Measurements for terrestrial vegetation. John Wiley & Sons, New York, USA.
- Camfield, A.F., S.F. Pearson, and K. Martin. 2010. Life history variation between high and low elevation subspecies of horned larks *Eremophila* spp. *Journal of Avian Biology*. 41:273–281.
- Dinkins, M.F., A.L. Zimmerman, J.A. Dechant, B.D. Parkin, D.H. Johnson, L.D. Igl, C.M. Goldade, and B.R. Euliss. 2003. Effects of management practices on grassland birds: Horned Lark. Northern Prairie Wildlife Research Center, Jamestown, ND. Available at: <http://www.npwrc.usgs.gov/resource/literatr/grasbird/hola/hola.htm> (Version 12 Dec. 2003).

- Drovetski, S.V., S.F. Pearson, and S. Rohwer. 2005. Implications of mitochondrial DNA diversity on the conservation status of the streaked horned lark *Eremophila alpestris strigata*. *Conservation Genetics* 6:875–883.
- Federal Aviation Administration (FAA). 2015. National Wildlife Strike Database. U.S. Department of Transportation Federal Aviation Administration, Washington, D.C.
- Galen, C. 2013a. Seasonal Avian Surveys Targeting a Selection of Port of Portland. Unpublished Technical Memorandum. Pacific Habitat Services, Wilsonville, Oregon.
- . 2013b. Port of Portland Grassland Avian Surveys: January 2013 – October 2013. Unpublished Technical Report. Pacific Habitat Services, Wilsonville, Oregon.
- . 2014. Port of Portland Grassland Avian Surveys: January 2014 – October 2014. Technical Memorandum. Pacific Habitat Services, Wilsonville, Oregon.
- . 2015a. Multnomah County Drainage District Levee Vegetation Maintenance: Streaked Horned Larks at Broughton Beach. Technical Memorandum. Pacific Habitat Services, Wilsonville, Oregon.
- . 2015b. Port of Portland Grassland Avian Surveys: January 2015 – October 2015. Technical Memorandum. Pacific Habitat Services, Wilsonville, Oregon.
- Intergovernmental Panel on Climate Change (IPCC). 2014. Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.
- Keren, I. N. and S. F. Pearson. 2016 (in prep). Streaked Horned Lark Abundance and Trends for the Puget Lowlands and the Lower Columbia River/Washington Coast, 2010-2014: Research Progress Report DRAFT. Washington Department of Fish and Wildlife, Wildlife Science Division, Olympia
- Lassen, M.E. 2011. Literature review: Can airports be managed to both minimize bird strikes and protect vulnerable grassland bird species such as the streaked horned lark? The Nature Conservancy.
- Mackenzie. 2014. Regional Industrial Site Readiness: 2014 Inventory Update. Portland, Oregon. Prepared for Business Oregon, Metro, NAIOP - Commercial Real Estate Development Association Oregon Chapter, Oregon Department of Land Conservation and Development, Port of Portland, and the Portland Business Alliance. 29 pp.
- Moore, R. 2008. Inventory of streaked horned lark (*Eremophila alpestris strigata*) populations on Federal, State, and municipal lands in Oregon's Willamette Valley. Technical Report. U.S. Fish and Wildlife Service, Portland, Oregon.
- . 2010. Abundance and Reproductive Success of Streaked Horned Larks (*Eremophila alpestris strigata*) in Multnomah County, OR: Breeding Season 2010. Report to the U.S. Fish and Wildlife Service, Portland, Oregon.
- . 2011. Managing agricultural land to benefit streaked horned lark: a guide for landowners and land managers. Oregon State University and Center for Natural lands Management.
- . 2012. Abundance and Reproductive Success of Streaked Horned Larks (*Eremophila alpestris strigata*) in Multnomah County, OR: Breeding Season 2011. Oregon State University, Corvallis, Oregon.

- . 2013. Streaked Horned Larks at Rivergate Corporate Center Site, Multnomah County, Oregon. Unpublished Technical Report.
- . 2014. Streaked Horned Larks at Rivergate Corporate Center Site, Multnomah County, Oregon, Breeding Season 2014. Unpublished Technical Report.
- National Oceanic and Atmospheric Administration Fisheries. 2012. Status of ESA Listings & Critical Habitat Designations for West Coast Salmon & Steelhead. Available at:  
[http://www.westcoast.fisheries.noaa.gov/publications/protected\\_species/salmon\\_steelhead/status\\_of\\_esa\\_salmon\\_listings\\_and\\_ch\\_designations\\_map.pdf](http://www.westcoast.fisheries.noaa.gov/publications/protected_species/salmon_steelhead/status_of_esa_salmon_listings_and_ch_designations_map.pdf).
- . 2014. ESA-Listed Species List. NOAA Fisheries: West Coast Region. Available at:  
[http://www.westcoast.fisheries.noaa.gov/protected\\_species/species\\_list/species\\_lists.html](http://www.westcoast.fisheries.noaa.gov/protected_species/species_list/species_lists.html).
- Pearson, S.F., and B. Altman. 2005. Range-wide streaked horned lark (*Eremophila alpestris strigata*) assessment and preliminary conservation strategy. Washington Department of Fish and Wildlife, Wildlife Program, Olympia, Washington.
- Pearson, S.F., and M. Hopey. 2004. Streaked horned lark inventory, nesting success and habitat selection in the Puget lowlands of Washington. Natural Areas Report 2004-1. Washington Department of Natural Resources, Olympia, Washington.
- . 2005. Streaked Horned Lark nest success, habitat selection, and habitat enhancement experiments for the Puget lowlands, coastal Washington and Columbia River Islands. Natural Areas Program Report 2005-1. Washington Department of Natural Resources. Olympia, Washington.
- Pearson, S.F., H.E. Anderson, and M. Hopey. 2005a. Streaked Horned Lark Monitoring, Habitat Manipulations, and a Conspecific Attraction Experiment. Washington Department of Fish and Wildlife, Olympia, WA. 38 pp.
- Pearson, S.F., M. Hopey, W.D. Robinson, and R. Moore. 2005b. Range, Abundance and Movement Patterns of Wintering Streaked Horned Larks (*Eremophila alpestris strigata*) in Oregon and Washington. Natural Areas Program Report 2005-1. Washington Department of Natural Resources. Olympia, Washington.
- Pearson, S.F., A.F. Camfield, and K. Martin. 2008. Streaked Horned Lark (*Eremophila alpestris strigata*) fecundity, survival, population growth and site fidelity: Research progress report. Washington Department of Fish and Wildlife, Wildlife Science Division, Olympia, Washington.
- Pearson, S.F., M. Linders, I. Keren, H. Anderson, R. Moore, G. Slater, and A. Kreager. 2016. Streaked Horned Lark Occupancy and Abundance Survey Protocols and Strategies. Washington Department of Fish and Wildlife, Wildlife Science Division, Olympia.
- Port of Portland (Port). 2009. Portland International Airport Wildlife Hazard Management Plan – 2009 Update. Portland, Oregon.  
[https://www.portofportland.com/PDFPOP/Env\\_WildfireHzdMgtPrgm\\_PDX\\_2009.pdf](https://www.portofportland.com/PDFPOP/Env_WildfireHzdMgtPrgm_PDX_2009.pdf); accessed May 2, 2016. 101 pp + appendices.
- . 2013. Undeveloped Properties Management Plan: 2013. Unpublished technical document. Portland, Oregon.
- . 2015. Airport Information Report Manager (AIRMAN) Database. Portland, Oregon.

- Ralph, C. John; Geupel, Geoffrey R.; Pyle, Peter; Martin, Thomas E.; DeSante, David F. 1993. Handbook of field methods for monitoring landbirds. Gen. Tech. Rep. PSWGTR-144. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture; 41 p.
- Slater, G., and H. Anderson. 2016. Columbia River Streaked Horned Lark Surveys and Monitoring. Draft Report. Oregon Center for Natural Lands Management. 35 pp.
- Stinson, D.W. 2005. Status report for the Mazama pocket gopher, streaked horned lark, and Taylor's checkerspot. Washington Department of Fish and Wildlife, Wildlife Program, Olympia, Washington.
- . 2016. Periodic status review for the Streaked Horned Lark in Washington. Washington Department of Fish and Wildlife, Olympia, Washington. 20 + iii pp.
- Tebaldi, C., B. H. Strauss, and C. E. Zervas (2012), Modelling sea level rise impacts on storm surges along US coasts, *Environmental Research Letters*, 7(1)
- Thorson, T.D., S.A. Bryce, D.A. Lammers, A.J. Woods, J.M. Omernik, J. Kagan, D.E. Pater, and J.A. Comstock. 2003. Ecoregions of Oregon (color poster with map, descriptive text, summary tables, and photographs: map scale 1:1,500,000). Reston, Virginia, U.S. Geological Survey. [https://archive.epa.gov/wed/ecoregions/web/html/or\\_eco.html](https://archive.epa.gov/wed/ecoregions/web/html/or_eco.html); accessed May 2, 2016.
- U.S. Army Corps of Engineers (USACE). 2014. Biological Assessment for the Continued Operations and Maintenance Dredging Program for the Columbia River Federal Navigation Channel. Unpublished technical document. 212 pp.
- U.S. Fish and Wildlife Service (USFWS). 2010. U.S. Fish and Wildlife Service Species Assessment and Listing Priority Assignment Form. Washington Fish and Wildlife Office, Lacey, Washington.
- . 2013a. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Taylor's Checkerspot Butterfly and Threatened Status for the Streaked Horned Lark; Final Rule. 78 Federal Register 61452.
- . 2013b. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Taylor's Checkerspot Butterfly and Streaked Horned Lark; Final Rule. 78 Federal Register 61506.
- . 2015a. Biological Opinion Consultation for U.S. Army Corps of Engineers Continued Operations and Maintenance Dredging Program for the Columbia River Federal Navigation Channel in Oregon and Washington (2014-2018). USFWS Reference Number: 01EOFW00-2014-F-0112. U.S. Army Corps of Engineers, Portland District. Portland, Oregon
- . 2015b. USFWS Threatened and Endangered List, Multnomah County and Columbia County. Available at: <http://www.fws.gov/oregonfwo/Species/Lists/RequestList.asp>. Accessed on August 10, 2015.
- U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). 1996. Habitat Conservation Planning and Incidental Take Permit Processing Handbook. <http://www.fws.gov/Endangered/esa-library/index.html>; accessed May 5, 2016.
- . 2015. Interagency Cooperation – Endangered Species Act of 1973, as Amended; Incidental Take Statements. Final Rule. 80 Federal Register 26832 – 26845.
- U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA). 2000. Availability of a Final Addendum to the Handbook for Habitat Conservation Planning and Incidental Take Permitting. 65 Federal Register 35242-35257 (June 1, 2000).

Wolf, A., H. Anderson, and G. Slater. 2015. Habitat and Species Cooperative Restoration Program Joint Base Lewis-McChord. Center for Natural Lands Management. Olympia, Washington. Unpublished technical document. 70 pp.

DRAFT



**APPENDIX A**  
**LIST OF CONTRIBUTORS**

# List of Contributors

## Port of Portland Team:

- Dana Green, Senior Natural Resources Manager
- Ian Whitlock, Assistant General Counsel
- Nick Atwell, Aviation Wildlife Manager
- Marla Harrison, Environmental Planning Manager
- Joe Mollusky, Real Estate Program Manager

## Consultant Team

- Taya K. MacLean, Senior Biologist, AKS Engineering and Forestry (HCP Coauthor, Agency and Science Team Coordination)
- Amanda Aurora, Regulatory Specialist, SWCA Environmental Consultants (HCP Coauthor)
- Amanda Childs, SWCA Environmental Consultants (Project Manager)
- Jennifer Rideout, SWCA Environmental Consultants (Project Coordinator)

## Science Advisory Team:

- Dan Bell, The Nature Conservancy
- Joe Buttafuoco, The Nature Conservancy
- Hannah Anderson, Center for Natural Lands Management
- Gary Slater, Center for Natural Lands Management
- Bob Altman, The American Bird Conservancy

## U.S. Fish and Wildlife Coordinators

- Rich Szlemp, Biologist, U.S. Fish and Wildlife Service
- Cat Brown, Wildlife Biologist, U.S. Fish and Wildlife Service

**APPENDIX B**

**DSL SANDY ISLAND SHLA CONSERVATION  
EASEMENT SUBMITTAL (2016–2046)**

### Thank you for your payment!

This service has been provided by Columbia County, OR and Point & Pay. We value your business. Please keep this receipt for future reference.

You have made a payment to Columbia County, OR , your payment was processed at Land Development Services office . Columbia County Thanks You for your payment.

**Name:** Nicole Miranda  
**Address:** P O Box 3529, Portland OR, US, 97208  
**Contact:** 5034156507  
**Comments:** LUC 16-85

**Payment ID:** 24923583  
**Date:** 06/21/16 09:46 AM  
**Subtotal:** \$36.00  
**Fee:** \$2.00  
**Total:** \$38.00  
**Method:** Credit or Debit Card(\*\*\*\*\*5920)

Item Purchased	Transaction Description	Account	Amount
Permits-LDS	Columbia County		\$36.00

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_/\_\_\_\_/\_\_\_\_  
/\_\_\_\_\_

By signing this receipt you agree to the terms and conditions of this service.

You will see one line item on your credit or debit card statement indicating the amount you paid and will be identified as *Columbia County* . If you have any questions about the charges please call 1-888-891-6064.

[Print Receipt](#) [Close Window](#)

COLUMBIA COUNTY COURTHOUSE  
 LAND DEVELOPMENT SERVICES  
 230 STRAND STREET  
 ST. HELENS, OR 97051  
 (503) 397-1501

Receipt #: 17674      Receipt Date: 06/21/2016 09:51 AM  
 Station: 15            Cashier: CLAYK  
 Receipt Name: PORT OF PORTLAND

Comments: LUC 16-85

**2016-0201 P-P: PLANNING PERMITS**

	Detail	Amount
Map #	61180000100	
Customer Name	PORT OF PORTLAND	
Customer Address	P O BOX 3529	
Customer City/State/Zip	PORTLAND OR 97208	
Owner Name	PORT OF PORTLAND	
Situs Address	SANDY ISLAND	
Situs City	GOBLE OR	
Usage or purpose	LUC	
Contractor	PORT OF PORTLAND	
Permit #	LUC 16-85	
Code Compl. Investig. Fee (Y/N)	NO	
Zoning Compliance Stmt. (Y/N)	YES	\$36.00
		<b>ITEM TOTAL: \$36.00</b>

Thank You  
 Retain this receipt for your records

<b>Receipt Total</b>		<b>\$36.00</b>
CREDIT CARD	24923583	\$36.00



### 5 - ADDITIONAL INFORMATION

Name, address and phone number for all adjoining property owners

The relevant portion of Sandy Island is owned by Oregon Department of State Lands. The adjacent submerged and submersible lands are owned by the Oregon Department of State Lands.

Have you applied for Corps of Engineers or Department of State Lands permits for this project?     Yes  No

If yes, what identification number(s) were assigned by the respective agencies:

Corps # : \_\_\_\_\_ State of Oregon # : \_\_\_\_\_

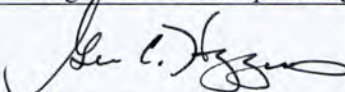
### 6 - CITY/COUNTY PLANNING DEPARTMENT AFFIDAVIT

(to be completed by local planning official)

- This project is not regulated by the local comprehensive plan and zoning ordinance.
- This project has been reviewed and is consistent with the local comprehensive plan and zoning ordinance.
- This project has been reviewed and is **not** consistent with the local comprehensive plan and zone ordinance.
- Consistency of this project with the local planning ordinance cannot be determined until the following local approval(s) are obtained:

- Conditional Use Approval
- Development Permit
- Plan Amendment
- Zone Change
- Other \_\_\_\_\_

An application  has  has not been made for local approvals checked above.

Signature of local planning official	Title	City / County	Date
	<i>Planning Manager</i>	<i>Columbia County</i>	<i>6/20/16</i>

### 7 - BUSINESS INFORMATION

**LIMITED LIABILITY COMPANY:** Complete the following

- a) Do you have authority from the Oregon Secretary of State to do business in the State of Oregon?     Yes  No
- b) Is the LLC presently in good standing with the Oregon Secretary of State?     Yes  No
- c) In what state is the LLC primarily domiciled? \_\_\_\_\_
- d) Is the LLC name and the Oregon business address the same as stated in this application?     Yes  No

If no, state the legal Name: \_\_\_\_\_

Address:

\_\_\_\_\_

Street or Box Number
City
State
Zip Code

Additionally, a LIMITED LIABILITY COMPANY must submit the following with the application:

- a) A certified copy of the company's Articles of Organization
- b) A copy of the company's operating agreement

**CORPORATION:** Complete the following:





# Easement Application Form Across State Land or Waterbody

Date Received:

**RECEIVED**

**MAY 23 2016**

Land Development Services

[www.oregon.gov/dsl](http://www.oregon.gov/dsl)

LUC 16-85

<p><b>(West of the Cascade Crest) WESTERN REGION</b> Department of State Lands 775 Summer Street NE, Suite 100 Salem, OR 97301-1279 503-986-5200 FAX: 503-378-4844</p>	<p>Mail completed application with the non-refundable application fee, made payable to Oregon Department of State Lands.</p> <hr/> <p>We accept Visa &amp; Master Card; please call (503) 986-5200</p>	<p><b>(East of the Cascade Crest) EASTERN REGION</b> Department of State Lands 1645 NE Forbes Rd, Suite 112 Bend, OR 97701 541-388-6112 FAX: 541-388-6480</p>
--	--	---

<p><b>For Office Use Only:</b></p> <p>AGENCY WILL ASSIGN NUMBER</p> <p>Oregon Department of State Lands Application No. _____</p>	<p><b>Please indicate Existing:</b></p> <p>Oregon Department of State Lands Application No. 58554-EA</p>
---	--

## 1 - APPLICANT INFORMATION

Applicant is:	<input type="checkbox"/> Private Facility	<input checked="" type="checkbox"/> Government Entity	<input type="checkbox"/> PUC Regulated Utility	<input type="checkbox"/> Person
Applicant's Name and Address: Port of Portland		Home Phone:		
P.O. Box 3529		Business Phone: 503-415-6507		
Portland, OR 97208		Fax:		
Co-Applicant's Name and Address:		Email: Nicole.miranda@portofportland.com		
		Home Phone:		
		Business Phone:		
		Fax:		
		Email:		
Authorized Agent's Name and Address:		Home Phone:		
		Business Phone:		
		Fax:		
Riparian Property Owner Name and Address: (vested); if different than applicant		Home Phone:		
		Business Phone:		
		Fax:		

## 2 - PROJECT LOCATION

Street, Road or other descriptive location		Legal Description		
Sandy Island, Columbia River (see attached Easement 33472-A for survey and legal description)		Township 6N	Range R1W	Section 18/19
In or Near (City or Town) Goble, OR	County Columbia	Tax Map # 6118-00-00100		Tax Lot #
Waterway Columbia	River Mile O-75.8	County Property Tax Account Number		



### 3 - PROJECT INFORMATION

Activity Type (Check all that apply):

LUC 16-85

a)  Water                       Storm water                       Sewer                       Gas                       Electricity

Combined Water Pipeline & Associated Fixture                       Combined Sewer/Storm water

Communication Cable                       Pressure Sewer Line                       Effluent Outfall and Diffuser

Area request (length x width): \_\_\_\_\_

b)  Ditches                       Irrigation                       Mining                       Drainage

Other: \_\_\_\_\_

Area request (length x width): \_\_\_\_\_

c)  Railroad                       Road, trail                       Bridge

Area request (length x width): \_\_\_\_\_

d)  Surface                       Subsurface                       Overhead

e)  Other: Describe: **Easement for Conservation Purposes (Streaked Horned Lark Habitat)**

f) Each crossing requires a separate easement.                      Total number of crossings requested: **1**

a) Are there any State, Federal listed, or Candidate Endangered Species (including plants, fish or wildlife) on the project site?                       Yes                       No                       Unknown

b) Are there any Cultural Resources on or near the project site?                       Yes                       No                       Unknown

c) Is the project site near a State Scenic Waterway?                       Yes                       No                       Unknown

d) If yes to any of the above, please explain in the project description (Section 4)                       Yes                       No                       Unknown

If you are applying for a special use easement for water pipeline and associated fixture, do you have a pending or valid Department of Water Resources application to appropriate water?                       Yes                       No                       Unknown



### 4 - PROJECT PURPOSE & DESCRIPTION

Existing

Proposed

**Project Purpose and Need:**

The Port of Portland currently holds an Oregon Department of State Lands issued "Dredge Spoils Disposal Site Easement" (see attached 33472-EA) for a 31.85-acre site on Sandy Island in Columbia County, valid through February 16, 2030. The disposal easement was obtained as part of the Port of Portland's Non-federal Sponsor responsibilities associated with upland placement of Columbia River Federal Navigation Channel sediment dredged to maintain the channel in support of the U.S. Army Corps of Engineers (Corps) federally authorized mandate.

The current Corps Biological Assessment and personal communications indicates that the Sandy Island placement site has now reached capacity and is not needed as a designated placement site for the next five years. After this five-year period ends, the Port may need to provide a location for dredged material placement in this reach if requested by the Corps. Should that request be forthcoming, the Port will obtain a new lease for this material and/or utilize an existing nearby placement site (such as Lower Deer Island).

The Port requests a separate and distinct Easement for Conservation Purposes associated with this placement site in order to create a Streaked Horned Lark (SHLA) conservation site under Section 10 of the Endangered Species Act (ESA). The SHLA, listed as "threatened" under the ESA, currently occupy this site which is designated by the U.S. Fish and Wildlife Service (USFWS) as Critical Habitat for this species. The species' presence at the site is a result of the historical dredge placement operations. In the absence of intervention to maintain the site, natural vegetation growth will soon render it unsuitable for SHLA and the site will be abandoned.

The Port currently owns two properties within the Portland Metro Area (Portland International Airport [PDX] and Rivergate) where SHLA are known to breed and forage. Both of these sites are slated for future development and will eventually cease to provide suitable habitat for the Larks. The Port will be submitting a Habitat Conservation Plan (HCP) to the USFWS in support of an Incidental Take Permit to cover development and/or operations at Rivergate and PDX. The HCP will propose active conservation measures at Sandy Island as part of a program to achieve the requirements of the ESA.

**Project Description** (include alternative sites considered):

The Port will clear, grub, grade and disc the Sandy Island dredged material placement site to maximize optimal nesting habitat potential for SHLAs, under adaptive management principles and guidance from the USFWS. The Port will also monitor, manage, and maintain the site over the term of the easement as a dedicated SHLA conservation site. As periodic site disturbance (grading, discing, mechanical and chemical vegetative management, signage installation) is a necessary part of site management prescriptions for SHLAs, manipulation or addition of dredged material or mining of existing sediments will not be constrained outside of the nesting season (April 15 to August 30). The proposed site management activities are compatible with the original land uses allowed under the original dredged material placement easement, which will remain in effect through its term (2030).

Estimated Start Date: Pending issuance of USFWS incidental take permit

Estimated Completion Date: 30 year term from date of issuance



- a) Do you have authority from the Oregon Secretary of State to do business in the State of Oregon?  Yes  No
- b) Is the corporation presently in good standing with the Oregon Secretary of State?  Yes  No
- c) In what state are you incorporated? \_\_\_\_\_
- d) Is the legal corporation name and Oregon business address the same as stated in this application?  Yes  No

If no, state the legal Corporate Name: **Port of Portland is a Port District of the State of Oregon.**

Address:

_____	_____	_____	_____
Street or Box Number	City	State	Zip Code

**PARTNERSHIP OR JOINT VENTURE: Complete the following**

NAME	BUSINESS ADDRESS	%SHARE	DIVISION

**TRUST: Complete the following for each beneficiary of the Trust:**

NAME	BUSINESS ADDRESS

**OR identify the Trust document by title, document number, and county where document is recorded:**

TITLE	DOCUMENT NUMBER	COUNTY

**A resolution that the individual designated to sign is authorized to act on behalf of the company in this matter.**

**8 - FOR A COMPLETE APPLICATION,\**  
**PLEASE SUBMIT ALL THE FOLLOWING:**

- a) A street or highway location map with road directions to the site from the nearest main highway or road.
- b) Assessor map that contains the riparian uplands. Do not mark on this map.  
A copy of the current year's property tax statement which identifies the present owner's name(s), land values, land size and tax account numbers of the riparian uplands.
- c) A legal description of the requested easement area with an accurate delineation of the area relative to the tax lot boundaries of the upland parcel. (The department may require a survey for this purpose).
- d) A separate drawing to scale of all existing and proposed structures for the easement area. Label each separate activity type stated in Section 3 and show the dimensions of each area by length and width, as stated in Section 3.
- e) Non-refundable application fee of \$125.00 for water pipeline and associated fixtures or \$750.00 for all other easement requests.

### 9 - APPLICANT SIGNATURE

I hereby request a state authorization for **30** (number) years.

(The maximum easement term is 30 years. The Department may issue permanent easements for qualifying uses.


*Application is hereby made for the activities described herein. I certify that I am familiar with the information contained in the application, and, to the best of my knowledge and belief, this information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. I understand that the granting of other permits by local, county, state or federal agencies does not release me from the requirement of obtaining the authorization requested before commencing the project. I understand that payment of the required state application fee does not guarantee authorization.*

Teresa Carr

DIR, COM PROP

Print /Type Name

Title



5/19/16

Applicant Signature

Date

I appoint the person named below to act as my duly authorized agent.

\_\_\_\_\_

\_\_\_\_\_

Print /Type Name

Title

\_\_\_\_\_

\_\_\_\_\_

Authorized Agent Signature

Date



## **APPENDIX C**

# **DSL SANDY ISLAND DREDGE SPOILS DISPOSAL SITE EASEMENT (2005–2030)**

2006-109

**AUTHORIZATION FOR ENTRY FOR CONSTRUCTION AND OPERATION**  
**("Authorization for Entry")**  
**(O-75.8 Sandy Island Disposal Site)**

This Authorization for Entry replaces and supersedes that certain Authorization for Entry executed by the Port and delivered to the United State of America, Department of Army, dated March 9, 2005, Port Agreement No. 2005-043 ("Prior Authorization"), which Prior Authorization shall be terminated effective upon the execution of this Authorization for Entry.

Pursuant to the Project Cooperation Agreement for Construction of Improvements for Ecosystem Restoration and Navigation on the Columbia River Portion of the Columbia and Lower Willamette Rivers Federal Navigation Channel, Oregon and Washington (PCA) executed June 23, 2004 and on file with the U.S. Army Corps of Engineers, I, Bill Wyatt, Executive Director for the Port of Portland (Sponsor) do hereby certify that the Sponsor has acquired the real property interests required by the United States of America, Department of the Army (collectively referred to herein from time to time as "Government"), and otherwise is vested with sufficient title and interest in the lands, to support construction of the Columbia River Channel Improvement Project **O-75.8 Sandy Island Disposal Site** located in Columbia County, Oregon.

Further, I hereby authorize the United States of America, Department of the Army, its agents, employees, and contractors, to enter upon the lands described and shown in that certain Easement (Department of State Lands Agreement No. 33472-EA, Port Agreement No. 2005-035) between the Sponsor and the State of Oregon, Department of State Lands dated February 17, 2005 attached hereto as Exhibit "A" ("Easement") to construct and operate the Columbia River Channel Improvement Project **O-75.8 Sandy Island Disposal Site** as set forth in the plans and specifications held in the U.S. Army Corps of Engineers' Portland District Office, Portland, Oregon.

The exercise by the United States of America, Department of the Army, or any of their employees, agents, or contractors, of any right under this Authorization for Entry shall constitute acceptance by the United States, Department of the Army of all of the provisions of this Authorization for Entry, including but not limited to the following:

The United States, Department of the Army, its agents, employees, and contractors shall conduct their entry onto such lands in compliance with all terms and conditions of the Easement.

The term of this Authorization for Entry is for approximately twenty three (23) years and eight (8) months as specified in the Real Estate Plan of the Integrated Feasibility Report for Channel Improvements and Environmental Impact Statement dated August 1999 as supplemented in 2003 and in the PCA. This Authorization for Entry is effective from June 28, 2006 until February 16, 2030.

If any action of the Government's agents, employees or contractors in the exercise of this right-of-entry results in damage to the real property, the Government will, in its sole discretion, either repair such damage or make an appropriate settlement with the Sponsor. In no event shall such repair or settlement exceed the fair market value of the fee title to the real property at the time immediately preceding such damage. The Government's liability under this clause is subject to the availability of appropriations for such payment, and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet any deficiencies. The provisions of this clause are without prejudice to any rights the Sponsor may have to make a claim under applicable laws for any damages other than those provided herein.

WITNESS my signature as Executive Director for the Port of Portland this 28th day of June, 2006.

BY: Bill Wyatt  
Bill Wyatt, Executive Director

**ATTORNEY'S CERTIFICATE OF AUTHORITY**

I, E. Julia Killgore, Assistant General Counsel for the Port of Portland certify that the Port of Portland has authority to grant the above Authorization for Entry; that said Authorization for Entry is executed by the proper duly authorized officer; and that the Authorization for Entry is in sufficient form to grant the authorization therein stated.

WITNESS my signature as Assistant General Counsel, this 28th day of June, 2006.

BY: E. Julia Killgore  
E. Julia Killgore, Assistant General Counsel  
Port of Portland

After Recording, Return To:

Port of Portland  
P.O. Box 3529  
Portland, Oregon 97208  
Attn: Lorali Sinnen

Send Tax Statements to:

No Change.

2005-035

STATE OF OREGON  
Department of State Lands

DREDGE SPOILS DISPOSAL SITE EASEMENT

EASEMENT NO. 33472-EA  
SANDY ISLAND

The STATE OF OREGON, by and through its Department of State Lands, GRANTOR, for and in consideration of N/A, hereby grants to GRANTEE,

NAME of GRANTEE:  
Port of Portland

ADDRESS:  
121 NW Everett St.  
Portland, OR 97209

A TERM easement and right to place dredge spoils over, upon, and across the following particularly described property situated in Columbia County, Oregon, and that dredged material having been dredged from the Columbia River during channel maintenance and improvement projects being completed by the Corps of Engineers pursuant to the disposal plan detailed in the Final Supplemental Integrated Feasibility Report and Environmental Impact Statement published January 28, 2003.

This term easement includes the right, power, privilege and easement to transport, deposit, place and dispose of dredge or spoil materials or other excavated matter in, on, over and across the land described below along with the right of ingress and egress thereto over and upon other lands of the GRANTOR, provided that such ingress and egress is necessary and not otherwise conveniently available to the GRANTEE, in connection with the construction, operation and maintenance of the Columbia River Channel Improvement Project as authorized by the Act of Congress approved in Section 101 (b)(13) of the Water Resources Development Act of 1999 (Public Law 106-53) and Division H, Section 123 of the Consolidated Appropriations Act of 2004 (Public Law 108-199) including the right to clear, cut, fell, remove and dispose of any and all timber, trees, underbrush, buildings, improvements and/or other obstructions therefrom; reserving, however, to the GRANTOR, their heirs and assigns, all such rights and privileges as may be used and enjoyed without interfering with or abridging the rights and easement hereby acquired, provided that any use of the land shall be subject to Federal and State laws with respect to pollution, fill and removal, wildlife habitat and the environment; the above estate is taken subject to existing easements for public roads and highways, public utilities, railroads and pipelines.

Sandy Island is an island in the Columbia River lying adjacent to and stretching to the south of Goble and is presently a disposal site for maintenance dredging. The island is located in Sections 18 and 19, of Township 6 North, Range 1 West, Willamette Meridian, Columbia

County, Oregon and the area to be used for dredge material disposal is more particularly described as:

All state-owned lands on Sandy Island including submerged and submersible lands and former submerged and submersible lands lying above ordinary high water, legally described in the attached Exhibit "A", and in particular a 30.0 acre site of state owned lands lying at the south end of Sandy Island at approximately Columbia River Mile 75.8 and that site being located in the SE $\frac{1}{4}$  SW $\frac{1}{4}$  and SW $\frac{1}{4}$  SE $\frac{1}{4}$  of Section 18, and NE $\frac{1}{4}$  NW $\frac{1}{4}$  and NW $\frac{1}{4}$  NE $\frac{1}{4}$  of Section 19, Township 6 North, Range 1 West, and using only that area designated for dredge spoils disposal as shown on the attached Exhibit "B".

TO HAVE AND TO HOLD the same unto GRANTEE for 25 years, and GRANTOR acknowledges and agrees that GRANTEE may authorize third parties, including without limitation GRANTEE'S contractors, the Corps of Engineers and its contractors, all who may enter onto the easement area and exercise the rights, powers, and privileges granted and conveyed to GRANTEE by this easement, subject to the following conditions:

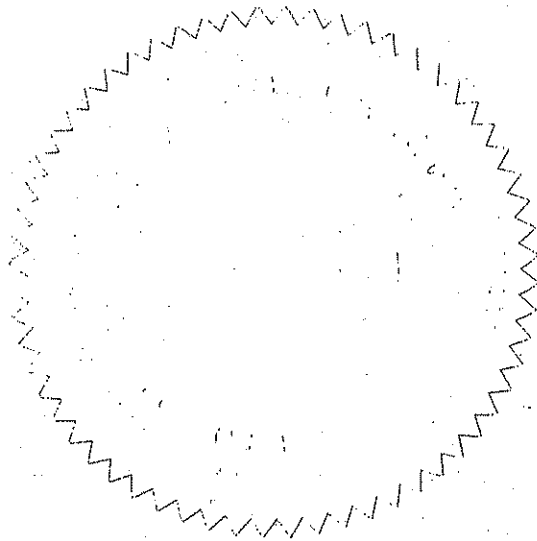
1. GRANTOR has the right to grant additional easements that do not interfere with the GRANTEE's permitted uses within the area authorized by this easement subject to the provisions of the administrative rules governing the granting of easements (OAR 141-122-0010 to 0120).
2. GRANTEE shall obtain prior written approval from GRANTOR prior to:
  - a) Changing the type of use authorized by this easement;
  - b) Expanding the number of authorized developments or uses;
  - c) Changing the authorized area; and/or
  - d) Permitting other persons to utilize the easement for uses and developments requiring separate written authorization by GRANTOR pursuant to the administrative rules governing the granting of easements or other GRANTOR requirements.
3. The easement area shall remain open to the public for recreational and other non-proprietary uses except during disposal operations unless restricted or closed to public entry by the State Land Board or GRANTOR.
4. GRANTOR and/or its authorized representative(s) shall have the right to enter into and upon the easement area at any time for the purposes of inspection or management.
5. Except as expressly authorized in writing by GRANTOR, GRANTEE shall not: remove any sand and gravel, or other mineral resources for commercial use or sale that occur in the easement area except as expressly authorized in writing by GRANTOR. Routine right-of-way maintenance including vegetation trimming shall be allowed.
6. GRANTEE shall compensate GRANTOR for the fair market value of any commercially valuable timber or sand and gravel resources in the easement area that must be removed during or after placement of the authorized use, or which cannot be developed because of the authorized use.
7. GRANTEE shall conduct all operations within the easement area in a manner that conserves fish and wildlife habitat; protects water quality; and does not contribute to soil erosion, or the introduction or spread of noxious weeds or pests.

8. GRANTEE shall obtain a surety bond in the amount of \$N/A to ensure compliance with the terms and conditions of this easement.
9. Unless otherwise approved in writing by GRANTOR, GRANTEE shall remove all cables, pipes, conduits, roads, and other developments placed by GRANTEE on the easement, and shall restore the surface of the easement area to a condition satisfactory to GRANTOR within one (1) year following expiration of this easement. Easement area shall be stabilized through grading and design.
10. The GRANTEE or third parties authorized by the GRANTEE, shall inspect the condition of the easement area for each year used for disposal and shall report on all developments or non-usage annually to the GRANTOR.
11. GRANTOR shall have the right to stop operation of the use authorized by this easement for noncompliance with the conditions of this easement, the provisions of the administrative rules governing the granting of easements, and/or any lawful requirement by a regulatory agency of this STATE.
12. If this easement authorizes the use of state-owned submerged and/or submersible land:
  - a) Construction in navigable waters shall conform to the standards and specifications set by the U.S. Army Corps of Engineers and the U.S. Coast Guard for the use authorized by this easement.
  - b) Any blasting which may be necessary, or in-water placement, maintenance, or repair of the authorized use shall be performed according to the laws of this STATE, including strict adherence to in-water work windows as specified in project permits..
13. To the extent allowed by Oregon law, GRANTEE agrees to defend and hold GRANTOR harmless from any and all claims suffered or alleged to be suffered on the easement area as the result of use of the easement area by GRANTEE, GRANTEE's contractors, the Corps of Engineers or its contractors under this easement. Further, GRANTEE shall be responsible for the payment of any fines or penalties charged against the easement area as a result of the failure by GRANTEE, GRANTEE's contractors, the Corps of Engineers or its contractors to comply with laws or regulations affecting the easement area.
14. GRANTEE shall pay to GRANTOR the current market value, as determined by GRANTOR for any unnecessary and non-approved damages to state-owned lands caused by construction or maintenance of the easement.
15. GRANTEE shall pay all assessments that may be legally charged on public lands which are levied against the property subject to this easement, whether or not such assessments have been levied against the easement area or STATE by the assessing agency.
16. GRANTEE shall use the authorized easement area only in a manner or for such purposes that assure fair and non-discriminatory treatment of all persons without respect to race, creed, color, religion, handicap, disability, age, gender or national origin.
17. This easement is non-transferable without the prior approval of the Department of State Lands. No transfer may increase the burden on the easement area or detract from the value of the underlying state-owned land. Prior to transferring this easement,

GRANTEE shall submit to GRANTOR notice of proposed transfer of this easement on a form provided by GRANTOR, and a non-refundable transfer processing fee of \$750 (seven hundred and fifty dollars) payable to GRANTOR.

This easement does not convey an estate in fee simple of the lands used for a right-of-way. This grant is for an easement only, and title remains in the State of Oregon.

WITNESS the seal of the Department of State Lands affixed this 17th day of February, 2005.

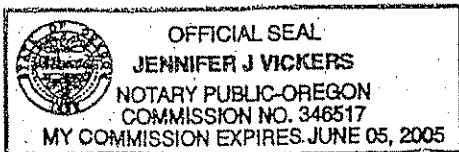


STATE OF OREGON, acting by and through its Department of State Lands

*Stephen Purchase*  
Stephen J. Purchase

STATE OF OREGON )  
County of Marion )ss  
)

This foregoing instrument was acknowledged before me this 17th day of February, 2005, by Stephen J. Purchase, the Assistant Director of the Department of State Lands.



*Jennifer J. Vickers*  
Signature  
My commission Expires 6-5, 2005



CERTIFICATE OF APPROVAL OF CONVEYANCE  
(ORS 93.808)

The Port of Portland, Grantee, hereby approves and accepts, pursuant to ORS 93.808, the grant of an interest in real property from the State of Oregon, by and through its Department of State Lands, Grantor, as described in the instrument to which this Certificate is attached.

A copy of this Certificate may be affixed to, and recorded with, the instrument described above.

DATED this 4 day of March, 2005.

The Port of Portland, Grantee

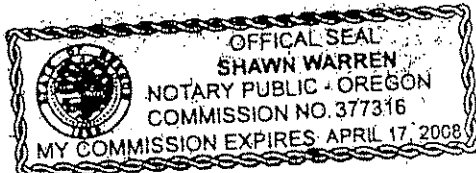
By: Bill Wyatt

Name: Bill Wyatt

Title: Executive Director

STATE OF OREGON            )  
  ) ss.  
County of Multnomah        )

On this 4 day of March, 2005, before me personally appeared Bill Wyatt, who being duly sworn stated that he is the Executive Director of the Port of Portland, Grantee, and acknowledged the foregoing instrument to be the voluntary act of said Grantee and that he executed the foregoing instrument under authority granted by said Grantee.



Shawn Warren  
NOTARY PUBLIC FOR OREGON  
My commission Expires: April 17, 2008

EXHIBIT A

LEGAL DESCRIPTION

SANDY ISLAND

BEGINNING AT A STONE WITH "X" INSCRIBED AT THE SOUTHWEST CORNER OF SECTION 19, TOWNSHIP 6 NORTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, COLUMBIA COUNTY, OREGON; THENCE NORTH 27°44'50" EAST, FOR A DISTANCE OF 5272.39 FEET TO THE LINE OF ORDINARY HIGH WATER (12.1 FEET, COLUMBIA RIVER DATUM) AND THE TRUE POINT OF BEGINNING; THENCE NORTH 26°55'43" WEST, LEAVING SAID LINE OF ORDINARY HIGH WATER FOR A DISTANCE OF 464.50 FEET; THENCE NORTH 05°19'16" EAST, FOR A DISTANCE OF 258.36 FEET; THENCE NORTH 33°52'33" EAST, FOR A DISTANCE OF 232.95 FEET; THENCE NORTH 15°06'03" EAST, FOR A DISTANCE OF 378.48 FEET; THENCE NORTH 26°56'18" EAST, FOR A DISTANCE OF 214.30 FEET; THENCE NORTH 52°50'54" EAST, FOR A DISTANCE OF 118.00 FEET; THENCE NORTH 84°27'16" EAST, FOR A DISTANCE OF 71.99 FEET; THENCE NORTH 65°47'18" EAST, FOR A DISTANCE OF 306.12 FEET TO THE LINE OF ORDINARY HIGH WATER (12.1 FEET, COLUMBIA RIVER DATUM); THENCE ALONG SAID LINE OF ORDINARY HIGH WATER THE FOLLOWING COURSES: SOUTH 13°16'36" EAST, FOR A DISTANCE OF 96.44 FEET; THENCE SOUTH 25°01'37" EAST, FOR A DISTANCE OF 51.15 FEET; THENCE NORTH 55°15'23" EAST, FOR A DISTANCE OF 61.44 FEET; THENCE SOUTH 16°10'44" EAST, FOR A DISTANCE OF 187.48 FEET; THENCE SOUTH 07°22'08" EAST, FOR A DISTANCE OF 495.10 FEET; THENCE SOUTH 08°24'25" EAST, A DISTANCE OF 319.33 FEET; THENCE SOUTH 08°59'17" EAST, A DISTANCE OF 546.08 FEET; THENCE SOUTH 14°14'32" WEST, FOR A DISTANCE OF 100.11 FEET; THENCE SOUTH 72°14'41" WEST, A DISTANCE OF 60.82 FEET; THENCE NORTH 82°57'32" WEST, FOR A DISTANCE OF 359.42 FEET; THENCE NORTH 81°46'03" WEST, FOR A DISTANCE OF 305.36 FEET; THENCE NORTH 79°27'50" WEST, FOR A DISTANCE OF 187.73 FEET TO THE TRUE POINT OF BEGINNING.

CONTAINING 31.85 ACRES MORE OR LESS

RECORD OF SURVEY  
FOR PROPOSED DREDGE DISPOSAL SITE  
ON SANDY ISLAND, LOCATED IN A  
PORTION OF SECTION 18 AND 19,  
T. 6 N., R. 1 W., W.M.  
COLUMBIA COUNTY, OREGON  
SHEET 2 OF 2

LEGEND

- INDICATES 5/8" X 30" IRON ROD WITH YELLOW PLASTIC CAP SET, STAMPED "RENTON 2830"
- ⊗ INDICATES MEANDER CORNER (CALCULATED)
- ⊙ INDICATES LIGHT NEAR DIKE
- OHWL INDICATES ORDINARY HIGH WATER LINE PER NOTE 1
- OLWL INDICATES ORDINARY LOW WATER LINE PER NOTE 3
- EW INDICATES EDGE OF WATER
- (R) INDICATES RECORD DISTANCE
- (M) INDICATES MEASURED DISTANCE
- INDICATES COORDINATE LIST
- ⊙ INDICATES MONUMENT DESCRIPTION
- INDICATES BOUNDARY OF PROPOSED DREDGE DISPOSAL SITE
- - - INDICATES LINE OF ORDINARY LOW WATER (OLWL) PER NOTE 3
- · - · - INDICATES EDGE OF WATER
- · - · - INDICATES CALCULATED PERIMETER OF SANDY ISLAND PER CAMPBELL SURVEY (1875)
- - - INDICATES SECTION LINE

LINE TABLE		
LINE	LENGTH	BEARING
L1	464.50'	N 25°55'43" W
L2	258.38'	N 05°19'16" E
L3	232.95'	N 33°52'33" E
L4	378.46'	N 15°06'03" E
L5	214.30'	N 25°56'18" E
L6	118.00'	N 52°30'54" E
L7	71.29'	N 84°27'16" E
L8	306.12'	N 65°47'18" E
L9	96.44'	S 17°16'36" E
L10	51.15'	S 25°01'37" E
L11	61.44'	N 55°15'23" E
L12	182.48'	S 16°10'44" E
L13	495.10'	S 07°22'08" E
L14	319.33'	S 02°21'25" E
L15	548.08'	S 08°55'17" E
L16	109.11'	S 14°14'32" W
L17	60.82'	S 72°14'41" W
L18	359.42'	N 62°57'32" W
L19	305.36'	N 61°45'03" W
L20	182.73'	N 79°27'50" W

COORDINATE LIST (GRID)

NO	NORTHING	EASTING
1	857456.2841	7603033.1756
2	857870.4285	7602820.0120
3	856127.6742	7602643.9714
4	858121.0801	7602373.8168
5	852686.4893	7603072.4164
6	858877.5318	7603169.4989
7	858948.7937	7603263.5476
8	858955.7505	7603335.2002
9	859081.3940	7603814.3534
10	858987.4307	7603636.5414
11	858941.0846	7603658.1793
12	858976.1013	7603708.6679
13	858796.0500	7603769.9054
14	858305.0345	7603824.4650
15	857989.1331	7603871.0829
16	857449.7634	7603956.4047
17	857352.7332	7603931.7761
18	857334.1361	7603871.8534
19	857378.2436	7603517.1475
20	857421.9670	7603214.9384

ALL COORDINATES ARE GRID, IAD 63/91 OREGON STATE PLANE COORDINATE SYSTEM, NORTH ZONE, INTERNATIONAL FEET.

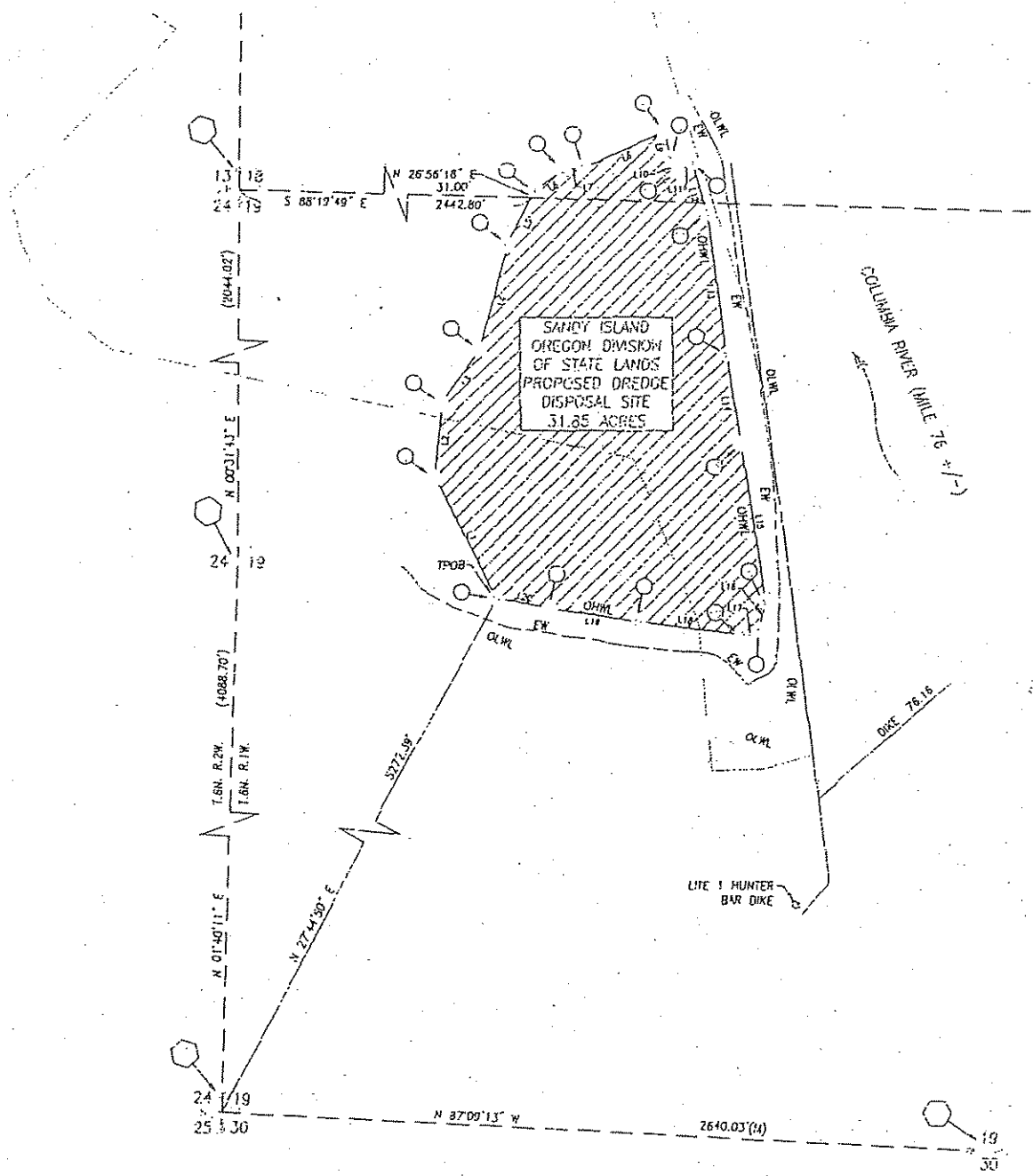
SURVEY REFERENCES

R1) 1875 CAMPBELL SURVEY (CS 2814) OF SANDY ISLAND. SURVEY ON RECORD AT COLUMBIA COUNTY SURVEYOR'S OFFICE, ST. HELENS, OREGON.

BASIS OF BEARING:  
HAD 83/91, OREGON STATE  
PLANE COORDINATE SYSTEM,  
NORTH ZONE, INTERNATIONAL FEET  
CONVERGENCE ANGLE: -01°40'14.42"BB  
COMBINED SCALE FACTOR: 0.9999497985  
AT CENTER OF DISPOSAL SITE

GRAPHIC SCALE  
300 150 0 150 300 450 600  
SCALE 1 INCH = 100 FEET

EXHIBIT B



NO.	DATE	BY	REVISIONS	CRD	APP'D



PORT OF PORTLAND  
PORTLAND, OREGON

MINISTER-CLAESER  
SURVEYING INC.  
2200 E. EVERETT BLVD.  
VANCOUVER, WA 98631  
(206) 844-3313

20000775      22768-201

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

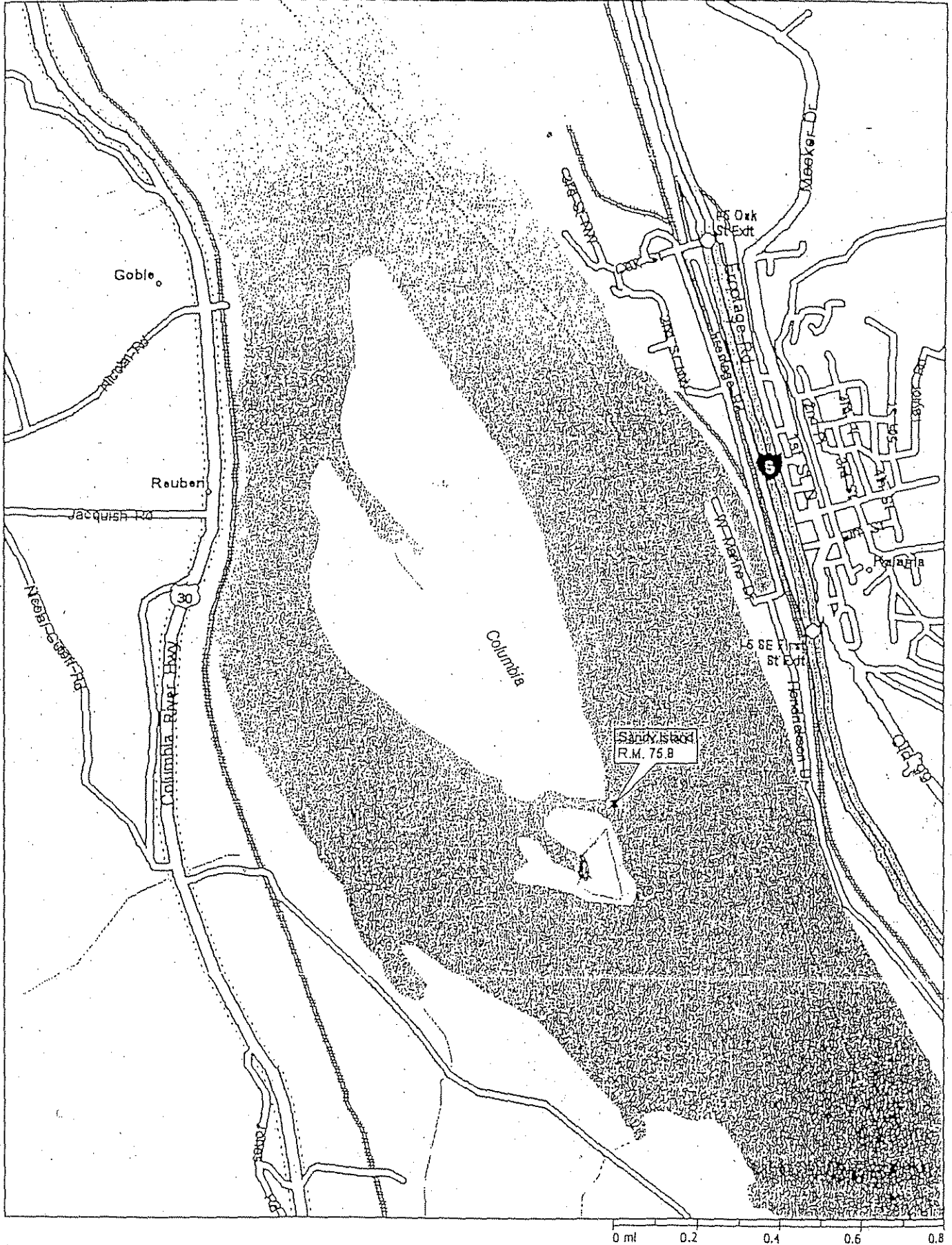
OREGON  
DANIEL A. RENTON  
2830

DESIGNED BY: CRAIG GALVIN  
DRAWN BY: CRAIG GALVIN  
CHECKED BY: DANIEL A. RENTON  
DATE: NOVEMBER 18, 2002

COLUMBIA RIVER  
CHANNEL DEEPENING  
SITE# 16, SANDY ISLAND  
PARCEL LAYOUT

SLIP SHEET NO.      TYPE      DRAWING NO.

# Sandy Island R.M. 75.8



**APPENDIX D**

**SPECIAL STATUS SPECIES OCCURRENCE TABLE**



Special Status Species Naturally Occurring in Multnomah and/or Columbia Counties, Oregon; and Clark and/or Cowlitz Counties, Washington

Species Name	Federal Listing Status*	State Listing Status*	Counties (ESU or DPS)†	Habitat Characteristics‡	Likelihood for Incidental Taking from Proposed Project
<b>AMPHIBIANS</b>					
Oregon spotted frog ( <i>Rana pretiosa</i> )	T		Clark, WA	Vegetated shallows or among grasses or sedges along the margins of streams, lakes, ponds, oxbows, springs, and marshes (Chelgren et al. 2008; Hodge 1976; Licht 1986; Watson et al. 2003.).	None—No suitable habitat.
<b>BIRDS</b>					
Marbled murrelet ( <i>Brachyramphus marmoratus</i> )	T	T	Multnomah, OR Columbia, OR Clark, WA Cowlitz, WA	Nests in mature/old growth coniferous forests in coastal areas, mainly in salt water within 2 kilometers (km) of shore (Marshall 1988), occasionally on rivers and lakes within 20 km of the ocean (Carter and Sealy 1986).	None—No suitable habitat.
Northern spotted owl ( <i>Strix occidentalis caurina</i> )	T	T	Multnomah, OR Columbia, OR Clark, WA Cowlitz, WA	Moderate to high canopy closure from a multilayered, multispecies canopy dominated by large overstory trees with numerous large cavities, broken tops, and snags. Heavy accumulation of woody debris on the forest floor and considerably open space is also needed (Thomas et al. 1990).	None—No suitable habitat.
Streaked horned lark ( <i>Eremophila alpestris strigata</i> )	T		Multnomah, OR Columbia, OR Clark, WA Cowlitz, WA	Large expanses of bare or thinly vegetated land, including field, prairies, dunes, upper beaches, airports, and other disturbed areas with low/sparse grassy vegetation (Pearson and Altman 2005).	Will Occur (non-lethal)—streaked horned lark will be displaced by development at Rivergate and will be temporarily flushed from the SW Quad during construction activities.
Yellow-billed cuckoo ( <i>Coccyzus americanus</i> )	T		Multnomah, OR Columbia, OR Clark, WA Cowlitz, WA	During breeding season, open woodlands with thick undergrowth, parks, and deciduous riparian woodlands, nesting in deciduous woodlands, moist thickets, orchards, and overgrown pastures (Harrison 1979).	Not Likely—Suitable habitat not present at Rivergate and the SW Quad. At Sandy Island, suitable habitat is associated with the cottonwood habitat along the west and north boundary of the site. Conservation measures will not encroach on this habitat and potential disturbing activities will be conducted outside of their nesting season.

Species Name	Federal Listing Status*	State Listing Status*	Counties (ESU or DPS)†	Habitat Characteristics‡	Likelihood for Incidental Taking from Proposed Project
<b>CONIFERS/CYCADS</b>					
Whitebark pine ( <i>Pinus albicaulis</i> )	C		Multnomah, OR Cowlitz, WA	Montane forests and on thin, rocky, cold soils at or near timberline, 1300–1370 meters (m) in elevation (Flora of North America 1993). Reproduction is almost entirely dependent on Clark's nutcracker ( <i>Nucifraga columbiana</i> ) for seed dispersal (Flora of North America 1993; Lanner 1982).	None—No suitable habitat.
<b>FISHES</b>					
Bull trout ( <i>Salvelinus confluentus</i> )	T		Multnomah, OR Clark, WA Cowlitz, WA	Bottom of deep pools in cold rivers and large tributary streams, often in moderate to fast currents with temperatures 45°–50° F. Now confined mostly to headwater streams (Rieman and McIntyre 1993).	None—No habitat for this species occurs on the Plan Areas. Additionally, no in-water work or activities along the shoreline are proposed at Sandy island.
Chinook salmon ( <i>Oncorhynchus tshawytscha</i> )	T (E for UCR) <sup>2</sup>	T	LCR, UCR, UWR, SR	All salmonids require sufficient invertebrate organisms for food; cool, flowing waters free of pollutants; high dissolved oxygen concentrations in rearing and incubation habitats; water of low sediment content during the growing season (for visual feeding); clean gravel substrate for reproduction; and unimpeded migratory access to and from spawning and rearing areas (Spence et al. 1996).	None—No habitat for this species occurs on the Plan Areas. Additionally, no in-water work or activities along the shoreline are proposed at Sandy island.
Chum salmon ( <i>Oncorhynchus keta</i> )	T <sup>2</sup>		CR	Same as Chinook salmon.	None—No habitat for this species occurs on the Plan Areas. Additionally, no in-water work or activities along the shoreline are proposed at Sandy island.
Coho salmon ( <i>Oncorhynchus kisutch</i> )	T <sup>2</sup>	E	LCR	Same as Chinook salmon.	None—No habitat for this species occurs on the Plan Areas. Additionally, no in-water work or activities along the shoreline are proposed at Sandy island.
Sockeye salmon ( <i>Oncorhynchus nerka</i> )	E <sup>2</sup>		SR	Same as Chinook salmon.	None—No habitat for this species occurs on the Plan Areas. Additionally, no in-water work or activities along the shoreline are proposed at Sandy island.

Species Name	Federal Listing Status*	State Listing Status*	Counties (ESU or DPS)†	Habitat Characteristics‡	Likelihood for Incidental Taking from Proposed Project
Steelhead ( <i>Oncorhynchus mykiss</i> )	T <sup>2</sup>		LCR, UWR, MCR, UCR, SR	Same as Chinook salmon.	None—No habitat for this species occurs on the Plan Areas. Additionally, no in-water work or activities along the shoreline are proposed at Sandy island
Eulachon ( <i>Thaleichthys pacificus</i> )	T <sup>2</sup>		Southern DPS	Water temperatures between 4°–10° C in the Columbia River is preferred for spawning. Juveniles are reported to rear in nearshore marine waters (Washington Department of Fish and Wildlife and Oregon Department of Fish and Wildlife 2001). They do not feed while in fresh water.	None—No habitat for this species occurs on the Plan Areas. Additionally, no in-water work or activities along the shoreline are proposed at Sandy island
Green sturgeon ( <i>Acipenser medirostris</i> )	T <sup>2</sup>		Southern DPS	Southern DPS spawn in the Sacramento River in California, migrating through the coastal marine corridor to reach overwintering habitats in bays and estuaries in northern California, Oregon, and Washington (Lindley et al. 2008).	None—No habitat for this species occurs on the Plan Areas. Additionally, no in-water work or activities along the shoreline are proposed at Sandy island
<b>FLOWERING PLANTS</b>					
Bradshaw's desert-parsley ( <i>Lomatium bradshawii</i> )	E	E	Multnomah, OR Columbia, OR Clark, WA	Open, clay soil bottomland with seasonal standing water. Occurs in the <i>Deschampsia cespitosa</i> Valley Prairie (UNKNOWN).	None—No suitable habitat.
Golden paintbrush ( <i>Castilleja levisecta</i> )	T	E	Clark, WA	Open grasslands at elevations below 100 m, often on glacial outwash or deposits. Low intensity fires may be important in maintaining the native grassland habitat required for this species (UNKNOWN).	None—No suitable habitat.
Kincaid's lupine ( <i>Lupinus sulphureus</i> ssp. <i>kincaidii</i> )	T	T	Multnomah, OR Columbia, OR Cowlitz, WA	Native upland prairies characterized by heavier soils with mesic to slightly xeric soil moisture levels (Kaye and Kuykendall 1993).	None—No suitable habitat.

Species Name	Federal Listing Status*	State Listing Status*	Counties (ESU or DPS)†	Habitat Characteristics‡	Likelihood for Incidental Taking from Proposed Project
Nelson's checker-mallow ( <i>Sidalcea nelsoniana</i> )	T	T	Multnomah, OR Columbia, OR Cowlitz, WA	Variable soils in areas becoming saturated during the rainy season with frequent inundation for several weeks, or longer, at a time. In the Willamette Valley, sites occur within a mosaic of urban and agricultural areas from 45–200 m elevation (Gisler 2004).	None—No suitable habitat.
Water Howellia ( <i>Howellia aquatilis</i> )	T	T	Multnomah, OR Columbia, OR Clark, WA	Small vernal wetlands with firmly consolidated bottoms. These include shallow, low-elevation glacial pothole ponds and former river oxbows with margins of deciduous trees and shrubs (UNKNOWN).	None—No suitable habitat. Additionally, no in-water work or activities along the shoreline are proposed at Sandy island.
Willamette Daisy ( <i>Erigeron decumbens</i> var. <i>decumbens</i> )	E	E	Multnomah, OR Columbia, OR	Clay soiled prairie in Valley bottoms, often by creek drainages. Occurs in the <i>Deschampsia cespitosa</i> Valley Prairie (UNKNOWN).	None—No suitable habitat.
<b>INSECTS</b>					
Fender's blue butterfly ( <i>Icaricia icarioides fenderi</i> )	E		Multnomah, OR	Habitat is limited by presence of abundant larval food plants ( <i>Lupinus sulphureus</i> ssp. <i>kincaidii</i> , <i>L. laxiflorus</i> , and <i>L. albicaulis</i> ) (UNKNOWN).	None—No suitable habitat.
<b>MAMMALS</b>					
Columbian white-tailed deer ( <i>Odocoileus virginianus leucurus</i> )	E		Multnomah, OR Columbia, OR Cowlitz, WA	Wet prairies and lightly wooded bottomlands or "tidelands" along streams and rivers, especially when interspersed with grasslands and pastures (Matthews and Moseley 1990).	Not Likely—Suitable habitat not present at Rivergate and the SW Quad. At Sandy Island, suitable habitat may be associated with the cottonwood habitat along the west and north boundary of the site. Conservation measures will not encroach on this habitat.
Fisher ( <i>Martes pennanti</i> )	PT		Multnomah, OR Columbia, OR	Coniferous, mixed, and deciduous upland and lowland forests, primarily in dense coniferous or mixed forests in early succession and dense overhead cover (Forest Service Scientific Analysis Team 1993).	None—No suitable habitat.
Gray wolf ( <i>Canis lupus</i> )	E		Clark, WA Cowlitz, WA	No particular habitat preference. Move as required to remain close to migratory caribou (UNKNOWN).	None—No suitable habitat.

Species Name	Federal Listing Status*	State Listing Status*	Counties (ESU or DPS)†	Habitat Characteristics‡	Likelihood for Incidental Taking from Proposed Project
Red tree vole ( <i>Arborimus longicaudus</i> )	C		Multnomah, OR Columbia, OR	Optimum habitat consists of wet and mesic old-growth Douglas-fir forest and various other mesic habitats, including those dominated by grand fir, Sitka spruce, or western hemlock (Johnson and George 1991).	None—No suitable habitat.

<sup>1</sup> U.S. Fish and Wildlife Service 2015; <sup>2</sup> National Oceanic and Atmospheric Administration Fisheries 2012 and 2014

\* E = Endangered; T = Threatened; PT = Proposed Threatened; C = Federal Candidate for Listing

† DPS = distinct population segments

ESU = evolutionarily significant unit

CR = Columbia River

LCR = Lower Columbia River

MCR = Middle Columbia River

SR = Snake River

UWR = Upper Willamette River

UCR = Upper Columbia River

‡ Information retrieved from <http://explorer.natureserve.org>. Individual references provided below.

## References

- Carter, H. R., and S. G. Sealy. 1986. Year-round use of coastal lakes by marbled murrelets. *Condor* 88:473–477.
- Chelgren, N. D., C. A. Pearl, M. J. Adams, and J. Bowerman. 2008. Demography and movement in a relocated population of Oregon spotted frogs (*Rana pretiosa*): influence of season and gender. *Copeia* 2008:742–751.
- Flora of North America Editorial Committee. 1993. Flora of North America north of Mexico. Volume 2. Pteridophytes and gymnosperms. Oxford University Press, New York.
- Forest Service Scientific Analysis Team. 1993. Viability assessments and management considerations for species associated with late-successional and old-growth forests of the Pacific Northwest. The report of the Scientific Analysis Team. USDA Forest Service, Spotted Owl EIS Team, Portland Oregon.
- Gisler, S. D. 2004. Developing biogeographically based population introduction protocols for at-risk Willamette Valley plant species. Report to US Fish and Wildlife Service, Portland, Oregon. Native Plant Conservation Program, Oregon Department of Agriculture, Salem, Oregon.
- Harrison, H. H. 1979. A field guide to western birds' nests. Houghton Mifflin Company, Boston.
- Hodge, R. P. 1976. Amphibians and reptiles in Alaska, the Yukon and Northwest Territories. Alaska Northwest Publishing Company Anchorage, Alaska.
- Johnson, M. L., and S. B. George. 1991. Species limits within the *Arborimus longicaudus* species-complex (Mammalia: Rodentia) with a description of a new species from California. *Natural History Museum of Los Angeles County Contributions in Science* 429:1–16.
- Kaye, T.N., and K. Kuykendall. 1993. Status report for *Lupinus sulphureus* ssp. *kincaidii*. Oregon Department of Agriculture, Salem, and U.S. Fish and Wildlife Service, Portland.
- Lanner, R.M. 1982. Adaptations of whitebark pine for seed dispersal by Clark's nutcracker. *Canadian Journal of Forest Research* 12:391–402.



- Licht, L.E. 1986. Food and feeding behavior of sympatric red-legged frogs, *Rana aurora*, and spotted frogs, *Rana pretiosa*, in southwestern British Columbia. *Canadian Field-Naturalist* 100:22–31.
- Lindley, S. T., M. L. Moser, D. L. Erickson, M. Belchik, D. W. Welch, E. Rechisky, J. T. Kelly, J. C. Heublein, and A. P. Klimley. 2008. Marine migration of North American green sturgeon. *Transactions of the American Fisheries Society* 137:182-194.
- Marshall, D. B. 1988. Status of the marbled murrelet in North America: with special emphasis on populations in California, Oregon, and Washington. U.S. Fish and Wildlife Service, Biological Report 88(30).
- Matthews, J.R. and C.J. Moseley (eds.). 1990. *The Official World Wildlife Fund Guide to Endangered Species of North America. Volume 1: Plants, Mammals and Volume 2: Birds, Reptiles, Amphibians, Fishes, Mussels, Crustaceans, Snails, Insects, and Arachnids.* Beacham Publications, Inc., Washington, D.C.
- National Oceanic and Atmospheric Administration Fisheries. 2012. Status of ESA Listings & Critical Habitat Designations for West Coast Salmon & Steelhead. Available at: [http://www.westcoast.fisheries.noaa.gov/publications/protected\\_species/salmon\\_steelhead/status\\_of\\_esa\\_salmon\\_listings\\_and\\_ch\\_designations\\_map.pdf](http://www.westcoast.fisheries.noaa.gov/publications/protected_species/salmon_steelhead/status_of_esa_salmon_listings_and_ch_designations_map.pdf). Accessed on August 10, 2015.
- . 2014. ESA-Listed Species List. NOAA Fisheries: West Coast Region. Available at: [http://www.westcoast.fisheries.noaa.gov/protected\\_species/species\\_list/species\\_lists.html](http://www.westcoast.fisheries.noaa.gov/protected_species/species_list/species_lists.html). Accessed on August 10, 2015.
- Pearson, S., and B. Altman. 2005. Range-wide Streaked Horned Lark (*Eremophila alpestris strigata*) Assessment and Preliminary Conservation Strategy. Washington Department of Fish and Wildlife, Olympia, Washington.
- Rieman, B. E., and J. D. McIntyre. 1993. Demographic and habitat requirements for conservation of bull trout. USDA Forest Service, Intermountain Research Station, General Technical Report INT-302.
- Spence, B.C., G.A. Lomnický, R.M. Hughes, and R.P. Novitzki. 1996. *An Ecosystem Approach to Salmonid Conservation.* TR-4501-96-6057. Corvallis, Oregon: ManTech Environmental Research Services Corp.
- Thomas, J. W., E. D. Forsman, J. B. Lint, E. C. Meslow, B. R. Noon, and J. Verner. 1990. A conservation strategy for the northern spotted owl: a report to the Interagency Scientific Committee to address the conservation of the northern spotted owl. U.S. Forest Service, U.S. Fish and Wildlife Service, and National Park Service, Washington, D.C.
- U.S. Fish and Wildlife Service (USFWS). 2015. Annotated county lists of rare species – Multnomah and Columbia Counties, Oregon; and Clark and Cowlitz Counties, Washington. Last revision: August 14, 2015. Available at: <http://www.fws.gov/oregonfwo/Species/Lists/RequestList.asp>. Accessed on August 10, 2015.
- Washington Department of Fish and Wildlife and Oregon Department of Fish and Wildlife. 2001. Washington and Oregon Eulachon Management Plan. Washington Department of Fish and Wildlife and Oregon Department of Fish and Wildlife, Olympia, Washington.
- Watson, J. W., K. R. McAllister, and D. J. Pierce. 2003. Home ranges, movements, and habitat selection of Oregon spotted frogs (*Rana pretiosa*). *Journal of Herpetology* 37:292–300.

**APPENDIX E**

**ESTIMATED CONSERVATION BENEFITS:  
BIRD-YEAR DATA**

The formula for calculating bird-years relies on the estimated number of nesting pairs present at a site in any given year, calculated as:

$$\text{Total Suitable Habitat / Site-Specific Territory Density} = \text{Estimated Nesting Pairs}$$

Bird-years are the cumulative number of nesting pairs at a given site over time, and are calculated as:

$$\text{Estimated Nesting Pairs}_{PY1} + \text{Estimated Nesting Pairs}_{PY2} + \dots + \text{Estimated Nesting Pairs}_{PY30} = \text{Cumulative Bird-years}_{PY1-PY30}$$

Permit Year	Actual Year	Estimated Nesting Pairs					
		Rivergate - No Action	Rivergate - Covered Activities	SW Quad - No Action	SW Quad - Covered Activities	Sandy Island - No Action	Sandy Island - Conservation Measures
Year -6	2011	6	6	4	4	2	2
Year -5	2012	3	3	3	3	1	1
Year -4	2013	6	6	3	3	4	4
Year -3	2014	4	4	3	3	5	5
Year -2	2015	5	5	3	3	3	3
Year -1	2016	4	4	3	3	2	2
Year 1 (Permit Year)	2017	4	6	3	3	0	3
Year 2	2018	2	3	3	3	0	5
Year 3	2019	0	0	2	3	0	5
Year 4	2020	0	0	2	3	0	5
Year 5	2021	0	0	1	3	0	5
Year 6	2022	0	0	1	3	0	5
Year 7	2023	0	0	0	4	0	5
Year 8	2024	0	0	0	4	0	5
Year 9	2025	0	0	0	4	0	5
Year 10	2026	0	0	0	4	0	5
Year 11	2027	0	0	0	4	0	5
Year 12	2028	0	0	0	4	0	5
Year 13	2029	0	0	0	4	0	5
Year 14	2030	0	0	0	4	0	5
Year 15	2031	0	0	0	4	0	5
Year 16	2032	0	0	0	4	0	5
Year 17	2033	0	0	0	4	0	5
Year 18	2034	0	0	0	4	0	5
Year 19	2035	0	0	0	4	0	5

Permit Year	Actual Year	Estimated Nesting Pairs					
		Rivergate - No Action	Rivergate - Covered Activities	SW Quad - No Action	SW Quad - Covered Activities	Sandy Island - No Action	Sandy Island - Conservation Measures
Year 20	2036	0	0	0	3	0	5
Year 21	2037	0	0	0	3	0	5
Year 22	2038	0	0	0	2	0	5
Year 23	2039	0	0	0	2	0	5
Year 24	2040	0	0	0	1	0	5
Year 25	2041	0	0	0	1	0	5
Year 26	2042	0	0	0	0	0	5
Year 27	2043	0	0	0	0	0	5
Year 28	2044	0	0	0	0	0	5
Year 29	2045	0	0	0	0	0	5
Year 30	2046	0	0	0	0	0	5
<b>Sum (Year 1-30)</b>		<b>6</b>	<b>9</b>	<b>12</b>	<b>82</b>	<b>0</b>	<b>148</b>

Take shown inside the red box for SW Quad between permit years 25 and 30 would be part of future consultations under Section 7 of the ESA, though impacts from the anticipated take are evaluated in the HCP.

Permit Year	Actual Year	Cumulative Bird Years					
		Rivergate - No Action	Rivergate - Covered Activities	SW Quad - No Action	SW Quad - Covered Activities	Sandy Island - No Action	Sandy Island - Conservation Measures
Year 1 (Permit Year)	2017	4	6	3	3	0	3
Year 2	2018	6	9	6	3	0	8
Year 3	2019	6	9	8	6	0	13
Year 4	2020	6	9	10	9	0	18
Year 5	2021	6	9	11	12	0	23
Year 6	2022	6	9	12	15	0	28
Year 7	2023	6	9	12	18	0	33
Year 8	2024	6	9	12	22	0	38
Year 9	2025	6	9	12	26	0	43
Year 10	2026	6	9	12	30	0	48
Year 11	2027	6	9	12	34	0	53
Year 12	2028	6	9	12	38	0	58
Year 13	2029	6	9	12	42	0	63
Year 14	2030	6	9	12	46	0	68
Year 15	2031	6	9	12	50	0	73

Permit Year	Actual Year	Cumulative Bird Years					
		Rivergate - No Action	Rivergate - Covered Activities	SW Quad - No Action	SW Quad - Covered Activities	Sandy Island - No Action	Sandy Island - Conservation Measures
Year 16	2032	6	9	12	54	0	78
Year 17	2033	6	9	12	58	0	83
Year 18	2034	6	9	12	62	0	88
Year 19	2035	6	9	12	66	0	93
Year 20	2036	6	9	12	70	0	98
Year 21	2037	6	9	12	73	0	103
Year 22	2038	6	9	12	76	0	108
Year 23	2039	6	9	12	78	0	113
Year 24	2040	6	9	12	80	0	118
Year 25	2041	6	9	12	81	0	123
Year 26	2042	6	9	12	82	0	128
Year 27	2043	6	9	12	82	0	133
Year 28	2044	6	9	12	82	0	138
Year 29	2045	6	9	12	82	0	143
<b>Year 30</b>	<b>2046</b>	<b>6</b>	<b>9</b>	<b>12</b>	<b>82</b>	<b>0</b>	<b>148</b>



## **APPENDIX F**

### **SHLA WORKING GROUP'S 2015–2016 ACTION PLAN**

## 2015-2016 Streaked Horned Lark Action Plan

The purpose of this action plan is to identify the next-best conservation actions that can be conducted over the next 3-5 years to support SHLA recovery. [Ranking Key: The top 15 tasks are ranked. The tasks marked with an \* for the rank signifies increased emphasis, but not at the level of ranking.]

Category	Ref#	Task	Rank	Implementing Party
1. Determine population status, current distribution and limiting factors	1.1	<b>1. Develop WV component of survey protocol in order to finalize range wide standardized survey and monitoring protocols that address occupancy, abundance, trends, use and spatial distribution.</b>	3	Working Group.
	1.2	<b>2. Identify threats to population viability.</b>		
	1.2.a	a. Determine factors limiting juvenile and adult survivorship in OR & WA (e.g. predation). Does adult and juvenile survivorship (esp. females) limit population growth?	4	OSU, WDFW, CNLM, JBLM, ...
	1.2.b	b. Evaluate need to control predators (e.g., at airports) and if implemented, evaluate the effect of predator management (e.g., at Coast, McChord) and its influence on population trend.	11	
	1.2.c	c. Evaluate existing data and ID information gaps regarding the role of disturbances (e.g., recreation, military activities, industrial uses, researchers, habitat enhancement actions, dredge material deposition, airfield management actions, agricultural activities) that may affect survival in all life stages (i.e. nests, juveniles, adults), and prioritize development of BMPs for certain actions.	*	WDFW, OSU, CNLM, JBLM
	1.2.d	d. Evaluate effect of pest control agents (e.g., zinc phosphide, maki) to larks (i.e., are they affected?) and if so, are there different application techniques that can eliminate negative effect?	8	OSU, FWS, Port of Portland
	1.2.e	e. Identify potential sink habitats and identify a process for potential management actions (e.g., creating recipient habitats, dissuasion at current sites), use qualitative approach as first step.	*	
	1.2.f	f. Track current climate change science to inform the role of climate change to streaked horned lark conservation decision making, e.g. northward expansion of prairie habitat		WDFW, OSU, USFWS, CNLM
	1.2.g	g. Examine genetic variability and population structuring.		WDFW, Smithsonian
	1.2.h	h. Determine factors limiting reproductive success in private working lands of the Willamette Valley.		
	1.2.i	i. Evaluate effect of different crops and agricultural management techniques to larks.		
	1.3	<b>3. Utilize and collect data from color band resights.</b>		
	1.3.a	a. Collect and integrate existing color banded resight information from Oregon and Washington to inform conservation planning and habitat management.	14	OSU, WDFW, CNLM
	1.3.b	b. Inform and mobilize citizen science efforts (e.g. Audubon) to collect lark locations and new color band resights, especially in winter.		
	1.4	<b>4. Develop SHLA ID training program/materials and consider a certification process that integrates potential surveyors with (to be) established protocols.</b>	*	
	1.5	<b>5. Develop criteria to determine if habitat is suitable for all life history stages (i.e. How can I tell if I have habitat?) - done for breeding habitat, not wintering.</b>	*	
	1.5.a	a. Apply criteria to develop a range wide map of potential breeding and wintering habitat.		
	1.6	<b>6. Survey and monitor for larks.</b>		
1.6.a	a. Conduct annual monitoring at occupied breeding sites.	*	WDFW, OSU, CNLM, JBLM, PDX, ODFW, FWS	
1.6.b	b. Survey new and historic sites. Potential examples: Willamette Valley, Rogue River valley, Roger's Washington townships, OR Coast, Cowlitz River, regional airports.	10	Portland Audubon, WDFW, CNLM, Port of Portland, ODFW, FAA	
1.7	<b>7. Identify important features that affect habitat quality and lark productivity.</b>			
1.7.a	a. Determine the effect of habitat parameters and seasonality on nest success on working lands in OR (e.g., grass seed, clover, mint, xmas tree, row crops, pasture).	*		
1.7.b	b. Understand habitat quality in relation to food availability, including wintering habitat quality.			
1.8	<b>8. Address the need for coordinated and consolidated database for lark data.</b>		CNLM, WDFW, OSU, FWS	
2. Protect Existing Populations and Habitats	2.1	<b>1. Seek opportunities to secure sites dedicated to lark conservation (e.g. lark preserves).</b>	1	Working Group, Land Trusts, NRCS, WWMP, FWS, JBLM, Thurston Co.
	2.2	<b>2. Secure protection commitment on priority occupied sites (e.g. management plans, Safe Harbor).</b>	2	Working Group
	2.3	<b>3. Define and identify core sites for recovery.</b>	*	
	2.4	<b>4. Work with the regulatory community to identify mitigation opportunities including conservation banks.</b>		
	2.4.a	a. Develop mitigation banking strategy and criteria	15	FWS
	2.5	<b>5. Encourage partners to include management for larks in land protection plans when opportunities are available (e.g. America's Great Outdoors Initiative, Willamette Wildlife Mitigation Program, SWAPs, legislative initiatives).</b>		
	2.6	<b>6. Work with NRCS and others to ensure larks are a priority for funding programs (e.g., easements) and landowner assistance (e.g. Partner Biologists).</b>		FWS, ODFW, WDFW, CNLM
	2.7	<b>7. Identify mechanisms to establish long-term management funding (e.g. endowments) for important sites.</b>		
2.8	<b>8. Address identified threats range-wide: Initiate protection measures, reduce predator impacts, redirect recreation, airport disturbance.</b>		Working Group	
2.8.a	a. Redirect, adapt, or modify timing of incompatible aspects of land uses, e.g. airshows, police training, dog trials, model airplane use, ATVs, dredged material placement, airport management practices, coastal recreation activities.	*	OSU, WDFW, FWS, CNLM, JBLM, ACOE, POP, WA Parks, DSL	
3. Enhance viability of extant populations and habitats	3.1	<b>1. Enhance existing habitat and increase amount of available habitat in the Willamette Valley.</b>		OSU, WDFW, FWS Refuges
	3.1.a	a. Implement habitat restoration activities on breeding and wintering grounds.	9	NRCS, Private, Refuges, USFWS
	3.1.b	b. Refine and implement management prescriptions to create breeding habitat and develop winter habitat prescription in agricultural matrix and understand effect on lark vital rates.	6	FWS Refuges
	3.1.c	c. Investigate the value and feasibility of conservation burning for larks and its potential as an incentive for private landowners.		OSU, USFWS, NWR, NRCS, TNC
	3.2	<b>2. Conduct genetic rescue aiming at stabilizing South Sound population. Evaluate success.</b>	*	WDFW, ODFW, OSU, CNLM
	3.3	<b>3. Evaluate appropriateness and feasibility of population augmentation, relocation or reintroduction (e.g., investigate lark colonization, captive rearing, hacking, cross fostering).</b>	12	WDFW, OSU, Oregon Zoo, CNLM
	3.4	<b>4. Conduct habitat restoration in South Puget Sound to increase and improve lark habitat.</b>		
	3.4.a	a. Implement habitat restoration activities on breeding ground using all available tools (e.g., herbicide, fire). Focus on invasives that change the structure of the habitat - ongoing.	*	JBLM, CNLM, FWS, WDFW
	3.5	<b>5. Conduct habitat restoration on the Columbia River and Coast to increase and improve lark habitat</b>		
	3.5.a	a. Implement habitat restoration activities on breeding and wintering grounds (e.g. Damon Point, Midway Beach), remove beach grass (use Leadbetter HRA as demo). Ongoing.	13	FWS, WDFW, WSP, CNLM, WDNR
3.5.b	b. Implement and monitor effectiveness of created lark habitat by dredge material deposition and implementing complementary strategy to control structure-modifying vegetation.	*	ACOE, CNLM, Port of Portland, FWS	
3.5.b.i	i. Test and refine habitat suitability model for dredged material sites.		ACOE, CNLM	
3.5.c	c. Implement habitat restoration activities on unoccupied sites within the breeding and wintering range (e.g. St. John's, Sauvie, Gov't island).		City of Portland, Port of Portland, Metro, OSU, USFWS, NRCS	
3.6	<b>6. Evaluate the effect of habitat enhancement actions on lark vital rates.</b>			
3.7	<b>7. Develop strategy for compatible airport and lark use, develop management guidelines specific for each airport (e.g., Manage habitat to attract birds outside areas that the airport identifies as high risk for airport safety).</b>		CNLM, Ports, FAA, WDFW, ODFW, OSU, JBLM	
4. Coordination, Education, and Outreach	4.1	<b>1. Facilitate lark-beneficial habitat management on WV private lands through incentive programs or other means.</b>	7	
	4.1.a	a. Support partner biologist to work on agricultural related lark issues (e.g. actions 1.2.d, 2.1, 2.2, 2.6, 4.1.b, 4.1.c, 4.2.b, 4.3.a)	5	
	4.1.b	b. Disseminate lark information to NRCS and SWCDs and brainstorm on how to implement programs (first).		ongoing
	4.1.c	c. Encourage federal & state agencies to promote incentive programs.		WDFW, FWS
	4.2	<b>2. Facilitate coordination and information sharing.</b>		
	4.2.a	a. Maintain range-wide working group and coordination.	14	Working Group
	4.2.b	b. Open and maintain working groups/informational sharing forums about larks revolving around industry-specific issues (e.g. airports, water ports, agriculture, developers/land use planning).	*	CNLM, FWS, Ports, WDFW
	4.3	<b>3. Develop outreach and educational materials.</b>		
	4.3.a	a. Package existing habitat prescriptions specifically for agricultural producers (i.e., abridge Tech Note for lay audience) and distribute to agricultural community.		
	4.3.b	b. Conduct outreach to permitting entities (e.g. counties/cities, ODSL) regarding potential for lark impacts from development and other permitted activities.		FWS, DSL
4.3.c	c. Develop materials on habitat management and restoration for land managers including habitat targets.		CNLM, JBLM	
4.3.d	d. Reach out to additional partners by promoting regional recovery and habitat management (e.g. DNR aquatic lands, WA/OR State Parks, land trusts, mitigation banks, OR Dept. of State Lands, Pacific Birds Habitat Joint Venture).			



## Streaked Horned Lark (*Eremophila alpestris strigata*) | 2015 Action Plan Summary

The streaked horned lark is a small ground dwelling bird that is endemic to the Pacific Northwest. Small populations occur along Washington's coast, through the Puget lowlands, and on lower Columbia River islands, while the majority of the approximately 1,500 remaining individuals are found in the Willamette Valley. Relying on wide open spaces that have sparse vegetation, the streaked horned lark population has declined greatly with the loss of ideal habitat due to range contraction, land use conversion and the encroachment of woody vegetation. In October 2013, the US Fish and Wildlife Service designated the streaked horned lark as Threatened under the Endangered Species Act.

Protection Status of the Streaked Horned Lark		
		
<b>State of WA</b> Endangered	<b>State of OR</b> Species of Concern	<b>Federal</b> Threatened

### CPOP and the Species-Specific Working Groups

The Cascadia Prairie-Oak Partnership (CPOP) is an ecoregional group that brings together conservation focused professionals that represent state, federal and local government, military, conservation groups and other entities interested in prairie-oak conservation. CPOP was created to increase coordination between these groups in order to promote conservation action, leverage funding, and expand recovery efforts. The streaked horned lark working group first convened in 2007 and meets annually to discuss and prioritize recovery actions.



### What is an Action Plan and what is its purpose?

Each CPOP working group maintains an Action Plan, a document that lists the 'next best tasks' that can be taken to improve the status of the species and ranks the highest priority actions. Each year at the annual meeting the list is updated to reflect completed work, new opportunities and changes in urgency. The Action Plan is meant to encourage dialogue and consensus among the group as well as to inform entities that work with conservation policies and funding, such as US Fish and Wildlife Service, as to what actions are priorities to support the recovery of the streaked horned lark.

### Action Plan Ranked Priorities

Rank	Action to be taken
# 1	Seek opportunities to secure sites dedicated to lark conservation.
# 2	Secure protection commitment on priority occupied sites.
# 3	Develop Willamette Valley component of survey protocol in order to finalize range-wide standardized protocols that address occupancy, abundance, trends, use and spatial distribution.
# 4	Identify threats to population viability with an emphasis on determining the factors limiting juvenile and adult survivorship in Oregon and Washington, on evaluating effects of pest control agents on larks (ranked #8), and on evaluating the need to control predators (ranked #11).
# 5	Support partner biologists to work on agriculture-related lark issues.
# 6	Refine and implement management prescriptions to create breeding habitat, develop winter prescription in agricultural matrix, and understand effect on lark vital rates.
# 7	Facilitate lark-beneficial habitat management on Willamette Valley private lands through incentive programs or other means.
# 9	Enhance existing habitat and increase amount of available habitat in the Willamette Valley with an emphasis on implementing habitat restoration activities on breeding and wintering grounds.
# 10	Survey and monitor for larks on new and historic sites.
# 12	Evaluate appropriateness and feasibility of population augmentation, relocation or reintroduction.
# 13	Conduct habitat restoration on the Columbia River and Coast to increase and improve lark habitat, with an emphasis on implementing restoration on breeding and wintering grounds.
# 14	Facilitate coordination and information sharing with an emphasis on range-wide working group.
# 15	Work with the regulatory community to identify mitigation opportunities including conservation banks with an emphasis on developing mitigation banking strategy and criteria.

### Threats

Although progress has been made, threats such as development and habitat degradation are still very real for the streaked horned lark. Continued efforts will be necessary to ensure their recovery and survival.



### Recently Completed Actions

Since the first Action Plan was created in 2007, the following notable tasks have been completed or have made substantial progress:

- Several additional entities have been engaged in the coordinated effort to recover the streaked horned lark.
- An analysis of habitat distribution and change through time following dredged material deposition was conducted on Columbia River islands. This knowledge is informing a plan to systematically create lark habitat.
- Nest enclosure research was implemented range-wide, aimed at protecting eggs and nestlings from predation.
- OR and WA partners are working to abate decline through a genetic rescue project, which translocates eggs from OR to increase lark genetic variability in South Puget Sound. A hatched lark from OR paired, nested, and produced off-spring that fledged and returned the next spring.
- An integrated strategy to remove invasive plants is being implemented range-wide. These include bulldozing beach grass, prescribed fire and careful use of herbicides to remove structure modifying plants.
- Partners are tracking lark productivity and occupancy at many key sites.
- A conspecific attraction study was completed showing that larks will respond to cues, but will only remain at the site if habitat is favorable.
- A larks and airports working group has been formed to address conservation efforts in partnership with airports in the region.

