

YEAR TWO MONITORING REPORT

FOR

ORCAS ISLAND AIRPORT SAN JUAN COUNTY, WA

Wetland Resources, Inc. Project #19055

Prepared By Wetland Resources, Inc. 9505 19th Avenue SE, Suite 106 Everett, WA 98208 (425) 337-3174

Prepared For WHPacific Attn: John Shute 9450 SW Commerce Circle Suite 300 Wilsonville, OR 97070

December 9, 2021

TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 PROJECT DESCRIPTION 2.1 PROJECT GOALS 2.2 PERFORMANCE STANDARDS	1
3.0 PROJECT MONITORING PROGRAM	3 3
3.2 MITIGATION AREA MAINTENANCE 3 3.3 ADDITIONAL PERMITTED MAINTENANCE ACTIVITIES 4 3.3.1 Maintenance on the North Site 4 3.3.2 Maintenance on the South Site 4	4 4 4
3.4 INVASIVE SPECIES	5 5
4.0 MITIGATION AREA CONDITIONS	5
5.0 MAINTENANCE RECOMMENDATIONS	6
6.0 CONCLUSION	7
7.0 Use of This Report	7

LIST OF APPENDICES

APPENDIX A: YEAR TWO SAMPLE PLOT DATA APPENDIX B: YEAR TWO PHOTOS APPENDIX C: MITIGATION AREAS AND SAMPLE PLOT MAPS

1.0 INTRODUCTION

Wetland Resources, Inc. (WRI) was contracted by WHPacific to perform annual monitoring of the Wetland and Buffer Mitigation Plan areas for the Port of Orcas at the Orcas Island Airport.

The project site is located at 147 Schoen Lane on Orcas Island in San Juan County (portion of Section 11 and 14, Township 37N, Range 2W, W.M.). This site is designated within the Water Resources Inventory Area (WRIA) 2. The project includes the following tax parcel numbers: 271412010000, 271412009000, 271412013000, 27114202300, and 271131001000. The Airport facility and adjacent mitigation area (herein referred to as the "Airport Site") covers approximately 40 acres. The site south of the airport covers almost 12 acres and is herein referred to as the "South Site" (Sheet 1, Appendix C). The South Site has no address and is bordered to the north by Mt. Baker Rd., to the west by Lover's Ln., and can be accessed from either road.

Mitigation site preparation began in September 2019 and mitigation plantings were installed in October and November 2019. WRI verified correct installation of the project on November 6 and 7, 2019. For details of the approved project installation, please refer to the As-Built Report dated February 5, 2020.

The project has completed its second growing season. Monitoring site visits were conducted on May 19 and October 14, 2021, to evaluate the condition of the mitigation areas.

2.0 PROJECT DESCRIPTION

The project consisted of removing vegetation on the South Site to comply with FAA safety standards for the approach surface within the flight path for Runway 34. To improve the 20:1 visual approach surface for Runway 34, vegetation clearing took place within the eastern and southern portions of the South Site. The clearing included removal of trees and shrubs from a total of 2.38 acres of Wetland D and 0.24 acres of buffer area immediately adjacent to Wetland D.

The South Site includes a recorded conservation easement (doc #90168783), which is currently being managed by San Juan County. In the areas outside of this conservation easement, tree stumps were removed to allow for on-going maintenance throughout the site and to ensure no regrowth. Stumps within the conservation easement were retained to minimize disturbance to the greatest extent possible.

2.1 PROJECT GOALS

The goal of this mitigation plan is to replace the functions and values lost through wetland and buffer vegetation clearing on the South Site. Specifically, the applicant will ensure water quality improvement functions as well as establish a diversity of native species in a larger off-site wetland, and ensure long-term protection of both wetland systems. To achieve this, specific goals have been established and are listed below.

Goal 1. Compensate for temporal loss through wetland and buffer enhancement.

- **Objective 1.** Enhance areas within Wetland A and B.
- **Objective 2.** Enhance wetland buffer adjacent to Wetland B.

Goal 2. Increase existing vegetated corridor and improve species richness for wildlife habitat.

- **Objective 1.** Enhance areas within Wetland A and B.
- **Objective 2.** Enhance wetland buffer adjacent to Wetland B.

Goal 3. Protect Water Quality within Wetland D.

- **Objective 1.** Install native shrubs within 25 feet of either site of the ditch (Stream 3).
- **Objective 2.** Avoid mowing within 25 feet on either side of the ditch.

2.2 PERFORMANCE STANDARDS

Performance/success standards have been established to assess the success of the mitigation project in achieving the stated goals. Performance/success standards are as follows:

Year 1 Monitoring

Success Standard: 100 percent survival of planted species No greater than 15 percent coverage of invasive species. Zero tolerance of noxious weeds.

Year 2 Monitoring

Success Standard: 90 percent survival of planted species No greater than 15 percent coverage of invasive species. Zero tolerance of noxious weeds.

Year 3 Monitoring

Success Standard: Minimum 35 percent aerial coverage of native species No greater than 15 percent coverage of invasive species. Zero tolerance of Noxious weeds.

Year 5 Monitoring

Success Standard: Minimum 50 percent aerial coverage of native species No greater than 15 percent coverage of invasive species. Zero tolerance of noxious weeds.

Year 7 Monitoring

Success Standard: Minimum 60 percent aerial coverage of native species No greater than 15 percent coverage of invasive species. Zero tolerance of noxious weeds.

Year 10 Monitoring

Success Standard: Minimum 80 percent aerial coverage of native species No greater than 15 percent coverage of invasive species. Zero tolerance of noxious weeds.

In any monitored year, naturally occurring native species shall count toward the overall percent coverage of native species.

Note: Reed canarygrass coverage is not to be counted in the assessment of invasive species coverage. The purpose of this mitigation plan is not to eradicate reed canarygrass, but to increase species diversity and replace temporal loss.

3.0 PROJECT MONITORING PROGRAM

This mitigation project will be monitored for ten years following completion and approval of the installed plan. Monitoring will be conducted by a contracted wetland professional or other qualified person.

3.1 SAMPLING METHODS

Monitoring sample plots and photo points were established during the as-built inspection and are shown on the maps included in Appendix B of this report. These will be used throughout the tenyear monitoring period. Plant survival shall be measured during the first two years of monitoring and aerial cover will be documented for remainder of the monitoring period. The percentage of plant survival will be derived by subtracting the number of missing or dead plants from the number of plants that were recorded in the transects/sample plots during the initial visit to assess plan compliance.

Plant survival and aerial cover within the sample plots is assumed to be representative of the entire site, unless otherwise discussed within a monitoring report. In addition to the sample plots, a visual inspection of the entire mitigation area shall be conducted to assess high mortality or sparsely covered areas not represented by the plots. If one or more of the planted species exhibit a high rate of mortality and are deemed inappropriate for the site, a substitution may be recommended by the consulting biologist.

3.1.1 Photo Documentation

During the site visit for the as-built plan, photo points were established at the same locations as the sample plots to visually document the changes of the site over time. These photo points shall be used during each monitoring visit and photos will be included with the monitoring reports.

3.2 MITIGATION AREA MAINTENANCE

Periodic maintenance will be needed to ensure the success of the mitigation plantings. The planting areas will be maintained in spring and fall of each year for the first five years and as needed for the

remainder of the ten-year monitoring period. Maintenance activities will include the following, as necessary:

- Plant inspection and replacement
- Control invasive species
- Remove noxious weeds
- Remove trash
- Replace signs
- Replace mulch

Following each monitoring, recommendations will be made for the replacement of plant mortality. Any replanting will be done by the contracted landscaper and should be done during the fall maintenance visit. Maintenance activities will be conducted in a manner that avoids impacts to establishing plants and existing habitat. Mowing, selective clearing, and other maintenance activities necessary to prevent future potential obstructions will be allowed as described below.

3.3 ADDITIONAL PERMITTED MAINTENANCE ACTIVITIES

To reduce the risk of wildlife-aviation conflict, the following vegetation management activities will be allowed in all mitigation planting areas:

1) Removal of volunteer plants that produce abundant seeds, berries, and fruits attractive to wildlife.

2) Install additional tree/shrub plantings to fill canopy gaps and/or speed low canopy closure.

3.3.1 Maintenance on the North Site

Ongoing maintenance to control volunteer tree species shall be allowed throughout the mitigation areas. The stumps of species prone to re-sprouting may be removed from this area to avoid additional maintenance measures.

3.3.2 Maintenance on the South Site

Flight Path maintenance measures for the South Site will follow the guidelines below:

1) Mowing shall be avoided within 25 feet of either side of the channel to protect water quality functions within the ditch. The shrubs in this zone may be maintained by methods other than mowing.

2) Ongoing maintenance/mowing to control pioneer tree species shall be allowed throughout this property. Any tree stumps and debris may be removed from the areas outside of the Conservation Easement.

3) The Conservation Easement area will continue to have trees removed as necessary to prevent obstructions as required for safety. Tree stumps will be left within the Conservation Easement.

3.4 INVASIVE SPECIES

Invasive species control will be accomplished through the removal of foliage and roots, whenever possible. Mowing of Himalayan blackberry and Scot's broom is also effective if conducted as part of a routine maintenance schedule (a minimum of four times per year). Invasive species, such as Himalayan blackberry, reed canarygrass, Scot's broom, and Japanese knotweed are to be controlled within the mitigation area. All Himalayan blackberry and Scot's broom within the mitigation areas shall be cut to ground level during each maintenance visit. Reed canarygrass shall be mowed (cut back or weed whacked) at least twice a year, once in the early spring, prior to formation of the seed heads and again in mid-summer. Spray, and or minor grubbing of canarygrass may also occur upon approval of the regulatory biologist. A zero tolerance of noxious weeds, such as Japanese knotweed, is to be implemented and any and all specimens shall be entirely removed from the mitigation area and disposed of in an appropriate off-site location. The goal of this maintenance is to ensure that the planted native species establish as designed. Once established, it is expected that the native plants will prevent further establishment of invasive species.

3.5 CONTINGENCY PLAN

If more than 20% of the plants are severely stressed during any of the inspections, or it appears more than 20% may not survive, additional plantings of the same species or, if necessary, alternative species may be added to the planting area. If this situation persists into the next inspection, a meeting with the consulting wetland specialist, ECY, and/or representative for San Juan County will be scheduled to decide upon contingency plans. Elements of the contingency plan may include, but will not be limited to, more aggressive weed control, plant mortality replacement, species substitution, fertilization, soil amendments and/or irrigation.

4.0 MITIGATION AREA CONDITIONS

4.1 YEAR ONE (FALL 2019 - FALL 2020)

During the May 11, 2020, site visit, it was noted that the majority of the mitigation planting areas were doing well, with the exception of the eastern portion of Wetland Enhancement Area 1. Very few of the installed plants within this area survived. Given the condition of this mitigation area and based on discussions with WA State Department of Ecology, development of contingency measures was necessary. Supplemental plantings were added to Areas 2a, 2b, 2c, 2d, 4, and 5. Wetland Enhancement Area 1a was extended slightly north to create a larger planting area.

The supplemental planting plan was installed in late October/early November 2020. Vegetation sampling plot data for the Year One Monitoring Report was collected after installation of the supplemental planting plan.

4.2 YEAR TWO (FALL 2020 - FALL 2021)

Monitoring inspections were conducted on May 19 and October 14, 2021. Given the supplemental plantings that were installed in Year 1, survival rates for Year 2 were based on the data collected in November 2020 (end of Year 1).

During the May 2021 site visit, WRI reviewed all the planting areas to assess maintenance needs and make note of areas where plant survival was low. After the May inspection, WRI provided a list of maintenance tasks to the contractor responsible for maintaining the mitigation areas during the late spring and summer. Maintenance occurred in May and September 2021. The planting areas were irrigated weekly in August and September.

During the October 2021 site inspection, WRI reviewed all the mitigation planting areas, collected data at each sampling plot, and took photos from the established photo points. Survival rates within the sampling plots range from 72 percent to 100 percent, with the lowest survival rates in Buffer Enhancement Area 3. The average survival rate of the sampling plots is 93.5 percent, which is representative of the overall survival across the mitigation areas. While Area 3 is not meeting the 90 percent survival performance standard, this area is densely vegetated and has reached 35 percent aerial cover of native plants, which is the required standard for Year 3 (2022).

Invasive species have been removed from the mitigation areas and reed canary grass has been treated/cut back periodically over the last year. Aerial cover of invasive species across all mitigation planting areas is less than 5 percent (with the exception of reed canarygrass).

Photos of the mitigation areas are provided in Appendix B.

5.0 MAINTENANCE RECOMMENDATIONS

No urgent maintenance is needed currently; but within the upcoming growing season (spring - fall 2022), the following measures are recommended:

- Re-flag installed plants as necessary prior to invasive species removal/mowing.
- Remove invasive species (including Himalayan blackberry) and mow/treat reed canary grass a minimum of two times between April and October 2022.
- Repair deer fencing as necessary.
- Provide irrigation as needed during the dry season (approximately July 15 October 15).
- Replace plants as necessary in fall 2022 to achieve the required 35 percent aerial coverage.

6.0 CONCLUSION

Except for reed canary grass, the mitigation areas contain less than 5 percent aerial cover of invasive species, which is lower than the required minimum of 15 percent. The average survival rate of installed plantings is at 93.5 percent, above the required 90 percent. As the Area 3 plantings are dense, and already meeting next year's performance standards, no additional planting is recommended. If any of the mitigation planting areas are not meeting the required performance standards in the fall of 2022, contingency measures will be implemented.

7.0 Use of This Report

This Year Two Monitoring Report is supplied to WHPacific as a means of determining mitigation site conditions, as required by the WA State Department of Ecology and San Juan County. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions. Reports may be adversely affected due to the physical condition of the site and the difficulty of access, which may lead to observation or probing difficulties.

The laws applicable to wetlands are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report, and any implied representation or warranty is disclaimed.

Wetland Resources, Inc.

Mengl A. Kamongini

Meryl Kamowski, PWS Senior Ecologist

APPENDIX A: YEAR TWO SAMPLE PLOT DATA

WETLAND ENHANCEMENT AREA 1, ZONE 1A, PLOT 1-1 (35'X55')		
Species	Year 1 Quantity in Sampling Plot	Year 2 Quantity in Sampling Plot
Salix spp.	70	70
Total:	70	70
Percent Survival:		100%

WETLAND ENHANCEMENT AREA 1, ZONE 1A, PLOT 1-2 (35'X55')		
Species	Year 1 Quantity in Sampling Plot	Year 2 Quantity in Sampling Plot
Salix spp.	69	62
Total:	69	62
Percent Survival:		90%

WETLAND ENHANCEMENT AREA 2, ZONE 2B, PLOT 2-1 (40'x50')		
Species	Year 1 Quantity in Sampling Plot	Year 2 Quantity in Sampling Plot
Thuja plicata	5	4
Fraxinus latifolia	4	4
Picea sitchensis	2	2
Salix spp.	16	14
Rubus spectabilis	0	1
Spiraea douglasii	0	1
Total:	27	26
Percent Survival:		96%

WETLAND ENHANCEMENT AREA 2, ZONE 2B, PLOT 2-2 (40'x50')		
Species	Year 1 Quantity in Sampling Plot	Year 2 Quantity in Sampling Plot
Fraxinus latifolia	1	3
Physocarpus capitatus	5	5
Salix lasiandra	15	15
Pinus contorta	6	5
Total:	27	28
Percent Survival:		>100%

WETLAND ENHANCEMENT AREA 2, ZONE 2C, PLOT 2-3 (40'x50')		
Species	Year 1 Quantity in Sampling Plot	Year 2 Quantity in Sampling Plot
Spiraea douglasii	22	22
Salix hookeriana	3	2
Total:	25	24
Percent Survival:		96%

WETLAND ENHANCEMENT AREA 2, ZONE 2D, PLOT 2-4 (40'x50')		
Species	Year 1 Quantity in Sampling Plot	Year 2 Quantity in Sampling Plot
Physocarpus capitatus	19	18
Total:	19	18
Percent Survival:		95%

BUFFER ENHANCEMENT AREA 3, PLOT 3-1 (30'x30')		
Species	Year 1 Quantity in Sampling Plot	Year 2 Quantity in Sampling Plot
Corylus cornuta	4	2
Acer macrophyllum	12	11
Pseudotsuga menziesii	4	4
Holodiscus discolor	18	8
Philadelphus lewisii	12	11
Total:	50	36
Percent Survival:		72%

BUFFER ENHANCEMENT AREA 3, PLOT 3-2 (30'x30')		
Species	Year 1 Quantity in Sampling Plot	Year 2 Quantity in Sampling Plot
Corylus cornuta	3	2
Acer macrophyllum	5	5
Pseudotsuga menziesii	4	3
Holodiscus discolor	4	4
Thuja plicata	5	4
Total:	21	18
Percent Survival:		86%

WETLAND RESTORATION AREA 4, PLOT 4-1 (25'x60')		
Species	Year 1 Quantity in Sampling Plot	Year 2 Quantity in Sampling Plot
Spiraea douglasii	3	2
Physocarpus capitatus	28	28
Total:	31	30
Percent Survival:		97%

WETLAND RESTORATION AREA 4, PLOT 4-2 (25'x60')		
Species	Year 1 Quantity in Sampling Plot	Year 2 Quantity in Sampling Plot
Spiraea douglasii	13	12
Physocarpus capitatus	23	23
Total:	36	35
Percent Survival:		97%

WETLAND RESTORATION AREA 5, PLOT 5-1 (25'x45')		
Species	Year 1 Quantity in Sampling Plot	Year 2 Quantity in Sampling Plot
Carex obnupta	28	30
Physocarpus capitatus	21	0
Juncus effusus	0	21
Total:	49	51
Percent Survival:		>100%

APPENDIX B: YEAR TWO PHOTOS



PHOTO 1: PLOT 1-1. LOOKING NORTH IN WETLAND ENHANCEMENT AREA 1, ZONE 1A.



PHOTO 2: PLOT 1-1. LOOKING EAST IN WETLAND ENHANCEMENT AREA 1, ZONE 1A.



PHOTO 3: PLOT 1-2. FROM EAST LOOKING WEST IN WETLAND ENHANCEMENT AREA 1, ZONE 1A.



PHOTO 4: PLOT 1-2. FROM SOUTH LOOKING NORTH IN WETLAND ENHANCEMENT AREA 1, ZONE 1A.



PHOTO 5: PLOT 2-1 FROM EAST LOOKING WEST IN WETLAND ENHANCEMENT AREA 2, ZONE 2B.



PHOTO 6: PLOT 2-1. FROM SOUTH LOOKING NORTH IN WETLAND ENHANCEMENT AREA 2, ZONE 2B.



PHOTO 7: PLOT 2-2. FROM EAST LOOKING WEST IN WETLAND ENHANCEMENT AREA 2, ZONE 2B.



PHOTO 8: PLOT 2-2. FROM NORTH LOOKING SOUTH IN WETLAND ENHANCEMENT AREA 2, ZONE 2B.



PHOTO 9: PLOT 2-3. FROM SOUTH LOOKING NORTH IN WETLAND ENHANCEMENT AREA 2, ZONE 2C.



PHOTO 10: PLOT 2-3. FROM WEST LOOKING EAST IN WETLAND ENHANCEMENT AREA 2, ZONE 2C.



PHOTO 13: PLOT 3-1. FROM EAST LOOKING WEST IN BUFFER ENHANCEMENT AREA 3.



PHOTO 14: PLOT 3-1. FROM SOUTH LOOKING NORTH IN BUFFER ENHANCEMENT AREA 3.



PHOTO 11: PLOT 2-4. FROM EAST LOOKING WEST IN WETLAND ENHANCEMENT AREA 2, ZONE 2D.



PHOTO 12: PLOT 2-4. FROM SOUTH LOOKING NORTH IN WETLAND ENHANCEMENT AREA 2, ZONE 2D.



PHOTO 15: PLOT 3-2. FROM SOUTH LOOKING NORTH IN BUFFER ENHANCEMENT AREA 3.



PHOTO 16: PLOT 3-2. FROM EAST LOOKING WEST IN BUFFER ENHANCEMENT AREA 3.



PHOTO 17: PLOT 4-1. FROM NORTH LOOKING SOUTH.



PHOTO 18: PLOT 4-1. FROM SOUTH LOOKING NORTH.



PHOTO 19: PLOT 4-2. FROM SOUTH LOOKING NORTH.



PHOTO 20: PLOT 5-1. LOOKING SOUTHEAST THROUGH EMERGENT PLANTS IN AREA 5.

APPENDIX C: MITIGATION AREAS AND SAMPLE PLOT MAPS

PROJECT SITE OVERVIEW ORCAS ISLAND AIRPORT

PORTION OF SECTION 11, TOWNSHIP 37N, RANGE 2E, W.M.







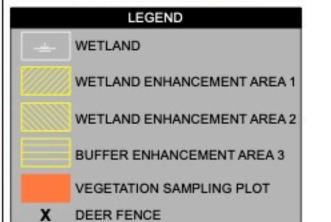
Project Site Overview Orcas Island Airport San Juan County

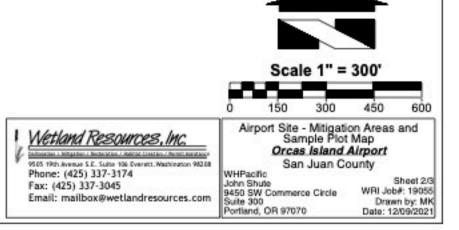
WHPacific Sheet 1/3 John Shute WRI Job#: 19055 Suite 300 Drawn by: MK Portland, OR 97070 Date: 12/09/2021

AIRPORT SITE - MITIGATION AREAS AND SAMPLE PLOT MAP ORCAS ISLAND AIRPORT

PORTION OF SECTION 11, TOWNSHIP 37N, RANGE 2E, W.M.







SOUTH SITE - MITIGATION AREAS AND SAMPLE PLOT MAP ORCAS ISLAND AIRPORT

PORTION OF SECTION 11, TOWNSHIP 37N, RANGE 2E, W.M.

