

2018

Mitigation Monitoring Annual Report Template

1. Mitigation Monitoring Report Cover Sheet

1: Project Name Identifiers: Long Tom Mitigation Bank

DSL Permit # <u>41168-RF</u>	Corps Permit # <u>NWP-2007-719</u>	Permittee: <u>EcoBank LLC</u>
County <u>Lane</u>	Report Date <u>14DEC15</u>	Monitoring Year 1 2 3 4 5 6 7 8 9 <u>10</u>
Date Removal-Fill Activity Completed <u>31MAY11</u>	Date mitigation was completed: Grading <u>31MAY11</u>	Planting <u>ongoing</u>
Date(s) of data collection: <u>20-10JUN18</u>		
Report prepared by: <u>Timothy A. Acker</u>		

2: Monitoring Report Purpose:

This monitoring report is for a project that includes: (check all that apply):

- Compensatory **freshwater, non-tidal** wetland mitigation for permanent wetland impacts.
- Compensatory **estuarine** wetland mitigation for permanent wetland impacts.
- Only non-wetland** compensatory mitigation.
- Only** mitigation for **temporary** impacts that had a monitoring requirement.
- Voluntary** wetland enhancement, creation or restoration (General authorization or individual permit) not funded with money from DSL's wetland mitigation fund.
- Voluntary wetland enhancement, creation or restoration (General authorization or individual permit) funded with money from DSL's **wetland mitigation fund**.
- Mitigation Bank** Report
- Other _____

3: Results: (add more rows if needed)

	Performance standards (verbatim from permit)	Fully Met? (Y/N)	Comments/Reason for shortfall (mark NA if doesn't apply this year)
1.	The PEM areas shall be wetland as determined using the '87 <u>Manual</u> and applicable guidance and supplements as of 31DEC07.	Y	See post-construction delineation report
2.	A minimum of 55% of the mean relative plant cover for the PEM habitat type as a whole (including substrate) is comprised of native species.	Y	76% (CI _{80%} = 71-81%)
3.	No more than 15% mean relative percent cover for the PEM habitat type as a whole is comprised of non-native invasive species as set forth in Exhibit C1 of the Mitigation Plan.	Y	0% (CI _{80%} = 0-0%)
4.	The moisture index for the PEM habitat type as calculated in <u>Marshall</u> , appendix VII, is equal to or less than 3.0	Y	2.08

5.	For FACW-dominated PEM communities, a minimum of 10 wet prairie cohort species a set forth in the Mitigation Plan Exhibit C2 shall be present in the pertinent sample plots by year 5.	Y	12 wet prairie species present in plots; 20 known to occur.
6.	The PFO areas shall be wetland as determined using the '87 <i>Manual</i> and applicable guidance and supplements as of 31DEC07.	Y	See post-construction delineation report
7.	A minimum of 55% of the mean relative plant cover for the PFO habitat type as a whole (including substrate) is comprised of native species.	Y	74% (CI _{80%} = 60-86%)
8.	No more than 15% mean relative percent cover for the PFO habitat type as a whole is comprised of non-native invasive.	Y	0% (CI _{80%} = 0-0%)
9.	The moisture index of the herbaceous and shrub strata for the PFO habitat type is equal to or less than 3.0	Y	1.75
10.	The mean tree d.b.h. for the largest 85 percent of the stems in the PFO habitat type shall be at least 3"	N	Mean d.b.h. = 1.04" Mean ht. = 9.1'
11.	By the end of six full calendar years after planting there shall be a minimum of 160 free-to-grow trees per acre in the PFO habitat type	Y	FTG/ac = 183 (CI _{80%} = 137-228) Tree count suspended after year 8.
12.	Not more than 5% of the tree count in the PFO habitat type shall be non-native	Y	0% (CI _{80%} = 0-0%)
13.	The PSS areas shall be wetland as determined using the '87 <i>Manual</i> and applicable guidance and supplements as of 31DEC07.	Y	See post-construction delineation report
14.	A minimum of 55% of the mean relative plant cover for the PSS habitat type as a whole (including substrate) is comprised of native species.	Y	95% (CI _{80%} = 92-99%)
15.	No more than 15% mean relative percent cover for the PSS habitat type as a whole is comprised of non-native invasive species.	Y	0% (CI _{80%} = 0-0%)
16.	The moisture index of the herbaceous and shrub strata for	Y	1.43

	the PSS habitat type is equal to or less than 3.0		
17.	The Upland Savanna areas shall be upland as determined using the '87 <i>Manual</i> and applicable guidance and supplements as of 31DEC07.	Y	See post-construction delineation report
18.	A minimum of 55% of the mean relative plant cover for the Upland Savanna habitat type as a whole (including substrate) is comprised of native species.	Y	89% (CI _{80%} = 84-95%)
19.	No more than 15% mean relative percent cover for the Upland Savanna habitat type as a whole is comprised of non-native invasive species.	Y	0% (CI _{80%} = 0-0%)
20.	The moisture index of the herbaceous stratum for the Upland Savanna habitat type is greater than 3.0	N	2.61
21.	There shall be between 15 and 25 live trees per acre at least 3" d.b.h. and free-to-grow (≥5' tall) in the Upland Savanna habitat type, and at least 9 of which shall be <i>Quercus garryana</i> .	N	TPA _{Total} = 20 FTG WVPP _{Total} = 35 Q. garryana ((OWO)) = 13 FTG OWO _{Total} = 12 FTGTPA _{Total} = 13
22.	The Upland Forest areas shall be upland as determined using the '87 <i>Manual</i> and applicable guidance and supplements as of 31DEC07.	Y	See post-construction delineation report
23.	A minimum of 55% of the mean relative plant cover for the Upland Forest habitat type as a whole (including substrate) is comprised of native species.	Y	72% (CI _{80%} = 64-81%)
24.	No more than 15% mean relative percent cover for the Upland Forest habitat type as a whole is comprised of non-native invasive species.	Y	0% (CI _{80%} = 0-0%)
25.	The moisture index of the herbaceous stratum for the Upland Forest habitat type is greater than 3.0	N	2.21
26.	The mean tree d.b.h. for the largest 85 percent of the stems shall be at least 3" in the Upland Forest habitat type	N	Mean d.b.h. = 1.26" Mean ht. = 7.10'
27.	By the end of six full calendar years after planting there shall be a minimum of 160 free-to-grow	Y	Live trees per acre = 256 (CI _{80%} = 246-267) FTG tpa = 221 (CI _{80%} = 210-233)

	trees per acre in the Upland Forest habitat type		
28.	Not more than 5% of the tree count in the Upland Forest habitat type shall be non-native	Y	0% (CI _{80%} = 0-0%)

4: Further Actions:

Remedial work recommended

Yes

No

Deed Restriction or other protection instrument attached

Yes

No

Final Monitoring Report?

Yes

No

Requesting release or partial release of financial security?

Yes

No

2. Long Tom Mitigation Bank Plan Purpose and Overview

A. Location.

The mitigation site is located in the NE1/4 Section 26, T15S R05W, W.M. on Lane County tax lot 15052610-102 at N44°14'14.84", W123°15'15.61". From Interstate 5 exit 209 go west six miles to the Hwy 99E intersection in Harrisburg. Turn left at the light and travel south on Hwy 99E to Junction City. At the Safeway turn right and go north on Hwy 99W for 1.9 miles. Turn left onto Ferguson Road and travel west for 1.3 miles. Turn left onto Washburn Lane and travel south for 1.0 mile. Turn right onto Cox Butte Rd. and travel west for ¼ mile. The Long Tom Mitigation Bank gate is on your right.

B. Mitigation goals and objectives.

The Long Tom Mitigation Bank mitigation plan is intended to replace the functions and values lost due to unavoidable adverse impacts to wetlands as authorized by the Oregon Department of State Lands (DSL) and/or the U.S. Army Corps of Engineers (Corps) in its service area (HUC 17090003). The mitigation bank consists of aquatic habitats created, restored, enhanced, or preserved in accordance with state and federal regulations to compensate for permitted impacts in the categories shown in Table 1.

Table 1. Long Tom Mitigation Bank habitats achieved.

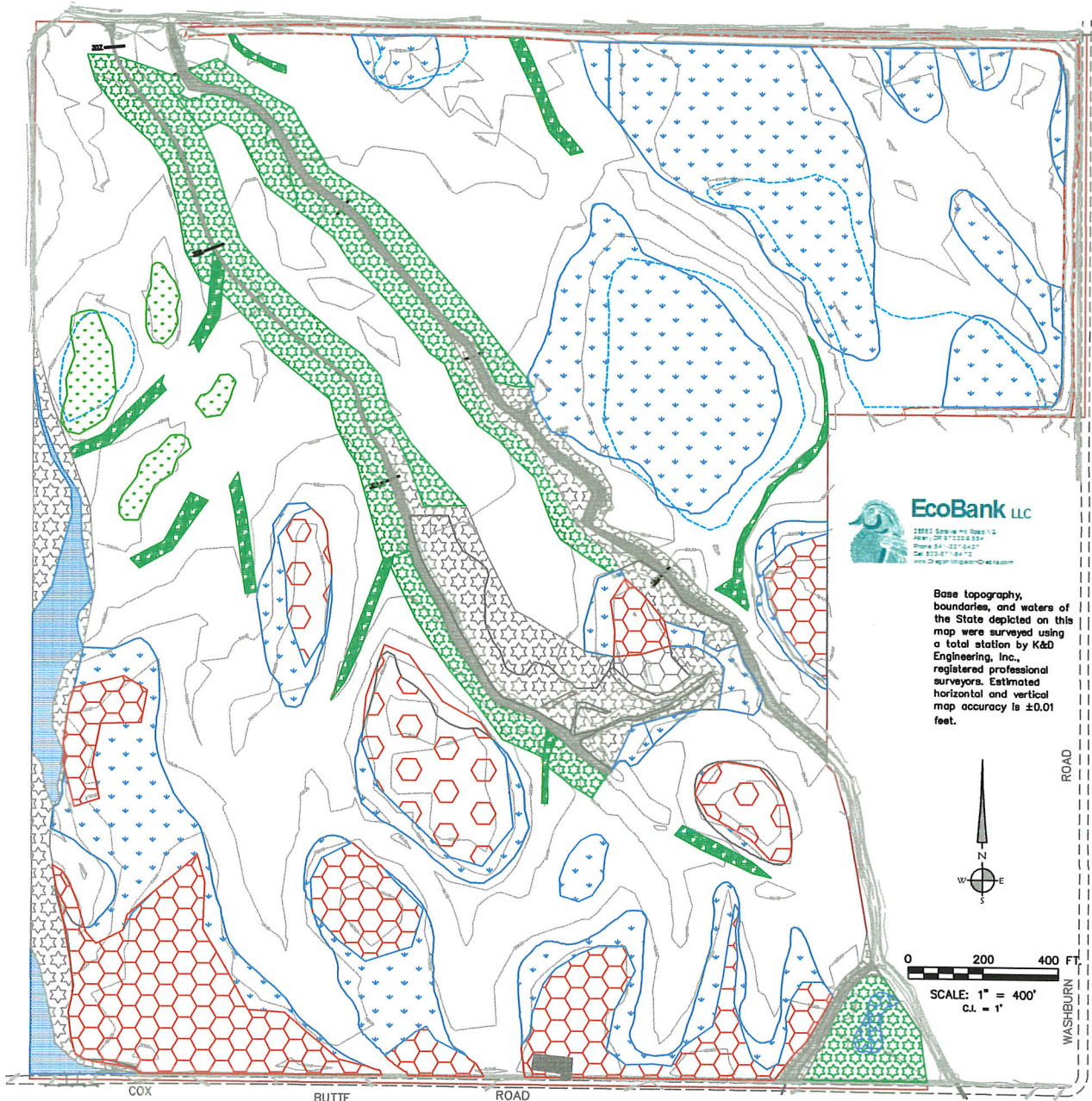
Mitigation Method	Acres	HGM	Cowardin	Mitigation Ratio	Credits Achieved
Conservation	0.00	N/A	N/A	0.00	0.00
Enhance	67.43	S/F	PEM	2:1	33.72
Enhance	1.75	S/F	PSS	2:1	0.88
Enhance	7.76	S/F	PFO	2:1	3.88
Create	27.30	S/F	PEM	1.5:1	18.20
Create	0.19	S/F	PFO	1.5:1	0.12
Restore	1.77	S/F	PEM	1:1	1.77
Restore	2.93	S/F	PFO	1:1	2.93
Buffer	11.09	N/A	Forest	10:1	1.11
Buffer	4.24	N/A	Savanna	10:1	0.42

124.46

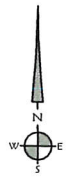
63.02

Errors

FIGURE 1. HABITATS, STRUCTURES & AS-BUILT TOPOGRAPHIC MAP



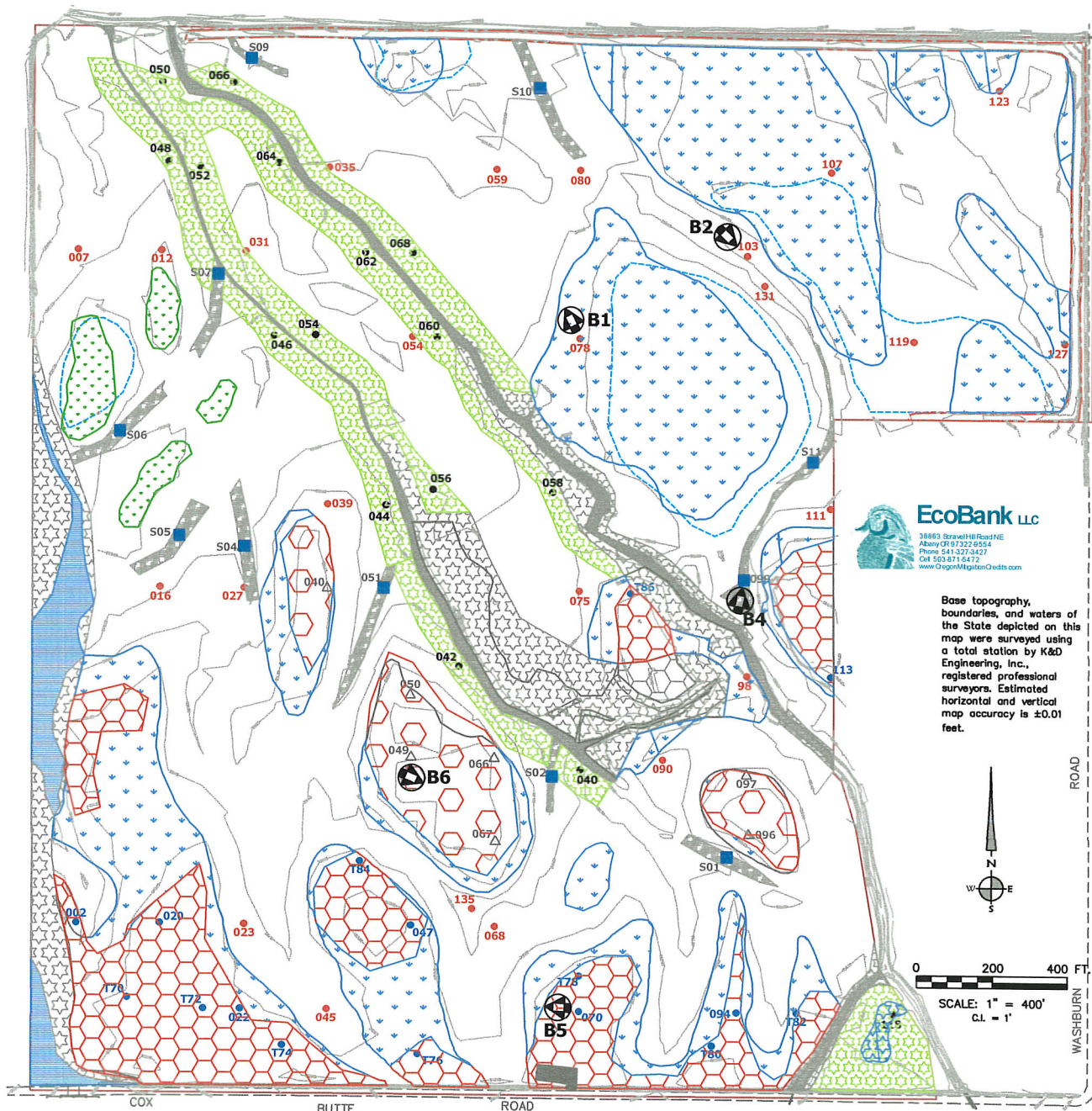
Base topography, boundaries, and waters of the State depicted on this map were surveyed using a total station by K&D Engineering, Inc., registered professional surveyors. Estimated horizontal and vertical map accuracy is ±0.01 feet.



0 200 400 FT.
SCALE: 1" = 400'
C.I. = 1"

LEGEND					
PROPERTY BOUNDARY		CONSERVATION PFO		RESTORED PEM	
WEIR		PRE-EXISTING UPLAND FOREST		ENHANCED PFO	
BERM		SLOUGH		CREATED PEM	
ROCKED HAY PAD		OHW		CREATED PFO	
ORIGINAL UPLAND BNDY		RE-GRADED 2010		ENHANCED PEM	
		ENHANCED PSS		UPLAND FOREST	
				UPLAND SAVANNA	

FIGURE 2. MONITORING PLAN MAP



EcoBank LLC
 38863 Stravel Hill Road NE
 Albany, OR 97322-9554
 Phone: 541-327-3427
 Cell: 503-871-6472
 www.OregonMitigationCredits.com

Base topography, boundaries, and waters of the State depicted on this map were surveyed using a total station by K&D Engineering, Inc., registered professional surveyors. Estimated horizontal and vertical map accuracy is ±0.01 feet.



0 200 400 FT
 SCALE: 1" = 400'
 C.I. = 1"

LEGEND

PROPERTY BOUNDARY		PRE-EXISTING PFO		HERBACEOUS WETLAND SAMPLE PT		093
PHOTO POINT		PRE-EXISTING UPLAND FOREST		SHRUB WETLAND SAMPLE PT		S01
BERM		SLOUGH		FORESTED WETLAND SAMPLE PT		118
ROCKED HAY PAD		OHW		UPLAND FOREST SAMPLE PT		T76
ORIGINAL UPLAND BNDY		RE-GRADED 2010		SAVANNA SAMPLE PT		067

Instructions: Use this sheet for Upland Buffers. Add or delete columns and rows to reflect the data collected. Review formulas in highlighted cells (green) and fix them after completing. Use the Summary Information to evaluate site performance against the specific standards found in your authorization. These standards and the Summary Print this worksheet and include it in Section 3 of the monitoring report.

Site: Long Tom Mitigation Bank
 Shrub Wetland Habitat Unit
 Sample Date(s): 02-03JUN18

Species	Origin (N, NN, I)	Wetland Status (1 - 5)	S01-1	S02-1	051-1	S04-1	S05-1	S06-1	S07-1	S09-1	S10-1	S11-1	099-1	Row Average
Native Herbaceous Species														
<i>Agrostis exarata</i>	N	2	20	0	0	0	0	0	0	0	0	0	0	2
<i>Ailnra plantago-aqualica</i>	N	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Alpeccurus geniculatus</i>	N	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Beckmannia syzigachne</i>	N	3	0	0	0	0	0	0	0	0	0	0	40	4
<i>Callitriche</i> spp.	N	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Deschampsia cespitosa</i>	N	2	0	20	40	65	65	15	75	10	0	0	0	26
<i>Downingia elegans</i>	N	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Epiobium brachycarpum</i>	N	4	20	20	10	0	0	20	5	0	0	0	0	7
<i>Epiobium ciliatum</i>	N	2	20	0	0	0	10	10	0	0	0	0	0	4
<i>Galium aparine</i>	N	4	0	0	0	0	0	5	0	0	0	0	0	1
<i>Glyceria occidentalis</i>	N	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Gratiophallum palustre</i>	N	2	0	0	10	0	0	0	0	0	0	0	0	1
<i>Hordeum brachyantherum</i>	N	2	0	0	0	0	0	0	0	0	0	0	0	0
<i>Juncus tenuis</i>	N	3	0	0	0	0	0	0	0	0	0	0	0	0
<i>Lotus unifloratus</i>	N	4	0	0	0	0	0	0	0	0	0	0	0	0
<i>Plagiobolus figuratus</i>	N	2	10	20	10	0	5	10	0	0	0	0	20	8
<i>Plagiobolus scouleri</i>	N	2	0	0	0	0	0	0	0	0	20	0	0	2
<i>Prunella vulgaris</i>	N	4	0	0	0	0	0	0	0	0	0	0	0	0
<i>Rorippa curvisiliqua</i>	N	1	0	0	0	0	0	0	0	0	0	0	0	0
Invasive Herbaceous Species														
<i>species-latin name</i>														
Non-Native Herbaceous Species														
<i>species-latin name</i>														
<i>Festuca ovina</i>	NN	5	0	0	0	0	0	0	0	0	0	0	0	0
<i>Lactuca serriola</i>	NN	4	0	0	0	0	0	0	0	0	0	0	0	0
<i>Lythrum portula</i>	NN	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Myosotis discolor</i>	NN	3	0	0	0	0	0	10	0	0	10	0	0	2
<i>Sonchus asper</i>	NN	3	0	0	0	0	0	0	0	0	0	0	0	0
<i>Vulpia bromoides</i>	NN	4	0	0	0	0	0	0	0	0	0	0	0	0
Native Shrub and Tree Species														
<i>species-latin name</i>														
<i>Spiraea douglasii</i>	N	2	20	20	50	30	20	30	10	30	10	20	20	24
<i>Rosa nutkana</i>	N	3	0	0	0	10	0	0	10	0	0	0	0	2
Thatch														
			0	30	0	10	10	0	20	40	70	70	40	26
Bare														
			30	10	0	20	10	30	0	40	0	20	0	15
Performance Standards														
Cover of Native Species & Substrate	Standard	≥55%	S01-1	S02-1	051-1	S04-1	S05-1	S06-1	S07-1	S09-1	S10-1	S11-1	099-1	Habitat Average
			100	100	70	100	100	90	100	100	90	100	100	95
Cover of Invasive Species		≤15%	0	0	0	0	0	0	0	0	0	0	0	92
Cover of Native Shrubs and Trees			20	20	50	30	20	30	10	30	10	20	20	24
														19
														28
Shrub stem count (5' rad. plot)			2	2	7	4	2	9	3	4	1	2	0	3
Shrub stem count per acre (Exp F=555)			1110	1110	3885	2220	1110	4995	1665	2220	555	1110	0	1816
Prevalence Index		<3.0	1.78	1.50	1.00	1.45	1.60	1.70	1.89	0.80	1.00	1.00	2.00	1.43
Weighted Prevalence Index			160	120	120	145	160	170	170	40	40	30	160	
Sum of plant cover			90	80	120	100	100	100	90	50	40	30	80	

Site: Long Tom Mitigation Bank		Sample Date(s):						
Upland Buffer Savanna Habitat Unit		02-03JUN18						
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	40H1	49H1	50H1	66H1	67H1	96H1
Native Herbaceous Species								
<i>species-latin name</i>								
Achillea millefolium	N	4	0	0	0	0	0	0
Agrostis exarata	N	2	0	0	0	0	0	0
Cerastium arvense	N	4	0	0	0	0	0	0
Deschampsia cespitosa	N	2	0	10	20	10	5	0
Elymus glaucus	N	4	65	0	0	0	0	0
Epilobium brachycarpum	N	4	0	0	0	0	0	0
Festuca rubra	N	3	0	40	60	70	60	95
Galium aparine	N	4	10	0	0	0	0	0
Lotus unifoliolatus	N	4	0	0	0	0	0	0
Lupinus micranthus	N	3	0	0	0	0	0	0
Prunella vulgaris	N	4	0	0	0	0	0	0
Invasive Herbaceous Species								
<i>species-latin name</i>								
			0	0	0	0	0	0
Non-Native Herbaceous Species								
<i>species-latin name</i>								
Bromus hordeaceus	NN	3	0	0	0	0	0	0
Crepis capillaris	NN	4	0	0	0	0	0	0
Lactuca serriola	NN	3	0	0	0	0	0	0
Myosotis discolor	NN	3	20	0	0	0	0	0
Vulpia bromoides	NN	4	0	30	0	0	15	5
Native Shrub and Tree Species								
<i>species-latin name</i>								
Pinus ponderosa	N	4	0	0	0	0	0	0
Quercus garryana	N	4	0	0	0	0	0	0
Thatch			5	0	20	20	15	0
Bare			0	20	0	0	5	0
Performance Standards		Standard	40H1	49H1	50H1	66H1	67H1	96H1
Cover of Native Species & Substrate		≥55%	80	70	100	100	85	95
Lower CI (80%)								
Upper CI (80%)								
Cover of Invasive Species		≤15%	0	0	0	0	0	0
Lower CI (80%)								
Upper CI (80%)								
Cover of Native Shrubs and Trees			0	0	0	0	0	0
Lower CI (80%)								
Upper CI (80%)								
Free-to-Grow Tree Count per ac. (≥5')		15≤t.p.a.≤25						
Free-to-Grow Quercus garryana		≥9						
Prevalence Index		>3.0	3.16	1.75	2.75	2.88	2.38	2.85

Site: Long Tom Mitigation Bank		Sample Date(s):					
Upland Buffer Savanna Habitat Unit		02-03JUN18					
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	97H1	Row Average			
Native Herbaceous Species							
<i>species-latin name</i>							
Achillea millefolium	N	4	0	0			
Agrostis exarata	N	2	0	0			
Cerastium arvense	N	4	0	0			
Deschampsia cespitosa	N	2	30	11			
Elymus glaucus	N	4	0	9			
Epilobium brachycarpum	N	4	0	0			
Festuca rubra	N	3	40	52			
Galium aparine	N	4	5	2			
Lotus unifoliolatus	N	4	0	0			
Lupinus micranthus	N	3	0	0			
Prunella vulgaris	N	4	0	0			
Invasive Herbaceous Species							
<i>species-latin name</i>							
			0	0			
Non-Native Herbaceous Species							
<i>species-latin name</i>							
Bromus hordeaceus	NN	3	0	0			
Crepis capillaris	NN	4	0	0			
Latuca serriola	NN	3	0	0			
Myosotis discolor	NN	3	5	4			
Vulpia bromoides	NN	4	0	7			
Native Shrub and Tree Species							
<i>species-latin name</i>							
Pinus ponderosa	N	4	0	0			
Quercus garryana	N	4	0	0			
Thatch			20	11			
Bare			0	4			
Performance Standards		Standard	97H1	Habitat Average	Standard Error	Standard Met?	
Cover of Native Species & Substrate		≥55%	95	89	4.3	YES	
Lower CI (80%)				84			
Upper CI (80%)				95			
Cover of Invasive Species		≤15%	0	0	0	YES	
Lower CI (80%)				0			
Upper CI (80%)				0			
Cover of Native Shrubs and Trees			0	0	0		
Lower CI (80%)				0			
Upper CI (80%)				0			
Free-to-Grow Tree Count per ac. (≥5')		15≤t.p.a.≤25				complete census	
Free-to-Grow Quercus garryana		≥9				complete census	
Prevalence Index		>3.0	2.50	2.61			