Mitigation Monitoring Annual Report Template

1. Mitigation Monitoring Report Cover Sheet

1: *Project Name* Identifiers: Long Tom Mitigation Bank

DSL Permit # 41168-RF Corps Permit # NWP-2007-719 Permittee: EcoBank LLC
County Lane Report Date 23JAN20 Monitoring Year **11**
Date Removal-Fill Activity Completed 31MAY11
Date mitigation was completed: Grading 31MAY11 Planting ongoing
Date(s) of data collection: 09JUN19 (herbaceous & shrub) & 29-30NOV19 (trees)
Report prepared by: Timothy A. Acker

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 Manual* 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	77% ($CI_{80\%}$ = 71-84%)
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 *Marshall*, appendix VII, is equal to or less than 3.0	Y	2.05

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	11 wet prairie species present in plots; 45 known to occur.
6.	The PFO areas shall be wetland as determined using the *'87 Manual* 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	79% ($CI_{80\%}$ = 72-88%)
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	1.76
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. = 1.08" Mean ht. = 10.5'
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 = 1117 ($CI_{80\%}$ = 346-1888) Heavy volunteering
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 Manual* 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	96% ($CI_{80\%}$ = 93-99%)
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 the PSS habitat type is equal to or less than 3.0	Y	1.21
17.	The Upland Savanna areas shall be upland as determined using the *'87 Manual* 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	60% ($CI_{80\%}$ = 45-75%)
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	1.24
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 *Quercus garryanna*.	N	TPA_{Total} = 20 FTG $WVPP_{Total}$ = 35 Q. garryana ((OWO) = 13 FTG OWO_{Total} = 12 $FTGTPA_{Total}$ = 13 WVPP $D.B.H._{AVG}$ = 4.7"
22.	The Upland Forest areas shall be upland as determined using the *'87 Manual* 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	89% ($CI_{80\%}$ = 73-100%)
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	1.67
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. = 2.29" Mean ht. = 9.09'

27.	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 Upland Forest habitat type	Y	Live trees per acre = 256 ($CI_{80\%}$ = 245-266) FTG tpa = 223 ($CI_{80\%}$ = 212-233)
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.

PRE-PROJECT HABITATS	Acres	POST-PROJECT HABITATS	Acres	Ratio	Credits
Existing Slough	1.71	Slough	1.71	10	0.17
Existing PFO	3.79	PFO	6.72	10	0.67
Existing Creeks	1.96	Creeks	1.96	10	0.20
Existing Forested Upland	4.44	Forested Upland	1.51	10	0.15
Existing Farmed Upland	45.85	Buffer Forested Upland	11.09	10	1.11
		Buffer Savanna	4.24	10	0.42
		Restored PEM	3.81	1	3.81
		Created PEM	25.26	1.5	16.84
		Created PFO	0.19	1.5	0.13
		Rocked Pad	0.10	0	0.00
		Berm	1.16	0	0.00
Existing Farmed Wetland	77.77	Enhanced PFO	7.76	2	3.88
		Enhanced PSS	1.75	2	0.88
		Enhanced PEM	67.43	2	33.72
		Berm, Ford & Weirs	0.83	-1	-0.83
TOTAL	**135.52**		**135.52**		**61.14**

C. Maintenance and management actions.
Since June 2018, the following activities were conducted:

a. Typical weed control activities (selective mowing & spraying) across the entire property.
b. Intense program of mowing and broadcast spraying in the Upland Forest, the berm, Upland Savanna, and in several areas in the Washburn Road side of the property to combat a pernicious *Crepis capillaris*/*Cirsium arvense* infestation. A new herbicide (Curtail®) was used and appears to be very effective against these target weeds.
c. About a third of the Upland Forest Willamette Valley Ponderosa pine plantation was pruned during December-January. Several tools (loppers, pruning saw and electric chainsaw) were trialed with the electric chain saw proved most efficient. Pruned branches were left on the ground and later reduced during mowing with no apparent increase in Sequoia pitch moth incidence. The immediate pruning benefit was ease of subsequent boom spraying with complete coverage around the bases of the trees. The second round of pruning commenced in early December 2019.
d. The storage container/barn was burgled in January 2019. The lock bock has since been reinforced, and a security camera with smart phone connectivity was installed shortly thereafter.

D. Monitoring methods.
Vegetation and hydrology monitoring followed the routine methods specified in the DSL Removal-Fill Guidelines. Tree cover for the PFO and Upland Forest habitats was estimated using circular plots superimposed over July 2018 aerial photography.

E. Monitoring data plot locations.

No changes to the number of monitoring plots or their locations was done since last monitoring in 2018.

F. Hydrology methods and context.
There are no specific performance standards for hydrology other than having to meet *'87 Manual* criteria for wetland hydrology.

3. Results

Performance standard-specific results are presented in the table in section 3 of this template starting on the cover sheet, including verbatim standards, and as such will not be repeated here. Of the 28 standards applicable to the Long Tom Mitigation Bank, we are meeting 23 and failing to meet five.

Of the five fails, two have to do with the moisture index targets for the Upland Forest and Upland Savanna which will likely never be met due to the hydrologic range of *Deschampsia caespitosa*. One fail is regarding the d.b.h. target for the PFO habitat, which will likely not be met within the monitor life of the project. Likewise, the d.b.h. target for the Oregon white oak located in the Upland Savanna habitat will not be met within the monitoring life of the project due to the characteristic slow growth habit of this species.

The last failing performance standard relates to the d.b.h. target for the Upland Forest pine plantation. In the past two years the pine has really taken off, packing on about an inch in average diameter and two feet in average height. At this rate it appears likely this performance target will be met within the next two years.

C. Delineation of wetland acreage achieved:
Table 1 above summarizes the results of the approved post-construction wetland delineation findings.

D. Functional Assessment:
The following table shows the functional assessment scores pre-existing and post-construction for the Long Tom Mitigation Bank using the HGM Slope/Flats V2.1 calculator.

Function:	Calculated Function if HFR: Pre-const.	Post-const.
Water Storage & Delay (ws)	0.20	0.80
Sediment Stabilization & Phosphorous Retention (sp)	0.83	0.93
Nitrogen Removal (n)	1.00	1.00
Primary Production (pp)	0.73	0.96
Invertebrate Habitat Support (i)	0.36	0.71
Amphibian & Turtle Habitat (at)	0.73	0.94
Breeding Waterbird Support (bw)	0.00	0.00
Wintering & Migrating Waterbird Support (ww)	0.75	0.96
Songbird Habitat Support (sb)	0.74	0.76
Support of Characteristic Vegetation (v)	0.78	0.95

Note that all the functional scores either stayed the same (Nitrogen Removal maxed out at 1.00) or increased.

4. Conclusions and Recommendations

A. Project status.
The mitigation bank project is not in compliance with all performance standards as noted above in section 3A. The moisture index deficiencies will likely persist but are more an artifact of the metric and do not indicate a real deficiency in either project design or execution.

The d.b.h. standards will be met in the fullness of time. No actions are contemplated to accelerate the development of the tree metrics necessary to meet these standards.

Rattail fescue (*Vulpia spp.*) is steadily increasing its presence, primarily in the uplands and along the upland/wetland fringes. I haven't yet experimented with the OSU Extension Service herbicide regimen for rattail control in grass seed fields mentioned last year, and it is relatively low on my priority list for this year given the following work recommendations.

B. Recommendations.
The action plan for 2020 includes:

a. Routine weed control mowing and spraying across the property.
b. Weir 1 end cutting repair has yet to be pounded into the ground to its final elevation; however, the repair as-is is functioning to stop the end cutting. Pounding the sheet piling will be accomplished as other priorities permit.
c. As mentioned above, pruning in the Upland Forest will continue with the target of full coverage by the end of January, with the additional intent of chipping the branches.
d. Pipe plugs will be installed in the overflow pipes under the berm. The intent here is to maximize saturated soil conditions on that side of the property in preparation for augmenting the species diversity in the *Crepis*/*Cirsium* infestation areas via overseeding with a sedge/rush mix and grass species not common elsewhere on the property. Assuming normal precipitation sufficient to fully charge the wetlands, soil pits will be installed perpendicular to the contours to establish the extent of soil hydrology in the

problem areas. Upon evidence that the *Crepis*/*Cirsium* problem is under control, broadleaved species will be introduced later to round out the herbaceous community.

C. Financial Security status.
A secured account at Willamette Community Bank with a current balance of $20,000 is serving as financial security for the mitigation bank project. As of the date of this report we are not petitioning for release of any of that security.

5. Maps and Figures

Figure 1. Long Tom Mitigation – Final Credit Yield

Figure 2. Monitoring Plan Map

6. Appendices

A. Data (accompanying as a separate Excel file)

B. Site Photos

C. Bank Ledger

FIGURE 1. LONG TOM MITIGATION BANK - FINAL CREDIT YIELD

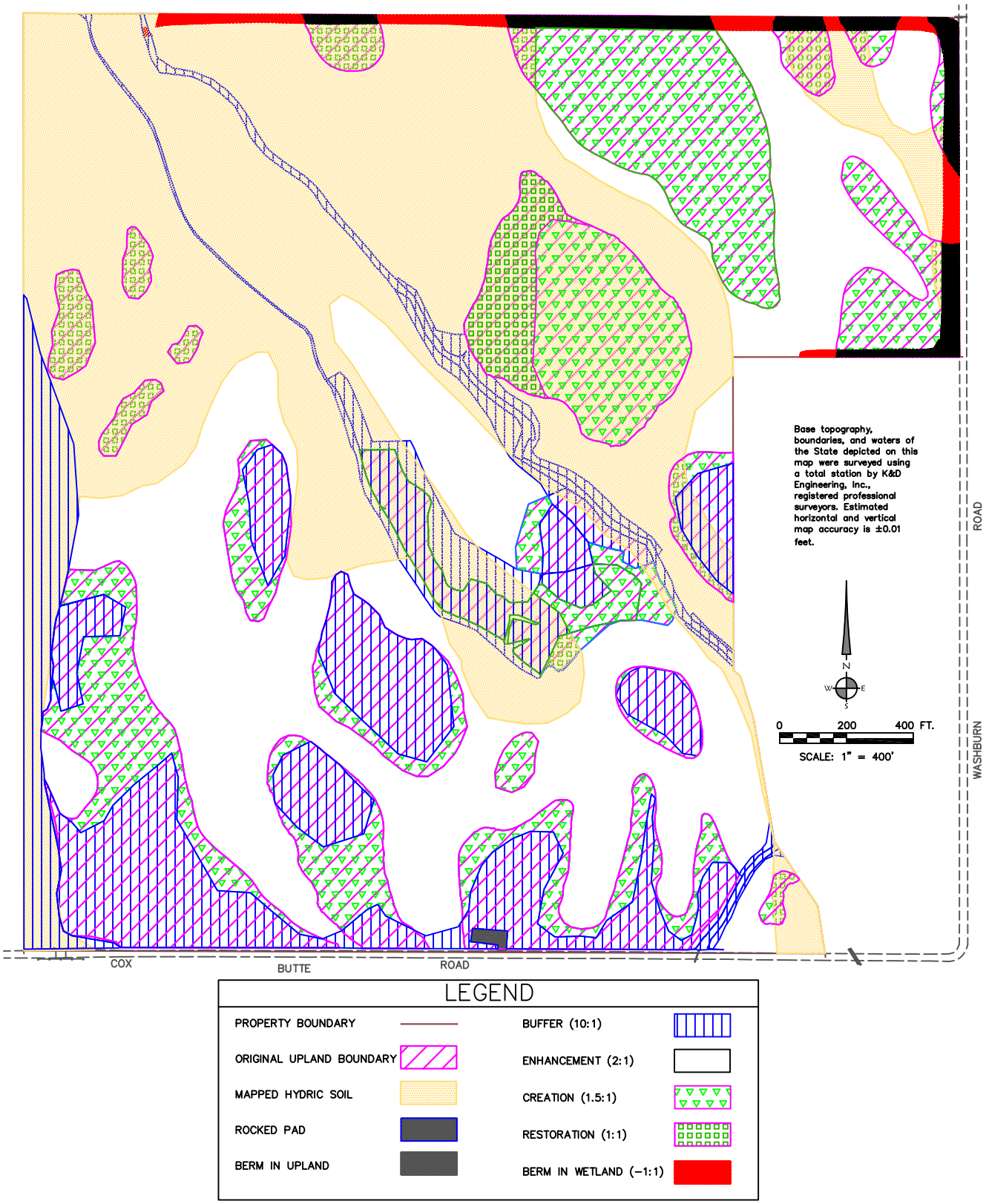
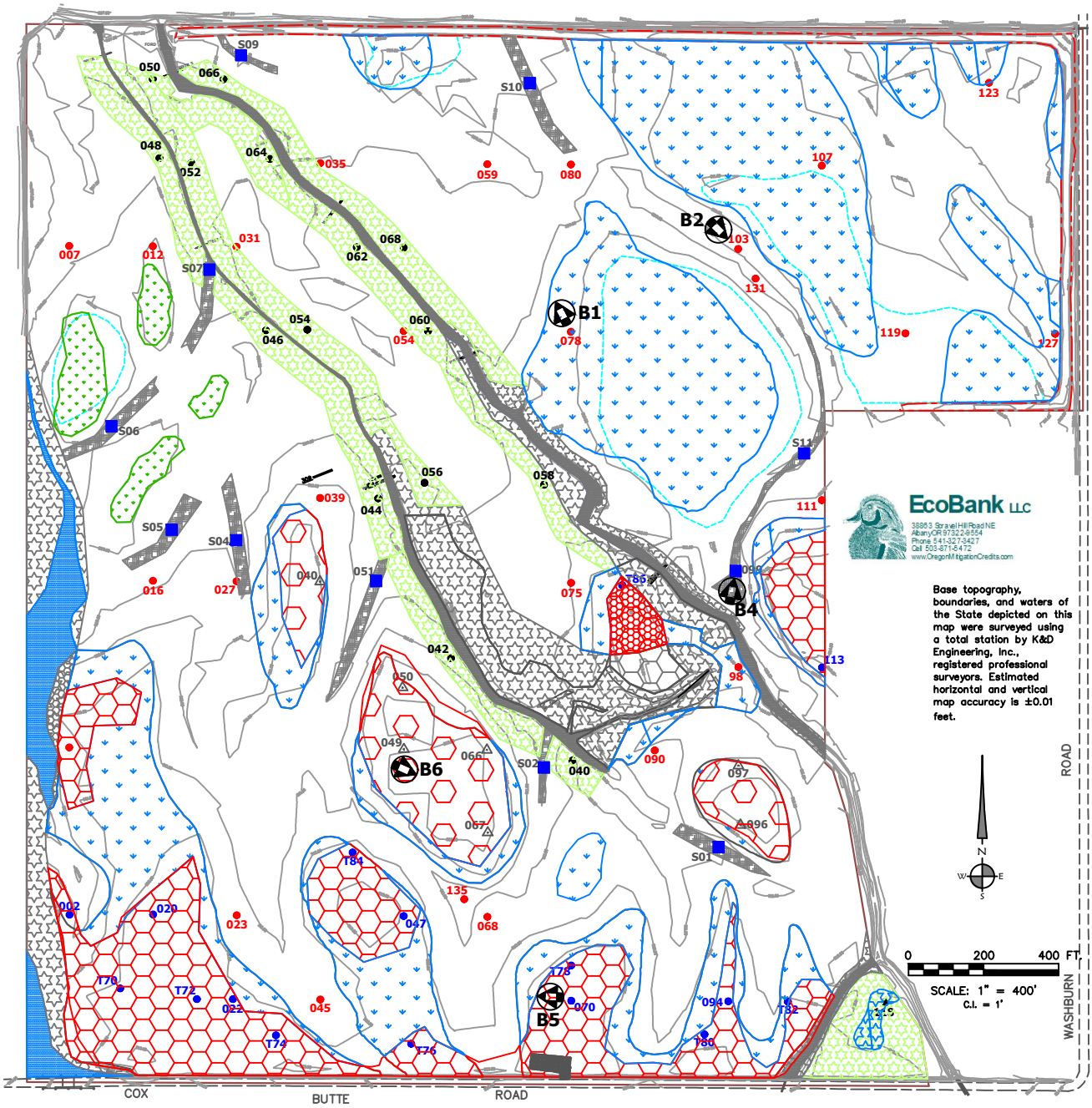


FIGURE 2. MONITORING PLAN MAP



LEGEND

PROPERTY BOUNDARY		PRE-EXISTING PFO		HERBACEOUS WETLAND SAMPLE PT	093
PHOTO POINT	B1	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

APPENDIX B. Site Photos

Photo B1. Typical view of PEM management unit from sample point 78 looking NW on 09JUN19.

Photo B2. Typical view of vernal pool management unit from sample point 103 looking SE on 09JUN19.

Photo B3. Typical view of PFO management unit from sample point 62 looking NW on 09JUN19.

Photo B4. Typical view of Shrub Wetland management unit from sample point 99 looking NW on 09JUN19.

Photo B5. Typical view of Upland Forest management unit from sample point 70 looking W on 09JUN19.

Photo B6. Typical view of Upland Savanna management unit from sample point 49 looking SE on 09JUN19.

APPENDIX C. LONG TOM MITIGATION BANK CREDIT SALES LEDGER

Permittee Name	Corps No.	DSL No.	Project Name	Impact HUC	Impact Acs.	Date	Credits Sold	Add	Credit Bal.
								Begin. credit bal.	18.000
Samaritan Albany General Hospital	NWP-2008-282	40496-RF	Evergreen Hospice	1709000304	0.85	2/26/09	0.850		17.150
City of Monroe	2007-00149-1	37980-FP	Wastewater Treatment Project	1709000302	0.77	3/9/09	0.770		16.380
Oregon Military Department	NWP-2008-569/1	42154-FP	Camp Adair Access Roads	1709000306	0.30	6/2/09	0.300		16.080
City of Junction City	N/A	N/A	Unspecified future projects	17090003	1.09	3/18/10	1.090		14.990
Phil Heer	2009-00362	6950-ENF	Violation	1709000301	1.29	3/31/10	1.290		13.700
Robert Brink Violation	N/A	ENF-3724	Robert Brink dba Rosewood Ltd	1709000301	2.00	5/10/10	2.000		11.700
Lane Forest Products, Inc.	NWP-2009-458-1	APP0043731	Lane Forest Products, Inc.	1709000301	1.58	5/29/10	1.580		10.120
Robert Brink Violation	N/A	ENF-3724	Robert Brink dba Rosewood Ltd	1709000301	1.00	10/6/10	1.000		9.120
City of Philomath	NWP-2009-00626	43699-FP	Water Treatment Plant	1709000305	7.20	10/7/10	1.400		7.720
Bonneville Power Administration	NWP-2011-53	46470-RF	Harrisburg Substation	1709000302	1.68	7/13/11	1.680		6.040
Bonneville Power Administration	NWP-2012-65	49228-RF	Albany-Eugene Transmission Line Rebu	17090003	0.38	5/22/12	0.380		5.660
Polk County Public Works	NWP-2012-82	49614-RF	Fern Creek (Guthrie Rd) Bridge Project	1709000305	0.085	6/8/2012	0.085		5.575
CREDIT RELEASE						7/3/12		12.00	17.575
Jamie Paddock/Willow Creek 06 LLC	2011-00031	46197-RF	Willow Creek Industrial Park	17090003	0.770	8/6/2012	1.350		16.23
Bonneville Power Administration	NWP-2012-65	49228-RF	Albany-Eugene Transmission Line Rebu	17090003	0.140	10/1/2012	0.140		16.09
Grace Point Church of the Nazarene	NWP-2012-109	50159-RF	New Church	1709000304	0.9	12/6/2012	0.90		15.19
Properties Northwest, A Lmtd Prtnshp	NWP-1997-912/1	51814-RF	Mixed Use Development	1709000301	15.700	4/12/2013	15.180		0.005
CREDIT RELEASE						7/3/14		7.00	7.005
Wood Recovery	NWP-2009-659/1	44336-RF	Compost Yard	1709000301	3.450	7/3/14	3.450		3.555
CREDIT RELEASE						8/8/14		3.00	6.555
GGP Gateway Mall LLC	NWP-2014-167	56266-RF	Gateway Mitigation Site Maintenance	1709000302	0.078	12/24/2014	0.078		6.477
J. Conser & Sons LLC	N/A	57720-RF	Goodnight Townehomes	170000305	0.14	5/4/2015	0.140		6.337
City of Corvallis	NWP-2008-226/3	58057-RF	Corvallis Airport Cargo Apron Access R	1709000305	0.05	9/24/2015	0.050		6.287
CB & KB Ranch LLC		7553-ENF	Violation	1709000301	1.66	9/28/2015	1.660		4.627
McDougal Brothers, Inc.	NWP-2013-141/1	57556-RF	McDougal Brothers Inc. Railroad Siding	1709000301	0.76	10/26/15	0.763		3.864
Andrew Head	N/A	7510-ENF	Violation	1709000301	0.56	10/20/15	0.560		3.304
Mennonite Home of Albany, Inc.	NWP-2015-170	57798-RF	South Campus	1709000304	0.77	11/6/15	0.770		2.534
Seneca Sawmill Company	NWP-2015-206	57958-RF	Log Yard Expansion	1709000301	0.86	12/18/15	0.860		1.674
CREDIT RELEASE						1/29/2016		10.58	12.254
Bonneville Power Administration	NWP-2015-205	58197-RF	Lane Wendson Transmission Line Rebui	1709000301	1.54	3/16/16	1.540		10.714
Georgia 01 LLC	NWP-2014-383-1	58541-RF	Stormwater Reconfiguration Project		0.59	3/16/16	0.590		10.124
Cheadle Lake RV & Self-Storage LLC	NWP-2016-44	58675-RF	Cheadle RV & Self-Storage	170900060105	0.35	3/30/16	0.350		9.774
ODOT	NWP-2016-204	59112-GP	OR 99W Lake Sl. Bridge Replacement	17090003	0.08	6/6/16	0.077		9.697
James L. Dodge	NWP-2016-192	59043-RF	Dover @ Whitecliff	170900030209	0.18	6/10/16	0.180		9.517
Land Whisperers LLC	NWP-2015-74	57770-RF	Willow Run Subdivision	170900030108	0.21	7/20/16	0.210		9.307
Alko Investments LLC	NWP-2016-233	58927-RF	Glenwood Hotel Sites - Phase 2&3	170900030601	0.09	8/18/16	0.090		9.217
Northside Developers LLC	NWP-2008-271/1	57387-RF	Millrace Station	1709000304	0.488	9/12/16	0.488		8.729
Katrina Wester	NWP-2016-288	59077-RF	Sterling Woods	170900030201	0.05	9/19/16	0.050		8.679
City of Albany Parks Department	NWP-2016-180	59026-RF	Sunrise Park Renovation	17090003610	0.67	10/19/16	0.670		8.009
Circle Drive Partners, LLC	NWP-2016-240	59155-RF	CORE Corvallis	170900030211	1.67	11/7/16	1.670		6.339
O.O. Agricultural Investment Company, I	N/A	7637-ENF	Decker Road Violation	1709000305	0.67	11/14/16	0.670		5.669
Corvallis Station LLC	2014-00716	33347-RF	Corvallis Station Mitigation Shortfall	1709000306	2.89	12/8/16	2.890		2.779
Parkway West LLC	NWP-2016-0313	59397-RF	Parkway West LLC Development	170900030106	2.72	12/13/16	2.720		0.059
TOTAL							50.521		0.059