Albadore

Amazon Creek Mitigation Bank, LLC

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Annual Report, 2008

Phase I and II

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Amazon Creek Mitigation Bank
Phase I Restored Wetland

Annual Report, 2008: Year-7 Monitoring

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Summary

Data from July 11,2008 indicates that the credited portion of the restored Phase I wetland at the Amazon Creek Mitigation Bank continues to attain performance criteria established in the Bank Mitigation Instrument.

Introduction

The Instrument specifies that the Phase I wetland that was restored in 2001 shall be monitored annually for at least 5 years to determine if specific wetland features are restored successfully, and consequently, if the MBRT may authorize release of mitigation credits. This report describes results of year-7 (2008 growing season) monitoring of the wetland. The Instrument also stipulates that particular comparisons will be made with a reference site, and the MBRT had previously agreed that Stewart Pond wetland complex in Eugene is an acceptable reference site.

Methods

The same survey methods used in the previous years were used again in the year 7 monitoring. Exactly as specified in the Instrument, a systematic quadrat (plot) method for sampling within the Bank was used. Within the Phase I Bank wetland, 25 quadrats that had been situated equidistantly (approximately 210 ft apart) along 5 transect lines were revisited, plus 20 that had been added in year 2. The transects were aligned perpendicular to the general topographic slope and direction of water movement. The location of the first sample quadrat on each transect has been staggered in order to minimize potential overlap among quadrats. The most northerly of the transects, (quadrats #38-#45) lies north of the boundary berm and passes through an area planted with trees. The remaining transects, except for their eastern ends (and a few mid-transect points on the southernmost transect) lie within the seasonally inundated area. For surveying herbaceous and open water habitats, each quadrat was 1m x 1m, with the centers located on a fixed t-bar fence post. Plants were identified to species where possible and percent cover of each species was estimated in each quadrat, as well as the percent bare ground. For surveying woody plantings along the northern most transect, each quadrat had a diameter of 30 feet, centered on the transect. Herbaceous vegetation was also sampled in this transect, using the 1m x 1m quadrat. Each quadrat on each transect was surveyed for the characteristics described in sections 13.1.1, 13.1.2, 13.1.3 of the Instrument. In 2008, the Phase I wetland was surveyed on July 11. All vegetation data is included in Appendix A. Vegetation that may have been sampled in previous years of monitoring, but which was not present during the 2008 monitoring, is included within the data presented in Appendix A, however, their sum species percentages are indicated as 0. The prevalence (moisture) index was calculated using the formula in the *Draft Guidance for Vegetation Planning and Monitoring in Western Oregon Wetlands and Riparian Areas* (June 2004 version). Scores were assigned to species as follows: 1 = OBL, 2 =FACW, 3 = FAC, 4 = FACU, and 5 = UPL or NOL.

By prior agreement with the MBRT, Amazon Creek data were compared to reference data collected by the City of Eugene from their Stewart Pond mitigation bank site. The most recent published data available from Stewart Pond (summer 2002) were used in the comparison. For woody plants, stem density in five Amazon Creek plots was compared with data from the same number of plots at the Stewart Pond reference site. Plant species richness also was compared. To make that comparison with Amazon Creek data statistically comparable, 45 plots had been selected randomly (using the NCSS 2001 statistical software package) from a total of 259 that had been surveyed at Stewart Pond by the City of Eugene. Data were compared with data from the 45 Amazon Creek Bank plots.

Results

GENERAL CRITERIA: For a mitigation site to be counted as "wetland," it must have hydrological conditions, soils, and vegetation that typify wetlands. Hydrological conditions are clearly being met at most of the Amazon Creek site, with standing water or saturation occurring within 12 inches of the soil surface during the growing season over the entire area, and into late June in parts of the area. Soil indicators of wetland conditions require time to develop, and in much of the site already have developed. Given the fact that the site is located on soil classified as hydric and is now being flooded for long duration, it is inevitable that soil indicators and associated hydrophytic vegetation will eventually dominate all parts of the mitigation bank unit.

With regard to vegetation along the transect lines, and excluding quadrats 28, 44, and 45 which are outside of the part of the wetland counted for mitigation credit, the prevalence (moisture) index averaged 2.15 using the USFWS scale for plant indicator status. Numbers less than 3 indicate a prevalence of hydrophytic plant cover. The score was less than 3.00 (suggesting wetland conditions) in 81% of the quadrats within the area counted for mitigation credit. The quadrats where it exceeded 3.00 were mostly in higher areas along the periphery of the site. For comparison, the index values from all years are:

Year	Date	Prevalence (Moisture) Index
2002	8/30	2.54
2003	7/12	2.21
2004	6/25	1.91
2005	6/28	2.15
2006	6/29	1.93
2007	7/2	2.32
2008	7/11	2.15

The Amazon Creek Mitigation Bank site continues to support a rich community of desirable herbaceous plants: 42 species were found during this, the seventh year of monitoring. A comparable number of plots from the Stewart Pond reference site contained 16, which likewise has existed as a restored formerly-riverine wetland but for a much longer period of time. Creation of wet prairie is not an objective of this project as defined by the Bank Instrument, which requires that part of the site be developed as a forested wetland.

Text below in *italics* is quoted directly from the Instrument. Other text responds to the Instrument's criteria.

The project will be successful and certified when:

13.1 Vegetation Performance Standards

13. 1.1 Herbaceous Vegetation

CRITERION: COVER and COMPOSITION. At the end of the first growing season, desirable herbaceous vegetation will dominate in 60% of the plots located in the non-inundated emergent habitats located at the bank site. At the end of year two growing season, desirable herbaceous vegetation will dominate in a number of plots equal or greater than 65% of the proportional number of plots in which it dominates at the reference site in non-inundated emergent habitats, and 70% or greater in subsequent years.

STATUS: This standard was met, with desirable vegetation (i.e., no undesirable vegetation) dominating 100% of the plots. The only herbaceous species designated as undesirable in the Instrument and found previously within the Mitigation Bank by the approved sampling methodology was *Cirsium arvense.* However, this species was not encountered here in 2008, due to aggressive weed management efforts.

CRITERION: *SPECIES RICHNESS. At the end of the first and second growing seasons the number of species on the cumulative list of desirable herbaceous plant species (i.e.. the list accumulated from among all plots in herbaceous emergent habitats at the Bank site) will be at least 60% percent of the number of species of desirable herbaceous plants on a comparable list from the reference site. At the end of year five growing season, this standard will be 70% or greater.... Both planted and recruited species will be included in evaluating these standards.*

STATUS: The cumulative list for a comparable number (45) of randomly-selected plots from the Stewart Pond reference site contained a total of 16 desirable herbaceous species. For comparison, the 45 plots in the Mitigation Bank site in early July 2008 contained 42 desirable herbaceous species. Thus 42/16= 263%.

CRITERION: *No more than 15% of individuals will be non-native, invasive, undesirable herbaceous species.*

STATUS: This criterion is clearly met because no species designated as undesirable was found this year in the Mitigation Bank wetland during the quadrat survey.

13.1.2 Scrub-shrub and Forest Vegetation

CRITERION: The cumulative list of species from plots in the scrub/shrub habitats will contain no fewer than three species of desirable planted or volunteer woody species.

STATUS: Excluding the undesirable *Rubus discolor*, during 2008 a total of 5 woody species was found in the Phase I wetland. This is an increase of one desirable species when compared with 2007. Observed species are *Fraxinus latifolia* (Oregon ash), *Salix lasiandra.* (Pacific willow), *Rosa nutkana* (Nootka rose), *Crataegus douglasii* (Douglas hawthorn), and new for 2008, *Populus trichocarpa* (Black cottonwood).

CRITERION: *Based on counts of woody stems summed from plots in scrub-shrub habitats there will be at least 100 stems per acre or at least 60% of the stem density at which they occur in comparable plots at the reference site (whichever is greater).*

STATUS: A total of 71 woody stems were noted in 7 scrub-shrub plots in the northeast corner, an increase from the 68 observed in 2007. Each 30-ft diameter quadrat encompasses 707 sq. ft., or 0.0162 acre, so 71 stems per 0.1134 acres (71 / 0.1134) is equivalent to 626 stems per acre, clearly exceeding the 100-stems-per-acre criterion. Woody stem density in 5 equivalent quadrats in the Stewart Pond reference site was determined to be 30 stems per 0.0810 acres, or 370 stems per acre. Taking 60% of this yields a criterion of 222 stems per acre. Thus, the Mitigation Bank site in 2007 clearly exceeded both criteria.

CRITERION: No more than 15% of individuals shall be undesirable non-native species. Both planted and recruited species will be included in evaluating these standards.

STATUS: Of the 71 woody stems found within the scrub-shrub portion of the Mitigation Bank wetland, none were from species deemed undesirable according to the Instrument.

13.1.3 Open Water

CRITERION: In open water areas there will be no more than a total of 15% cover of undesirable, non-native, invasive species.

STATUS: There are no parts of the Mitigation Bank wetland that contain surface water year-round. Nearly the entire site is inundated seasonally. Within that area, no species deemed undesirable was present (as noted in 13.1.1 above).

Appendix A

2008 Vegetation species percent cover in 45 quadrats in Amazon Creek Mitigation Bank wetland Phase I

2008 Phase I

species status	species score	Species	Quadrat 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
--------		(bare/water)	0	15	2	0	3	50	5	0	5	3	3	30	0	0	0	0	8	3	10	15	12	6	20	15	1	2
FACW	2	Agrostis exarata	0	65	0	0	0	5	0	10	5	0	5	20	0	0	1	1	0	20	0	0	0	0	0	0	0	38
NOL	5	Aira caryophyllea	0	0	0	0	0	0	0	0	0	20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACW	1	Alopecurus geniculatus	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	0	0	0	0	0	0	0
FACW	2	Alopecurus pratensis	90	0	62	35	0	35	0	15	5	15	22	0	0	0	78	70	0	0	0	0	0	0	0	0	0	20
FACU	4	Anthemis cotula	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACU	4	Arenaria serpyllifolia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0
OBL	1	Beckmannia syzigachne	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	6	6	0	1	0	0	0	0	0
FACW+	2	Bidens frondosa	0	0	0	0	5	0	0	0	0	0	0	0	3	6	0	0	0	0	2	0	0	0	0	0	0	0
FACW+	2	Bidens cernua	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC	3	Briza minor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOL	5	Bromus inermis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC	3	Centaurium erythraea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UPL	5	Cerastium glomeratum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC	3	Chenopodium album	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC-	3	Cirsium arvense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC	3	Cirsium edule	0	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACU	4	Cirsium vulgare	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC	3	Craetagues douglassii	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACU	4	Crepis capillaris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOL	5	Daucus carota	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACW	2	Deschampsia caespitosa	7	5	0	10	0	0	0	0	0	2	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
FACW-	2	Deschampsia danthonioides	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0
FACW	2	Echinochloa crus-galli	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Eleocharis ovata	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Eleocharis palustris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	0	30	40	5	0	0
FAC	3	Elymus trachycaulus	0	0	0	0	0	0	0	0	0	15	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACW-	2	Epilobium watsonii	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC-	3	Festuca arundinaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACU	4	Galium aparine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACU	4	Galium triflorum	0	0	5	0	0	0	15	10	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC+	3	Gnaphalium palustre	0	0	0	0	20	5	0	0	0	0	0	0	36	0	0	0	0	2	0	0	0	0	0	0	0	0
FAC	3	Holcus lanatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACW-	2	Hordeum brachyantherum	0	15	5	40	0	0	75	30	25	6	0	0	0	0	6	29	0	0	0	0	0	0	0	0	0	30
FACU	4	Hypochaeris radicata	0	0	0	0	0	0	0	0	60	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACW	2	Juncus bufonius	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Juncus effusus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACW	2	Juncus tenuis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACU	4	Lactuca serriola	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOL	5	Lapsana communis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOL	5	Lolium multiflorum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOL	5	Lotus micranthus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOL	5	Lotus purshiana	0	0	10	0	1	0	0	0	0	0	0	0	25	3	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Lythrum (Peplis) portula	0	0	0	0	22	0	0	5	0	0	0	6	25	87	0	0	20	45	6	10	40	57	25	25	85	0
OBL	1	Lythrum hyssopifolia	0	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	5	0
NOL	5	Madia sativa	3	0	0	5	30	2	5	0	0	0	0	1	0	0	0	0	1	3	1	0	0	0	0	0	1	0
FACU	4	Matricaria discoidea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC	3	Medicago lupulina	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Mentha pulegium	0	0	0	0	0	0	0	0	0	0	0	12	0	1	0	0	50	20	15	6	45	0	4	55	30	0
FACU+	4	Panicum capillare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC-	3	Parentucellia viscosa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACW	2	Paspalum distichum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6	0	0	3	0
FACW	2	Plagiobothrys sp.	0	0	0	0	0	0	0	5	0	0	0	30	0	0	0	0	0	0	6	0	0	0	0	0	0	0

2008 Phase I

species status	species score	Species	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	SUM
--------		(bare/water)	0	0	0	3	20	0	3	20	9	5	25	0	5	10	0	0	0	0	10	318
FACW	2	Agrostis exarata	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	182
NOL	5	Aira caryophyllea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
FACW	1	Alopecurus geniculatus	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69
FACW	2	Alopecurus pratensis	6	0	0	12	0	0	0	0	0	0	0	0	5	13	0	0	0	0	0	483
FACU	4	Anthemis cotula	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACU	4	Arenaria serpyllifolia	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	17
OBL	1	Beckmannia syzigachne	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	34
FACW+	2	Bidens frondosa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
FACW+	2	Bidens cernua	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC	3	Briza minor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOL	5	Bromus inermis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC	3	Centaurium erythraea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UPL	5	Cerastium glomeratum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC	3	Chenopodium album	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC-	3	Cirsium arvense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC	3	Cirsium edule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
FACU	4	Cirsium vulgare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	6
FAC	3	Craetagues douglassii	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
FACU	4	Crepis capillaris	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	4	0	19
NOL	5	Daucus carota	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5
FACW	2	Deschampsia caespitosa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
FACW-	2	Deschampsia danthonioides	0	0	0	0	0	0	0	0	0	0	0	45	45	50	0	0	0	0	0	155
FACW	2	Echinochloa crus-galli	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Eleocharis ovata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
OBL	1	Eleocharis palustris	0	0	0	0	0	0	36	0	0	0	68	0	0	0	0	0	0	0	0	249
FAC	3	Elymus trachycaulus	60	88	67	0	0	0	0	0	0	0	0	0	12	3	0	85	88	84	10	519
FACW-	2	Epilobium watsonii	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	5	5	6	3	25
FAC-	3	Festuca arundinaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	77
FACU	4	Galium aparine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACU	4	Galium triflorum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	0	48
FAC+	3	Gnaphalium palustre	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63
FAC	3	Holcus lanatus	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
FACW-	2	Hordeum brachyantherum	25	0	15	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	385
FACU	4	Hypochaeris radicata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	63
FACW	2	Juncus bufonius	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
OBL	1	Juncus effusus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACW	2	Juncus tenuis	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2
FACU	4	Lactuca serriola	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOL	5	Lapsana communis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOL	5	Lolium multiflorum	0	0	0	0	0	0	0	0	0	0	0	1	12	0	0	0	0	0	0	13
NOL	5	Lotus micranthus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOL	5	Lotus purshiana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39
OBL	1	Lythrum (Peplis) portula	0	0	0	0	15	6	0	55	85	80	0	0	0	0	0	0	0	0	0	699
OBL	1	Lythrum hyssopifolia	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	23
NOL	5	Madia sativa	0	4	0	1	0	0	0	0	3	1	0	55	30	12	79	0	0	0	0	237
FACU	4	Matricaria discoidea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC	3	Medicago lupulina	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Mentha pulegium	0	0	0	0	70	3	25	25	2	6	6	0	0	0	0	0	0	0	0	375
FACU+	4	Panicum capillare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC-	3	Parentucellia viscosa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACW	2	Paspalum distichum	0	0	0	0	0	97	36	0	0	0	0	0	0	0	0	0	0	0	0	145
FACW	2	Plagiobothrys sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	42

2008 Phase I

			Quadrat	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
NOL	5	Poa nemoralis		0	0	0	5	0	0	0	0	0	35	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACW	2	Polygonum persicaria		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Rorippa curvisiliqua		0	0	0	0	20	5	0	0	0	0	0	0	5	2	0	0	1	0	0	0	0	0	0	0	1	0
FACU	4	Rubus discolor		0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACU+	4	Rumex acetosella		0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC+	3	Rumex crispus		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
OBL	1	Schoenoplectus microcarpus		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Schoenoplectus tabernaemontanii		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACU	4	Senecio jacobaea		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NI	5	Sidalcea campestris		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC	3	Sidalcea nelsoniana		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC-	3	Sonchus asper		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Sparganium sp.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Typha latifolia		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACW	2	Veronica peregrina		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOL	5	Vicia tetrasperma		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total % veg cover	=SUM(D4:D72)	100	85	97	100	98	54	95	98	95	99	97	69	100	100	100	100	92	97	101	86	89	93	80	85	125	98
		Vegetation + Bare Ground		100	100	99	100	101	104	100	98	100	102	100	99	100	100	100	100	100	100	111	101	101	99	100	100	126	100

		Woody Planting Count		38	39	40	41	42	43	44	45		
FAC	3	Crataegus douglasii		0	0	0	1	2	0	1	0		
FACW	2	Fraxinus latifolia		11	13	7	8	6	4	2	0		
FAC	3	Populus trichocarpa		0	0	0	0	0	0	0	2		
FAC-	3	Rosa nutkana		0	0	0	0	0	0	4	4		
FACW+	2	Salix lasiandra		1	1	4	0	0	0	0	0	7	Sum

[illegible]			2.09	2.00	2.46	2.25	2.72	2.11	2.47	2.50	3.26	3.90	2.26	1.78	2.91	1.18	2.00	2.00	1.04	1.39	1.12	1.00	1.03	1.06	1.19	1.00	1.06	2.00

2008 Phase I

			27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	SUM
NOL	5	Poa nemoralis	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
FACW	2	Polygonum persicaria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Rorippa curvisiliqua	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
FACU	4	Rubus discolor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
FACU+	4	Rumex acetosella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
FAC+	3	Rumex crispus	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
OBL	1	Schoenoplectus microcarpus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Schoenoplectus tabernaemontanii	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACU	4	Senecio jacobaea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NI	5	Sidalcea campestris	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
FAC	3	Sidalcea nelsoniana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAC-	3	Sonchus asper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Sparganium sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OBL	1	Typha latifolia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FACW	2	Veronica peregrina	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOL	5	Vicia tetrasperma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	12
		Total % veg cover	100	100	100	97	85	106	97	80	91	101	76	103	105	90	100	100	105	100	90	
		Vegetation + Bare Ground	100	100	100	100	105	106	100	100	100	106	101	103	110	100	100	100	105	100	100	

		Woody Planting Count
FAC	3	Crataegus douglasii
FACW	2	Fraxinus latifolia
FAC	3	Populus trichocarpa
FAC-	3	Rosa nutkana
FACW+	2	Salix lasiandra

	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	MEAN (45 quads)	MEAN (credited quads)
[illegible]	2.87	3.07	3.21	2.03	1.00	1.92	1.37	1.00	1.13	1.40	1.03	3.64	3.31	2.43	4.25	3.05	3.11	3.04	2.97	2.13	

Amazon Creek Mitigation Bank
Phase II Restored Wetland

Annual Report, 2008: Year-4 Monitoring

by
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Summary

Data from July 16, 2008 indicate the credited portion of the restored Phase II wetland at the Amazon Creek Mitigation Bank continues to attain all performance criteria established in the Mitigation Bank Instrument.

Introduction

The Instrument specifies that the Amazon Creek Mitigation Bank wetland that was restored in 2001 shall be monitored annually for at least 5 years to determine if specific wetland features are restored successfully, and consequently, if the MBRT may authorize release of mitigation credits. This report describes results of monitoring of the "Phase II" wetland. Vegetation was monitored previously at this site beginning in 2004. The Instrument also stipulates that particular comparisons will be made with a reference site, and the MBRT had previously agreed that Stewart Pond wetland complex in Eugene is an acceptable reference site.

Methods

Survey methods similar to those used at the Phase I site and previous years on the Phase II site were used. Exactly as specified in the Instrument, a systematic quadrat (plot) method is being used for sampling. A total of 30 quadrats were located systematically and surveyed. Quadrats were situated equidistantly (approximately 71m apart) along 7 transect lines, which also were 71 m apart. Because of the irregularly tapering shape of the wetland, five transects contained 5 points, one contained 4 points, and one (near the north end) contained a single point. The location of the first quadrat on each transect was staggered. Quadrats were surveyed sequentially beginning at the southwest corner and proceeding eastward, then transitioning northward to the next transect and heading westward on that. For surveying herbaceous habitats, each quadrat had dimensions of 1 x 1 m, with centers located on a fixed post. In 2004 a steel post was installed at the center of each quadrat to allow resurvey at exact locations in future years. Plants were identified to species where possible and percent cover of each species was estimated in each quadrat, as well as percent bare ground. No woody habitats were included in this Phase II survey. Each quadrat on each transect was surveyed for the characteristics described in sections 13.1.1, 13.1.2, 13.1.3 of the Instrument. The Phase II site was monitored on July 16, 2008. All vegetation data is included in Appendix A. Vegetation that may have been sampled in previous years of monitoring, but which was not present during the 2008 monitoring, is included within the data presented in Appendix A, however, their sum species percentages are indicated as 0.The prevalence (moisture) index was calculated using the formula in the *Draft Guidance for Vegetation Planning and Monitoring in Western Oregon Wetlands and Riparian Areas* (June 2004 version). Scores were assigned to species as follows: 1 = OBL, 2 =FACW, 3 = FAC, 4 = FACU, and 5 = UPL or NOL.

Results

<u>GENERAL CRITERIA</u>: For a mitigation site to be counted as "wetland," it must have hydrological conditions, soils, and vegetation that typify wetlands. Soil and hydrological conditions are documented in papers filed separately from this report, and vegetation conditions are documented herein.

From the data from all 30 quadrats (see accompanying data in Appedix A), the average moisture index was found to be 1.99, indicating a prevalence of wetland plant species cover. The score was

less than 3.00 (suggesting wetland conditions) in 83% of the quadrats. Quadrats where it exceeded 3.00 were all in higher areas along the periphery of the site and their high score mainly reflected increased dominance by *Madia sativa*, a species whose wetland status is actually unknown, but which had to be categorized as "Upland" by default according to Corps of Engineers delineation procedures. The Phase II site also was found to support a noteworthy richness of plants: 31 species were found during this survey, and that includes only the species that fell within the sample quadrats. A comparable number of plots from the Stewart Pond reference site, which likewise has existed as a restored formerly-riverine wetland but for a much longer period of time, contained 14 species.

Text below in *italics* is quoted directly from the Instrument. Other text responds to the Instrument's criteria.

The project will be successful and certified when:

13.1 Vegetation Performance Standards

13. 1.1 Herbaceous Vegetation

CRITERION: COVER and COMPOSITION. At the end of the first growing season, desirable herbaceous vegetation will dominate in 60% of the plots located in the non-inundated emergent habitats located at the bank site. At the end of year two growing season, desirable herbaceous vegetation will dominate in a number of plots equal or greater than 65% of the proportional number of plots in which it dominates at the reference site in non-inundated emergent habitats, and 70% or greater in subsequent years.

STATUS: No herbaceous species designated as undesirable in the Instrument were found within the Phase II area by the approved sampling methodology. Thus, the standard is clearly met.

CRITERION: *SPECIES RICHNESS. At the end of the first and second growing season the number of species on the cumulative list of desirable herbaceous plant species (i.e.. the list accumulated from among all plots in herbaceous emergent habitats at the Bank site) will be at least 60% percent of the number of species of desirable herbaceous plants on a comparable list from the reference site. At the end of year 5 growing season, this standard will be 70% or greater... Both planted and recruited species will be included in evaluating these standards.*

STATUS: The cumulative list for a comparable number of randomly-selected quadrats from the Stewart Pond reference site contained a total of 14 desirable herbaceous species. For comparison, the 30 plots in the Phase II Mitigation Bank site in July 2008 contained 31 herbaceous species excluding those designated as undesirable. Thus 31/14= 221% and the criterion is clearly exceeded.

CRITERION: *No more than 15% of individuals will be non-native, invasive, undesirable herbaceous species.*

STATUS: This criterion is clearly met: none of the 30 species in the Phase II Mitigation Bank wetland was a species designated as undesirable.

13.1.3 Open Water

CRITERION: In open water areas there will be no more than a total of 15% cover of undesirable, non-native, invasive species.

STATUS: There are no parts of the Phase II Mitigation Bank wetland that contain surface water year-round. Nearly all of the site is inundated seasonally. Within that area, no species deemed undesirable was present (as noted in 13.1.1 above).

Appendix A

2008 Vegetation species percent cover in 30 quadrats in Amazon Creek Mitigation Bank wetland Phase II

2008 Phase II	Wet Score		46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	SUM
...ass)		--	8	0	1	20	0	3	35	0	12	10	0	12	8	0	3	0	0	10	50	0	0	0	0	0	0	12	0	6	5	20	8	223
...lopecurus pratensis	2	FACW	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
...nthemis cotula	4	FACU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
...eckmannia syzigachne	1	OBL	0	0	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	9
...idens frondosa	2	FACW+	0	65	0	1	0	0	0	5	10	0	0	3	0	1	0	0	1	0	0	0	0	0	0	1	6	70	6	10	80	0	259
...arex densa	1	OBL	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	0	0	0	0	0	0	0	0	0	0	74
...isium vulgare	4	FACU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
...repis capillaris	4	FACU	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
...uscuta sp.	5	NOL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10
...eschampsia danthonioides	2	FACW-	0	19	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
...chinochloa crus-galli	2	FACW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
...leocharis ovata	1	OBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
...leocharis palustris	1	OBL	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	8
...pilobium watsonii	2	FACW-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
...orb 1			5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
...raxinus latifolia	2	FACW	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
...alium aparine	4	FACU	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
...alium trifiorum	4	FACU	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	17
...ntaphalium palustre	3	FAC+	0	1	6	3	0	0	0	75	12	0	0	1	3	0	35	0	0	10	0	0	0	0	3	2	0	0	10	10	0	0	171
...ncus bufonius	2	FACW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
...actuca serriola	4	FACU	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
...ycus micranthus	5	NOL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
...ycus purshiana	5	NOL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	20
...ythrum hyssopifolia	3	OBL	0	1	0	5	0	20	0	1	1	0	0	0	3	4	0	0	6	5	0	0	0	0	0	6	0	0	1	0	0	0	55
...ythrum portula	1	OBL	0	0	6	30	0	85	0	6	20	0	0	35	25	98	35	0	95	40	0	0	0	0	10	95	30	15	42	20	0	62	749
...ifia sativa	5	NOL	45	1	5	1	73	0	0	1	3	90	94	0	0	0	25	1	0	0	0	27	80	0	0	0	0	0	0	0	0	0	446
...ntha pulegium	1	OBL	0	70	80	35	0	5	59	15	42	0	0	40	59	4	0	80	3	25	50	0	0	100	87	0	50	0	25	40	0	30	899
...ppsalum distichum	2	FACW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
...ycobothrys sp.	2	FACW	0	0	0	0	0	0	6	3	0	0	0	6	2	1	0	10	4	15	0	0	0	0	0	8	0	0	0	0	0	0	55
...ra nemoralis	5	NOL	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
...olemoniaceae sp.			0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
...olygonum pensylvanicum	2	FACW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	20
...opulus trichocarpa	3	FAC	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
...orippa curvisiliqua	1	OBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
...umex acetosella	4	FACU	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
...umex conglomeratus	2	FACW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
...umex crispus	3	FAC+	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
...umex salicifolius	2	FACW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
...onchus asper	3	FAC-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Vegetated Cover			82	165	100	85	100	111	65	106	88	90	103	85	92	108	95	111	109	95	50	100	104	100	100	118	88	106	94	80	80	92	
Total Veg + Bare			90	165	101	105	100	114	100	106	100	100	103	97	100	108	98	111	109	105	100	100	104	100	100	118	100	106	100	85	100	100	
[illegible]			4.30	1.64	1.32	1.27	4.17	1.38	1.09	2.55	1.55	5.00	4.97	1.13	1.15	1.09	2.79	1.31	1.16	1.47	1.00	2.13	4.96	1.00	1.06	1.22	1.07	1.85	1.72	1.38	2.00	1.00	[illegible]

Wildlife Survey

Winter Survey February, 2008

Species:

Red-tailed Hawk	2
Marsh Hawk	0
Short –eared Owl	0
Widgeon	200+
Pintail	75+
Greenwing Teal	200+
Northern Shoveler	20+
Mallard	20+
Gadwall	?
Bufflehead	2
Great Blue Heron	1
Ring-necked Pheasant	9
Canada Goose	Thousands
Crow	15
Field Mouse	0
Bald Eagle	0

Survey Station Results. Numbers represent sightings within 50 meters of the survey station; bracketed numbers represent sightings more than 50 meters from the survey station.

Species	**Station 1**	**Station 2**	**Station 3**	**Station 4**
Red-tailed Hawk	[1]	[1]		
Marsh Hawk				
Short-eared Owl				
Widgeon	100+		100	
Pintail	[50]		[25]	
Greenwing Teal	[100]		100	
Northern Shoveler	[20+]			
Mallard	[20+]			
Gadwall	?			
Bufflehead			2	
Great Blue Heron	[1]			
Ring-necked Pheasant	Walking between stations			
Canada Goose				[Thousands]
Crow		[15]		
Bald Eagle				

Other observations

Animal tracks included: nutria, goose, heron or egret? Many other unidentifiable.
Coyote scat, many.

Wildlife Survey

Spring Survey May, 2008

Species:

Killdeer	0
Red-tailed Hawk	3
Widgeon	35
Pintail	20+
Greenwing Teal	40+
Northern Shoveler	20+
Mallard	10+
Gadwall	0
Barn Swallow	5
Starling	0
Great Blue Heron	2
American Robin	5
Red-winged Blackbird	9
Ring-necked Pheasant	19
Western Canada Goose	10
Canada Goose	[1000+]
Mourning Dove	12
Crow	0
Field Mouse	0

Survey Station Results. Numbers represent sightings within 50 meters of the survey station; bracketed numbers represent sightings more than 50 meters from the survey station.

Species	**Station 1**	**Station 2**	**Station 3**	**Station 4**
Killdeer				
Red-tailed Hawk	[2]	[1]		
Widgeon	[20]		[15]	
Pintail	[12]		[8]	
Greenwing Teal	[25+]		[15]	
Northern Shoveler	[8]		[12]	
Mallard	[20+]			
Gadwall				
Barn Swallow			[5]	
Starling				
Great Blue Heron	[1]	[1]		
American Robin	[2]		[3]	
Red-winged Blackbird		[7]	[2]	
Ring-necked Pheasant	Walking between stations			
Western Canada Goose	[4]		[6]	
Canada Goose				[1000+]
Mourning Dove	[6]		[6]	
Crow				
Field Mouse				

Other observations: Animal tracks included: nutria, coyote, deer, goose, heron or egret? other unidentified.

Well Data Phase I & II
2008

This Table shows depth to water (in inches) below land surface in observation wells.

Well #	1	2	3	4	5
Date					
1-17	9	0	0	+4	+5
2-25	12	1	1	+5	+6
3-10	17	4	2	+5	+6
4-10	28	11	8	6	5
5-21	38	16	12	13	9
6-1	52	58	50	43	47
7-1	>54	69	58	>57	>48
8-6	>54	>80	>62	>57	>48
9-5	>54	>80	>62	>57	>48
10-1	>54	>80	>62	>57	>48
11-2	54	78	>59	57	48
12-3	42	29	24	27	20

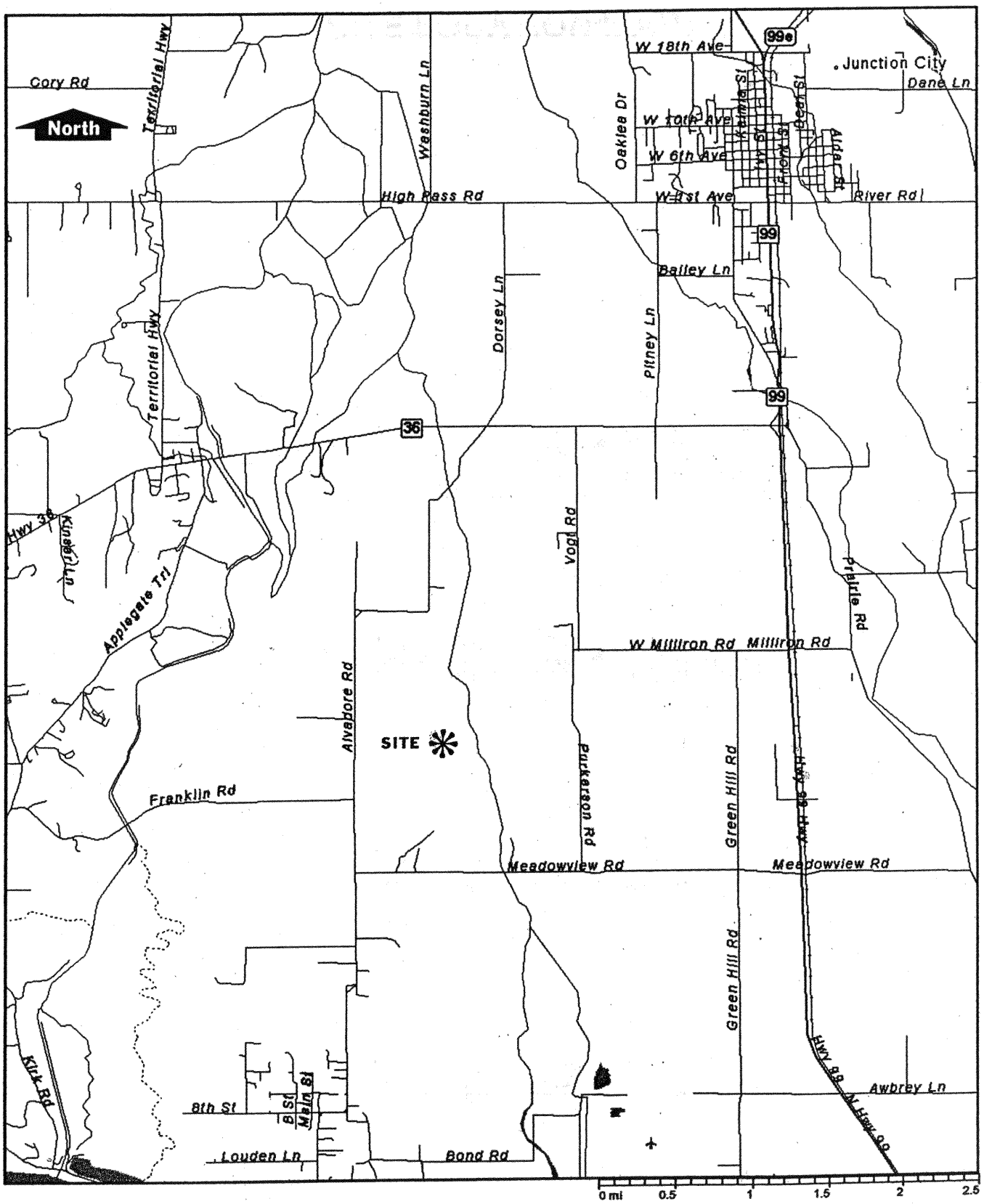
9.32 credits remaining from 2007

Credit Sale Log, 2008
Phase II

1.	2/13/2008		.084	Dana Shulz	DSL#APP0039678 Corps#2006-00841
2.	2/15/2008		.008		Same APP number
3.	2/3/2008		.081	Pacific Corrugated Pipe	DSL#APP0039086 Corps#2007-00781
4.	4/1/2008	0.21 on 0.11	.11	DSL PTP Payment	DSL#V4315 DSL#31464
5.	6/13/2008		.8	Thrift Builders	DSL#APP0039211. Corps#2007-822
6.	7/16/2008		.01	Walter Custom Homes	DSL#APP0039497 Corps#
7.	8/22/2008		.05	Breeden Homes	DSL#APP0041217 Corps#2008-99
8.	9/22/2008		.17	Lane Co Pub Wks	DSL# 41410 GA Corps#2008562
9.	11/18/2008		.16	Graygo Industries	DSL#APP0041319 Corps#2008-527
Total Credits Sold in 2008			1.473		

7.847 Credits Remaining

receipt has 0.21

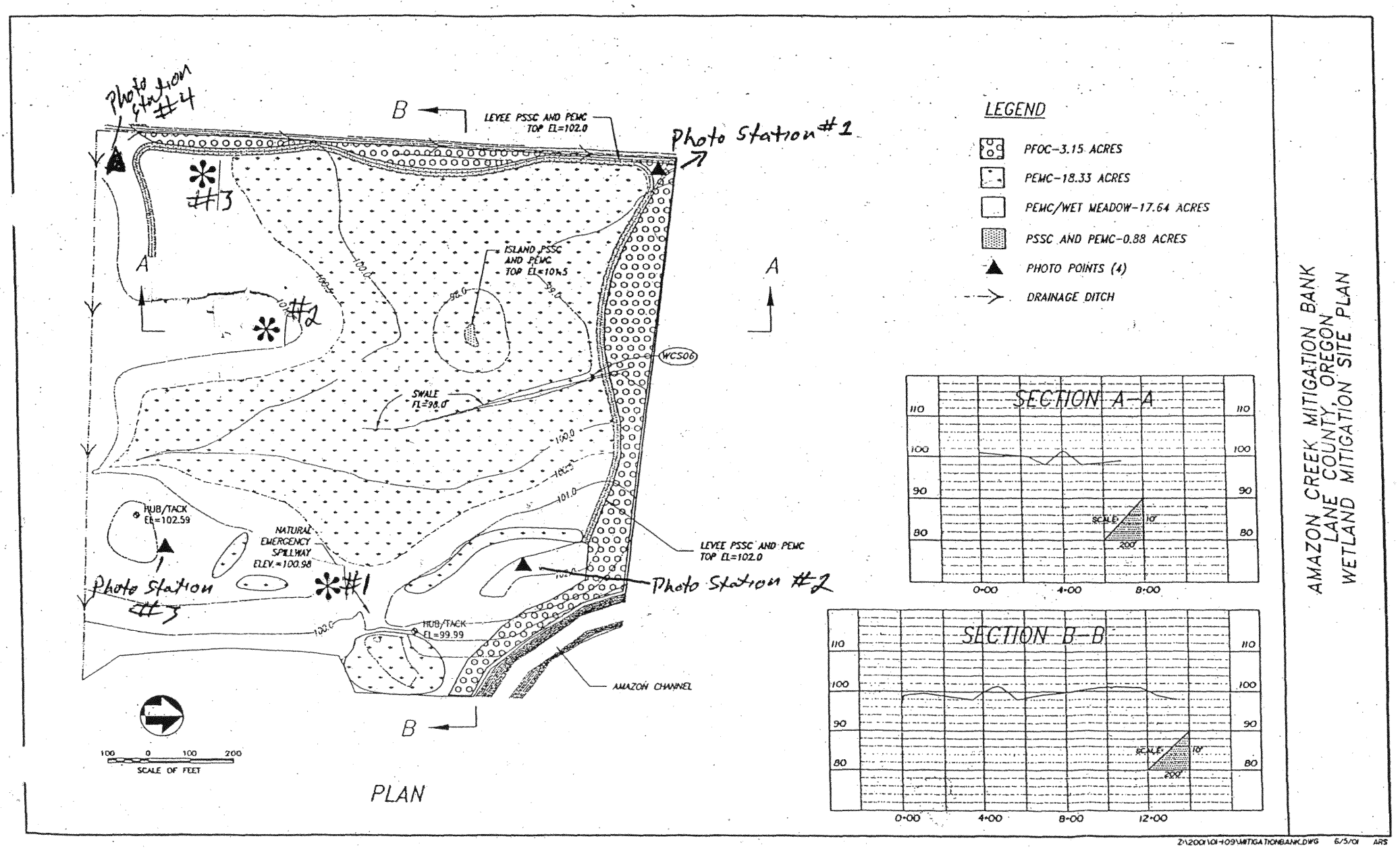


Amazon Creek Wetland Mitigation Bank

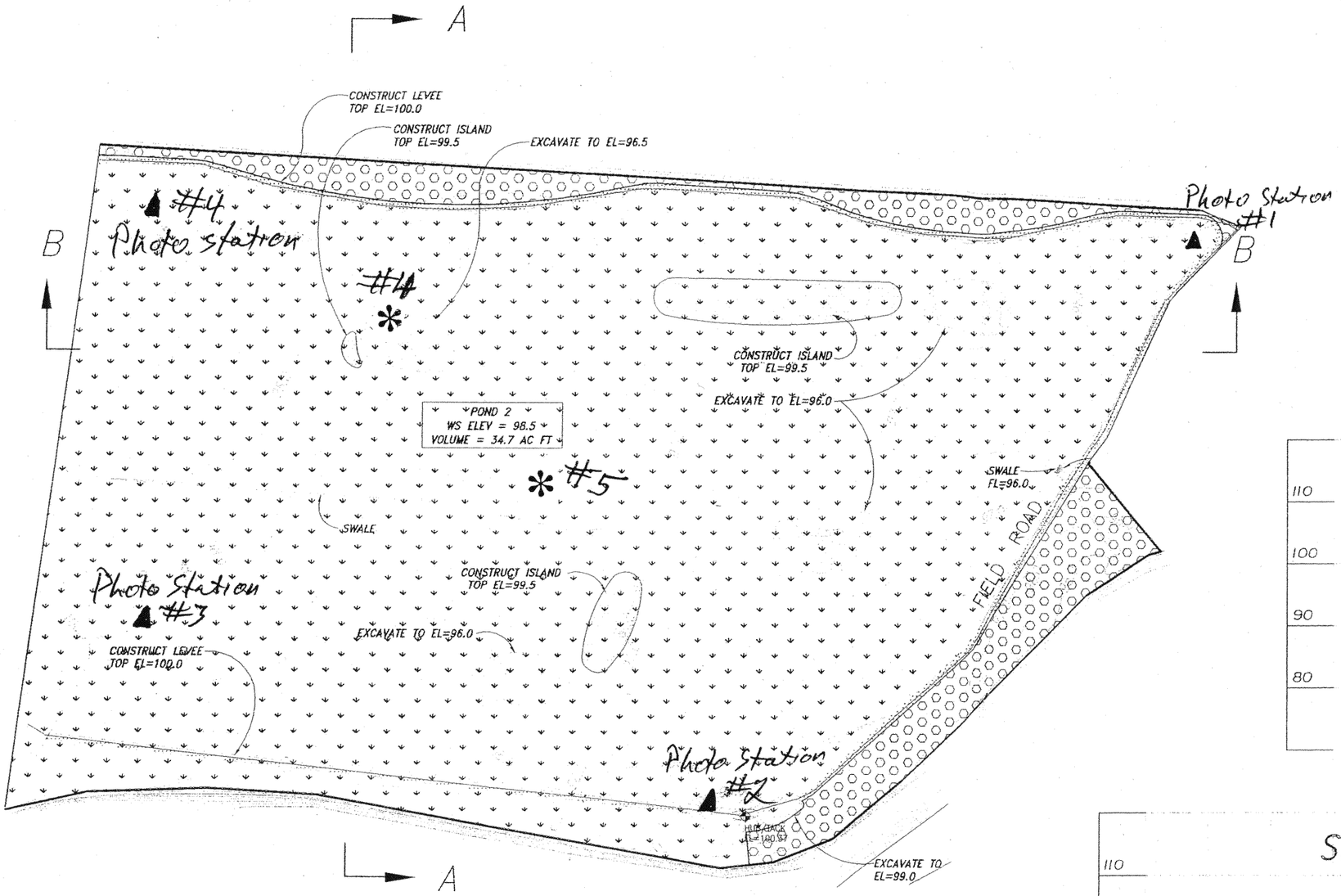
SITE LOCATION MAP

Figure 1

Phase I Monitoring Well Locations: *



Phase II Monitoring Well Locations: ✻



PLAN

100 0 100 200
SCALE OF FEET

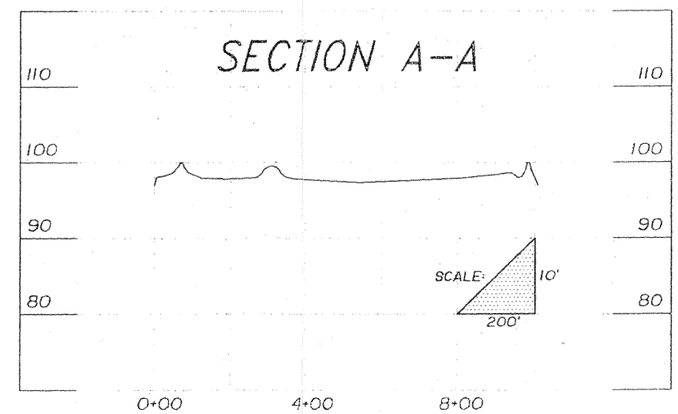
LEGEND

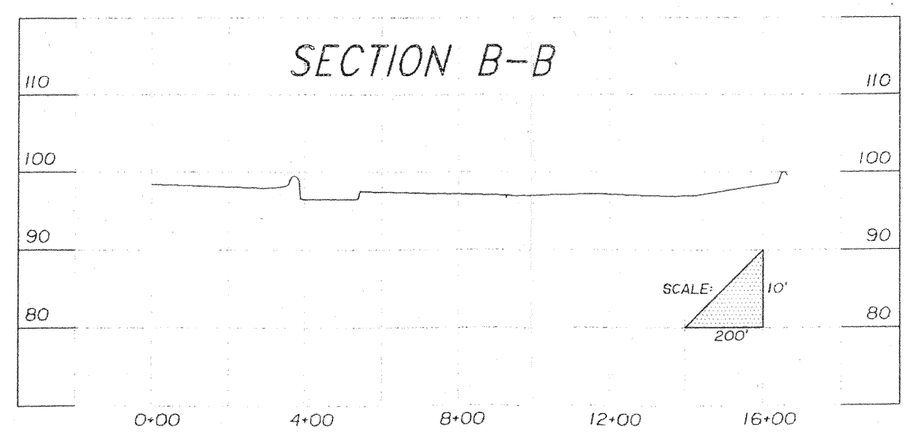
PFOC-1.5 ACRES

PEMC-36.6 ACRES

PHOTO POINTS (4)

DRAINAGE DITCH





AMAZON CREEK MITIGATION BANK PHASE 2
LANE COUNTY, OREGON
WETLAND MITIGATION SITE PLAN

Jampolsky - July 2006