Mitigation Monitoring Annual Report Template

1. Mitigation Monitoring Report Cover Sheet

1: ***Tualatin Valley Environmental Bank*** **Identifiers:**

DSL Permit # 46796 Corps Permit # 2009-552 Permittee MOTEL, GREEN BANKS
County WASHINGTON Report Date 12/28/12 Monitoring Year (1) 2 3 4 5
Date Removal-Fill Activity Completed Sept. 2011 - Initial Oct. 2011
Date mitigation was completed: Grading Sept. 2011 Planting - Continued
Date(s) of data collection: Aug. 10 - Sept. 13 2012
Report prepared by: GREEN BANKS LLC

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:

	Performance standards (verbatim from permit)	Fully Met? (Y/N)	Comments/Reason for shortfall (mark NA if doesn't apply this year)
VEGETATION PERFORMANCE STANDARDS			
Herbaceous (PEM) Wetlands			
FACW or FAC Dominated Herbaceous Wetlands			
1.1	The combined cover of native species for Year 1 shall be 40%; Year 2 shall be 50%; and Year 3 and thereafter shall be 60%.	Y	Average cover of native species in 23 sample plots in this habitat class for Year 1 was 57%. At an 80% confidence level, the upper confidence interval (CI) was 65% and the lower CI was 48%.
1.2	The cover of non-native invasive species during the 1st and 2nd years shall not exceed 30%. For year 3 and thereafter, the non-native invasive cover, excluding reed canarygrass (*Phalaris arundinacea*), shall not exceed 10%. The cover of reed canary grass shall not exceed 10% for year 3 and thereafter.	Y	Average cover of invasive species in this habitat class for Year 1 was 0.1%. At an 80% confidence level, the upper confidence interval (CI) was 0% and the lower CI was 0%.
1.3	Bare substrate represents no more than 20% cover by the 3rd year after planting.	NA	There is no Year 1 standard for "bare substrate" (see definition in notes) but the average was 38%. Most plots that have high percentages this year were primarily covered with dead, sprayed non-natives.

1.4	The standard for diversity in herbaceous wetlands is at least 6 native species, each with 5% or more average cover and occurring in at least 10% of the plots by the 3rd year after planting.	NA	There is no Year 1 standard for diversity but 3 native species (*Deschampsia cespitosa*, *Plagiobothrys scouleri* and *Rorippa curvisilqua*) met the standard.
1.5	The hydrophytic vegetation standard is that the Prevalence Index is $\leq$ 3.0 and/or the vegetation passes the "50/20 rule" for dominance of hydrophytic vegetation.	Y	The average rounded Prevalence Index (PI) is 2 (FACW) and no plots exceeded a rounded PI of 2. Two plots had a rounded PI of 1 (OBL) and 3 plots were unvegetated and thus had no PI.
OBL Dominated Herbaceous Wetlands			
2.1	The standard for native cover for Year 1 shall be 10%; Year 2 shall be 20%; and Year 3 and thereafter shall be 40%.	Y	Average cover of native species in 21 herbaceous plots in this habitat class for Year 1 was 63%. At an 80% confidence level, the upper confidence interval (CI) was 74% and the lower CI was 52%.
2.2	The cover of non-native invasive species during the 1st and 2nd years shall not exceed 30%. For year 3 and thereafter, the non-native invasive cover, excluding reed canarygrass, shall not exceed 10%. The cover of reed canary grass shall not exceed 10% for year 3 and thereafter.	Y	Average cover of invasive species in this habitat class for Year 1 was 1%. At an 80% confidence level, the upper confidence interval (CI) was 2% and the lower CI was 1%.
Shrub dominated (PSS) Wetlands, Forested (PFO) Wetlands, and Buffers			
3.1	The combined cover of native species for Year 1 shall be 40%; Year 2 shall be 50%; and Year 3 and thereafter shall be 60%.	PFO: Y PSS: Y Buffer: NA	**PFO:** Average cover of native species in the 36 herbaceous plots for this habitat class for Year 1 was 62% (upper CI = 70%, lower CI = 54%). There was an average of 18% cover of native woody species in the 20 woody sample plots (upper CI = 27, lower CI =9). Combining the herb & woody averages gives a total of 80% native cover. **PSS:** Average cover of native species in the 41 herbaceous plots for this habitat class for Year 1 was 34% (upper CI) = 42%, lower CI = 26%). There was an average of 10% cover of native woody species in the 20 woody sample plots (upper CI = 16, lower CI =4). Combining the herb & woody averages gives a total of 44% native cover. **Buffer:** The buffer areas had not yet been planted.
3.2	The combined cover of non-native invasive species will not exceed 30% by Year 3 and thereafter.	PFO:NA PSS:NA Buffer: NA	**PFO:** NA for Year 1 but average cover of invasives in the herb plots for this class was 3%; invasive cover in the woody plots was 0%. **PSS:** NA for Year 1 but average cover of invasives in the herb plots for this class was 8%; invasive cover in the woody plots was 1%. **Buffer:** The buffer areas had not yet been planted.
3.3	Bare substrate represents no more than 40% cover by the 3rd year.	NA	There is no Year 1 standard for "bare substrate" (see definition in notes) but the average is 29% in PFO herbaceous plots and 53% in PSS herbaceous plots. Most plots that have high percentages this year were primarily covered with dead, sprayed non-natives.
3.4	By Year 3 and thereafter, there are at least 6 different native species. To qualify, a species must have at least 5% average cover in the habitat class, and occur in at least 10% of the plots sampled.	NA	There is no Year 1 standard for diversity but in the PFO, 7 native species (*Deschampsia elongata, D. cespitosa, Epilobium ciliatum, Bidens cernua, Leersia oryzoides* plus *Fraxinus latifolia* [from the woody plots] met the standard. In the PSS, 4 species (*Glyceria borealis, L. oryzoides E. ciliatum* plus *Salix scouleriana* [from the woody plots]) met the standard.

3.5	The density of woody vegetation is at least 1,000 native plants (shrubs) and/or stems (trees) per acre, including native volunteers. After the aerial canopy cover (*including* shrub cover) is 50% or greater, there will be no minimum number of plants/stems. Woody vegetation standards should be met for two successive years without irrigation.	PFO: NA PSS: NA Buffers: NA	**PFO:** There was an average of 384 plants or stems/acre 20 woody plots. Three plots had ≥ 50% native woody cover. **PSS:** There was an average of 273 plants or stems/acre 20 woody plots. Two plots had ≥ 50% native woody cover. **Note:** Planting in the PSS and PFO areas is not yet completed; the planting plan specifies planting over a 2 year period. **Buffers:** The buffer areas had not yet been planted.
3.6	The hydrophytic vegetation standard for PSS and PFO wetlands is that the Prevalence Index is ≤ 3.0 and/or the vegetation passes the "50/20 rule" for dominance of hydrophytic vegetation.	PFO: Y PSS: Y	**PFO:** The average rounded Prevalence Index (PI) was 2 (FACW); only one plot exceeded a rounded PI of 3 and 6 plots were unvegetated and thus had no PI. **PSS:** The average rounded Prevalence Index (PI) was 2 (FACW); no plots exceeded a rounded PI of 3 and 2 plots were unvegetated and thus had no PI.
Notes: All the above cover percentages represent absolute aerial cover. In all cases, the "Year" refers to the number of years after *that portion of the site* was first planted. Thus **all habitat classes except the buffers are Year 1; the buffers are Year 0**. Bare substrate includes areas of bare soil and areas covered by moss, water, or dead herbaceous plants.			
HYDROLOGY PERFORMANCE STANDARDS			
	The criteria for achieving wetland hydrology at the mitigation site will be met if hydrologic conditions meet or exceed the basic standard of the 1987 *US Army Corps of Engineers Wetland Delineation Manual*, and refined in the *Corp's May 2010 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region*.	NA	Not applicable until wetland delineation "lite" is completed; this will likely occur between years 3 and 5 (2014-2016).

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 ☑

December 28, 2012

TUALATIN VALLEY ENVIRONMENTAL BANK

MONITORING REPORT YEAR 1 (2012)

Prepared by: C. Jonas Moiel, Senior Ecologist
Jeff Handley, Senior Wetland Scientist
Green Banks LLC
3828 SE 13th Avenue
Portland, Oregon 97202
(503) 477-5391

Prepared For: Dave Heikes Farms Inc.
9400 SW Heikes Drive
Hillsboro, Oregon 97123

TABLE OF CONTENTS

MITIGATION PLAN PURPOSE AND OVERVIEW

A. LOCATION:

The Tualatin Valley Environmental Bank (TVEB) is located on 105.95 acres at the confluence of the Tualatin River, Christensen Creek and unnamed surface and subsurface drainages. The TVEB is located near 9400 S.W. Heikes Drive in Hillsboro, Oregon, 97123; Township 1 South, Range 2 West, Section 32, utilizing portions of tax lots 1200 and 691; and Township 1 South, Range 2 West, Section 29, tax lot 601.

B. MITIGATION GOALS AND OBJECTIVES:

The TVEB goals and objectives are outlined in the following section. The goals are generalized, primary goals of the project. The objectives are specific tasks or elements that will be implemented through the mitigation plan to accomplish the Bank goals.

Goal 1: To restore 4.11 acres, create 18.28 acres, and enhance 33.29 acres, of Slope/Flats and Riverine wetlands; and establish 36.70 acres of wetland and upland buffers to improve wetland functions and generate 31.10 wetland mitigation acre credits.

Objective 1A: To restore wetland hydrology by de-activating artificial drainage features such as culverts, tiling, ditching, and trenching. This will be accomplished by filling and re-contouring, breaking tiling lines, and placing large woody debris (LWD) in areas where it historically accumulated.

Objective 1B: To create wetlands in areas that are currently upland through the removal of artificial drainage features, the construction of a series of log-jams, and the lowering of ground elevations adjacent to the existing wetland.

Objective 1C: To establish native dominated plant communities through the removal of non-native invasive species, seeding and planting.

Objective 1D: To establish 36.70 acres of forested buffers ranging from 25 to 120 feet wide surrounding the wetland mitigation area. This will limit pollutant influx from adjacent lands into the Bank, increase the on-site sources of LWD, and increase terrestrial and avian habitat support.

Objective 1E: To construct log-jams in areas where historic beaver activity has occurred that will be self-sustaining. This was accomplished through the construction of engineered log-jams and planting of forests that will provide long term LWD inputs to the site.

Goal 2: To provide a means for long term protection and management of the wetland mitigation bank area.

Objective 2A: A Long Term Endowment Fund will be developed to fund the long term management of the bank site, based on the anticipated costs of long term maintenance and management.

Objective 2B: A Long Term Land Steward will be selected to manage the TVEB after bank closure, and a Conservation Easement will be established over the project area to ensure perpetual protection.

C. MAINTENANCE AND MANAGEMENT ACTIONS:

The TVEB was heavily maintained and managed in 2012, as it was Year 1 after initial planting and seeding of the wetland areas (~55.7 acres). Planting and seeding of small areas of wetland began in 2010; however, a majority of the wetlands on site were planted and seeded in the fall of 2011 to the spring of 2012.

Green Banks staff conducted monthly bank "walk-throughs" of the ~55.7 acre wetland area from the spring to fall of 2012, to determine what management actions were necessary. The goals of management were to decrease competition of non-native plant species and reduce their spread, and to encourage native plant community growth and diversity. These goals were accomplished through maintenance activities such as herbicide application and mechanical control (e.g. hand pulling, cutting). Native seeding and planting also occurred throughout the year in areas with bare ground or sufficient hydrology for year-round planting.

Herbicide applications began in early March and continued until October. A majority of the wetland areas were maintained using backpack herbicide sprayers. All non-native plants were targeted. In general, herbicide applications were made to non-native plant species in the spring, summer, and fall at optimal timing to induce mortality and/or when species were identifiable to maintenance staff. In some cases, weeds were hand pulled to avoid damaging native plants. Non-native shrubs and trees were cut with chainsaw and sprayed. Some large non-native trees were girdled.

The bank buffers were sprayed three times (spring, summer, fall) with broad spectrum and broad leaf herbicides to prepare them for planting and seeding in the fall of 2012.

D. MONITORING METHODS:

Vegetation and hydrology monitoring followed the routine methods specified in the DSL Removal-Fill Guidelines with the following exceptions:

For the purpose of these performance standards we will generally adopt most of the definitions of invasive and non-native species in the DSL Guidance. The DSL Guidance defines invasive and non-native plants in the following way: "*A plant species should automatically be labeled as invasive if it appears on the current Oregon Department of Agriculture Noxious Weed list, plus known problem species including Phalaris arundinacea, Mentha pelugium, Holcus lanatus, Anthoxanthum odoratum, and the last crop plant if it is non-native. Non-native plants should be labeled as such if they are listed as non-native on the USDA Plants Database. Beginning in year 2 of monitoring, DSL will consider a non-native plant species invasive if it comprises more than 15% cover in 10% or more of the sample plots in any habitat class, and increases in cover or frequency from the previous monitoring period. Plants that meet this definition should be considered invasive for all successive years of monitoring.*" (DSL 2009).

In general we concur with *most* of the above definitions of non-native and invasive species. However, the ODA ranks some native species e.g., giant horsetail (*Equisetum telmateia*) as noxious presumably because they can become pests on agricultural sites. Although our site currently does not include this or other "noxious" natives, we would like to exclude considering any native species as noxious and thus "invasive". Additionally, although it is agreed that we need a mechanism to identify, track and control potentially invasive non-natives not already listed by ODA or DSL as "invasive", the threshold proposed by DSL Guidance (15% cover in 10% or more of the sample plots in any habitat class) is too proscriptive. This is particularly true for species that "trigger" the invasive status one season, but are controlled well below threshold levels in subsequent years. Instead we are using a modified standard (as described in the TVEB bank instrument): *Beginning in year 2 of monitoring, a non-native plant (not already identified by ODA or DSL) shall be considered "invasive" if it has 20% or more absolute cover in 20% or more of the plots for a given habitat class. If, in subsequent years, the plant is controlled below the threshold level, it will be removed from the "invasive species list". However, the ODA-listed and DSL-listed non-native "invasives"(as of 2010) will <u>always</u> be considered invasive, regardless of percent cover.*

Our other variance is the ranking of certain plant species as "non-native" by the USDA database. Narrowleaf burreed (*Sparganium emersum*), which is abundant in some of the wetter parts of the existing wetland, is listed on the USDA Plants Database as "native" in Canada but "introduced" in the contiguous lower 48 states and Alaska. Other recent online sources or databases disagree with the "introduced" designation: the Oregon Flora Image Project (2010) website shows images of this plant from 2008 and designates it as "native" in Oregon; CalFlora (2010) lists this species as "native to California" and also present in other western states; the Burke Museum, associated with the University of Washington designates this as "native" in Washington (2006). We would thus like to designate this as a native species. Additionally, since continuing refinement of taxonomic science has resulted in changes back and forth regarding the nativity of species such as water foxtail (*Alopecurus geniculatus*) (designated as a native by the Oregon Flora Project) and American water plantain (*Alisma plantago-aquatica*) (*A. plantago-aquatica* is a synonym for *A. triviale* which is considered a native to Oregon), the TVEB would like to designate these two species as native.

The Mitigation Bank Instrument (MBI) also specifies allowing certain non-native smartweeds (*Persicaria* [*Polygonum*] species) to persist in, and near, permanently or semi-permanently inundated areas in the mitigation wetlands that are otherwise dominated by obligate (OBL) natives. Because of our desire to limit herbicide applications in and near inundated areas, and because the native and non-native smartweeds are often inter-mixed: *the non-native smartweeds, not otherwise listed by the ODA as noxious, are excluded from any performance standards regarding percent native and/or invasive species cover.*

E. MONITORING DATA LOCATIONS:

Please refer to Figures 1a-1d which display the planted habitat types (sample units), monitoring transect locations, monitoring data plots, photo monitoring locations, and hydrology monitoring pits and wells. The habitat types consist of PEM wetlands, PSS wetlands, PFO wetlands, and buffers. In the PEM wetlands, we divided the class into two sub-classes: OBL dominated and FAC/FACW dominated. This is the case because each of these sub-classes has different performance standards.

Monitoring locations were established throughout the site at a density which exceeds the minimum number of samples suggested in the DSL Guidance. Since each wetland habitat type is greater than 5 acres, the minimum sampling size required is: 30 herbaceous plots in the PEM wetlands; 15 woody plots and 30 herbaceous plots each in PFO and PSS dominated wetlands; and 15 woody and herbaceous plots in the buffers. In 2012, we established: 44 PEM herbaceous plots (23 in the FAC/FACW community; 21 in the OBL community); 36 herbaceous plots and 20 woody plots in the PFO areas; and 41 herbaceous plots and 20 woody plots in the PSS areas. If after the first couple years of monitoring the data are uniform, we may reduce the number of plots according to the sample size calculations provided in the DSL Guidance or other approved method.

Transects were established running west to east, beginning at the western edge of the project area. The first transect (T1) started near the northern end of the site, and subsequent parallel transects were located at intervals of approximately 500 feet south of each other. There were two transects (T1 and T3) that were slightly skewed to lengthen the transect distance across the wetland area and to incorporate a unique plant community (PEM, HGM Slope). Transect 12 was added after reviewing the monitoring data to increase the number of PEM FAC/FAW dominated herbaceous wetland plots; it was located halfway between transects 10 and 11, approximately 250 feet south of transect 10.

In general, the first plot was located 5 feet east of the beginning of the transect start point. The first plots on two transects (T2-SH1 and T5-PEMOBL1) were offset more than 5 feet because one was located in a narrow sliver at the tax lot edge and the other was located in an area with inundation too deep to survey (>3'). Herbaceous plots were spaced every 50 feet after the first plot on a transect. On PSS and PFO transects, the first woody plot was located at the same location as the first herbaceous plot. Each subsequent woody plot was located 100 feet east of the previous woody plot. In situations where a transect crossed an inundated portion of the wetland that was too deep to survey (>3 feet), sampling plots were offset over the inundated area and restarted easterly along the transect at the nearest location with a water depth shallow enough to survey; sampling plots east of an offset plot were spaced at the standard interval described above.

The herbaceous plots were 1 square meter in size. Most of the herbaceous plots were established with the northwest corner of each meter square at the transect plot location and were located on the south side of the transect. Some plots were located on the north side of the transect to avoid

impermeable surface, upland areas, or tax lot edges. The amount of bare substrate and the areal cover of each plant species growing in, or hanging over the meter plots was estimated and recorded.

The woody vegetation plots (used in the forested wetlands, shrub-dominated wetlands and buffers) were 1,350 square feet; rectangles measuring 45 feet by 30 feet. Most of the plots were established with the 45 foot edge laying east/west and the 30 foot edge facing north/south; located on the south side of the transect. Some of the plots were skewed either by having the 30 foot edge running east/west rather than north/south or were laid on the north side of the transect to avoid impermeable surface, uplands areas, or tax lot edges. The number of individual stems (trees) or plants (shrubs) of each native species, including volunteers were counted in each woody vegetation plot. We also estimated the percent cover of both native and non-native invasive woody species in each woody vegetation plot. In later years, when it becomes difficult to count clonal shrubs and/or when the shrub and tree cover is approaching 50% we will visually estimate cover rather than completing total plant counts.

The locations of the start and end points of each monitoring transect, the northwestern corner of each herbaceous plot, and all four corners of the woody vegetation plots were GPS'ed during the initial layout of the transects so that they could be re-located in subsequent years.

F. HYDROLOGY METHODS AND CONTEXT:

Hydrology monitoring will occur for the first few years of bank establishment until the post-construction delineation (delineation-lite) is completed. We anticipate completing the post construction delineation between Years 3 and 5 (2014-2016) and will be providing an in-depth hydrological analysis at that time; including additional sample plot data that will be used to fine tune the wetland boundary.

Please refer to the hydrological monitoring pit and well locations shown on Figures 1b-1d. A majority of these monitoring locations were established in 2010, when the original wetland delineation was completed for the site. Additional hydrological monitoring pits were added in areas that we predicted were near the wetland boundary (post-construction) in 2012. Shallow monitoring wells with data loggers were also installed in several representative locations within the wetland. These data loggers measure water table levels on an hourly basis. Additionally, we had aerial photography taken of the wetland area on February 4th, February 27th, and September 7th, 2012 (see Appendix D). The photos taken in February display the inundation levels in the early part of the growing season.

In 2012, the growing season began on February 7th based on the bud break of native plant species on-site; it was determined to begin on February 10th 2010, for the pre-construction wetland delineation. Hydrological pit monitoring began on February 8th and continued through March 3rd. Hydrology data including the depth to saturation and inundation were collected at monitoring pits approximately twice a week for the duration of the monitoring period.

Monitoring wells tracked the depth to ground water from the beginning of the monitoring period through the summer of 2012.

Precipitation data for the two weeks prior to start of sampling, the percent of normal precipitation for each of the preceding three months, and the percent of normal precipitation for the water year to date are included in tables below.

Daily Precipitation Data for the 2 Weeks Prior to Monitoring Start

Date	Precipitation (inches)	Date	Precipitation (inches)
Jan. 18, 2012	1.02	Jan. 25, 2012	0.02
Jan. 19, 2012	1.29	Jan. 26 , 2012	0.09
Jan. 20, 2012	0.45	Jan. 27 , 2012	0.00
Jan. 21, 2012	0.16	Jan. 28, 2012	0.00
Jan. 22, 2012	0.35	Jan. 29 , 2012	0.33
Jan. 23, 2012	0.00	Jan. 30, 2012	0.00
Jan. 24, 2012	0.81	Jan. 31, 2012	T

T=trace (less than 0.01 inch)

Monthly Precipitation Data

Month	Total Precipitation (Inches)	Average Precipitation (Inches)*	Percent of Monthly Average Precipitation	Within "Normal" 30-70 percentile Range from WETS Table?	Current Water Year to Date	Percent of Average Water Year to Date at end of Month*
Nov. 2011	5.38	6.03	89%	normal	7.26	83%
Dec. 2011	2.33	6.44	36%	below normal	9.59	63%
Jan. 2012	5.79	5.76	101%	normal	15.38	73%
Feb. 2012	2.82	4.72	60%	below normal	18.20	71%
Mar. 2012	6.59	3.93	168%	above normal	24.79	89%
Apr. 2012	2.38	2.46	97%	normal	27.17	85%

* The average monthly precipitation and calculated average water year to date reported here is from the Hillsboro WETS table NWS data for Hillsboro, which vary slightly from the NRCS averages in some months.

Precipitation at the time of sampling was below normal for February, above normal for March, and normal for April. These months also had less than average water-year-to-date values.

A majority of the wetlands on-site are located within the floodplain of the Tualatin river (within the DSL concurred OHWM). River flooding typically occurs between December and March on an annual basis, sometimes multiple times per year, and is a contributing factor to the hydrology. The Tualatin river flooded the site on January 24th, March 17th, April 5th in 2012. Data from a nearby river gauge at the Farmington road bridge will be used to track river levels on an annual basis. Tualatin river flood events will be considered to be normal occurrences if they correlate with normal precipitation data (within the 30-70 percentile range of WETS table) for that time of the year.

RESULTS

A. VEGETATION STANDARDS

Herbaceous (PEM) Wetlands FAC/FACW Dominated Communities:

Performance Standard 1.1 Result:
Standard- The combined cover of native species for Year 1 shall be 40%; Year 2 shall be 50%; and Year 3 and thereafter shall be 60%.
Result- Average cover of native species in 23 sample plots in this habitat class for Year 1 was 57%. At an 80% confidence level, the upper confidence interval (CI) was 65% and the lower CI was 48%.
Standard met? Yes.

Performance Standard 1.2 Result:
Standard- The cover of non-native invasive species during the 1st and 2nd years shall not exceed 30%. For Year 3 and thereafter, the non-native invasive cover, excluding reed canarygrass (*Phalaris arundinacea*), shall not exceed 10%. The cover of reed canary grass shall not exceed 10% for year 3 and thereafter.
Result- Average cover of invasive species in this habitat class for Year 1 was 0.1%. At an 80% confidence level, the upper CI was 0% and the lower CI was 0%.
Standard met? Yes.

Performance Standard 1.3 Result:
Standard- Bare substrate represents no more than 20% cover by the 3rd year after planting.
Result- There is no Year 1 standard for "bare substrate" (see definition in notes) but the average was 38%. Most plots that have high percentages this year were primarily covered with dead, sprayed non-natives.
Standard met? Not applicable at Year 1.

Performance Standard 1.4 Result:
Standard- The standard for diversity in herbaceous wetlands is at least 6 native species, each with 5% or more average cover and occurring in at least 10% of the plots by the 3rd year after planting.
Result- There is no Year 1 standard for diversity, but 3 native species (*Deschampsia cespitosa*, *Plagiobothrys scouleri* and *Rorippa curvisilqua*) met the standard.
Standard met? Not applicable at Year 1.

Performance Standard 1.5 Result:
Standard- The hydrophytic vegetation standard is that the Prevalence Index is $\leq$ 3.0 and/or the vegetation passes the "50/20 rule" for dominance of hydrophytic vegetation.
Result- The average rounded Prevalence Index (PI) is 2 (FACW) and no plots exceeded a rounded PI of 2. Two plots had a rounded PI of 1 (OBL) and 3 plots were unvegetated and thus had no PI.
Standard met? Yes.

Herbaceous (PEM) Wetlands OBL Dominated Communities:

Performance Standard 2.1 Result:
Standard- The standard for native cover for Year 1 shall be 10%; Year 2 shall be 20%; and Year 3 and thereafter shall be 40%.

Result- Average cover of native species in 21 herbaceous plots in this habitat class for Year 1 was 63%. At an 80% confidence level, the upper confidence interval (CI) was 74% and the lower CI was 52%.
Standard met? Yes.

Performance Standard 2.2 Result:

Standard- The cover of non-native invasive species during the 1st and 2nd years shall not exceed 30%. For year 3 and thereafter, the non-native invasive cover, excluding reed canarygrass, shall not exceed 10%. The cover of reed canary grass shall not exceed 10% for year 3 and thereafter.
Result- Average cover of invasive species in this habitat class for Year 1 was 1%. At an 80% confidence level, the upper CI was 2% and the lower CI was 1%.
Standard met? Yes.

Forested (PFO) and Shrub (PSS) Dominated Wetlands and Buffers:

Performance Standard 3.1 Result:

Standard- The combined cover of native species for Year 1 shall be 40%; Year 2 shall be 50%; and Year 3 and thereafter shall be 60%.
Result- PFO: Average cover of native species in the 36 herbaceous plots for this habitat class for Year 1 was 62% (upper CI = 70%, lower CI = 54%). There was an average of 18% cover of native woody species in the 20 woody sample plots (upper CI = 27, lower CI =9). Combining the herb and woody averages gives a total of 80% native cover.
PSS: Average cover of native species in the 41 herbaceous plots for this habitat class for Year 1 was 34% (upper CI) = 42%, lower CI = 26%). There was an average of 10% cover of native woody species in the 20 woody sample plots (upper CI = 16, lower CI =4). Combining the herb and woody averages gives a total of 44% native cover.
Buffer: The buffer areas had not yet been planted.
Standard met? Yes.

Performance Standard 3.2 Result:

Standard- The combined cover of non-native invasive species will not exceed 30% by Year 3 and thereafter.
Result- PFO: NA for Year 1 but average cover of invasives in the herb plots for this class was 3%; invasive cover in the woody plots was 0%.
PSS: NA for Year 1 but average cover of invasives in the herb plots for this class was 8%; invasive cover in the woody plots was 1%. Buffer: The buffer areas had not yet been planted.
Standard met? Not applicable at Year 1.

Performance Standard 3.3 Result:

Standard- Bare substrate represents no more than 40% cover by the 3rd year.
Result- There is no Year 1 standard for "bare substrate" (see definition in notes) but the average is 29% in PFO herbaceous plots and 53% in PSS herbaceous plots. Most plots that have high percentages this year were primarily covered with dead, sprayed non-natives.
Standard met? Not applicable at Year 1.

Performance Standard 3.4 Result:

Standard- By Year 3 and thereafter, there are at least 6 different native species. To qualify, a species must have at least 5% average cover in the habitat class, and occur in at least 10% of the plots sampled.
Result- There is no Year 1 standard for diversity but in the PFO, 7 native species (*Deschampsia elongata, D. cespitosa, Epilobium ciliatum, Bidens cernua, Leersia oryzoides* plus *Fraxinus latifolia* [from the woody plots] met the standard. In the PSS, 4 species (*Glyceria borealis, L. oryzoides E. ciliatum* plus *Salix scouleriana* [from the woody plots]) met the standard.
Standard met? Not applicable at Year 1.

Performance Standard 3.5 Result:

Standard- The density of woody vegetation is at least 1,000 native plants (shrubs) and/or stems (trees) per acre, including native volunteers. After the areal canopy cover (*including* shrub cover) is 50% or greater, there will be no minimum number of plants/stems. Woody vegetation standards should be met for two successive years without irrigation.
Result- PFO: There was an average of 384 plants or stems/acre 20 woody plots. Three plots had $\geq$ 50% native woody cover.
PSS: There was an average of 273 plants or stems/acre 20 woody plots. Two plots had $\geq$ 50% native woody cover.
Note: There have already been additional woody plantings in the PFO and PSS habitats since the monitoring efforts.
Buffers: The buffer areas had not yet been planted.

Standard met? Not applicable until planting is completed; Planting will occur over approximately a two year period within wooded habitats.

Performance Standard 3.6 Result:

Standard- The hydrophytic vegetation standard for PSS and PFO wetlands is that the Prevalence Index is ≤ 3.0 and/or the vegetation passes the "50/20 rule" for dominance of hydrophytic vegetation.

Result- PFO: The average rounded Prevalence Index (PI) was 2 (FACW); only one plot exceeded a rounded PI of 3 and 6 plots were unvegetated and thus had no PI.

PSS: The average rounded PI was 2 (FACW); no plots exceeded a rounded PI of 3 and 2 plots were unvegetated and thus had no PI.

Standard met? Yes.

NOTES: All the above cover percentages represent absolute areal cover. In all cases, the "Year" refers to the number of years after *that portion of the site* was first planted. Thus all habitat classes except the buffers are Year 1; the buffers are Year 0. Bare substrate includes areas of bare soil and areas covered by moss, water, or dead herbaceous plants.

B. HYDROLOGY STANDARDS RESULT:

Standard: "The criteria for achieving wetland hydrology at the mitigation site will be met if hydrologic conditions meet or exceed the basic standard of the 1987 *US Army Corps of Engineers Wetland Delineation Manual*, and refined in the *Corp's May 2010 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region.*"

Result: Not applicable until wetland delineation "lite" is completed; this will likely occur between years 3 and 5 (2014-2016). Hydrology data were collected at representative monitoring pit and well locations in 2012 to provide longer term data which will be incorporated into the post-construction delineation report. It is important to note that aerial photographs taken on February 4th and 27th, 2012, display evidence of 24 days of consecutive inundation during the growing season which extended near to the predicted post-construction wetland boundary during a month with lower than normal precipitation. A majority of the hydrology monitoring pits were also inundated through the study period; a summary of selected monitoring pit data is included in Appendix E. The monitoring wells were also inundated through the study period. Multi-year well data will be provided when the post-construction delineation is completed.

C. DELINEATION OF WETLAND ACREAGE ACHEIVED

Post-construction wetland delineation "lite" has not yet been completed. It is anticipated that the post-construction delineation will occur between years 3 and 5 (2014-2016).

D. FUNCTIONAL ASSESSMENT

Post-construction functional assessments have not yet been completed. These assessments will be completed in the same year as the post-construction wetland delineation.

CONCLUSIONS AND RECOMMENDATIONS

A. PROJECT STATUS

The mitigation project is in compliance with all performance standards for Year 1. Some standards are not required to be met until later years, therefore they are briefly addressed.

The wetland areas seem to be on a positive trajectory toward developing diverse native-dominated plant communities. In the early years of a re-vegetation project the primary concerns are invasion from non-native plant species and mortality of planted and seeded individuals. The TVEB wetland areas had very low weed cover for Year 1 with a average range of 0-9% non-native invasive cover within the various plant community types. This meets the non-native invasive cover standards (1.2 and 3.2) for Year 1, and also meets the Year 3 goal of having less than 10% non-native invasive cover. Planting and seeding efforts were successful in most of the wetland areas with high seed germination rates with vigorous growth, and low mortality of planted woody and herbaceous species. High quantities of herbaceous plugs (100,000+) in a variety of species have been installed within the wetland areas in the past couple years. This will help to ensure that the wetlands develop diverse herbaceous layers with species that would not likely become established from seed. Multi-annual seeding efforts have also occurred at the TVEB, and will continue for the first couple years of plant community establishment. These efforts will ensure that the native plant cover and diversity standards are met. Currently, the wetland areas are very diverse with a large number of species in all plant community types. Many species have low cover and/or widely spaced individuals and do not yet have an average of 5% cover in 10% of the plots within a plant community. It is anticipated that as the site matures, more of these species will contribute to meeting the diversity standards (1.4 and 3.4).

PFO and PSS wetland areas were not fully planted prior to the Year 1 monitoring efforts. The MBI Planting Plan (Section 4.3) specified that forested and shrub areas would be planted over a 2 year period until the target stem density was achieved. The wetland enhancement, creation and restoration areas were initially planted in the fall of 2011 to the spring of 2012. The MBI specified completing planting of the creation and restoration areas by the spring of 2013; the TVEB is ahead of schedule. Monitoring of the PFO and PSS areas was completed to document the work completed thus far and determine how much additional planting is necessary to meet the target of 1,000 woody stems per acre in these areas. During the 2012 monitoring walk-through by agency staff, it was noted that the density of woody plantings looked sufficient in certain areas even though they were planted at approximately half the proposed density (~500 stems per acre). This performance standard may be adjusted in future years, if a reduction in stem density is approved by the agencies. Additional planting of woody species has already occurred in the fall of 2012 and will continue in the spring of 2013.

The buffer areas were not yet planted at the time of monitoring in 2012. Initial seeding and planting of the buffers began in the fall of 2012.

The hydrological enhancements made through construction of the project are performing as designed. Please review the MBI or As-Built report for more information about the features described in this section. The primary 18 inch drain tile (culvert) was plugged and buried with native soils in the summer of 2011 and remained de-activated through the 2012 monitoring period. The woody debris jams (ditch plugs) slowed the rate of receding flood waters and increased the groundwater in the restoration and creation areas. The newly constructed swale

connecting the East-West Swale to the main portion of the creation area conveyed surface water intermittently for many weeks in the spring; providing additional surface and ground water into the created wetlands.

The primary log jam greatly restricted the outflow of water from flood events and surface runoff, retaining surface water within the wetland areas for a much longer duration than had historically occurred. The primary log jam had very restricted flows from October of 2011 to March of 2012, likely due to the compaction of certain areas of the feature during construction. In April of 2012, areas of the log jam that were plugged with debris (wood and native soils), began to flush out of the feature, greatly increasing the outflow of surface water at the log jam. Surface water flow through the log jam continued through the summer of 2012 until around September 1st, when flows diminished and stopped with approximately 1 foot of water perched on the upstream side of the log jam. Surface water flow through the log jam began again in the beginning of October, after the several rain events. The porosity and flow through the log jam will be monitored over the bank life to ensure that there is proper fish passage. More in-depth information regarding this feature will be included in the Year 2 monitoring report; a request was made in the fall of 2012 to monitor flow rates of the log jam annually in the springtime, by Oregon Department of Fish and Wildlife (ODFW).

Wetland hydrology data were collected in the early spring of 2012 as part of a longer term hydrology study that will be used to determine the wetland boundary in a future year. The aerial photos taken of the restoration and creation areas in February of 2012 prove that wetland hydrology was achieved for a majority of the wetland areas in a month with below normal rainfall. However, the wetland hydrology standard will be proved in a later year through a post-construction wetland delineation utilizing multi-year hydrology pit and well data, and additional spot checks of hydrology near the wetland boundary. It is anticipated that most of the wetland mitigation acreage will be achieved based on the preliminary data collected at Year 1.

B. RECOMMENDATIONS

The TVEB is currently meeting the performance standards for Year 1 and is on track to meeting the performance standards for future years. It is recommended that the current plan and strategy for vegetative community establishment continue. This will include additional seeding and planting events for a duration of a couple years. Non-native plant control efforts should continue multiple times per year for the duration of the project. A higher level of weed control effort is expected in the first few years after planting and will likely decrease over time. The project area should be observed multiple times per year in 2013 to direct maintenance efforts and ensure that project goals are being met.

C. FINANCIAL SECURITY STATUS

A performance bond (Assignment of Deposit) in the amount of $89,782 was established for the release of enhancement area credits; $44,891 was returned to the bank sponsor after completion of hydrological enhancements and initial planting of the enhancement area, and $44,891 is currently in the account.

A line of credit was established for the release of restoration, creation and buffer credits in the amount of $196,075, and $196,075 is currently in the account. The release of financial securities will follow the financial assurance release schedule as described in Exhibit J of the MBI.

MAPS AND FIGURES:

Figure 1a: Monitoring Index Map
Figures 1b-1d: Monitoring Inset Maps
Figure 13: Determination of Credits Map (from Mitigation Bank Instrument)

Figure 1a- Tualatin Valley Environmental Bank Monitoring Index Map

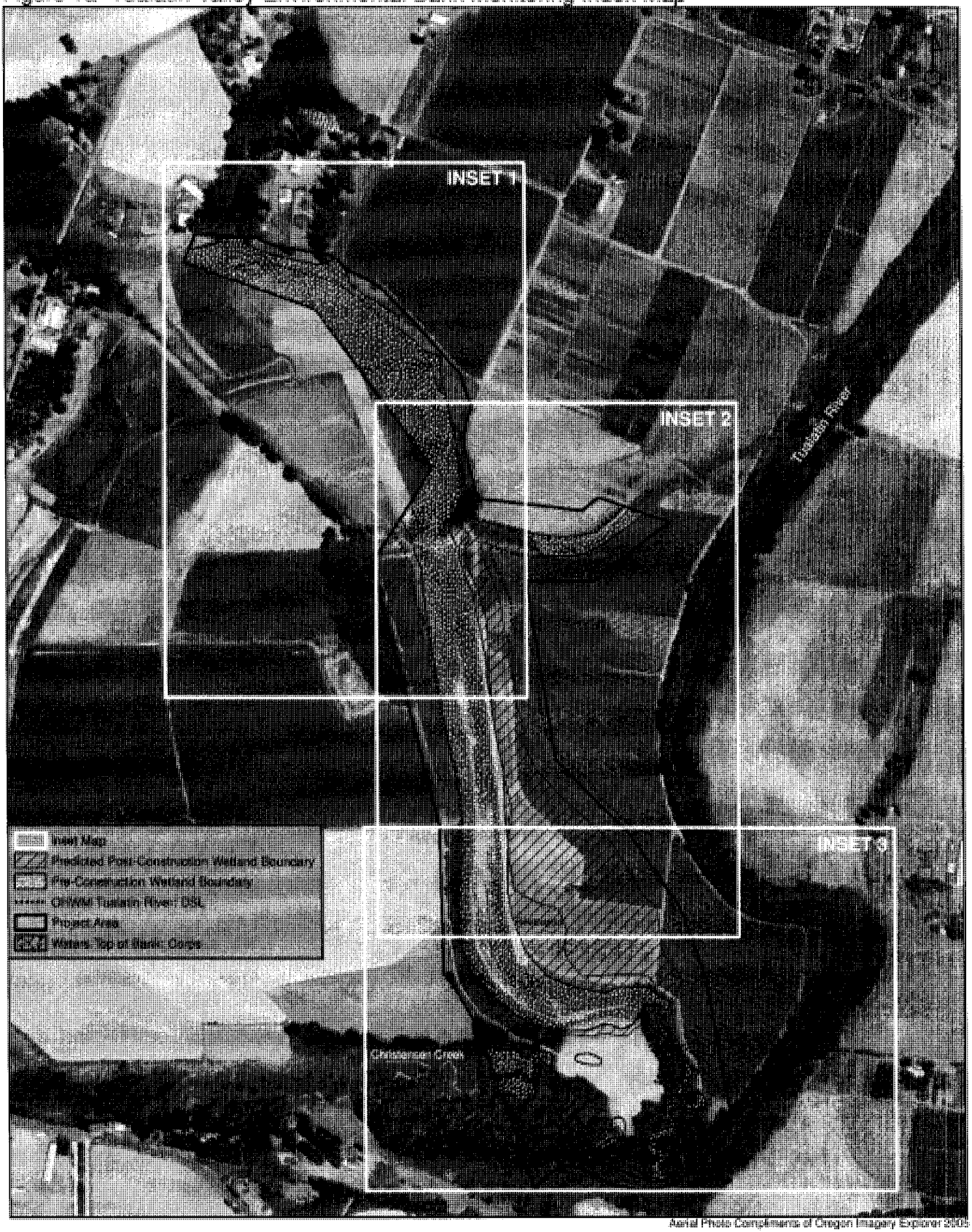
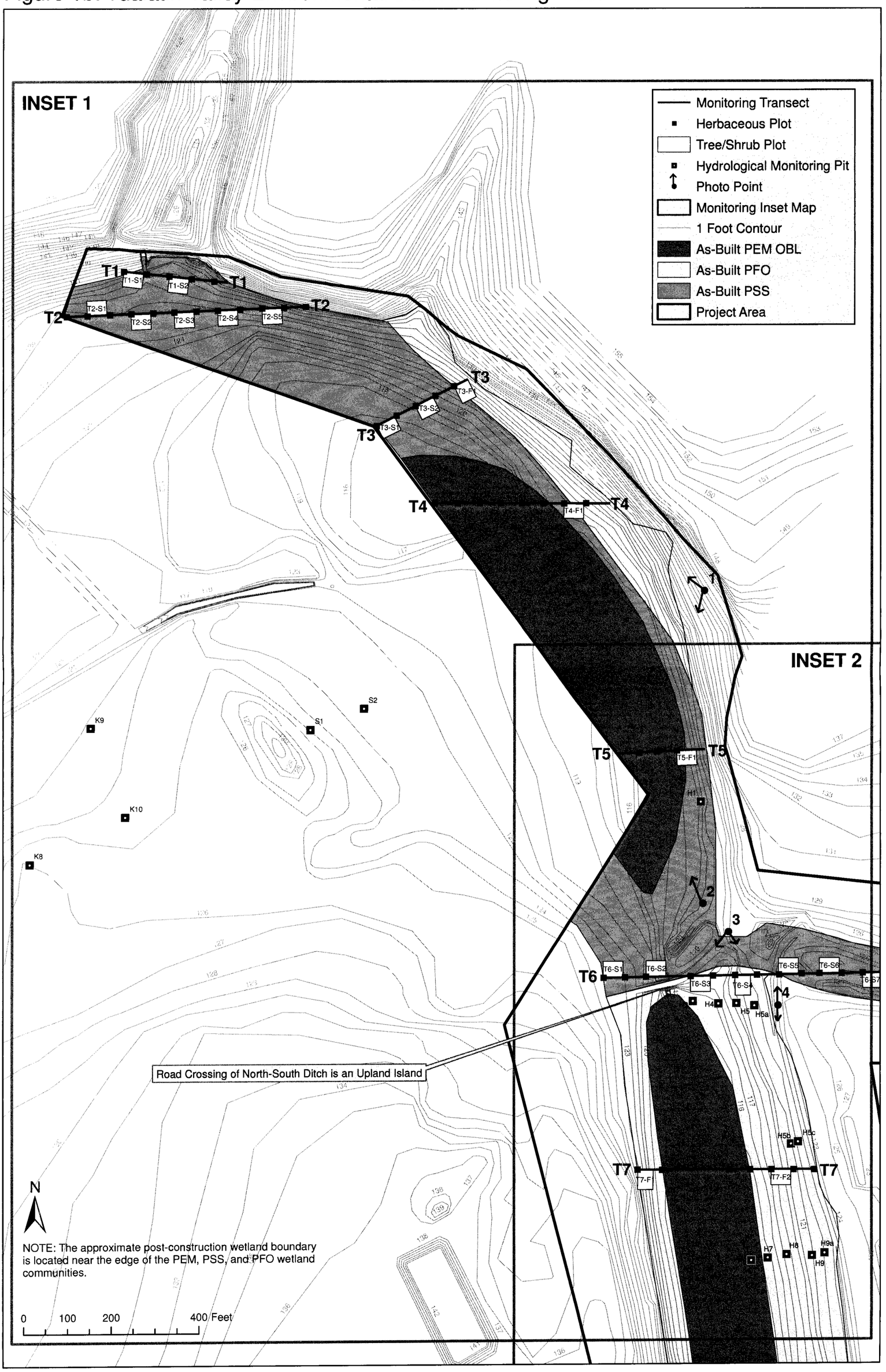


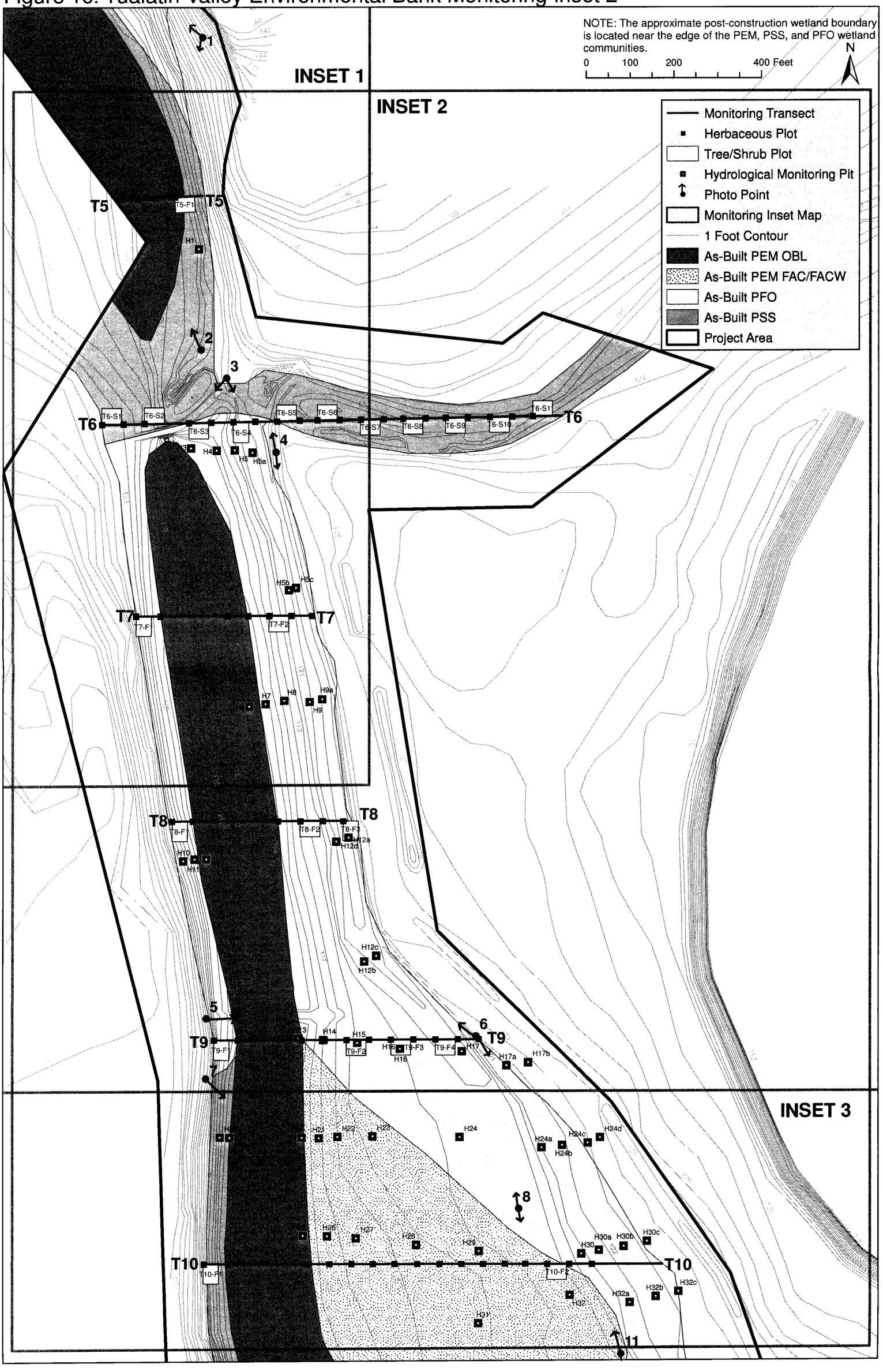
Figure 1b: Tualatin Valley Environmental Bank Monitoring Inset 1



Map should be printed size 11"x17"

greenbank

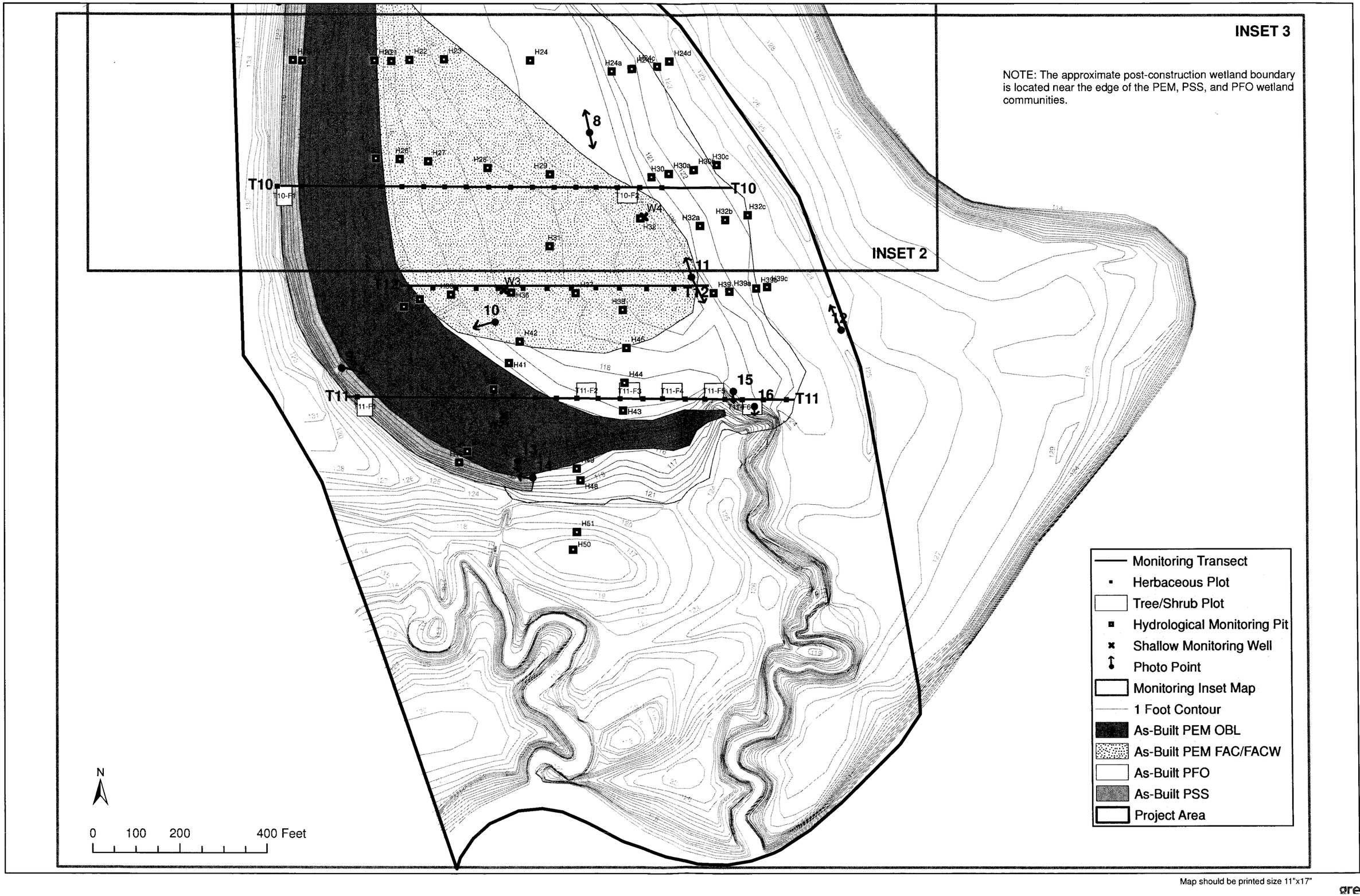
Figure 1c: Tualatin Valley Environmental Bank Monitoring Inset 2



Map should be printed size 11"x17"

greenbanks

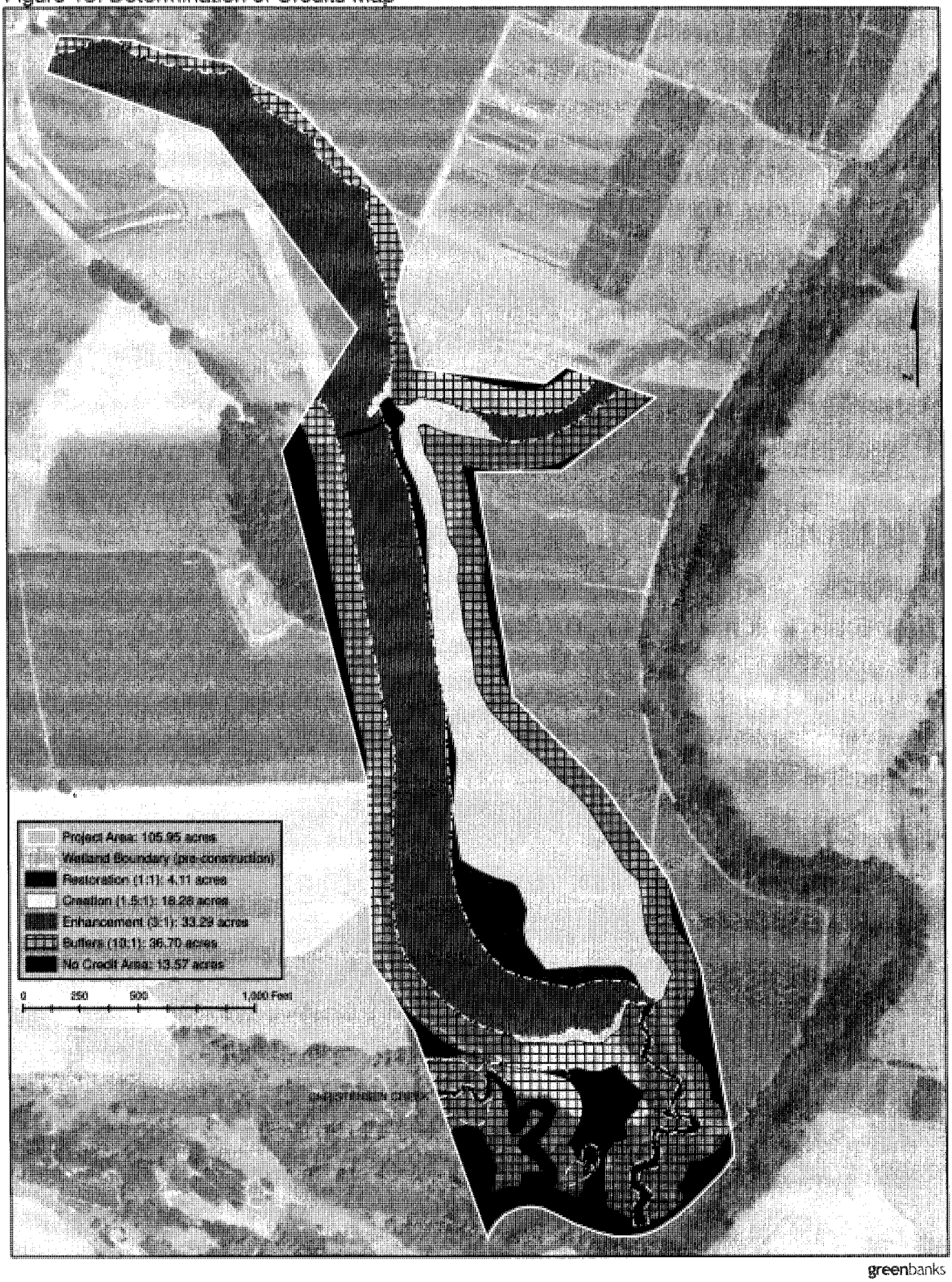
Figure 1d: Tualatin Valley Environmental Bank Monitoring Inset 3



Map should be printed size 11"x17"

greenbank

Figure 13: Determination of Credits Map



greenbanks

APPENDICES:

APPENDIX A:	Vegetation Data
APPENDIX B:	Photographic Documentation
APPENDIX C:	Sample Plot Location Table
APPENDIX D:	Aerial Photography
APPENDIX E:	Hydrology Pit Data (from selected plots in 2012)
APPENDIX F:	Credit Ledger (2011-2012)

APPENDIX A: VEGETATION DATA

Table 1: Summary Information for Communities and Plots-2012 Data and Performance Standards

Tables 2-7: Complete Vegetation Monitoring Data

Table 2: FAC/FACW PEM Community

Table 3: OBL PEM Community

Table 4: PFO Community Herbaceous Plots

Table 5: PSS Community Herbaceous Plots

Table 6: PFO Community Tree & Shrub Plots

Table 7: PSS Community Tree & Shrub Plots

Table 1a: Summary Information for Communities and Plots-2012 Data and Performance Standards, page 1 of 8											
FAC/FACW PEM Herb Plots- See Table 2 for Complete Species Information etc.											
Criteria	**Percent Native Cover**		**Percent Invasive Cover**		**Percent Bare Substrate**		**Native Species Diversity**		**Prevalence Index**		**Comments**
Performance Standard	**≥ 40% at Yr. 1**		**≤ 30% at Yr. 1**		**NA at Yr 1 (≤ 20%- Yr. 3)-some plots already pass (Y)**		**NA at Yr. 1 (≥ 6 spp. at ≥ 5% cover in ≥ 10% of plots by Yr 3).**		**≤ 3.0**		**3 species already meet the diversity criteria. There is no diversity criteria for individual plots thus all are NA.**
	Value	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	
Community Average	**56**	**Y**	**0**	**Y**	**38**	**NA**	**NA**	**NA**	**2**	**Y**	
T9-PEM1	105	Y	0	Y	0	NA (Y)	NA	NA	2	Y	
T10-PEM1	88	Y	1	Y	10	NA (Y)	NA	NA	2	Y	
T10-PEM2	101	Y	1	Y	0	NA (Y)	NA	NA	2	Y	
T10-PEM3	81	Y	0	Y	12	NA (Y)	NA	NA	2	Y	
T10-PEM4	95	Y	0	Y	2	NA (Y)	NA	NA	2	Y	
T10-PEM5	96	Y	0	Y	0	NA (Y)	NA	NA	2	Y	
T10-PEM6	79	Y	0	Y	0	NA (Y)	NA	NA	2	Y	
T10-PEM7	0	N	0	Y	100	NA	NA	NA	NA	NA	no cover-sprayed/dead
T10-PEM8	0	N	0	Y	100	NA	NA	NA	NA	NA	no cover-sprayed/dead
T10-PEM9	0	N	0	Y	100	NA	NA	NA	NA	NA	no cover-sprayed/dead
T10-PEM10	28	N	1	Y	66	NA	NA	NA	2	Y	
T12-PEM1	48	Y	0	Y	0	NA (Y)	NA	NA	1	Y	
T12-PEM2	60	Y	0	Y	35	NA	NA	NA	2	Y	
T12-PEM3	35	N	0	Y	64	NA	NA	NA	2	Y	
T12-PEM4	45	Y	0	Y	54	NA	NA	NA	1	Y	
T12-PEM5	35	N	0	Y	63	NA	NA	NA	2	Y	
T12-PEM6	49	Y	0	Y	49	NA	NA	NA	2	Y	
T12-PEM7	99	Y	0	Y	1	NA (Y)	NA	NA	2	Y	
T12-PEM8	38	N	0	Y	56	NA	NA	NA	2	Y	
T12-PEM9	55	Y	0	Y	43	NA	NA	NA	2	Y	
T12-PEM10	50	Y	0	Y	45	NA	NA	NA	2	Y	
T12-PEM11	57	Y	0	Y	37	NA	NA	NA	2	Y	
T12-PEM12	54	Y	0	Y	44	NA	NA	NA	2	Y	

Table 1b: Summary Information for Communities and Plots-2012 Data and Performance Standards, page 2 of 8										
OBL-Dominated PEM Herb Plots- See Table 3 for Complete Species Information etc.										
Criteria	**Percent Native Cover**		**Percent Invasive Cover**		**Prevalence Index**		**Comments**			
Performance Standard	**≥ 40% at Yr. 1**		**≤ 30% at Yr. 1**		**Although there is no Prevalence Index (PI) standard for this community, the PI is displayed here to demonstrate that it is typically dominated by OBL plants (PI=1, (Y))**		**There are no standards for diversity or bare substrate in this community. Nonetheless these were recorded (see Table 3). Bare substrate in this community very often includes unvegetated water-see Table 3 also for water depths.**			
	Value	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**				
Community Average	**63**	**Y**	**1**	**Y**	**1**	**NA (Y)**				
T4-PEMOBL1	80	Y	7	Y	1	NA (Y)				
T4-PEMOBL2	100	Y	0	Y	1	NA (Y)				
T4-PEMOBL3	105	Y	0	Y	1	NA (Y)				
T4-PEMOBL4	110	Y	0	Y	1	NA (Y)				
T4-PEMOBL5	95	Y	0	Y	1	NA (Y)				
T4-PEMOBL6	100	Y	0	Y	1	NA (Y)				
T5-PEMOBL1	100	Y	0	Y	1	NA (Y)				
T5-PEMOBL2	100	Y	0	Y	1	NA (Y)				
T7-PEMOBL1	90	Y	2	Y	1	NA (Y)				
T7-PEMOBL2	10	N	5	Y	1	NA (Y)				
T7-PEMOBL3	34	N	3	Y	1	NA (Y)				
T8-PEMOBL1	46	Y	1	Y	1	NA (Y)				
T8-PEMOBL2	15	N	0	Y	1	NA (Y)				
T9-PEMOBL1	18	N	5	Y	1	NA (Y)				
T9-PEMOBL2	95	Y	0	Y	1	NA (Y)				
T10-PEMOBL1	17	N	0	Y	1	NA (Y)				
T10-PEMOBL2	31	N	0	Y	1	NA (Y)				
T11-PEMOBL1	45	Y	0	Y	1	NA (Y)				
T11-PEMOBL2	66	Y	0	Y	1	NA (Y)				
T11-PEMOBL3	47	Y	0	Y	1	NA (Y)				
T11-PEMOBL4	20	N	0	Y	1	NA (Y)				

Table 1c: Summary Information for Communities and Plots-2012 Data and Performance Standards, page 3 of 8											
PFO Herbaceous Plots- See Table 4 for Complete Species Information etc.											
Criteria	**Combined Percent Native Cover**		**CombinedPercent Invasive Cover**		**Percent Bare Substrate**		**Native Species Diversity**		**Prevalence Index**		**Comments**
Performance Standard	**≥ 40% at Yr. 1**		**NA at Yr 1 (≤ 30% at Yr. 3) but many plots already pass (Y)**		**NA at Yr 1 (≤ 40% by Yr. 3)-some plots already pass (Y)**		**NA at Yr. 1 (≥ 6 spp. at ≥ 5% cover in ≥ 10% of plots by Yr 3)**		**≤ 3.0**		**7 species already meet the diversity criteria, inluding one from the tree/shrub plots. There is no diversity criteria for individual plots thus all are listed NA.**
	Value	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	
Community Average	**Combined total = 80% (62 herbs + 18 woody)**	**Y**	**3**	**Y**	**29**	**Y**	**7 (6 herbs + 1 woody species)**	**NA (Y)**	**2**	**Y**	
T3-FH1	106	Y	0	NA (Y)	0	NA (Y)	NA	NA	1	Y	
T4-FH1	105	Y	0	NA (Y)	0	NA (Y)	NA	NA	1	Y	
T4-FH2	72	Y	0	NA (Y)	20	NA (Y)	NA	NA	2	Y	
T5-FH1	87	Y	12	NA (Y)	0	NA (Y)	NA	NA	1	Y	
T7-FH1	68	Y	25	NA (Y)	0	NA (Y)	NA	NA	2	Y	
T7-FH2	69	Y	1	NA (Y)	18	NA (Y)	NA	NA	2	Y	
T7-FH3	0	N	0	NA (Y)	100	NA	NA	NA	NA	NA	no cover-sprayed/dead
T7-FH4	14	N	0	NA (Y)	85	NA	NA	NA	2	Y	
T8-FH1	95	Y	10	NA (Y)	0	NA (Y)	NA	NA	2	Y	
T8-FH2	73	Y	10	NA (Y)	0	NA (Y)	NA	NA	2	Y	
T8-FH3	67	Y	3	NA (Y)	20	NA (Y)	NA	NA	2	Y	
T8-FH4	37	N	1	NA (Y)	62	NA	NA	NA	2	Y	
T9-FH1	2	N	38	NA	10	NA (Y)	NA	NA	3	Y	
T9-FH2	39	N	0	NA (Y)	13	NA (Y)	NA	NA	3	Y	
T9-FH3	59	Y	2	NA (Y)	36	NA (Y)	NA	NA	2	Y	
T9-FH4	90	Y	0	NA (Y)	7	NA (Y)	NA	NA	2	Y	
T9-FH5	88	Y	0	NA (Y)	11	NA (Y)	NA	NA	2	Y	
T9-FH6	92	Y	1	NA (Y)	5	NA (Y)	NA	NA	2	Y	
T9-FH7	90	Y	0	NA (Y)	5	NA (Y)	NA	NA	2	Y	
T9-FH8	61	Y	0	NA (Y)	36	NA (Y)	NA	NA	2	Y	
T10-FH1	30	N	0	NA (Y)	70	NA	NA	NA	1	Y	
T10-FH2	63	Y	0	NA (Y)	26	NA (Y)	NA	NA	2	Y	
T10-FH3	31	N	0	NA (Y)	68	NA	NA	NA	2	Y	
T10-FH4	78	Y	0	NA (Y)	19	NA (Y)	NA	NA	2	Y	
T11-FH1	0	N	0	NA (Y)	100	NA	NA	NA	NA	NA	no cover-sprayed/dead
T11-FH2	42	Y	3	NA (Y)	36	NA	NA	NA	1	Y	

Table 1c (cont.): Summary Information for Communities and Plots-2012 Data and Performance Standards, page 4 of 8											
PFO Herbaceous Plots (cont.)- See Table 4 for Complete Species Information etc.											
Criteria	**Combined Percent Native Cover**		**CombinedPercent Invasive Cover**		**Percent Bare Substrate**		**Native Species Diversity**		**Prevalence Index**		**Comments**
Performance Standard	**≥ 40% at Yr. 1**		**NA at Yr 1 (≤ 30% at Yr. 3) but many plots already pass (Y)**		**NA at Yr 1 (≤ 20% by Yr. 3)-some plots already pass (Y)**		**NA at Yr. 1 (≥ 6 spp. at ≥ 5% cover in ≥ 10% of plots by Yr 3)**		**≤ 3.0**		**7 species already meet the diversity criteria, inluding one from the tree/shrub plots. There is no diversity criteria for individual plots thus all are listed NA.**
	Value	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	
Community Average	**Combined total = 80% (62 herbs + 18 woody)**	**Y**	**total = 3% (3% herbs + 0% woody)**	**Y**	**29**	**Y**	**7 (6 herbs + 1 woody species)**	**NA (Y)**	**2**	**Y**	
T11-FH3	95	Y	1	NA (Y)	0	NA (Y)	NA	NA	1	Y	
T11-FH4	95	Y	0	NA (Y)	0	NA (Y)	NA	NA	2	Y	
T11-FH5	87	Y	3	NA (Y)	0	NA (Y)	NA	NA	2	Y	
T11-FH6	105	Y	0	NA (Y)	0	NA (Y)	NA	NA	1	Y	
T11-FH7	102	Y	3	NA (Y)	0	NA (Y)	NA	NA	1	Y	
T11-FH8	90	Y	0	NA (Y)	10	NA (Y)	NA	NA	1	Y	
T11-FH9	95	Y	0	NA (Y)	5	NA (Y)	NA	NA	1	Y	
T11-FH10	0	N	0	NA (Y)	100	NA	NA	NA	NA	NA	no herb cover-rose thicket
T11-FH11	10	N	0	NA (Y)	89	NA	NA	NA	2	Y	
T11-FH12	0	N	0	NA (Y)	98	NA	NA	NA	3	Y	

Table 1d: Summary Information for Communities and Plots-2012 Data and Performance Standards, page 5 of 8										
PFO Tree & Shrub Plots- See Table 6 for Complete Species Information etc.										
Criteria	**Native Tree & Shrub Percent Cover**		**Native Tree & Shrub Stem and Plant Count**			**Percent Non-Native Woody Cover**		**Prevalence Index**		**Comments**
Performance Standard	**≥ 50% combined aerial cover of native trees and shrubs. Please note that if *either* this or the percent cover criteria passes, the plot or habitat is succeeding.**		**≥1000 stems (trees) or plants/acre. Please note that if *either* this or the percent cover criteria passes, the plot or habitat is succeeding.**			**NA at Yr 1 (≤ 30% at Yr. 3, combined with herbs- see Tables 4 & 1c)**		**≤ 3.0**		**7 species already meet the diversity criteria, including one from the tree/shrub plots. Please see notes at end of Appendix and Tables 1c, 4 & 6 for details. Bare substrate was recorded in herb plots only. In some plots where cover was ≥ 50%, stems/plants wer not counted.**
	Value	**Pass? Y/N**	**Value (# of stems or plants/plot)**	**Calculated stems or plants /acre**	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	
Community Average	**18**	**N**	**12**	**384**	**NA**	**Combined total = 3% (3% herbs + 0% woody)**	**Y**	**2**	**Y**	
T3-F1	5	N	7	226	NA	0	Y	2	Y	
T4-F1	2	N	4	129	NA	0	Y	2	Y	
T5-F1	3	N	5	161	NA	0	Y	2	Y	
T7-F1	1	N	1	32	NA	0	Y	2	Y	
T7-F2	6	N	17	549	NA	0	Y	3	Y	
T8-F1	0	N	0	0	NA	0	Y	NA	Y	
T8-F2	3	N	12	387	NA	0	Y	2	Y	
T8-F3	2	N	5	161	NA	0	Y	3	Y	
T9-F1	35	N	39	1258	NA (Y)	0	Y	3	Y	
T9-F2	3	N	14	452	NA	0	Y	3	Y	
T9-F3	2	N	15	484	NA	0	Y	3	Y	
T9-F4	6	N	24	774	NA	1	Y	2	Y	
T10-F1	111	Y	unknown	unknown	NA	0	Y	2	Y	stems not counted, plot passes on cover
T10-F2	5	N	15	484	NA	0	Y	3	Y	
T11-F1	80	Y	unknown	unknown	NA	0	Y	2	Y	stems not counted, plot passes on cover
T11-F2	5	N	43	1387	NA (Y)	0	Y	2	Y	many stems, low cover: vol. seedlings
T11-F3	1	N	6	194	NA	0	Y	2	Y	
T11-F4	1	N	2	65	NA	0	Y	2	Y	
T11-F5	20	N	29	936	NA	0	Y	2	Y	
T11-F6	75	Y	unknown	unknown	NA	0	Y	2	Y	stems not counted, plot passes on cover

Table 1e: Summary Information for Communities and Plots-2012 Data and Performance Standards, page 6 of 8											
PSS Herbaceous Plots- See Table 5 for Complete Species Information etc.											
Criteria	**Combined Percent Native Cover**		**CombinedPercent Invasive Cover**		**Percent Bare Substrate**		**Native Species Diversity**		**Prevalence Index**		**Comments**
Performance Standard	**≥ 40% at Yr. 1**		**NA at Yr 1 (≤ 30% at Yr. 3) but many plots already pass (Y)**		**NA at Yr 1 (≤ 40% by Yr. 3)-some plots already pass (Y)**		**NA at Yr. 1 (≥ 6 spp. at ≥ 5% cover in ≥ 10% of plots by Yr 3)**		**≤ 3.0**		**4 species already meet the diversity criteria. There is no diversity criteria for individual plots thus all are listed NA.**
	Value	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	
Community Average	**Combined total = 44% (34% herbs + 10% woody)**	**Y**	**Combined total = 9% (8% herbs + 1% woody)**	**NA (Y)**	**53**	**NA**	**4 spp. met criteria (3 herbs + 1 woody species)**	**NA**	**2**	**Y**	
T1-SH1	8	N	20	NA (Y)	67	NA	NA	NA	3	Y	
T1-SH2	5	N	0	NA (Y)	64	NA	NA	NA	3	Y	
T1-SH3	7	N	0	NA (Y)	92	NA	NA	NA	2	Y	
T1-SH4	88	Y	0	NA (Y)	0	NA (Y)	NA	NA	2	Y	
T1-SH5	5	N	0	NA (Y)	95	NA	NA	NA	2	Y	
T2-SH1	20	N	70	NA	10	NA (Y)	NA	NA	2	Y	
T2-SH2	50	Y	55	NA	0	NA (Y)	NA	NA	2	Y	
T2-SH3	90	Y	5	NA (Y)	4	NA (Y)	NA	NA	1	Y	
T2-SH4	96	Y	1	NA (Y)	3	NA (Y)	NA	NA	2	Y	
T2-SH5	81	Y	10	NA (Y)	5	NA (Y)	NA	NA	2	Y	
T2-SH6	0	N	0	NA (Y)	100	NA	NA	NA	NA	NA	no cover-sprayed/dead
T2-SH7	1	N	0	NA (Y)	99	NA	NA	NA	2	Y	
T2-SH8	28	N	0	NA (Y)	72	NA	NA	NA	1	Y	
T2-SH9	95	Y	0	NA (Y)	0	NA (Y)	NA	NA	1	Y	
T2-SH10	98	Y	0	NA (Y)	0	NA (Y)	NA	NA	1	Y	
T2-SH11	0	N	0	NA (Y)	100	NA	NA	NA	NA	NA	no cover-sprayed/dead
T2-SH12	91	Y	0	NA (Y)	0	NA (Y)	NA	NA	1	Y	
T3-SH1	100	Y	0	NA (Y)	0	NA (Y)	NA	NA	1	Y	
T3-SH2	95	Y	0	NA (Y)	0	NA (Y)	NA	NA	2	Y	
T3-SH3	95	Y	0	NA (Y)	0	NA (Y)	NA	NA	1	Y	
T3-SH4	104	Y	0	NA (Y)	0	NA (Y)	NA	NA	1	Y	
T6-SH1	2	N	55	NA	29	NA (Y)	NA	NA	3	Y	
T6-SH2	10	N	12	NA (Y)	77	NA	NA	NA	2	Y	
T6-SH3	15	N	42	NA	0	NA (Y)	NA	NA	3	Y	
T6-SH4	53	Y	0	NA (Y)	47	NA	NA	NA	2	Y	

Table 1e (cont.): Summary Information for Communities and Plots-2012 Data and Performance Standards, page 7 of 8											
PSS Herbaceous Plots (cont)- See Table 5 for Complete Species Information etc.											
Criteria	**Combined Percent Native Cover**		**CombinedPercent Invasive Cover**		**Percent Bare Substrate**		**Native Species Diversity**		**Prevalence Index**		**Comments**
Performance Standard	**≥ 40% at Yr. 1**		**NA at Yr 1 (≤ 30% at Yr. 3) but many plots already pass (Y)**		**NA at Yr 1 (≤ 40% by Yr. 3)-some plots already pass (Y)**		**NA at Yr. 1 (≥ 6 spp. at ≥ 5% cover in ≥ 10% of plots by Yr 3)**		**≤ 3.0**		**4 species already meet the diversity criteria. There is no diversity criteria for individual plots thus all are listed NA.**
	Value	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**	
Community Average	**Combined total = 44% (34% herbs + 10% woody)**	**Y**	**Combined total = 9% (8% herbs + 1% woody)**	**NA (Y)**	**53**	**NA**	**(3 herbs + 1 woody species)**	**NA**	**2**	**Y**	
T6-SH5	55	Y	0	NA (Y)	45	NA	NA	NA	1	Y	
T6-SH6	0	N	0	NA (Y)	100	NA	NA	NA	NA	NA	no cover-sprayed/dead
T6-SH7	0	N	0	NA (Y)	100	NA	NA	NA	NA	NA	no cover-sprayed/dead
T6-SH8	60	Y	0	NA (Y)	29	NA (Y)	NA	NA	2	Y	
T6-SH9	0	N	0	NA (Y)	100	NA	NA	NA	NA	Y	
T6-SH10	0	N	2	NA (Y)	94	NA	NA	NA	3	Y	
T6-SH11	0	N	0	NA (Y)	99	NA	NA	NA	5	N	PI = 5 because only 1% cover (by a UPL weed)
T6-SH12	0	N	0	NA (Y)	88	NA	NA	NA	3	Y	
T6-SH13	15	N	1	NA (Y)	76	NA	NA	NA	3	Y	
T6-SH14	7	N	2	NA (Y)	49	NA	NA	NA	3	Y	
T6-SH15	3	N	16	NA (Y)	80	NA	NA	NA	3	Y	
T6-SH16	5	N	10	NA (Y)	85	NA	NA	NA	3	Y	
T6-SH17	10	N	23	NA (Y)	66	NA	NA	NA	3	Y	
T6-SH18	0	N	5	NA (Y)	95	NA	NA	NA	3	Y	
T6-SH19	0	N	1	NA (Y)	99	NA	NA	NA	2	Y	
T6-SH20	0	N	0	NA (Y)	100	NA	NA	NA	NA	NA	no cover-sprayed/dead

Table 1f: Summary Information for Communities and Plots-2012 Data and Performance Standards, page 8 of 8											
PSS Tree & Shrub Plots- See Table 7 for Complete Species Information etc.											
Criteria	**Native Tree & Shrub Percent Cover**		**Native Tree & Shrub Stem and Plant Count**			**Percent Non-Native Invasive Woody Cover**		**Prevalence Index**		**Comments**	
Performance Standard	**≥ 50% combined aerial cover of native trees and shrubs. Please note that if either this or the percent cover criteria passes, the plot or habitat is succeeding.**		**≥1000 stems (trees) or plants/acre. Please note that if *either* this or the percent cover criteria passes, the plot or habitat is succeeding.**			**NA at Yr 1 (≤ 30% at Yr. 3, combined with herbs- see Tables 4 & 1c)**		**≤ 3.0**		**4 species already meet the diversity criteria, including one from the tree/shrub plots. Please see notes at end of Appendix and Tables 1e, 5 & 7 for details. Bare substrate was recorded in herb plots only.**	
	Value	**Pass? Y/N**	**Value (# of stems or plants/plot)**	**Calculated stems or plants /acre**	**Pass? Y/N**	**Value**	**Pass? Y/N**	**Value**	**Pass? Y/N**		
Community Average	**10**	**N**	**9**	**273**	**NA**	**Combined total = 9% (8% herbs + 1% woody)**	**Y**	**2**	**Y**		
T1-S1	0	N	0	0	NA	0	Y	2	Y		
T1-S2	5	N	13	419	NA	0	Y	2	Y		
T2-S1	3	N	4	129	NA	0	Y	3	Y		
T2-S2	2	N	4	129	NA	0	Y	2	Y		
T2-S3	1	N	1	32	NA	0	Y	3	Y		
T2-S4	4	N	6	194	NA	0	Y	2	Y		
T2-S5	2	N	3	97	NA	0	Y	2	Y		
T3-S1	2	N	3	97	NA	0	Y	2	Y		
T3-S2	4	N	16	516	NA	0		2	Y		
T6-S1	15	N	0	0	NA	0	Y	2	Y	no stems rooted in plot; cover is from overhanging mature willows	
T6-S2	1	N	4	129	NA	0	Y	2	Y		
T6-S3	1	N	1	32	NA	0	Y	2	Y		
T6-S4	4	N	12	387	NA	0	Y	3	Y		
T6-S5	4	N	4	129	NA	7	Y	3	Y		
T6-S6	60	Y	33	1065	NA (Y)	5	Y	3	Y		
T6-S7	75	Y	27	871	NA	0	Y	3	Y		
T6-S8	10	N	29	936	NA	0	Y	3	Y		
T6-S9	1	N	9	290	NA	0	Y	3	Y		
T6-S10	0	N	0	0	NA	0	Y	NA	NA		
T6-S11	0	N	0	0	NA	0	Y	NA	NA		

Table 2a: FACW/FAC PEM Community (Plots T9-PEM 1 to T12-PEM 1, upper portion), page 1 of 4	August 10 –Sept. 13, 2012	Percent Cover by Plot												
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T9-PEM1	T10-PEM1	T10-PEM2	T10-PEM3	T10-PEM4	T10-PEM5	T10-PEM6	T10-PEM7	T10-PEM8	T10-PEM9	T10-PEM10	T12-PEM1
Native Herbaceous Species														
Agrostis exarata	N	2	0	0	0	0	0	1	0	0	0	0	0	0
Alisma trivale	N	1	0	0	0	0	0	0	0	0	0	0	0	1
Beckmannia syzigachne	N	1	0	0	1	0	0	0	0	0	0	0	1	0
Bidens cernua	N	1	0	1	10	0	0	0	0	0	0	0	3	5
Bidens frondosa	N	2	0	0	0	0	0	0	0	0	0	0	2	0
Carex ovalis	N	2	0	0	0	0	0	0	0	0	0	0	0	2
Cyperus erythrorhizos	N	1	0	1	0	0	0	0	0	0	0	0	0	15
Deschampsia cespitosa	N	2	2	2	25	3	2	0	0	0	0	0	3	0
Deschampsia elongata	N	2	50	0	5	0	0	0	0	0	0	0	0	2
Eleocharis ovata (obtusa var ovata)	N	1	0	0	0	0	0	0	0	0	0	0	0	10
Epilobium cilliatum	N	2	1	1	1	0	1	0	0	0	0	0	0	0
Gnaphalium palustre	N	2	1	0	2	30	20	4	2	0	0	0	0	4
Hordeum brachyantherum	N	2	0	0	5	5	1	3	1	0	0	0	0	1
Juncus bufonius	N	2	5	67	18	0	0	0	0	0	0	0	0	0
Leersia oryzoides	N	1	3	7	0	0	0	0	7	0	0	0	0	4
Panicum capillare	N	3	0	0	0	0	1	0	0	0	0	0	2	0
Plagiobothrys scouleri	N	2	7	5	2	7	48	81	62	0	0	0	10	0
Polygonum (Persicaria) lapathifolium	N	2	25	2	20	1	2	1	1	0	0	0	0	3
Potentilla norvegica	N	3	0	0	0	0	0	0	0	0	0	0	0	0
Prunella vulgaris	N	4	10	0	0	0	0	0	0	0	0	0	0	0
Psilocarphus elatior	N	2	1	1	1	5	0	1	0	0	0	0	0	1
Rorippa curvisiliqua	N	1		0	10	25	15	2	5	0	0	0	5	0
Veronica peregrina	N	1	0	1	1	5	5	3	1	0	0	0	2	0
Invasive Herbaceous Species														
Convolvulus arvensis	I	5	0	1	0	0	0	0	0	0	0	0	1	0
Phalaris arundinacea	I	2	0	0	1	0	0	0	0	0	0	0	0	0

Table 2b: FACW/FAC PEM Community (Plots T12-PEM2 to T12-PEM12, upper portion) page 2 of 4	August 10 –Sept. 13, 2012	Percent Cover by Plot												
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T12-PEM2	T12-PEM3	T12-PEM4	T12-PEM5	T12-PEM6	T12-PEM7	T12-PEM8	T12-PEM9	T12-PEM10	T12-PEM11	T12-PEM12	Average
Native Herbaceous Species														
Agrostis exarata	N	2	0	0	0	0	0	0	0	0	0	0	0	**0**
Alisma trivale	N	1	0	0	0	0	0	0	0	0	0	0	0	**0**
Beckmannia syzigachne	N	1	0	1	0	1	2	3	0	0	0	0	0	**0**
Bidens cernua	N	1	7	0	15	6	1	25	0	0	0	0	3	**3**
Bidens frondosa	N	2	0	0	0	0	0	0	0	0	0	0	0	**0**
Carex ovalis	N	2	0	0	0	0	0	0	0	0	0	0	0	**0**
Cyperus erythrorhizos	N	1	0	0	0	0	0	0	0	0	0	0	0	**1**
Deschampsia cespitosa	N	2	0	2	0	2	5	25	3	10	15	20	25	**6**
Deschampsia elongata	N	2	0	0	0	0	2	0	0	5	3	10	3	**3**
Eleocharis ovata (obtusa var ovata)	N	1	1	0	0	0	0	0	0	0	0	0	0	**0**
Epilobium cilliatum	N	2	1	0	0	1	0	0	0	0	0	0	0	**0**
Gnaphalium palustre	N	2	13	1	2	0	1	0	0	0	0	0	0	**3**
Hordeum brachyantherum	N	2	4	0	3	0	2	7	3	25	7	15	2	**4**
Juncus bufonius	N	2	1	0	0	0	0	0	0	0	0	0	0	**4**
Leersia oryzoides	N	1	4	0	0	1	0	0	0	0	0	0	0	**1**
Panicum capillare	N	3	0	0	0	0	0	0	0	0	0	0	0	**0**
Plagiobothrys scouleri	N	2	1	5	10	15	30	30	30	15	25	12	20	**18**
Polygonum (Persicaria) lapathifolium	N	2	10	0	3	1	1	5	2	0	0	0	0	**3**
Potentilla norvegica	N	3	0	0	0	0	0	1	0	0	0	0	0	**0**
Prunella vulgaris	N	4	0	0	0	0	0	0	0	0	0	0	0	**0**
Psilocarphus elatior	N	2	0	10	1	1	3	0	0	0	0	0	0	**1**
Rorippa curvisiliqua	N	1	15	15	10	7	1	3	0	0	0	0	0	**5**
Veronica peregrina	N	1	3	1	1	0	1	0	0	0	0	0	1	**1**
Invasive Herbaceous Species														
Convolvulus arvensis	I	5	0	0	0	0	0	0	0	0	0	0	0	**0**
Phalaris arundinacea	I	2	0	0	0	0	0	0	0	0	0	0	0	**0**

Table 2c: FACW/FAC PEM Community, (Plots T9-PEM 1 through T12-PEM1, lower portion) page 3 of 4	August 10 –Sept. 13, 2012		Percent Cover by Plot											
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T9-PEM1	T10-PEM1	T10-PEM2	T10-PEM3	T10-PEM4	T10-PEM5	T10-PEM6	T10-PEM7	T10-PEM8	T10-PEM9	T10-PEM10	T12-PEM1
Non-Native Herbaceous Species														
Digitaria sanguinalis	NN	4	0	0	0	0	0	0	0	0	0	0	0	0
Echinochloa crusgalli	NN	3	0	0	0	0	0	0	0	0	0	0	0	0
Gnaphalium uliginosum	NN	3	0	0	2	5	0	0	0	0	0	0	1	5
Kickxia elatine	NN	3	0	0	0	0	2	0	0	0	0	0	1	1
Lythrum portula	NN	1	0	0	0	0	0	0	0	0	0	0	0	60
Poa annua	NN	3	5	0	1	2	1	3	20	0	0	0	0	0
Polygonum aviculare	NN	2	2	0	0	0	0	1	0	0	0	0	2	0
Rumex crispus	NN	3	0	0	0	0	0	0	0	0	0	0	0	0
Sonchus asper	NN	4	0	1	0	0	0	0	0	0	0	0	1	0
Spergularia rubra	NN	3	0	0	0	0	0	0	1	0	0	0	0	0
Trifolium hybridum	NN	3	0	0	0	0	0	0	0	0	0	0	0	0
Bare Substrate														
Bare ground and/or dead sprayed weeds			0	10	0	12	2	0	0	100	100	100	66	0
Summary Information														
Cover of Native Herbaceous Species			105	88	101	81	95	96	79	0	0	0	28	48
Lower CI (80%)														
Upper CI (80%)														
Cover of Invasive Herbaceous Species			0	1	1	0	0	0	0	0	0	0	1	0
Lower CI (80%)														
Upper CI (80%)														
Bare Substrate			0	10	0	12	2	0	0	100	100	100	66	0
Lower CI (80%)														
Upper CI (80%)														
Native Diversity														
Prevalence Index			2	2	2	2	2	2	2				2	1
Weighted Prevalence Index			246	175	191	153	180	198	208	0	0	0	66	139
Sum of plant cover			112	90	105	88	98	100	100	0	0	0	34	114

Table 2d: FACW/FAC PEM Community, Plots T12-PEM2 to T12-PEM12, lower portion), page 4 of 4	August 10 –Sept. 13, 2012		Percent Cover by Plot												
Species	**Origin (N, NN, I)**	**Wetland Status (1 - 5)**	**T12-PEM2**	**T12-PEM3**	**T12-PEM4**	**T12-PEM5**	**T12-PEM6**	**T12-PEM7**	**T12-PEM8**	**T12-PEM9**	**T12-PEM10**	**T12-PEM11**	**T12-PEM12**	**Average**	
Non-Native Herbaceous Species															
Digitaria sanguinalis	NN	4	0	0	0	0	0	0	0	0	0	2	0	**0**	
Echinochloa crusgalli	NN	3	1	0	0	0	0	0	0	0	0	0	0	**0**	
Gnaphalium uliginosum	NN	3	2	0	0	0	0	0	0	0	0	0	0	**1**	
Kickxia elatine	NN	3	0	0	0	2	2	0	1	1	0	0	0	**0**	
Lythrum portula	NN	1	0	0	0	0	0	0	0	0	0	0	0	**3**	
Poa annua	NN	3	2	1	0	0	0	0	5	0	5	0	2	**2**	
Polygonum aviculare	NN	2	0	0	0	0	0	0	0	0	0	3	0	**0**	
Rumex crispus	NN	3	0	0	0	0	0	0	0	1	0	1	0	**0**	
Sonchus asper	NN	4	0	0	1	0	0	0	0	0	0	0	0	**0**	
Spergularia rubra	NN	3	0	0	0	0	0	0	0	0	0	0	0	**0**	
Trifolium hybridum	NN	3	0	0	0	0	0	0	0	0	0	0	0	**0**	
Bare Substrate															
Bare ground and/or dead sprayed weeds			35	64	54	63	49	1	56	43	45	37	44	**38**	
Summary Information														**Habitat Average**	**Standard Error**
Cover of Native Herbaceous Species			60	35	45	35	49	99	38	55	50	57	54	**56**	**6.8**
Lower CI (80%)														**48**	
Upper CI (80%)														**65**	
Cover of Invasive Herbaceous Species			0	0	0	0	0	0	0	0	0	0	0	**0**	**0.1**
Lower CI (80%)														**0**	
Upper CI (80%)														**0**	
Bare Substrate			35	64	54	63	49	1	56	43	45	37	44	**38**	**7.1**
Lower CI (80%)														**29**	
Upper CI (80%)														**47**	
Native Diversity														NA until year 3 but 3 native spp. pass	
Prevalence Index			2	2	1	2	2	2	2	2	2	2	2	**2**	**N/A**
Weighted Prevalence Index			105	56	68	61	99	168	94	116	115	131	110		
Sum of plant cover			65	36	46	37	51	99	44	57	55	63	56		

Table 3a: OBL PEM Community (Plots T4-PEMOBL1 to T8-PEMOBL1, upper portion), page 1 of 4	August 10-Sep 13, 2012		Percent Cover by Plot											
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T4-PEMOBL1	T4-PEMOBL2	T4-PEMOBL3	T4-PEMOBL4	T4-PEMOBL5	T4-PEMOBL6	T5-PEMOBL1	T5-PEMOBL2	T7-PEMOBL1	T7-PEMOBL2	T7-PEMOBL3	T8-PEMOBL1
Native Herbaceous Species														
Alisma trivale	N	1	15	0	0	0	0	0	0	0	0	5	7	0
Amaranthus retroflexus	N	4	2	0	0	0	0	0	0	0	0	0	0	0
Bidens cernua	N	1	0	0	0	0	5	0	0	0	0	0	0	0
Cyperus erythrorhizos	N	1	35	0	0	0	0	0	0	0	0	0	0	0
Eleocharis ovata (obtusa var ovata)	N	1	0	10	10	15	0	0	0	0	0	0	0	0
Epilobium cilliatum	N	2	10	5	0	0	0	0	0	0	0	0	0	0
Leersia oryzoides	N	1	5	70	95	95	85	100	0	0	0	0	0	1
Lemna minor	N	1	0	0	0	0	5	0	0	0	90	5	7	15
Ludwigia palustris	N	1	0	0	0	0	0	0	0	0	0	0	15	0
Polygonum (Persicaria) hydropiperoides	N	1	0	0	0	0	0	0	75	30	0	0	0	0
Potomogeton natens	N	1	0	0	0	0	0	0	0	0	0	0	0	0
Potamogeton nodosus	N	1	0	0	0	0	0	0	0	0	0	0	5	15
Ranunculus sceleratus	N	1	5	0	0	0	0	0	0	0	0	0	0	0
Rorippa curvisiliqua	N	1	1	0	0	0	0	0	0	0	0	0	0	0
Sparganium emersum	N	1	5	15	0	0	0	0	25	70	0	0	0	15
Stuckenia pectinata	N	1	0	0	0	0	0	0	0	0	0	0	0	0
Veronica americana	N	1	2	0	0	0	0	0	0	0	0	0	0	0
Invasive Herbaceous Species														
Phalaris arundinacea	I	2	7	0	0	0	0	0	0	0	2	5	3	1
Non-Native Herbaceous Species														
Alisma lanceolatum	NN	1	0	0	0	0	0	0	0	0	0	0	0	0
Lythrum portula	NN	1	0	0	0	0	0	0	0	0	0	0	0	0
Sonchus asper	NN	4	8	0	0	0	0	0	0	0	0	0	0	0

Table 3b: OBL PEM Community (Plots T8-PEMOBL2 to T11-PEMOBL4, upper portion), page 2 of 4	August 10-Sep 13, 2012	Percent Cover by Plot										
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T8-PEMOBL2	T9-PEMOBL1	T9-PEMOBL2	T10-PEMOBL1	T10-PEMOBL2	T11-PEMOBL1	T11-PEMOBL2	T11-PEMOBL3	T11-PEMOBL4	Row Average
Native Herbaceous Species												
Alisma trivale	N	1	0	0	0	0	20	40	60	35	0	**9**
Amaranthus retroflexus	N	4	0	0	0	0	0	0	0	0	0	**0**
Bidens cernua	N	1	0	0	0	0	0	0	0	0	0	**0**
Cyperus erythrorhizos	N	1	0	0	0	0	0	0	0	0	0	**2**
Eleocharis ovata (obtusa var ovata)	N	1	0	0	0	0	0	0	0	0	0	**2**
Epilobium cilliatum	N	2	0	0	0	0	0	0	0	0	0	**1**
Leersia oryzoides	N	1	0	0	0	0	0	0	0	0	0	**21**
Lemna minor	N	1	0	3	5	15	1	0	1	2	10	**8**
Ludwigia palustris	N	1	0	0	0	0	0	0	0	0	0	**1**
Polygonum (Persicaria) hydropiperoides	N	1	0	15	0	0	0	0	0	0	0	**6**
Potomogeton natens	N	1	0	0	35	0	0	0	0	0	0	**2**
Potamogeton nodosus	N	1	10	0	0	0	0	0	0	0	0	**1**
Ranunculus sceleratus	N	1	0	0	0	0	0	0	0	0	0	**0**
Rorippa curvisiliqua	N	1	0	0	0	0	0	0	0	0	0	**0**
Sparganium emersum	N	1	5	0	30	2	10	5	5	10	10	**10**
Stuckenia pectinata	N	1	0	0	25	0	0	0	0	0	0	**1**
Veronica americana	N	1	0	0	0	0	0	0	0	0	0	**0**
Invasive Herbaceous Species												
Phalaris arundinacea	I	2	0	5	0	0	0	0	0	0	0	**1**
Non-Native Herbaceous Species												
Alisma lanceolatum	NN	1	0	0	0	0	0	0	0	0	3	**0**
Lythrum portula	NN	1	0	0	0	0	0	0	0	0	0	**0**
Sonchus asper	NN	4	0	0	0	0	0	0	0	0	0	**0**

Table 3c: OBL PEM Community (Plots T4-PEMOBL1 to T8-PEMOBL1, lower portion), page 3 of 4	August 10-Sep 13, 2012		Percent Cover by Plot											
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T4-PEMOBL1	T4-PEMOBL2	T4-PEMOBL3	T4-PEMOBL4	T4-PEMOBL5	T4-PEMOBL6	T5-PEMOBL1	T5-PEMOBL2	T7-PEMOBL1	T7-PEMOBL2	T7-PEMOBL3	T8-PEMOBL1
Bare Substrate														
Bare ground and/or sprayed weeds			5	0	0	0	5	0	0	0	0	0	0	0
Unvegetated water			0	0	0	0	0	0	0	0	8	85	63	53
Approx. water depth (feet)			0	0	0	0	0	0	2.5	1.5	4	3	2	2
Summary Information														
Cover of Native Herbaceous Species			80	100	105	110	95	100	100	100	90	10	34	46
Lower CI (80%)														
Upper CI (80%)														
Cover of Invasive Herbaceous Species			7	0	0	0	0	0	0	0	2	5	3	1
Lower CI (80%)														
Upper CI (80%)														
Bare Substrate			5	0	0	0	5	0	0	0	8	85	63	53
Lower CI (80%)														
Upper CI (80%)														
Native Diversity														
Prevalence Index			1	1	1	1	1	1	1	1	1	1	1	1
Weighted Prevalence Index			142	105	105	110	95	100	100	100	94	20	40	48
Sum of plant cover			95	100	105	110	95	100	100	100	92	15	37	47

Table 3d: OBL PEM Community (Plots T8-PEMOBL2 to T11-PEMOBL4, lower portion), page 4 of 4	August 10-Sep 13, 2012		Percent Cover by Plot										
Species	**Origin (N, NN, I)**	**Wetland Status (1 - 5)**	**T8-PEMOBL2**	**T9-PEMOBL1**	**T9-PEMOBL2**	**T10-PEMOBL1**	**T10-PEMOBL2**	**T11-PEMOBL1**	**T11-PEMOBL2**	**T11-PEMOBL3**	**T11-PEMOBL4**	**Row Average**	
Bare Substrate													
Bare ground and/or sprayed weeds			0	0	0	0	0	0	0	0	0	**1**	
Unvegetated water			85	77	5	83	69	55	34	53	77	**36**	
Approx. water depth (feet)			2	3	2	3	2	2	2	1.7	1	**2**	
Summary Information												**Habitat Average**	**Standard Error**
Cover of Native Herbaceous Species			15	18	95	17	31	45	66	47	20	**63**	**9**
Lower CI (80%)												**52**	
Upper CI (80%)												**74**	
Cover of Invasive Herbaceous Species			0	5	0	0	0	0	0	0	0	**1**	**1**
Lower CI (80%)												**1**	
Upper CI (80%)												**2**	
Bare Substrate			85	77	5	83	69	55	34	53	77	**33**	**9**
Lower CI (80%)												**22**	
Upper CI (80%)												**44**	
Native Diversity												**NA- no standard for this community**	
Prevalence Index			1	1	1	1	1	1	1	1	1	**1**	**N/A**
Weighted Prevalence Index			15	28	70	17	31	45	66	47	23		
Sum of plant cover			15	23	95	17	31	45	66	47	23		

Table 4a: PFO Community-Herb Plots (Plots T3-FH1 to T9-FH3, upper portion) page 1 of 9	August 10-Sep 13, 2012		Percent Cover by Plot														
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T3-FH1	T4-FH1	T4-FH2	T5-FH1	T7-FH1	T7-FH2	T7-FH3	T7-FH4	T8-FH1	T8-FH2	T8-FH3	T8-FH4	T9-FH1	T9-FH2	T9-FH3
Native Herbaceous Species																	
Agrostis exarata	N	2	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0
Alisma trivale	N	1	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0
Beckmannia syzigachne	N	1	1	0	0	0	0	20	0	0	0	1	0	0	0	0	0
Bidens cernua	N	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Bidens frondosa	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carex obnupta	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carex ovalis	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyperus erythrorhizos	N	1	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0
Deschampsia cespitosa	N	2	0	0	0	0	0	0	0	0	0	0	45	20	0	0	3
Deschampsia elongata	N	2	0	0	0	0	0	1	0	10	0	1	3	0	0	10	1
Eleocharis ovata (obtusa var ovata)	N	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Epilobium cilliatum	N	2	15	0	25	0	68	2	0	0	90	3	0	0	0	0	0
Equisetum palustre	N	2	25	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Gnaphalium palustre	N	2	0	0	0	0	0	4	0	0	0	10	2	0	0	2	2
Hordeum brachyantherum	N	2	0	0	0	0	0	0	0	0	0	0	7	0	0	1	0
Juncus bufonius	N	2	0	0	0	0	0	10	0	0	0	20	0	0	0	0	0
Juncus patens	N	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Leersia oryzoides	N	1	30	100	10	52	0	25	0	0	5	2	0	0	0	1	0
Lemna minor	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ludwigia palustris	N	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Navarretia squarrosa	N	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panicum capillare	N	3	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0
Plagiobothrys scouleri	N	2	0	0	0	0	0	3	0	0	0	3	8	10	0	5	35
Polygonum (Persicaria) lapathifolium	N	2	0	0	0	0	0	1	0	0	0	2	0	0	0	15	1
Prunella vulgaris	N	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psilocarphus elatior	N	2	0	0	0	0	0	1	0	0	0	5	0	5	0	2	2
Ranunculus sceleratus	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rorippa curvisiliqua	N	1	0	0	0	0	0	0	0	1	0	26	0	0	0	3	0
Rubus ursinus	N	4	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0

Table 4b: PFO Community-Herb Plots (Plots T9-FH4 to T11-FH4, upper portion) page 2 of 9	August 10-Sep 13, 2012		Percent Cover by Plot												
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T9-FH4	T9-FH5	T9-FH6	T9-FH7	T9-FH8	T10-FH1	T10-FH2	T10-FH3	T10-FH4	T11-FH1	T11-FH2	T11-FH3	T11-FH4
Native Herbaceous Species															
Agrostis exarata	N	2	0	0	0	0	0	0	2	0	0	0	0	0	1
Alisma trivale	N	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Beckmannia syzigachne	N	1	1	0	0	0	1	0	0	0	0	0	0	0	0
Bidens cernua	N	1	0	0	0	0	0	0	0	1	0	0	10	12	6
Bidens frondosa	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Carex obnupta	N	1	0	0	0	0	0	30	0	0	0	0	0	0	0
Carex ovalis	N	2	0	0	0	0	2	0	0	3	0	0	0	0	0
Cyperus erythrorhizos	N	1	0	0	0	0	0	0	0	0	0	0	5	0	0
Deschampsia cespitosa	N	2	20	40	40	35	0	0	8	15	0	0	0	0	0
Deschampsia elongata	N	2	2	10	15	20	30	0	2	0	62	0	0	0	0
Eleocharis ovata (obtusa var ovata)	N	1	0	0	0	0	15	0	0	0	0	0	10	0	1
Epilobium cilliatum	N	2	0	0	0	0	0	0	0	0	0	0	1	0	0
Equisetum palustre	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Gnaphalium palustre	N	2	1	0	0	0	0	0	1	0	0	0	5	0	20
Hordeum brachyantherum	N	2	0	0	0	0	3	0	10	1	2	0	0	0	0
Juncus bufonius	N	2	0	0	0	0	0	0	0	0	3	0	0	2	0
Juncus patens	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Leersia oryzoides	N	1	0	0	0	0	0	0	0	1	0	0	0	10	5
Lemna minor	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Ludwigia palustris	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Navarretia squarrosa	N	4	0	0	0	0	0	0	0	0	0	0	0	1	0
Panicum capillare	N	3	1	0	0	0	0	0	0	0	0	0	0	0	0
Plagiobothrys scouleri	N	2	52	35	34	35	10	0	35	3	7	0	0	0	49
Polygonum (Persicaria) lapathifolium	N	2	7	0	0	0	0	0	0	0	0	0	2	3	3
Prunella vulgaris	N	4	0	0	0	0	0	0	0	5	0	0	0	0	0
Psilocarphus elatior	N	2	0	0	0	0	0	0	0	1	0	0	0	1	5
Ranunculus sceleratus	N	1	0	0	0	0	0	0	0	0	0	0	2	64	0
Rorippa curvisiliqua	N	1	1	0	0	0	0	0	0	1	0	0	7	0	2
Rubus ursinus	N	4	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4c: PFO Community-Herb Plots (Plots T11-FH5 to T11-FH12, upper portion) page 3 of 9	August 10-Sep 13, 2012		Percent Cover by Plot								
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T11-FH5	T11-FH6	T11-FH7	T11-FH8	T11-FH9	T11-FH10	T11-FH11	T11-FH12	Row Average
Native Herbaceous Species											
Agrostis exarata	N	2	0	0	0	0	0	0	0	0	**0**
Alisma trivale	N	1	3	0	0	0	0	0	0	0	**1**
Beckmannia syzigachne	N	1	0	0	0	0	0	0	0	0	**1**
Bidens cernua	N	1	0	90	85	0	0	0	0	0	**6**
Bidens frondosa	N	2	0	0	5	0	0	0	0	0	**0**
Carex obnupta	N	1	0	0	0	0	0	0	0	0	**1**
Carex ovalis	N	2	0	0	0	0	0	0	0	0	**0**
Cyperus erythrorhizos	N	1	1	0	7	0	0	0	0	0	**1**
Deschampsia cespitosa	N	2	0	0	0	0	0	0	0	0	**6**
Deschampsia elongata	N	2	0	0	0	0	0	0	0	0	**5**
Eleocharis ovata (obtusa var ovata)	N	1	5	0	0	0	0	0	0	0	**1**
Epilobium cilliatum	N	2	2	0	0	0	0	0	0	0	**6**
Equisetum palustre	N	2	0	0	0	0	0	0	0	0	**1**
Gnaphalium palustre	N	2	0	0	0	0	0	0	0	0	**1**
Hordeum brachyantherum	N	2	0	0	0	0	0	0	0	0	**1**
Juncus bufonius	N	2	0	0	0	0	0	0	0	0	**1**
Juncus patens	N	2	0	0	0	0	0	0	0	0	**0**
Leersia oryzoides	N	1	15	15	5	0	0	0	0	0	**8**
Lemna minor	N	1	0	0	0	90	95	0	0	0	**5**
Ludwigia palustris	N	1	0	0	0	0	0	0	0	0	**0**
Navarretia squarrosa	N	4	0	0	0	0	0	0	0	0	**0**
Panicum capillare	N	3	5	0	0	0	0	0	0	0	**1**
Plagiobothrys scouleri	N	2	35	0	0	0	0	0	7	0	**10**
Polygonum (Persicaria) lapathifolium	N	2	20	0	0	0	0	0	0	0	**2**
Prunella vulgaris	N	4	0	0	0	0	0	0	0	0	**0**
Psilocarphus elatior	N	2	0	0	0	0	0	0	3	0	**1**
Ranunculus sceleratus	N	1	0	0	0	0	0	0	0	0	**2**
Rorippa curvisiliqua	N	1	0	0	0	0	0	0	0	0	**1**
Rubus ursinus	N	4	0	0	0	0	0	0	0	0	**0**

Table 4d: PFO Community-Herb Plots (Plots T3-FH1-T9-FH3, middle portion) page 4 of 9	August 10-Sep 13, 2012		Percent Cover by Plot														
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T3-FH1	T4-FH1	T4-FH2	T5-FH1	T7-FH1	T7-FH2	T7-FH3	T7-FH4	T8-FH1	T8-FH2	T8-FH3	T8-FH4	T9-FH1	T9-FH2	T9-FH3
Native Herbaceous Species cont.																	
Scirpus microcarpus	N	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sparganium emersum	N	1	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0
Veronica americana	N	1	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Veronica peregrina	N	1	0	0	0	0	0	0	0	0	0	0	2	2	0	0	15
Invasive Herbaceous Species																	
Cirsium arvense	I	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Convolvulus arvensis	I	5	0	0	0	0	0	1	0	0	0	0	0	0	3	0	2
Cyperus esculentus	I	3	0	0	0	0	0	0	0	0	0	10	2	1	0	0	0
Phalaris arundinacea	I	2	0	0	0	12	25	0	0	0	10	0	1	0	35	0	0
Non-Native Herbaceous Species																	
Agrostis stolonifera	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Anthemis cotula	NN	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Digitaria sanguinalis	NN	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Echinochloa crusgalli	NN	3	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0
Gnaphalium uliginosum	NN	3	0	0	0	0	0	5	0	0	0	15	0	0	0	1	0
Kickxia elatine	NN	3	0	0	0	0	5	1	0	0	0	0	0	0	0	0	0
Lolium perenne	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lythrum portula	NN	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Navarretia squarrosa	N	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plantago major	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poa annua	NN	3	0	0	0	0	0	0	0	0	0	0	5	0	0	45	0
Polygonum aviculare	NN	2	0	0	0	0	0	5	0	0	0	2	5	0	0	0	0
Raphanus sativus	NN	5	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0
Rumex crispus	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rumex obtusifolius	NN	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Sonchus asper	NN	4	0	0	0	0	0	1	0	1	0	0	0	0	45	0	0
Spergularia rubra	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trifolium hybridum	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Trifolium repens	NN	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Unknown broadleaf seedling	NN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4e: PFO Community-Herb Plots (Plots T9-FH4 to T11-FH4, middle portion) page 5 of 9	August 10-Sep 13, 2012		Percent Cover by Plot												
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T9-FH4	T9-FH5	T9-FH6	T9-FH7	T9-FH8	T10-FH1	T10-FH2	T10-FH3	T10-FH4	T11-FH1	T11-FH2	T11-FH3	T11-FH4
Native Herbaceous Species cont.															
Scirpus microcarpus	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Sparganium emersum	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Veronica americana	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Veronica peregrina	N	1	5	3	3	0	0	0	5	0	4	0	0	1	3
Invasive Herbaceous Species															
Cirsium arvense	I	3	0	0	1	0	0	0	0	0	0	0	0	0	0
Convolvulus arvensis	I	5	0	0	0	0	0	0	0	0	0	0	2	0	0
Cyperus esculentus	I	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Phalaris arundinacea	I	2	0	0	0	0	0	0	0	0	0	0	1	1	0
Non-Native Herbaceous Species															
Agrostis stolonifera	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	2
Anthemis cotula	NN	4	0	0	0	0	0	0	0	0	0	0	0	0	1
Digitaria sanguinalis	NN	4	0	0	0	0	0	0	0	0	0	0	0	2	0
Echinochloa crusgalli	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Gnaphalium uliginosum	NN	3	1	0	0	0	0	0	0	0	0	0	0	0	0
Kickxia elatine	NN	3	0	0	0	0	0	0	1	0	0	0	0	0	0
Lolium perenne	NN	3	1	0	0	0	0	0	0	0	0	0	0	0	0
Lythrum portula	NN	1	0	0	0	0	0	0	0	0	0	0	15	0	2
Navarretia squarrosa	N	4	0	0	0	0	0	0	0	0	0	0	0	1	0
Plantago major	NN	3	1	0	0	0	0	0	0	0	0	0	1	1	0
Poa annua	NN	3	0	1	1	5	1	0	0	0	3	0	0	0	0
Polygonum aviculare	NN	2	0	0	0	0	2	0	10	1	0	0	0	0	0
Raphanus sativus	NN	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Rumex crispus	NN	3	0	0	0	0	0	0	0	0	0	0	1	0	0
Rumex obtusifolius	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonchus asper	NN	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Spergularia rubra	NN	3	0	0	0	0	0	0	0	0	0	0	0	1	0
Trifolium hybridum	NN	3	0	0	1	0	0	0	0	0	0	0	0	0	0
Trifolium repens	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Unknown broadleaf seedling	NN		0	0	0	0	0	0	0	0	0	0	2	0	0

Table 4f: PFO Community-Herb Plots (Plots T11-FH5-to T11-FH12, middle portion) page 6 of 9	August 10-Sep 13, 2012		Percent Cover by Plot								
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T11-FH5	T11-FH6	T11-FH7	T11-FH8	T11-FH9	T11-FH10	T11-FH11	T11-FH12	Row Average
Native Herbaceous Species cont.											
Scirpus microcarpus	N	1	0	0	0	0	0	0	0	0	**0**
Sparganium emersum	N	1	0	0	0	0	0	0	0	0	**1**
Veronica americana	N	1	0	0	0	0	0	0	0	0	**1**
Veronica peregrina	N	1	1	0	0	0	0	0	0	0	**1**
Invasive Herbaceous Species											
Cirsium arvense	I	3	0	0	0	0	0	0	0	0	**0**
Convolvulus arvensis	I	5	0	0	0	0	0	0	0	0	**0**
Cyperus esculentus	I	3	3	0	0	0	0	0	0	0	**0**
Phalaris arundinacea	I	2	0	0	3	0	0	0	0	0	**2**
Non-Native Herbaceous Species											
Agrostis stolonifera	NN	3	0	0	0	0	0	0	0	0	**0**
Anthemis cotula	NN	4	2	0	0	0	0	0	0	0	**0**
Digitaria sanguinalis	NN	4	0	0	0	0	0	0	0	0	**0**
Echinochloa crusgalli	NN	3	0	0	0	0	0	0	0	0	**0**
Gnaphalium uliginosum	NN	3	0	0	0	0	0	0	0	0	**1**
Kickxia elatine	NN	3	0	0	0	0	0	0	0	0	**0**
Lolium perenne	NN	3	0	0	0	0	0	0	0	0	**0**
Lythrum portula	NN	1	0	0	0	0	0	0	0	0	**1**
Navarretia squarrosa	N	4	0	0	0	0	0	0	0	0	**0**
Plantago major	NN	3	0	0	0	0	0	0	0	0	**0**
Poa annua	NN	3	0	0	0	0	0	0	0	0	**2**
Polygonum aviculare	NN	2	3	0	0	0	0	0	1	0	**1**
Raphanus sativus	NN	5	0	0	0	0	0	0	0	0	**0**
Rumex crispus	NN	3	0	0	0	0	0	0	0	0	**0**
Rumex obtusifolius	NN	3	0	0	0	0	0	0	0	2	**0**
Sonchus asper	NN	4	0	0	0	0	0	0	0	0	**1**
Spergularia rubra	NN	3	0	0	0	0	0	0	0	0	**0**
Trifolium hybridum	NN	3	0	0	0	0	0	0	0	0	**0**
Trifolium repens	NN	3	0	0	0	0	0	0	0	0	**0**
Unknown broadleaf seedling	NN		0	0	0	0	0	0	0	0	**0**

Table 4g: PFO Community-Herb Plots (Plots T3-FH1 to T9-FH3, lower portion) page 7 of 9	August 10-Sep 13, 2012		Percent Cover by Plot														
			T3-FH1	T4-FH1	T4-FH2	T5-FH1	T7-FH1	T7-FH2	T7-FH3	T7-FH4	T8-FH1	T8-FH2	T8-FH3	T8-FH4	T9-FH1	T9-FH2	T9-FH3
Bare Substrate																	
Bare ground and/or dead sprayed weeds			0	0	20	0	0	18	100	85	0	0	20	62	10	13	36
Approx. water depth (feet)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Information																	
Cover of Native Herbaceous Species			106	105	72	87	68	69	0	14	95	73	67	37	2	39	59
Lower CI (80%)																	
Upper CI (80%)																	
Cover of Invasive Herbaceous Species			0	0	0	12	25	1	0	0	10	10	3	1	38	0	2
Lower CI (80%)																	
Upper CI (80%)																	
Bare Substrate			0	0	20	0	0	18	100	85	0	0	20	62	10	13	36
Lower CI (80%)																	
Upper CI (80%)																	
Native Diversity																	
Prevalence Index			1	1	2	1	2	2		2	2	2	2	2	3	3	2
Weighted Prevalence Index			146	105	153	112	207	129	0	31	205	196	165	75	298	221	112
Sum of plant cover			106	105	80	100	100	82	0	15	105	100	80	38	90	87	64

Table 4h: PFO Community-Herb Plots (Plots T9-FH4 to T11-FH5, lower portion) page 8 of 9	August 10-Sep 13, 2012		Percent Cover by Plot													
			T9-FH4	T9-FH5	T9-FH6	T9-FH7	T9-FH8	T10-FH1	T10-FH2	T10-FH3	T10-FH4	T11-FH1	T11-FH2	T11-FH3	T11-FH4	T11-FH5
Bare Substrate																
Bare ground and/or dead sprayed weeds			7	11	5	5	36	70	26	68	19	100	36	0	0	0
Approx. water depth (feet)			0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Information																
Cover of Native Herbaceous Species			90	88	92	90	61	30	63	31	78	0	42	95	95	87
Lower CI (80%)																
Upper CI (80%)																
Cover of Invasive Herbaceous Species			0	0	1	0	0	0	0	0	0	0	3	1	0	3
Lower CI (80%)																
Upper CI (80%)																
Bare Substrate			7	11	5	5	36	70	26	68	19	100	36	0	0	0
Lower CI (80%)																
Upper CI (80%)																
Native Diversity																
Prevalence Index			2	2	2	2	2	1	2	2	2		1	1	2	2
Weighted Prevalence Index			183	176	193	195	113	30	144	71	161	0	83	120	185	177
Sum of plant cover			93	89	95	95	64	30	74	32	81	0	64	101	100	95

Table 4i: PFO Community-Herb Plots (Plots T11-FH6 to T11-FH12, lower portion) page 9 of 9	August 10-Sep 13, 2012		Percent Cover by Plot								
			T11-FH6	T11-FH7	T11-FH8	T11-FH9	T11-FH10	T11-FH11	T11-FH12	Row Average	
Bare Substrate											
Bare ground and/or dead sprayed weeds			0	0	0	0	100	89	98	**29**	
Approx. water depth (feet)			0	0	2.5	2.5	0	0	0		
Summary Information										**Habitat Average**	**Standard Error**
Cover of Native Herbaceous Species			105	102	90	95	0	10	0	**62**	**6.0**
Lower CI (80%)										**54**	
Upper CI (80%)										**70**	
Cover of Invasive Herbaceous Species			0	3	0	0	0	0	0	**3**	**2**
Lower CI (80%)										**1**	
Upper CI (80%)										**5**	
Bare Substrate			0	0	10	5	100	89	98	**29**	**6**
Lower CI (80%)										**21**	
Upper CI (80%)										**37**	
Native Diversity										**NA until 3rd year but 7 spp. pass**	
Prevalence Index			1	1	1	1		2	3	**2**	
Weighted Prevalence Index			105	113	90	95	0	22	6		
Sum of plant cover			105	105	90	95	0	11	2		

Table 5a: PSS Community-Herb Plots (Plots T1-SH1 to T2-SH10, upper portion), page 1 of 9	August 10-Sep 13, 2012		Percent Cover by Plot															
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T1-SH1	T1-SH2	T1-SH3	T1-SH4	T1-SH5	T2-SH1	T2-SH2	T2-SH3	T2-SH4	T2-SH5	T2-SH6	T2-SH7	T2-SH8	T2-SH9	T2-SH10
Native Herbaceous Species																		
Alisma trivale	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Athyrium filix-femina	N	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beckmannia syzigachne	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bidens cernua	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carex species	N		0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Cyperus erythrorhizos	N	1	0	0	0	0	0	0	0	15	0	0	0	0	3	0	0	0
Deschampsia elongata	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eleocharis ovata (obtusa var ovata)	N	1	0	0	0	0	0	0	0	25	0	3	0	0	0	5	0	0
Epilobium cilliatum	N	2	0	0	2	35	5	0	5	5	95	51	0	1	0	0	5	0
Equisetum arvense	N	3	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Equisetum palustre	N	2	0	0	0	3	0	0	1	0	0	0	0	0	5	1	1	0
Glyceria borealis	N	1	0	0	0	47	0	0	0	0	0	7	0	0	15	0	67	0
Gnaphalium palustre	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hordeum brachyantherum	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Juncus bufonius	N	2	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Juncus effusus	N	2	1	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0
Leersia oryzoides	N	1	0	0	0	3		10	5	10	1	15	0	0	3	85	15	0
Myosotis laxa	N	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Panicum capillare	N	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plagiobothrys scouleri	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polygonum (Persicaria) lapathifolium	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ranunculus sceleratus	N	1	0	0	0	0	0	10	25	30	0	0	0	0	0	0	0	0
Rorippa curvisiliqua	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Schoenoplectus tabernaemontani	N	1	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
Scirpus microcarpus	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sparganium emersum	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Typha latifolia	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Veronica americana	N	1	0	0	0	0	0	0	5	3	0	5	0	0	2	0	10	0
Veronica peregrina	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5b: PSS Community-Herb Plots (Plots T2-SH 11 to T6-SH9, upper portion), page 2 of 9	August 10-Sep 13, 2012		Percent Cover by Plot															
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T2-SH11	T2-SH12	T3-SH1	T3-SH2	T3-SH3	T3-SH4	T6-SH1	T6-SH2	T6-SH3	T6-SH4	T6-SH5	T6-SH6	T6-SH7	T6-SH8	T6-SH9
Native Herbaceous Species																	
Alisma trivale	N	1	0	0	45	15	5	0	0	0	0	0	0	0	0	0	0
Athyrium filix-femina	N	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beckmannia syzigachne	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bidens cernua	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carex species	N		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyperus erythrorhizos	N	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
Deschampsia elongata	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	60	0
Eleocharis ovata (obtusa var ovata)	N	1	0	0	5	7	0	2	0	0	0	0	0	0	0	0	0
Epilobium cilliatum	N	2	0	2	5	8	5	2	0	10	7	3	3	0	0	0	0
Equisetum arvense	N	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Equisetum palustre	N	2	0	0	0	0	0	45	0	0	0	0	0	0	0	0	0
Glyceria borealis	N	1	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0
Gnaphalium palustre	N	2	0	0	0	0	0	0	1	0	0	17	10	0	0	0	0
Hordeum brachyantherum	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Juncus bufonius	N	2	0	0	0	45	0	0	0	0	0	0	0	0	0	0	0
Juncus effusus	N	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Leersia oryzoides	N	1	0	0	40	20	82	55	0	0	1	23	40	0	0	0	0
Myosotis laxa	N	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Panicum capillare	N	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Plagiobothrys scouleri	N	2	0	0	0	0	0	0	0	0	0	10	2	0	0	0	0
Polygonum (Persicaria) lapathifolium	N	2	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0
Ranunculus sceleratus	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rorippa curvisiliqua	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Schoenoplectus tabernaemontani	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scirpus microcarpus	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sparganium emersum	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Typha latifolia	N	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Veronica americana	N	1	0	5	3	0	0	0	0	0	0	0	0	0	0	0	0
Veronica peregrina	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5c: PSS Community-Herb Plots (Plots T6-SH10 to T6-SH20, upper portion), page 3 of 9	August 10-Sep 13, 2012		Percent Cover by Plot											
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T6-SH10	T6-SH11	T6-SH12	T6-SH13	T6-SH14	T6-SH15	T6-SH16	T6-SH17	T6-SH18	T6-SH19	T6-SH20	Row Average
Native Herbaceous Species														
Alisma trivale	N	1	0	0	0	0	0	0	0	0	0	0	0	**2**
Athyrium filix-femina	N	3	0	0	0	0	0	0	0	0	0	0	0	**0**
Beckmannia syzigachne	N	1	0	0	0	0	0	0	0	0	0	0	0	**0**
Bidens cernua	N	1	0	0	0	0	0	0	0	0	0	0	0	**0**
Carex species	N		0	0	0	0	0	0	0	0	0	0	0	**0**
Cyperus erythrorhizos	N	1	0	0	0	0	0	0	0	0	0	0	0	**1**
Deschampsia elongata	N	2	0	0	0	0	0	0	0	0	0	0	0	**1**
Eleocharis ovata (obtusa var ovata)	N	1	0	0	0	0	0	0	0	0	0	0	0	**1**
Epilobium cilliatum	N	2	0	0	0	15	3	0	0	0	0	0	0	**7**
Equisetum arvense	N	3	0	0	0	0	0	0	0	0	0	0	0	**0**
Equisetum palustre	N	2	0	0	0	0	0	0	0	0	0	0	0	**1**
Glyceria borealis	N	1	0	0	0	0	0	0	0	0	0	0	0	**5**
Gnaphalium palustre	N	2	0	0	0	0	1	3	5	10	0	0	0	**1**
Hordeum brachyantherum	N	2	0	0	0	0	0	0	0	0	0	0	0	**0**
Juncus bufonius	N	2	0	0	0	0	1	0	0	0	0	0	0	**1**
Juncus effusus	N	2	0	0	0	0	0	0	0	0	0	0	0	**0**
Leersia oryzoides	N	1	0	0	0	0	0	0	0	0	0	0	0	**10**
Myosotis laxa	N	1	0	0	0	0	0	0	0	0	0	0	0	**0**
Panicum capillare	N	3	0	0	0	0	0	0	0	0	0	0	0	**0**
Plagiobothrys scouleri	N	2	0	0	0	0	0	0	0	0	0	0	0	**0**
Polygonum (Persicaria) lapathifolium	N	2	0	0	0	0	0	0	0	0	0	0	0	**0**
Ranunculus sceleratus	N	1	0	0	0	0	0	0	0	0	0	0	0	**2**
Rorippa curvisiliqua	N	1	0	0	0	0	0	0	0	0	0	0	0	**0**
Schoenoplectus tabernaemontani	N	1	0	0	0	0	0	0	0	0	0	0	0	**0**
Scirpus microcarpus	N	1	0	0	0	0	0	0	0	0	0	0	0	**0**
Sparganium emersum	N	1	0	0	0	0	0	0	0	0	0	0	0	**0**
Typha latifolia	N	1	0	0	0	0	0	0	0	0	0	0	0	**0**
Veronica americana	N	1	0	0	0	0	0	0	0	0	0	0	0	**1**
Veronica peregrina	N	1	0	0	0	0	2	0	0	0	0	0	0	**0**

Table 5d: PSS Community-Herb Plots (Plots T1-SH1 to T2-SH10, middle portion), page 4 of 9	August 10-Sep 13, 2012		Percent Cover by Plot														
Species	**Origin (N, NN, I)**	**Wetland Status (1 - 5)**	**T1-SH1**	**T1-SH2**	**T1-SH3**	**T1-SH4**	**T1-SH5**	**T2-SH1**	**T2-SH2**	**T2-SH3**	**T2-SH4**	**T2-SH5**	**T2-SH6**	**T2-SH7**	**T2-SH8**	**T2-SH9**	**T2-SH10**
Invasive Herbaceous Species			0	0	0	0										0	
Convolvulus arvensis	I	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyperus esculentus	I	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Holcus lanatus	I	3	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phalaris arundinacea	I	2	0	0	0	0	0	70	55	5	1	10	0	0	0	0	0
Non-Native Herbaceous Species			0	0	0	0										0	
Agrostis stolonifera	NN	3	0	0	0	2	0	0	0	0	0	0	0	0	0	5	0
Alisma lanceolatum	NN	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alopecurus pratensis	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anthemis cotula	NN	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daucus carota	NN	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Digitaria sanguinalis	NN	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Echinochloa crusgalli	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kickxia elatine	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lolium perenne	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lotus corniculatus	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plantago lanceolata	NN	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poa species	NN	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poa trivialis	NN	3	0	0	0	10	0	0	0	0	0	0	0	0	0	0	2
Ranunculus repens	NN	3	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0
Rumex crispus	NN	3	0	30	0	0	0	0	0	1	0	2	0	0	0	0	0
Schedonorus phoenix (Festuca	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solanum dulcamara	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonchus asper	NN	4															
Trifolium species	NN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vicia tetrasperma	NN	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5e: PSS Community-Herb Plots (Plots T2-SH11 to T6-SH9, middle portion), page 5 of 9	August 10-Sep 13, 2012		Percent Cover by Plot														
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T2-SH11	T2-SH12	T3-SH1	T3-SH2	T3-SH3	T3-SH4	T6-SH1	T6-SH2	T6-SH3	T6-SH4	T6-SH5	T6-SH6	T6-SH7	T6-SH8	T6-SH9
Invasive Herbaceous Species																	
Convolvulus arvensis	I	5	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Cyperus esculentus	I	3	0	0	0	0	0	0	25	0	10	0	0	0	0	0	0
Holcus lanatus	I	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phalaris arundinacea	I	2	0	0	0	0	0	0	30	12	30	0	0	0	0	0	0
Non-Native Herbaceous Species																	
Agrostis stolonifera	NN	3	0	0	0	10	0	0	0	0	0	0	0	0	0	5	0
Alisma lanceolatum	NN	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alopecurus pratensis	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anthemis cotula	NN	4	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Daucus carota	NN	4	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0
Digitaria sanguinalis	NN	4	0	0	0	0	0	0	3	0	26	0	0	0	0	0	0
Echinochloa crusgalli	NN	3	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
Kickxia elatine	NN	3	0	0	0	0	0	0	10	0	12	0	0	0	0	2	0
Lolium perenne	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Lotus corniculatus	NN	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Plantago lanceolata	NN	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poa species	NN	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Poa trivialis	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ranunculus repens	NN	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Rumex crispus	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Schedonorus phoenix (Festuca	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solanum dulcamara	NN	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Sonchus asper	NN	4							1	0	0	0	0	0	0	0	0
Trifolium species	NN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vicia tetrasperma	NN	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5f: PSS Community-Herb Plots (Plots T6-SH10 to T6-SH20, middle portion), page 6 of 9	August 10-Sep 13, 2012		Percent Cover by Plot											
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T6-SH10	T6-SH11	T6-SH12	T6-SH13	T6-SH14	T6-SH15	T6-SH16	T6-SH17	T6-SH18	T6-SH19	T6-SH20	Row Average
Invasive Herbaceous Species												0		
Convolvulus arvensis	I	5	0	0	0	0	1	0	0	0	0	0	0	**0**
Cyperus esculentus	I	3	0	0	0	0	0	15	10	20	5	0	0	**2**
Holcus lanatus	I	3	0	0	0	0	0	0	0	0	0	0	0	**0**
Phalaris arundinacea	I	2	2	0	0	1	1	1	0	3	0	1	0	**5**
Non-Native Herbaceous Species														
Agrostis stolonifera	NN	3	0	0	0	1	40	0	0	0	0	0	0	**2**
Alisma lanceolatum	NN	1	0	0	0	0	0	0	0	0	0	0	0	**0**
Alopecurus pratensis	NN	3	0	0	2	0	0	0	0	0	0	0	0	**0**
Anthemis cotula	NN	4	0	0	0	0	0	0	0	0	0	0	0	**0**
Daucus carota	NN	4	0	0	0	0	0	0	0	0	0	0	0	**0**
Digitaria sanguinalis	NN	4	0	0	0	0	0	0	0	1	0	0	0	**1**
Echinochloa crusgalli	NN	3	0	0	0	0	0	0	0	0	0	0	0	**0**
Kickxia elatine	NN	3	0	0	0	1	1	0	0	0	0	0	0	**1**
Lolium perenne	NN	3	0	0	0	0	0	0	0	0	0	0	0	**0**
Lotus corniculatus	NN	3	0	0	0	0	0	0	0	0	0	0	0	**0**
Plantago lanceolata	NN	4	0	0	0	1	0	0	0	0	0	0	0	**0**
Poa species	NN	3	0	0	0	0	0	0	0	0	0	0	0	**0**
Poa trivialis	NN	3	0	0	0	0	0	0	0	0	0	0	0	**0**
Ranunculus repens	NN	3	0	0	0	0	0	0	0	0	0	0	0	**0**
Rumex crispus	NN	3	0	0	0	0	0	0	0	0	0	0	0	**1**
Schedonorus phoenix (Festuca	NN	3	3	0	10	0	0	0	0	0	0	0	0	**0**
Solanum dulcamara	NN	3	0	0	0	0	0	0	0	0	0	0	0	**0**
Sonchus asper	NN	4	0	0	0	0	0	0	0	0	0	0	0	**0**
Trifolium species	NN		0	0	0	0	1	1	0	0	0	0	0	**0**
Vicia tetrasperma	NN	5	1	1	0	5	0	0	0	0	0	0	0	**0**

Table 5g: PSS Community-Herb Plots (Plots T1-SH1- to T2-SH10, lower portion), page 7 of 9	August 10-Sep 13, 2012		Percent Cover by Plot														
			T1-SH1	T1-SH2	T1-SH3	T1-SH4	T1-SH5	T2-SH1	T2-SH2	T2-SH3	T2-SH4	T2-SH5	T2-SH6	T2-SH7	T2-SH8	T2-SH9	T2-SH10
Bare Substrate																	
Bare ground and/or dead sprayed weeds			67	64	92	0	95	10	0	4	3	5	100	99	72	0	0
Summary Information																	
Cover of Native Herbaceous Species			8	5	7	88	5	20	50	90	96	81	0	1	28	95	98
Lower CI (80%)																	
Upper CI (80%)																	
Cover of Invasive Herbaceous Species			20	0	0	0	0	70	55	5	1	10	0	0	0	0	0
Lower CI (80%)																	
Upper CI (80%)																	
Bare Substrate			67	64	92	0	95	10	0	4	3	5	100	99	72	0	0
Lower CI (80%)																	
Upper CI (80%)																	
Native Diversity																	
Prevalence Index			3	3	2	2	2	2	2	1	2	2		2	1	1	1
Weighted Prevalence Index			98	108	17	162	10	160	166	110	193	164	0	2	33	111	110
Sum of plant cover			33	36	8	100	5	90	105	96	97	95	0	1	28	100	100

Table 5h: PSS Community-Herb Plots (Plots T2-SH11 to T6-SH9, lower portion), page 8 of 9	August 10-Sep 13, 2012		Percent Cover by Plot														
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T2-SH11	T2-SH12	T3-SH1	T3-SH2	T3-SH3	T3-SH4	T6-SH1	T6-SH2	T6-SH3	T6-SH4	T6-SH5	T6-SH6	T6-SH7	T6-SH8	T6-SH9
Bare Substrate																	
Bare ground and/or dead sprayed weeds			100	0	0	0	0	0	29	77	0	47	45	100	100	29	100
Summary Information																	
Cover of Native Herbaceous Species			0	91	100	95	95	104	2	10	15	53	55	0	0	60	0
Lower CI (80%)																	
Upper CI (80%)																	
Cover of Invasive Herbaceous Species			0	0	0	0	0	0	55	12	42	0	0	0	0	0	0
Lower CI (80%)																	
Upper CI (80%)																	
Bare Substrate			100	0	0	0	0	0	29	77	0		45	100	100	29	100
Lower CI (80%)																	
Upper CI (80%)																	
Native Diversity																	
Prevalence Index				1	1	2	1	1	3	2	3	2	1			2	
Weighted Prevalence Index			0	125	105	178	115	151	186	47	289	83	70	0	0	156	0
Sum of plant cover			0	100	100	105	100	104	71	23	100	53	55	0	0	71	0

Table 5i: PSS Community-Herb Plots (Plots T6-SH10 to T6-SH20, lower portion), page 9 of 9	August 10-Sep 13, 2012		Percent Cover by Plot												
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T6-SH10	T6-SH11	T6-SH12	T6-SH13	T6-SH14	T6-SH15	T6-SH16	T6-SH17	T6-SH18	T6-SH19	T6-SH20	Row Average	
Bare Substrate															
Bare ground and/or dead sprayed weeds			94	99	88	76	49	80	85	66	95	99	100	53	
Summary Information														**Habitat Average**	**Standard Error**
Cover of Native Herbaceous Species			0	0	0	15	7	3	5	10	0	0	0	34	6.3
Lower CI (80%)														26	
Upper CI (80%)														42	
Cover of Invasive Herbaceous Species			2	0	0	1	2	16	10	23	5	1	0	8	4
Lower CI (80%)														3	
Upper CI (80%)														13	
Bare Substrate			94	99	88	76	49	80	85	66	95	99	100	53	8
Lower CI (80%)														43	
Upper CI (80%)														64	
Native Diversity														NA until 3rd year but 4 species pass	
Prevalence Index			3	5	3	3	3	3	3	3	3	2		2	
Weighted Prevalence Index			18	5	36	67	142	53	40	90	15	2	0		
Sum of plant cover			6	1	12	24	51	20	15	34	5	1	0		

Table 6a: PFO Tree & Shrub Plots (Plots T3-F1 to T11-F1, upper portion) page 1 of 4	August 10-Sep 13, 2012		Percent Cover by Plot														
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T3-F1	T4-F1	T5-F1	T7-F1	T7-F2	T8-F1	T8-F2	T8-F3	T9-F1	T9-F2	T9-F3	T9-F4	T10-F1	T10-F2	T11-F1
Native Shrub and Tree Species																	
Alnus rubra	N	3	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0
Amelanchier alnifolia	N	4	0	0	0	0	0	0	0	0	10	0	0	0	10	0	0
Cornus sericia ssp. sericia (alba)	N	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corylus cornuta	N	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
Crataegus douglasii	N	3	0	0	0	0	1	0	1	1	0	1	1	1	15	1	15
Frangula purshiana	N	3	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0
Fraxinus latifolia	N	2	1	1	1	0	1	0	1	0	0	1	1	1	70	1	50
Malus fusca	N	2	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0
Rosa pisocarpa and/or R. nutkana	N	3	0	0	0	0	0	0	0	0	25	0	0	0	15	0	5
Salix hookeriana	N	2	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Salix lucida var. lasiandra (lasiandra)	N	2	1	0	1	0	1	0	0	0	0	0	0	1	0	1	0
Salix scouleriana	N	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Salix sitchensis	N	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiraea douglasii	N	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	5
Symphoricarpos albus	N	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-Native Shrub and Tree Species																	
Crataegus monogyna	NN	3	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0
Invasive Shrub and Tree Species																	
Rubus species hybrids (cultivars)	I		0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Native Shrub and Tree Count -Note that in plots with > 50% cover the stem count was not always recorded			**Stem (tree) or Plant (shrub) Count**														
Alnus rubra	N	3	0	0	0	0	1	0	0	0	0	4	0	2	0	0	0
Amelanchier alnifolia	N	4	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0
Cornus sericia ssp. sericia (alba)	N	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Corylus cornuta	N	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crataegus douglasii	N	3	0	0	0	0	1	0	2	4	0	1	1	1	0	1	0
Frangula purshiana	N	3	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0
Fraxinus latifolia	N	2	1	2	1	0	9	0	9	0	0	9	14	11	0	8	0
Malus fusca	N	2	0	0	0	0	3	0	1	0	0	0	0	1	0	3	0

Table 6b: PFO Tree & Shrub Plots (Plots T11-F2 to T11-F6, upper portion) page 2 of 4	August 10-Sep 13, 2012		Percent Cover by Plot					
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T11-F2	T11-F3	T11-F4	T11-F5	T11-F6	Row Average
Native Shrub and Tree Species								
Alnus rubra	N	3	0	0	0	0	0	**0**
Amelanchier alnifolia	N	4	0	0	0	0	0	**1**
Cornus sericia ssp. sericia (alba)	N	2	0	0	0	3	0	**0**
Corylus cornuta	N	4	0	0	0	0	3	**0**
Crataegus douglasii	N	3	0	0	0	0	0	**2**
Frangula purshiana	N	3	0	0	0	0	0	**0**
Fraxinus latifolia	N	2	1	1	1	10	60	**10**
Malus fusca	N	2	0	0	0	0	0	**0**
Rosa pisocarpa and/or R. nutkana	N	3	0	0	0	5	10	**3**
Salix hookeriana	N	2	0	0	0	0	0	**0**
Salix lucida var. lasiandra (lasiandra)	N	2	2	0	0	1	0	**0**
Salix scouleriana	N	3	1	0	0	0	0	**0**
Salix sitchensis	N	2	1	0	0	1	0	**0**
Spiraea douglasii	N	2	0	0	0	0	0	**0**
Symphoricarpos albus	N	4	0	0	0	0	2	**0**
Non-Native Shrub and Tree Species								
Crataegus monogyna	NN	3	0	0	0	0	0	**1**
Invasive Shrub and Tree Species								
Rubus species hybrids (cultivars)	I		0	0	0	0	0	**0**
Native Shrub and Tree Count -Note that in plots with > 50% cover the stem count was not always recorded			**Stem (trees) or Plant (shrubs) Count**					
Alnus rubra	N	3	0	0	0	0	0	**0**
Amelanchier alnifolia	N	4	0	0	0	0	0	**0**
Cornus sericia ssp. sericia (alba)	N	2	0	0	0	4	0	**0**
Corylus cornuta	N	4	0	0	0	0	0	**0**
Crataegus douglasii	N	3	0	0	0	0	0	**1**
Frangula purshiana	N	3	0	0	0	0	0	**0**
Fraxinus latifolia	N	2	6	6	2	5	0	**4**
Malus fusca	N	2	0	0	0	0	0	**0**

Table 6c: PFO Tree & Shrub Plots (Plots T3-F1 to T11-F1, lower portion) page 3 of 4	August 10-Sep 13, 2012		Percent Cover by Plot														
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T3-F1	T4-F1	T5-F1	T7-F1	T7-F2	T8-F1	T8-F2	T8-F3	T9-F1	T9-F2	T9-F3	T9-F4	T10-F1	T10-F2	T11-F1
Native Shrub and Tree Count cont.			Stem (trees) or Plant (shrubs) Count														
Rosa pisocarpa and/or R. nutkana	N	3	0	0	0	0	0	0	0	0	35	0	0	0	0	0	0
Salix hookeriana	N	2	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Salix lucida var. lasiandra (lasiandra)	N	2	3	0	3	0	2	0	0	0	0	0	0	8	0	2	0
Salix scouleriana	N	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Salix sitchensis	N	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiraea douglasii	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Symphoricarpos albus	N	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Routine Performance Standards																	
Cover of Invasive Shrubs and Trees			0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Lower CI (80%)																	
Upper CI (80%)																	
Native Diversity--See notes at end of Appendix combined PFO summar																	
Prevalence Index--woody strata			2	2	2	2	3		2	3	3	3	3	2	2	3	2
Weighted Prevalence Index			10	4	6	2	15	0	7	6	130	8	5	15	287	13	190
Sum of plant cover			5	2	3	1	6	0	3	2	40	3	2	7	116	5	80
Density of Woody Vegetation		Average per acre	226	129	161	32	549	0	387	161	1258	452	484	774	unkn.	484	unkn.
Plot Area (shrub/tree plot)	1350																
Per acre multiplier:	43560																
Cover of Native Shrubs and Trees			5	2	3	1	6	0	3	2	35	3	2	6	111	5	80
Lower CI (80%)																	
Upper CI (80%)																	
Does Plot Pass Native Cover Standard based on > 50% Native Cover Y or N?			N	N	N	N	N	N	N	N	N	N	N	N	Y	N	Y
Does Plot Pass Native Cover Standard based on > 1000 plants or stems per acre Y or N?			NA	NA	NA	NA	NA	NA	NA	NA	NA (Y)	NA	NA	NA	NA	NA	NA

Table 6d: PFO Tree & Shrub Plots (Plots T11-F2 to T11-F6, lower portion) page 4 of 4	August 10-Sep 13, 2012		Percent Cover by Plot						
Species	**Origin (N, NN, I)**	**Wetland Status (1 - 5)**	**T11-F2**	**T11-F3**	**T11-F4**	**T11-F5**	**T11-F6**	**Row Average**	
Native Shrub and Tree Count cont.			**Stem (trees) or Plant (shrubs) Count**						
Rosa pisocarpa and/or R. nutkana	N	3	0	0	0	15	0	**3**	
Salix hookeriana	N	2	0	0	0	0	0	**0**	
Salix lucida var. lasiandra (lasiandra)	N	2	30	0	0	4	0	**3**	
Salix scouleriana	N	3	6	0	0	0	0	**0**	
Salix sitchensis	N	2	1	0	0	1	0	**0**	
Spiraea douglasii	N	2	0	0	0	0	0	**0**	
Symphoricarpos albus	N	4	0	0	0	0	0	**0**	
Routine Performance Standards							**20**	**Habitat Average**	**Standard Error**
Cover of Invasive Shrubs and Trees			0	0	0	0	0	**0**	**0**
Lower CI (80%)								**0**	
Upper CI (80%)								**0**	
Native Diversity--See notes at end of Appendix re: combined PFO summary								NA till Year 3 but 1 sp. passes	
Prevalence Index--woody strata			2	2	2	2	2	**2**	
Weighted Prevalence Index			11	2	2	45	170		
Sum of plant cover			5	1	1	20	75		
Density of Woody Vegetation		Average per acre	1387	194	65	936	unkn.	**384**	
Plot Area (shrub/tree plot)	1350								
Per acre multiplier:	43560								
Cover of Native Shrubs and Trees			5	1	1	20	75	**18**	**7**
Lower CI (80%)								**9**	
Upper CI (80%)								**27**	
Does Plot Pass Native Cover Standard based on > 50% Native Cover Y or N?			N	N	N	N	Y		
Does Plot Pass Native Cover Standard based on > 1000 plants or stems per acre Y or N?			NA (Y)	NA	NA	NA	NA		

Table 7a: PSS Tree & Shrub Plots (Plots T1-S1 to T6-S6, upper portion) page 1 of 4	August 10-Sep 13, 2012		Percent Cover by Plot														
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T1-S1	T1-S2	T2-S1	T2-S2	T2-S3	T2-S4	T2-S5	T3-S1	T3-S2	T6-S1	T6-S2	T6-S3	T6-S4	T6-S5	T6-S6
Native Shrub and Tree Species																	
Alnus rubra	N	3	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Amelanchier alnifolia	N	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cornus sericia ssp. sericia (alba)	N	2	0	0	0	1	0	1	1	0	1	0	0	0	1	1	0
Crataegus douglasii	N	3	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0
Frangula purshiana	N	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Fraxinus latifolia	N	2	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0
Malus fusca	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physocarpus capitatus	N	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Populus balsamifera	N	3	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
Rosa pisocarpa and/or R. nutkana	N	3	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19
Salix hookeriana	N	2	2	0	0	0	0	1	1	1	1	0	0	0	0	0	0
Salix lucida var. lasiandra (lasiandra)	N	2	10	1	0	1	0	0	0	1	1	5	1	0	0	0	0
Salix scouleriana	N	3	3	0	0	0	0	0	0	0	0	5	0	0	0	0	40
Salix sitchensis	N	2	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0
Spiraea douglasii	N	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-Native Shrub and Tree Species																	
Crataegus monogyna	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Malus pumila	NN	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Invasive Shrub and Tree Species																	
Rubus armeniacus	I	4	0	0	0	0	0	0	0	0	0	0	0	0	0	7	5
Bare Substrate- See the PSS herbaceous plot data on Table 5 for																	
Native Shrub and Tree Count -Note that in plots with > 50% cover the stem count was not always recorded			**Plant Count (Shrubs) + Stem Count (Trees)**														
Alnus rubra	N	3	0	6	0	0	0	0	0	0	0	0	0	0	2	0	0
Amelanchier alnifolia	N	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cornus sericia ssp. sericia (alba)	N	2	0	0	0	2	0	1	1	0	2	0	0	0	2	1	0
Crataegus douglasii	N	3	0	0	2	0	1	2	0	0	0	0	0	0	0	0	0
Frangula purshiana	N	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Fraxinus latifolia	N	2	0	3	0	0	0	2	0	0	0	0	0	1	7	2	0
Malus fusca	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 7b: PSS Tree & Shrub Plots (Plots T6-S7 to T6-S11, upper portion) page 2 of 4	August 10-Sep 13, 2012		Percent Cover by Plot					
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T6-S7	T6-S8	T6-S9	T6-S10	T6-S11	Row Average
Native Shrub and Tree Species								
Alnus rubra	N	3	0	0	0	0	0	**0**
Amelanchier alnifolia	N	4	0	0	0	0	0	**0**
Cornus sericia ssp. sericia (alba)	N	2	1	0	0	0	0	**0**
Crataegus douglasii	N	3	0	0	0	0	0	**0**
Frangula purshiana	N	3	0	0	0	0	0	**0**
Fraxinus latifolia	N	2	4	0	0	0	0	**0**
Malus fusca	N	2	0	0	0	0	0	**0**
Physocarpus capitatus	N	2	0	0	0	0	0	**0**
Populus balsamifera	N	3	10	10	1	0	0	**1**
Rosa pisocarpa and/or R. nutkana	N	3	0	0	0	0	0	**1**
Salix hookeriana	N	2	0	0	0	0	0	**0**
Salix lucida var. lasiandra (lasiandra)	N	2	0	0	0	0	0	**1**
Salix scouleriana	N	3	60	0	0	0	0	**5**
Salix sitchensis	N	2	0	0	0	0	0	**0**
Spiraea douglasii	N	2	0	0	0	0	0	**0**
Non-Native Shrub and Tree Species								
Crataegus monogyna	NN	3	0	0	0	0	0	**0**
Malus pumila	NN	5	0	0	0	0	0	**0**
Invasive Shrub and Tree Species								
Rubus armeniacus	I	4	0	0	0	0	0	**1**
Bare Substrate- See the PSS herbaceous plot data on Table 5 for								
Native Shrub and Tree Count -Note that in plots with > 50% cover the stem count was not always recorded			**Plant Count (Shrubs) + Stem Count (Trees)**					
Alnus rubra	N	3	0	0	0	0	0	**0**
Amelanchier alnifolia	N	4	0	0	0	0	0	**0**
Cornus sericia ssp. sericia (alba)	N	2	1	0	0	0	0	**1**
Crataegus douglasii	N	3	0	0	0	0	0	**0**
Frangula purshiana	N	3	0	0	0	0	0	**0**
Fraxinus latifolia	N	2	5	0	0	0	0	**1**
Malus fusca	N	2	0	0	0	0	0	**0**

Table 7c: PSS Tree & Shrub Plots (Plots T1-S1 to T6-S6, lower portion) page 3 of 4	August 10-Sep 13, 2012		Percent Cover by Plot														
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T1-S1	T1-S2	T2-S1	T2-S2	T2-S3	T2-S4	T2-S5	T3-S1	T3-S2	T6-S1	T6-S2	T6-S3	T6-S4	T6-S5	T6-S6
Native Shrub & Tree Count (cont.)																	
Physocarpus capitatus	N	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Populus balsamifera	N	3	0	0	2	0	0	0	0	0	0	0	0	0	0	1	2
Rosa pisocarpa and/or R. nutkana	N	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
Salix hookeriana	N	2	0	0	0	0	0	1	2	2	6	0	0	0	0	0	0
Salix lucida var. lasiandra (lasiandra)	N	2	0	1	0	2	0	0	0	1	7	0	4	0	0	0	0
Salix scouleriana	N	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Salix sitchensis	N	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Spiraea douglasii	N	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Routine Performance Standards																	
Cover of Invasive Shrubs and Trees			0	0	0	0	0	0	0	0	0	0	0	0	0	7	5
Lower CI (80%)																	
Upper CI (80%)																	
herbaceous plot data on a separate table for bare substrate data.																	
See PSS Herb table for summary info on diversity																	
Prevalence Index--All strata			2	2	3	2	3	2	2	2	2	2	2	2	3	3	3
Weighted Prevalence Index			33	11	9	4	3	9	4	4	6	25	2	2	10	38	200
Sum of plant cover			15	5	3	2	1	4	2	2	4	15	1	1	4	11	65
Density of Woody Vegetation		Average per acre	0	419	129	129	32	194	97	97	516	0	129	32	387	129	1065
Plot Area (shrub/tree plot)	1350																
Per acre multiplier:	43560																
Cover of Native Shrubs and Trees			0	5	3	2	1	4	2	2	4	15	1	1	4	4	60
Lower CI (80%)																	
Upper CI (80%)																	
Does Plot Pass Native Cover Standard based on > 50% Native Cover Y or N?			N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y
Does Plot Pass Native Cover Standard based on > 1000 plants or stems per acre Y or N?			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA (Y)

Table 7d: PSS Tree & Shrub Plots (Plots T6-S7 to T6-S11, lower portion) page 4 of 4	August 10-Sep 13, 2012		Percent Cover by Plot						
Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T6-S7	T6-S8	T6-S9	T6-S10	T6-S11	Row Average	
Native Shrub & Tree Count (cont.)									
Physocarpus capitatus	N	2	0	0	0	0	0	**0**	
Populus balsamifera	N	3	17	29	9	0	0	**3**	
Rosa pisocarpa and/or R. nutkana	N	3	0	0	0	0	0	**2**	
Salix hookeriana	N	2	0	0	0	0	0	**1**	
Salix lucida var. lasiandra (lasiandra)	N	2	0	0	0	0	0	**1**	
Salix scouleriana	N	3	4	0	0	0	0	**0**	
Salix sitchensis	N	2	0	0	0	0	0	**0**	
Spiraea douglasii	N	2	0	0	0	0	0	**0**	
Routine Performance Standards								**Habitat Average**	**Standard Error**
Cover of Invasive Shrubs and Trees			0	0	0	0	0	**1**	**0**
Lower CI (80%)								**0**	
Upper CI (80%)								**1**	
herbaceous plot data on a separate table for bare substrate data.									
See PSS Herb table for summary info on diversity									
Prevalence Index--All strata			3	3	3			**2**	
Weighted Prevalence Index			220	30	3	0	0		
Sum of plant cover			75	10	1	0	0		
Density of Woody Vegetation		Average per acre	871	936	290	0	0	**273**	
Plot Area (shrub/tree plot)	1350								
Per acre multiplier:	43560								
Cover of Native Shrubs and Trees			75	10	1	0	0	**10**	**5**
Lower CI (80%)								**4**	
Upper CI (80%)								**16**	
Does Plot Pass Native Cover Standard based on > 50% Native Cover Y or N?			Y	N	N	N	N		
Does Plot Pass Native Cover Standard based on > 1000 plants or stems per acre Y or N?			NA	NA	NA	NA	NA		

NOTES:

PEM-FACW/FAC Herbaceous Community

-This community is seasonally inundated and/or saturated and is expected to be mostly dominated by FAC or FACW vegetation (a rounded prevalence indicator of 2 or 3) . Nonetheless some parts of the community will be dominated by OBL species (a rounded prevalence indicator of 1), which was observed at two plots (T12-PEM1 and T12-PEM4).

-In the plots that have large percentages of "Bare ground and/or dead sprayed weeds", this is almost always mostly or completely composed of dead sprayed weeds.

-The diversity standard is NA until year 3 but 3 native spp. (*Deschampsia cespitosa, Plagiobothrys scouleri* and *Rorippa curvisilqua*) currently meet the diversity criteria of $\geq$5% average cover, and present in $\geq$ 10% of plots.

-Plot T12-PEM1 has 1% cover of a *Salix* species sapling but we are not recording shrubs in herb data.

-Plot T12-FH3. ID of *Carex ovalis* is tentative.

PEM-OBL Herbaceous Community

-There are some disagreements re: the nativity of *Sparganium emersum.* As per the Mitigation Bank Instrument, this species will be considered a native for this project.

-Both *Potomogeton nodosus* and *P. natens* are present in this community and have similar floating leaves (the submerged leaves differ). Populations within plots identified as one or the other may include both. Both species are native OBL aquatic plants.

-Identification of *Stuckenia pectinata* (formerly *Potomogeton pectinatus*) is tentative; no flowers were present in sample.

-Plot T4-PEMOBL2 has 2% *Salix lasiandra* but we are not recording woody species in herb data.

PFO-Herbs

-Plot T8-FH2: the identification of *Cyperus esculentus* (an invasive) is tentative here (no flowers). This is a portion of the site where both the native and non-native nut-sedge species are present.

-Plot T9-FH1: There was 5% wood in plot, so the effective area monitored was 5% smaller than 1 square meter.

-Plot T10-FH3. ID of *Carex ovalis* is tentative (no flowers)

-T11-FH1 and T10-FH1 are both in shaded mature forest that has a very low herb cover (30% and 0% respectively in the 2 plots). Similarly plot T11-FH10 was in a dense native rose thicket and had 0% herb cover. The other plots in the community that have large percentages of "Bare ground and/or dead sprayed weeds" are almost always mostly or completely composed of dead sprayed weeds.

-T11-FH2: the "unknown broadleaf seedling" (2% cover) is assumed to be non-native.

-The community meets the diversity standard: 7 native species (*Deschampsia elongata, Deschampsia cespitosa, Epilobium ciliatum, Bidens cernua & Leersia oryzoides* plus *Fraxinus latifolia* [from the PFO woody table] with $\geq$ 5% average cover, and present in $\geq$ 10% of plots.

PSS-herbs

-In the plots that have large percentages of "Bare ground and/or dead sprayed weeds", this is almost always mostly or completely composed of dead sprayed weeds.

-Unidentified *Poa* species are assumed to be non-native with an indicator status of FAC (or wetter)

-In plot T1-SH1, the plant identified as *Equisetum arvense* is likely a known hybrid w/ *E. fluviatile.*

-In plot T1-SH2, the *Rumex crispus* is very stressed from spray but not dead yet.

-Plot T2-SH10: there is an additional 20% cover by *Salix lasiandra* but we are not recording shrubs in herb data.

-Plot T2-SH12: There was 5% wood in plot, so the effective area monitored was 5% smaller than 1 square meter.

-Plot T6-SH1: this area had been sprayed the day before the sample date (8/16/12) so the percent dead/bare would likely have been greater in a few days.

-Plot T6-SH4: There was 5% rock in plot, so the effective area monitored was 5% smaller than 1 square meter.

-Plot T6-SH13: there is an additional 5% cover by *Rubus armeniacus* but we are not recording shrubs in herb data.

-The diversity standard is NA until 3rd year but 4 species (*Glyceria borealis*, *Leersia oryzoides,* and *Epilobium ciliatum* plus *Salix scouleriana* [from the PSS woody table]) meet the standard of >5% average cover and present in > 10% of the plots.

PFO-Tree & Shrub Plots

-At present there isn't enough cover by native trees and shrubs (generally < 5% total native woody cover in planted plots), except for *Fraxinus latifolia* in the PFO plots to contribute to the diversity standard; please see the PFO and PSS *herb* plots for diversity calculations.

-Bare ground was not recorded in the tree and shrub plots- see the PFO and PSS herb plots for this data.

-In some cases where native cover exceeded 50% cover, we did not count plants/stems.

-Plot T9-F1: the plant count of native *Rosa pisocarpa* of 35 (or more) is an estimate in a dense thicket.

-Plot T11-F5: about 10% was in water

-In assigning percent cover to planted trees and shrubs, we are only using whole percent increments, thus the smallest percent cover assigned is 1%, which is any cover > 0 ≤ 1%. This may represent 1 to several (up to about 15) young planted and/or volunteer plants or stems.

PSS-Shrubs & Tree Plots

-In assigning percent cover to planted trees and shrubs, we are only using whole percent increments, thus the smallest percent cover assigned is 1%, which is any cover > 0 ≤ 1%. This may represent 1 to several (up to about 15) young planted and/or volunteer plants or stems.

-Willows identified as *Salix hookeriana* (aka *S. piperi*) may include *S. scouleriana* plants; the two may look very similar when young.

-Plot T6-S1. The mature willows overhang into the plot; no stems are rooted in the plot. The available rooting space in this plot is about 30% smaller than normal because of the ditch.

-Plot T6-S7-Plot T9-F1: the plant count of native *Rosa pisocarpa* of 30 (or more) is an estimate in a dense thicket

Plant Nomenclature:

-Plant nomenclature is up-to-date. The USDA PLANTS database (http://plants.usda.gov/java/) was our source for nomenclature. In cases where the latest nomenclature is different than that listed in the new Corps WIS list, the name used name in the Corps' list, or closest synomy is in parentheses.

-The Wetland Indicator Statuses (WIS) are from the new 2012 list for the Western Mountains, Valleys and Coast Region.

Principal Plant Identification Resources Used For This Project

Technical Flora and Keys:

-Hitchcock, C. Leo and Cronquist. 1974. Flora of the Pacific Northwest. University of Washington Press.

-Hitchcock, C. Leo et. al. 1955, 1959, 1961, 1964 and 1969. Vascular Plants of the Pacific Northwest (5 Volumes). University of Washington Press.

-Kozloff, Eugene N. 2005. Plants of Western Oregon, Washington and British Columbia. Timber Press.

Field Guides:

-Cooke, Sarah Spear (Editor). 1997. A Field Guide to the Common Wetland Plants of Western Washington and Northwestern Oregon. Seattle Audubon Society

-Guard, B. Jennifer. 1995. Wetland Plants of Oregon and Washington. Lone Pine Publishing.

-Whitson, Tom D. (editor) et. al. 1996. Weeds of the West. 5th Edition. University of Wyoming Press.

-Other Resources:

-USDA PLANTS database URL http://plants.usda.gov/java/. This site provides drawings, photos and distribution maps plus useful links to other web sites including the CalPhotos website URL http://calphotos.berkeley.edu etc.

-John Christy, Wetland ecologist for the Institute for Natural Resources was consulted concerning the identification of several native species

APPENDIX B: PHOTOGRAPHIC DOCUMENTATION

PHOTOGRAPHIC DOCUMENTATION:
All Photos taken by C. Jonas Moiel on September 13th 2012.

Photo Point 1 NW: Photo displays native dominated plant communities within the wetland area and site preparation work in the buffer.

Photo Point 1 SW: Photo displays native dominated plant communities within the wetland area and site preparation work in the buffer.

Photo Point 2 NW: Photo displays native dominated plant communities within the wetland area and woody plantings.

Photo Point 3 SW: Photo displays the un-improved access road which crosses the "north-south" ditch.

Photo Point 3 SE: Photo displays the un-improved access road which crosses the constructed swale.

Photo Point 4 N: Photo displays the head of the constructed swale, at the un-improved access road crossing.

Photo Point 4 S: Photo displays head of constructed swale, at the un-improved access road crossing.

Photo Point 5 E: Photo displays northern woody-debris Jam / ditch plug.

Photo Point 6 NW: Photo displays constructed swale and wetland creation area within the PFO vegetation community.

Photo Point 6 SE: Photo displays constructed swale and wetland creation area.

Photo Point 7 SE: Photo displays wetland enhancement, restoration and creation areas.

Photo Point 8 NW: Photo displays wetland creation area within the PEM FAC/FACW and PFO vegetation communities.

Photo Point 8 SE: Photo displays wetland creation and restoration areas within the PEM FAC/FACW and PFO vegetation communities.

Photo Point 9 SE: Photo displays southern woody-debris jam / ditch plug.

Photo Point 10 SW: Photo displays Woody-Debris Jam / Ditch Plug, and wetland restoration area.

Photo Point 11 NW: Photo displays the mouth of the constructed swale and the wetland creation area.

Photo Point 11 SE: Photo displays the mouth of the constructed swale looking toward the log jams.

Photo Point 12 NW: Photo displays upland buffer area and site preparation efforts.

Photo Point 13 S: Photo displays the re-contoured location of the 18" culvert, ditch outfall, and adjacent hill-slope trench.

Photo Point 14 NW: Photo displays the re-contoured location of the 18" culvert and ditch outfall.

Photo Point 15 SW: Photo displays the secondary log jam.

Photo Point 16 SE: Photo displays primary log jam.

APPENDIX C: SAMPLE PLOT (TRANSECT) LOCATION TABLE

TUALATIN VALLEY ENVIRONMENTAL BANK

Vegetation Monitoring Transect Locations:

Transect	Start Latitude	Start Longitude	End Latitude	End Longitude
T1	45.448	-122.968	45.448	-122.967
T2	45.448	-122.968	45.448	-122.966
T3	45.447	-122.965	45.447	-122.964
T4	45.446	-122.965	45.446	-122.963
T5	45.445	-122.963	45.445	-122.962
T6	45.443	-122.963	45.443	-122.959
T7	45.442	-122.963	45.442	-122.961
T8	45.441	-122.963	45.441	-122.961
T9	45.439	-122.962	45.439	-122.960
T10	45.438	-122.962	45.438	-122.958
T11	45.437	-122.962	45.437	-122.958
T12	45.437	-122.961	45.437	-122.959

Please refer to Section E: Monitoring Data Locations for an in depth description of plot locations. Transects ran west to east. In general, the first plot on a transect was 5 feet east of the transect start point; herbaceous plots were spaced every 50 feet and tree/shrub plots were spaced every 100 feet. Some areas were not sampled due to deep inundation, upland, or impermiable surface. The locations of the start and end points of each monitoring transect, the northwestern corner of each herbaceous plot, and all four corners of the woody vegetation plots were GPS'ed; this data is available upon request.

APPENDIX D: AERIAL PHOTOGRAPHY

Aerial Photograph- February 4th, 2012

Photograph compliments of Steve Sahnow.

Aerial Photograph- February 27th, 2012

Photograph compliments of Steve Sahnow.

Aerial Photograph- September 7th, 2012

Photograph compliments of Steve Sahnow.

APPENDIX E: HYDROLOGY PIT DATA FROM SELECTED PITS IN 2012

TUALATIN VALLEY ENVIRONMENTAL BANK

Hydrological Monitoring Pit Data Summary: February 8th- March 3rd 2012

Hydrological Monitoring Pit ID	Depth to Water Table Range (inches b.g.s.)	Depth to Saturation Range (inches b.g.s.)	Atleast 14 Days of Consecutive Hydrology Achieved
H5a	0.25" to 11.5"	surface to 9"	Yes
H5b	9" to 14"	6" to 11"	Yes
H5c	12" to 13"	7" to 10.5"	Yes
H9	0" to 5"	surface to 1"	Yes
H9a	11" to 14"	8.5" to 11"	Yes
H12a	12.25" to 13.25"	9.5" to 10.25"	Yes
H12b	11.5" to 14"	9" to 11"	Yes
H12c	4.25" to 11.5"	1" to 8.5"	Yes
H12d	3.25" to 4.25"	surface to 1.5"	Yes
H17a	3.5" to 11.5"	surface to 9"	Yes
H17b	1.5" to 17.5"	surface to 14.5"	No
H25a	0"	surface	Yes
H25b	0" to 4.75"	surface to 1.5"	Yes
H25c	2.5" to 16.5"	surface to 13.5"	No
H25d	3.5" to 18.5"	surface to 15.75"	No
H30	0"	surface	Yes
H30a	0.5" to 5"	surface to 2.25"	Yes
H30b	5.5" to 16.5"	2.5" to 13.5"	No
H30c	8.5" to 18.5"	5.75" to 15.5"	No
H32a	0.75" to 3"	surface	Yes
H32b	3.5" to 14"	surface to 11"	Yes
H32c	10" to 20"	7" to 17"	No
H39	0"	surface	Yes
H39a	0.25" to 5.5"	surface to 3"	Yes
H39b	7.5" to 19"	4.5" to 16"	No
H39c	9.5" to 20"	6.5" to 17"	No

APPENDIX F: CREDIT LEDGER 2011-2012

TUALATIN VALLEY ENVIRONMENTAL BANK

CREDIT LEDGER 6/6/2011 - 12/28/2012

Date	Transaction Type	Jurisdiction	Permitee	Project Name	DSL Permit	Corps Permit	Wetland Type	Number of Credits (ac.)	Balance of Credits after Transaction (ac.)
6/6/2012	release	State/Fed	NA	NA	NA	NA	NA	1.6700	1.6700
6/28/2011	withdrawal	State/Fed	Tualatin Hills Parks and Rec.	Athetic Fields	0046405	NWP-2011-94	Slope	1.5000	0.1700
7/12/2011	withdrawal	State/Fed	City of Lake Oswego	Stafford Basin Trail Project	46156-GA	NWP-2011-24	PEM/Slope	0.0241	0.1459
7/28/2011	withdrawal	State/Fed	City of Hillsboro	Rock Creek Trail	46746		PFO, PEM/RFT, RI, Slope, Flats	0.0600	0.0859
12/19/2012	release	State/Fed	NA	NA	NA	NA	NA	1.6600	1.7459
1/10/2012	withdrawal	State/Fed	Tualatin Hills Parks and Rec.	North Bethany Trail Segment 2	47271-RF	2011-242	PEM/Slope	0.0100	1.7359
3/5/2012	release	State/Fed	NA	NA	NA	NA	NA	3.0000	4.7359
3/12/2012	withdrawal	State/Fed	Tualatin Hills Parks and Rec.	Waterhouse Trail Project	APP0048396	NWP-2010-415	PEM/Slope	0.0600	4.6759
3/23/2012	withdrawal	State/Fed	Washington County	Cornelius Road Widening	48277	NA	PEM,PSS,PFO/Slope	0.0400	4.6359
5/10/2012	withdrawal	State/Fed	Tualatin LTC Properties II LLC	Marquis- Tualatin	48431-RF	2011-510	PEM/RFT	0.0100	4.6259
5/22/2012	withdrawal	State/Fed	Vicki Abtin	Crossing/ Bald Peak RD	50085	NWP-2012-126	PFO/RFT	0.0500	4.5759
5/29/2012	withdrawal	State/Fed	Columbia Land Trust	Rosemont Trail	48103-RF	NA	PSS/Slope	0.0040	4.5719
6/19/2012	withdrawal	State/Fed	Langer Gramor LLC	Sherwood Town Center/ Langer Farms	50271-RF	NWP-2012-165	PSS/Slope,Riverine	0.0900	4.4819
8/28/2012	withdrawal	State/Fed	Hamel Heights LLC	Arbor Heights East Development	50470	2012-95	PEM, PSS/Slope, Flats	0.4700	4.0119
8/29/2012	withdrawal	State/Fed	John Crosley	Primetime Commencial Development	50272-FP	2012-162	PEM/Slope,Flats	0.1500	3.8619
9/5/2012	withdrawal	State/Fed	Noyes Development Co.	new residential development	48368	2011-311	PEM,PSS,PFO/Slope	0.2000	3.6619
9/24/2012	withdrawal	State/Fed	Polygon NW	Murray Blvd. and Weir Road	45796	2010-476	PFO/Slope	0.0156	3.6463
10/29/2012	withdrawal	State/Fed	Noyes Development Co.	Iron Ridge Heights	51723-GP	2007-542-1	PFO/Slope	0.0100	3.6363

Total Credits Released (ac.): 6.33 **Total Credits Withdrawn (ac.): 2.6937** **Balance (ac.): 3.6363**

-0.04
-0.188
3.4083