

**Mitigation Monitoring Report Cover Sheet  
Oregon Department of State Lands**

**Block 1: Report Information**

DSL Permit Number: 36499-RF	COE Permit Number 200500621
County Clackamas	Report Date 12/11/2013 Monitoring Year 1 2 3 4 5
Date Removal-Fill Activity Completed NA	
Date mitigation was completed Grading 2006	Planting 2011
Report submitted by: M. Vlahakis	

**Block 2: Monitoring Report Purpose**

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

- Compensatory **freshwater** 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 our wetland mitigation revolving fund.
- Voluntary wetland enhancement, creation or restoration (General authorization or individual permit) funded with money from **our wetland mitigation revolving fund**.
- Mitigation Bank Report**
- Other \_\_\_\_\_

**Block 3: Results**

	Success Criteria	Met? (Y/N)	Comments/Reason for failure*
1.	Percent Cover Native Species - Prairie	Y	
2.	Percent Cover Invasive Species - Prairie	Y	
3.	Percent Cover Trees and Shrubs - Prairie	Y	
4.	Number of Native Species - Prairie	N	No single forb species is >10% overall cover within the plots
5.	Number of Native Tree/Shrub Species - PFO	Y	
6.	Density of Native Tree Species - PFO	Y	
7.	Density of Native Shrub Species - PFO	Y	
8.	Percent Cover Native Herbaceous Species -PFO	Y	
9.	Percent Cover Invasive Species - PFO	Y	
10.			

**Remedial work recommended**

Yes  No

**Deed Restriction or other protection instrument attached (note: if a filed deed restriction was required as a permit condition, please attach a copy):**

Yes  No

**Final Monitoring Report?**

Yes  No

**Requesting release or partial release of bond?**

Yes  No

**FOSTER CREEK WETLAND MITIGATION BANK**  
**2013 VEGETATION MONITORING REPORT**  
**CLACKAMAS COUNTY, OREGON**

**Wetland Systems, LLC**  
**2016 SE Henkle Road**  
**Corbett, Oregon 97019**

*December 2013*

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# 1 PROJECT OVERVIEW

## Status and Location

Foster Creek Wetland Mitigation Bank is owned and operated by Wetland Systems, LLC. The Foster Creek Wetland Mitigation Bank was authorized with approval of the Instrument in June 2006 (Corps File Number: 200500621, and DSL Permit 36499-RF). Comments or questions concerning this report may be directed to the report's author: Mark Vlahakis at [mvlahakis@q.com](mailto:mvlahakis@q.com).

The site is located on S. Eaden Road near Barton in Clackamas County, Oregon. The Foster Creek Wetland Mitigation Bank (Bank) serves the Clackamas River basin below 1,200 feet, all of the Johnson Creek basin, all of the Abernathy Creek basin, and limited portions of the Willamette basin (around Oregon City and Milwaukie). Urban areas served by this bank include Damascus, Oregon City, portions of Gresham, Milwaukie, Portland, and Sandy; and unincorporated Clackamas County.

The Foster Creek Wetland Mitigation Bank provides Slope/Flats and Depressional wetlands according to the Hydrogeomorphic classification, and Palustrine Emergent and Palustrine Forested wetlands according to the Cowardin classification. The habitat focus of the Bank is seasonal wet prairie (55.4 acres) with a lesser amount of forested wetland (13.2 acres). The Bank has been approved for a total of 27.56 wetland mitigation credits, with 17.91 of those credits currently approved for release by regulatory oversight.

This is the fifth annual monitoring report for the Foster Creek Wetland Mitigation Bank, and fourth in succession following initial revegetation events (the 2008 annual report monitored revegetation test plots only). Site preparation activities in 2009 and early 2010 focusing on weed control have necessitated a phased approach for revegetation of the site. For purpose of discussion with this report, the site is segregated into two distinct areas related to current revegetation and vegetation monitoring activities: Wet Prairie and Forested Wetland (Figure 1).

The 68.6-acre wetland site area was fully planted in 2010, with grasses completed in 2009; forbs completed in 2010. Trees/shrubs were fully installed within the forested wetland in 2011 to complete the planting of the entire 68.6-acres. Supplemental plantings and seeding occur throughout the bank on an as-needed basis.

## Summary of 2013 Credit Activity

The Foster Creek Bank is currently eligible for release of 65% (17.91) of the Bank's total credits (27.56). There were 1.13 credits sold in 2013. The total of credits sold to-date is 12.19, with 5.72 credits currently available for transaction (conditional upon posting of financial assurance). A copy of the Bank's ledger is attached to this report as Appendix A.

# 2 PERFORMANCE REQUIREMENTS

## Summary of Vegetation Performance Standards

Vegetation performance standards and performance status for the 2013 monitoring year for the wet prairie and forested wetland habitats are presented in Tables 1 and 2. Refer to the "Monitoring Results" Section in Section 4 (Page 3) for details on the individual performance criteria results based on the 2013 monitoring.

**TABLE 1 - WET PRAIRIE PERFORMANCE STANDARDS**

Wet Prairie Performance Criteria	Wet Prairie Performance Criteria Benchmark	Wet Prairie Performance Criteria Time Period	2013 Status
Percent Cover	>50% native species	2 Consecutive Years	Meets 5 Years
Native Species	tufted hairgrass/camas >15%	2 Consecutive Years	Meets 3 Years
Percent Cover	>60% native species	3 Consecutive Years	Meets 4 Years
Native Species	tufted hairgrass/camas >20%	3 Consecutive Years	Meets 3 Years

Percent Cover Invasive Species	<20% <15% for reed canarygrass	5 Consecutive Years 5 Consecutive Years	Meets 5 Years Meets 5 Years
Percent Cover Trees & Shrubs	<5%	5 Consecutive Years	Meets 5 Years
Number of Native Species (> 10% cover)	Minimum 2 native grass species Minimum 1 native forb species	2 Consecutive Years 2 Consecutive Years	Meets 3 Years Not Met
Number of Native Species (> 10% cover)	Minimum 3 native grass species Minimum 2 native forb species	3 Consecutive Years 3 Consecutive Years	Not Met Not Met

**TABLE 2 - FORESTED WETLAND PERFORMANCE STANDARDS**

Forested Wetland Performance Criteria	Forested Wetland Performance Criteria Benchmark	Forested Wetland Performance Criteria Time Period	2013 Status
# Native Tree/Shrub Species	Minimum 1 native tree species Minimum 3 native shrub species	5 Consecutive Years 5 Consecutive Years	Meets 5 Years Meets 5 Years
Density of Native Tree Species	Minimum of 240 stems per acre	5 Consecutive Years	Meets 4 Years
Density of Native Shrub Species	Minimum of 320 stems per acre	5 Consecutive Years	Meets 3 Years
Percent Cover Native Herbaceous Species	>50% cover	5 Consecutive Years	Meets 2 Years
Percent Cover Invasive Species	<20% <15% reed canarygrass	5 Consecutive Years 5 Consecutive Years	Meets 2 Years Meets 5 years

### 3 METHODOLOGY

#### Vegetation Monitoring Methodology

Vegetation data collection follows protocols described in VEMA (Marshall 2007). Vegetation monitoring was conducted in late spring (June 1, 2, and 3) by John Christy (Christy 2013).

Permanent monitoring transects have been laid out from a baseline transect running east to west across the property, establishing 13 monitoring transects running north and south from the baseline (Figure 1). Five transects on the north side of the baseline (T-1N to T-5N), and eight transects on the south side (T-1S to T-8S), were numbered sequentially from west to east (Transect T-8S is located slightly south of the baseline to facilitate coverage in that area). A transect's first sample plot (S1) was located at a random distance from the baseline, with subsequent plots located at 100-foot intervals from the first plot to the end of the respective transect. GPS coordinates were recorded at transect end points and for all 102 plot points. Locations of the endpoints of the baseline and transects were field-marked with wooden stakes, and sample plot locations were marked with labeled pin flags. Capped rebar was installed at all these points to create permanent location markers.

For wet prairie monitoring, a total of 79 plots of 1m<sup>2</sup> were located along the transects to sample herbaceous vegetation within the wet prairie. In addition to the transect plots, four upland (prairie) plots of 1m<sup>2</sup> (Upland plots A, B, C, and D) were also established on the south side of the baseline. For forested wetland monitoring where trees and shrubs were installed, 19 circular plots with a radius of 30-feet were sampled within five transects (T-2N, T-3N, T-4N, T-7S, T-8S) to count individual stems of trees and shrubs. The flagged sample locations were used to mark the center of the circular plot. Each of the

circular plots also contained a 1m<sup>2</sup> herbaceous plot nested within it, using the same flagged point to mark the lower left corner of the plot.

Representative photographs were taken during the monitoring's data collection and are presented in Appendix C of John Christy's report.

#### 4 MONITORING RESULTS

##### Vegetation Monitoring Summary Data

Monitoring data was collected by John Christy, and categorized by John Christy and the author. John's monitoring results and conclusions have been summarized for this report, with his full report attached for reference as Appendix B.

Monitoring data was summarized based on the habitat type (wet prairie or forested wetland) and the performance criteria required of each. Data was summarized by averaging the results of each sample plot within each transect, and then averaging the results of the transects to obtain a site-wide result for each criteria. Table 3 summarizes the site-wide results for the respective performance criteria.

**TABLE 3 – PERFORMANCE CRITERIA RESULTS**

<b>WET PRAIRIE HABITAT</b>					
<b>Performance Criteria</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Native species cover >50% <sup>1</sup>	54%	64%	70%	74%	64%
Tufted hairgrass/camas >15% <sup>1</sup>	1%	12%	30%	24%	23%
Native species cover >60% <sup>2</sup>	54%	64%	70%	74%	64%
Tufted hairgrass/camas >20% <sup>2</sup>	1%	12%	30%	24%	23%
Non-native invasive species cover <20% <sup>3</sup>	11%	9%	7%	16%	10%
<15% for reed canarygrass <sup>3</sup>	0%	<1%	<1%	0%	0%
Tree and shrub species cover <5% <sup>3</sup>	0%	<1% (trace)	<1% (trace)	<1% (trace)	<1% (trace)
Minimum of 2 native grass species >10% cover <sup>1</sup>	0	1	2	2	2
Minimum 1 native forb species >10% cover <sup>1</sup>	1	0	0	0	0
Minimum of 3 native grass species >10% cover <sup>2</sup>	0	1	2	2	2
Minimum 2 native forb species >10% cover <sup>2</sup>	1	0	0	0	0
<b>FORESTED WETLAND HABITAT</b>					
<b>Performance Criteria</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Minimum of 1 native tree species <sup>3</sup>	2	3	3	4	5
Minimum of 3 native shrub species <sup>3</sup>	2	6	6	7	7
Minimum tree density of 240 stems/acre <sup>3</sup>	189	283	480	598	636
Minimum shrub density of 320 stems/acre <sup>3</sup>	6	240	473	602	602
>50% cover of native herbaceous species <sup>3</sup>	49%	40%	48%	58%	54%
<20% cover of non-native invasive species <sup>3</sup>	14%	42%	32%	15%	18%
<15% reed canarygrass <sup>3</sup>	0%	0%	0%	0%	0%

<sup>1</sup> required for 2 consecutive years

<sup>2</sup> required for 3 consecutive years

<sup>3</sup> required for 5 consecutive years

The 2013 data collection continued the recording of percent frequency of individual species on a transect basis. Frequency is an important measure because it often reveals future trends of vegetation makeup, a useful tool in assessing dynamic populations that are typical of prairie establishment. See Appendix F in John Christy’s report for individual species frequency within the monitoring transects for 2012 and 2013.

### Additional Analysis

We have summarized the collected data for additional wet prairie criteria of interest outside of those specifically required by the Bank’s performance standards (Table 4). Note that this additional criterion is not subject to the Bank’s performance criteria as defined in the Instrument, but is summarized in order to facilitate identification of both short and long-term trends in vegetation composition which will assist site management efforts.

**TABLE 4 – ADDITIONAL DATA ANALYSIS**

		2009	2010	2011	2012	2013
Number of Wet Prairie Cohort Species <sup>1</sup>	VEMA Performance Standard = 10	6	17	36	34	24
Wet Prairie Moisture Index <sup>2</sup>	VEMA Performance Standard = 2.0 – 3.0	2.4	2.3	2.3	2.5	2.6
Total Species within Monitoring Plots <sup>3</sup>		83	104	105	86	105
Total Species Site-wide		NA	NA	162	NA	160
Total Native Species Specific to Wet Prairies <sup>4</sup>		NA	NA	72	NA	56

<sup>1</sup> Wet prairie cohort species as identified in: *Vascular Plants of the prairies and associated habitats of the Willamette Valley-Puget Trough-Georgia Basin ecoregion, Present in Willamette Valley Section* (refer to: “Tom’s Indicator List Wetland”)

<sup>2</sup> Calculated using the following indices: OBL=1; FACW=2; FAC=3; FACU=4; UPL=5

<sup>3</sup> Total numbers of all species recorded within monitoring plots (wet prairie, upland, and forested wetland)

<sup>4</sup> Species specific to wet prairie as identified in: *Vascular Plants of the prairies and associated habitats of the Willamette Valley-Puget Trough-Georgia Basin ecoregion, Present in Willamette Valley Section* (refer to: “Seasonal Wet Prairie”)

NA – Not Assessed

### Discussion of Vegetation Performance

Revegetation of the Bank is still in the establishment stage, and shares a management focus with continued weed control. The monitoring data results reveal the establishment of several natives introduced at the site, as well as the continued persistence of some of the non-native species. We are beginning to focus more on “percent frequency” data as an indicator of a species potential to expand cover on the site. Over time this can assist in helping target both desired and undesired species that have grown comfortable at the Bank.

John Christy summarizes the bank’s vegetation conditions in his 2013 monitoring report: “Overall, vegetation at Foster Creek in 2013 did not show much change from 2012. Transects and upland plots had 17 more species in 2013 than were found in 2012, each gaining an average of 6.6 species. Ten species were new to the monitoring plots, and seven of these are potentially troublesome weeds. However, the relative amount of native vs. exotic taxa, and upland vs. wetland taxa in 2013 was more or less the same as in 2012. *Deschampsia caespitosa*, the

dominant species on the site, also showed little overall change from 2012 to 2013. The litter and vole problems of 2012 have abated. *Anthoxanthum odoratum*, *Geranium dissectum*, *Holcus lanatus*, *Leucanthemum vulgare*, *Poa trivialis*, *Vicia hirsuta*, and *Vicia tetrasperma* should be monitored to deter future infestation problems.”

In 2013 the bank contained 160 species site-wide, of which 113 (71%) are native and 47 (29%) exotic. Within the prairie habitat 134 species are present of which 89 (66%) are native and 45 (34%) are exotic. Of woody (tree and shrub) species that are present within the forested wetland and buffer areas, a total of 26 species are present with 24 (92%) native and 2 (8%) exotic.

Monitoring and a continued site presence guide our weed control program which currently occupies the majority of management effort at the bank. Spot spraying of individual weeds occurs throughout the growing season when conditions warrant. Herbicides include non-selective, broadleaf specific, and grass specific varieties depending on the target species and timing of application. *Lotus corniculatus*, *Holcus lanatus*, *Anthoxanthum odoratum*, and *Poa trivialis*, *Geranium molle* and *Geranium dissectum* were the primary targets in 2013. *Bromus racemosus* has begun to garner our attention. A number of previously numerous invasives (*Phalaris arundinacea*, *Leucanthemum vulgare*, *Hypochaeris radicata*, *Parentucellia viscosa*, and *Trifolium pretense*) remain present at the site but are under control as the result of management activities. A 2013 outbreak of *Vicia* species (*hirsuta* and *tetrasperma*) in some of the drier areas of the bank was difficult to target/control without significant collateral damage. The unusually warm and dry weather in early spring may have tilted the advantage to these fast growing annuals. If they appear en masse again in 2014 they will be mowed at the flowering stage.

Moles and their signature “soil mounds” are ubiquitous at the Bank. The mounds play a valuable role in physical soil mixing and we continue to experiment with seeding various native forb species onto the exposed soil to establish natives to combat the typical emergence of non-natives from the existing seed bank. The mounds have become a primary seeding target for the establishment of native forbs, and as such these soil mounds are aggressively seeded when they appear throughout the fall and winter. The native forbs *Epilobium densiflorum*, *Madia elegans* and *M. gracilis*, *Ranunculus occidentalis*, *Potentilla gracilis*, *Clarkia amoena* and *C. purpurea*, and *Sidalcea nelsonii* were the primary forbs seeded in 2013. Also seeded for the first time on the mounds was *Heraculum lanatum*. Since none of the site can be control-burned due to proximity of nearby structures, we look at the ever-present mounds as an opportunity to establish native forbs, especially annuals, by seed. An informal (personal) goal of the Bank’s vegetation program is to have native species emerging from new mole mounds.

Percent frequency on a transect basis was added to the herbaceous data summary in 2012 and was continued in 2013. For non-native herbaceous species, a species with a consistently high frequency is *Myosotis discolor*, while on the rise from 2012 is *Poa trivialis*, and on a decreasing trend is *Lotus corniculatus*. For native herbaceous species, *Deschampsia caespitosa* and *Epilobium densiflorum* are consistently high, *Sidalcea nelsonii* (and *S. campestris*) and *Ranunculus occidentalis* are on the rise, and *Deschampsia elongata* is trending slightly down. Individual species frequency can be found in Appendix F of John Christy’s report (Appendix B).

**Wet Prairie** – The monitoring data results show the establishment of several natives introduced at the site, as well as the persistence of some of the weed species. Native grasses are well represented by 14 species with *Deschampsia caespitosa* containing an average cover of 22% within the plots (24% in 2012), *Hordeum brachyantherum* at 11% (5% in 2012), and *Deschampsia elongata* at 6% (13% in 2012). Native forbs are abundant (54 native species), but individual species continue to have a difficult time achieving the performance standard of >10% cover. *Epilobium densiflorum* contained the highest 2013 average native forb cover within the plots at 6% (4% in 2012). *Sidalcea* sp. contained 4% average cover in the plots in 2013, up from 1% in 2012 (note: due to difficulty in determining *Sidalcea* seedling plants

at the species-level we combined *S. nelsonii* and *S. campestris* cover data). This is somewhat perplexing as the site overall contains several thousand individual *Sidalcea* plants (primarily *S. nelsonii*) and the plot areas seem grossly under-represented. That said, we feel *Epilobium* and *Sidalcea* continue to be the strongest candidates to achieve the “>10% native forb cover” to meet the performance standard and will continue to support efforts in that regard.

Management of non-natives continued throughout the prairie in 2013. The control of *Leucanthemum vulgare*, *Phalaris arundinacea*, and *Hypochaeris radicata* has been effective to date, while *Lotus corniculatus*, *Myosotis discolor*, *Anthoxanthum odoratum*, and *Poa trivialis* continue to be a primary concern. *Lotus* cover has been lessened dramatically from the “bloom” in 2012, but remains a threat to be dealt with. Overall, control is primarily through spot spraying of individual plants or groups of plants.

**Forested Wetland** – In 2013, all annual forested wetland performance categories were met, with additional consecutive years required to meet the comprehensive performance standards for tree density, shrub density, percent herbaceous cover, and percent invasive cover (Table 2). From 2012 to 2013 tree density increased from 596/acre to 632/acre, shrub density stayed constant at 602/acre, native herbaceous cover decreased slightly from 58% to 54%, and invasive herbaceous species increased slightly from 15% to 18%. Target density for trees and shrubs is being met, though there are a few areas that will receive supplemental plantings in 2014 to replace dead plants or increase density in strategic locations. Although the condition of the herbaceous strata is meeting targets, the trend in 2013 is away from those targets: native herbaceous cover from 58% in 2012 to 54% in 2013; and invasive cover from 15% in 2012 to 18% in 2013. Additionally, there remain relatively small clusters of non-natives in some parts of the area. Consequently, additional management efforts will be targeted in 2014 to address these potential shortcomings.

#### **Establishment of Listed Prairie Species**

The Bank has coordinated with the USFWS and ODA to permit the introduction of appropriate federal and state listed prairie species within the Bank’s wet prairie habitat. The Bank is currently permitted for specific introduction of *Sidalcea nelsoniana* and *Lomatium bradshawii*. Currently, several thousand plants of *Sidalcea nelsoniana* are present within the wet prairie, originating from a 2009 seeding and 2010 planting. Only a few plants of a 2011 introduction of *Lomatium bradshawii* are present, although those present appeared healthy and we expect them to continue growing and to flower in 2013. There are no additional *Lomatium bradshawii* plantings or seeding planned for 2014.

Although not technically a listed species, *Penstemon hesperius* (currently lumped under *P. rydbergii* var. *oreocharis*) has been identified by John Christy as a recently rediscovered local endemic species that would be suitable for establishment at the Foster Creek bank. We plan to pursue introduction in 2014.

## **5 CORRECTIVE ACTIONS AND RECOMMENDATIONS**

Post monitoring corrective actions fall into two primary categories: weed control to reduce the occurrence and density of targeted species, and native forb establishment to increase the density and occurrence of select forb species. These two core activities are directed through an adaptive management process with numerous points of input taken into consideration, which includes formal monitoring.

#### **Weed Control**

Weed control efforts are on-going. In 2013 weed control activities concentrated on combining summer mowing with follow-up spot spraying. Approximately 40% of the prairie was mowed during late summer in various sized patches in select areas of the prairie. This allowed the majority of the prairie to remain as relatively undisturbed habitat for wildlife (vesper and grasshopper sparrows call the site home). An assessment of the mowed areas will be done in 2014 and that information used to potentially target

additional areas for next summer mowing with follow-up spot spraying and seeding. We would like to keep a mosaic pattern for the prairie for habitat considerations (mowed/unmowed) with perhaps a one to two year interval between disturbance, but we will wait to evaluate the results of this first year's activities before committing to a regular rotation.

Areas of the forested wetland that contain weedy herbaceous cover were mowed and later spot sprayed. As tree and shrub canopies are established most of the troublesome species will be outcompeted by shade, but that will be several years at the current growth rates so until then annual efforts will continue to reduce their densities.

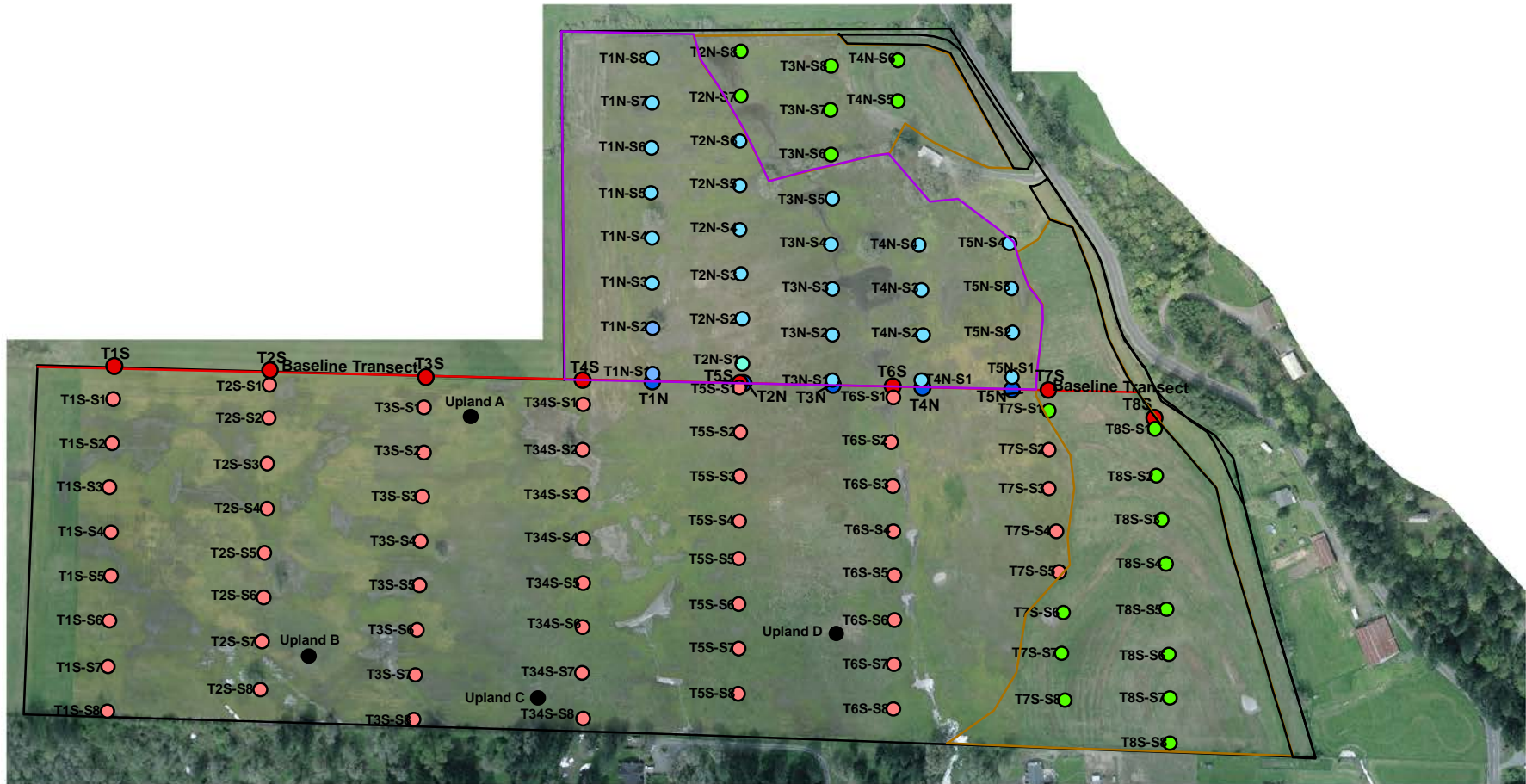
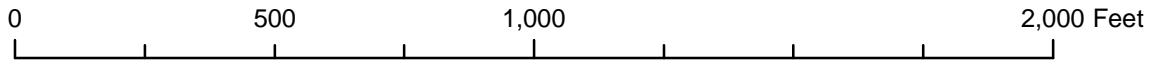
In order to standardize the list of non-native invasive species for use in evaluating prairie performance standards, we will use those species listed in the 2011 paper: "Management Strategies for Invasive Plants in Pacific Northwest Prairies, Savannas, and Oak Woodlands" (Dennehy et al.). The paper's Table 1 identifies invasive non-native species of existing or potential ecological importance (refer to "Oregon" column). Other than the Oregon Department of Agriculture's invasive species list (which is more agriculturally oriented), this is the only current listing put together by local experts we know of that identifies invasives for specific grassland/woodland habitat in Oregon. While we will continue to address on the ground non-native species that take an aggressive turn, this standardized list will allow continuity for performance standards.

### **Vegetation Establishment**

Establishing additional native species and increasing the density of select prairie cohort species is a core activity at the Bank. Species for establishment are selected each year based on monitoring results, availability, integration with weed management activities, and appropriateness for the Bank's habitats. Seeding and a limited installation of potted plants were performed in 2013. We seeded areas of the mowed sections of the wet prairie in the fall to take advantage of the relatively open conditions for plant establishment. A trial seeding in the early spring of *Madia* and *Clarkia* resulted in good establishment, so additional seeding of those species will occur in late winter/early spring of 2014. Newly seeded in fall 2014 was *Heraculum lanatum* and *Potentilla glandulosa*. We performed some test plantings of *Aster subspicatus* and *Sisyrinchium bellum* from nursery grown plants in spring 2013. These did well, and have been followed up with additional plantings and seeding in the fall. Mole mounds throughout the prairie are seeded with native forbs from late fall to late winter. A quite strong freeze gripped the site in early December. Extended freezing temperatures with no insulating snow cover sent frozen conditions several inches below the ground surface. It will be interesting to see how the plant community reacted to the stress come next spring/summer.

## REFERENCES

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- USFWS August 2008. Draft Recovery Plan for Prairie Species of Western Oregon and Southwestern Washington. Region 1, U.S. Fish and Wildlife Service. Portland, Oregon
- Vascular Plants of the Prairies and Associated Habitats of the Willamette Valley- Puget Trough-Georgia Basin Ecoregion. Unpublished data.
- Wetland Systems Restoration and Conservation, LLC. May 28, 2006. Foster Creek Wetland Mitigation Bank Instrument, Clackamas County, Oregon.



- South Transect ●
- South Transect Sample Plot ○
- North Transect ●
- North Transect Sample Plot ○
- Forested Wetland Sample Plot ●
- Upland Sample Plot ●

**Foster Creek Wetland Bank  
2013 Monitoring Report**

**Figure 1 - Monitoring Site Map**

Aerial Photo Date: April 15, 2009



**APPENDIX A**  
**2013 CREDIT LEDGER**

**Foster Creek Wetland Mitigation Bank - Credit Ledger 2013**

Event / Credit Purchaser	Date	Total Credits Eligible for Release	Total Financial Assurance of Credits	ODSL Permit #	ACOE Permit #	HGM Class and Subclass					Cowardin Class			Credit Purchase	Total Credits Sold To Date	Total Potential Credits To Be Available
						Depress Closed	Depress Outflow	Slope/ Flats	Riverine Flow-Thru	Riverine Impound	PEM	PFO	PSS			
<i>MBRT - MOA</i>	30-Jun-06	4.20	-	<b>36499-RF</b>	<b>200500621</b>									NA	0.00	27.56
<i>DSL Initial Credit Release - 0.25</i>	25-Sep-06	4.20	0.25	N/A	N/A									NA	0.00	27.56
<b>1 - Happy Valley credits</b>	29-Sep-06	4.20	0.25	<b>36838</b>	N/A									0.04	0.04	27.52
<b>2 - Bella Ponte Cino credits</b>	21-Nov-06	4.20	0.25	<b>36943</b>	N/A									0.06	0.10	27.46
<b>3 - Ossey Development credits</b>	2-Feb-07	4.20	1.00	<b>37080</b>	N/A									0.21	0.31	27.25
<i>DSL 2nd Release of Initial Cr. - 0.75</i>	7-Feb-07	4.20	1.00											NA	0.31	27.25
<i>Weed Control Release Request</i>	21-Feb-07	4.20	1.00											NA	0.31	27.25
<b>4 - Clackamas County credits</b>	4-Apr-07	4.20	1.00	<b>37492</b>	N/A									0.01	0.32	27.24
<b>5-Eastridge Covenant Church credits</b>	24-Apr-07	4.20	1.00	<b>26078</b>	N/A									0.04	0.36	27.20
<i>As-Built Report Submittal</i>	15-Jul-07	8.40	1.00											NA	0.36	27.20
<b>6 - Kosrow credits</b>	30-Jul-07	8.40	1.00	<b>37082</b>	<b>19991217</b>									0.08	0.44	27.12
<b>7 - Quadrant Homes credits</b>	1-Aug-07	8.40	1.00	<b>38166</b>	<b>2007309</b>									0.03	0.47	27.09
<b>8 - LIRA Development credits</b>	17-Sep-07	8.40	1.00	N/A	<b>2007495</b>									0.01	0.48	27.08
<b>9 - Goodwood Homes credits</b>	29-Feb-08	8.40	1.00	<b>39444</b>	<b>2007928</b>			0.09					0.09	0.09	0.57	26.99
<b>10 - Clackamas County credits</b>	10-Mar-08	8.40	1.00	<b>39516</b>	<b>2007894</b>			0.09	0.12		0.12	0.09	0.12	0.12	0.69	26.87
<i>Corps Approval of Hydrol. Rpt.</i>	16-May-08	14.00	1.00											NA	0.69	26.87
<b>11 - N. Clackamas School District credits</b>	26-Jun-08	14.00	1.00	<b>40136</b>	<b>2008168</b>			0.12			0.12		0.12	0.12	0.81	26.75
<b>12 - Portland General Electric credits</b>	21-Jul-08	14.00	1.00	<b>40137</b>	<b>2008161</b>			0.01	0.01		0.02		0.02	0.02	0.83	26.73
<i>Financial Assurance Purchase #3</i>	23-Jul-08	14.00	3.00											NA	0.83	26.73

**Foster Creek Wetland Mitigation Bank - Credit Ledger 2013**

Event / Credit Purchaser	Date	Total Credits Eligible for Release	Total Financial Assurance of Credits	ODSL Permit No.	ACOE Permit No.	HGM Class and Subclass					Cowardin Class			Credit Purchase	Total Credits Sold To Date	Total Potential Credits To Be Available
						Depress Closed	Depress Outflow	Slope/ Flats	Riverine Flow-Thru	Riverine Impound	PEM	PFO	PSS			
<i>DSL 3rd Release of Credit. - 2.0</i>	28-Jul-08	14.00	3.00										NA	0.83	26.73	
<b>13 - N. Clackamas School District credits</b>	29-Jul-08	14.00	3.00	<b>40596</b>	<b>2008310</b>			0.95			0.95		0.95	1.78	25.78	
<i>Credit Recalculation (-0.44)</i>	20-Oct-08	14.00	4.00										NA	1.78	25.78	
<i>DSL 4th Release of Credit. - 1.0</i>	13-Feb-09	14.00	4.00										NA	1.78	25.78	
<b>14A - Oregon Military Department credits</b>	16-Feb-09	14.00	4.00	<b>40597</b>	<b>200800143</b>	0.48		0.48		0.48	0.96		0.48	1.44	24.34	
<b>14B - Oregon Military Department credits</b>	16-Feb-09	14.00	4.00	<b>EN -4838</b>	<b>N/A</b>	0.08		0.07		0.07	0.14		0.08	0.22	24.12	
<b>15 - NACO Land II credits</b>	12-Mar-09	14.00	4.00	<b>39536</b>	<b>200700963</b>			0.41			0.21		0.20	0.41	23.71	
<i>DSL Approval of Hydrology Rpt.</i>	3-Apr-09	14.00	4.00										NA	3.85	23.71	
<i>DSL 5th Release of Credit. - 1.0</i>	4-Sep-09	14.00	5.00										NA	3.85	23.71	
<b>16 - Oregon Military Department credits</b>	16-Sep-09	14.00	5.00	<b>EN -4838</b>	<b>N/A</b>	0.10		0.09		0.09	0.18		0.10	0.28	23.43	
<i>DSL 6th Release of Credit - 2.00</i>	18-Jan-11	14.00												4.13	23.43	
<b>17 - Oregon City Public Works</b>	18-Jan-11	14.00	7.00	<b>44900-RF</b>	<b>NWP-2010-32</b>						1.37		1.43	5.56	22.00	
<b>18 - Bonneville Power Admin.</b>	13-May-11	14.00	7.00	<b>46502-RF</b>	<b>N/A</b>			0.099				0.099	0.1	5.66	21.90	
<b>19 - Oregon Dept. of Transportation</b>	13-May-11	14.00	7.00	<b>16401-RF, 26248-GA</b>	<b>1999-00021, 2002-000902</b>			0.45			0.45		0.45	6.11	21.45	
<b>20 - Bonneville Power Admin. Credits</b>	18-May-11	14.00	10.00	<b>46157-RF</b>	<b>NWP-2011-438</b>	3.64						1.14	2.5	3.64	9.75	17.81
<b>21 - Bonneville Power Admin. Credits</b>	27-Jul-11	14.00	10.00	<b>46502-RF</b>	<b>NWP-2011-88</b>			0.025					0.025	0.03	9.78	17.78
<b>22 - Newland Communities</b>	23-Nov-11	14.00	12.00	<b>37480-RF</b>	<b>NWP-2006-888</b>			1.23			1.23		1.23	11.01	16.55	
<i>Completion (65% v. 75%)</i>	15-Dec-11	17.91	12.00													
<b>23 - Allen Properties, LLC</b>	13-Apr-12	17.91	12.00	<b>48456-RF</b>	<b>NWP-2011-513</b>			0.05			0.05		0.05	11.06	16.5	
<b>24 - AT Properties</b>	4-Jan-13	17.91	12.00	<b>52049-RF</b>	<b>NA</b>			0.05			0.05		0.05	11.11	16.45	
<b>25 - Oregon Dept. of Transportation</b>	15-Jan-13	17.91	12.00	<b>52103-RF</b>	<b>NWP-2012-482</b>		0.04	0.268	0.024		0.31	0.03	0.34	11.45	16.11	

**Foster Creek Wetland Mitigation Bank - Credit Ledger 2013**

<b>26 - Clackamas County DTD</b>	28-Jan-13	17.91	12.00	52031-RF	N/A			0.3			0.29		0.01	0.3	11.75	15.81
<b>27 - ODOT</b>	1-Apr-13	17.91	12.00	52265-RF	NWP 2012-513							0.02		0.02	11.77	15.79
<b>28 - Douglas Ridge Rifle Club</b>	19-Aug-13	17.91	12.00	WD 11-0054	NWP 2009-574			0.39			0.39			0.39	12.16	15.4
<b>29 - Black Horse Estates</b>	13-Nov-13	17.91	12.00	NA	NWP 2013-81			0.03			0.03			0.03	12.19	15.37

**APPENDIX B**  
**2013 VEGETATION MONITORING REPORT**  
**JOHN CHRISTY**

**2013 VEGETATION MONITORING,  
FOSTER CREEK WETLAND MITIGATION BANK,  
CLACKAMAS COUNTY, OREGON**



**Prepared for**

**Wetland Systems LLC**

**by**

**John A. Christy**

**September 2013**

## EXECUTIVE SUMMARY

Overall, vegetation at Foster Creek in 2013 did not show much change from 2012. Transects and upland plots had 17 more species in 2013 than were found in 2012, each gaining an average of 6.6 species. Ten species were new to the monitoring plots, and seven of these are potentially troublesome weeds. However, the relative amount of native vs. exotic taxa, and upland vs. wetland taxa in 2013 was more or less the same as in 2012. *Deschampsia caespitosa*, the dominant species on the site, also showed little overall change from 2012 to 2013. Annual haying is recommended to mediate growth of *Deschampsia caespitosa*. The litter and vole problems of 2012 have abated. *Anthoxanthum odoratum*, *Geranium dissectum*, *Holcus lanatus*, *Leucanthemum vulgare*, *Poa trivialis*, *Vicia hirsuta*, and *Vicia tetrasperma* should be monitored to deter future infestation problems. Frequent mowing of the perimeter of the site, and removal of herbaceous and woody invasives along the BPA boundary will help reduce invasion by exotic species. *Penstemon hesperius* is recommended as an addition to the planting list.

## INTRODUCTION

Wetland Systems LLC manages the Foster Creek Wetland Mitigation Bank (WMB) on 73.75 acres in northwestern Clackamas County, Oregon. The subject property is located in Township 02 South, Range 03 East, and includes tax lot 1400 in the southeast corner of Section 26, and tax lots 600 and 690 in the northeast corner of Section 35 (Wetland Systems Restoration and Conservation 2004). Pre-construction baseline wetland and vegetation assessments were completed by John Christy in 2005. Following approved mitigation plans implemented between 2005 and 2008, the site was tilled, portions were recontoured for wetland enhancement and restoration, and most herbaceous vegetation was repeatedly treated with herbicide to eliminate exotic species. Since 2008, WS has planted the site extensively with seeds, plugs, and container-grown trees and shrubs representing about 90 species of native plants. Starting in 2009, the establishment of native species has been closely monitored. Intensive spot-spraying of exotic species, and infill planting with native forbs is ongoing.

In June 2013, John Christy completed the fifth year of post-construction vegetation monitoring at the site. Periodic monitoring of vegetation enables managers and regulators to determine if federal and state performance standards for compensatory mitigation are being met at the site, and they assist in development of adaptive management strategies.

## METHODS

Monitoring of vegetation plots in 2013 was conducted on June 1, 2, and 3. A general botanical inventory of the entire site, outside of monitoring plots, was made on July 8. Measurable precipitation for the month prior to June 1 was 4.75 inches, occurring on 14 of the preceding 30 days (National Weather Service 2013). The first two weeks of May were unseasonably dry and warm, with only 0.2 inches of precipitation. Twelve of the 15 days had average temperatures exceeding 60°F, and afternoon temperatures on five days reached the low to mid 80s. Almost all precipitation occurred during the last two weeks of the month immediately prior to vegetation sampling. During this wetter period, only 5 of the 15 days had average temperatures exceeding 60°F, and only one day was over 70°F. No measurable precipitation occurred during the monitoring period. Vegetation matured somewhat earlier than normal because of the warm, dry weather, and then went dormant during the cooler wet weather.

Vegetation monitoring followed protocols described in Marshall (2007), and was the same as reported in Christy (2012). Transects and plots established by WS in 2009 consisted of a baseline transect running east to west across the property, with 13 transects running north and south from the baseline. Five transects on the north side of the baseline, and eight transects on the south side, were numbered sequentially from west to east. For vegetation sampling, WS installed 98 plots (quadrats) of 1m<sup>2</sup> along the transects. In addition, four upland plots of the same dimension were established on the south side of the baseline, one (B) located between transects T2S and T3S, two (A, C) located between transects T3S and T4S, and one (D) located between transects T5S and T6S. WS recorded GPS coordinates for all 102 plots, marked the beginning and endpoints of the baseline and transects with wooden stakes, and marked plot locations with rebar topped with orange plastic caps, and pin flags.

Per Marshall (2007), percent cover of all plant species and bare ground/ litter was recorded in the 102 monitoring plots. Plots were sampled along the right side of each transect, beginning at the initial or zero point for each transect along the baseline, and extending north or south to the endpoint of each transect. For transects north of the baseline, the points flagged by WS marked the SW corner of each plot, and for transects south of the baseline the points marked the NE corner of each plot. The four upland plots, all located south of the baseline, were oriented parallel to adjacent transects, and the points flagged by WS marked the NE corner of each plot. One photograph was taken of each transect, facing either north or south from the initial or zero point along the baseline, looking toward the endpoint of each transect. Two photographs were taken of each upland plot, one facing south toward the endpoints of adjacent transects, and one facing west.

Along portions of five transects (T2N, T3N, T4N, T7S, T8S) that were planted with trees and shrubs to establish palustrine forested (PFO) wetland, 19 circular plots with a radius of 30 ft were sampled to count stems of trees and shrubs. The points flagged by WS for the 1m<sup>2</sup> plots were used as centerpoints for the circular plots. Therefore, each of the 19 circular plots had a 1m<sup>2</sup> herbaceous plot nested within it, using the same flagged point as a point of reference.

Nomenclature follows the current [Oregon Flora Project checklist](#) (last updated August 2013). Wetland indicator status follows the [July 2013 National Wetland Plant List](#) (NWPL; Lichvar 2013). To simplify summaries of wetland indicator status, species were grouped into three categories, per the Dominance Test used in wetland delineations (US Army Corps of Engineers 2010): wetland (OBL, FAC, FACW), upland (UPL, FACU), and unknown (NI, UNK). Species with the indicator NI are presumably upland (ODSL 2009), but are included here in the "unknown" category.

## **EXISTING VEGETATION**

Data recorded in 2013 from the 102 1m<sup>2</sup> herbaceous monitoring plots and the 19 circular PFO plots are provided in Appendix A (transects, including PFO data) and Appendix B (upland plots). Species recorded between 2009 and 2012 but not seen in 2013 were left on the data sheets to illustrate changes in species composition. Photographs are provided in Appendix C (transect photos 1-13), Appendix D (upland plot photos 14-21), and Appendix E (miscellaneous photo 22).

Occurrence data (frequency, average percent cover, minimum percent cover, maximum percent cover) for each species in the 98 transect plots are summarized in Appendix F by transect (= 13 sample units). The 4 upland plots are included, summarized as a separate, single sample unit.

Summaries from both 2012 and 2013 are presented side-by-side in Appendix F to compare changes that have occurred since 2012. Data from PFO plots was not summarized.

## **Locational changes in transects and monitoring plots since 2012**

**Transect 1.** The wooden stake at the beginning (zero point) of Transect 1 North was missing in 2013. It was originally located about 4 feet north of the 2x4 bird perch currently standing near that location. Christy set a temporary flag to mark the approximate location of the zero point of the transect, based on where the baseline intersected the alignment of monitoring plots along the transect.

**Upland monitoring plot D.** Mark Vlahakis could not relocate the original marker for Upland Plot D in 2013. He reestablished the marker in approximately the same location as the original.

## **Vegetation inside monitoring plots**

**1. Number of species.** A total of 140 species were recorded from monitoring plots in 2013, 17 more than were found in 2012 (Table 1). The 14 transects and combined upland plots each gained an average of 6.6 species in 2013, ranging from 2 to 11 per sample. Of these new species, 2 were exotic grasses, 9 were native sedges, and 82 were forbs, 17 of which were exotic. The increase in numbers could be due in part to removal of the heavy *Deschampsia* litter present in 2012, which appeared to suppress numbers of species. Ten species new to the monitoring plots were seen in 2013, three of which (*Micranthes oregana* [= *Saxifraga oregana*], *Sidalcea campestris*, *Sisyrinchium bellum*) had been planted by WS. The *Sidalcea campestris* was undoubtedly present in the plots for several years as seedlings, but was not separable from *S. nelsoniana* until both began widespread flowering at the site in 2013. Seven of the new species (*Aira caryophyllea*, *Cirsium arvense*, *Galium aparine*, *Lapsana communis*, *Poa palustris*, *Senecio jacobea*, *Vicia tetrasperma*) are potentially troublesome weeds.

**2. Native vs. exotic species.** The number of native and exotic taxa increased in 2013 by 9 and 8, respectively, decreasing the percentage of native taxa by 2 points, and increasing the percentage of exotic taxa by the same amount (Figure 1; Table 2). Unlike all sample years since 2009, the change in percentage is less than 5% and probably not statistically significant. It indicates that the relative amount of native vs. exotic taxa in 2013 was more or less the same as in 2012.

**3. Wetland indicator status.** In order to standardize wetland indicator status over the life of the monitoring project, records for all species recorded in plots between 2009 and 2013 were updated to the [July 2013 National Wetland Plant List](#) (NWPL). Status was changed for 2 species since publication of the draft 2012 NWPL, but this did not affect their scoring in wetland and upland groups (Table 3). Compared to 2012, upland taxa increased by 2 percentage points, and wetland taxa decreased by 3 points (Figure 2; Table 4). Some of the change in the upland number is attributable to the addition of 9 new taxa—3 new ones found in 2013, and 6 reclassified as upland in the draft 2012 NWPL. Increase in the unknown category is due to discovery of taxa not included or classified in the 2013 NWPL. In contrast, only 2 new wetland taxa were found in 2013, and only 4 were reclassified as wetland in the 2012 NWPL.

**4. Changes within monitoring plots.** Appendix F shows changes that have occurred in plots since 2012. The dense litter layer from 2011's heavy growth of *Deschampsia caespitosa* was removed by haying in 2012 and decomposition, and was a minor concern in 2013. Also, the

meadow vole population and signs of herbivory were much lower in 2013 than in 2012, presumably because the population had crashed after the peak in 2012. WS installed a number of 2x4 raptor perches throughout the property, which may have helped reduce the vole population.

Primary species in the transects and combined upland plots with frequencies of 60% or more in 2012 or 2013 showed no real change from 2012. *Deschampsia caespitosa* remains dominant at the WMB, present in 13 of the 14 (93%) plots meeting the 60% frequency rule, but it staid virtually the same as in 2012, with increases in mean frequency and cover of only 0.8% and 0.7%, respectively. Mean frequency and cover in *Deschampsia elongata* declined by 17.5% and 11%, respectively. *Hordeum brachyantherum* increased mean frequency by 18.5%, but increased mean cover by only 1.6%. With the exception of *Myosotis discolor* that is treated in the following Section 5 below, *Epilobium densiflorum* was the only native forb that met the 60% frequency rule in a majority of plots (13 of the 14, or 93%), increasing mean frequency by 6.5% and mean cover by 1.8%. Moss increased increased mean frequency by 1.5% but increased cover by only 0.25%. Figures for bare surface were not examined because it behavior varies widely from year to year because of random denudation from herbicide applications and mole activity.

Photos of the transects and upland plots (Appendix C) also show no obvious changes in composition or cover from 2012.

**5. Weeds.** *Lotus corniculatus* showed a sudden increase in 2012, prompting early cutting for hay before the *Lotus* could set seed. By 2013, it had declined 12-87% in frequency (mean = -32.5), and 1-22% in cover (mean = -6.7) in the 11 transects and combined upland plots that met the 60% frequency rule in 2012 (Appendix F). Frequency is an important measure because it often reveals future trends in a stand of vegetation. While average cover may be low, a high frequency indicates that plants may come to dominate a site if habitat is suitable.

Prompt action in 2012 may have averted or postponed futher proliferation of *Lotus corniculatus*, but it is difficult to predict what species will become problematic in the future. Both *Poa trivialis* and *Holcus lanatus* could be potentially troublesome in coming years. In 2013, *Poa trivialis* showed gains of 12-75% in frequency (mean = 33.8) and 2-10% in cover (mean = 4.6) in 7 of the 8 transects meeting the 60% frequency rule. Similarly, *Holcus lanatus* increased 13-62% in frequency (mean = 36.0) in 3 of the 4 transects meeting the frequency rule, but gained only 1-3% in cover (mean = 0). In seven transects and upland plots meeting the 60% rule, *Parentucellia viscosa* increased mean frequency by 8.9% but showed a mean loss in cover of 0.1%. In contrast, although the native but weedy *Myosotis discolor* occurred in all 14 transects and upland plots and met the frequency rule, its behavior was much more variable, with mean increases of only 3.6 in frequency and 2.4 in cover, suggesting that it may not be a strong long-term competitor. Other potential threats, *Anthoxanthum odoratum* and *Leucanthemum vulgare*, met the 60% frequency rule only twice and once, respectively. The small sample sizes for these species don't tell us much, but they should be monitored in the future. Similarly, the behavior of *Geranium dissectum*, *Vicia hirsuta*, and *Vicia sativa* in the upland plots don't tell us much, other than that the first species increased in frequency by 25% since 2012, while the other two declined 50%. *Vicia hirsuta* forms dense, tangled stands in localized areas. *Vicia tetrasperma*, seen for the first time in 2013, is similar to *Vicia hirsuta* and forms the same tangled stands. Future plot data should be monitored to detect if any other exotic species are increasing in frequency, even if their cover remains low. This may provide a key to identify the next problem species.

As noted in previous years, exotic *Crataegus monogyna* is actively invading many areas in the WMB because of dispersal by birds from the perimeter hedgerows and beyond. At present, most

occurrences are seedlings and difficult to control, but when plants grow larger they should be easier to detect and remove.

### **Vegetation outside monitoring plots**

As part of ongoing enhancement of species diversity on the site, WS planted a number of new species in 2012 or early 2013 outside of the monitoring plots: *Amsinckia menziesii*, *Artemisia douglasiana*, *Delphinium nuttallii*, *Heracleum maximum* (= *H. lanatum*), *Lomatium bradshawii*, *Perideridia gairdneri*, *Rumex salicifolius*, *Salix scouleriana*, and *Sisyrinchium bellum*. Of these, Christy found only *Lomatium bradshawii* and *Sisyrinchium bellum* in 2013.

The general botanical inventory of areas outside of monitoring plots, made on July 8, yielded 78 species, resulting in 21 more species than seen in the general inventory of 2011 (Table 5). While not including any monitoring plots, it did include peripheral fenceline species, and many other species also occur in the monitoring plots. In 2013, 57 (73%) were native and 21 (27%) were exotic. Of the species observed, 38 (49%) have a wetland indicator status of OBL, FACW, or FAC, and the remaining 40 (51%) are upland (FACW or NI). As in 2011, most upland and exotic species were confined to the constructed berms along the north and east side of the site, and to weedy strips 50 to 100 feet wide along fencelines at the east and west ends of the site, where control of exotics and establishment of native wetland species seems to have been less successful.

The wetland species that self-seeded into vernaly-flooded areas continue to spread, and some early seral annual species such as the exotic annual *Lythrum portula* are being replaced by native perennials, particularly *Eleocharis palustris* and *Leersia oryzoides* (Photo 22). The *Isoetes nuttallii* found in 2012 could not be relocated in 2013.

In 2013, Christy did not detect some of the species planted by WS in 2011-2012 (*Allium amplexans*, *Boykinia major*, *Delphinium menziesii*, *Delphinium nuttallii*, *Erigeron philadelphicus*, *Iris chrysophylla*, *Sisyrinchium douglasii*, *Stachys cooleyae*, *Tellima grandiflora*, *Viola adunca*), or in 2012-2013 (*Lomatium bradshawii*).

## **OBSERVATIONS AND RECOMMENDATIONS**

*Deschampsia caespitosa*, the dominant species at the WMB, showed little overall change from 2012 to 2013. This could have a desirable affect on performance standards for the WMB that could enhance forb growth. The slowdown in *Deschampsia caespitosa* may have resulted from both management activity in the plots and setback from the heavy litter in 2012. Annual haying in June may be the best management tool to mediate *Deschampsia caespitosa* by reducing litter buildup, suppressing season-long production of *Deschampsia*, and enhancing forb production the following year by making more space and light available. It will also help reduce seed set and proliferation of potentially problematic weeds, as was seen with *Lotus corniculatus* in 2012. Burning the site is not a feasible alternative because of the proximity of housing and the BPA substation.

Ongoing monitoring of *Anthoxanthum odoratum*, *Geranium dissectum*, *Holcus lanatus*, *Leucanthemum vulgare*, *Poa trivialis*, *Vicia hirsuta*, and *Vicia tetrasperma* may help deter future infestation problems. Raptor perches installed in 2012 will help control the vole population.

Ash and cottonwood are expanding rapidly in the maturing PFO plots (Photo 23). Shade from these will eventually exclude whatever else is planted among them, reducing the need for annual maintenance, but this probably will not occur for 10-15 years. Natural seeding of *Fraxinus latifolia*, *Populus trichocarpa*, and this year's appearance of *Pseudotsuga menziesii* seedlings indicate that at least part of the site will end up looking much like the seasonally-flooded stand of ash, cottonwood, Douglas fir and oak along the south boundary of the property.

Significant amounts of invasive species, particularly *Crataegus monogyna*, *Holcus lanatus*, *Phalaris arundinacea*, and *Rubus bifrons* occur in the hedgerows and open fields around the perimeter of the WMB (Photo 24). These areas undoubtedly serve as sources of propagules and facilitate invasion of these species onto the site. Although additional seed sources obviously will remain beyond these boundaries and continue to provide avenues for invasion by weeds, these boundaries could be better managed to reduce some of the influx. I recommend continuing negotiations with BPA to remove invasive species from the hedgerows and the fields. A trained crew could be hired to cut woody material and treat the stumps with herbicide to prevent resprouting. Metro routinely hires such crews for managing their properties, so expertise is readily available. The fields would need complete site prep as was done for the WMB, perhaps through joint funding. The 50-100 foot strips along the west, south, and east boundaries of the tract that were never planted to prairie also serve as seed sources for unwanted weedy forbs and grasses, particularly *Anthoxanthum odoratum*, *Bromus racemosus*, *Holcus lanatus*, *Lotus corniculatus*, and *Phalaris arundinacea*. If these strips are never going to be treated and planted to prairie, I recommend frequent edging with a mower to reduce vegetation height and seed set. This would be a low-cost alternative to site prep, and would create easy access areas around the perimeter for management.

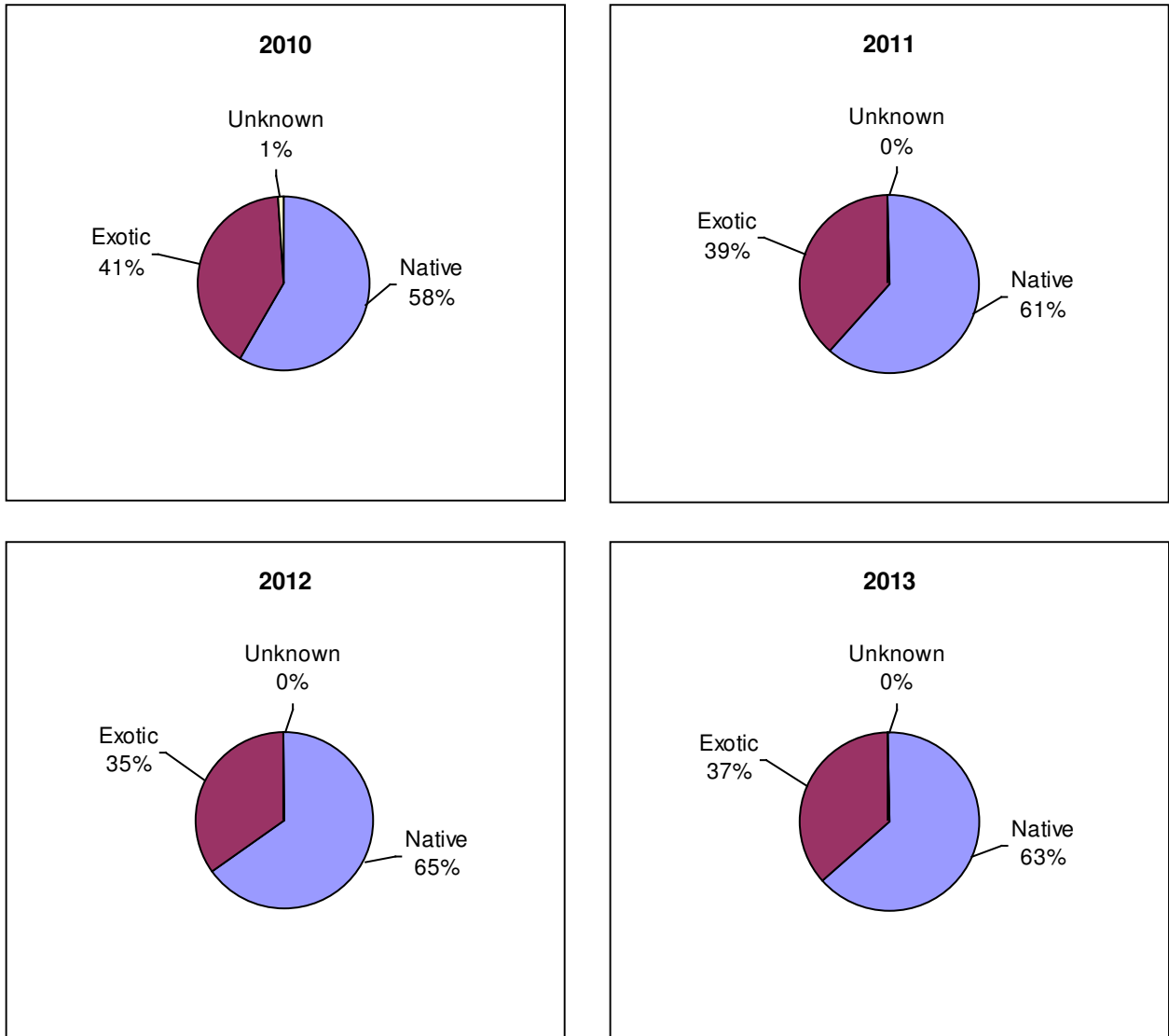
A little-known species that could potentially be planted at Foster Creek is *Penstemon hesperius*. This is a local endemic species, first described from Washington County in the 1930s and not seen since until about 2007. Currently lumped under *P. rydbergii* var. *oreocharis* with a wetland indicator status of FACU, recent study and newly found relict populations in the Metro area indicate that it is a distinct species and will be resurrected under the name *Penstemon hesperius*. If WS is interested in obtaining plants, Christy can provide contact information for the local *Penstemon* specialist who is growing material for new plantings. White oak could also be planted on the drier portions of the property, as this seems to be a natural component of the seasonally flooded woodland along the south edge of the WMB.

In 2013, a number of clayey anthills were seen within the planted prairie in the WMB. These would have developed after the original site prep leveled the site, and are good indicators of a developing seasonally wet prairie. The ants construct the hills of native clay and build them high enough so the nests are elevated above flooded surfaces in winter. These features are notable in prairie remnants further south in the Willamette Valley.

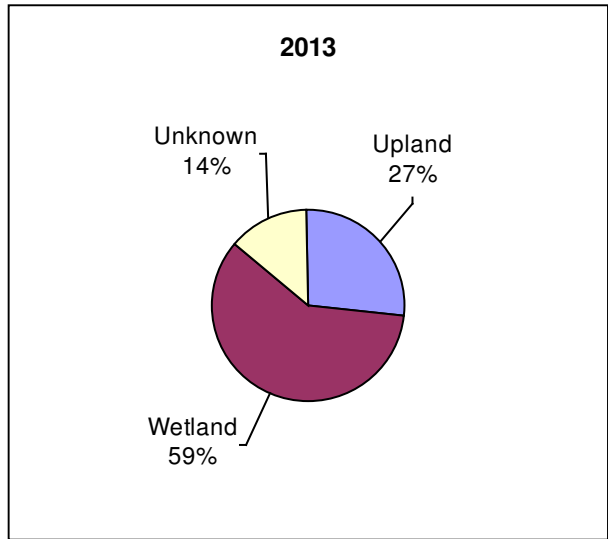
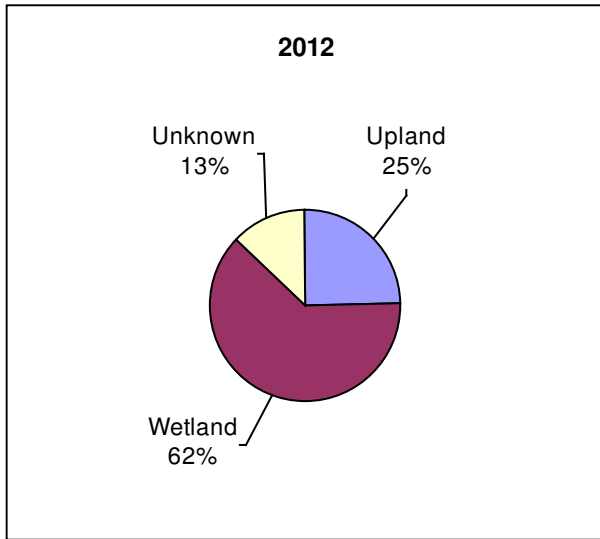
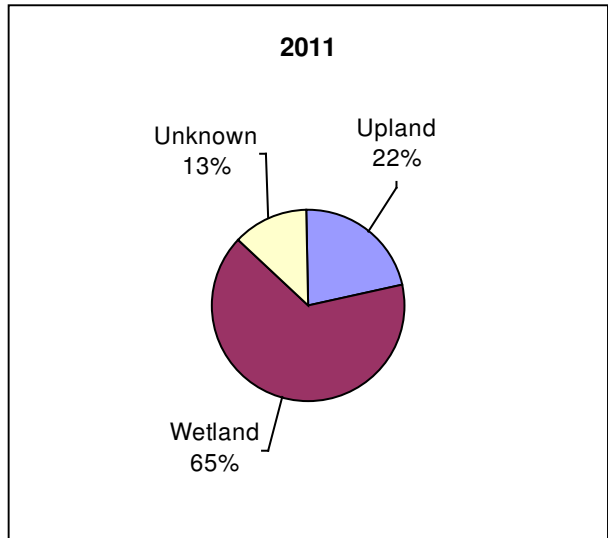
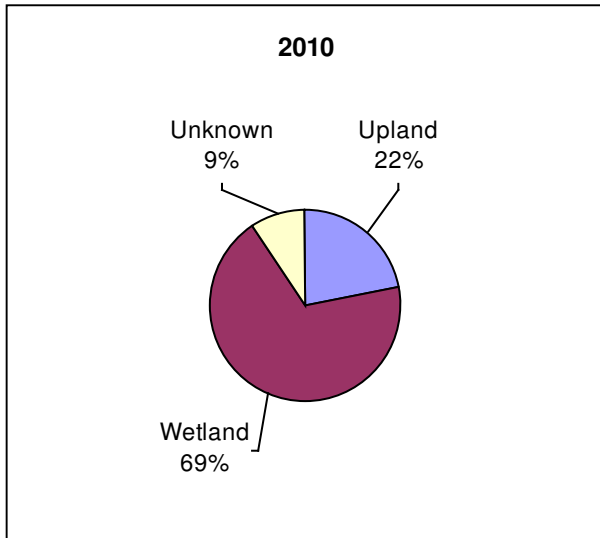
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**Figure 1. Total percentage of native vs. exotic species, monitoring plots, Foster Creek Mitigation Bank, 2010-2013.**



**Figure 2. Total percentage of species by wetland indicator group, monitoring plots, Foster Creek Mitigation Bank, 2009-2013.** Upland = UPL, FACU; Wetland = OBL, FAC, FACW; Unknown = NI, UNK. Indicator status for all years based on July 2013 National Wetland Plant List.



**Table 1. Species occurring in monitoring plots, Foster Creek Mitigation Bank, 2009-2013. Wetland indicator status based on July 2013 National Wetland Plant List.**

Taxon	Wetland Indicator Status	Native/ Exotic	2009	2010	2011	2012	2013
<b>Palustrine Emergent (Prairie)</b>							
<i>Achillea millefolium</i>	FACU	Native	N	N	N	Y	Y
<i>Agrostis exarata</i>	FACW	Native	Y	Y	Y	Y	Y
<i>Agrostis stolonifera</i>	FAC	Exotic	Y	Y	Y	Y	Y
<i>Aira caryophyllea</i>	FACU	Exotic	N	N	N	N	Y
<i>Allium vineale</i>	FACU	Exotic	Y	Y	Y	N	Y
<i>Alopecurus geniculatus</i>	OBL	Native	Y	Y	Y	Y	Y
<i>Alopecurus pratensis</i>	FAC	Exotic	N	N	Y	N	N
<i>Anthoxanthum odoratum</i>	FACU	Exotic	Y	Y	Y	Y	Y
<i>Aquilegia formosa</i>	FAC	Native	N	Y	Y	N	N
<i>Beckmannia syzigachne</i>	OBL	Native	N	Y	Y	Y	Y
<i>Bromus racemosus</i> (= <i>B. commutatus</i> )	NI	Exotic	N	Y	Y	Y	Y
<i>Camassia quamash</i>	FACW	Native	Y	Y	Y	Y	Y
<i>Cardamine occidentalis</i>	FACW	Native	Y	Y	Y	Y	Y
<i>Carex densa</i>	OBL	Native	N	N	Y	Y	Y
<i>Carex feta</i>	FACW	Native	N	N	Y	Y	Y
<i>Carex leptopoda</i> (= <i>C. deweyana</i> ssp. <i>leptopoda</i> )	FAC	Native	N	N	Y	N	N
<i>Carex obnupta</i>	OBL	Native	N	Y	Y	Y	Y
<i>Carex pachystachya</i>	FAC	Native	N	Y	Y	Y	Y
<i>Carex unilateralis</i>	FACW	Native	Y	Y	Y	Y	Y
<i>Centaureum erythraea</i> (= <i>C. umbellatum</i> )	FAC	Exotic	N	N	Y	Y	Y
<i>Cerastium arvense</i>	FACU	Native	Y	N	N	N	Y
<i>Cerastium fontanum</i> ssp. <i>vulgare</i> (= <i>C. vulgatum</i> )	FACU	Exotic	Y	Y	Y	N	Y
<i>Cerastium glomeratum</i> (= <i>C. viscosum</i> )	FACU	Exotic	Y	Y	Y	Y	Y
<i>Cirsium arvense</i>	FAC	Exotic	N	N	N	N	Y
<i>Cirsium vulgare</i>	FACU	Exotic	Y	N	Y	N	N
<i>Collinsia grandiflora</i>	NI	Native	N	N	Y	Y	Y
<i>Crataegus monogyna</i>	FAC	Exotic	Y	Y	Y	Y	Y
<i>Danthonia californica</i>	FAC	Native	N	N	N	Y	Y
<i>Daucus carota</i>	FACU	Exotic	N	Y	N	N	N
<i>Deschampsia caespitosa</i>	FACW	Native	Y	Y	Y	Y	Y
<i>Deschampsia danthonioides</i>	FACW	Native	N	N	Y	N	N
<i>Deschampsia elongata</i>	FACW	Native	Y	Y	Y	Y	Y
<i>Dichelostemma congestum</i>	NI	Native	Y	Y	N	N	Y
<i>Downingia elegans</i>	OBL	Native	Y	N	N	N	N
<i>Eleocharis acicularis</i>	OBL	Native	Y	N	N	Y	N
<i>Eleocharis obtusa</i> (= <i>E. ovata</i> )	OBL	Native	Y	Y	Y	Y	N
<i>Epilobium brachycarpum</i> (= <i>E. paniculatum</i> )	NI	Native	Y	N	Y	Y	Y
<i>Epilobium ciliatum</i> ssp. <i>watsonii</i> (= <i>E. watsonii</i> )	FACW	Native	Y	Y	Y	Y	Y
<i>Epilobium densiflorum</i> (= <i>Boisduvalia densiflora</i> )	FACW	Native	Y	Y	Y	Y	Y
<i>Erigeron philadelphicus</i>	FACU	Native	N	N	N	Y	N

<i>Festuca roemerii</i> (= <i>F. idahoensis</i> in part)	NI	Native	N	N	N	Y	N
<i>Festuca rubra</i>	FAC	Native	N	N	Y	N	N
<i>Fragaria virginiana</i>	FACU	Native	N	N	Y	Y	Y
<i>Fraxinus latifolia</i>	FACW	Native	Y	Y	Y	Y	Y
<i>Galium aparine</i>	FACU	Native	N	N	N	N	Y
<i>Geranium dissectum</i>	NI	Exotic	Y	Y	Y	Y	Y
<i>Geranium molle</i>	NI	Exotic	Y	N	Y	Y	Y
<i>Geum macrophyllum</i>	FAC	Native	Y	Y	Y	Y	Y
<i>Glyceria leptostachya</i>	OBL	Native	N	Y	Y	N	N
<i>Glyceria x occidentalis</i>	OBL	Native	Y	Y	Y	Y	Y
<i>Gnaphalium palustre</i>	FACW	Native	Y	N	Y	N	Y
<i>Gratiola ebracteata</i>	OBL	Native	Y	N	Y	N	N
<i>Gratiola neglecta</i>	OBL	Native	N	Y	Y	N	N
<i>Grindelia integrifolia</i>	FACW	Native	Y	Y	Y	N	Y
<i>Holcus lanatus</i>	FAC	Exotic	Y	Y	Y	Y	Y
<i>Hordeum brachyantherum</i>	FACW	Native	Y	Y	Y	Y	Y
<i>Hypericum anagaloides</i>	OBL	Native	N	N	Y	Y	N
<i>Hypericum perforatum</i>	FACU	Exotic	N	N	Y	Y	N
<i>Hypochaeris radicata</i>	FACU	Exotic	Y	Y	Y	Y	Y
<i>Juncus bufonius</i>	FACW	Native	Y	Y	Y	Y	Y
<i>Juncus ensifolius</i>	FACW	Native	N	N	Y	N	N
<i>Juncus patens</i>	FACW	Native	N	N	Y	Y	N
<i>Juncus tenuis</i>	FAC	Native	N	Y	Y	Y	Y
<i>Lactuca serriola</i>	FACU	Exotic	Y	N	Y	N	N
<i>Lapsana communis</i>	FACU	Exotic	N	N	N	N	Y
<i>Leucanthemum vulgare</i>	FACU	Exotic	Y	Y	Y	Y	Y
<i>Lolium multiflorum</i> (= <i>Lolium perenne</i> ssp. <i>multiflorum</i> )	FAC	Exotic	N	Y	Y	Y	N
<i>Lotus corniculatus</i>	FAC	Exotic	Y	Y	Y	Y	Y
<i>Lupinus polyphyllus</i>	FAC	Native	Y	Y	Y	Y	Y
<i>Lythrum portula</i>	OBL	Exotic	Y	Y	Y	Y	N
<i>Madia elegans</i>	NI	Native	N	N	N	Y	Y
<i>Matricaria recutita</i> (= <i>M. chamomilla</i> )	NI	Exotic	Y	N	Y	N	Y
<i>Medicago lupulina</i>	FACU	Exotic	Y	Y	Y	Y	Y
<i>Micranthes oregana</i> (= <i>Saxifraga oregana</i> )	FACW	Native	N	N	N	N	Y
<i>Montia fontana</i>	FACW	Native	Y	Y	Y	N	Y
<i>Montia linearis</i>	FAC	Native	Y	Y	Y	Y	Y
Moss	NI	Native	Y	Y	Y	Y	Y
<i>Myosotis discolor</i>	FAC	Exotic	Y	Y	Y	Y	Y
<i>Myosotis laxa</i>	OBL	Native	Y	Y	Y	Y	Y
<i>Navarretia intertexta</i>	FACW	Native	Y	N	Y	N	N
<i>Navarretia squarrosa</i>	FACU	Native	N	N	N	Y	N
<i>Panicum</i> sp. (seedling, probably <i>Dichanthelium</i> sp.)	UNK	Native	Y	N	Y	N	Y
<i>Parentucellia viscosa</i>	FAC	Exotic	Y	Y	Y	Y	Y
<i>Persicaria hydropiper</i> (= <i>Polygonum hydropiper</i> )	OBL	Exotic	Y	Y	Y	N	N
<i>Phalaris arundinacea</i>	FACW	Exotic	N	Y	Y	N	N
<i>Plagiobothrys figuratus</i>	FACW	Native	Y	Y	Y	Y	Y
<i>Plagiobothrys scouleri</i>	FACW	Native	Y	Y	Y	Y	Y
<i>Plectritis congesta</i>	FACU	Native	N	Y	N	N	Y
<i>Poa annua</i>	FAC	Exotic	Y	Y	Y	N	Y

<i>Poa palustris</i>	FAC	Exotic	N	N	N	N	Y
<i>Poa pratensis</i>	FAC	Exotic	N	Y	N	N	N
<i>Poa trivialis</i>	FAC	Exotic	Y	Y	Y	Y	Y
<i>Populus trichocarpa</i> (= <i>P. balsamifera</i> ssp. <i>trichocarpa</i> )	FAC	Native	N	Y	Y	Y	N
<i>Potentilla gracilis</i>	FAC	Native	Y	Y	Y	Y	Y
<i>Poteridium occidentale</i> (= <i>Sanguisorba occidentalis</i> , <i>S. annua</i> , <i>Poteridium annuum</i> )	NI	Native	N	N	N	Y	Y
<i>Prunella vulgaris</i> var. <i>lanceolata</i>	FACU	Native	N	N	Y	Y	Y
<i>Pseudotsuga menziesii</i>	FACU	Native	N	N	N	Y	Y
<i>Ranunculus</i> cf. <i>macounii</i>	OBL	Native	Y	N	N	N	N
<i>Ranunculus occidentalis</i>	FACW	Native	N	Y	N	Y	Y
<i>Ranunculus orthorhynchus</i>	FACW	Native	N	Y	N	N	N
<i>Ranunculus parviflorus</i>	FACU	Native	N	N	N	Y	N
<i>Ranunculus repens</i>	FAC	Exotic	Y	Y	Y	Y	Y
<i>Rorippa curvisiliqua</i>	OBL	Native	Y	Y	Y	Y	Y
<i>Rubus bifrons</i> (seedling; = <i>R. armeniacus</i> , <i>R. discolor</i> )	FACU	Exotic	Y	N	N	N	N
<i>Rumex acetosella</i>	FACU	Exotic	Y	Y	Y	Y	Y
<i>Rumex crispus</i>	FAC	Exotic	Y	N	Y	N	Y
<i>Rumex occidentalis</i> (= <i>R. aquaticus</i> var. <i>fenestratus</i> )	FACW	Native	Y	N	N	N	Y
<i>Senecio jacobea</i>	NI	Exotic	N	N	N	N	Y
<i>Senecio vulgaris</i>	FACU	Exotic	Y	Y	Y	N	N
<i>Sidalcea campestris</i>	FACU	Native	N	N	N	N	Y
<i>Sidalcea nelsoniana</i>	FAC	Native	Y	Y	Y	Y	Y
<i>Sisyrinchium bellum</i>	FACW	Native	N	N	N	N	Y
<i>Sisyrinchium idahoense</i>	FACW	Native	N	Y	Y	Y	Y
<i>Solidago elongata</i> (= <i>S. canadensis</i> )	FACU	Native	Y	N	N	Y	Y
<i>Sonchus asper</i>	FACU	Exotic	Y	N	Y	N	Y
<i>Stellaria media</i>	FACU	Exotic	Y	N	N	N	N
<i>Symphotrichum hallii</i> (? , seedling; = <i>Aster chilensis</i> , <i>Aster hallii</i> )	NI	Native	N	N	Y	N	N
<i>Trifolium hybridum</i>	FAC	Exotic	Y	Y	Y	Y	Y
<i>Trifolium pratense</i>	FACU	Exotic	Y	Y	N	Y	Y
<i>Trifolium repens</i>	FAC	Exotic	Y	Y	N	Y	N
<i>Triteleia hyacinthina</i>	FAC	Native	Y	Y	Y	Y	N
<i>Veronica arvensis</i>	FACU	Exotic	Y	Y	Y	Y	Y
<i>Veronica peregrina</i>	OBL	Exotic	Y	Y	Y	Y	Y
<i>Vicia hirsuta</i>	NI	Exotic	Y	Y	Y	Y	Y
<i>Vicia sativa</i>	UPL	Exotic	Y	Y	Y	N	Y
<i>Vicia tetrasperma</i>	NI	Exotic	N	N	N	N	Y
<i>Vulpia bromoides</i>	FACU	Exotic	Y	Y	Y	Y	Y
<b>Palustrine Forested</b>							
<i>Acer macrophyllum</i>	FACU	Native	N	N	N	Y	Y
<i>Alnus rubra</i>	FAC	Native	Y	Y	Y	N	N
<i>Cornus sericea</i> (= <i>C. stolonifera</i> , <i>C. alba</i> )	FACW	Native	Y	Y	Y	Y	Y
<i>Crataegus douglasii</i>	FAC	Native	Y	Y	Y	Y	Y
<i>Crataegus monogyna</i>	FAC	Exotic	Y	Y	Y	Y	Y
<i>Fraxinus latifolia</i>	FACW	Native	Y	Y	Y	Y	Y
<i>Lonicera involucrata</i>	FAC	Native	Y	Y	Y	Y	Y

Malus fusca	FACW	Native	Y	Y	Y	Y	Y
Physocarpus capitatus	FACW	Native	N	Y	Y	Y	Y
Populus trichocarpa (= P. balsamifera ssp. trichocarpa)	FAC	Native	N	Y	Y	Y	Y
Rhamnus purshiana (= Frangula purshiana)	FAC	Native	N	Y	Y	Y	Y
Ribes divaricatum	FAC	Native	N	N	N	Y	Y
Rosa pisocarpa	FAC	Native	N	Y	Y	Y	Y
Salix scouleriana	FAC	Native	N	N	N	Y	Y
Spiraea douglasii	FACW	Native	N	Y	Y	Y	Y
Symphoricarpos albus	FACU	Native	N	Y	Y	Y	Y

**Table 2. Total number of native vs. exotic species/ taxa in monitoring plots, Foster Creek Mitigation Bank, 2009-2013.**

Year	Native Taxa	Percent native	Exotic Taxa	Percent exotic	Unknown	Percent unknown
2009	43	52	38	46	2	2
2010	50	58	35	41	1	1
2011	63	61	40	39	0	0
2012	56	65	30	35	0	0
2013	65	63	38	37	0	0

**Table 3. Changes in wetland indicator status for species at Foster Creek WMB, July 2013 National Wetland Plant List.**

Taxon	DSL combined 1988 - 1993 list	USACE 2012 draft list	USACE 2013 final list
<i>Geum macrophyllum</i>	FACW-*	FACW	FAC
<i>Leucanthemum vulgare</i>	NI	UPL	FACU

**Table 4. Wetland indicator status, by total number of species in monitoring plots, Foster Creek Mitigation Bank, 2009-2013. Upland = UPL, FACU; Wetland = OBL, FAC, FACW; Unknown = NI, UNK. Indicator status for all years based on July 2013 National Wetland Plant List.**

Year	Upland	Percent upland	Wetland	Percent wetland	UNK	Percent UNK
2009	21	26	50	62	10	12
2010	19	22	58	68	8	9
2011	23	22	68	65	13	13
2012	23	25	58	62	12	13
2013	28	27	61	59	14	14

**Table 5. Species occurring outside of monitoring plots, Foster Creek Wetland Mitigation Bank, 2011 vs. 2013. Wetland indicator status Indicator status for all years based on July 2013 National Wetland Plant List. All taxa seen are listed, regardless of whether they were planted or not.**

Taxon	Wetland Indicator Status	Native/ Exotic	Planted	2011	2013
<i>Acer circinatum</i>	FAC	Native	2011	Y	Y
<i>Acer macrophyllum</i>	FACU	Native	2011	Y	Y
<i>Achillea millefolium</i>	FACU	Native	N	N	Y
<i>Acmispon americanus</i> var. <i>americanus</i> (= <i>Lotus purshianus</i> )	FACU	Native	2010	Y	Y
<i>Alisma gramineum</i>	OBL	Native	N	Y	Y
<i>Alnus rubra</i>	FAC	Native	Y	Y	Y
<i>Alopecurus geniculatus</i>	OBL	Native	N	Y	Y
<i>Amelanchier alnifolia</i>	FACU	Native	N	Y	Y
<i>Anaphalis margaritacea</i>	FACU	Native	N	N	Y
<i>Anthoxanthum odoratum</i>	FACU	Exotic	N	Y	Y
<i>Aquilegia formosa</i>	FAC	Native	Y	N	Y
<i>Berberis aquifolium</i> (= <i>Mahonia aquifolium</i> )	FACU	Native	2011	Y	Y
<i>Brodiaea coronaria</i>	FACW	Native	2009	Y	N
<i>Bromus racemosus</i> (= <i>B. commutatus</i> )	NI	Exotic	N	Y	Y
<i>Bromus sterilis</i>	NI	Exotic	N	Y	N
<i>Carex stipata</i>	OBL	Native	2008	Y	Y
<i>Chamerion angustifolium</i> (= <i>Epilobium angustifolium</i> , <i>Chamaenerion angustifolium</i> )	FACU	Native	N	N	Y
<i>Circaea alpina</i>	FAC	Native	N	Y	Y
<i>Cirsium arvense</i>	FAC	Exotic	N	Y	N
<i>Cirsium vulgare</i>	FACU	Exotic	N	N	Y
<i>Clarkia amoena</i>	NI	Native	2010	Y	Y
<i>Clarkia purpurea</i>	NI	Native	2010	Y	N
<i>Claytonia sibirica</i> (= <i>Montia sibirica</i> )	FAC	Native	N	Y	Y
<i>Corylus cornuta</i>	FACU	Native	N	Y	Y
<i>Crataegus douglasii</i>	FAC	Native	N	N	Y
<i>Crataegus monogyna</i>	FAC	Exotic	N	Y	Y
<i>Crepis capillaris</i>	FACU	Exotic	N	Y	Y
<i>Crepis setosa</i>	NI	Exotic	N	Y	Y
<i>Dodecatheon puchellum</i>	FACW	Native	2009	Y	N
<i>Downingia yina</i>	OBL	Native	Y	Y	Y
<i>Eleocharis palustris</i>	OBL	Native	N	Y	Y
<i>Eryngium petiolatum</i>	OBL	Native	2009	Y	Y
<i>Fragaria virginiana</i>	FACU	Native	2010	Y	Y
<i>Galium aparine</i>	FACU	Native	N	Y	Y
<i>Galium trifidum</i>	FACW	Native	2011	Y	Y
<i>Glyceria x occidentalis</i>	OBL	Native	N	Y	Y
<i>Gnaphalium purpureum</i> (= <i>Gamochaeta purpurea</i> )	NI	Native	N	Y	Y
<i>Hedera helix</i>	FACU	Exotic	N	Y	Y
<i>Holcus lanatus</i>	FAC	Exotic	N	Y	Y
<i>Hypericum perforatum</i>	FACU	Exotic	N	N	Y
<i>Iris tenax</i>	NI	Native	2010	Y	N

<i>Isoetes nuttallii</i>	OBL	Native	N	Y	N
<i>Juncus acuminatus</i>	OBL	Native	N	Y	Y
<i>Juncus effusus</i>	FACW	Exotic	N	N	Y
<i>Kickxia elatine</i>	FAC	Exotic	N	N	Y
<i>Lactuca serriola</i>	FACU	Exotic	N	Y	Y
<i>Lapsana communis</i>	FACU	Exotic	N	Y	Y
<i>Leersia oryzoides</i>	OBL	Native	N	Y	Y
<i>Ludwigia palustris</i>	OBL	Native	N	Y	Y
<i>Madia elegans</i>	NI	Native	2010	Y	Y
<i>Madia glomerata</i>	FACU	Native	2010	Y	N
<i>Micranthes oregana</i> (= <i>Saxifraga oregana</i> )	FACW	Native	2009	Y	Y
<i>Mimulus guttatus</i>	OBL	Native	2010	Y	Y
<i>Navarretia squarrosa</i>	FACU	Native	N	Y	Y
<i>Oemleria cerasiformis</i>	FACU	Native	N	Y	Y
<i>Panicum capillare</i>	FAC	Native	N	N	Y
<i>Parentucellia viscosa</i>	FAC	Exotic	N	Y	Y
<i>Perideridia oregana</i>	NI	Native	2008, 2009	Y	Y
<i>Persicaria hydropiperoides</i> (= <i>Polygonum hydropiperoides</i> )	OBL	Native	N	Y	Y
<i>Phalaris arundinacea</i>	FACW	Exotic	N	Y	Y
<i>Philadelphus lewisii</i>	NI	Native	Y	Y	Y
<i>Potentilla gracilis</i>	FAC	Native	N	N	Y
<i>Poteridium occidentale</i> (= <i>Sanguisorba occidentalis</i> , <i>S. annua</i> , <i>Poteridium annuum</i> )	NI	Native	2010	Y	N
<i>Prunus avium</i>	FACU	Exotic	N	Y	Y
<i>Prunus emarginata</i> var. <i>mollis</i>	FACU	Native	N	Y	Y
<i>Pseudotsuga menziesii</i>	FACU	Native	N	Y	Y
<i>Quercus garryana</i>	FACU	Native	2008	Y	Y
<i>Ranunculus alismifolius</i>	FACW	Native	2011	Y	N
<i>Ranunculus parviflorus</i>	FACU	Exotic	N	Y	N
<i>Ranunculus uncinatus</i>	FAC	Native	N	Y	N
<i>Rhamnus purshiana</i> (= <i>Frangula purshiana</i> )	FAC	Native	N	N	Y
<i>Ribes divaricatum</i>	FAC	Native	Y	Y	Y
<i>Ribes sanguineum</i>	FACU	Native	Y	Y	Y
<i>Rubus bifrons</i> (= <i>R. armeniacus</i> , <i>R. discolor</i> )	FACU	Exotic	N	Y	Y
<i>Rubus parviflorus</i>	FACU	Native	Y	Y	Y
<i>Rumex crispus</i>	FAC	Exotic	N	Y	Y
<i>Salix scouleriana</i>	FAC	Native	2011, 2012	N	Y
<i>Sambucus mexicana</i> (= <i>S. nigra</i> ssp. <i>cerulea</i> )	FACU	Native	2011	Y	Y
<i>Schoenoplectus tabernaemontani</i> (= <i>Scirpus validus</i> )	OBL	Native	N	Y	Y
<i>Senecio jacobea</i>	NI	Exotic	N	Y	Y
<i>Sidalcea campestris</i>	FACU	Native	2008, 2009	Y	Y
<i>Solidago elongata</i> (= <i>Solidago canadensis</i> )	FACU	Native	N	N	Y
<i>Spiranthes romanzoffiana</i>	FACW	Native	N	Y	N
<i>Stachys rigida</i>	FACW	Native	N	Y	Y
<i>Symphoricarpos albus</i>	FACU	Native	Y	Y	Y
<i>Thuja plicata</i>	FAC	Native	Y	Y	Y

Trifolium pratense	FACU	Exotic	N	Y	Y
Veronica americana	OBL	Native	N	N	Y
Veronica scutellata	OBL	Native	N	Y	Y
Veronica serpyllifolia	FAC	Native	N	Y	Y
Vicia tetrasperma	NI	Exotic	N	N	Y
Vulpia myuros	FACU	Exotic	N	Y	Y

## APPENDIX A. 2013 VEGETATION COVER DATA (Wetland monitoring plots)

Site: Foster Creek WMB

Author: John Christy

Date: 3 June 2013

Transect: T1N

Plot type: herbaceous	Percent Cover							
Plot number	1	2	3	4	5	6	7	8
Agrostis exarata	0	0	0	0	0	0	0	0
Agrostis stolonifera	0	0	0	0	0	3	0	0
Alopecurus geniculatus	0	0	0	0	0	0	0	0
Anthoxanthum odoratum	3	0	0	0	0	0	0	5
Aquilegia formosa	0	0	0	0	0	0	0	0
Bare/ Litter	10	10	10	25	35	10	25	2
Beckmannia syzigachne	0	2	2	0	0	2	0	0
Bromus racemosus	0	0	0	0	0	0	0	0
Camassia quamash	0	0	0	8	0	0	0	0
Cardamine occidentalis	0	0	0	0	0	0	0	0
Carex feta	0	3	0	0	0	0	0	0
Carex pachystachya	0	10	0	3	0	0	0	0
Carex unilateralis	0	15	3	2	0	0	0	0
Centaureum erythraea	0	0	0	0	0	0	0	0
Cerastium fontanum ssp. vulgare	1	0	0	0	0	0	0	0
Cerastium glomeratum	0	0	0	0	0	0	0	0
Cirsium vulgare	0	0	0	0	0	0	0	0
Deschampsia caespitosa	15	25	30	15	20	55	45	8
Deschampsia danthonioides	0	0	0	0	0	0	0	0
Deschampsia elongata	25	0	4	3	2	0	0	0
Dichelostemma congestum	0	0	0	3	0	0	0	0
Epilobium brachycarpum	0	0	0	0	0	0	0	0
Epilobium ciliatum ssp. watsonii	1	0	3	2	4	2	0	1
Epilobium densiflorum	3	0	25	20	15	4	10	0
Fraxinus latifolia (seedling)	0	0	0	0	0	0	0	0
Geranium dissectum	0	0	0	3	0	0	0	0
Geum macrophyllum	0	4	0	0	0	0	0	0
Gnaphalium palustre	0	0	0	0	0	0	0	0
Grindelia integrifolia	0	0	0	0	0	0	0	0
Holcus lanatus	0	0	2	0	0	1	1	3
Hordeum brachyantherum	2	10	10	15	10	0	0	0
Hypochaeris radicata	0	0	0	0	0	0	2	0
Juncus bufonius	0	0	0	0	0	0	0	0
Juncus patens	0	0	0	0	0	0	0	0
Juncus tenuis	0	0	0	0	0	0	0	0
Leucanthemum vulgare	0	0	0	0	0	0	0	0
Lotus corniculatus	3	0	3	0	2	0	3	0
Medicago lupulina	0	0	0	0	0	3	0	0

Montia fontana	0	0	0	0	0	0	0	0
Montia linearis	0	0	0	2	2	0	0	4
Moss	4	0	1	0	3	1	2	1
Myosotis discolor	15	0	5	0	4	8	8	70
Navarretia sp.	0	0	0	0	0	0	0	0
Panicum sp. (seedling)	0	0	0	0	0	0	0	0
Parentucellia viscosa	3	0	0	1	0	0	0	0
Plagiobothrys figuratus	0	0	0	0	0	0	0	0
Plagiobothrys scouleri	0	0	0	0	0	0	0	0
Plectritis congesta	3	0	0	0	0	0	0	0
Poa trivialis	4	15	5	0	0	5	5	3
Potentilla gracilis	3	0	0	0	0	1	0	0
Ranunculus occidentalis	3	0	0	0	0	0	0	0
Rorippa curvisiliqua	0	0	0	0	0	0	0	0
Rumex occidentalis	0	4	0	0	0	0	0	0
Senecio vulgaris	0	0	0	0	0	0	0	0
Sidalcea campestris	0	0	0	0	0	0	0	4
Sidalcea nelsoniana (seedling)	4	0	0	0	4	0	0	0
Sidalcea sp. (seedling)	0	0	0	1	0	4	0	0
Sisyrinchium bellum	0	0	0	0	2	0	0	0
Sisyrinchium idahoense	0	0	3	0	0	0	0	0
Trifolium hybridum	0	0	0	0	0	0	0	0
Triteleia hyacinthina	0	0	0	0	0	0	0	0
Veronica arvensis	0	0	0	0	0	0	0	0
Veronica peregrina	0	0	0	2	0	0	0	0
Vicia hirsuta	0	0	0	0	0	2	0	0
Vulpia bromoides	0	3	0	0	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 1 June 2013

Transect: T1S

Plot type: herbaceous	Percent Cover							
Plot number	1	2	3	4	5	6	7	8
Agrostis exarata	0	5	0	5	0	0	0	3
Aira caryophylla	0	0	0	0	2	0	0	0
Alopecurus geniculatus	0	0	0	0	0	0	0	0
Anthoxanthum odoratum	0	0	0	0	0	0	2	2
Bare/ Litter	30	4	2	25	3	5	10	20
Bromus racemosus	3	0	0	0	0	0	0	0
Camassia quamash	0	0	0	0	0	0	0	0
Cardamine occidentalis	0	0	0	0	0	0	0	0
Carex feta	0	0	0	0	0	0	0	0
Carex pachystachya	0	0	0	0	0	0	0	0
Carex sp. (seedling)	1	0	0	0	0	0	0	0
Carex unilateralis	0	2	0	4	0	0	0	0
Cerastium glomeratum	0	0	0	0	1	0	2	2
Crataegus monogyna (seedling)	0	0	0	0	0	0	0	0
Deschampsia caespitosa	20	75	65	30	50	5	20	5
Deschampsia elongata	4	0	5	0	25	0	0	3
Eleocharis obtusa	0	0	0	0	0	0	0	0
Epilobium brachycarpum	0	0	0	0	0	0	0	0
Epilobium ciliatum ssp. watsonii	0	0	0	0	0	0	0	3
Epilobium densiflorum	2	0	0	0	0	5	0	2
Fraxinus latifolia (seedling)	0	0	0	0	0	0	0	3
Geranium molle	0	0	0	0	0	20	0	0
Geum macrophyllum	1	0	0	0	0	1	0	20
Glyceria occidentalis	0	2	0	0	0	0	0	0
Gnaphalium palustre	0	0	0	0	0	0	0	0
Holcus lanatus	3	0	0	1	0	0	10	0
Hordeum brachyantherum	10	4	3	15	8	3	20	2
Hypochaeris radicata	0	0	0	0	0	0	0	5
Juncus bufonius	0	0	0	0	0	0	0	3
Juncus ensifolius	0	0	0	0	0	0	0	0
Juncus tenuis	0	0	0	0	0	0	0	0
Leucanthemum vulgare	0	0	0	0	0	0	0	0
Lotus corniculatus	2	0	15	0	0	2	0	0
Lupinus sp. (seedling)	0	0	0	0	0	0	0	0
Medicago lupulina	1	0	0	0	0	0	0	0
Montia fontana	0	0	0	0	0	0	0	1
Montia linearis	5	0	0	1	1	1	0	2
Moss	4	1	3	0	2	1	8	4
Myosotis discolor	4	0	5	0	4	5	0	3
Panicum sp. (seedling)	1	1	0	0	0	0	0	0
Parentucellia viscosa	2	0	0	0	0	0	3	5
Plagiobothrys figuratus	0	0	0	0	0	0	0	0
Plagiobothrys scouleri	0	0	0	0	0	0	0	0

Plectritis congesta	2	0	0	0	0	10	0	0
Poa sp. (seedling)	0	0	0	0	0	0	0	0
Poa trivialis	5	5	3	15	3	5	25	0
Populus trichocarpa (seedling)	0	0	0	0	0	0	0	0
Potentilla gracilis	0	0	0	0	0	0	0	0
Ranunculus repens	0	0	0	0	0	0	0	10
Rorippa curvisiliqua	0	0	0	0	0	0	0	0
Rumex acetosella	0	0	0	0	0	3	0	0
Senecio vulgaris	0	0	0	0	0	0	0	0
Trifolium hybridum	0	0	0	0	0	0	0	0
Unknown grass (leaves only)	0	0	0	0	0	0	0	0
Veronica arvensis	0	0	0	0	1	0	0	0
Veronica peregrina	0	0	0	0	0	0	0	0
Vulpia bromoides	2	0	5	0	0	35	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 2-3 June 2013

Transect: T2N

Plot type: herbaceous	Percent Cover							
Plot number	1	2	3	4	5	6	7	8
Agrostis exarata	0	0	0	1	2	0	0	0
Agrostis stolonifera	0	0	0	0	0	3	0	0
Anthoxanthum odoratum	0	0	0	5	0	0	0	0
Bare/ Litter	10	15	20	10	20	1	3	0
Beckmannia syzigachne	0	0	0	1	2	0	2	0
Bromus racemosus	0	0	0	3	0	0	0	0
Camassia quamash	0	0	0	0	0	0	0	0
Cardamine occidentalis	0	0	0	0	0	0	0	0
Carex densa	0	0	0	0	0	0	0	0
Carex feta	0	0	2	0	0	0	3	0
Carex leptopoda	0	0	0	0	0	0	0	0
Carex obnupta	0	0	0	0	0	4	8	15
Carex pachystachya	0	0	0	0	5	0	0	0
Carex unilateralis	0	0	2	0	0	0	0	0
Cerastium fontanum ssp. vulgare	0	0	0	0	0	0	0	1
Cerastium glomeratum	0	0	0	0	0	0	0	0
Cornus sericea	0	0	0	0	0	0	5	0
Daucus carota	0	0	0	0	0	0	0	0
Deschampsia caespitosa	30	10	10	25	8	0	60	0
Deschampsia elongata	0	0	1	1	2	0	0	15
Dichelostemma congestum	0	0	1	3	0	0	0	0
Epilobium brachycarpum	0	0	0	0	0	0	0	0
Epilobium ciliatum ssp. watsonii	0	0	2	0	2	15	0	0
Epilobium densiflorum	4	35	15	15	2	0	2	0
Fraxinus latifolia (planted)	0	0	0	0	0	0	0	25
Fraxinus latifolia (seedling)	0	0	0	0	0	0	0	0
Geranium dissectum	0	0	0	0	10	2	0	0
Geum macrophyllum	0	0	0	0	0	3	3	3
Glyceria occidentalis	0	0	0	0	0	0	2	15
Gnaphalium palustre	0	0	0	0	0	0	0	0
Gratiola ebracteata	0	0	0	0	0	0	0	0
Grindelia integrifolia	0	0	0	0	0	0	0	0
Holcus lanatus	2	0	0	0	0	0	0	0
Hordeum brachyantherum	1	15	4	8	20	0	0	15
Hypochaeris radicata	5	0	0	0	0	0	0	0
Juncus bufonius	0	0	2	0	0	0	0	0
Juncus tenuis	0	3	0	0	0	0	0	0
Leucanthemum vulgare	0	1	0	0	0	0	0	0
Lotus corniculatus	3	1	0	3	0	0	1	2
Lythrum portula	0	0	0	0	0	0	0	0
Matricaria recutita	0	0	0	0	0	0	0	0
Medicago lupulina	0	0	0	0	0	0	0	0
Montia linearis	0	0	0	0	0	3	0	0
Moss	5	0	0	0	0	2	1	0

<i>Myosotis discolor</i>	5	5	3	5	4	65	0	2
<i>Myosotis laxa</i>	0	0	0	0	0	0	0	0
<i>Panicum sp. (seedling)</i>	0	0	0	0	0	0	0	0
<i>Parentucellia viscosa</i>	4	1	0	0	0	2	0	0
<i>Persicaria hydropiper</i>	0	0	0	0	0	0	0	0
<i>Plagiobothrys figuratus</i>	0	0	0	0	0	0	0	0
<i>Plagiobothrys scouleri</i>	0	0	1	0	0	0	0	0
<i>Plectritis congesta</i>	4	0	0	4	0	0	0	0
<i>Poa annua</i>	0	0	0	0	0	0	0	0
<i>Poa sp. (seedling)</i>	0	0	0	0	0	0	0	0
<i>Poa trivialis</i>	10	0	3	10	20	0	8	5
<i>Potentilla gracilis</i>	0	2	0	0	0	0	0	0
<i>Prunella vulgaris var. lanceolata</i>	2	0	0	0	0	0	0	0
<i>Ranunculus occidentalis</i>	5	0	1	0	0	0	0	0
<i>Ranunculus orthorhynchus</i>	0	0	0	0	0	0	0	0
<i>Ranunculus repens</i>	0	0	0	0	0	0	0	0
<i>Rorippa curvisiliqua</i>	0	0	0	0	0	0	0	0
<i>Rumex acetosella</i>	0	0	0	0	0	0	0	0
<i>Sidalcea campestris</i>	4	4	0	0	10	0	0	0
<i>Sidalcea nelsoniana</i>	0	0	30	8	0	0	0	0
<i>Sisyrinchium idahoense</i>	0	0	0	0	0	0	0	0
<i>Sisyrinchium idahoense</i>	0	3	0	0	0	0	0	0
<i>Solidago canadensis</i>	0	0	0	0	0	0	0	0
<i>Trifolium hybridum</i>	0	3	0	0	0	0	0	0
<i>Trifolium repens</i>	0	0	0	0	0	0	0	0
<i>Triteleia hyacinthina</i>	0	0	0	0	0	0	0	0
<i>Veronica arvensis</i>	0	0	0	0	0	0	0	0
<i>Veronica peregrina</i>	0	0	0	0	0	0	0	0
<i>Vicia sativa</i>	0	0	1	0	0	0	0	0

**Site: Foster Creek WMB**

**Author: John Christy**

**Date: 2 June 2013**

**Transect: T2N**

<b>Plot type: PFO</b>	<b>Stem Counts</b>	
	<b>7</b>	<b>8</b>
<b>Plot number</b>		
Alnus rubra	0	0
Cornus sericea	13	16
Fraxinus latifolia	38	36
Lonicera involucrata	0	0
Malus fusca	0	1
Physocarpus capitatus	0	4
Spiraea douglasii	1	0

Comments: Volunteer ash no longer distinguished from those planted, and numbers are estimates. Dead plantings no longer counted.

Site: Foster Creek WMB

Author: John Christy

Date: 1 June 2013

Transect: T2S

Plot type: herbaceous	Percent Cover							
Plot number	1	2	3	4	5	6	7	8
Agrostis exarata	0	0	0	0	5	0	15	0
Alopecurus geniculatus	0	0	0	10	2	0	0	0
Anthoxanthum odoratum	0	0	0	0	0	2	0	0
Bare/ Litter	1	2	2	5	5	5	10	2
Bromus racemosus	0	0	0	0	0	0	0	0
Camassia quamash	0	0	5	0	0	0	0	0
Cardamine occidentalis	0	0	0	0	0	0	0	0
Carex densa	0	0	0	0	3	0	0	0
Carex unilateralis	0	0	0	0	2	3	10	0
Cerastium glomeratum	5	0	0	0	0	1	0	0
Deschampsia caespitosa	30	50	25	8	45	25	20	3
Deschampsia elongata	50	0	20	0	1	4	2	4
Epilobium brachycarpum	0	0	0	0	0	0	0	0
Epilobium ciliatum ssp. watsonii	0	0	0	0	0	0	0	0
Epilobium densiflorum	0	3	0	0	0	10	0	0
Fraxinus latifolia (seedling)	0	0	0	0	0	15	0	0
Geranium dissectum	0	0	0	0	0	0	0	10
Geum macrophyllum	0	0	0	0	0	0	0	1
Glyceria occidentalis	0	0	0	0	0	0	5	0
Holcus lanatus	0	3	0	2	1	1	12	5
Hordeum brachyantherum	5	4	15	60	10	5	0	25
Hypochaeris radicata	0	0	0	0	0	0	0	0
Juncus bufonius	0	0	0	0	1	0	0	0
Lactuca serriola	0	0	0	0	0	0	0	0
Leucanthemum vulgare	0	0	0	0	0	0	0	0
Lotus corniculatus	0	0	0	0	0	3	0	0
Medicago lupulina	0	0	0	0	0	0	0	0
Montia fontana	0	0	0	0	0	0	0	0
Montia linearis	0	0	0	0	0	0	3	0
Moss	0	10	4	0	3	3	1	5
Myosotis discolor	3	15	10	0	0	3	0	0
Panicum sp. (seedlings)	0	0	0	0	1	0	1	0
Parentucellia viscosa	0	5	10	0	0	3	0	5
Phalaris arundinacea	0	0	0	0	0	0	0	0
Plagiobothrys figuratus	0	0	0	0	0	0	0	0
Plagiobothrys scouleri	0	0	0	0	0	0	0	0
Plectritis congesta	3	1	0	0	0	5	0	25
Poa trivialis	0	5	0	15	20	3	15	20
Ranunculus occidentalis	0	0	0	0	0	5	0	0
Ranunculus repens	0	0	0	0	0	0	0	0
Rorippa curvisiliqua	0	0	0	0	0	0	0	0
Rumex acetosella	0	0	0	0	0	0	0	0
Rumex aquaticus var. fenestratus	0	0	0	0	0	0	0	0
Senecio vulgaris	0	0	0	0	0	0	0	0

<i>Sidalcea campestris</i>	2	0	0	0	0	5	0	5
<i>Sidalcea</i> sp. (seedlings)	2	0	0	0	0	0	0	0
<i>Solidago elongata</i>	0	0	0	0	0	2	0	0
<i>Symphotrichum hallii</i> (? , seedling)	0	0	0	0	0	0	0	0
<i>Trifolium hybridum</i>	0	0	0	0	0	0	0	0
<i>Veronica arvensis</i>	1	0	0	0	0	2	3	0
<i>Vulpia bromoides</i>	0	0	8	0	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 2-3 June 2013

Transect: T3N

Plot type: herbaceous	Percent Cover							
Plot number	1	2	3	4	5	6	7	8
Agrostis exarata	0	3	0	0	3	0	0	0
Agrostis stolonifera	0	0	0	0	0	0	0	0
Allium vineale	1	0	0	0	0	0	0	0
Alopecurus geniculatus	0	0	0	0	0	0	0	0
Anthoxanthum odoratum	0	0	0	0	0	0	8	5
Bare/ Litter	5	5	5	0	5	0	5	0
Beckmannia syzigachne	0	0	0	5	0	0	0	0
Bromus racemosus	0	0	0	0	0	0	0	3
Camassia quamash	0	0	0	0	0	0	0	0
Cardamine occidentalis	0	0	0	0	0	0	0	0
Carex feta	0	2	3	0	0	0	0	0
Carex obnupta	0	0	0	8	0	0	4	4
Carex sp. (seedling)	0	0	0	0	0	0	0	0
Carex unilateralis	0	0	0	15	0	0	0	0
Centaureum erythraea	0	0	0	0	0	0	0	0
Cerastium fontanum ssp. vulgare	0	0	0	0	0	0	0	0
Cerastium glomeratum	0	0	0	0	0	0	0	0
Collinsia grandiflora	0	1	0	0	0	0	0	0
Cornus sericea	0	0	0	0	0	2	2	3
Crataegus monogyna (seedling)	0	0	0	0	0	2	0	0
Danthonia californica	0	0	0	0	0	0	0	0
Daucus carota	0	0	0	0	0	0	0	0
Deschampsia caespitosa	30	10	50	48	30	0	5	40
Deschampsia elongata	1	10	5	0	0	0	15	0
Dichelostemma congestum	2	0	0	0	0	0	0	0
Eleocharis acicularis	0	0	0	0	0	0	0	0
Epilobium brachycarpum	2	0	0	0	0	0	2	4
Epilobium ciliatum ssp. watsonii	0	0	4	0	3	0	2	0
Epilobium densiflorum	15	8	10	10	5	0	3	3
Fraxinus latifolia	0	0	0	0	2	3	0	3
Galium aparine	0	0	0	0	0	2	0	0
Geranium dissectum	0	0	0	0	0	20	0	0
Geranium molle	0	0	0	0	0	0	0	0
Geum macrophyllum	0	0	0	3	0	5	2	0
Gnaphalium palustre	0	0	0	0	0	0	0	0
Gratiola neglecta	0	0	0	0	0	0	0	0
Grindelia integrifolia	0	0	0	0	0	0	0	0
Holcus lanatus	0	0	0	0	0	3	3	0
Hordeum brachyantherum	4	10	2	3	4	20	4	0
Hypericum perforatum	0	0	0	0	0	0	0	0
Hypochaeris radicata	0	0	0	0	0	0	0	8
Juncus bufonius	0	0	0	0	0	0	0	0
Juncus tenuis	0	3	0	0	0	0	3	0

Lapsana communis	0	0	0	0	0	10	0	0
Leucanthemum vulgare	2	0	0	0	0	0	0	3
Lolium multiflorum	0	0	0	0	0	0	0	0
Lotus corniculatus	0	0	0	1	2	0	1	4
Lythrum portula	0	0	0	0	0	0	0	0
Matricaria recutita	0	1	0	0	0	0	0	0
Medicago lupulina	3	0	0	0	0	0	2	0
Montia fontana	0	0	0	0	0	0	0	0
Montia linearis	0	0	0	0	0	0	0	0
Moss	0	0	0	0	0	0	0	0
Myosotis discolor	10	15	10	0	5	2	0	0
Myosotis laxa	0	0	0	5	0	0	3	0
Panicum sp. (seedling)	0	0	0	0	0	0	0	0
Parentucellia viscosa	0	1	0	0	3	0	15	3
Plagiobothrys figuratus	0	0	3	0	0	0	0	0
Plagiobothrys scouleri	0	0	0	0	0	0	0	0
Plectritis congesta	3	1	5	0	10	0	0	0
Poa palustris	0	0	0	3	0	0	0	0
Poa trivialis	0	0	5	5	5	15	20	0
Potentilla sp. (seedling)	0	0	0	0	0	0	0	0
Prunella vulgaris var. lanceolata	0	0	0	0	3	0	0	0
Ranunculus occidentalis	0	0	2	0	0	0	0	0
Ranunculus repens	0	0	0	0	5	0	0	0
Rorippa curvisiliqua	0	0	0	0	0	0	0	0
Rumex acetosella	0	0	0	0	0	0	0	0
Sidalcea nelsoniana	25	30	0	0	10	0	0	0
Sonchus asper	0	0	0	0	0	0	0	0
Trifolium repens	0	0	0	0	0	0	0	0
Triteleia hyacinthina	0	0	0	0	0	0	0	0
Veronica arvensis	0	0	0	0	0	0	0	0
Veronica peregrina	0	0	0	0	0	0	0	0
Vicia hirsuta	0	0	0	0	10	0	0	15
Vicia sativa	0	0	0	0	0	15	0	0
Vulpia bromoides	0	0	0	0	0	0	0	2

**Site: Foster Creek WMB**

**Author: John Christy**

**Date: 2 June 2013**

**Transect: T3N**

<b>Plot type: PFO</b>	<b>Stem Counts</b>		
	<b>6</b>	<b>7</b>	<b>8</b>
<b>Plot number</b>			
Cornus sericea	19	24	38
Crategus douglasii	4	1	1
Crataegus monogyna (volunteer)	19	1	2
Fraxinus latifolia	44	105	69
Fraxinus latifolia (mature tree)	1	0	0
Lonicera involucrata	6	1	1
Malus fusca	0	0	0
Physocarpus capitatus	1	5	16
Populus trichocarpa (volunteer)	0	0	1
Ribes divaricatum	0	0	1
Rosa pisocarpa	0	0	15
Spiraea douglasii	0	0	3

Comments: Volunteer ash no longer distinguished from those planted, and numbers are estimates. Dead plantings no longer counted.

Site: Foster Creek WMB

Author: John Christy

Date: 1 June 2013

Transect: T3S

Plot type: herbaceous	Percent Cover							
Plot number	1	2	3	4	5	6	7	8
Agrostis exarata	0	3	0	0	0	0	0	0
Agrostis stolonifera	0	0	0	0	0	0	0	0
Alopecurus geniculatus	0	0	0	2	0	0	0	0
Anthoxanthum odoratum	0	2	0	0	0	0	0	0
Bare/ Litter	2	20	5	25	0	3	30	4
Bromus racemosus	0	0	0	0	0	0	0	2
Camassia quamash	1	0	0	0	0	5	0	5
Cardamine occidentalis	0	0	0	0	0	0	0	0
Carex feta	0	0	0	5	3	5	0	8
Carex pachystachya	0	0	0	0	0	0	3	15
Carex unilateralis	0	0	0	0	0	10	0	0
Cerastium glomeratum	0	0	0	0	0	4	0	0
Collinsia grandiflora	1	0	0	0	0	0	0	0
Crataegus douglasii (volunteer)	0	0	0	0	0	0	0	0
Crataegus monogyna (volunteer)	0	0	0	0	0	0	0	0
Deschampsia caespitosa	50	25	4	15	10	40	0	0
Deschampsia danthonioides	0	0	0	0	0	0	0	0
Deschampsia elongata	0	15	3	2	8	0	10	0
Epilobium ciliatum ssp. watsonii	2	1	0	0	5	1	0	0
Epilobium densiflorum	5	4	3	30	10	0	0	0
Fraxinus latifolia (seedling)	0	0	0	0	0	0	0	1
Geranium dissectum	1	0	0	0	0	0	0	0
Geum macrophyllum	3	0	2	0	0	0	0	3
Glyceria occidentalis	0	0	0	2	3	0	0	0
Gnaphalium palustre	0	0	0	0	0	0	0	0
Holcus lanatus	0	0	0	0	0	2	0	2
Hordeum brachyantherum	4	0	30	2	10	0	15	25
Hypericum anagalloides	0	0	0	0	0	0	0	0
Hypochaeris radicata	0	0	2	0	0	0	0	0
Juncus bufonius	0	5	0	0	2	1	0	0
Leucanthemum vulgare	0	0	0	0	0	0	0	0
Lotus corniculatus	0	2	3	0	3	0	0	0
Madia elegans	0	0	0	0	0	2	0	0
Medicago lupulina	0	0	4	0	0	0	0	0
Montia fontana	0	0	0	0	0	0	0	0
Montia linearis	0	1	0	0	3	0	0	0
Moss	20	8	3	3	3	0	0	1
Myosotis discolor	5	4	20	15	20	8	8	0
Parentucellia viscosa	1	0	4	0	1	3	5	0
Phalaris arundinacea	0	0	0	0	0	0	0	0
Plagiobothrys figuratus	0	0	0	0	0	0	0	0
Plagiobothrys scouleri	0	0	0	0	0	0	0	0
Plectritis congesta	2	0	3	0	0	10	0	0

<i>Poa annua</i>	0	0	0	0	0	0	0	0
<i>Poa trivialis</i>	5	0	10	0	15	3	30	35
<i>Ranunculus occidentalis</i>	1	0	0	0	0	1	0	0
<i>Ranunculus repens</i>	0	0	0	0	0	2	0	0
<i>Rorippa curvisiliqua</i>	0	0	0	0	0	0	0	0
<i>Rumex acetosella</i>	0	0	0	0	0	0	0	0
<i>Sidalcea nelsoniana</i>	0	4	0	0	0	0	0	0
<i>Sidalcea</i> sp. (seedlings)	0	0	5	0	0	2	0	0
<i>Solidago elongata</i>	0	2	2	0	0	0	0	0
<i>Triteleia hyacinthina</i>	0	0	0	0	0	0	0	0
<i>Veronica arvensis</i>	0	0	0	0	0	0	0	0
<i>Veronica peregrina</i>	0	4	0	0	0	0	0	0
<i>Vicia hirsuta</i>	0	0	5	0	0	0	0	0
<i>Vicia sativa</i>	0	0	0	0	0	0	0	0
<i>Vulpia bromoides</i>	2	0	0	1	2	0	0	0

Comment: Machinery ruts in and near  
Plot 2

Site: Foster Creek WMB  
Author: John Christy  
Date: 2-3 June 2013  
Transect: T4N

Plot type: herbaceous	Percent Cover					
Plot number	1	2	3	4	5	6
Achillea millefolium	0	0	0	0	0	0
Agrostis exarata	0	0	4	0	0	0
Agrostis stolonifera	0	0	0	0	10	2
Alopecurus pratensis	0	0	0	0	0	0
Anthoxanthum odoratum	0	0	0	0	20	50
Bare/ Litter	5	40	1	0	2	10
Beckmannia syzigachne	0	0	0	0	0	0
Bromus racemosus	0	0	0	0	15	0
Camassia quamash	0	0	0	0	0	0
Carex pachystachya	0	0	0	0	0	0
Carex sp. (seedling)	0	0	0	0	3	2
Carex unilateralis	2	0	5	0	0	0
Centaureum erythraea	0	0	0	0	0	0
Cerastium fontanum ssp. vulgare	0	0	0	0	0	0
Cerastium glomeratum	0	0	1	0	0	0
Deschampsia caespitosa	5	15	10	8	3	5
Deschampsia elongata	4	3	15	0	0	0
Epilobium brachycarpum	3	0	0	1	15	5
Epilobium ciliatum ssp. watsonii	2	4	1	0	2	0
Epilobium densiflorum	3	15	15	0	0	0
Geranium dissectum	0	0	0	0	0	0
Geum macrophyllum (seedlings)	0	0	0	60	2	0
Glyceria occidentalis	0	4	0	0	0	0
Gnaphalium palustre	0	0	0	0	0	0
Holcus lanatus	2	2	2	2	4	0
Hordeum brachyantherum	10	0	10	4	0	0
Hypochaeris radicata	0	0	3	0	0	10
Juncus bufonius	0	3	0	0	0	0
Juncus tenuis	0	0	0	0	0	0
Leucanthemum vulgare	0	0	0	0	3	2
Lotus corniculatus	2	4	0	0	0	3
Madia elegans	0	0	0	2	0	0
Medicago lupulina	0	0	0	0	2	0
Montia fontana	0	0	0	0	0	0
Montia linearis	0	3	4	0	0	0
Moss	3	0	0	0	0	4
Myosotis discolor	50	3	20	4	0	0
Myosotis laxa	0	0	0	0	0	0
Navarretia sp.	0	0	0	0	0	0
Parentucellia viscosa	4	0	0	0	15	1
Plagiobothrys figuratus	0	0	0	0	0	0
Plagiobothrys scouleri	0	1	2	0	0	0
Plectritis congesta	2	0	0	0	0	0

Poa annua	0	0	0	0	0	0
Poa pratensis	0	0	0	0	0	0
Poa trivialis	0	0	3	3	0	0
Prunella vulgaris var. lanceolata	0	0	0	0	0	1
Pseudotsuga menziesii (seedling)	0	0	0	0	1	0
Ranunculus occidentalis	0	0	2	0	2	2
Ranunculus parviflorus	0	0	0	0	0	0
Ranunculus repens	0	0	0	0	0	0
Rorippa curvisiliqua	0	0	0	0	0	0
Rumex aquaticus var. fenestratus	0	0	0	0	0	0
Sidalcea nelsoniana	0	0	0	0	0	0
Sidalcea sp. (seedlings)	3	0	0	4	0	0
Sisyrinchium idahoense	0	0	0	0	0	0
Trifolium hybridum	0	0	0	1	0	0
Trifolium pratense	0	0	0	0	0	0
Trifolium repens	0	0	0	0	0	0
Veronica arvensis	0	0	0	0	0	0
Veronica peregrina	0	0	0	0	0	0
Vicia hirsuta	0	0	0	15	0	0
Vicia sativa	0	0	0	0	0	1
Vulpia bromoides	0	0	0	0	0	0

**Site: Foster Creek WMB**

**Author: John Christy**

**Date: 2 June 2013**

**Transect: T4N**

<b>Plot type: PFO</b>	<b>Stem Counts</b>	
	<b>5</b>	<b>6</b>
<b>Plot number</b>		
Alnus rubra	0	0
Cornus sericea	17	19
Crataegus douglasii	1	5
Fraxinus latifolia	19	15
Lonicera involucrata	4	9
Malus fusca	2	0
Physocarpus capitatus	8	0
Rhamnus purshiana	0	0
Rosa pisocarpa	0	5
Salix scouleriana	1	0
Spiraea douglasii	9	3
Symphoricarpos albus	0	13

Comments: Berm not included in circular plots. Volunteer ash no longer distinguished from those planted, and numbers are estimates. Dead plantings no longer counted.

Site: Foster Creek WMB

Author: John Christy

Date: 1 June 2013

Transect: T4S

Plot type: herbaceous	Percent Cover							
Plot number	1	2	3	4	5	6	7	8
Agrostis exarata	4	0	3	0	2	0	0	0
Alopecurus geniculatus	0	15	0	40	0	0	0	0
Anthoxanthum odoratum	0	0	2	0	15	3	5	0
Bare/ Litter	3	4	5	0	5	1	2	1
Beckmannia syzigachne	0	15	0	8	0	0	0	0
Bromus racemosus	0	0	1	0	0	2	0	0
Bromus racemosus	0	0	0	0	0	0	0	0
Camassia quamash	1	0	2	0	0	3	0	15
Cardamine occidentalis	0	0	0	0	0	0	0	0
Carex densa	0	30	0	0	0	0	0	0
Carex feta	0	0	3	0	0	0	0	0
Carex pachystachya	2	0	0	5	0	0	0	0
Carex sp. (seedling)	0	0	0	0	0	0	0	0
Carex unilateralis	0	5	0	0	0	0	0	0
Cerastium arvense	0	0	0	0	2	0	2	0
Cerastium glomeratum	0	0	0	0	0	0	0	0
Danthonia californica	0	0	0	0	0	0	0	0
Deschampsia caespitosa	60	0	30	15	15	4	4	10
Deschampsia elongata	0	0	5	0	3	2	0	0
Dichelostemma congestum	0	0	3	0	0	2	0	0
Downingia elegans	0	0	0	0	0	0	0	0
Eleocharis obtusa	0	0	0	0	0	0	0	0
Epilobium brachycarpum	0	0	0	0	0	0	0	0
Epilobium ciliatum ssp. watsonii	3	1	2	0	1	0	0	0
Epilobium densiflorum	3	5	10	1	2	2	3	0
Fragaria virginiana	0	0	0	0	0	2	0	0
Fraxinus latifolia (seedling)	0	0	0	0	0	0	0	0
Geranium dissectum	0	0	0	0	0	0	20	0
Geum macrophyllum	0	0	0	0	0	0	0	3
Glyceria occidentalis	0	15	0	10	0	0	0	0
Grindelia integrifolia	0	3	0	3	0	0	0	0
Holcus lanatus	0	0	0	0	1	0	3	2
Hordeum brachyantherum	2	0	5	3	3	4	8	20
Hypericum perforatum	0	0	0	0	0	0	0	0
Hypochaeris radicata	2	0	2	0	0	0	3	0
Juncus bufonius	0	0	0	0	0	0	0	0
Juncus tenuis	0	0	0	0	0	0	0	0
Lactuca serriola	0	0	0	0	0	0	0	0
Leucanthemum vulgare	0	0	0	0	0	0	0	0
Lotus corniculatus	0	0	0	2	3	30	0	0
Lythrum portula	0	0	0	0	0	0	0	0
Medicago lupulina	0	0	0	0	0	0	3	0
Montia linearis	0	0	0	0	4	2	0	2

Moss	2	0	0	0	1	3	0	3
Myosotis discolor	5	0	10	0	20	15	0	10
Parentucellia viscosa	1	0	2	0	2	0	4	0
Plagiobothrys figuratus	0	0	0	2	0	0	0	0
Plagiobothrys scouleri	0	0	0	2	0	0	0	0
Plectritis congesta	0	0	2	0	3	15	15	25
Poa trivialis	5	0	8	0	10	0	0	0
Ranunculus cf. macounii	0	0	0	0	0	0	0	0
Ranunculus occidentalis	0	0	0	0	1	2	2	0
Ranunculus repens	0	0	0	0	0	0	0	0
Rorippa curvisiliqua	3	0	0	8	0	0	0	0
Rubus bifrons (seedling)	0	0	0	0	0	0	0	0
Rumex acetosella	0	0	0	0	0	0	0	0
Rumex crispus	0	0	1	0	0	0	0	0
Sanguisorba officinalis (? , seedling)	0	0	0	0	0	0	0	0
Senecio vulgaris	0	0	0	0	0	0	0	0
Sidalcea campestris	0	0	0	0	0	0	0	3
Sidalcea nelsoniana	5	0	0	0	0	0	3	0
Stellaria media	0	0	0	0	0	0	0	0
Trifolium repens	0	0	0	0	0	0	0	0
Trifolium sp. (seedlings)	0	0	0	0	0	0	1	0
Triteleia hyacinthina	0	0	0	0	0	0	0	0
Veronica arvensis	0	0	0	0	0	0	0	0
Veronica peregrina	0	0	0	0	0	1	0	0
Vicia hirsuta	0	0	0	0	0	3	20	0
Vicia sativa	0	0	0	0	0	0	5	0
Vulpia bromoides	0	0	3	0	5	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 3 June 2013

Transect: T5N

Plot type: herbaceous	Percent Cover			
Plot number	1	2	3	4
Agrostis stolonifera	0	0	0	0
Anthoxanthum odoratum	0	0	0	3
Bare/ Litter	0	5	0	0
Bromus racemosus	0	0	0	0
Camassia quamash	1	0	0	0
Carex pachystachya	0	0	0	0
Carex sp. (seedling)	0	0	0	0
Cerastium fontanum	0	0	0	0
Cerastium glomeratum	0	5	0	2
Collinsia grandiflora	0	0	0	1
Deschampsia caespitosa	8	45	40	35
Deschampsia elongata	15	5	0	0
Epilobium brachycarpum	0	0	0	1
Epilobium ciliatum ssp. watsonii	0	0	0	0
Epilobium densiflorum	10	4	15	2
Fraxinus latifolia (seedling)	0	0	0	0
Geranium dissectum	1	0	0	3
Geum macrophyllum	0	1	0	3
Glyceria occidentalis	0	0	0	0
Holcus lanatus	0	0	2	0
Hordeum brachyantherum	5	8	5	1
Hypochaeris radicata	0	0	0	4
Juncus bufonius	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Lotus corniculatus	0	0	0	0
Madia elegans	0	0	0	1
Medicago lupulina	0	0	0	0
Montia linearis	3	0	0	0
Moss	3	0	0	3
Myosotis discolor	20	10	4	15
Parentucellia viscosa	4	3	5	4
Plagiobothrys figuratus	0	0	1	0
Plagiobothrys scouleri	0	0	0	0
Plectritis congesta	3	3	1	0
Poa trivialis	20	5	4	0
Potentilla gracilis	0	0	0	5
Prunella vulgaris var. lanceolata	0	0	0	1
Ranunculus occidentalis	0	1	0	8
Rumex acetosella	0	0	0	0
Senecio jacobea	2	0	0	0
Sidalcea sp. (seedlings)	3	3	0	3
Sonchus asper	0	0	0	0
Trifolium repens	0	0	0	0

<i>Triteleia hyacinthina</i>	0	0	0	0
<i>Veronica peregrina</i>	0	0	0	0
<i>Vicia tetrasperma</i>	4	0	20	0
<i>Vicia sativa</i>	0	0	0	4

Site: Foster Creek WMB

Author: John Christy

Date: 3 June 2013

Transect: T5S

Plot type: herbaceous	Percent Cover							
Plot number	1	2	3	4	5	6	7	8
Agrostis exarata	0	2	0	2	0	0	0	0
Agrostis stolonifera	0	0	0	0	0	0	0	0
Aira caryophylla	0	0	0	1	0	0	0	0
Alopecurus geniculatus	0	0	0	0	0	2	0	0
Anthoxanthum odoratum	0	0	0	0	0	2	8	0
Bare/ Litter	20	10	30	10	0	25	0	0
Beckmannia syzigachne	0	0	0	0	0	0	0	0
Bromus racemosus	0	0	0	0	2	1	0	8
Camassia quamash	5	10	15	4	5	5	0	4
Cardamine occidentalis	2	0	0	0	0	0	0	0
Carex feta	0	10	0	0	0	0	0	0
Carex unilateralis	0	5	0	0	2	0	0	0
Cerastium fontanum	0	0	0	0	0	0	0	0
Cerastium glomeratum	0	0	0	2	3	0	0	0
Cirsium arvense	0	2	0	0	0	0	0	0
Deschampsia caespitosa	15	30	10	15	55	3	0	0
Deschampsia elongata	3	0	2	2	5	1	2	3
Dichelostemma congestum	2	0	0	0	4	2	5	15
Epilobium brachycarpum	0	0	0	0	0	0	0	0
Epilobium ciliatum ssp. watsonii	1	2	1	4	0	0	0	0
Epilobium densiflorum	2	5	4	4	3	15	0	2
Fraxinus latifolia (volunteer)	0	0	0	0	0	0	0	3
Geranium dissectum	0	0	2	3	0	0	10	0
Geum macrophyllum	0	0	0	5	0	0	0	3
Gnaphalium palustre	0	0	0	0	0	1	0	0
Grindelia integrifolia	0	0	0	0	0	0	0	0
Holcus lanatus	0	0	0	5	2	4	0	2
Hordeum brachyantherum	4	0	0	0	0	8	3	20
Hypochaeris radicata	1	0	0	3	4	3	2	0
Juncus bufonius	0	0	0	0	0	0	0	0
Juncus tenuis	0	5	0	0	0	0	0	0
Leucanthemum vulgare	0	0	0	0	0	0	0	0
Lotus corniculatus	2	1	0	0	5	0	10	10
Lupinus sp. (seedling)	0	0	0	0	0	0	0	0
Matricaria recutita	0	0	0	0	0	3	0	0
Medicago lupulina	0	0	1	0	0	0	0	0
Montia linearis	0	1	5	25	5	10	0	0
Moss	5	4	0	0	3	0	2	1
Myosotis discolor	15	8	15	10	4	3	15	20
Parentucellia viscosa	8	0	4	1	0	0	3	1
Plagiobothrys figuratus	0	0	0	0	0	0	0	0
Plagiobothrys scouleri	0	0	0	0	0	0	0	0

<i>Plectritis congesta</i>	0	0	0	2	0	0	0	0
<i>Poa annua</i>	0	0	0	0	0	2	0	0
<i>Poa trivialis</i>	0	0	0	0	0	2	4	5
<i>Potentilla gracilis</i>	0	0	2	2	0	0	0	0
<i>Prunella vulgaris</i> var. <i>lanceolata</i>	0	0	0	0	0	0	0	3
<i>Ranunculus occidentalis</i>	3	1	0	0	0	2	0	0
<i>Ranunculus repens</i>	0	0	0	0	0	2	0	0
<i>Rorippa curvisiliqua</i>	0	0	0	0	0	0	0	0
<i>Rumex acetosella</i>	0	0	0	0	0	0	0	0
<i>Senecio vulgaris</i>	0	0	0	0	0	0	0	0
<i>Sidalcea campestris</i>	0	0	4	0	0	0	0	4
<i>Sidalcea nelsoniana</i>	10	3	0	0	0	0	0	0
<i>Sidalcea</i> sp. (seedlings)	0	0	3	2	0	1	2	0
<i>Trifolium repens</i>	0	0	0	0	0	0	0	0
<i>Triteleia hyacinthina</i>	0	0	0	0	0	0	0	0
<i>Veronica arvensis</i>	0	0	0	0	0	0	0	0
<i>Vicia hirsuta</i>	0	0	0	0	0	0	4	0
<i>Vulpia bromoides</i>	0	0	0	0	0	0	30	0

Site: Foster Creek WMB

Author: John Christy

Date: 3 June 2013

Transect: T6S

Plot type: herbaceous	Percent Cover							
Plot number	1	2	3	4	5	6	7	8
Achillea millifolium	0	0	0	0	0	1	3	2
Agrostis exarata	0	0	0	0	4	0	0	0
Agrostis stolonifera	0	0	0	0	0	0	0	0
Alopecurus geniculatus	2	0	0	0	0	0	0	0
Anthoxanthum odoratum	0	0	3	3	0	1	3	0
Bare/ Litter	5	3	5	5	2	25	10	0
Beckmannia syzigachne	3	0	0	0	0	0	0	0
Bromus racemosus	0	0	0	0	0	1	0	0
Camassia quamash	0	0	10	10	8	0	0	0
Cardamine occidentalis	0	0	0	0	0	0	0	0
Carex feta	0	0	0	0	3	0	0	0
Carex pachystachya	0	0	0	0	0	2	0	0
Cerastium fontanum ssp. vulgare	0	0	0	0	0	2	0	0
Cerastium glomeratum	0	0	1	0	0	0	0	0
Collinsia grandiflora	0	0	0	0	1	0	0	0
Danthonia californica	0	0	0	0	0	0	4	0
Deschampsia caespitosa	0	25	30	30	10	0	10	30
Deschampsia elongata	0	5	1	3	25	15	0	2
Dichelostemma congestum	0	0	10	10	15	4	4	4
Eleocharis obtusa	0	0	0	0	0	0	0	0
Epilobium brachycarpum	0	2	2	0	0	2	2	2
Epilobium ciliatum ssp. watsonii	4	5	3	2	2	0	0	0
Epilobium densiflorum	0	4	4	4	4	4	3	10
Geranium dissectum	0	1	0	4	0	0	2	0
Geum macrophyllum	0	0	0	0	2	0	30	4
Glyceria occidentalis	85	0	0	0	0	0	0	0
Gnaphalium palustre	0	0	0	0	0	0	0	0
Grindelia integrifolia	0	0	0	0	0	0	0	0
Holcus lanatus	0	0	0	0	0	0	3	0
Hordeum brachyantherum	0	0	0	3	3	4	3	5
Hypochaeris radicata	0	0	0	1	0	2	3	2
Juncus bufonius	0	0	0	0	0	0	0	0
Lactuca serriola	0	0	0	0	0	0	0	0
Leucanthemum vulgare	0	0	0	0	0	0	1	0
Lotus corniculatus	0	2	0	0	4	0	4	0
Lythrum portula	0	0	0	0	0	0	0	0
Matricaria recutita	0	1	0	0	0	0	0	0
Medicago lupulina	0	3	2	0	1	0	1	0
Montia linearis	0	3	0	3	0	0	0	2
Moss	0	3	1	0	0	4	0	0
Myosotis discolor	0	5	5	2	5	2	3	5
Parentucellia viscosa	0	10	5	2	0	4	0	0
Persicaria hydropiper	0	0	0	0	0	0	0	0

Phalaris arundinacea	0	0	0	0	0	0	0	0
Plagiobothrys figuratus	0	0	0	0	0	0	0	0
Plagiobothrys scouleri	0	0	0	0	0	0	0	0
Plectritis congesta	0	3	4		3	5	2	10
Poa trivialis	0	10	1	3	4	3	0	0
Potentilla gracilis	0	0	3	0	0	3	2	0
Prunella vulgaris	0	0	3	0	2	0	5	0
Ranunculus occidentalis	0	4	2	0	3	2	0	0
Ranunculus repens	0	0	0	0	0	0	0	0
Rorippa curvisiliqua	0	0	0	0	0	0	0	0
Rumex acetosella	0	0	0	1	0	2	2	0
Rumex crispus	0	0	0	0	0	0	0	0
Senecio vulgaris	0	0	0	0	0	0	0	0
Sidalcea nelsoniana	0	5	0	10	5	0	0	10
Sidalcea sp. (seedlings)	0	0	0	0	0	2	3	0
Sisyrinchium idahoense	0	0	0	2	0	0	0	0
Trifolium pratense	0	0	0	0	0	0	0	0
Trifolium repens	0	0	0	0	0	0	0	0
Triteleia hyacinthina	0	0	0	0	0	0	0	0
Veronica peregrina	0	0	0	0	0	0	0	0
Vicia hirsuta	0	4	0	0	0	0	0	0
Vulpia bromoides	0	0	2	0	0	3	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 2 June 2013

Transect: T7S

Plot type: herbaceous	Percent Cover							
Plot number	1	2	3	4	5	6	7	8
Agrostis exarata	0	0	0	0	0	0	0	0
Agrostis stolonifera	0	0	0	0	0	2	0	0
Anthoxanthum odoratum	2	0	0	0	3	1	35	20
Bare/ Litter	5	10	25	20	40	20	15	8
Bromus racemosus	0	0	0	0	0	0	0	0
Camassia quamash	0	0	0	0	0	0	2	2
Cardamine occidentalis	0	0	0	0	2	0	0	0
Carex obnupta	0	0	0	0	0	3	0	0
Centaureum erythraea	0	0	0	0	0	0	0	2
Cerastium glomeratum	0	0	0	0	0	0	0	0
Deschampsia caespitosa	3	50	20	20	15	5	0	40
Deschampsia danthonioides	0	0	0	0	0	0	0	0
Deschampsia elongata	0	0	5	12	3	5	0	0
Eleocharis acicularis	0	0	0	0	0	0	0	0
Epilobium brachycarpum	2	0	1	0	0	0	0	0
Epilobium ciliatum ssp. watsonii	5	0	1	3	5	0	0	0
Epilobium densiflorum	12	20	5	5	2	2	5	0
Fraxinus latifolia	0	0	0	0	0	0	2	0
Geum macrophyllum	4	0	0	1	2	2	1	2
Gratiola ebracteata	0	0	0	0	0	0	0	0
Holcus lanatus	1	0	0	0	3	1	10	1
Hordeum brachyantherum	5	2	0	5	4	0	0	0
Hypochaeris radicata	0	0	0	2	0	15	2	3
Juncus bufonius	0	0	0	1	0	1	0	0
Juncus tenuis	0	0	0	0	0	0	0	0
Leucanthemum vulgare	0	0	0	0	0	0	0	3
Lotus corniculatus	4	8	10	5	0	2	4	10
Lupinus sp. (seedling)	0	0	0	0	0	0	0	0
Lythrum portula	0	0	0	0	0	0	0	0
Medicago lupulina	0	0	0	0	0	0	0	0
Montia linearis	2	0	0	0	0	1	0	1
Moss	2	0	2	3	3	30	5	2
Myosotis discolor	15	3	15	15	15	0	4	1
Parentucellia viscosa	20	0	3	0	2	4	8	5
Plagiobothrys figuratus	0	0	0	0	0	0	0	0
Plagiobothrys scouleri	0	0	0	0	0	0	0	0
Plectritis congesta	0	5	4	5	0	0	0	0
Poa annua	0	0	0	0	0	0	0	0
Poa trivialis	0	0	4	0	0	0	0	0
Potentilla gracilis	4	0	0	0	0	0	0	0
Ranunculus occidentalis	2	0	1	0	0	0	0	0
Rorippa curvisiliqua	0	0	0	0	0	0	0	0
Saxifraga oregana	0	0	1	0	0	0	0	0
Senecio jacobea	1	0	0	0	0	0	0	0
Sidalcea nelsoniana	0	0	3	0	0	0	0	0

Sidalcea sp. (seedlings)	0	3	0	2	0	0	0	0
Solidago canadensis	0	0	0	0	0	0	0	0
Spiraea douglasii	8	0	0	0	0	0	0	0
Trifolium hybridum	0	0	0	0	0	0	0	0
Trifolium pratense	0	0	0	0	0	0	0	0
Trifolium repens	0	0	0	0	0	0	0	0
Veronica peregrina	0	0	0	0	0	0	0	0
Vicia hirsuta	0	0	0	0	0	0	5	0
Vicia sativa	0	0	0	0	0	0	2	0

**Site: Foster Creek WMB**

**Author: John Christy**

**Date: 2 June 2013**

**Transect: T7S**

<b>Plot type: PFO</b>	<b>Stem Counts</b>			
<b>Plot number</b>	<b>1</b>	<b>6</b>	<b>7</b>	<b>8</b>
Alnus rubra	0	0	0	0
Cornus sericea	31	12	5	2
Crataegus monogyna (volunteer)	0	0	1	1
Fraxinus latifolia	20	56	59	39
Lonicera involucrata	1	2	1	3
Malus fusca	0	1	1	9
Physocarpus capitatus	14	2	0	0
Rosa pisocarpa	0	0	4	9
Salix scouleriana	0	0	0	0
Spiraea douglasii	13	4	6	15
Symphoricarpos albus	3	10	2	0

Comments: Volunteer ash no longer distinguished from those planted, and numbers are estimates. Dead plantings no longer counted.

Site: Foster Creek WMB

Author: John Christy

Date: 2 June 2013

Transect: T8S

Plot type: herbaceous	Percent Cover							
Plot number	1	2	3	4	5	6	7	8
Agrostis exarata	0	0	0	0	0	0	0	0
Agrostis stolonifera var. palustris	0	0	0	0	0	0	0	0
Anthoxanthum odoratum	0	0	45	15	0	40	0	15
Bare/ Litter	10	10	5	0	0	0	5	5
Bromus racemosus	1	0	4	3	0	0	0	0
Camassia quamash	0	2	2	0	0	0	0	0
Centaureum erythraea	0	2	0	0	0	1	2	1
Collinsia grandiflora	0	0	0	0	0	0	0	0
Crataegus monogyna (volunteer)	0	0	0	0	0	0	0	1
Deschampsia caespitosa	30	50	0	30	0	0	30	50
Deschampsia elongata	0	0	0	0	0	0	0	0
Epilobium brachycarpum	3	1	4	1	0	1	0	0
Epilobium ciliatum ssp. watsonii	0	3	0	0	0	3	0	0
Epilobium densiflorum	3	0	20	0	0	2	0	0
Fragaria virginiana	0	0	0	0	0	0	0	3
Fraxinus latifolia	0	0	1	1	0	0	2	0
Geum macrophyllum	0	4	2	2	0	4	3	2
Holcus lanatus	2	3	5	3	20	0	3	0
Hordeum brachyantherum	10	0	0	0	15	0	0	0
Hypochaeris radicata	2	3	2	5	0	5	3	3
Juncus bufonius	0	0	0	0	0	0	0	0
Leucanthemum vulgare	0	0	3	1	15	25	0	0
Lotus corniculatus	2	3	0	2	20	0	4	2
Lupinus sp. (seedling)	0	0	0	0	0	0	1	0
Madia elegans	0	0	1	0	0	0	0	3
Medicago lupulina	0	0	0	0	0	1	0	0
Montia linearis	0	0	0	0	0	0	0	0
Moss	1	5	1	35	0	3	50	2
Myosotis discolor	15	3	0	0	5	5	0	0
Navarretia squarrosa	0	0	0	0	0	0	0	0
Parentucellia viscosa	3	4	0	0	15	3	3	0
Plagiobothrys figuratus	0	0	0	0	0	0	0	0
Plagiobothrys scouleri	0	0	0	0	0	0	0	0
Poa trivialis	3	0	0	0	0	3	0	0
Prunella vulgaris var. lanceolata	0	0	3	0	0	0	0	0
Pseudotsuga menziesii (seedling)	0	0	0	0	0	0	1	0
Ranunculus occidentalis	0	3	3	1	0	0	0	0
Ranunculus repens	0	0	0	0	0	0	0	0
Rosa pisocarpa	0	1	0	0	0	0	0	4
Rumex acetosella	0	0	0	0	0	0	0	2
Sidalcea nelsoniana	0	0	0	0	0	0	0	3
Spiraea douglasii	10	0	0	0	0	0	0	0
Symphoricarpos albus	0	0	0	0	5	2	0	0
Trifolium pratense	0	0	0	0	0	2	0	0

Trifolium repens	0	0	0	0	0	0	0	0
Vicia hirsuta	2	0	0	0	4	1	0	3
Vicia sativa	0	2	0	0	0	0	0	0
Vulpia bromoides	0	0	0	0	0	0	0	0

**Site: Foster Creek WMB**  
**Author: John Christy**  
**Date: 2 June 2013**  
**Transect: T8S**

<b>Plot type: PFO</b>	<b>Stem Counts</b>							
<b>Plot number</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
Acer macrophyllum	1	0	0	0	0	0	0	0
Alnus rubra	0	0	0	0	0	0	0	0
Cornus sericea	17	11	17	11	9	13	19	15
Crataegus douglasii	2	1	1	9	3	2	0	0
Crataegus monogyna (volunteer)	1	1	4	0	5	6	2	2
Fraxinus latifolia	13	18	13	37	17	22	23	25
Lonicera involucrata	13	4	2	0	8	1	3	0
Malus fusca	0	0	1	1	0	0	3	1
Physocarpus capitatus	5	1	0	2	4	3	3	0
Populus trichocarpa (volunteer)	0	0	0	6	0	25	1	3
Rhamnus purshiana	0	0	0	0	0	2	1	1
Rosa pisocarpa	2	3	4	2	4	0	0	18
Salix scouleriana	0	1	0	0	0	0	0	0
Spiraea douglasii	5	1	4	3	0	3	0	1
Symphoricarpos albus	4	7	13	10	12	8	8	9

Comments: Volunteer ash no longer distinguished from those planted. Dead plantings no longer counted.

## APPENDIX B. 2013 VEGETATION COVER DATA (Upland Monitoring Plots)

Note: Lettering of upland plots was changed by WS after 2009 monitoring report (H changed to A, G to B, F to C, and E to D). The original marker for Plot D could not be relocated in 2013, and was reestablished by Mark Vlahakis, probably in a slightly different location from the original.

**Site: Foster Creek WMB**

**Author: John Christy**

**Date: 1 & 3 June 2013**

**Transect: n/a**

Plot type: Upland Plots Plot number	Percent Cover			
	A	B	C	D
Agrostis stolonifera	0	0	0	0
Anthoxanthum odoratum	0	0	0	0
Bare/ Litter	2	0	60	10
Bromus racemosus	0	0	3	0
Camassia quamash	0	0	0	3
Cardamine occidentalis	0	0	0	0
Carex feta	0	0	0	3
Carex pachystachya	0	3	0	0
Carex unilateralis	0	0	0	3
Centaurium erythraea	0	0	0	0
Cerastium fontanum ssp. vulgare	0	0	0	0
Cerastium glomeratum	0	0	0	0
Collinsia grandiflora	0	0	0	0
Crepis sp.	0	0	0	0
Danthonia californica	0	0	1	0
Daucus carota (seedling)	0	0	0	0
Deschampsia caespitosa	10	0	0	30
Deschampsia elongata	0	0	0	4
Dichelostemma congestum	0	0	0	15
Epilobium brachycarpum	0	0	0	0
Epilobium ciliatum ssp. watsonii	0	2	0	3
Epilobium densiflorum	0	0	0	0
Erigeron philadelphicus	0	0	0	0
Festuca roemerii	0	0	0	0
Festuca rubra	0	0	0	0
Fraxinus latifolia (seedling)	0	0	0	0
Geranium dissectum	30	15	4	4
Geranium molle	0	0	0	0
Grindelia integrifolia	0	0	0	0
Holcus lanatus	0	0	0	0
Hordeum brachyantherum	5	8	4	15
Hypochaeris radicata	2	2	0	0
Juncus bufonius	0	0	0	0
Leucanthemum vulgare	0	15	0	0
Lotus corniculatus	0	3	0	0
Lupinus polyphyllus	0	0	0	0

Medicago lupulina	0	0	0	0
Montia linearis	0	3	0	0
Moss	3	0	0	0
Myosotis discolor	10	3	3	3
Parentucellia viscosa	2	3	2	3
Plectritis congesta	0	0	1	0
Poa trivialis	0	0	2	0
Potentilla gracilis	0	0	0	0
Poteridium occidentale	0	0	0	0
Prunella vulgaris var. lanceolata	2	0	0	0
Ranunculus occidentalis	1	0	0	0
Rumex acetosella	0	0	0	0
Saxifraga oregana	1	0	0	0
Senecio vulgaris	0	0	0	0
Sidalcea campestris	0	5	20	0
Sonchus asper	0	0	0	3
Trifolium hybridum	0	0	0	0
Triteleia hyacinthina	0	0	0	0
Veronica arvensis	0	3	0	0
Vicia hirsuta	0	35	0	0
Vicia sativa	0	0	2	0
Vulpia bromoides	30	0	0	0

**APPENDIX C. 2013 WETLAND TRANSECT PHOTOS.** All photos taken from beginning of transect at baseline, looking toward end of transect. Range pole marks first quadrat on each transect. Stake at beginning of Transect 1 North is missing, originally located ca. 4 ft north of 2x4 bird perch currently standing at this location.



**Photo 1. Transect 1 North**



**Photo 2. Transect 1 South**



**Photo 3. Transect 2 North**



**Photo 4. Transect 2 South**



**Photo 5. Transect 3 North**



**Photo 6. Transect 3 South**



**Photo 7. Transect 4 North**



**Photo 8. Transect 4 South**



**Photo 9. Transect 5 North**



**Photo 10. Transect 5 South**



**Photo 11. Transect 6 South**



**Photo 12. Transect 7 South**



**Photo 13. Transect 8 South**

**APPENDIX D. 2013 UPLAND MONITORING PLOT PHOTOS**



**Photo 14. Upland Transect A, looking south**



**Photo 15. Upland Transect A, looking west**



**Photo 16. Upland Transect B, looking south**



**Photo 17. Upland Transect B, looking west**



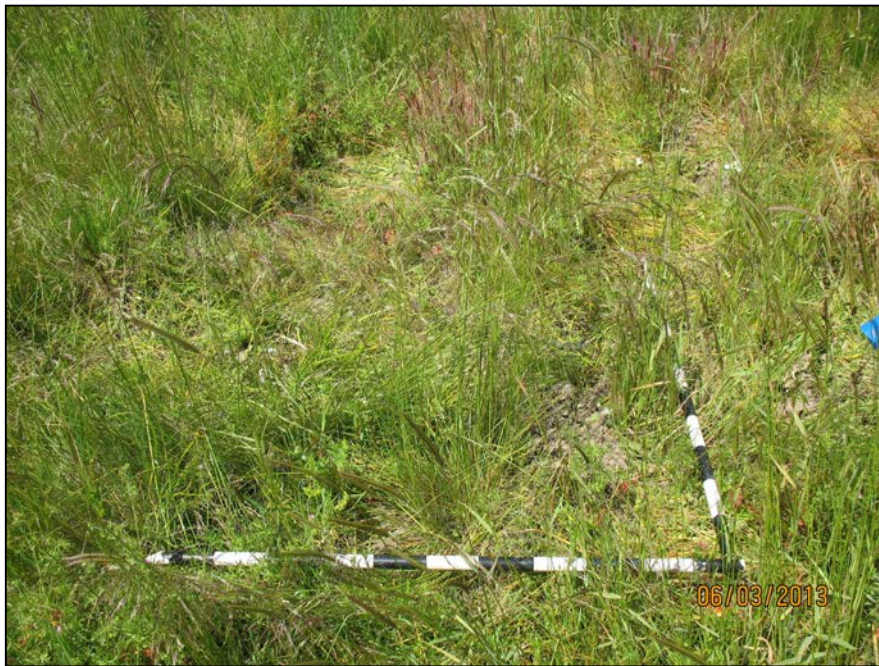
**Photo 18. Upland Transect C, looking south**



**Photo 19. Upland Transect C, looking west**



**Photo 20. Upland Plot D, looking south**



**Photo 21. Upland Plot D, looking west**

## APPENDIX E. MISCELLANEOUS PHOTOS

Photo 22. Changes in vernal pool vegetaton, 2011 (top) and 2013 (bottom). Notable is the replacement of the exotic annual *Lythrum portula* by the native perennials *Eleocharis palustris* and *Leersia oryzoides*.



**Photo 23. Maturing PFO plantings at south end of Transect 8 (top), and mature seasonally wet ash - cottonwood - Douglas fir - white oak woodland along south edge of Foster Creek WMB (bottom).**



**Photo 24. Top: north boundary adjacent to BPA ownership, with planted *Deschampsia caespitosa* prairie to left of center and weedy stands of *Phalaris arundinacea* and *Holcus lanatus* to right. Bottom: unplanted strip along west boundary of Foster Creek WMB, with weedy *Holcus lanatus* to left of center and planted *Deschampsia caespitosa* prairie to right.**



## APPENDIX F. TRANSECT SUMMARY DATA, 2011-2012.

Site: Foster Creek WMB

Author: John Christy

Date: 9 June 2012

Transect: T1N

Plot type: herbaceous	Freq	2012		
		Ave	Min	Max
Deschampsia caespitosa	100	29	10	55
Bare/ Litter	88	33	0	65
Deschampsia elongata	75	4	0	15
Myosotis discolor	63	4	0	25
Agrostis exarata	63	3	0	10
Lotus corniculatus	50	10	0	65
Carex unilateralis	50	4	0	25
Poa trivialis	50	3	0	10
Moss	50	1	0	4
Epilobium densiflorum	50	1	0	2
Potentilla gracilis	38	1	0	2
Agrostis stolonifera	25	2	0	15
Hordeum brachyantherum	25	2	0	15
Epilobium ciliatum ssp. watsonii	25	1	0	5
Geum macrophyllum	25	1	0	3
Carex pachystachya	13	1	0	5
Vulpia bromoides	13	1	0	5
Camassia quamash	13	0	0	2
Holcus lanatus	13	0	0	1
Juncus patens	13	0	0	1
Parentucellia viscosa	13	0	0	1
Sidalcea nelsoniana (seedling)	13	0	0	1
Triteleia hyacinthina	13	0	0	1
Alopecurus geniculatus	0	0	0	0
Anthoxanthum odoratum	0	0	0	0
Aquilegia formosa	0	0	0	0
Beckmannia syzigachne	0	0	0	0
Bromus racemosus	0	0	0	0
Cardamine occidentalis	0	0	0	0
Centaureum erythraea	0	0	0	0
Cerastium fontanum ssp. vulgare	0	0	0	0
Cerastium glomeratum	0	0	0	0
Cirsium vulgare	0	0	0	0
Deschampsia danthonioides	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Fraxinus latifolia (seedling)	0	0	0	0
Geranium dissectum	0	0	0	0
Gnaphalium palustre	0	0	0	0
Grindelia integrifolia	0	0	0	0
Hypochaeris radicata	0	0	0	0
Juncus bufonius	0	0	0	0
Juncus tenuis	0	0	0	0
Leucanthemum vulgare	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 3 June 2013

Transect: T1N

Plot type: herbaceous	Freq	2013		
		Ave	Min	Max
Deschampsia caespitosa	100	27	8	55
Bare/ Litter	100	16	2	35
Myosotis discolor	75	14	0	70
Epilobium densiflorum	75	10	0	25
Poa trivialis	75	5	0	15
Epilobium ciliatum ssp. watsonii	75	2	0	4
Moss	75	2	0	4
Hordeum brachyantherum	63	6	0	15
Deschampsia elongata	50	4	0	25
Lotus corniculatus	50	1	0	3
Holcus lanatus	50	1	0	3
Carex unilateralis	38	3	0	15
Montia linearis	38	1	0	4
Beckmannia syzigachne	38	1	0	2
Carex pachystachya	25	2	0	10
Anthoxanthum odoratum	25	1	0	5
Sidalcea nelsoniana (seedling)	25	1	0	4
Sidalcea sp. (seedling)	25	1	0	4
Parentucellia viscosa	25	1	0	3
Potentilla gracilis	25	1	0	3
Camassia quamash	13	1	0	8
Geum macrophyllum	13	1	0	4
Rumex occidentalis	13	1	0	4
Sidalcea campestris	13	1	0	4
Agrostis stolonifera	13	0	0	3
Carex feta	13	0	0	3
Dichelostemma congestum	13	0	0	3
Geranium dissectum	13	0	0	3
Medicago lupulina	13	0	0	3
Plectritis congesta	13	0	0	3
Ranunculus occidentalis	13	0	0	3
Sisyrinchium idahoense	13	0	0	3
Vulpia bromoides	13	0	0	3
Hypochaeris radicata	13	0	0	2
Sisyrinchium bellum	13	0	0	2
Veronica peregrina	13	0	0	2
Vicia hirsuta	13	0	0	2
Cerastium fontanum ssp. vulgare	13	0	0	1
Agrostis exarata	0	0	0	0
Alopecurus geniculatus	0	0	0	0
Aquilegia formosa	0	0	0	0
Bromus racemosus	0	0	0	0
Cardamine occidentalis	0	0	0	0

Medicago lupulina	0	0	0	0
Montia fontana	0	0	0	0
Montia linearis	0	0	0	0
Navarretia sp.	0	0	0	0
Panicum sp. (seedling)	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Senecio vulgaris	0	0	0	0
Trifolium hybridum	0	0	0	0
Veronica arvensis	0	0	0	0
Veronica peregrina	0	0	0	0

Centaurium erythraea	0	0	0	0
Cerastium glomeratum	0	0	0	0
Cirsium vulgare	0	0	0	0
Deschampsia danthonioides	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Fraxinus latifolia (seedling)	0	0	0	0
Gnaphalium palustre	0	0	0	0
Grindelia integrifolia	0	0	0	0
Juncus bufonius	0	0	0	0
Juncus patens	0	0	0	0
Juncus tenuis	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Montia fontana	0	0	0	0
Navarretia sp.	0	0	0	0
Panicum sp. (seedling)	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Senecio vulgaris	0	0	0	0
Trifolium hybridum	0	0	0	0
Triteleia hyacinthina	0	0	0	0
Veronica arvensis	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 9 June 2012

Transect: T1S

Plot type: herbaceous	Freq	2012		
		Ave	Min	Max
Lotus corniculatus	100	24	3	50
Deschampsia caespitosa	100	21	8	50
Epilobium densiflorum	100	9	1	25
Deschampsia elongata	100	8	3	25
Bare/ Litter	75	11	0	25
Myosotis discolor	75	4	0	15
Moss	63	3	0	5
Poa trivialis	63	2	0	5
Hordeum brachyantherum	50	2	0	5
Vulpia bromoides	38	3	0	20
Agrostis exarata	38	2	0	5
Parentucellia viscosa	38	1	0	3
Juncus bufonius	38	1	0	3
Holcus lanatus	38	1	0	2
Epilobium ciliatum ssp. watsonii	25	1	0	5
Cerastium glomeratum	25	0	0	2
Juncus tenuis	25	0	0	2
Camassia quamash	13	4	0	35
Montia linearis	13	2	0	15
Geum macrophyllum (many seedlings)	13	1	0	10
Geranium molle	13	1	0	4
Ranunculus repens (sprayed)	13	1	0	4
Fraxinus latifolia (seedling)	13	0	0	3
Glyceria occidentalis	13	0	0	3
Anthoxanthum odoratum	13	0	0	2
Cardamine occidentalis	13	0	0	2
Carex unilateralis	13	0	0	2
Eleocharis obtusa	13	0	0	2
Medicago lupulina	13	0	0	2
Plagiobothrys figuratus	13	0	0	2
Populus trichocarpa (seedling)	13	0	0	2
Potentilla gracilis	13	0	0	2
Hypochaeris radicata	13	0	0	1
Rorippa curvisiliqua	13	0	0	1
Alopecurus geniculatus	0	0	0	0
Carex feta	0	0	0	0
Carex pachystachya	0	0	0	0
Carex sp. (seedling)	0	0	0	0
Crataegus monogyna (seedling)	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Gnaphalium palustre	0	0	0	0
Juncus ensifolius	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Lupinus sp. (seedling)	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 1 June 2013

Transect: T1S

Plot type: herbaceous	Freq	2013		
		Ave	Min	Max
Deschampsia caespitosa	100	34	5	75
Bare/ Litter	100	12	2	30
Hordeum brachyantherum	100	8	2	20
Poa trivialis	88	8	0	25
Moss	88	3	0	8
Myosotis discolor	63	3	0	5
Montia linearis	63	1	0	5
Deschampsia elongata	50	5	0	25
Vulpia bromoides	38	5	0	35
Geum macrophyllum	38	3	0	20
Lotus corniculatus	38	2	0	15
Holcus lanatus	38	2	0	10
Agrostis exarata	38	2	0	5
Parentucellia viscosa	38	1	0	5
Epilobium densiflorum	38	1	0	5
Cerastium glomeratum	38	1	0	2
Plectritis congesta	25	2	0	10
Carex unilateralis	25	1	0	4
Anthoxanthum odoratum	25	1	0	2
Panicum sp. (seedling)	25	0	0	1
Geranium molle	13	3	0	20
Ranunculus repens	13	1	0	10
Hypochaeris radicata	13	1	0	5
Bromus racemosus	13	0	0	3
Epilobium ciliatum ssp. watsonii	13	0	0	3
Fraxinus latifolia (seedling)	13	0	0	3
Juncus bufonius	13	0	0	3
Rumex acetosella	13	0	0	3
Aira caryophylla	13	0	0	2
Glyceria occidentalis	13	0	0	2
Carex sp. (seedling)	13	0	0	1
Medicago lupulina	13	0	0	1
Montia fontana	13	0	0	1
Veronica arvensis	13	0	0	1
Alopecurus geniculatus	0	0	0	0
Camassia quamash	0	0	0	0
Cardamine occidentalis	0	0	0	0
Carex feta	0	0	0	0
Carex pachystachya	0	0	0	0
Crataegus monogyna (seedling)	0	0	0	0
Eleocharis obtusa	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Gnaphalium palustre	0	0	0	0
Juncus ensifolius	0	0	0	0

Montia fontana	0	0	0	0
Panicum sp. (seedling)	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Poa sp. (seedling)	0	0	0	0
Rumex acetosella	0	0	0	0
Senecio vulgaris	0	0	0	0
Trifolium hybridum	0	0	0	0
Unknown grass (leaves only)	0	0	0	0
Veronica arvensis	0	0	0	0
Veronica peregrina	0	0	0	0

Juncus tenuis	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Lupinus sp. (seedling)	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Poa sp. (seedling)	0	0	0	0
Populus trichocarpa (seedling)	0	0	0	0
Potentilla gracilis	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Senecio vulgaris	0	0	0	0
Trifolium hybridum	0	0	0	0
Unknown grass (leaves only)	0	0	0	0
Veronica peregrina	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 10 June 2012

Transect: T2N

Plot type: herbaceous	Freq	2012		
		Ave	Min	Max
Bare/ Litter	88	22	0	60
Myosotis discolor	88	3	0	8
Deschampsia caespitosa	75	23	0	50
Lotus corniculatus	75	10	0	40
Poa trivialis	75	5	0	20
Agrostis exarata	75	3	0	5
Hordeum brachyantherum	63	5	0	15
Epilobium densiflorum	63	1	0	4
Epilobium ciliatum ssp. watsonii	50	3	0	15
Sidalcea nelsoniana	50	3	0	20
Juncus bufonius	50	1	0	3
Deschampsia elongata	38	4	0	15
Moss	38	2	0	8
Carex obnupta	38	1	0	5
Glyceria occidentalis	25	3	0	15
Geum macrophyllum	25	1	0	4
Agrostis stolonifera	25	1	0	2
Potentilla gracilis	25	0	0	1
Fraxinus latifolia (planted)	13	3	0	20
Carex densa	13	1	0	10
Bromus racemosus	13	1	0	5
Beckmannia syzigachne	13	1	0	4
Triteleia hyacinthina	13	1	0	4
Anthoxanthum odoratum	13	0	0	3
Carex feta	13	0	0	3
Juncus tenuis	13	0	0	3
Holcus lanatus	13	0	0	2
Plagiobothrys scouleri	13	0	0	2
Sisyrinchium idahoense	13	0	0	2
Camassia quamash	13	0	0	1
Carex deweyana	13	0	0	1
Lythrum portula	13	0	0	1
Veronica peregrina	13	0	0	1
Cardamine occidentalis	0	0	0	0
Carex unilateralis	0	0	0	0
Cerastium fontanum ssp. vulgare	0	0	0	0
Cerastium glomeratum	0	0	0	0
Daucus carota	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Fraxinus latifolia (seedling)	0	0	0	0
Geranium dissectum	0	0	0	0
Gnaphalium palustre	0	0	0	0
Gratiola ebracteata	0	0	0	0
Grindelia integrifolia	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 2-3 June 2013

Transect: T2N

Plot type: herbaceous	Freq	2013		
		Ave	Min	Max
Myosotis discolor	88	11	0	65
Bare/ Litter	88	10	0	20
Deschampsia caespitosa	75	18	0	60
Epilobium densiflorum	75	9	0	35
Hordeum brachyantherum	75	8	0	20
Poa trivialis	75	7	0	20
Lotus corniculatus	63	1	0	3
Deschampsia elongata	50	2	0	15
Carex obnupta	38	3	0	15
Epilobium ciliatum ssp. watsonii	38	2	0	15
Sidalcea campestris	38	2	0	10
Geum macrophyllum	38	1	0	3
Moss	38	1	0	5
Parentucellia viscosa	38	1	0	4
Beckmannia syzigachne	38	1	0	2
Sidalcea nelsoniana	25	5	0	30
Glyceria occidentalis	25	2	0	15
Geranium dissectum	25	2	0	10
Plectritis congesta	25	1	0	4
Ranunculus occidentalis	25	1	0	5
Carex feta	25	1	0	3
Dichelostemma congestum	25	1	0	3
Agrostis exarata	25	0	0	2
Fraxinus latifolia (planted)	13	3	0	25
Anthoxanthum odoratum	13	1	0	5
Carex pachystachya	13	1	0	5
Cornus sericea	13	1	0	5
Hypochaeris radicata	13	1	0	5
Agrostis stolonifera	13	0	0	3
Bromus racemosus	13	0	0	3
Juncus tenuis	13	0	0	3
Montia linearis	13	0	0	3
Sisyrinchium idahoense	13	0	0	3
Trifolium hybridum	13	0	0	3
Carex unilateralis	13	0	0	2
Holcus lanatus	13	0	0	2
Juncus bufonius	13	0	0	2
Potentilla gracilis	13	0	0	2
Prunella vulgaris var. lanceolata	13	0	0	2
Cerastium fontanum ssp. vulgare	13	0	0	1
Leucanthemum vulgare	13	0	0	1
Plagiobothrys scouleri	13	0	0	1
Vicia sativa	13	0	0	1
Camassia quamash	0	0	0	0

Hypochaeris radicata	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Matricaria recutita	0	0	0	0
Medicago lupulina	0	0	0	0
Montia linearis	0	0	0	0
Myosotis laxa	0	0	0	0
Panicum sp. (seedling)	0	0	0	0
Parentucellia viscosa	0	0	0	0
Persicaria hydropiper	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plectritis congesta	0	0	0	0
Poa annua	0	0	0	0
Poa sp. (seedling)	0	0	0	0
Prunella vulgaris var. lanceolata	0	0	0	0
Ranunculus orthorhynchus	0	0	0	0
Ranunculus repens	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Rumex acetosella	0	0	0	0
Solidago canadensis	0	0	0	0
Trifolium hybridum	0	0	0	0
Trifolium repens	0	0	0	0
Veronica arvensis	0	0	0	0

Cardamine occidentalis	0	0	0	0
Carex densa	0	0	0	0
Carex leptopoda	0	0	0	0
Cerastium glomeratum	0	0	0	0
Daucus carota	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Fraxinus latifolia (seedling)	0	0	0	0
Gnaphalium palustre	0	0	0	0
Gratiola ebracteata	0	0	0	0
Grindelia integrifolia	0	0	0	0
Lythrum portula	0	0	0	0
Matricaria recutita	0	0	0	0
Medicago lupulina	0	0	0	0
Myosotis laxa	0	0	0	0
Panicum sp. (seedling)	0	0	0	0
Persicaria hydropiper	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Poa annua	0	0	0	0
Poa sp. (seedling)	0	0	0	0
Ranunculus orthorhynchus	0	0	0	0
Ranunculus repens	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Rumex acetosella	0	0	0	0
Sisyrinchium idahoense	0	0	0	0
Solidago canadensis	0	0	0	0
Trifolium repens	0	0	0	0
Triteleia hyacinthina	0	0	0	0
Veronica arvensis	0	0	0	0
Veronica peregrina	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 9 June 2012

Transect: T2S Plot type: herbaceous	2012			
	Freq	Percent cover		
		Ave	Min	Max
Bare/ Litter	100	28	5	40
Deschampsia caespitosa	100	18	8	30
Lotus corniculatus	100	8	2	30
Deschampsia elongata	88	11	0	30
Epilobium densiflorum	88	10	0	35
Myosotis discolor	88	10	0	20
Moss	88	3	0	5
Hordeum brachyantherum	63	3	0	10
Cardamine occidentalis	63	1	0	3
Parentucellia viscosa	38	1	0	4
Geranium dissectum	25	2	0	15
Poa trivialis	25	1	0	5
Ranunculus occidentalis	25	1	0	5
Agrostis exarata	25	1	0	3
Carex unilateralis	25	1	0	2
Montia linearis	25	0	0	1
Geum macrophyllum	13	1	0	5
Camassia quamash	13	0	0	3
Ranunculus repens	13	0	0	3
Veronica arvensis	13	0	0	3
Bromus racemosus	13	0	0	2
Glyceria occidentalis	13	0	0	2
Holcus lanatus	13	0	0	2
Hypochaeris radicata	13	0	0	2
Rorippa curvisiliqua	13	0	0	2
Sidalcea (seedling)	13	0	0	2
Cerastium glomeratum	13	0	0	1
Epilobium ciliatum ssp. watsonii	13	0	0	1
Juncus bufonius	13	0	0	1
Plagiobothrys scouleri	13	0	0	1
Solidago elongata	13	0	0	1
Alopecurus geniculatus	0	0	0	0
Anthoxanthum odoratum	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Fraxinus latifolia (seedling)	0	0	0	0
Lactuca serriola	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Medicago lupulina	0	0	0	0
Montia fontana	0	0	0	0
Phalaris arundinacea	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Rumex acetosella	0	0	0	0
Rumex aquaticus var. fenestratus	0	0	0	0
Senecio vulgaris	0	0	0	0
Symphotrichum hallii (? , seedling)	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 1 June 2013

Transect: T2S Plot type: herbaceous	2013			
	Freq	Percent cover		
		Ave	Min	Max
Deschampsia caespitosa	100	26	3	50
Bare/ Litter	100	4	1	10
Hordeum brachyantherum	88	16	0	60
Deschampsia elongata	75	10	0	50
Poa trivialis	75	10	0	20
Moss	75	3	0	10
Holcus lanatus	75	3	0	12
Plectritis congesta	50	4	0	25
Myosotis discolor	50	4	0	15
Parentucellia viscosa	50	3	0	10
Carex unilateralis	38	2	0	10
Sidalcea campestris	38	2	0	5
Veronica arvensis	38	1	0	3
Agrostis exarata	25	3	0	15
Epilobium densiflorum	25	2	0	10
Alopecurus geniculatus	25	2	0	10
Cerastium glomeratum	25	1	0	5
Panicum sp. (seedlings)	25	0	0	1
Fraxinus latifolia (seedling)	13	2	0	15
Geranium dissectum	13	1	0	10
Vulpia bromoides	13	1	0	8
Camassia quamash	13	1	0	5
Glyceria occidentalis	13	1	0	5
Ranunculus occidentalis	13	1	0	5
Carex densa	13	0	0	3
Lotus corniculatus	13	0	0	3
Montia linearis	13	0	0	3
Anthoxanthum odoratum	13	0	0	2
Sidalcea sp. (seedlings)	13	0	0	2
Solidago elongata	13	0	0	2
Geum macrophyllum	13	0	0	1
Juncus bufonius	13	0	0	1
Bromus racemosus	0	0	0	0
Cardamine occidentalis	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Epilobium ciliatum ssp. watsonii	0	0	0	0
Hypochaeris radicata	0	0	0	0
Lactuca serriola	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Medicago lupulina	0	0	0	0
Montia fontana	0	0	0	0
Phalaris arundinacea	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Ranunculus repens	0	0	0	0

Trifolium hybridum	0	0	0	0
Vulpia bromoides	0	0	0	0

Rorippa curvisiliqua	0	0	0	0
Rumex acetosella	0	0	0	0
Rumex aquaticus var. fenestratus	0	0	0	0
Senecio vulgaris	0	0	0	0
Symphyotrichum hallii (? , seedling)	0	0	0	0
Trifolium hybridum	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 10 June 2012

Transect: T3N

Plot type: herbaceous	2012			
	Freq	Percent cover		
		Ave	Min	Max
Deschampsia caespitosa	88	25	0	60
Epilobium densiflorum	88	3	0	5
Bare/ Litter	75	21	0	60
Deschampsia elongata	75	15	0	40
Myosotis discolor	75	5	0	20
Lotus corniculatus	63	2	0	3
Epilobium ciliatum ssp. watsonii	63	1	0	3
Carex obnupta	50	1	0	5
Geum macrophyllum	50	1	0	5
Poa trivialis	38	8	0	35
Hordeum brachyantherum	38	2	0	10
Parentucellia viscosa	38	1	0	4
Sidalcea nelsoniana	38	1	0	4
Fraxinus latifolia (seedling)	38	1	0	4
Vicia hirsuta	25	3	0	20
Juncus tenuis	25	1	0	4
Crataegus monogyna (seedling)	25	1	0	4
Juncus bufonius	25	1	0	3
Agrostis stolonifera	25	1	0	3
Centaurium erythraea	25	1	0	3
Cornus sericea	25	1	0	3
Epilobium brachycarpum	25	1	0	3
Agrostis exarata	25	0	0	1
Vulpia bromoides	13	3	0	20
Holcus lanatus	13	1	0	5
Carex unilateralis	13	0	0	3
Hypericum perforatum	13	0	0	3
Hypochaeris radicata	13	0	0	3
Lolium multiflorum	13	0	0	3
Lythrum portula	13	0	0	3
Danthonia californica	13	0	0	2
Eleocharis acicularis	13	0	0	2
Montia linearis	13	0	0	2
Myosotis laxa	13	0	0	2
Rorippa curvisiliqua	13	0	0	2
Geranium molle	13	0	0	1
Moss	13	0	0	1
Plagiobothrys scouleri	13	0	0	1
Allium vineale	0	0	0	0
Alopecurus geniculata	0	0	0	0
Anthoxanthum odoratum	0	0	0	0
Beckmannia syzigachne	0	0	0	0
Camassia quamash	0	0	0	0
Cardamine occidentalis	0	0	0	0
Carex sp. (seedling)	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 2-3 June 2013

Transect: T3N

Plot type: herbaceous	2013			
	Freq	Percent cover		
		Ave	Min	Max
Deschampsia caespitosa	88	27	0	50
Epilobium densiflorum	88	7	0	15
Hordeum brachyantherum	88	6	0	20
Poa trivialis	63	6	0	20
Myosotis discolor	63	5	0	15
Bare/ Litter	63	3	0	5
Deschampsia elongata	50	4	0	15
Parentucellia viscosa	50	3	0	15
Plectritis congesta	50	2	0	10
Lotus corniculatus	50	1	0	4
Sidalcea nelsoniana	38	8	0	30
Carex obnupta	38	2	0	8
Geum macrophyllum	38	1	0	5
Epilobium ciliatum ssp. watsonii	38	1	0	4
Epilobium brachycarpum	38	1	0	4
Fraxinus latifolia	38	1	0	3
Cornus sericea	38	1	0	3
Vicia hirsuta	25	3	0	15
Anthoxanthum odoratum	25	2	0	8
Myosotis laxa	25	1	0	5
Agrostis exarata	25	1	0	3
Holcus lanatus	25	1	0	3
Juncus tenuis	25	1	0	3
Carex feta	25	1	0	3
Leucanthemum vulgare	25	1	0	3
Medicago lupulina	25	1	0	3
Geranium dissectum	13	3	0	20
Carex unilateralis	13	2	0	15
Vicia sativa	13	2	0	15
Lapsana communis	13	1	0	10
Hypochaeris radicata	13	1	0	8
Beckmannia syzigachne	13	1	0	5
Ranunculus repens	13	1	0	5
Bromus racemosus	13	0	0	3
Plagiobothrys figuratus	13	0	0	3
Poa palustris	13	0	0	3
Prunella vulgaris var. lanceolata	13	0	0	3
Crataegus monogyna (seedling)	13	0	0	2
Dichelostemma congestum	13	0	0	2
Galium aparine	13	0	0	2
Ranunculus occidentalis	13	0	0	2
Vulpia bromoides	13	0	0	2
Allium vineale	13	0	0	1
Collinsia grandiflora	13	0	0	1
Matricaria recutita	13	0	0	1

Cerastium fontanum ssp. vulgare	0	0	0	0
Cerastium glomeratum	0	0	0	0
Daucus carota	0	0	0	0
Geranium dissectum	0	0	0	0
Gnaphalium palustre	0	0	0	0
Gratiola neglecta	0	0	0	0
Grindelia integrifolia	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Medicago lupulina	0	0	0	0
Montia fontana	0	0	0	0
Panicum sp. (seedling)	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plectritis congesta	0	0	0	0
Potentilla sp. (seedling)	0	0	0	0
Prunella vulgaris var. lanceolata	0	0	0	0
Ranunculus repens	0	0	0	0
Rumex acetosella	0	0	0	0
Sonchus asper	0	0	0	0
Trifolium repens	0	0	0	0
Triteleia hyacinthina	0	0	0	0
Veronica arvensis	0	0	0	0
Veronica peregrina	0	0	0	0
Vicia sativa	0	0	0	0

Agrostis stolonifera	0	0	0	0
Alopecurus geniculata	0	0	0	0
Camassia quamash	0	0	0	0
Cardamine occidentalis	0	0	0	0
Carex sp. (seedling)	0	0	0	0
Centaurium erythraea	0	0	0	0
Cerastium fontanum ssp. vulgare	0	0	0	0
Cerastium glomeratum	0	0	0	0
Danthonia californica	0	0	0	0
Daucus carota	0	0	0	0
Eleocharis acicularis	0	0	0	0
Geranium molle	0	0	0	0
Gnaphalium palustre	0	0	0	0
Gratiola neglecta	0	0	0	0
Grindelia integrifolia	0	0	0	0
Hypericum perforatum	0	0	0	0
Juncus bufonius	0	0	0	0
Lolium multiflorum	0	0	0	0
Lythrum portula	0	0	0	0
Montia fontana	0	0	0	0
Montia linearis	0	0	0	0
Moss	0	0	0	0
Panicum sp. (seedling)	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Potentilla sp. (seedling)	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Rumex acetosella	0	0	0	0
Sonchus asper	0	0	0	0
Trifolium repens	0	0	0	0
Triteleia hyacinthina	0	0	0	0
Veronica arvensis	0	0	0	0
Veronica peregrina	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 9 June 2012

Transect: T3S

Plot type: herbaceous	2012			
	Freq	Percent cover		
		Ave	Min	Max
Bare/ Litter	100	27	15	40
Moss	88	5	0	25
Myosotis discolor	75	8	0	35
Deschampsia caespitosa	63	16	0	60
Deschampsia elongata	63	11	0	60
Lotus corniculatus	63	7	0	40
Agrostis exarata	63	4	0	13
Epilobium densiflorum	63	2	0	8
Poa trivialis	63	2	0	3
Hordeum brachyantherum	50	4	0	25
Carex pachystachya	50	1	0	3
Camassia quamash	38	1	0	3
Agrostis stolonifera	25	2	0	10
Geum macrophyllum	25	1	0	8
Glyceria occidentalis	25	1	0	5
Holcus lanatus	25	0	0	2
Parentucellia viscosa	25	0	0	2
Juncus bufonius	25	0	0	1
Montia linearis	25	0	0	1
Ranunculus repens	25	0	0	1
Deschampsia danthonioides	13	3	0	25
Carex unilateralis	13	0	0	3
Triteleia hyacinthina	13	0	0	3
Vulpia bromoides	13	0	0	3
Cardamine occidentalis	13	0	0	2
Anthoxanthum odoratum	13	0	0	1
Epilobium ciliatum ssp. watsonii	13	0	0	1
Fraxinus latifolia (seedling)	13	0	0	1
Hypericum anagalloides	13	0	0	1
Hypochaeris radicata	13	0	0	1
Leucanthemum vulgare	13	0	0	1
Plagiobothrys scouleri	13	0	0	1
Alopecurus geniculatus	0	0	0	0
Cerastium glomeratum	0	0	0	0
Crataegus douglasii (volunteer)	0	0	0	0
Crataegus monogyna (volunteer)	0	0	0	0
Geranium dissectum	0	0	0	0
Gnaphalium palustre	0	0	0	0
Medicago lupulina	0	0	0	0
Montia fontana	0	0	0	0
Phalaris arundinacea	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Poa annua	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Rumex acetosella	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 1 June 2013

Transect: T3S

Plot type: herbaceous	2013			
	Freq	Percent cover		
		Ave	Min	Max
Bare/ Litter	88	11	0	30
Myosotis discolor	88	10	0	20
Deschampsia caespitosa	75	18	0	50
Poa trivialis	75	12	0	35
Hordeum brachyantherum	75	11	0	30
Moss	75	5	0	20
Epilobium densiflorum	63	7	0	30
Deschampsia elongata	63	5	0	15
Parentucellia viscosa	63	2	0	5
Carex feta	50	3	0	8
Epilobium ciliatum ssp. watsonii	50	1	0	5
Plectritis congesta	38	2	0	10
Camassia quamash	38	1	0	5
Geum macrophyllum	38	1	0	3
Juncus bufonius	38	1	0	5
Lotus corniculatus	38	1	0	3
Vulpia bromoides	38	1	0	2
Carex pachystachya	25	2	0	15
Sidalcea sp. (seedlings)	25	1	0	5
Glyceria occidentalis	25	1	0	3
Holcus lanatus	25	1	0	2
Montia linearis	25	1	0	3
Solidago elongata	25	1	0	2
Ranunculus occidentalis	25	0	0	1
Carex unilateralis	13	1	0	10
Vicia hirsuta	13	1	0	5
Cerastium glomeratum	13	1	0	4
Medicago lupulina	13	1	0	4
Sidalcea nelsoniana	13	1	0	4
Veronica peregrina	13	1	0	4
Agrostis exarata	13	0	0	3
Alopecurus geniculatus	13	0	0	2
Anthoxanthum odoratum	13	0	0	2
Bromus racemosus	13	0	0	2
Hypochaeris radicata	13	0	0	2
Madia elegans	13	0	0	2
Ranunculus repens	13	0	0	2
Collinsia grandiflora	13	0	0	1
Fraxinus latifolia (seedling)	13	0	0	1
Geranium dissectum	13	0	0	1
Agrostis stolonifera	0	0	0	0
Cardamine occidentalis	0	0	0	0
Crataegus douglasii (volunteer)	0	0	0	0
Crataegus monogyna (volunteer)	0	0	0	0
Deschampsia danthonioides	0	0	0	0

Veronica arvensis	0	0	0	0
Veronica peregrina	0	0	0	0
Vicia hirsuta	0	0	0	0
Vicia sativa	0	0	0	0

Gnaphalium palustre	0	0	0	0
Hypericum anagalloides	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Montia fontana	0	0	0	0
Phalaris arundinacea	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Poa annua	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Rumex acetosella	0	0	0	0
Triteleia hyacinthina	0	0	0	0
Veronica arvensis	0	0	0	0
Vicia sativa	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 10 June 2012

Transect: T4N

Plot type: herbaceous	Freq	2012		
		Ave	Min	Max
Bare/ Litter	100	44	25	70
Deschampsia caespitosa	83	11	0	40
Lotus corniculatus	83	3	0	8
Hordeum brachyantherum	83	3	0	5
Deschampsia elongata	67	10	0	25
Myosotis discolor	67	4	0	8
Epilobium ciliatum ssp. watsonii	67	3	0	10
Epilobium densiflorum	67	2	0	5
Moss	50	3	0	15
Geum macrophyllum (seedlings)	50	1	0	3
Holcus lanatus	50	1	0	3
Plagiobothrys scouleri	50	1	0	1
Anthoxanthum odoratum	33	1	0	3
Parentucellia viscosa	33	1	0	4
Agrostis stolonifera	33	1	0	2
Montia linearis	33	1	0	2
Ranunculus parviflorus	33	1	0	2
Leucanthemum vulgare	33	0	0	1
Vulpia bromoides	17	3	0	20
Agrostis exarata	17	1	0	8
Sidalcea nelsoniana	17	1	0	8
Bromus racemosus	17	1	0	5
Cerastium glomeratum	17	1	0	5
Hypochaeris radicata	17	1	0	3
Poa trivialis	17	1	0	3
Carex sp. (seedling)	17	0	0	2
Centaureum erythraea	17	0	0	2
Juncus bufonius	17	0	0	2
Juncus tenuis	17	0	0	2
Medicago lupulina	17	0	0	2
Achillea millefolium	17	0	0	1
Epilobium brachycarpum	17	0	0	1
Navarretia sp.	17	0	0	1
Plagiobothrys figuratus	17	0	0	1
Pseudotsuga menziesii (seedling)	17	0	0	1
Vicia hirsuta	17	0	0	1
Alopecurus pratensis	0	0	0	0
Beckmannia syzigachne	0	0	0	0
Bromus racemosus	0	0	0	0
Camassia quamash	0	0	0	0
Carex pachystachya	0	0	0	0
Cerastium fontanum ssp. vulgare	0	0	0	0
Geranium dissectum	0	0	0	0
Gnaphalium palustre	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 2-3 June 2013

Transect: T4N

Plot type: herbaceous	Freq	2013		
		Ave	Min	Max
Deschampsia caespitosa	100	8	3	15
Bare/ Litter	83	10	0	40
Holcus lanatus	83	2	0	4
Myosotis discolor	67	13	0	50
Epilobium brachycarpum	67	4	0	15
Epilobium ciliatum ssp. watsonii	67	2	0	4
Epilobium densiflorum	50	6	0	15
Hordeum brachyantherum	50	4	0	10
Deschampsia elongata	50	4	0	15
Parentucellia viscosa	50	3	0	15
Lotus corniculatus	50	2	0	4
Ranunculus occidentalis	50	1	0	2
Anthoxanthum odoratum	33	12	0	50
Geum macrophyllum (seedlings)	33	10	0	60
Hypochaeris radicata	33	2	0	10
Agrostis stolonifera	33	2	0	10
Carex unilateralis	33	1	0	5
Montia linearis	33	1	0	4
Moss	33	1	0	4
Sidalcea sp. (seedlings)	33	1	0	4
Poa trivialis	33	1	0	3
Carex sp. (seedling)	33	1	0	3
Leucanthemum vulgare	33	1	0	3
Plagiobothrys scouleri	33	1	0	2
Bromus racemosus	17	3	0	15
Vicia hirsuta	17	3	0	15
Agrostis exarata	17	1	0	4
Glyceria occidentalis	17	1	0	4
Juncus bufonius	17	1	0	3
Madia elegans	17	0	0	2
Medicago lupulina	17	0	0	2
Plectritis congesta	17	0	0	2
Cerastium glomeratum	17	0	0	1
Prunella vulgaris var. lanceolata	17	0	0	1
Pseudotsuga menziesii (seedling)	17	0	0	1
Trifolium hybridum	17	0	0	1
Vicia sativa	17	0	0	1
Achillea millefolium	0	0	0	0
Alopecurus pratensis	0	0	0	0
Beckmannia syzigachne	0	0	0	0
Camassia quamash	0	0	0	0
Carex pachystachya	0	0	0	0
Centaureum erythraea	0	0	0	0
Cerastium fontanum ssp. vulgare	0	0	0	0

Montia fontana	0	0	0	0
Myosotis laxa	0	0	0	0
Plectritis congesta	0	0	0	0
Poa annua	0	0	0	0
Poa pratensis	0	0	0	0
Ranunculus repens	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Rumex aquaticus var. fenestratus	0	0	0	0
Sisyrinchium idahoense	0	0	0	0
Trifolium hybridum	0	0	0	0
Trifolium pratense	0	0	0	0
Trifolium repens	0	0	0	0
Veronica arvensis	0	0	0	0
Veronica peregrina	0	0	0	0
Vicia sativa	0	0	0	0

Geranium dissectum	0	0	0	0
Gnaphalium palustre	0	0	0	0
Juncus tenuis	0	0	0	0
Montia fontana	0	0	0	0
Myosotis laxa	0	0	0	0
Navarretia sp.	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Poa annua	0	0	0	0
Poa pratensis	0	0	0	0
Ranunculus parviflorus	0	0	0	0
Ranunculus repens	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Rumex aquaticus var. fenestratus	0	0	0	0
Sidalcea nelsoniana	0	0	0	0
Sisyrinchium idahoense	0	0	0	0
Trifolium pratense	0	0	0	0
Trifolium repens	0	0	0	0
Veronica arvensis	0	0	0	0
Veronica peregrina	0	0	0	0
Vulpia bromoides	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 9 June 2012

Transect: T4S Plot type: herbaceous	2012			
	Freq	Percent cover		
		Ave	Min	Max
Deschampsia caespitosa	88	16	0	50
Bare/ Litter	75	14	0	25
Myosotis discolor	75	4	0	15
Lotus corniculatus	63	20	0	70
Agrostis exarata	50	3	0	15
Moss	50	2	0	5
Epilobium densiflorum	50	1	0	5
Hordeum brachyantherum	38	8	0	30
Deschampsia elongata	38	3	0	15
Glyceria occidentalis	38	3	0	20
Holcus lanatus	38	2	0	10
Poa trivialis	38	1	0	3
Alopecurus geniculatus	25	12	0	65
Anthoxanthum odoratum	25	2	0	10
Beckmannia syzigachne	25	2	0	8
Camassia quamash	25	1	0	10
Carex unilateralis	25	1	0	3
Cerastium glomeratum	25	1	0	3
Triteleia hyacinthina	25	0	0	2
Carex densa	13	1	0	8
Bromus mollis	13	1	0	5
Vicia hirsuta	13	1	0	5
Geum macrophyllum	13	1	0	4
Carex pachystachya	13	0	0	3
Juncus tenuis	13	0	0	3
Montia linearis	13	0	0	3
Vicia sativa	13	0	0	3
Epilobium ciliatum ssp. watsonii	13	0	0	1
Geranium dissectum	13	0	0	1
Hypochaeris radicata	13	0	0	1
Parentucellia viscosa	13	0	0	1
Sanguisorba officinalis (? , seedling)	13	0	0	1
Cardamine occidentalis	0	0	0	0
Carex sp. (seedling)	0	0	0	0
Cerastium arvense	0	0	0	0
Danthonia californica	0	0	0	0
Downingia elegans	0	0	0	0
Eleocharis ovata	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Fraxinus latifolia (seedling)	0	0	0	0
Hypericum perforatum	0	0	0	0
Juncus bufonius	0	0	0	0
Lactuca serriola	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Lythrum portula	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 1 June 2013

Transect: T4S Plot type: herbaceous	2013			
	Freq	Percent cover		
		Ave	Min	Max
Deschampsia caespitosa	88	17	0	60
Hordeum brachyantherum	88	6	0	20
Epilobium densiflorum	88	3	0	10
Bare/ Litter	88	3	0	5
Myosotis discolor	63	8	0	20
Plectritis congesta	63	8	0	25
Anthoxanthum odoratum	50	3	0	15
Camassia quamash	50	3	0	15
Moss	50	1	0	3
Parentucellia viscosa	50	1	0	4
Epilobium ciliatum ssp. watsonii	50	1	0	3
Lotus corniculatus	38	4	0	30
Poa trivialis	38	3	0	10
Deschampsia elongata	38	1	0	5
Agrostis exarata	38	1	0	4
Montia linearis	38	1	0	4
Hypochaeris radicata	38	1	0	3
Holcus lanatus	38	1	0	3
Ranunculus occidentalis	38	1	0	2
Alopecurus geniculatus	25	7	0	40
Glyceria occidentalis	25	3	0	15
Beckmannia syzigachne	25	3	0	15
Vicia hirsuta	25	3	0	20
Rorippa curvisiliqua	25	1	0	8
Sidalcea nelsoniana	25	1	0	5
Vulpia bromoides	25	1	0	5
Carex pachystachya	25	1	0	5
Grindelia integrifolia	25	1	0	3
Dichelostemma congestum	25	1	0	3
Cerastium arvense	25	1	0	2
Bromus racemosus	25	0	0	2
Carex densa	13	4	0	30
Geranium dissectum	13	3	0	20
Carex unilateralis	13	1	0	5
Vicia sativa	13	1	0	5
Carex feta	13	0	0	3
Geum macrophyllum	13	0	0	3
Medicago lupulina	13	0	0	3
Sidalcea campestris	13	0	0	3
Fragaria virginiana	13	0	0	2
Plagiobothrys figuratus	13	0	0	2
Plagiobothrys scouleri	13	0	0	2
Rumex crispus	13	0	0	1
Trifolium sp. (seedlings)	13	0	0	1
Veronica peregrina	13	0	0	1

Medicago lupulina	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Ranunculus cf. macounii	0	0	0	0
Ranunculus repens	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Rubus armeniacus (seedling)	0	0	0	0
Rumex acetosella	0	0	0	0
Senecio vulgaris	0	0	0	0
Stellaria media	0	0	0	0
Trifolium repens	0	0	0	0
Veronica arvensis	0	0	0	0
Vulpia bromoides	0	0	0	0

Bromus racemosus	0	0	0	0
Cardamine occidentalis	0	0	0	0
Carex sp. (seedling)	0	0	0	0
Cerastium glomeratum	0	0	0	0
Danthonia californica	0	0	0	0
Downingia elegans	0	0	0	0
Eleocharis obtusa	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Fraxinus latifolia (seedling)	0	0	0	0
Hypericum perforatum	0	0	0	0
Juncus bufonius	0	0	0	0
Juncus tenuis	0	0	0	0
Lactuca serriola	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Lythrum portula	0	0	0	0
Ranunculus cf. macounii	0	0	0	0
Ranunculus repens	0	0	0	0
Rubus bifrons (seedling)	0	0	0	0
Rumex acetosella	0	0	0	0
Sanguisorba officinalis (?, seedling)	0	0	0	0
Senecio vulgaris	0	0	0	0
Stellaria media	0	0	0	0
Trifolium repens	0	0	0	0
Triteleia hyacinthina	0	0	0	0
Veronica arvensis	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 11 June 2012

Transect: T5N Plot type: herbaceous	2012			
	Freq	Percent cover		
		Ave	Min	Max
Deschampsia caespitosa	100	37	8	50
Myosotis discolor	100	9	2	15
Epilobium ciliatum ssp. watsonii	100	1	1	1
Bare/ Litter	75	19	0	30
Deschampsia elongata	75	16	0	40
Moss	75	4	0	10
Parentucellia viscosa	75	3	0	10
Hordeum brachyantherum	75	2	0	4
Lotus corniculatus	50	1	0	4
Juncus bufonius	50	1	0	1
Plagiobothrys scouleri	50	1	0	1
Potentilla gracilis	50	1	0	1
Vicia hirsuta	25	2	0	8
Anthoxanthum odoratum	25	1	0	4
Geum macrophyllum	25	1	0	4
Bromus racemosus	25	1	0	3
Montia linearis	25	1	0	3
Prunella vulgaris var. lanceolata	25	1	0	2
Carex sp. (seedling)	25	0	0	1
Geranium dissectum	25	0	0	1
Medicago lupulina	25	0	0	1
Agrostis stolonifera	0	0	0	0
Camassia quamash	0	0	0	0
Carex pachystachya	0	0	0	0
Cerastium fontanum	0	0	0	0
Cerastium glomeratum	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Epilobium densiflorum	0	0	0	0
Fraxinus latifolia (seedling)	0	0	0	0
Glyceria occidentalis	0	0	0	0
Holcus lanatus	0	0	0	0
Hypochaeris radicata	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plectritis congesta	0	0	0	0
Poa trivialis	0	0	0	0
Ranunculus occidentalis	0	0	0	0
Rumex acetosella	0	0	0	0
Sonchus asper	0	0	0	0
Trifolium repens	0	0	0	0
Triteleia hyacinthina	0	0	0	0
Veronica peregrina	0	0	0	0
Vicia sativa	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 3 June 2013

Transect: T5N Plot type: herbaceous	2013			
	Freq	Percent cover		
		Ave	Min	Max
Deschampsia caespitosa	100	32	8	45
Myosotis discolor	100	12	4	20
Epilobium densiflorum	100	8	2	15
Hordeum brachyantherum	100	5	1	8
Parentucellia viscosa	100	4	3	5
Poa trivialis	75	7	0	20
Sidalcea sp. (seedlings)	75	2	0	3
Plectritis congesta	75	2	0	3
Vicia tetrasperma	50	6	0	20
Deschampsia elongata	50	5	0	15
Ranunculus occidentalis	50	2	0	8
Cerastium glomeratum	50	2	0	5
Moss	50	2	0	3
Geranium dissectum	50	1	0	3
Geum macrophyllum	50	1	0	3
Bare/ Litter	25	1	0	5
Potentilla gracilis	25	1	0	5
Hypochaeris radicata	25	1	0	4
Vicia sativa	25	1	0	4
Anthoxanthum odoratum	25	1	0	3
Montia linearis	25	1	0	3
Holcus lanatus	25	1	0	2
Senecio jacobea	25	1	0	2
Camassia quamash	25	0	0	1
Collinsia grandiflora	25	0	0	1
Epilobium brachycarpum	25	0	0	1
Madia elegans	25	0	0	1
Plagiobothrys figuratus	25	0	0	1
Prunella vulgaris var. lanceolata	25	0	0	1
Agrostis stolonifera	0	0	0	0
Bromus racemosus	0	0	0	0
Carex pachystachya	0	0	0	0
Carex sp. (seedling)	0	0	0	0
Cerastium fontanum	0	0	0	0
Epilobium ciliatum ssp. watsonii	0	0	0	0
Fraxinus latifolia (seedling)	0	0	0	0
Glyceria occidentalis	0	0	0	0
Juncus bufonius	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Lotus corniculatus	0	0	0	0
Medicago lupulina	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Rumex acetosella	0	0	0	0
Sonchus asper	0	0	0	0
Trifolium repens	0	0	0	0

<i>Triteleia hyacinthina</i>	0	0	0	0
<i>Veronica peregrina</i>	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 10 June 2012

Transect: T5S Plot type: herbaceous	2012			
	Freq	Percent cover		
		Ave	Min	Max
Bare/ Litter	100	15	10	30
Deschampsia caespitosa	88	22	0	60
Lotus corniculatus	88	15	0	50
Deschampsia elongata	88	14	0	30
Hordeum brachyantherum	63	8	0	35
Myosotis discolor	63	7	0	25
Camassia quamash	63	6	0	15
Moss	63	2	0	5
Triteleia hyacinthina	50	1	0	5
Holcus lanatus	38	3	0	15
Parentucellia viscosa	38	1	0	2
Potentilla gracilis	38	0	0	1
Epilobium densiflorum	25	3	0	20
Poa trivialis	25	1	0	3
Geum macrophyllum	13	1	0	4
Agrostis exarata	13	0	0	3
Carex feta	13	0	0	3
Carex unilateralis	13	0	0	3
Sidalcea nelsoniana	13	0	0	3
Vulpia bromoides	13	0	0	3
Agrostis stolonifera	13	0	0	1
Epilobium ciliatum ssp. watsonii	13	0	0	1
Juncus tenuis	13	0	0	1
Montia linearis	13	0	0	1
Ranunculus sp. (seedling)	13	0	0	1
Vicia hirsuta	13	0	0	1
Alopecurus geniculatus	0	0	0	0
Anthoxanthum odoratum	0	0	0	0
Beckmannia syzigachne	0	0	0	0
Cerastium fontanum	0	0	0	0
Cerastium glomeratum	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Fraxinus latifolia (volunteer)	0	0	0	0
Gnaphalium palustre	0	0	0	0
Grindelia integrifolia	0	0	0	0
Hypochaeris radicata	0	0	0	0
Juncus bufonius	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Lupinus sp. (seedling)	0	0	0	0
Matricaria recutita	0	0	0	0
Medicago lupulina	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Rorippa curvisiliqua	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 3 June 2013

Transect: T5S Plot type: herbaceous	2013			
	Freq	Percent cover		
		Ave	Min	Max
Myosotis discolor	100	11	3	20
Camassia quamash	88	6	0	15
Epilobium densiflorum	88	4	0	15
Deschampsia elongata	88	2	0	5
Deschampsia caespitosa	75	16	0	55
Bare/ Litter	63	12	0	30
Montia linearis	63	6	0	25
Dichelostemma congestum	63	4	0	15
Lotus corniculatus	63	4	0	10
Parentucellia viscosa	63	2	0	8
Moss	63	2	0	5
Hypochaeris radicata	63	2	0	4
Hordeum brachyantherum	50	4	0	20
Holcus lanatus	50	2	0	5
Epilobium ciliatum ssp. watsonii	50	1	0	4
Sidalcea sp. (seedlings)	50	1	0	3
Geranium dissectum	38	2	0	10
Bromus racemosus	38	1	0	8
Poa trivialis	38	1	0	5
Ranunculus occidentalis	38	1	0	3
Sidalcea nelsoniana	25	2	0	10
Anthoxanthum odoratum	25	1	0	8
Geum macrophyllum	25	1	0	5
Sidalcea campestris	25	1	0	4
Carex unilateralis	25	1	0	5
Cerastium glomeratum	25	1	0	3
Agrostis exarata	25	1	0	2
Potentilla gracilis	25	1	0	2
Vulpia bromoides	13	4	0	30
Carex feta	13	1	0	10
Juncus tenuis	13	1	0	5
Vicia hirsuta	13	1	0	4
Fraxinus latifolia (volunteer)	13	0	0	3
Matricaria recutita	13	0	0	3
Prunella vulgaris var. lanceolata	13	0	0	3
Alopecurus geniculatus	13	0	0	2
Cardamine occidentalis	13	0	0	2
Cirsium arvense	13	0	0	2
Plectritis congesta	13	0	0	2
Poa annua	13	0	0	2
Ranunculus repens	13	0	0	2
Aira caryophyllea	13	0	0	1
Gnaphalium palustre	13	0	0	1
Medicago lupulina	13	0	0	1

Rumex acetosella	0	0	0	0
Senecio vulgaris	0	0	0	0
Trifolium repens	0	0	0	0
Veronica arvensis	0	0	0	0

Agrostis stolonifera	0	0	0	0
Beckmannia syzigachne	0	0	0	0
Cerastium fontanum	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Grindelia integrifolia	0	0	0	0
Juncus bufonius	0	0	0	0
Leucanthemum vulgare	0	0	0	0
Lupinus sp. (seedling)	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Rumex acetosella	0	0	0	0
Senecio vulgaris	0	0	0	0
Trifolium repens	0	0	0	0
Triteleia hyacinthina	0	0	0	0
Veronica arvensis	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 10 June 2012

Transect: T6S

Plot type: herbaceous	Freq	2012		
		Percent cover		
		Ave	Min	Max
Bare/ Litter	88	11	0	40
Myosotis discolor	88	9	0	15
Parentucellia viscosa	88	4	0	15
Deschampsia caespitosa	75	15	0	45
Triteleia hyacinthina	75	13	0	35
Deschampsia elongata	75	10	0	35
Hordeum brachyantherum	63	11	0	30
Epilobium densiflorum	63	5	0	10
Epilobium ciliatum ssp. watsonii	63	2	0	10
Camassia quamash	50	2	0	3
Geum macrophyllum	50	1	0	5
Poa trivialis	38	1	0	5
Lotus corniculatus	38	1	0	5
Moss	38	1	0	4
Prunella vulgaris (seedlings)	38	1	0	2
Montia linearis	38	1	0	2
Potentilla gracilis	38	1	0	2
Eleocharis obtusa	25	1	0	5
Holcus lanatus	25	1	0	4
Sidalcea sp. (seedling)	25	1	0	3
Achillea millifolium	25	0	0	1
Hypochaeris radicata	25	0	0	1
Glyceria occidentalis	13	5	0	40
Alopecurus geniculatus	13	2	0	15
Anthoxanthum odoratum	13	1	0	4
Danthonia californica	13	0	0	3
Epilobium brachycarpum	13	0	0	3
Sidalcea nelsoniana	13	0	0	3
Carex pachystachya	13	0	0	2
Geranium dissectum	13	0	0	2
Vulpia bromoides	13	0	0	2
Juncus bufonius	13	0	0	1
Leucanthemum vulgare	13	0	0	1
Lythrum portula	13	0	0	1
Ranunculus occidentalis (seedling)	13	0	0	1
Rumex acetosella	13	0	0	1
Trifolium repens	13	0	0	1
Agrostis exarata	0	0	0	0
Agrostis stolonifera	0	0	0	0
Beckmannia syzigachne	0	0	0	0
Cardamine occidentalis	0	0	0	0
Cerastium fontanum ssp. vulgare	0	0	0	0
Cerastium glomeratum	0	0	0	0
Gnaphalium palustre	0	0	0	0
Grindelia integrifolia	0	0	0	0

Site: Foster Creek WMB

Author: John Christy

Date: 3 June 2013

Transect: T6S

Plot type: herbaceous	Freq	2013		
		Percent cover		
		Ave	Min	Max
Bare/ Litter	88	7	0	25
Epilobium densiflorum	88	4	0	10
Myosotis discolor	88	3	0	5
Plectritis congesta	86	4	0	10
Deschampsia caespitosa	75	17	0	30
Deschampsia elongata	75	6	0	25
Dichelostemma congestum	75	6	0	15
Poa trivialis	63	3	0	10
Hordeum brachyantherum	63	2	0	5
Epilobium ciliatum ssp. watsonii	63	2	0	5
Epilobium brachycarpum	63	1	0	2
Sidalcea nelsoniana	50	4	0	10
Parentucellia viscosa	50	3	0	10
Ranunculus occidentalis	50	1	0	4
Anthoxanthum odoratum	50	1	0	3
Hypochaeris radicata	50	1	0	3
Medicago lupulina	50	1	0	3
Geum macrophyllum	38	5	0	30
Camassia quamash	38	4	0	10
Lotus corniculatus	38	1	0	4
Prunella vulgaris	38	1	0	5
Montia linearis	38	1	0	3
Moss	38	1	0	4
Potentilla gracilis	38	1	0	3
Geranium dissectum	38	1	0	4
Achillea millifolium	38	1	0	3
Rumex acetosella	38	1	0	2
Sidalcea sp. (seedlings)	25	1	0	3
Vulpia bromoides	25	1	0	3
Glyceria occidentalis	13	11	0	85
Agrostis exarata	13	1	0	4
Danthonia californica	13	1	0	4
Vicia hirsuta	13	1	0	4
Beckmannia syzigachne	13	0	0	3
Carex feta	13	0	0	3
Holcus lanatus	13	0	0	3
Alopecurus geniculatus	13	0	0	2
Carex pachystachya	13	0	0	2
Cerastium fontanum ssp. vulgare	13	0	0	2
Sisyrinchium idahoense	13	0	0	2
Bromus racemosus	13	0	0	1
Cerastium glomeratum	13	0	0	1
Collinsia grandiflora	13	0	0	1
Leucanthemum vulgare	13	0	0	1
Matricaria recutita	13	0	0	1

Lactuca serriola	0	0	0	0
Matricaria recutita	0	0	0	0
Medicago lupulina	0	0	0	0
Persicaria hydropiper	0	0	0	0
Phalaris arundinacea	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Ranunculus repens	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Rumex crispus	0	0	0	0
Senecio vulgaris	0	0	0	0
Sisyrinchium idahoense	0	0	0	0
Trifolium pratense	0	0	0	0
Unknown grass (leaves only)	0	0	0	0
Veronica peregrina	0	0	0	0

Agrostis stolonifera	0	0	0	0
Cardamine occidentalis	0	0	0	0
Eleocharis obtusa	0	0	0	0
Gnaphalium palustre	0	0	0	0
Grindelia integrifolia	0	0	0	0
Juncus bufonius	0	0	0	0
Lactuca serriola	0	0	0	0
Lythrum portula	0	0	0	0
Persicaria hydropiper	0	0	0	0
Phalaris arundinacea	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Ranunculus repens	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Rumex crispus	0	0	0	0
Senecio vulgaris	0	0	0	0
Trifolium pratense	0	0	0	0
Trifolium repens	0	0	0	0
Triteleia hyacinthina	0	0	0	0
Veronica peregrina	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 11 June 2012  
 Transect: T7S

Plot type: herbaceous	Freq	2012		
		Ave	Min	Max
Moss	100	6	1	30
Lotus corniculatus	100	4	1	20
Deschampsia caespitosa	88	20	0	40
Epilobium densiflorum	88	7	0	25
Bare/ Litter	75	13	0	25
Deschampsia elongata	63	20	0	45
Holcus lanatus	50	6	0	40
Myosotis discolor	50	4	0	15
Anthoxanthum odoratum	38	7	0	25
Hordeum brachyantherum	38	3	0	20
Parentucellia viscosa	38	3	0	20
Epilobium ciliatum ssp. watsonii	38	1	0	5
Hypochaeris radicata	38	0	0	1
Geum macrophyllum	25	1	0	4
Spiraea douglasii	13	1	0	10
Agrostis stolonifera	13	1	0	5
Juncus bufonius	13	1	0	4
Poa trivialis	13	1	0	4
Leucanthemum vulgare	13	0	0	3
Camassia quamash	13	0	0	2
Fraxinus latifolia	13	0	0	2
Vicia hirsuta	13	0	0	2
Agrostis exarata	13	0	0	1
Bromus racemosus	13	0	0	1
Carex obnupta	13	0	0	1
Montia linearis	13	0	0	1
Plagiobothrys figuratus	13	0	0	1
Plagiobothrys scouleri	13	0	0	1
Cerastium glomeratum	0	0	0	0
Deschampsia danthonioides	0	0	0	0
Eleocharis acicularis	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Gratiola ebracteata	0	0	0	0
Juncus tenuis	0	0	0	0
Lupinus sp. (seedling)	0	0	0	0
Lythrum portula	0	0	0	0
Medicago lupulina	0	0	0	0
Poa annua	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Solidago canadensis	0	0	0	0
Trifolium hybridum	0	0	0	0
Trifolium pratense	0	0	0	0
Trifolium repens	0	0	0	0
Veronica peregrina	0	0	0	0
Vicia sativa	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 2 June 2013  
 Transect: T7S

Plot type: herbaceous	Freq	2013		
		Ave	Min	Max
Bare/ Litter	100	18	5	40
Deschampsia caespitosa	88	19	0	50
Myosotis discolor	88	9	0	15
Epilobium densiflorum	88	6	0	20
Moss	88	6	0	30
Lotus corniculatus	88	5	0	10
Parentucellia viscosa	75	5	0	20
Geum macrophyllum	75	2	0	4
Anthoxanthum odoratum	63	8	0	35
Holcus lanatus	63	2	0	10
Deschampsia elongata	50	3	0	12
Hypochaeris radicata	50	3	0	15
Hordeum brachyantherum	50	2	0	5
Epilobium ciliatum ssp. watsonii	50	2	0	5
Plectritis congesta	38	2	0	5
Montia linearis	38	1	0	2
Sidalcea sp. (seedlings)	25	1	0	3
Camassia quamash	25	1	0	2
Epilobium brachycarpum	25	0	0	2
Ranunculus occidentalis	25	0	0	2
Juncus bufonius	25	0	0	1
Spiraea douglasii	13	1	0	8
Vicia hirsuta	13	1	0	5
Poa trivialis	13	1	0	4
Potentilla gracilis	13	1	0	4
Carex obnupta	13	0	0	3
Leucanthemum vulgare	13	0	0	3
Sidalcea nelsoniana	13	0	0	3
Agrostis stolonifera	13	0	0	2
Cardamine occidentalis	13	0	0	2
Centaurium erythraea	13	0	0	2
Fraxinus latifolia	13	0	0	2
Vicia sativa	13	0	0	2
Saxifraga oregana	13	0	0	1
Senecio jacobea	13	0	0	1
Agrostis exarata	0	0	0	0
Bromus racemosus	0	0	0	0
Cerastium glomeratum	0	0	0	0
Deschampsia danthonioides	0	0	0	0
Eleocharis acicularis	0	0	0	0
Gratiola ebracteata	0	0	0	0
Juncus tenuis	0	0	0	0
Lupinus sp. (seedling)	0	0	0	0
Lythrum portula	0	0	0	0
Medicago lupulina	0	0	0	0

Plagiobothrys figuratus	0	0	0	0
Plagiobothrys scouleri	0	0	0	0
Poa annua	0	0	0	0
Rorippa curvisiliqua	0	0	0	0
Solidago canadensis	0	0	0	0
Trifolium hybridum	0	0	0	0
Trifolium pratense	0	0	0	0
Trifolium repens	0	0	0	0
Veronica peregrina	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 11 June 2012  
 Transect: T8S

Plot type: herbaceous	Freq	2012		
		Ave	Min	Max
Bare/ Litter	100	9	5	20
Parentucellia viscosa	88	5	0	15
Lotus corniculatus	88	2	0	4
Geum macrophyllum	88	1	0	3
Holcus lanatus	75	3	0	10
Epilobium densiflorum	75	3	0	8
Myosotis discolor	75	3	0	10
Epilobium ciliatum ssp. watsonii	75	2	0	4
Deschampsia caespitosa	63	24	0	60
Anthoxanthum odoratum	63	15	0	45
Moss	63	10	0	55
Leucanthemum vulgare	63	1	0	2
Hordeum brachyantherum	50	13	0	60
Hypochaeris radicata	50	2	0	8
Juncus bufonius	38	1	0	3
Ranunculus occidentalis	38	0	0	1
Symphoricarpos albus	25	2	0	10
Deschampsia elongata	25	1	0	3
Plagiobothrys figuratus	25	1	0	3
Vicia sativa	25	0	0	2
Centaureum erythraea	25	0	0	1
Montia linearis	25	0	0	1
Poa trivialis	13	1	0	5
Vicia hirsuta	13	1	0	4
Epilobium brachycarpum	13	0	0	3
Agrostis exarata	13	0	0	2
Agrostis stolonifera var. palustris	13	0	0	2
Bromus racemosus	13	0	0	2
Madia elegans	13	0	0	2
Camassia quamash	13	0	0	1
Collinsia grandiflora	13	0	0	1
Fragaria virginiana	13	0	0	1
Fraxinus latifolia (seedlings)	13	0	0	1
Navarretia squarrosa	13	0	0	1
Plagiobothrys scouleri	13	0	0	1
Prunella vulgaris var. lanceolata	13	0	0	1
Pseudotsuga menziesii (seedling)	13	0	0	1
Ranunculus repens	13	0	0	1
Rosa sp. (seedling)	13	0	0	1
Rumex acetosella	13	0	0	1
Sidalcea sp. (seedling)	13	0	0	1
Trifolium pratense	13	0	0	1
Trifolium repens	0	0	0	0
Vulpia bromoides	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 2 June 2013  
 Transect: T8S

Plot type: herbaceous	Freq	2013		
		Ave	Min	Max
Moss	88	12	0	50
Hypochaeris radicata	88	3	0	5
Holcus lanatus	75	5	0	20
Lotus corniculatus	75	4	0	20
Geum macrophyllum	75	2	0	4
Deschampsia caespitosa	63	24	0	50
Bare/ Litter	63	4	0	10
Parentucellia viscosa	63	4	0	15
Epilobium brachycarpum	63	1	0	4
Anthoxanthum odoratum	50	14	0	45
Leucanthemum vulgare	50	6	0	25
Myosotis discolor	50	4	0	15
Vicia hirsuta	50	1	0	4
Centaureum erythraea	50	1	0	2
Epilobium densiflorum	38	3	0	20
Bromus racemosus	38	1	0	4
Ranunculus occidentalis	38	1	0	3
Fraxinus latifolia	38	1	0	2
Hordeum brachyantherum	25	3	0	15
Symphoricarpos albus	25	1	0	5
Epilobium ciliatum ssp. watsonii	25	1	0	3
Poa trivialis	25	1	0	3
Rosa pisocarpa	25	1	0	4
Camassia quamash	25	1	0	2
Madia elegans	25	1	0	3
Spiraea douglasii	13	1	0	10
Fragaria virginiana	13	0	0	3
Prunella vulgaris var. lanceolata	13	0	0	3
Sidalcea nelsoniana	13	0	0	3
Rumex acetosella	13	0	0	2
Trifolium pratense	13	0	0	2
Vicia sativa	13	0	0	2
Crataegus monogyna (volunteer)	13	0	0	1
Lupinus sp. (seedling)	13	0	0	1
Medicago lupulina	13	0	0	1
Pseudotsuga menziesii (seedling)	13	0	0	1
Agrostis exarata	0	0	0	0
Agrostis stolonifera var. palustris	0	0	0	0
Collinsia grandiflora	0	0	0	0
Deschampsia elongata	0	0	0	0
Juncus bufonius	0	0	0	0
Montia linearis	0	0	0	0
Navarretia squarrosa	0	0	0	0
Plagiobothrys figuratus	0	0	0	0
Plagiobothrys scouleri	0	0	0	0

Ranunculus repens	0	0	0	0
Trifolium repens	0	0	0	0
Vulpia bromoides	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 9 & 10 June 2012

Transect: n/a Plot type: Upland Plots	2012			
	Freq	Percent cover		
		Ave	Min	Max
Bare/ Litter	100	20	5	50
Parentucellia viscosa	100	11	1	25
Geranium dissectum	75	18	0	30
Hordeum brachyantherum	75	10	0	15
Lotus corniculatus	75	8	0	15
Deschampsia elongata	75	6	0	15
Sidalcea sp. (seedling)	75	6	0	20
Vicia hirsuta	75	3	0	5
Vicia sativa	75	3	0	5
Poa trivialis	50	4	0	10
Deschampsia caespitosa	50	2	0	5
Centaureum erythraea	50	1	0	4
Moss	50	1	0	4
Myosotis discolor	50	1	0	3
Vulpia bromoides	25	3	0	10
Bromus racemosus	25	1	0	5
Danthonia californica	25	1	0	5
Cardamine occidentalis	25	1	0	4
Crepis sp.	25	1	0	4
Trifolium hybridum	25	1	0	4
Epilobium densiflorum	25	1	0	3
Hypochaeris radicata	25	1	0	3
Sidalcea campestris	25	1	0	3
Festuca roemerii	25	1	0	2
Erigeron philadelphicus	25	0	0	1
Geranium molle	25	0	0	1
Holcus lanatus	25	0	0	1
Potentilla gracilis	25	0	0	1
Poteridium occidentale	25	0	0	1
Sidalcea sp (seedling)	25	0	0	1
Agrostis stolonifera	0	0	0	0
Anthoxanthum odoratum	0	0	0	0
Camassia quamash	0	0	0	0
Carex sp. (seedling)	0	0	0	0
Cerastium fontanum ssp. vulgare	0	0	0	0
Cerastium glomeratum	0	0	0	0
Collinsia grandiflora	0	0	0	0
Daucus carota (seedling)	0	0	0	0
Dichelostemma congestum	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Festuca rubra	0	0	0	0
Fraxinus latifolia (seedling)	0	0	0	0
Grindelia integrifolia	0	0	0	0
Juncus bufonius	0	0	0	0

Site: Foster Creek WMB  
 Author: John Christy  
 Date: 1 & 3 June 2013

Transect: n/a Plot type: Upland Plots	2013			
	Freq	Percent cover		
		Ave	Min	Max
Geranium dissectum	100	13	4	30
Hordeum brachyantherum	100	8	4	15
Myosotis discolor	100	5	3	10
Parentucellia viscosa	100	3	2	3
Bare/ Litter	75	18	0	60
Deschampsia caespitosa	50	10	0	30
Sidalcea campestris	50	6	0	20
Epilobium ciliatum ssp. watsonii	50	1	0	3
Hypochaeris radicata	50	1	0	2
Vicia hirsuta	25	9	0	35
Vulpia bromoides	25	8	0	30
Dichelostemma congestum	25	4	0	15
Leucanthemum vulgare	25	4	0	15
Deschampsia elongata	25	1	0	4
Bromus racemosus	25	1	0	3
Camassia quamash	25	1	0	3
Carex feta	25	1	0	3
Carex pachystachya	25	1	0	3
Carex unilateralis	25	1	0	3
Lotus corniculatus	25	1	0	3
Montia linearis	25	1	0	3
Moss	25	1	0	3
Sonchus asper	25	1	0	3
Veronica arvensis	25	1	0	3
Poa trivialis	25	1	0	2
Prunella vulgaris var. lanceolata	25	1	0	2
Vicia sativa	25	1	0	2
Danthonia californica	25	0	0	1
Plectritis congesta	25	0	0	1
Ranunculus occidentalis	25	0	0	1
Saxifraga oregana	25	0	0	1
Agrostis stolonifera	0	0	0	0
Anthoxanthum odoratum	0	0	0	0
Cardamine occidentalis	0	0	0	0
Centaureum erythraea	0	0	0	0
Cerastium fontanum ssp. vulgare	0	0	0	0
Cerastium glomeratum	0	0	0	0
Collinsia grandiflora	0	0	0	0
Crepis sp.	0	0	0	0
Daucus carota (seedling)	0	0	0	0
Epilobium brachycarpum	0	0	0	0
Epilobium densiflorum	0	0	0	0
Erigeron philadelphicus	0	0	0	0
Festuca roemerii	0	0	0	0

Leucanthemum vulgare	0	0	0	0
Lupinus polyphyllus	0	0	0	0
Medicago lupulina	0	0	0	0
Montia linearis	0	0	0	0
Rumex acetosella	0	0	0	0
Senecio vulgaris	0	0	0	0
Triteleia hyacinthina	0	0	0	0
Veronica arvensis	0	0	0	0

Festuca rubra	0	0	0	0
Fraxinus latifolia (seedling)	0	0	0	0
Geranium molle	0	0	0	0
Grindelia integrifolia	0	0	0	0
Holcus lanatus	0	0	0	0
Juncus bufonius	0	0	0	0
Lupinus polyphyllus	0	0	0	0
Medicago lupulina	0	0	0	0
Potentilla gracilis	0	0	0	0
Poteridium occidentale	0	0	0	0
Rumex acetosella	0	0	0	0
Senecio vulgaris	0	0	0	0
Trifolium hybridum	0	0	0	0
Triteleia hyacinthina	0	0	0	0