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GARRET CREEK MITIGATION BANK

SECOND YEAR MITIGATION MONITORING REPORT

PREPARED BY:

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Garret Creek Mitigation Bank. 2010. Second Year Mitigation Monitoring Report. December 2010. Molalla, OR.

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Appendices

Acronyms and Abbreviations

Acronyms

CI confidence interval
Corps Corps of Engineers
DSL Department of State Lands
HGM hydrogeomorphic
IRT Interagency Review Team
MBI Mitigation Bank Instrument
OHWM Ordinary High Water Mark

Chapter 1
Introduction

The Garret Creek Mitigation Bank is owned and operated by Garret Creek Mitigation Bank, LLC in Molalla, Clackamas County, Oregon (Figure 1). The mitigation bank lies at the confluence of Garret and Rock Creeks, and was developed to offset unavoidable impacts to wetlands of the U.S. and State due to development in the Molalla – Pudding watershed, Hydrologic Unit Code 17090009.

The Bank is located at 33711 S. Dryland Road, between Molalla and Canby, in Clackamas County, Oregon. The Bank is contained within three tax lots: 51E2300500, 51E2300501 and 51E2300502 and located within Section 23, Township 5 South, Range 1 East.

The Garret Creek Mitigation Bank Instrument was signed by DSL and Portland District Corps in July 2008 and the site was graded the same summer. The site was planted during winter 2008-2009, and the first year of formal monitoring began during the spring of 2009. The bank is eligible to earn 15.49 wetland mitigation credits and 220 stream credits, (each credit is equivalent to 1 cubic yard of fill below the OHWM). Mitigation bank development included wetland restoration, wetland enhancement, riparian enhancement, stream restoration, and upland buffer enhancement. Table 1 summarizes the areas for each mitigation activity type. Detailed descriptions of mitigation activities can be found in the Garret Creek Mitigation Bank Instrument (MBI), produced by Jones & Stokes Associates in 2008.

(total potential credits)

Table 1. Mitigation Area Summary

Treatment Area	Area	Activities	Functions
Creek restoration	1,205 linear feet	Remove or breach berms, restore tributary channel	Hydrologic, water quality, habitat
Wetland restoration	10.68 acres	Disable tile, fill ditches, planting	Hydrologic, water quality, habitat
Cropped wetland enhancement	7.52 acres	Disable tile, fill ditches, planting	Hydrologic, water quality, habitat
Wetland enhancement	0.77 acres	Disable tile, planting	Habitat, hydrologic
Wetland buffer enhancement	0.79 acres	Protection	Habitat, hydrologic, water quality
Upland riparian enhancement	2.80 acres	Preservation, planting	Habitat
Upland buffer enhancement	1.72 acres	Preservation, planting	Buffering, habitat
Upland buffer preservation*	4.57 acres	Preservation	Buffering, habitat
Riparian Buffer	0.70 acres	Remove adjacent berm, protection.	Habitat, buffering

*Does not generate mitigation credit

Chapter 2

Mitigation Goals, Objectives, and Performance Standards

Mitigation bank goals, objectives and success criteria guide bank design elements, and are also used to evaluate mitigation bank success. Mitigation bank goals are broad and serve as an overarching descriptor for the project. Objectives for the bank identify specific activities that were undertaken to achieve site goals; performance standards are specific thresholds that should be measured through quantitative monitoring to determine whether bank activities were successful, and therefore achieving the project goals. The goals and objectives from the Garret Creek Mitigation Bank Instrument are provided below to provide context for the monitoring results. Specific Year 2 Performance Standards are provided in Chapter 4 along with the results of the monitoring that addressed that standard.

Goal —To restore 10.68 acres of wetland and enhance 7.52 acres of cropped wetland to Riverine forested wetland class, to enhance 0.77 acres of wetland and 2.80 acres of upland riparian habitat, provide protection to the Bank by providing sediment trapping and visual screening through establishing or preserving vegetation, and to restore stream area within the Bank.

Objective 1—Restore wetland hydrology by disabling drain tiles, filling ditches, removing berms, disking compact soils and restoring overbank flooding to wetland areas.

Objective 2—Establish native palustrine wetland forest vegetation through planting.

Objective 3—Enhance 1.72 acres of upland buffer.

Objective 4—Restore the Garret Creek Tributary stream channel.

Chapter 3
Monitoring Methods

The physical, hydrologic, and vegetative conditions of the mitigation site were monitored relative to the bank instrument goals, objectives, and performance standards. The following methods have been used to directly address project performance standards and objectives.

As-Built Conditions—The site was inspected after site construction to assess as-built conditions. Graded feature limits were surveyed to produce as-built plans, which were submitted in 2008.

Site Development—Photographs were taken that document physical wetland condition and plant community development; photographs were taken from permanent photo stations each monitoring year to facilitate consistent year-to-year comparisons.

Soil Erosion and Sedimentation—The bank was visually inspected for evidence of soil erosion and sedimentation, particularly at the bubble-up (tile discharge pipes) locations. Erosion or sedimentation will be reported and assessed for whether it threatens site goals.

Wetland Hydrology—The presence of saturation and inundation are monitored in groundwater monitoring wells in wetland restoration areas and recorded twice weekly during March, April, and early May. Tile discharge locations are also observed to verify that tiles are no longer discharging water.

Stream Restoration –Stream flow is photo-documented and observed during annual IRT site visits and reported in annual monitoring reports.

Vegetation and Wildlife

Vegetation development is monitored to address performance standards using random transects to measure woody plant species survival, plant density, and aerial cover. Baselines are established along the boundary of the wetland and buffer areas. Transects are established along the baselines extending into both wetlands and upland buffers to establish sampling areas. Transects are located every 150 feet along the baseline and oriented east-west or north-south to extend into planting areas. Transect distributions are regular, from a random starting point. Samples are calculated to assure that a confidence interval of 80%, with a confidence interval width of ±20% has been satisfied. Additional samples, if needed, are randomly located between transects. Transect locations are shifted as needed to include underplanting areas. Sampling is performed as described in *Measuring & Monitoring Plant Populations* (Elzinga et al. 1998).

Plant density is measured with 30 - 1m x 20m rectangular quadrats, distributed randomly along transect lines. All woody plants are identified to species and counted within the quadrat. The number of individual plants recorded within each quadrat will provide an estimate of plants per sampling area, which will then be used to estimate plants per acre. This approach is used to

estimate total number of woody plants, number of each species of woody plants, and number of native plants per acre. (Elzinga et al. 1998, pp 170-172).

Aerial cover (for woody species and invasive cover will measured using the line-intercept technique along the full transect length. The length of intercept for each sample and total length of transects is used to calculate the aerial cover for species. (Elzinga et al. 1998, pp 181)

Vegetation Moisture Tolerance Index is measured in 30 – 1 meter square quadrats located randomly within plant density quadrats in wetland areas. Vegetation moisture tolerance index is calculated as described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Mountains, Valleys, and Coasts (*Corps 2010)

Beaver activity—Any beaver activity is monitored to ensure that site goals and performance standards can be achieved. Beaver activity is described in monitoring reports.

Wildlife Activity—Other wildlife activity is reported qualitatively, with particular attention to state or federally listed species.

Chapter 4

Monitoring Results and Management

The Garret Creek Mitigation Bank has achieved all performance standards to date and is being colonized by native plant communities in the wetter portions of the site. Bank sponsors have controlled invasive species, replaced dead plantings, and will continue to do so. Some portions of the site are dominated by non-native species; it is anticipated that site growing conditions will favor native species as woody cover continues to establish on the site.

2010 Monitoring Results

Performance Standard 1.1—The southern ditch will be filled to within 6" of surrounding grade.	Southern ditch was graded to plan, as indicated in as-built plans submitted in 2008. No subsidence or erosion has occurred since that time; elevations remain within 6" of surrounding grade.
Performance Standard 1.2—The tile outlets to Garret and Rock Creeks will not discharge water.	A small amount of tile leakage was observed into the relocated stream channel in the southern field. The leak has been plugged.
Performance Standard 1.4 - Vegetation recorded within wetland areas during vegetation monitoring sampling will show a moisture tolerance index of 3.0 or less in years 1, 2, 3, and 5.	The moisture index recorded on vegetation samples taken within the wetland areas is 2.66, meeting the performance standard.
Performance Standard 2.1—Native woody species within wetland restoration and enhancement, and stream restoration areas will average 786 living plants per acre (a 65% survival rate) in planted areas[1] at the end of Year 1, 2, and 3.	Native woody species samples with the wetland restoration and enhancement areas indicate a stem density of 2,032 living stems per acre. (CI+/- 20%=2,439 – 1,636). Sample size required based on results is 4 (7 using Kupper correction factor) plots; 19 plots were recorded.
Performance Standard 2.4 - Phalaris arundinacea, Polygonum cuspidatum, Rubus armenicanus, Craetagus laevigata, Helix hedera, Solanum	No invasive species cover was recorded during vegetation sampling. Small amounts of *Phalaris arundinaceae* and *Rubus armeniacus* were

actually 1773

[1] Wetland enhancement areas east of the "informal roadway" include existing wetland forest that will be underplanted in appropriate areas. Areas not underplanted will not be included in plant density or aerial cover estimates.

dulcamara, Polygonum cuspidatum, Lythrum salicaria, and any other Oregon Department of Agriculture-listed noxious weed will collectively cover less than 30% of the combined wetland restoration, wetland enhancement, wetland buffer enhancement, cropped wetland enhancement, riparian buffer, upland riparian enhancement and upland buffer enhancement areas.	observed along the wetland fringe. Invasive species are being controlled with herbicide.
Performance Standard 2.5 - At least 4 native woody species will provide 5% or more living plants or aerial cover in each of the wetland restoration, wetland enhancement and tributary enhancement areas in years 1, 2, 3, and 5.	*Rosa nutkana, Salix sitchensis, Salix lasiandra, Populus balsamifera,* and *Fraxinus latifolia* each contributed greater than 5% of the living stems.
Performance Standard 3.1— The upland buffer enhancement areas will include 650 living native woody plants per acres (65% survival rate) at the end of Year 1, 2, and 3.	Native woody species samples with the upland enhancement areas indicate a stem density of 1,103 living stems per acre. (CI+/- 20%=1,324 – 883). Sample size required based on results is 3.4 (7 using Kupper correction factor) plots; 5 plots were sampled. 7 plots will be sampled in 2011 to achieve Kupper correction factor.
Performance Standard 3.3—Woody plants or woody species cover within the enhanced upland buffer areas will be comprised of 80% native species in each year of monitoring (Years 1, 2, 3, and 5).	All woody species recorded in both wetland and upland areas are native; woody plant composition is 100% native.
Performance Standard 4.1—The restored Garret Creek tributary channel will be graded to within 6-12 feet in width and 6 -30 inches in depth, as depicted on site plan, Exhibit B.	Garret Creek tributary channel was graded according to plan, as indicated on project as-built documents submitted in 2008. Some lateral and vertical erosion was observed in the northern segment of the channel, within acceptable parameters.
Performance Standard 4.2 – The restored Garret Creek tributary channel will flow seasonally in years of average or greater precipitation	The Garret Creek tributary channel flowed between September 2009- July 2010, and became stagnant during August 2010.
Performance Standard 4.3 – The restored Garret Creek tributary channel will have less than 100 square feet of scour area in each year of monitoring from years 2-5.	Garret Creek tributary channel was graded according to plan, as indicated on project as-built documents submitted in 2008. Some lateral and vertical erosion was observed in the northern segment of the channel, within acceptable parameters.

Chapter 5
Summary and Recommendations

The bank site has met all Year-1 and Year -2 performance criteria . making the site eligible for further mitigation credit release. Site maintenance has been limited to vegetation management; no irrigation was performed in 2010. IRT authorized Garret Creek Mitigation Bank to delineate the mitigation site in 2011, one year early, if irrigation work is forgone again in 2011.

The primary area of concern expressed by the IRT was that a portion of the site along Garret Creek in the southern portion of the bank lacks some wetland characteristics. The area in question is not developing a predominance of wetland plants and casual shovel probing didn't uncover clear hydric soil indicators. However, a groundwater monitoring well in this area has recorded soil saturation into late April, indicating sufficient soil saturation is occurring to develop wetland characteristics in the vicinity of the monitoring well.

Garret Creek Mitigation Bank will consider delineating on-site wetlands in spring 2011 and notify the IRT prior to any delineation work. We will also continue bank maintenance to control invasive species, and otherwise manage vegetation. Monitoring will continue, as described in the original MBI.

References

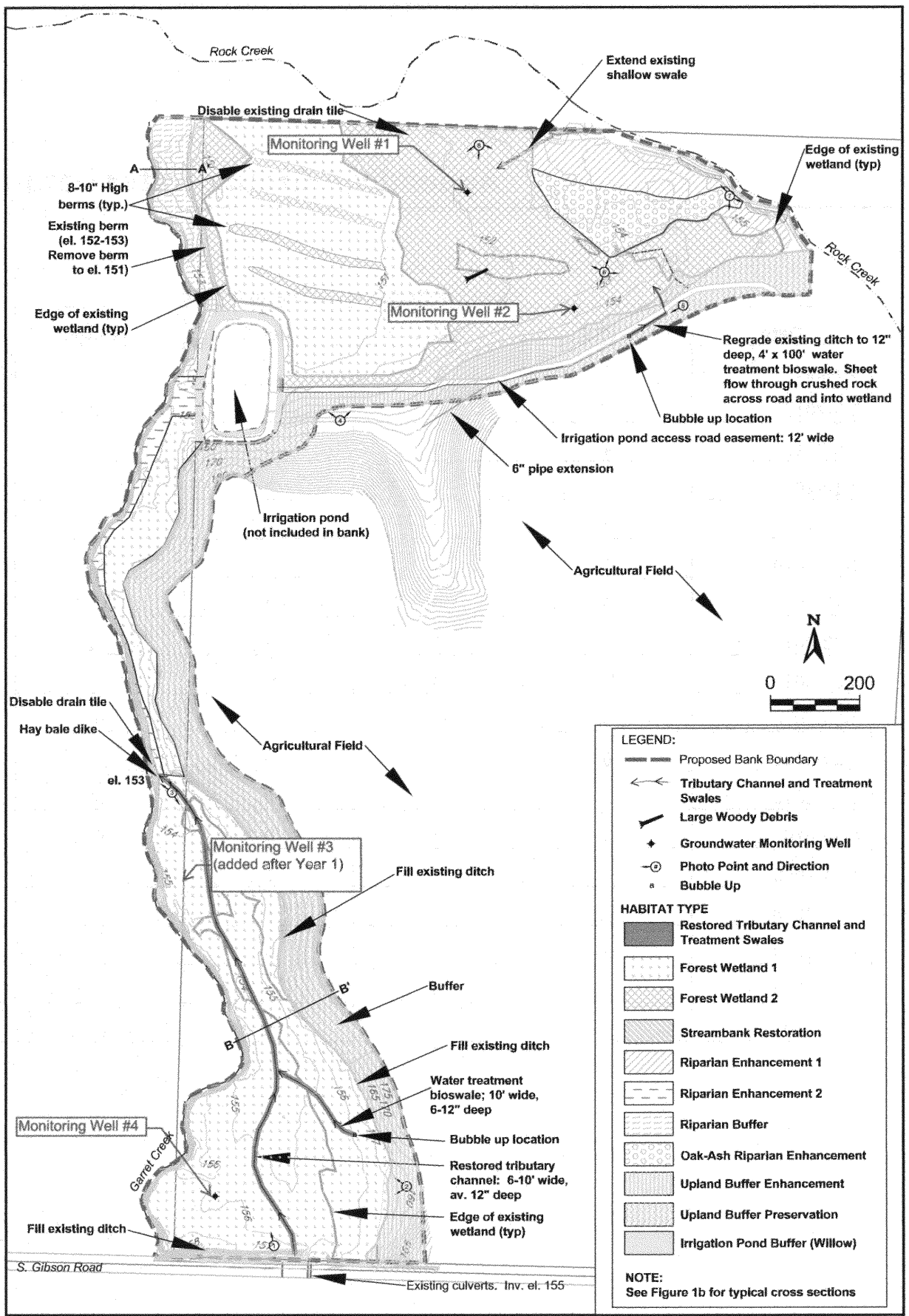
Jones and Stokes. 2008. *Garret Creek Mitigation Bank Instrument*. Prepared for Garret Creek Mitigation Bank, LLC Molalla OR.

Elzinga, C.L.,D. W. Salzer, and J.W. Willoughby. 1998. *Measuring and Monitoring Plant Populations*. Bureau of Land Management Technical Reference. 1730-1, BLM/RST?ST-98/005+1730. National Business Center, Denver, CO.

U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*, ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3.Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Appendix A Groundwater Data

	Water Depth Below Surface in Inches			
Date	Well 1	Well 2	Well 3	Well 4
3-1-2010	2	3	0	5
3-5-2010	11	6	4	3
3-8-2010	4	0	0	4
3-10-2010	7	0	3	0
3-12-2010	3	0	0	1
3-15-2010	7	0	2	5
3-17-2010	9	0	4	12
3-22-2010	12	0	8	12
3-24-2010	12	0	10	2
3-26-2010	0	0	2	0
3-29-2010	0	0	0	0
3-31-2010	2	0	0	0
4-5-2010	3	0	0	0
4-14-2010	8	0	2	1
4-19-2010	12	0	9	8
4-21-2010	8	0	4	6
4-28-2010	2	0	0	0
5-9-2010	14	0	12	17



	Habitat Types	Project: **Garret Creek Wetland Mitigation Bank**	Client: **Elton Kemnitz**	Notes: Author: Apr 16, 2008 – 1:04pm

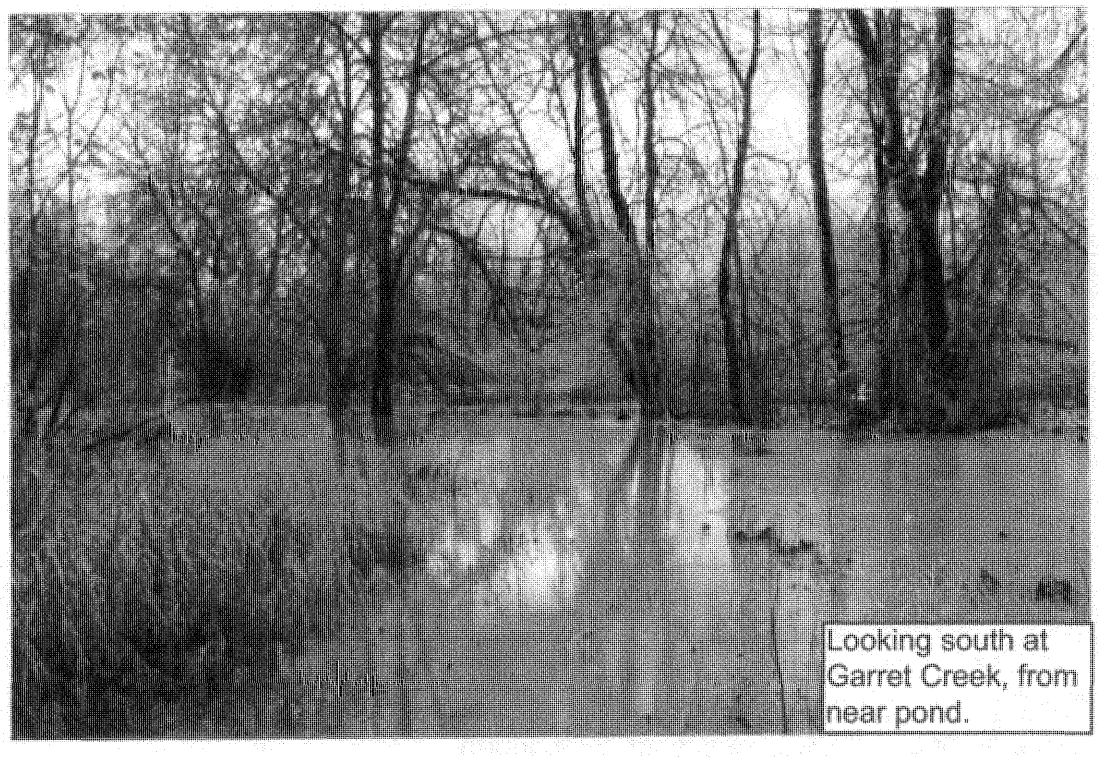
G:\Projects\Kemnitz Farms\Resources\CAD-GIS\CAD\Kemnitz_bank.dwg

Appendix B Site Photos

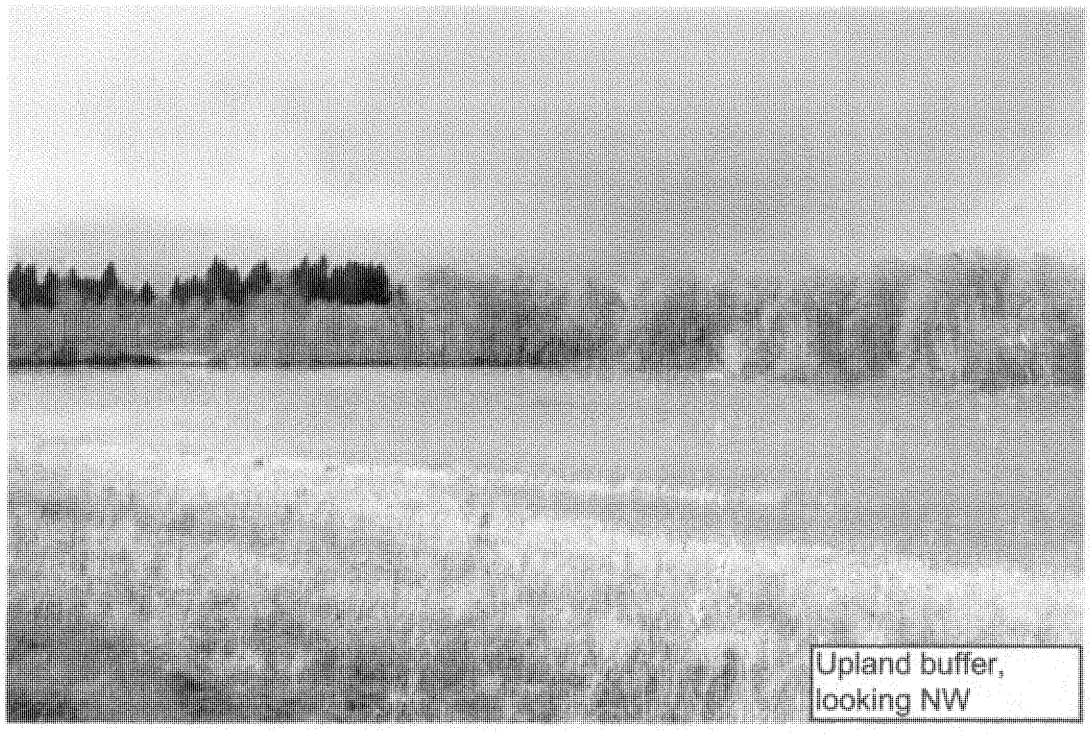
South Field,
looking West

Irrigation Pond
Berm, looking east

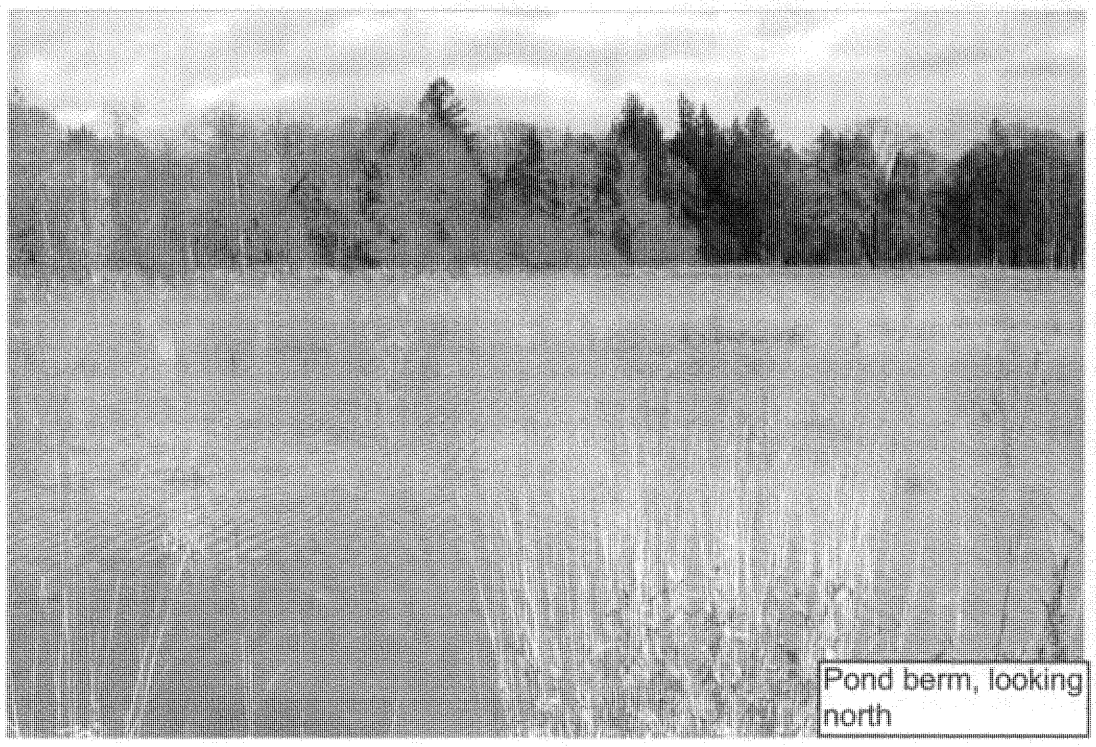
Pond berm, looking north



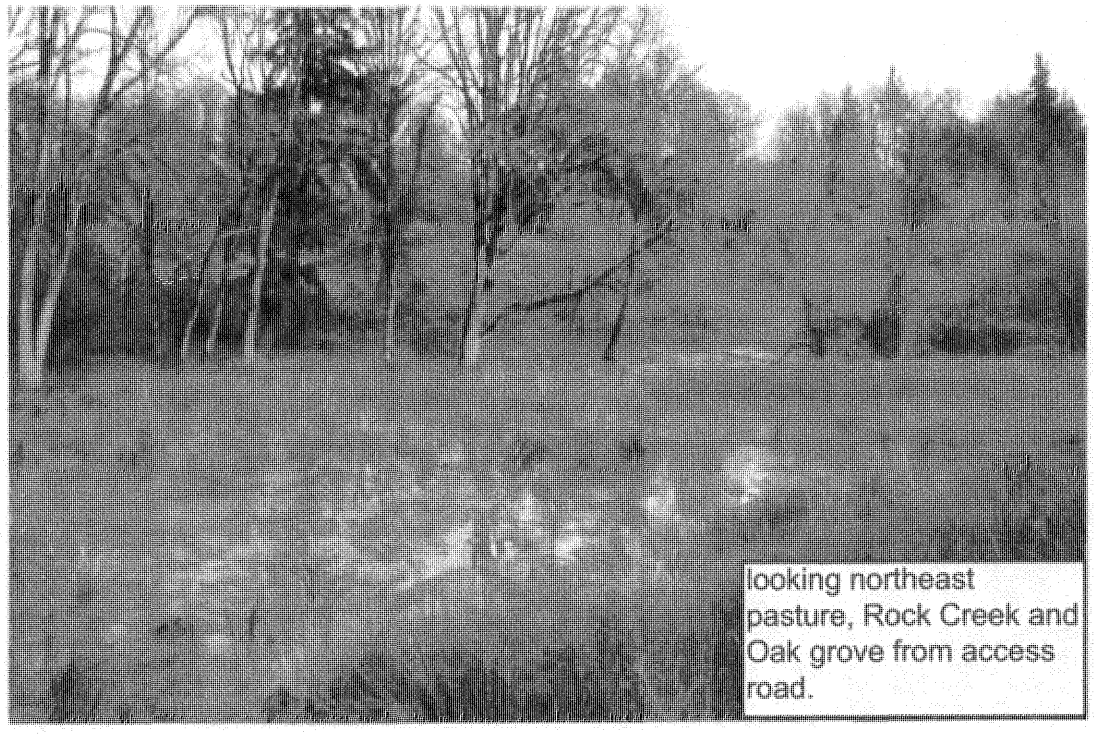
Looking south at Garret Creek, from near pond.



Upland buffer, looking NW



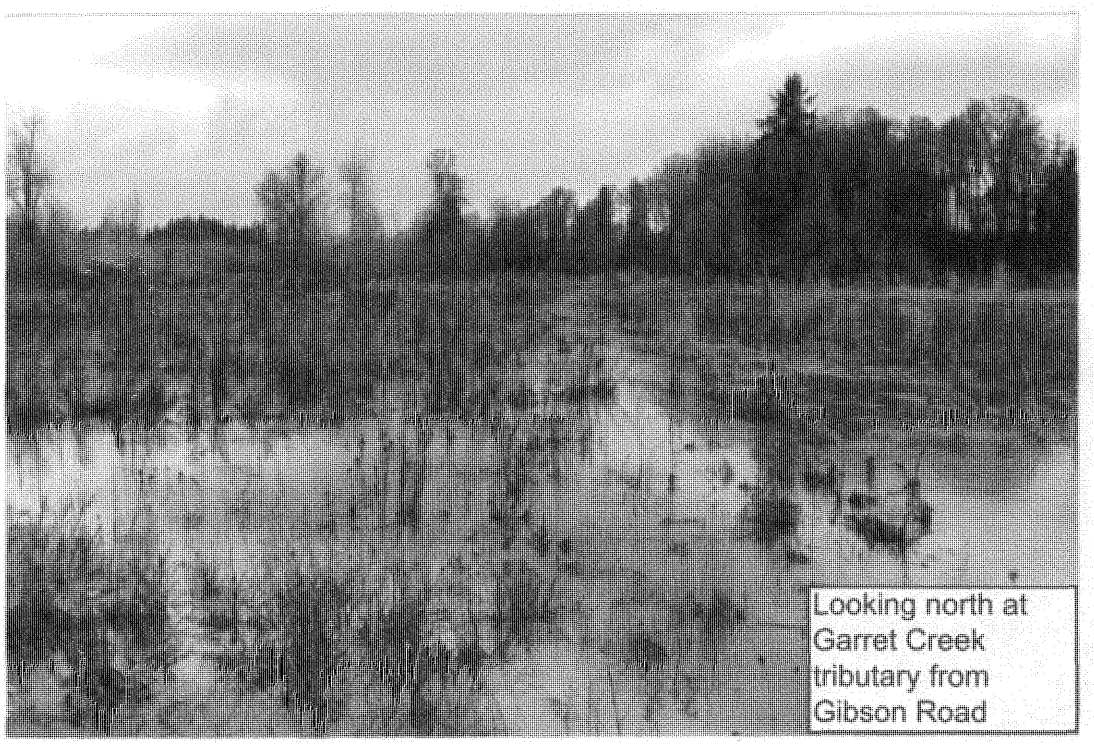
Pond berm, looking north



looking northeast pasture, Rock Creek and Oak grove from access road.

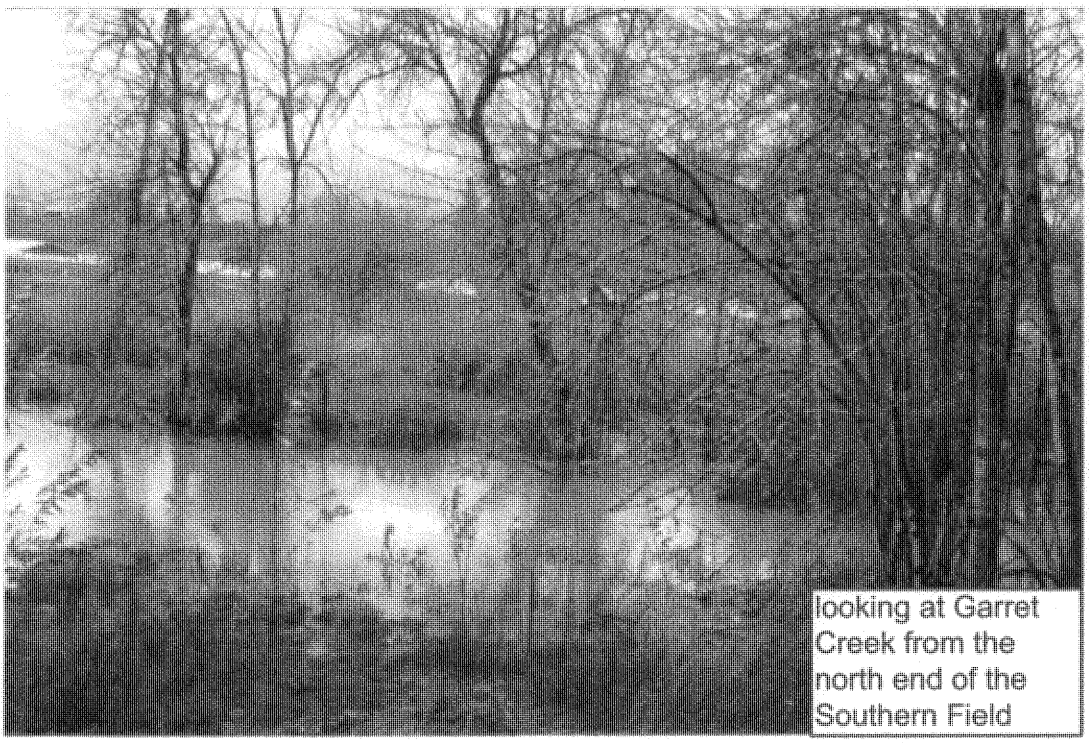
Looking south at southern field

Looking west at northwest field from access road



Looking north at Garret Creek tributary from Gibson Road

Garret Creek, west of pond



looking at Garret Creek from the north end of the Southern Field

Looking west at south end of southern field

Appendix C Vegetation Data

Tree and Shrub Stem Density Data, Wetland																				
	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T19B
Fraxinus latifolia	4	0		5	10	1	2	3	1	3	0	6	5	3	2	3	2	4	6	4
Populus balsamifera	2	4		0	1	2	1	0	0	0	0	0	2	0	0	1	0	1	1	0
Quercus garryana	1	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Salix lasiandra	0	0		1	0	1	2	0	2	0	1	0	0	0	1	1	0	0	0	1
Salix sitchensis	0	0		0	0	0	0	1	2	2	0	1	0	1	0	3	2	1	1	1
Acer macrophyllum	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cornus sericea	0	0		0	0	0	0	1	1	1	0	0	0	2	0	0	0		0	0
Rosa nutkana	0	0		1	0	2	0	0	0	0	0	0	0	0	1	0	0	0	2	0
Pseudotsuga menzesii	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7	4		7	11	6	5	5	6	6	1	7	7	6	4	8	4	6	10	6

Tree and Shrub Stem Density Data, Upland																				
	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T19B
Fraxinus latifolia		2	1																1	
Populus balsamifera		1	1				2												2	2
Quercus garryana			1																	
Salix lasiandra		2																		
Salix sitchensis																				
Acer macrophyllum																				
Cornus sericea																				
Rosa nutkana																				
Pseudotsuga menzesii			1																1	2
		5	4				2												4	4

Wetland Statistic Summary

Total sampled quads	19
total sampled sf	2850
total sf	196,020
% sampled	1.45%
MEAN	7
STD	2.208436773
n (=(1.28)^2*(B245)^2/(0.2*B243)^2)	4.076935195
n* (corrected Kupper & Hafner value)	7
stems per ac	2032.8
quadrats per ac	290.4
Performance Criteria (80% of original installed number)	
Number Needed per acre for 80%	-2033
Acres per site for Zone	30.35
Plants Needed by Zone (=B259*B258)	-61695

Confidence Interval Width +/- 20% (=0.2*B251)	407
plus 20%	2439
minus 20%	1626

Upland Statistics Summary

Total sampled quads	5
total sampled sf	750
total sf	196,020
% sampled	0.38%
MEAN	3.8
STD	1.095445115
n (=(1.28)^2*(B245)^2/(0.2*B243)^2)	3.403878116
n* (corrected Kupper & Hafner value)	7
stems per ac	1103.52
Quadrats per ac	290.4
Performance Criteria (80% of original installed number)	

Number Needed per acre for 80%	-1104
Acres per site for Zone	30.35
Plants Needed by Zone (=B259*B258)	-33492
Survival by Zone	
Confidence Interval Width +/- 20% (=0.2*B251)	221
plus 20%	1324
minus 20%	883

Species	Origin (N, NN, I)	Wetland Status (1 - 5)	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20	Row Average
Native Herbaceous Species																							
Transect & Quad Number																							
Alopecurus geniculatus	N	1	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	37.5	0	0	0	0	3
Carex 2 sp.	N	1	0	0	0	2.5	0	2.5	2.5	0	0	0	0	15	0	0	0	0	0	0	0	0	1
Carex stipata	N	1	0	0	0	0	0	0	0	0	0	2.5	0	0	0	0	0	0	0	0	0	0	0.125
Eleocharis palustris	N	1	0	0	0	0	0	0	0	0	63	37.5	0	0	0	0	0	2.5	0	0	0	0	5
Epilobium ciliatum	N	2	0	0	0	15	0	15	0	0	0	0	0	15	15	37.5	37.5	0	15	15	15	15	10
Glyceria elata	N	2	0	0	0	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Juncus acuminatus	N	1	0	0	0	0	0	0	0	37.5	0	37.5	0	0	37.5	0	0	0	0	0	0	0	6
Juncus bufonius	N	2	0	0	0	63	0	0	37.5	63	0	15	0	15	0	37.5	0	0	0	0	0	0	12
Juncus tenuis	N	2	0	0	0	15	15	15	0	0	0	15	0	0	0	0	0	0	0	0	0	0	3
Poa palustris	N	3	0	37.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	3
Polygonum hydropiperoides	N	1	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	1
Rorippa curvisiquila	N	1	0	0	0	0	15	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	2
Veronica americana	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	15	15	0	0	0	0	0	2
Stellaria sp	N	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vicia americana	N	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified grass	N	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vicia nigr. var gigantica	N	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Invasive Herbaceous Species																							
Centaurea stoebe	I	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirsium arvense	I	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirsium vulgare	I	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lolium multiflorum	I	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phalaris arundinacea	I	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rubus discolor	I	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-Native Herbaceous Species																							
Alopecurus pratensis	NN	2	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.5	3
Crepis capillaris	NN	4	2.5	2.5	0	2.5	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	1
Daucus carota	NN	5	37.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Echinochloa crusgalli	NN	2	0	0	0	0	2.5	0	0	15	63	0	97.5	0	0	2.5	0	0	0	0	0	0	9
Geranium sp	NN	5	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	15	0	0	0	2
Hypericum perforatum	NN	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	1
Hypochaeris radicata	NN	5	0	0	0	0	63	37.5	37.5	15	0	1	0	2.5	15	0	15	0	0	0	0	0	9
Leucanthemum vulgare (Chrysanth)	NN	5	0	0	0	0	0	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lolium multiflorum	NN	4	0	15	0	0	0	0	15	0	0	0	0	0	0	0	15	2.5	0	0	0	37.5	4
Lotus corniculatus	NN	3	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	37.5	0	0	0	3
Matricaria discoidea	NN	4	0	0	0	0	0	0	0	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0
Parentucellia viscosa	NN	3	0	0	0	0	0	0	15	0	0	0	0	0	0	37.5	0	0	0	15	0	37.5	5
Plantago major	NN	4	0	0	0	0	2.5	0	0	0	0	2.5	0	15	15	0	0	0	0	0	0	0	2
Ranunculus repens	NN	2	15	63	0	0	0	0	0	0	0	63	0	0	0	0	0	37.5	37.5	0	15	0	12
Rumex crispus	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	15	37.5	0	63	15	0	0	0	7
Sonchus asper	NN	3	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	1
Trifolium pratense	NN	4	0	0	0	0	0	0	0	15	0	0	0	0	0	15	0	0	0	0	0	0	2
Trifolium repens	NN	3	37.5	15	0	0	0	63	0	0	0	0	0	37.5	0	0	0	0	37.5	85	85	63	21
vicia sativa	NN	5	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bare Ground			0	0	0	0	15	0	0	0	15	0		0	0	0	15	37.5	0	0	0	0	4

Routine Performance Standards	Routine Threshold	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20	Habitat Average	Standard Error	Standard Met?
Cover of Native Herbaceous Specie	>=60%	0	38		98	30	33	40	101	78	123	0	60	53	90	53	40	15	15	30	15	48	8.1	NO
Lower CI (80%)																								
Upper CI (80%)																								
Cover of Invasive Herbaceous Spec	<=10%	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	YES
Lower CI (80%)																								
Upper CI (80%)																								
Bare Substrate	<=20%	0	0		0	15	0	0	0	15	0	0	0	0	0	15	38	0	0	0	0	4	2	YES
Lower CI (80%)																								
Upper CI (80%)																								
Cover of Native Shrubs and Trees	>=50% (alternative)	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NO
Lower CI (80%)																								
Upper CI (80%)																								
Cover of Invasive Shrubs and Trees	<=10%	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	YES
Lower CI (80%)																								
Upper CI (80%)																								
Native Diversity	4																							
Prevalence Index	<3.0	3.48	2.59		2.02	3.83	3.33	3.44	2.29	1.45	1.55	2.00	2.46	2.60	2.68	2.92	2.20	2.86	3.12	2.77	2.92	2.66	N/A	NO
Weighted Prevalence Index		383	384	0	204	375	452	370	339	204	294	195	320	293	530	265	314	450	405	360	557			
Sum of plant cover		110	148	0	101	98	136	108	148	141	189	98	130	113	198	98	143	158	130	130	191			