Appendix D

Ecological Restoration Monitoring

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Abbreviations

AIBI	Amphibian Index of Biotic Integrity
CC	Coefficient of Conservatism
DOE	U.S. Department of Energy
FQAI	Floristic Quality Assessment Index
OEPA	Ohio Environmental Protection Agency

Measurement Abbreviations

cm	centimeters
m^2	meter squared

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D.1.0 Ecological Restoration Monitoring

Ecological restoration monitoring at the Fernald Preserve in 2010 involved continuing the wetland mitigation monitoring program, as well as characterization of prairie communities as part of functional monitoring. Reptile and small mammal wildlife surveys were conducted in 2010 as well, using coverboards.

Wetland mitigation monitoring and functional phase monitoring were both required as a result of the natural resource damage settlement between U. S. Department of Energy (DOE), Ohio Environmental Protection Agency (OEPA) and U.S. Department of Interior (State of Ohio 2008).

D.1.1 Wetland Mitigation Monitoring

Enhanced wetland mitigation monitoring was initiated, as specified in the *Fernald Preserve Wetland Mitigation Monitoring Plan* (DOE 2009a). Amphibian surveys were conducted to calculate an Amphibian Index of Biotic Integrity (AIBI) for a number of created wetlands across the site. Hydrological monitoring and soil biogeochemical sampling also took place. Figure D−1 shows the wetland areas that are included in the wetland mitigation monitoring program.

D.1.1.1 Amphibian Index of Biotic Integrity

The use of the AIBI is one of several metrics used to compare on-site restored wetlands against performance criteria established by OEPA (Mack 2004). The *Fernald Preserve Wetland Mitigation Monitoring Plan* (DOE 2009a) adopts the OEPA performance criteria for the Fernald Preserve, and sets forth the approach for monitoring on-site restored wetlands, with detailed field procedures documented in the *Fernald Preserve Ecological Monitoring Methods Plan* (DOE 2010). The purpose of the AIBI is to use amphibian communities in wetlands as indicators of overall wetland conditions. The data collected provides information on species richness and abundance per wetland basin.

Monitoring and data collection are conducted three times between late February and early July, with each event spaced approximately 6 weeks apart. Late winter/early spring sampling (late February to early April) allows for monitoring of adult salamanders, early breeding frogs and macroinvertebrates, and early season taxa. Middle spring sampling (late April to mid May) is conducted to collect adult frog species, amphibian larvae, and macroinvertebrates. Late spring/early summer sampling (early June to early July) is conducted to collect well-developed amphibian larvae and macroinvertebrates.

Ten funnel traps are placed evenly around the perimeter of each of the 15 monitored wetlands. The distance between each trap was determined by pacing around the wetland perimeter and dividing the total paces by 10. Traps are placed on the substrates of the wetland and partially submerged. The traps are left at the designated locations for 24 hours to ensure results for diurnal and nocturnal activity patterns. Traps are not baited. Funnel traps are similar in size and shape to a commercial minnow trap but constructed with a smaller mesh aluminum screen. Cylinders are 18 inches long and 8 inches in diameter with fiberglass cones on each end. The funnels are directed inward and contain a 1.75-inch-diameter circular opening in the middle. The monitoring methods described above are in accordance with *Integrated Wetland Assessment Program Part 7: Amphibian Index of Biotic Integrity for Ohio Wetlands* (Micacchion 2004).

The AIBI is calculated using five metrics. Amphibian data are used to assign a score (0, 3, 7, 10) for each of the 5 metrics resulting in a composite score for a given wetland between 0 and 50. The *Fernald Preserve Wetland Mitigation Monitoring Plan* established that site wetland areas will be evaluated against the emergent wetland performance criteria (DOE 2009a). Therefore, the AIBI metrics calculated from the collected amphibian data include the following:

- Amphibian Quality Assessment Index: A weighted index that takes into account both the sensitivity of individual species and the number of individuals collected. The sum of each individual species is multiplied by its associated Coefficient of Conservatism (CC) score. This total is then divided by the total number of amphibians collected in the wetland.
- Relative Abundance of Sensitive Species: The sum for all species with CC of six or higher divided by the total number of amphibians.
- Relative Abundance of Tolerant Species: The sum for all species with CC of three or less divided by the total number of amphibians.
- Number of Pond Breeding Salamanders Species: Adult pond breeding ambystomid salamander species are primarily terrestrial; however, egg and larval life stages are aquatic.
- Presence of Spotted Salamanders or Wood Frogs: These two species are indicators of relatively undisturbed conditions. Neither occurs at sites that are severely degraded.

Fifteen wetland basins within five different restoration areas were surveyed in 2010. Figures D–2A to D–2D show the wetland areas that are included in the amphibian monitoring program.

Scoring metrics and results of the amphibian monitoring program are provided in Table D–1. Table D–2 lists the amphibian species observed in 2010. These tables show that several of the onsite mitigation wetlands are developing into good habitat for amphibians. It is interesting to note the importance of placement of created wetlands. Most of the basins that scored well through AIBI are located adjacent to established forest communities. The Northern Pine Plantation wetlands had the two highest AIBI scores, and all three Wetland Mitigation Phase II wetlands also scored well. These findings are corroborated with previous species inventory and public outreach activities, where ambystomid salamanders have been observed in the Wetland Mitigation Phase II basins for several years.

D.1.1.2 Hydrologic Monitoring

Hydrological monitoring consists of daily water level readings from shallow wells (piezometers) that were installed in late 2009. The location of piezometers within site wetlands is shown on Figures D–2A to D–2D. Table D–3 summarizes the 2010 findings.

There are two performance standards associated with water levels: the average depth to water from ground surface should be less than 29.4 centimeters (cm) and water should be present in the root zone (less than 30 cm from ground surface) more than 53 percent of the time. Table D–3 shows that most wetlands met the root zone standard and approximately half met the average depth standard. These findings are as expected for surface water-fed emergent wetlands such as those at Fernald. Hydrographs for each monitored basin are presented in Figures D–3A to D–3W. With the exception wetland BAPW2, these hydrographs show an expected pattern of

inundation for impoundment wetlands. Almost all of the wetlands monitored showed strong seasonal variation, with low levels recorded in September and October. This is attributable to the regional drought experienced in the fall of 2010. The low values in wetland BAPW2 are most likely due to a malfunctioning transducer. The transducer has been replaced and the data will be reevaluated in 2011. As the hydrographs show, several other brief gaps in data collection are present. These are mostly attributable to transducer malfunction. In these instances, average water depth and root zone presence were calculated based on collected data rather than the entire year.

D.1.1.3 Biogeochemical Sampling

Soil samples were collected near each of the piezometer locations. Pursuant to OEPA monitoring protocols, six samples were collected: five in a "Y" shaped pattern that extended into the wetland basin and one at the center of vegetation monitoring fixed plots (Mack 2004). Samples were analyzed for total nitrogen, total organic carbon, and percent solids. Median values were calculated for all parameters in each wetland basin. Additionally, a surface water grab sample was collected in each basin.

A summary of soil sample results is provided in Table D–4. Results showed some progress, but more time will be needed to meet soil biogeochemistry performance standards. The only performance standard met in 2010 was the amount of total organic carbon present in several of the Former Production Area basins. Given the relatively young age of site mitigation wetlands (four to ten years old), these results are not unexpected. Previous research by OEPA has shown that the 2010 results are fairly typical for mitigation wetlands (Fennessy 2004).

The 2010 sampling is an initial effort, and will be continued in 2011. OEPA reporting guidelines for soil and water data will be utilized in 2012, once two years of data have been collected (Mack 2004).

D.1.2 Prairie Functional Phase Monitoring

Pursuant to the *Natural Resource Restoration Plan* (State of Ohio 2008), functional phase monitoring in 2010 focused on restored prairie communities. Fifteen random 1 square meter (m^2) quadrats were surveyed across each of 28 prairie areas during the growing season (June through September). Figures D–2A to D–2D show quadrat locations within each monitoring area. Surveys were divided into three rounds of five samples to ensure coverage throughout the growing season. Species richness data were collected and were used to calculate the percent native species, average CC and Floristic Quality Assessment Index (FQAI) for each restoration area. Cover class estimates were also obtained in order to evaluate the extent of vegetation establishment across restored areas. The parameters used for evaluation of functional monitoring results have been established for some time. Processes for calculating FQAI and cover are described in the *Ecological Monitoring Methods Plan* (DOE 2010).

A summary of prairie functional monitoring findings is provided in Tables D–5 and D–6. Area-specific data summaries are provided in Tables D–7 through D–34. As with the wetland functional monitoring in 2009, the prairie data sets are used to compare to both the baseline and reference sites. The baseline and reference site information was originally reported in the *2002 Consolidated Monitoring Report for Restored Areas* (DOE 2003). This information is now

available as an appendix to the *Fernald Preserve Ecological Monitoring Methods Plan* (DOE 2010).

Results show much improvement over baseline conditions, with all of the restoration areas surveyed exceeding baseline in percent native species, average CC and FQAI. A comparison to the 2004 functional monitoring dataset also shows continued progress. Table D–6 provides the data summary for the three areas surveyed in 2004: the Phase I Wetland Mitigation project; Area 8, Phase II Revegetation project; and the Ecological Restoration Park prairie. Percent native species and average CC have all improved, with the exception of average CC in the Ecological Restoration Park prairie. This is most likely attributable to the large amount of Canada goldenrod that has spread across the prairie. While native, Canada goldenrod has a low CC of 1. Even though the average CC score is often higher in 2010 than 2004, the FQAI scores are generally higher in 2004. This is probably due to the increased number of species observed in 2004. The species discrepancy could be related to increased diversity that is often seen in newly-established areas (from weedy annuals) or due to the fact that more quadrats were sampled in 2004 (30) than in 2010 (15).

D.1.3 Species Inventory Activities

A new effort was initiated in 2008 to inventory a variety of plant and animal species at the Fernald Preserve. This work assists with adaptive management of ecologically restored areas, adds to the local database of biological information, and provides opportunities for educational outreach.

Reptile and small mammal surveys were continued in 2010. Coverboards were placed around a number of site wetlands and monitored biweekly from April through October. The coverboards are simply 2-feet by 4-feet pieces of corrugated sheet metal placed directly on the ground. Animals are attracted to the cover and warmth the coverboards provide. Table D–35 lists the species observed and frequency of occurrence in 2010. Findings were roughly similar to those in 2009. No new species of reptiles or amphibians were observed in 2010.

D.1.4 Activities in 2011

Activities in 2011 include continued wetland mitigation monitoring and functional phase monitoring. Wetland monitoring efforts will involve a second year of amphibian sampling, soil biogeochemistry, and collection of hydrological data. Vegetation Index of Biotic Integrity will also be conducted in 2011. In addition, soil and water sampling will be continued. Functional phase monitoring will center on an evaluation of site forest communities, while species inventory work in 2011 will include continued coverboard monitoring. A second Bioblitz is planned for 2011 as well.

Table D–1. Amphibian Monitoring Scoring Metrics and Results Summary

Restoration Area	Wetland Area	Amphibian Quality Assessment Index	Score	Percent Relative Abundance Sensitive Species	Score	Percent Relative Abundance Tolerant Species	Score	Number of Pond-Breeding Salamanders	Score	Spotted Salamanders or Wood Frogs	Score	Amphibian Index of Biotic Integrity Score
Borrow Area (BAP)	BAPW2	2.00	0	0	0	100	0	0	0	0	0	0
	BAPW4	2.00	0	0	0	100	0	0	0	0	0	0
	BAPW7	2.00	0	0	0	100	0	0	0	0	0	0
Former Production Area (FPA)	FPAW2	2.00	0	0	0	100	0	0	0	0	0	0
	FPAW7	0.00	0	0	0	0	0	0	0	0	0	0
	FPAW9	1.80	0	0	0	100	0	0	0	0	0	0
	PREW6	3.54	3	23	7	77	3	0	0	0	0	13
Northern Pine Plantation Enhancement (NPP)	NPPW4	3.81	3	33	7	65	3	2	3	0	0	16
	NPPW5	5.30	7	65	10	35	7	0	0	0	0	24
Wetland Mitigation Phase I (WM1)	WM1W1	2.00	0	0	0	100	0	0	0	0	0	0
	WM1W4	3.14	3	23	7	77	3	0	0	0	0	13
	WM1W7	2.14	0	0	0	88	0	0	0	0	0	0
Wetland Mitigation Phase II (WM2)	WM2W1	2.06	0	1	3	99	0	0	0	0	0	3
	WM2W2	2.07	0	1	0	99	0	0	0	0	0	3
	WM2W3	4.19	3	42	7	58	3	1	3	0	0	16

Table D–2. Amphibian Species Monitoring Summary

Restoration Project Area	Wetland Area	AIBI[a]	Species and Number of Individuals								
			Cricket Frog (*Acris crepitans*)	Streamside Salamander (*Ambystoma barbouri*)	Marbled Salamander (*Ambystoma opacum*)	American Toad (*Anaxyrus americanus*)	Fowlers Toad (*Anaxyrus fowleri*)	American Bull Frog (*Lithobates catesbeiana*)	Green Frog (*Lithobates clamitans*)	Northern Leopard Frog (*Lithobates pipiens*)	Spring Peeper (*Pseudacris crucifer*)
Borrow Area (BAP)	BAPW2	0	0	0	0	0	83	0	0	0	0
	BAPW4	0	0	0	0	0	0	2	0	0	0
	BAPW7	0	0	0	0	0	0	4	0	0	0
Former Production Area (FPA)	FPAW2	0	0	0	0	0	0	10	0	0	0
	FPAW7	0	0	0	0	0	0	0	0	0	0
	FPAW9	0	0	0	0	0	0	4	1	0	0
	PREW6	13	19	0	0	0	0	32	0	0	31
Northern Pine Plantation Enhancement (NPP)	NPPW4	16	16	0	1	16	0	13	0	0	5
	NPPW5	24	15	0	0	0	0	6	1	0	1
Wetland Mitigation Phase I (WM1)	WM1W1	0	0	0	0	0	0	10	0	0	0
	WM1W4	13	8	0	0	0	0	27	0	0	0
	WM1W7	0	0	0	0	0	0	5	1	1	0
Wetland Mitigation Phase II (WM2)	WM2W1	3	6	0	0	480	0	9	2	0	3
	WM2W2	3	12	0	0	794	0	5	0	0	0
	WM2W3	16	10	1	0	0	0	12	0	0	3

[a]Amphibian Index of Biotic Integrity Score

Table D–3. Hydrological Monitoring Summary

Restoration Project Area	Wetland Area	Average Depth (cm)	Percent of Time in Root Zone
Borrow Area (BAP)	BAPW2	66	6%
	BAPW3	**25**	**71%**
	BAPW4	**14**	**73%**
	BAPW7	32	**68%**
	BAPW9	**28**	**67%**
Former Production Area (FPA)	FPAW2	32	**67%**
	FPAW4	**19**	**78%**
	FPAW5	**15**	**71%**
	FPAW7	**22**	**77%**
	FPAW9	53	30%
	PREW6	**13**	**75%**
Northern Pine Plantation Enhancement (NPP)	NPPW4	**28**	**65%**
	NPPW5	**28**	**67%**
Wetland Mitigation Phase I (WM1)	WM1W1	49	34%
	WM1W2	36	**67%**
	WM1W3	41	**63%**
	WM1W4	**24**	**77%**
	WM1W5	38	**53%**
	WM1W6	30	**66%**
	WM1W7	37	**61%**
Wetland Mitigation Phase II (WM2)	WM2W1	**15**	**97%**
	WM2W2	**18**	**73%**
	WM2W3	31	**66%**
Performance Standard		<29.4	>53%

Values in bold have met the performance standard

Table D–4. Soil Biogeochemistry Sampling Summary

Restoration Project Area	Wetland Area	Percent Total Nitrogen	Percent Total Organic Carbon	Percent Solids
Borrow Area (BAP)	BAPW2	0.1	0.9	77.4
	BAPW3	0.1	1.1	65.4
	BAPW4	0.1	1.1	76.5
	BAPW7	0.1	2.0	75.0
	BAPW9	0.2	1.5	79.2
Former Production Area (FPA)	FPAW2	0.3	**5.4**	56.2
	FPAW4	0.4	**4.4**	65.1
	FPAW5	0.2	**4.1**	70.2
	FPAW7	0.3	**5.0**	60.9
	FPAW9	0.1	1.9	68.4
	PREW6	0.1	1.4	68.4
Northern Pine Plantation Enhancement (NPP)	NPPW4	0.2	2.6	62.9
	NPPW5	0.1	0.8	68.7
Wetland Mitigation Phase I (WM1)	WM1W1	0.2	2.3	65.3
	WM1W2	0.1	1.7	67.7
	WM1W3	0.1	1.3	72.1
	WM1W4	0.1	1.6	69.5
	WM1W5	0.2	2.2	69.1
	WM1W6	0.2	1.4	68.7
	WM1W7	0.3	3.6	68.1
Wetland Mitigation Phase II (WM2)	WM2W1	0.1	3.5	69.3
	WM2W2	0.1	1.4	77.7
	WM2W3	0.0	1.9	79.2
Performance Standard		>0.5	>3.9	<46.6

Values in bold have met the performance standard

Table D–5. Prairie Functional Monitoring Summary

Functional Monitoring Area	Total Species	Native Species	Percent Native	Average CC[a]	FQAI[b]	Average Cover[c]
A82PR1	43	27	63%	2.07	13.57	87%
BAPPR1	20	13	65%	2.15	9.62	98%
BAPPR2	24	10	42%	1.20	5.88	85%
ERPPR1	39	25	64%	1.46	9.13	98%
FPAA3A	23	19	83%	2.70	12.93	84%
FPAA3B	34	24	71%	2.35	13.72	91%
FPAA4A	36	23	64%	2.22	13.33	94%
FPAA4B	43	27	63%	2.07	13.57	87%
FPAA6A	31	21	68%	2.03	11.32	94%
FPAA6B	43	31	72%	2.07	13.56	96%
FPAMDC	47	30	64%	1.74	11.96	78%
FSAPR1	44	23	52%	1.68	11.16	92%
FVCPR1	43	30	70%	2.21	14.49	75%
NDAA14	39	20	51%	1.28	8.01	88%
NDAA6E	34	18	53%	1.15	6.69	77%
NDAARA	39	19	49%	1.59	9.93	88%
NDABAW	36	21	58%	1.81	10.83	94%
NDACWT	33	18	55%	1.45	8.36	94%
NDAEPL	35	20	57%	2.06	12.17	90%
NDAFPP	35	20	57%	3.11	18.42	90%
NDARP	31	14	45%	1.52	8.44	96%
NDASP7	40	18	45%	0.88	5.53	74%
NPPBR1	32	15	47%	1.28	7.25	98%
PREPR1	41	29	71%	2.23	14.30	98%
PRWPR1	32	19	59%	1.94	10.96	97%
PRWPR2	35	20	57%	1.49	8.79	96%
PRWPR3	38	27	71%	2.13	13.14	98%
WM1PR1	25	14	56%	1.80	9.00	96%
Baseline	38	15	39%	0.42	2.60	NA
Reference	88	81	92%	3.26	30.59	NA

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
[c] NA = not applicable

Table D–6. Functional Monitoring Comparison

Year	Total Species	Native Species	Percent Native	Average CC[a]	FQAI[b]
Wetland Mitigation Phase I					
2004	64	31	48%	1.33	10.63
2011	25	14	56%	1.80	9.00
Area 8 Phase II Revegetation					
2004	53	28	53%	1.40	10.16
2011	22	12	55%	1.68	7.89
Ecological Restoration Park					
2004	66	40	61%	1.65	13.42
2011	39	25	64%	1.46	9.13

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index

Table D–7. A82PR1 Prairie Functional Monitoring Data Summary

Total Species:	22	**Mean CC[a]:**	1.68
Native Species:	12	**Average Cover:**	98%
Non-Native Species:	10	**FQAI[b]:**	7.89
Percent Native:	55%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Acer negundo	BOX ELDER	tree	3	0.07	1%
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.07	1%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.40	9%
Carex granularis	MEADOW SEDGE	sedge	3	0.07	1%
Elymus trachycaulus	BEARDED WHEAT GRASS	grass	7	0.07	1%
Juglans nigra	BLACK WALNUT	tree	5	0.07	1%
Juncus tenuis	PATH RUSH	forb	1	0.13	3%
Panicum virgatum	SWITCH GRASS	grass	4	0.20	4%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.20	4%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.47	10%
Toxicodendron radicans	POISON-IVY	vine	1	0.07	1%
Vernonia gigantea	TALL IRONWEED	forb	2	0.07	1%
Agrostis gigantea	**REDTOP**	grass	0	1.07	24%
Allium vineale	**FIELD GARLIC**	forb	0	0.07	1%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.13	3%
Dactylis glomerata	**ORCHARD GRASS**	grass	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.07	1%
Festuca elatior	**TALL FESCUE**	grass	0	0.93	21%
Lolium multiflorum	**ITALIAN RYEGRASS**	grass	0	0.07	1%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.07	1%
Setaria glauca	**YELLOW FOXTAIL**	grass	0	0.07	1%
Torilis japonica	**JAPANESE HEDGE-PARSLEY**	forb	0	0.07	1%
			Native Species:	1.87	42%
			Non-Native Species:	2.60	58%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–8. BAPPR1 Prairie Functional Monitoring Data Summary

Total Species:	20	**Mean CC[a]:**	2.15
Native Species:	13	**Average Cover:**	98%
Non-Native Species:	7	**FQAI[b]:**	9.62
Percent Native:	65%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.07	2%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.33	10%
Aster pilosus	AWL ASTER	forb	1	0.07	2%
Baptisia australis	BLUE FALSE INDIGO	forb	6	0.07	2%
Conyza canadensis	HORSEWEED	forb	0	0.07	2%
Elymus canadensis	CANADA WILD RYE	grass	6	0.13	4%
Elymus trachycaulus	BEARDED WHEAT GRASS	grass	7	0.20	6%
Juncus tenuis	PATH RUSH	forb	1	0.20	6%
Panicum virgatum	SWITCH GRASS	grass	4	0.07	2%
Parthenocissus quinquefolia	VIRGINIA CREEPER	vine	2	0.07	2%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.07	2%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.20	6%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.20	6%
Agrostis gigantea	**REDTOP**	grass	0	0.20	6%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.13	4%
Festuca elatior	**TALL FESCUE**	grass	0	0.20	6%
Lolium multiflorum	**ITALIAN RYEGRASS**	grass	0	0.47	14%
Phleum pratense	**TIMOTHY**	grass	0	0.13	4%
Polygonum persicaria	**LADY'S THUMB**	forb	0	0.13	4%
Setaria viridis	**GREEN FOXTAIL**	grass	0	0.27	8%
			Native Species:	1.73	53%
			Non-Native Species:	1.53	47%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–9. BAPPR2 Prairie Functional Monitoring Data Summary

Total Species:	24	**Mean CC[a]:**	1.20
Native Species:	10	**Average Cover:**	85%
Non-Native Species:	14	**FQAI[b]:**	5.88
Percent Native:	42%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Aster novae-angliae	NEW ENGLAND ASTER	forb	2	0.13	2%
Aster pilosus	AWL ASTER	forb	1	0.60	10%
Baptisia australis	BLUE FALSE INDIGO	forb	6	0.07	1%
Conyza canadensis	HORSEWEED	forb	0	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.47	8%
Panicum virgatum	SWITCH GRASS	grass	4	0.07	1%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.60	10%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.33	5%
Verbena hastata	BLUE VERVAIN	forb	4	0.07	1%
Agrostis gigantea	**REDTOP**	grass	0	0.07	1%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.20	3%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.27	4%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.47	8%
Lolium multiflorum	**ITALIAN RYEGRASS**	grass	0	0.07	1%
Lolium perenne	**PERENNIAL RYEGRASS**	grass	0	0.13	2%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.07	1%
Melilotus alba	**WHITE SWEET-CLOVER**	forb	0	0.53	9%
Melilotus officinalis	**YELLOW SWEET-CLOVER**	forb	0	0.33	5%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.07	1%
Regreen	**REGREEN**	grass	0	0.40	7%
Rumex crispus	**CURLY DOCK**	forb	0	0.07	1%
Sonchus arvensis	**FIELD SOW-THISTLE**	forb	0	0.07	1%
Trifolium pratense	**RED CLOVER**	forb	0	0.33	5%
Trifolium repens	**WHITE CLOVER**	forb	0	0.53	9%
			Native Species:	2.47	41%
			Non-Native Species:	3.60	59%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–10. ERPPR1 Prairie Functional Monitoring Data Summary

Total Species:	39	**Mean CC[a]:**	1.46
Native Species:	25	**Average Cover:**	98%
Non-Native Species:	14	**FQAI[b]:**	9.13
Percent Native:	64%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Acer negundo	BOX ELDER	tree	3	0.07	1%
Achillea millefolium	YARROW	forb	1	0.13	2%
Allium canadense	WILD GARLIC	forb	2	0.13	2%
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.07	1%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.47	7%
Apocynum cannabinum	INDIAN HEMP	forb	1	0.07	1%
Aster pilosus	AWL ASTER	forb	1	0.07	1%
Bouteloua curtipendula	SIDE-OATS GRAMA GRASS	grass	8	0.07	1%
Campsis radicans	TRUMPET-CREEPER	vine	1	0.13	2%
Carex blanda	COMMON WOOD SEDGE	sedge	1	0.20	3%
Carex granularis	MEADOW SEDGE	sedge	3	0.20	3%
Carex stipata	CROWDED SEDGE	sedge	2	0.07	1%
Conyza canadensis	HORSEWEED	forb	0	0.07	1%
Elymus trachycaulus	BEARDED WHEAT GRASS	grass	7	0.27	4%
Erigeron annuus	DAISY FLEABANE	forb	0	0.27	4%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.07	1%
Oxalis stricta	COMMON YELLOW WOOD-SORREL	forb	0	0.07	1%
Parthenocissus quinquefolia	VIRGINIA CREEPER	vine	2	0.07	1%
Phytolacca americana	POKEWEED	forb	1	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	1.00	16%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.13	2%
Toxicodendron radicans	POISON-IVY	vine	1	0.07	1%
Ulmus americana	AMERICAN ELM	tree	2	0.13	2%
Verbesina alternifolia	WINGSTEM	forb	5	0.07	1%
Vernonia gigantea	TALL IRONWEED	forb	2	0.33	5%
Agrostis gigantea	**REDTOP**	grass	0	0.47	7%
Allium vineale	**FIELD GARLIC**	forb	0	0.13	2%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.07	1%
Dipsacus fullonum	**WILD TEASEL**	forb	0	0.13	2%
Elaeagnus umbellata	**AUTUMN-OLIVE**	sm tree	0	0.07	1%
Festuca elatior	**TALL FESCUE**	grass	0	0.27	4%
Glechoma hederacea	**GROUND IVY**	forb	0	0.33	5%
Loniciera maackii	**AMUR HONEYSUCKLE**	shrub	0	0.13	2%
Potentilla recta	**ROUCH-FRUITED CINQUEFOIL**	forb	0	0.07	1%
Regreen	**REGREEN**	grass	0	0.07	1%
Setaria viridis	**GREEN FOXTAIL GRASS**	grass	0	0.07	1%
Solanum carolinese	**HORSE NETTLE**	forb	0	0.13	2%
Sorghum halepense	**JOHNSON GRASS**	grass	0	0.07	1%
Verbascum thapsus	**COMMON MULLEIN**	forb	0	0.07	1%
			Native Species:	4.20	66%
			Non-Native Species:	2.07	33%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–11. FPAA3A Prairie Functional Monitoring Data Summary

Total Species:	23	**Mean CC[a]:**	2.70
Native Species:	19	**Average Cover:**	84%
Non-Native Species:	4	**FQAI[b]:**	12.93
Percent Native:	83%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Andropogon gerardii	BIG BLUESTEM	grass	5	0.40	8%
Asclepias incarnata	SWAMP MILKWEED	forb	4	0.07	1%
Aster pilosus	AWL ASTER	forb	1	0.20	4%
Bouteloua curtipendula	SIDE-OATS GRAMA GRASS	grass	8	0.13	3%
Conyza canadensis	HORSEWEED	forb	0	0.07	1%
Digitaria filiformis	SLENDER CRAB GRASS	grass	4	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.40	8%
Erigeron annuus	DAISY FLEABANE	forb	0	0.20	4%
Euphorbia maculata	SPOTTED SPURGE	forb	0	0.07	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.20	4%
Panicum capillare	WITCH GRASS	grass	1	0.20	4%
Panicum virgatum	SWITCH GRASS	grass	4	0.47	9%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.07	1%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.33	6%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.40	8%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.33	6%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.27	5%
Tradescantia ohiensis	OHIO SPIDERWORT	forb	5	0.13	3%
Verbena hastata	BLUE VERVAIN	forb	4	0.27	5%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.53	10%
Cirsium vulgare	**BULL THISTLE**	forb	0	0.07	1%
Regreen	**REGREEN**	grass	0	0.27	5%
Melilotus alba	**WHITE SWEET-CLOVER**	forb	0	0.07	1%
		Native Species:		4.27	82%
		Non-Native Species:		0.93	18%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–12. FPAA3B Prairie Functional Monitoring Data Summary

Total Species:	34	**Mean CC[a]:**	2.35
Native Species:	24	**Average Cover:**	91%
Non-Native Species:	10	**FQAI[b]:**	13.72
Percent Native:	71%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.07	1%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.87	12%
Asclepias incarnata	SWAMP MILKWEED	forb	4	0.27	4%
Asclepias tuberosa	BUTTERFLY-WEED	forb	4	0.20	3%
Aster pilosus	AWL ASTER	forb	1	0.07	1%
Bouteloua curtipendula	SIDE-OATS GRAMA GRASS	grass	8	0.20	3%
Conyza canadensis	HORSEWEED	forb	0	0.40	6%
Echinacea purpurea	PURPLE CONEFLOWER	forb	6	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.40	6%
Euphorbia maculata	SPOTTED SPURGE	forb	0	0.07	1%
Heliopsis helianthoides	SMOOTH OXEYE	forb	5	0.07	1%
Ipomoea pandurata	POTATO-VINE	forb	2	0.07	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.33	5%
Panicum capillare	WITCH GRASS	grass	1	0.07	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.80	11%
Populus deltoides	EASTERN COTTONWOOD	tree	3	0.07	1%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.13	2%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.40	6%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.27	4%
Senna hebecarpa	NORTHERN WILD SENNA	forb	4	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.27	4%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.27	4%
Verbena hastata	BLUE VERVAIN	forb	4	0.13	2%
Verbena stricta	HOARY VERVAIN	forb	3	0.07	1%
Abutilon theophrasti	**VELVETLEAF**	forb	0	0.07	1%
Arctium minus	**COMMON BURDOCK**	forb	0	0.07	1%
Chenopodium album	**LAMB'S-QUARTERS**	forb	0	0.07	1%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.20	3%
Cirsium vulgare	**BULL THISTLE**	forb	0	0.27	4%
Dipsacus fullonum	**WILD TEASEL**	forb	0	0.27	4%
Echinochloa crusgalli	**BARNYARD GRASS**	grass	0	0.27	4%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.07	1%
Polygonum persicaria	**LADY'S THUMB**	forb	0	0.07	1%
Setaria viridis	**GREEN FOXTAIL GRASS**	grass	0	0.13	2%
		Native Species:		5.60	79%
		Non-Native Species:		1.47	21%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–13. FPAA4A Prairie Functional Monitoring Data Summary

Total Species:	36	**Mean CC[a]:**	2.22
Native Species:	23	**Average Cover:**	94%
Non-Native Species:	13	**FQAI[b]:**	13.33
Percent Native:	64%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.20	2%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.40	5%
Apocynum cannabinum	INDIAN HEMP	forb	1	0.07	1%
Asclepias tuberosa	BUTTERFLY-WEED	forb	4	0.13	2%
Aster pilosus	AWL ASTER	forb	1	0.53	6%
Bouteloua curtipendula	SIDE-OATS GRAMA GRASS	grass	8	0.13	2%
Conyza canadensis	HORSEWEED	forb	0	0.20	2%
Echinacea purpurea	PURPLE CONEFLOWER	forb	6	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.80	9%
Euphorbia maculata	SPOTTED SPURGE	forb	0	0.07	1%
Heliopsis helianthoides	SMOOTH OXEYE	forb	5	0.07	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.60	7%
Oenothera biennis	COMMON EVENING-PRIMROSE	forb	1	0.07	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.67	8%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.60	7%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.47	5%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.07	1%
Senna hebecarpa	NORTHERN WILD SENNA	forb	4	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.53	6%
Solidago rigida	STIFF GOLDENROD	forb	8	0.33	4%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.33	4%
Verbena hastata	BLUE VERVAIN	forb	4	0.07	1%
Verbena stricta	HOARY VERVAIN	forb	3	0.07	1%
Agrostis gigantea	**REDTOP**	grass	0	0.07	1%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.07	1%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.13	2%
Convolvulus arvensis	**FIELD BINDWEED**	forb	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.27	3%
Dipsacus fullonum	**WILD TEASEL**	forb	0	0.33	4%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.33	4%
Melilotus alba	**WHITE SWEET-CLOVER**	forb	0	0.33	4%
Melilotus officinalis	**YELLOW SWEET-CLOVER**	forb	0	0.07	1%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.07	1%
Regreen	**REGREEN**	grass	0	0.13	2%
Rumex crispus	**CURLY DOCK**	forb	0	0.07	1%
Verbascum thapsus	**COMMON MULLEIN**	forb	0	0.07	1%
		Native Species:		6.53	77%
		Non-Native Species:		2.00	23%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–14. FPAA4B Prairie Functional Monitoring Data Summary

Total Species:	43	**Mean CC[a]:**	2.07
Native Species:	27	**Average Cover:**	87%
Non-Native Species:	16	**FQAI[b]:**	13.57
Percent Native:	63%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Acer negundo	BOX ELDER	tree	3	0.07	1%
Achillea millefolium	YARROW	forb	1	0.20	3%
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.07	1%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.33	4%
Asclepias tuberosa	BUTTERFLY-WEED	forb	4	0.07	1%
Aster pilosus	AWL ASTER	forb	1	0.47	6%
Bouteloua curtipendula	SIDE-OATS GRAMA GRASS	grass	8	0.13	2%
Chamaecrista fasciculata	PARTRIDGE-PEA	forb	3	0.07	1%
Conyza canadensis	HORSEWEED	forb	0	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.40	5%
Erigeron annuus	DAISY FLEABANE	forb	0	0.27	3%
Eryngium yuccifolium	RATTLESNAKE-MASTER	forb	7	0.07	1%
Euphorbia maculata	SPOTTED SPURGE	forb	0	0.07	1%
Eupatorium serotinum	LATE-FLOWERING BONESET	forb	2	0.13	2%
Heliopsis helianthoides	SMOOTH OXEYE	forb	5	0.13	2%
Helianthus hirsutus	HAIRY SUNFLOWER	forb	4	0.07	1%
Mimulus ringens	COMMON MONKEY-FLOWER	forb	4	0.07	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.47	6%
Panicum capillare	WITCH GRASS	grass	1	0.07	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.40	5%
Populus deltoides	EASTERN COTTONWOOD	tree	3	0.07	1%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.40	5%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.60	8%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.20	3%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.93	12%
Solidago rigida	STIFF GOLDENROD	forb	8	0.13	2%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.13	2%
Agrostis gigantea	**REDTOP**	grass	0	0.07	1%
Cichorium intybus	**CHICORY**	forb	0	0.07	1%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.27	3%
Dipsacus fullonum	**WILD TEASEL**	forb	0	0.07	1%
Echinochloa crusgalli	**BARNYARD GRASS**	grass	0	0.20	3%
Loniciera maackii	**AMUR HONEYSUCKLE**	shrub	0	0.07	1%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.13	2%
Melilotus alba	**WHITE SWEET-CLOVER**	forb	0	0.07	1%
Melilotus officinalis	**YELLOW SWEET-CLOVER**	forb	0	0.07	1%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.20	3%
Plantago major	**COMMON PLANTAIN**	forb	0	0.07	1%
Regreen	**REGREEN**	grass	0	0.20	3%
Taraxacum officinale	**COMMON DANDELION**	forb	0	0.07	1%
Trifolium repens	**WHITE CLOVER**	forb	0	0.07	1%
Verbascum blattaria	**MOTH MULLEIN**	forb	0	0.07	1%
		Native Species:		6.07	78%
		Non-Native Species:		1.73	22%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–15. FPAA6A Prairie Functional Monitoring Data Summary

Total Species:	31	**Mean CC[a]:**	2.03
Native Species:	21	**Average Cover:**	94%
Non-Native Species:	10	**FQAI[b]:**	11.32
Percent Native:	68%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.13	2%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.33	6%
Asclepias tuberosa	BUTTERFLY-WEED	forb	4	0.07	1%
Aster pilosus	AWL ASTER	forb	1	0.33	6%
Conyza canadensis	HORSEWEED	forb	0	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.80	13%
Erigeron annuus	DAISY FLEABANE	forb	0	0.27	4%
Eupatorium altissimum	TALL BONESET	forb	0	0.07	1%
Euphorbia maculata	SPOTTED SPURGE	forb	0	0.13	2%
Heliopsis helianthoides	SMOOTH OXEYE	forb	5	0.13	2%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.27	4%
Panicum virgatum	SWITCH GRASS	grass	4	0.20	3%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.13	2%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.40	7%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.13	2%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.47	8%
Solidago gigantea	SMOOTH GOLDENROD	forb	3	0.07	1%
Solidago rigida	STIFF GOLDENROD	forb	8	0.20	3%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.13	2%
Verbena hastata	BLUE VERVAIN	forb	4	0.07	1%
Verbena stricta	HOARY VERVAIN	forb	3	0.07	1%
Agrostis gigantea	**REDTOP**	grass	0	0.13	2%
Bromus commutatus	**HAIRY CHESS**	grass	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.27	4%
Dipsacus fullonum	**WILD TEASEL**	forb	0	0.07	1%
Festuca elatior	**TALL FESCUE**	grass	0	0.07	1%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.13	2%
Plantago major	**COMMON PLANTAIN**	forb	0	0.20	3%
Regreen	**REGREEN**	grass	0	0.33	6%
Setaria viridis	**GREEN FOXTAIL GRASS**	grass	0	0.13	2%
Trifolium pratense	**RED CLOVER**	forb	0	0.13	2%
		Native Species:		4.47	74%
		Non Native Species:		1.53	26%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–16. FPAA6B Prairie Functional Monitoring Data Summary

Total Species:	43	**Mean CC[a]:**	2.07
Native Species:	31	**Average Cover:**	96%
Non-Native Species:	12	**FQAI[b]:**	13.56
Percent Native:	72%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Andropogon gerardii	BIG BLUESTEM	grass	5	0.50	6%
Aster pilosus	AWL ASTER	forb	1	0.50	6%
Bidens frondosa	DEVIL'S BEGGAR'S-TICK	forb	2	0.06	1%
Conyza canadensis	HORSEWEED	forb	0	0.13	2%
Carex frankii	FRANK'S SEDGE	sedge	2	0.06	1%
Carex hystericina	PORCUPINE SEDGE	sedge	5	0.06	1%
Carex vulpinoidea	FOX SEDGE	sedge	1	0.06	1%
Conyza canadensis	HORSEWEED	forb	0	0.19	2%
Digitaria filiformis	SLENDER CRAB GRASS	grass	4	0.06	1%
Echinochloa walteri	WALTER'S MILLET	grass	6	0.06	1%
Eleocharis erythropoda	RED-FOOTED SPIKE-RUSH	sedge	4	0.06	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.75	10%
Erigeron annuus	DAISY FLEABANE	forb	0	0.06	1%
Eupatorium serotinum	LATE-FLOWERING BONESET	forb	2	0.13	2%
Fraxinus pennsylvanica	GREEN ASH	tree	3	0.06	1%
Juncus tenuis	PATH RUSH	forb	1	0.06	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.38	5%
Oenothera biennis	COMMON EVENING-PRIMROSE	forb	1	0.06	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.63	8%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.13	2%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.50	6%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.19	2%
Schoenoplectus tabernaemontani	SOFT-STEMMED BULRUSH	sedge	2	0.13	2%
Scirpus atrovirens	GREEN BULRUSH	sedge	1	0.06	1%
Salix exigua	SANDBAR WILLOW	shrub	1	0.06	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.75	10%
Solidago rigida	STIFF GOLDENROD	forb	8	0.19	2%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.31	4%
Vernonia gigantea	TALL IRONWEED	forb	2	0.06	1%
Verbena hastata	BLUE VERVAIN	forb	4	0.19	2%
Verbena stricta	HOARY VERVAIN	forb	3	0.06	1%
Verbena urticifolia	WHITE VERVAIN	forb	3	0.06	1%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.06	1%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.13	2%
Cirsium vulgare	**BULL THISTLE**	forb	0	0.13	2%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.19	2%
Echinochloa crusgalli	**BARNYARD GRASS**	grass	0	0.13	2%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.19	2%
Plantago major	**COMMON PLANTAIN**	forb	0	0.06	1%
Regreen	**REGREEN**	grass	0	0.06	1%
Rumex crispus	**CURLY DOCK**	forb	0	0.06	1%
Setaria viridis	**GREEN FOXTAIL GRASS**	grass	0	0.06	1%
Sonchus arvensis	**FIELD SOW-THISTLE**	forb	0	0.06	1%
Typha angustifolia	**NARROW-LEAVED CAT-TAIL**	forb	0	0.06	1%
		Native Species:		6.56	85%
		Non-Native Species:		1.19	15%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–17. FPAMDC Prairie Functional Monitoring Data Summary

Total Species:	47	**Mean CC[a]:**	1.74
Native Species:	30	**Average Cover:**	78%
Non-Native Species:	17	**FQAI[b]:**	11.96
Percent Native:	64%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Acalypha rhomboidea	RHOMBIC THREE-S. MERCURY	forb	0	0.07	1%
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.20	2%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.53	6%
Aster novae-angliae	NEW ENGLAND ASTER	forb	2	0.07	1%
Aster pilosus	AWL ASTER	forb	1	0.47	5%
Chamaecrista fasciculata	PARTRIDGE-PEA	forb	3	0.07	1%
Conyza canadensis	HORSEWEED	forb	0	0.13	1%
Carex vulpinoidea	FOX SEDGE	sedge	1	0.07	1%
Echinacea purpurea	PURPLE CONEFLOWER	forb	6	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.53	6%
Erigeron annuus	DAISY FLEABANE	forb	0	0.27	3%
Eupatorium altissimum	TALL BONESET	forb	0	0.07	1%
Euphorbia maculata	SPOTTED SPURGE	forb	0	0.07	1%
Heliopsis helianthoides	SMOOTH OXEYE	forb	5	0.13	1%
Lactuca canadensis	WILD LETTUCE	forb	1	0.07	1%
Lycopus americanus	AMERICAN WATER-HOREHOUND	forb	3	0.07	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.53	6%
Oenothera biennis	COMMON EVENING-PRIMROSE	forb	1	0.07	1%
Panicum capillare	WITCH GRASS	grass	1	0.07	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.40	4%
Populus deltoides	EASTERN COTTONWOOD	tree	3	0.07	1%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.47	5%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.60	7%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.13	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.67	7%
Solidago rigida	STIFF GOLDENROD	forb	8	0.20	2%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.27	3%
Tradescantia ohiensis	OHIO SPIDERWORT	forb	5	0.07	1%
Verbena hastata	BLUE VERVAIN	forb	4	0.27	3%
Verbena stricta	HOARY VERVAIN	forb	3	0.07	1%
Agrostis gigantea	**REDTOP**	grass	0	0.13	1%
Cichorium intybus	**CHICORY**	forb	0	0.07	1%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.07	1%
Cirsium vulgare	**BULL THISTLE**	forb	0	0.13	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.27	3%
Dipsacus fullonum	**WILD TEASEL**	forb	0	0.07	1%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.20	2%
Melilotus alba	**WHITE SWEET-CLOVER**	forb	0	0.13	1%
Melilotus officinalis	**YELLOW SWEET-CLOVER**	forb	0	0.07	1%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.13	1%
Polygonum aviculare	**COMMON KNOTWEED**	forb	0	0.07	1%
Polygonum persicaria	**LADY'S THUMB**	forb	0	0.07	1%
Regreen	**REGREEN**	grass	0	0.33	4%
Setaria viridis	**GREEN FOXTAIL GRASS**	grass	0	0.07	1%
Taraxacum officinale	**COMMON DANDELION**	forb	0	0.07	1%
Trifolium pratense	**RED CLOVER**	forb	0	0.13	1%
Trifolium repens	**WHITE CLOVER**	forb	0	0.20	2%
			Native Species:	6.73	75%
			Non-Native Species:	2.20	25%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–18. FSAPR1 Prairie Functional Monitoring Data Summary

Total Species:	44	**Mean CC[a]:**	1.68
Native Species:	23	**Average Cover:**	92%
Non-Native Species:	21	**FQAI[b]:**	11.16
Percent Native:	52%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Acer negundo	BOX ELDER	tree	3	0.07	1%
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.33	4%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.13	2%
Aster novae-angliae	NEW ENGLAND ASTER	forb	2	0.13	2%
Aster pilosus	AWL ASTER	forb	1	0.40	5%
Bidens frondosa	DEVIL'S BEGGAR'S-TICK	forb	2	0.07	1%
Bouteloua curtipendula	SIDE-OATS GRAMA GRASS	grass	8	0.07	1%
Chamaecrista fasciculata	PARTRIDGE-PEA	forb	3	0.07	1%
Conyza canadensis	HORSEWEED	forb	0	0.13	2%
Echinacea purpurea	PURPLE CONEFLOWER	forb	6	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.33	4%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.07	1%
Panicum capillare	WITCH GRASS	grass	1	0.13	2%
Panicum virgatum	SWITCH GRASS	grass	4	0.07	1%
Parthenocissus quinquefolia	VIRGINIA CREEPER	vine	2	0.07	1%
Platanus occidentalis	SYCAMORE	tree	7	0.13	2%
Populus deltoides	EASTERN COTTONWOOD	tree	3	0.07	1%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.13	2%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.33	4%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.53	6%
Ulmus americana	AMERICAN ELM	tree	2	0.07	1%
Verbena hastata	BLUE VERVAIN	forb	4	0.07	1%
Agrostis gigantea	**REDTOP**	grass	0	0.40	5%
Allium vineale	**FIELD GARLIC**	forb	0	0.07	1%
Cichorium intybus	**CHICORY**	forb	0	0.13	2%
Coronilla varia	**CROWN-VETCH**	forb	0	0.13	2%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.93	11%
Dipsacus fullonum	**WILD TEASEL**	forb	0	0.07	1%
Echinochloa crusgalli	**BARNYARD GRASS**	grass	0	0.13	2%
Festuca elatior	**TALL FESCUE**	grass	0	0.13	2%
Loniciera maackii	**AMUR HONEYSUCKLE**	shrub	0	0.13	2%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.40	5%
Melilotus alba	**WHITE SWEET-CLOVER**	forb	0	0.07	1%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.47	5%
Plantago major	**COMMON PLANTAIN**	forb	0	0.13	2%
Regreen	**REGREEN**	grass	0	0.40	5%
Rumex crispus	**CURLY DOCK**	forb	0	0.07	1%
Setaria viridis	**GREEN FOXTAIL GRASS**	grass	0	0.27	3%
Sonchus arvensis	**FIELD SOW-THISTLE**	forb	0	0.13	2%
Taraxacum officinale	**COMMON DANDELION**	forb	0	0.20	2%
Trifolium pratense	**RED CLOVER**	forb	0	0.47	5%
Trifolium repens	**WHITE CLOVER**	forb	0	0.47	5%
Verbascum thapsus	**COMMON MULLEIN**	forb	0	0.07	1%
		Native Species:		3.53	40%
		Non- Native Species:		5.27	60%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–19. FVCPR1 Prairie Functional Monitoring Data Summary

Total Species:	43	**Mean CC[a]:**	2.21
Native Species:	30	**Average Cover:**	75%
Non-Native Species:	13	**FQAI[b]:**	14.49
Percent Native:	70%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.53	5%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.40	4%
Asclepias incarnata	SWAMP MILKWEED	forb	4	0.07	1%
Aster novae-angliae	NEW ENGLAND ASTER	forb	2	0.27	2%
Aster pilosus	AWL ASTER	forb	1	0.87	8%
Chamaecrista fasciculata	PARTRIDGE-PEA	forb	3	0.07	1%
Cyperus esculentus	YELLOW NUT-SEDGE	sedge	0	0.07	1%
Dalea purpurea	PURPLE PRAIRIE-CLOVER	forb	9	0.07	1%
Desmodium canadense	CANADA TICK-TREFOIL	forb	4	0.07	1%
Echinacea purpurea	PURPLE CONEFLOWER	forb	6	0.20	2%
Eleocharis obtusa	BLUNT SPIKE-RUSH	sedge	1	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.47	4%
Erigeron annuus	DAISY FLEABANE	forb	0	0.13	1%
Eryngium yuccifolium	RATTLESNAKE-MASTER	forb	7	0.07	1%
Euphorbia maculata	SPOTTED SPURGE	forb	0	0.20	2%
Eupatorium serotinum	LATE-FLOWERING BONESET	forb	2	0.27	2%
Heliopsis helianthoides	SMOOTH OXEYE	forb	5	0.27	2%
Juncus tenuis	PATH RUSH	forb	1	0.07	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.40	4%
Oenothera biennis	COMMON EVENING-PRIMROSE	forb	1	0.07	1%
Oxalis stricta	COMMON YELLOW WOOD-SORREL	forb	0	0.07	1%
Panicum capillare	WITCH GRASS	grass	1	0.07	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.67	6%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.67	6%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.60	5%
Silphium perfoliatum	CUP-PLANT	forb	6	0.27	2%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.60	5%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.60	5%
Trifolium reflexum	BUFFALO CLOVER	forb	8	0.13	1%
Verbena hastata	BLUE VERVAIN	forb	4	0.13	1%
Agrostis gigantea	**REDTOP**	grass	0	0.07	1%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.20	2%
Cichorium intybus	**CHICORY**	forb	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.67	6%
Echinochloa crusgalli	**BARNYARD GRASS**	grass	0	0.07	1%
Festuca elatior	**TALL FESCUE**	grass	0	0.07	1%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.13	1%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.40	4%
Plantago major	**COMMON PLANTAIN**	forb	0	0.13	1%
Taraxacum officinale	**COMMON DANDELION**	forb	0	0.07	1%
Trifolium pratense	**RED CLOVER**	forb	0	0.13	1%
Trifolium repens	**WHITE CLOVER**	forb	0	0.60	5%
Xanthium strumarium	**COMMON COCKLEBUR**	forb	0	0.07	1%
		Native Species:		8.40	76%
		Non-Native Species:		2.67	24%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–20. NDAA14 Prairie Functional Monitoring Data Summary

Total Species:	39	**Mean CC[a]:**	1.28
Native Species:	20	**Average Cover:**	88%
Non-Native Species:	19	**FQAI[b]:**	8.01
Percent Native:	51%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.20	3%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.27	4%
Aster pilosus	AWL ASTER	forb	1	0.40	6%
Bidens frondosa	DEVIL'S BEGGAR'S-TICK	forb	2	0.07	1%
Conyza canadensis	HORSEWEED	forb	0	0.07	1%
Carex frankii	FRANK'S SEDGE	sedge	2	0.07	1%
Carex vulpinoidea	FOX SEDGE	sedge	1	0.07	1%
Echinacea purpurea	PURPLE CONEFLOWER	forb	6	0.13	2%
Elymus canadensis	CANADA WILD RYE	grass	6	0.60	8%
Erigeron annuus	DAISY FLEABANE	forb	0	0.07	1%
Euphorbia maculata	SPOTTED SPURGE	forb	0	0.07	1%
Juncus tenuis	PATH RUSH	forb	1	0.07	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.20	3%
Populus deltoides	EASTERN COTTONWOOD	tree	3	0.07	1%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.07	1%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.13	2%
Silphium perfoliatum	CUP-PLANT	forb	6	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.20	3%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.27	4%
Toxicodendron radicans	POISON-IVY	vine	1	0.07	1%
Agrostis gigantea	**REDTOP**	grass	0	0.13	2%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.20	3%
Cichorium intybus	**CHICORY**	forb	0	0.13	2%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.07	1%
Coronilla varia	**CROWN-VETCH**	forb	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.80	11%
Echinochloa crusgalli	**BARNYARD GRASS**	grass	0	0.13	2%
Festuca elatior	**TALL FESCUE**	grass	0	0.13	2%
Lolium multiflorum	**ITALIAN RYEGRASS**	grass	0	0.13	2%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.33	5%
Melilotus alba	**WHITE SWEET-CLOVER**	forb	0	0.20	3%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.33	5%
Plantago major	**COMMON PLANTAIN**	forb	0	0.07	1%
Regreen	**REGREEN**	grass	0	0.13	2%
Rumex crispus	**CURLY DOCK**	forb	0	0.07	1%
Taraxacum officinale	**COMMON DANDELION**	forb	0	0.07	1%
Trifolium pratense	**RED CLOVER**	forb	0	0.53	7%
Trifolium repens	**WHITE CLOVER**	forb	0	0.47	6%
Typha x glauca	**HYBRID CAT-TAIL**	forb	0	0.07	1%
			Native Species:	3.13	44%
			Non-Native Species:	4.07	56%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–21. NDAA6E Prairie Functional Monitoring Data Summary

Total Species:	34	**Mean CC[a]:**	1.15
Native Species:	18	**Average Cover:**	77%
Non-Native Species:	16	**FQAI[b]:**	6.69
Percent Native:	53%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.60	8%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.13	2%
Aster novae-angliae	NEW ENGLAND ASTER	forb	2	0.20	3%
Aster pilosus	AWL ASTER	forb	1	0.53	7%
Bidens frondosa	DEVIL'S BEGGAR'S-TICK	forb	2	0.07	1%
Chamaecrista fasciculata	PARTRIDGE-PEA	forb	3	0.07	1%
Carex vulpinoidea	FOX SEDGE	sedge	1	0.07	1%
Cyperus erythrorhizos	RED-ROOTED UMBRELLA SEDGE	sedge	4	0.07	1%
Eleocharis obtusa	BLUNT SPIKE-RUSH	sedge	1	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.60	8%
Juncus tenuis	PATH RUSH	forb	1	0.07	1%
Oenothera biennis	COMMON EVENING-PRIMROSE	forb	1	0.07	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.13	2%
Phytolacca americana	POKEWEEK	forb	1	0.07	1%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.27	4%
Robinia pseudoacacia	BLACK LOCUST	tree	0	0.07	1%
Rudbexkia hirta	BLACK-EYED-SUSAN	forb	1	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.47	6%
Agrostis gigantea	**REDTOP**	grass	0	0.07	1%
Agrostis stolonifera	**CREEPING BENT GRASS**	grass	0	0.07	1%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.07	1%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.27	4%
Cirsium vulgare	**BULL THISTLE**	forb	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.67	9%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.13	2%
Melilotus alba	**WHITE SWEET-CLOVER**	forb	0	0.20	3%
Melilotus officinalis	**YELLOW SWEET-CLOVER**	forb	0	0.33	5%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.67	9%
Plantago major	**COMMON PLANTAIN**	forb	0	0.20	3%
Polygonum persicaria	**LADY'S THUMB**	forb	0	0.07	1%
Regreen	**REGREEN**	grass	0	0.40	5%
Taraxacum officinale	**COMMON DANDELION**	forb	0	0.07	1%
Trifolium pratense	**RED CLOVER**	forb	0	0.27	4%
Trifolium repens	**WHITE CLOVER**	forb	0	0.20	3%
		Native Species:		3.60	49%
		Non-Native Species:		3.73	51%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–22. NDAARA Prairie Functional Monitoring Data Summary

Total Species:	39	**Mean CC[a]:**	1.59
Native Species:	19	**Average Cover:**	88%
Non-Native Species:	20	**FQAI[b]:**	9.93
Percent Native:	49%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Acer negundo	BOX ELDER	tree	3	0.07	1%
Acer saccharinum	SILVER MAPLE	tree	3	0.07	1%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.29	4%
Aster novae-angliae	NEW ENGLAND ASTER	forb	2	0.07	1%
Aster pilosus	AWL ASTER	forb	1	0.36	5%
Bouteloua curtipendula	SIDE-OATS GRAMA GRASS	grass	8	0.07	1%
Conyza canadensis	HORSEWEED	forb	0	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.64	9%
Eupatorium altissimum	TALL BONESET	forb	0	0.07	1%
Eupatorium purpureum	PURPLE JOE-PYE WEED	forb	5	0.07	1%
Heliopsis helianthoides	SMOOTH OXEYE	forb	5	0.07	1%
Lactuca canadensis	WILD LETTUCE	forb	1	0.07	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.21	3%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.07	1%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.79	11%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.14	2%
Toxicodendron radicans	POISON-IVY	vine	1	0.21	3%
Vernonia gigantea	TALL IRONWEED	forb	2	0.14	2%
Agrostis gigantea	**REDTOP**	grass	0	0.36	5%
Allium vineale	**FIELD GARLIC**	forb	0	0.07	1%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.29	4%
Cichorium intybus	**CHICORY**	forb	0	0.07	1%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.07	1%
Cirsium vulgare	**BULL THISTLE**	forb	0	0.07	1%
Convolvulus arvensis	**FIELD BINDWEED**	forb	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.79	11%
Festuca elatior	**TALL FESCUE**	grass	0	0.36	5%
Hemerocallis fulva	**ORANGE DAY-LILY**	forb	0	0.07	1%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.14	2%
Melilotus officinalis	**YELLOW SWEET-CLOVER**	forb	0	0.07	1%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.21	3%
Regreen	**REGREEN**	grass	0	0.29	4%
Rumex crispus	**CURLY DOCK**	forb	0	0.07	1%
Taraxacum officinale	**COMMON DANDELION**	forb	0	0.07	1%
Trifolium pratense	**RED CLOVER**	forb	0	0.14	2%
Trifolium pratense	**RED CLOVER**	forb	0	0.21	3%
Trifolium repens	**WHITE CLOVER**	forb	0	0.07	1%
Urtica dioica var. dioica	**EUROPEAN STINGING NETTLE**	forb	0	0.07	1%
		Native Species:		3.57	50%
		Non-Native Species:		3.57	50%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–23. NDABAW Prairie Functional Monitoring Data Summary

Total Species:	36	**Mean CC[a]:**	1.81
Native Species:	21	**Average Cover:**	94%
Non-Native Species:	15	**FQAI[b]:**	10.83
Percent Native:	58%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.20	2%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.33	3%
Asclepias incarnata	SWAMP MILKWEED	forb	4	0.07	1%
Aster pilosus	AWL ASTER	forb	1	0.33	3%
Bidens frondosa	DEVIL'S BEGGAR'S-TICK	forb	2	0.07	1%
Chamaecrista fasciculata	PARTRIDGE-PEA	forb	3	0.07	1%
Cyperus esculentus	YELLOW NUT-SEDGE	sedge	0	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.27	3%
Erigeron annuus	DAISY FLEABANE	forb	0	0.07	1%
Eryngium yuccifolium	RATTLESNAKE-MASTER	forb	7	0.13	1%
Fraxinus pennsylvanica	GREEN ASH	tree	3	0.07	1%
Juncus tenuis	PATH RUSH	forb	1	0.07	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.07	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.20	2%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.13	1%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.33	3%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.13	1%
Silphium perfoliatum	CUP-PLANT	forb	6	0.13	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.40	4%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.53	6%
Verbena stricta	HOARY VERVAIN	forb	3	0.07	1%
Agrostis gigantea	**REDTOP**	grass	0	0.73	8%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.13	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.87	9%
Dianthus armeria	**DEPTFORD-PINK**	forb	0	0.07	1%
Festuca elatior	**TALL FESCUE**	grass	0	0.47	5%
Lolium multiflorum	**ITALIAN RYEGRASS**	grass	0	0.20	2%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.40	4%
Melilotus alba	**WHITE SWEET-CLOVER**	forb	0	0.13	1%
Phleum pratense	**TIMOTHY**	grass	0	0.40	4%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.80	8%
Plantago major	**COMMON PLANTAIN**	forb	0	0.33	3%
Regreen	**REGREEN**	grass	0	0.40	4%
Taraxacum officinale	**COMMON DANDELION**	forb	0	0.13	1%
Trifolium pratense	**RED CLOVER**	forb	0	0.60	6%
Trifolium repens	**WHITE CLOVER**	forb	0	0.13	1%
		Native Species:		3.73	39%
		Non-Native Species:		5.80	61%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–24. NDACWT Prairie Functional Monitoring Data Summary

Total Species:	33	**Mean CC[a]:**	1.45
Native Species:	18	**Average Cover:**	94%
Non-Native Species:	15	**FQAI[b]:**	8.36
Percent Native:	55%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Acer saccharinum	SILVER MAPLE	tree	3	0.07	1%
Achillea millefolium	YARROW	forb	1	0.27	3%
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.27	3%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.07	1%
Aster pilosus	AWL ASTER	forb	1	0.80	10%
Chamaecrista fasciculata	PARTRIDGE-PEA	forb	3	0.07	1%
Echinacea purpurea	PURPLE CONEFLOWER	forb	6	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.20	3%
Erigeron annuus	DAISY FLEABANE	forb	0	0.33	4%
Juncus tenuis	PATH RUSH	forb	1	0.07	1%
Lactuca canadensis	WILD LETTUCE	forb	1	0.07	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.07	1%
Panicum capillare	WITCH GRASS	grass	1	0.07	1%
Platanus occidentalis	SYCAMORE	tree	7	0.07	1%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.20	3%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.33	4%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.60	8%
Verbena stricta	HOARY VERVAIN	forb	3	0.07	1%
Agrostis gigantea	**REDTOP**	grass	0	0.60	8%
Cichorium intybus	**CHICORY**	forb	0	0.20	3%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.20	3%
Cirsium vulgare	**BULL THISTLE**	forb	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.73	9%
Echinochloa crusgalli	**BARNYARD GRASS**	grass	0	0.07	1%
Festuca elatior	**TALL FESCUE**	grass	0	0.13	2%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.20	3%
Melilotus alba	**WHITE SWEET-CLOVER**	forb	0	0.13	2%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.93	12%
Plantago major	**COMMON PLANTAIN**	forb	0	0.07	1%
Regreen	**REGREEN**	grass	0	0.20	3%
Taraxacum officinale	**COMMON DANDELION**	forb	0	0.13	2%
Trifolium pratense	**RED CLOVER**	forb	0	0.20	3%
Trifolium repens	**WHITE CLOVER**	forb	0	0.33	4%
		Native Species:		3.67	47%
		Non-Native Species:		4.20	53%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–25. NDAEPL Prairie Functional Monitoring Data Summary

Total Species:	35	**Mean CC[a]:**	2.06
Native Species:	20	**Average Cover:**	89%
Non-Native Species:	15	**FQAI[b]:**	12.17
Percent Native:	57%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.47	6%
Asclepias incarnata	SWAMP MILKWEED	forb	4	0.07	1%
Aster pilosus	AWL ASTER	forb	1	0.53	6%
Bouteloua curtipendula	SIDE-OATS GRAMA GRASS	grass	8	0.07	1%
Chamaecrista fasciculata	PARTRIDGE-PEA	forb	3	0.07	1%
Conyza canadensis	HORSEWEED	forb	0	0.07	1%
Echinacea purpurea	PURPLE CONEFLOWER	forb	6	0.20	2%
Elymus canadensis	CANADA WILD RYE	grass	6	0.73	9%
Eupatorium serotinum	LATE-FLOWERING BONESET	forb	2	0.07	1%
Heliopsis helianthoides	SMOOTH OXEYE	forb	5	0.13	2%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.27	3%
Panicum virgatum	SWITCH GRASS	grass	4	0.27	3%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.27	3%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.33	4%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.07	1%
Silphium perfoliatum	CUP-PLANT	forb	6	0.13	2%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.53	6%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.07	1%
Verbena hastata	BLUE VERVAIN	forb	4	0.07	1%
Verbena stricta	HOARY VERVAIN	forb	3	0.07	1%
Agrostis gigantea	**REDTOP**	grass	0	0.20	2%
Cichorium intybus	**CHICORY**	forb	0	0.13	2%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.40	5%
Convolvulus arvensis	**FIELD BINDWEED**	forb	0	0.13	2%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.80	10%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.27	3%
Melilotus officinalis	**YELLOW SWEET-CLOVER**	forb	0	0.47	6%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.27	3%
Regreen	**REGREEN**	grass	0	0.33	4%
Rumex crispus	**CURLY DOCK**	forb	0	0.07	1%
Solanum carolinense	**HORSE NETTLE**	forb	0	0.07	1%
Sonchus arvensis	**FIELD SOW-THISTLE**	forb	0	0.07	1%
Taraxacum officinale	**COMMON DANDELION**	forb	0	0.07	1%
Trifolium pratense	**RED CLOVER**	forb	0	0.20	2%
Trifolium repens	**WHITE CLOVER**	forb	0	0.33	4%
		Native Species:		4.47	54%
		Non-Native Species:		3.80	46%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–26. NDAFPP Prairie Functional Monitoring Data Summary

Total Species:	35	**Mean CC[a]:**	3.11
Native Species:	20	**Average Cover:**	90%
Non-Native Species:	15	**FQAI[b]:**	18.42
Percent Native:	57%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.07	1%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.13	2%
Asclepias incarnata	SWAMP MILKWEED	forb	4	0.13	2%
Aster novae-angliae	NEW ENGLAND ASTER	forb	2	0.13	2%
Aster pilosus	AWL ASTER	forb	1	0.60	8%
Carex frankii	FRANK'S SEDGE	sedge	2	0.13	2%
Carex stipata	CROWDED SEDGE	sedge	2	0.20	3%
Elymus canadensis	CANADA WILD RYE	grass	6	0.60	8%
Erigeron annuus	DAISY FLEABANE	forb	0	0.13	2%
Eupatorium altissimum	TALL BONESET	forb	0	0.07	1%
Heliopsis helianthoides	SMOOTH OXEYE	forb	5	0.07	1%
Juncus tenuis	PATH RUSH	forb	1	0.13	2%
Panicum virgatum	SWITCH GRASS	grass	4	0.60	8%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.13	2%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.87	12%
Solidago rigida	STIFF GOLDENROD	forb	8	0.07	1%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.07	1%
Toxicodendron radicans	POISON-IVY	vine	1	0.07	1%
Tradescantia ohiensis	OHIO SPIDERWORT	forb	5	0.13	2%
Agrostis gigantea	**REDTOP**	grass	0	0.53	7%
Allium vineale	**FIELD GARLIC**	forb	0	0.07	1%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.20	3%
Cichorium intybus	**CHICORY**	forb	0	0.13	2%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.27	4%
Dipsacus fullonum	**WILD TEASEL**	forb	0	0.13	2%
Echinochloa crusgalli	**BARNYARD GRASS**	grass	0	0.07	1%
Festuca elatior	**TALL FESCUE**	grass	0	0.20	3%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.40	6%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.13	2%
Plantago major	**COMMON PLANTAIN**	forb	0	0.27	4%
Regreen	**REGREEN**	grass	0	0.13	2%
Setaria viridis	**GREEN FOXTAIL GRASS**	grass	0	0.07	1%
Trifolium repens	**WHITE CLOVER**	forb	0	0.20	3%
		Native Species:		4.40	61%
		Non-Native Species:		2.87	39%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–27. NDARP Prairie Functional Monitoring Data Summary

Total Species:	31	**Mean CC[a]:**	1.52
Native Species:	14	**Average Cover:**	96%
Non-Native Species:	17	**FQAI[b]:**	8.44
Percent Native:	45%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Andropogon gerardii	BIG BLUESTEM	grass	5	0.47	8%
Aster pilosus	AWL ASTER	forb	1	0.27	4%
Eleocharis obtusa	BLUNT SPIKE-RUSH	sedge	1	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.20	3%
Erigeron annuus	DAISY FLEABANE	forb	0	0.20	3%
Eryngium yuccifolium	RATTLESNAKE-MASTER	forb	7	0.07	1%
Eupatorium altissimum	TALL BONESET	forb	0	0.07	1%
Heliopsis helianthoides	SMOOTH OXEYE	forb	5	0.07	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.07	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.67	11%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.53	9%
Solidago rigida	STIFF GOLDENROD	forb	8	0.07	1%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.27	4%
Agrostis gigantea	**REDTOP**	grass	0	0.47	8%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.27	4%
Cichorium intybus	**CHICORY**	forb	0	0.07	1%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.13	2%
Convolvulus arvenses	**FIELD BINDWEED**	forb	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.33	6%
Dipsacus fullonum	**WILD TEASEL**	forb	0	0.33	6%
Duchesnea indica	**INDIAN-STRAWBERRY**	forb	0	0.07	1%
Festuca elatior	**TALL FESCUE**	grass	0	0.40	7%
Lolium perenne	**PERENNIAL RYEGRASS**	grass	0	0.07	1%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.13	2%
Melilotus officinalis	**YELLOW SWEET-CLOVER**	forb	0	0.07	1%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.20	3%
Trifolium pratense	**RED CLOVER**	forb	0	0.07	1%
Trifolium repens	**WHITE CLOVER**	forb	0	0.07	1%
Verbascum blattaria	**MOTH MULLEIN**	forb	0	0.07	1%
Xanthium strumarium	**COMMON COCKLEBUR**	forb	0	0.07	1%
		Native Species:		3.07	52%
		Non-Native Species:		2.87	48%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–28. NDASP7 Prairie Functional Monitoring Data Summary

Total Species:	40	**Mean CC[a]:**	0.88
Native Species:	18	**Average Cover:**	74%
Non-Native Species:	22	**FQAI[b]:**	5.53
Percent Native:	45%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Alisma subcordatum	SOUTHERN WATER-PLANTAIN	forb	2	0.07	1%
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.20	3%
Aster pilosus	AWL ASTER	forb	1	0.40	6%
Bidens frondosa	DEVIL'S BEGGAR'S-TICK	forb	2	0.07	1%
Conyza canadensis	HORSEWEED	forb	0	0.07	1%
Carex vulpinoidea	FOX SEDGE	sedge	1	0.07	1%
Cyperus erythrorhizos	RED-ROOTED UMBRELLA-SEDGE	sedge	4	0.07	1%
Cyperus esculentus	YELLOW NUT-SEDGE	sedge	0	0.07	1%
Eleocharis obtusa	BLUNT SPIKE-RUSH	sedge	1	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.27	4%
Erigeron annuus	DAISY FLEABANE	forb	0	0.13	2%
Panicum capillare	WITCH GRASS	grass	1	0.20	3%
Panicum virgatum	SWITCH GRASS	grass	4	0.07	1%
Populus deltoides	EASTERN COTTONWOOD	tree	3	0.07	1%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.07	1%
Schoenoplectus tabernaemontani	SOFT-STEMMED BULRUSH	sedge	2	0.07	1%
Salix nigra	BLACK WILLOW	tree	2	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.47	6%
Agrostis gigantea	**REDTOP**	grass	0	0.40	6%
Allium vineale	**FIELD GARLIC**	forb	0	0.07	1%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.20	3%
Cichorium intybus	**CHICORY**	forb	0	0.13	2%
Dactylis glomerata	**ORCHARD GRASS**	grass	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.80	11%
Dipsacus fullonum	**WILD TEASEL**	forb	0	0.13	2%
Echinochloa crusgalli	**BARNYARD GRASS**	grass	0	0.07	1%
Festuca elatior	**TALL FESCUE**	grass	0	0.07	1%
Lolium multiflorum	**ITALIAN RYEGRASS**	grass	0	0.07	1%
Lolium perenne	**PERENNIAL RYEGRASS**	grass	0	0.07	1%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.67	9%
Melilotus alba	**WHITE SWEET-CLOVER**	forb	0	0.27	4%
Melilotus officinalis	**YELLOW SWEET-CLOVER**	forb	0	0.20	3%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.73	10%
Regreen	**REGREEN**	grass	0	0.33	5%
Rumex crispus	**CURLY DOCK**	forb	0	0.13	2%
Schoenoplectus mucronatus	**RICEFIELD BULRUSH**	sedge	0	0.07	1%
Setaria viridis	**GREEN FOXTAIL GRASS**	grass	0	0.13	2%
Taraxacum officinale	**COMMON DANDELION**	forb	0	0.07	1%
Trifolium pratense	**RED CLOVER**	forb	0	0.07	1%
Trifolium repens	**WHITE CLOVER**	forb	0	0.07	1%
		Native Species:		2.47	34%
		Non-Native Species:		4.80	66%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–29. NPPB1 Prairie Functional Monitoring Data Summary

Total Species:	32	**Mean CC[a]:**	1.28
Native Species:	15	**Average Cover:**	98%
Non-Native Species:	17	**FQAI[b]:**	7.25
Percent Native:	47%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.07	1%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.13	2%
Conyza canadensis	HORSEWEED	forb	0	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.20	3%
Erigeron annuus	DAISY FLEABANE	forb	0	0.13	2%
Eupatorium serotinum	LATE-FLOWERING BONESET	forb	2	0.07	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.07	1%
Morus rubra	RED MULBERRY	tree	7	0.07	1%
Oxalis stricta	COMMON YELLOW WOOD-SORREL	forb	0	0.33	6%
Panicum virgatum	SWITCH GRASS	grass	4	0.53	9%
Physalis longifolia	SMOOTH GROUND-CHERRY	forb	1	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.67	11%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.07	1%
Verbena hasta	BLUE VERVAIN	forb	4	0.07	1%
Verbena urticifolia	WHITE VERVAIN	forb	3	0.07	1%
Agrostis gigantea	**REDTOP**	grass	0	0.33	6%
Allium vineale	**FIELD GARLIC**	forb	0	0.07	1%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.27	5%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.40	7%
Cirsium vulgare	**BULL THISTLE**	forb	0	0.13	2%
Convolvulus arvensis	**FIELD BINDWEED**	forb	0	0.07	1%
Dactylis glomerata	**ORCHARD GRASS**	grass	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.53	9%
Festuca elatior	**TALL FESCUE**	grass	0	0.47	8%
Hordeum jubatum	**SQUIRRWL-TAIL BARLEY**	grass	0	0.07	1%
Humulus japonicus`	**JAPANESE HOPS**	vine	0	0.07	1%
Lolium perenne	**PERENNIAL RYEGRASS**	grass	0	0.13	2%
Melilotus officinalis	**YELLOW SWEET-CLOVER**	forb	0	0.07	1%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.07	1%
Regreen	**REGREEN**	grass	0	0.33	6%
Solanum carolinense	**HORSE NETTLE**	forb	0	0.07	1%
Sorghum halepense	**JOHNSON GRASS**	grass	0	0.07	1%
		Native Species:		2.60	45%
		Non-Native Species:		3.20	55%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–30. PREPR1 Prairie Functional Monitoring Data Summary

Total Species:	41	**Mean CC[a]:**	2.23
Native Species:	29	**Average Cover:**	98%
Non-Native Species:	14	**FQAI[b]:**	14.30
Percent Native:	71%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Acer negundo	BOX ELDER	tree	3	0.07	1%
Acer saccharinum	SILVER MAPLE	tree	3	0.13	2%
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.07	1%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.87	12%
Aster pilosus	AWL ASTER	forb	1	0.20	3%
Baptisia australis	BLUE FALSE INDIGO	forb	6	0.07	1%
Camsis radicans	TRUMPET-CREEPER	vine	1	0.13	2%
Cercis canadensis	REDBUD	sm tree	3	0.07	1%
Chamaecrista fasciculata	PARTRIDGE-PEA	forb	3	0.07	1%
Conyza canadensis	HORSEWEED	forb	0	0.07	1%
Cyperus erythrorhizos	RED-ROOTED UMBRELLA SEDGE	sedge	4	0.07	1%
Dalea purpurea	PURPLE PRAIRIE-CLOVER	forb	9	0.07	1%
Desmodium canadense	CANADA TICK-TREFOIL	forb	4	0.40	6%
Elymus canadensis	CANADA WILD RYE	grass	6	0.13	2%
Erigeron annuus	DAISY FLEABANE	forb	0	0.20	3%
Eupatorium rugosum	WHITE SNAKE ROOT	forb	3	0.07	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.13	2%
Panicum virgatum	SWITCH GRASS	grass	4	1.00	14%
Populus deltoides	EASTERN COTTONWOOD	tree	3	0.07	1%
Quercus imbricaria	SHINGLE OAK	tree	5	0.07	1%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.07	1%
Silphium perfoliatum	CUP-PLANT	forb	6	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.53	7%
Solidago rigida	STIFF GOLDENROD	forb	8	0.07	1%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.33	5%
Toxicodendron radicans	POISON-IVY	vine	1	0.07	1%
Ulmus americana	AMERICAN ELM	tree	2	0.13	2%
Ulmus rubra	SLIPPERY ELM	tree	3	0.07	1%
Verbena urticifolia	WHITE VERVAIN	forb	3	0.07	1%
Agrostis gigantea	**REDTOP**	grass	0	0.27	4%
Allium vineale	**FIELD GARLIC**	forb	0	0.07	1%
Althaea officinalis	**MARSH-MALLOW**	forb	0	0.07	1%
Cichorium intybus	**CHICORY**	forb	0	0.07	1%
Convolvulus arvensis	**FIELD BINDWEED**	forb	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.47	6%
Festuca elatior	**TALL FESCUE**	grass	0	0.07	1%
Loniciera maackii	**AMUR HONEYSUCKLE**	shrub	0	0.07	1%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.07	1%
Melilotus alba	**WHITE SWEET-CLOVER**	forb	0	0.13	2%
Plantago lanceolata	**ENGLISH PLANTAIN**	forb	0	0.27	4%
Plantago major	**COMMON PLANTAIN**	forb	0	0.07	1%
Setaria viridis	**GREEN FOXTAIL GRASS**	grass	0	0.07	1%
Trifolium repens	**WHITE CLOVER**	forb	0	0.13	2%
			Native Species:	5.33	74%
			Non-Native Species:	1.87	26%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–31. PRWPR1 Prairie Functional Monitoring Data Summary

Total Species:	32	**Mean CC[a]:**	1.94
Native Species:	19	**Average Cover:**	97%
Non-Native Species:	13	**FQAI[b]:**	10.96
Percent Native:	59%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Andropogon gerardii	BIG BLUESTEM	grass	5	1.00	18%
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.07	1%
Asclepias tuberosa	BUTTERFLY-WEED	forb	4	0.13	2%
Aster pilosus	AWL ASTER	forb	1	0.20	4%
Bouteloua curtipendula	SIDE-OATS GRAMA GRASS	grass	8	0.07	1%
Carex granularis	MEADOW SEDGE	sedge	3	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.13	2%
Eupatorium serotinum	LATE-FLOWERING BONESET	forb	2	0.07	1%
Heliopsis helianthoides	SMOOTH OXEYE	forb	5	0.13	2%
Juncus tenuis	PATH RUSH	forb	1	0.13	2%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.07	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.20	4%
Phytolacca americana	POKEWEED	forb	1	0.07	1%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.07	1%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.47	8%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.73	13%
Tradescantia ohiensis	OHIO SPIDERWORT	forb	5	0.07	1%
Vernonia gigantea	TALL IRONWEED	forb	2	0.20	4%
Agrostis gigantea	**REDTOP**	grass	0	0.47	8%
Avena sativa	**OATS**	grass	0	0.07	1%
Barbarea vulgaris	**YELLOW ROCKET**	forb	0	0.07	1%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.27	5%
Cirsium vulgare	**BULL THISTLE**	forb	0	0.07	1%
Echinochloa crusgalli	**BARNYARD GRASS**	grass	0	0.07	1%
Festuca elatior	**TALL FESCUE**	grass	0	0.07	1%
Lolium multiflorum	**ITALIAN RYEGRASS**	grass	0	0.07	1%
Oxalis stricta	**COMMON YELLOW WOOD-SORREL**	forb	0	0.13	2%
Phleum pratense	**TIMOTHY**	grass	0	0.13	2%
Plantago rugelii	**RUGEL'S PLANTAIN**	forb	0	0.07	1%
Polygonum persicaria	**LADY'S THUMB**	forb	0	0.07	1%
Setaria viridis	**GREEN FOXTAIL GRASS**	grass	0	0.13	2%
		Native Species:		3.93	70%
		Non-Native Species:		1.67	30%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–32. PRWPR2 Prairie Functional Monitoring Data Summary

Total Species:	35	**Mean CC[a]:**	1.49
Native Species:	20	**Average Cover:**	96%
Non-Native Species:	15	**FQAI[b]:**	8.79
Percent Native:	57%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Acer saccharinum	SILVER MAPLE	tree	3	0.09	1%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.09	1%
Calystegia sepium	HEDGE BINDWEED	forb	1	0.09	1%
Carex digitalis	SLENDER WOOD SEDGE	sedge	4	0.09	1%
Carex stipata	CROWDED SEDGE	sedge	2	0.18	3%
Elymus canadensis	CANADA WILD RYE	grass	6	0.09	1%
Erigeron annuus	DAISY FLEABANE	forb	0	0.18	3%
Geum canadense	WHITE AVENS	forb	2	0.09	1%
Juncus tenuis	PATH RUSH	forb	1	0.09	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.09	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.09	1%
Parthenocissus quinquefolia	VIRGINIA CREEPER	vine	2	0.18	3%
Phytolacca americana	POKEWEED	forb	1	0.09	1%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.09	1%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.09	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.73	12%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.09	1%
Toxicodendron radicans	POISON-IVY	vine	1	0.09	1%
Verbena urticifolia	WHITE VERVAIN	forb	3	0.09	1%
Vernonia gigantea	TALL IRONWEED	forb	2	0.45	7%
Agrostis gigantea	**REDTOP**	grass	0	0.36	6%
Allium vineale	**FIELD GARLIC**	forb	0	0.18	3%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.27	4%
Cerastium vulgatum	**COMMON CHICKWEED**	forb	0	0.09	1%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.73	12%
Conium maculatum	**POISON-HEMLOCK**	forb	0	0.09	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.09	1%
Dipsacus fullonum	**WILD TEASEL**	forb	0	0.09	1%
Festuca elatior	**TALL FESCUE**	grass	0	0.73	12%
Festuca pratensis	**MEADOW FESCUE**	grass	0	0.09	1%
Lolium multiflorum	**ITALIAN RYEGRASS**	grass	0	0.09	1%
Lolium perenne	**PERENNIAL RYEGRASS**	grass	0	0.09	1%
Mentha x piperata	**PEPPERMINT**	forb	0	0.09	1%
Sorghum halepense	**JOHNSON GRASS**	grass	0	0.09	1%
Urtica dioica var. dioica	**EUROPEAN STINGING NETTLE**	forb	0	0.09	1%
		Native Species:		3.09	49%
		Non-Native Species:		3.18	51%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–33. PRWPR3 Prairie Functional Monitoring Data Summary

Total Species:	38	**Mean CC[a]:**	2.13
Native Species:	27	**Average Cover:**	98%
Non-Native Species:	11	**FQAI[b]:**	13.14
Percent Native:	71%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Achillea millefolium	YARROW	forb	1	0.13	2%
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.67	8%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.53	7%
Asclepias incarnata	SWAMP MILKWEED	forb	4	0.07	1%
Aster pilosus	AWL ASTER	forb	1	0.13	2%
Carex cristatella	CRESTED SEDGE	sedge	3	0.07	1%
Carex digitalis	SLENDER WOOD SEDGE	sedge	4	0.07	1%
Carex stipata	CROWDED SEDGE	sedge	2	0.33	4%
Conyza canadensis	HORSEWEED	forb	0	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.07	1%
Eryngium yuccifolium	RATTLESNAKE-MASTER	forb	7	0.20	2%
Fraxinus pennsylvanica	GREEN ASH	tree	3	0.33	4%
Heliopsis helianthoides	SMOOTH OXEYE	forb	5	0.07	1%
Monarda fistulosa	WILD BERGAMOT	forb	3	0.13	2%
Oxalis stricta	COMMON YELLOW WOOD-SORREL	forb	0	0.07	1%
Panicum capillare	WITCH GRASS	grass	1	0.07	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.20	2%
Parthenocissus quinquefolia	VIRGINIA CREEPER	vine	2	0.13	2%
Ratibida pinnata	GRAY-HEADED CONEFLOWER	forb	5	0.07	1%
Rudbeckia hirta	BLACK-EYED SUSAN	forb	1	0.13	2%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.07	1%
Sisyrinchium angustifolium	STOUT BLUE-EYED-GRASS	forb	2	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.87	11%
Solidago rigida	STIFF GOLDENROD	forb	8	0.07	1%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.53	7%
Toxicodendron radicans	POISON-IVY	vine	1	0.13	2%
Vernonia gigantea	TALL IRONWEED	forb	2	0.53	7%
Agrostis gigantea	**REDTOP**	grass	0	0.73	9%
Allium vineale	**FIELD GARLIC**	forb	0	0.13	2%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.07	1%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.20	2%
Dipsacus fullonum	**WILD TEASEL**	forb	0	0.07	1%
Festuca elatior	**TALL FESCUE**	grass	0	0.33	4%
Glechoma hederacea	**GROUND IVY**	forb	0	0.07	1%
Lonicera maackii	**AMUR HONEYSUCKLE**	shrub	0	0.07	1%
Sonchus arvensis	**FIELD SOW-THISTLE**	forb	0	0.07	1%
Trifolium repens	**WHITE CLOVER**	forb	0	0.47	6%
		Native Species:		5.80	72%
		Non-Native Species:		2.27	28%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–34. WM1PR1 Prairie Functional Monitoring Data Summary

Total Species:	25	**Mean CC[a]:**	1.80
Native Species:	14	**Average Cover:**	96%
Non-Native Species:	11	**FQAI[b]:**	9.00
Percent Native:	56%		

Species	Common Name	Type	CC[a]	Frequency (species/quadrat)	Relative Frequency
Ambrosia artemisiifolia	COMMON RAGWEED	forb	0	0.13	3%
Andropogon gerardii	BIG BLUESTEM	grass	5	0.47	10%
Aster pilosus	AWL ASTER	forb	1	0.07	1%
Bouteloua curtipendula	SIDE-OATS GRAMA GRASS	grass	8	0.07	1%
Conyza canadensis	HORSEWEED	forb	0	0.07	1%
Elymus canadensis	CANADA WILD RYE	grass	6	0.20	4%
Erechtites hieracifolia	PILEWORT	forb	2	0.07	1%
Fraxinus pennsylvanica	GREEN ASH	tree	3	0.07	1%
Panicum virgatum	SWITCH GRASS	grass	4	0.40	9%
Parthenocissus quinquefolia	VIRGINIA CREEPER	vine	2	0.07	1%
Schizachyrium scoparium	LITTLE BLUESTEM	grass	5	0.07	1%
Solidago canadensis	CANADA GOLDENROD	forb	1	0.20	4%
Sorghastrum nutans	INDIAN GRASS	grass	5	0.20	4%
Symphoricarpos orbiculatus	CORALBERRY	shrub	3	0.07	1%
Agrostis gigantea	**REDTOP**	grass	0	0.40	9%
Bromus japonicus	**JAPANESE BROME**	grass	0	0.27	6%
Cirsium arvense	**CANADA THISTLE**	forb	0	0.27	6%
Cirsium vulgare	**BULL THISTLE**	forb	0	0.07	1%
Conium maculatum	**POISON-HEMLOCK**	forb	0	0.07	1%
Daucus carota	**QUEEN-ANNE'S-LACE**	forb	0	0.53	11%
Festuca elatior	**TALL FESCUE**	grass	0	0.53	11%
Loniciera maackii	**AMUR HONEYSUCKLE**	shrub	0	0.07	1%
Medicago lupulina	**BLACK MEDICK**	forb	0	0.07	1%
Regreen	**REGREEN**	grass	0	0.20	4%
Verbascum blattaria	**MOTH MULLEIN**	forb	0	0.07	1%
			Native Species:	2.13	46%
			Non-Native Species:	2.53	54%

[a] CC = Coefficent of Conservatism
[b] FQAI = Florist Quality Assessment Index
Species in bold are non-native.

Table D–35. 2010 Mammal and Reptile Coverboard Observations

Species	Common Name	BAPW3	BAPW4	BAPW5	BAPW7	BAPW8	BAPW9	NPPW1	NPPW2	NPPW3	NPPW4	NPPW5	PREW6	WM1W1	WM1W2	WM1W3	WM1W4	WM1W5	WM1W6	WM1W7	WM2M1	WM2W2	WM2W3	Frequency	Relative Frequency
Blarnia brevicauda	short-tailed shrew	1			1						4	8			1				2		1	2		20	8%
Cryptotis parva	least shrew	1								1									1			2		5	2%
Microtus pennsylvanicus	meadow vole			11		2	4					2			1		8			2				30	11%
Peromyscus maniculatus	deer mouse	7	7	60						1					1							1	1	78	30%
Scalopus aquaticus	eastern mole											1												1	0%
Nerodia sipedon	northern water snake									2							2				4	5	2	15	6%
Rana clamitans	American green frog														1									1	0%
Thamnophis sirtalis sirtalis	eastern garter snake		6	5			1		1		5	5	9	5	2	1	3		1	1	13	12	43	113	43%
Coluber constrictor foxii	northern blue racer																					1		1	0%

total = 264

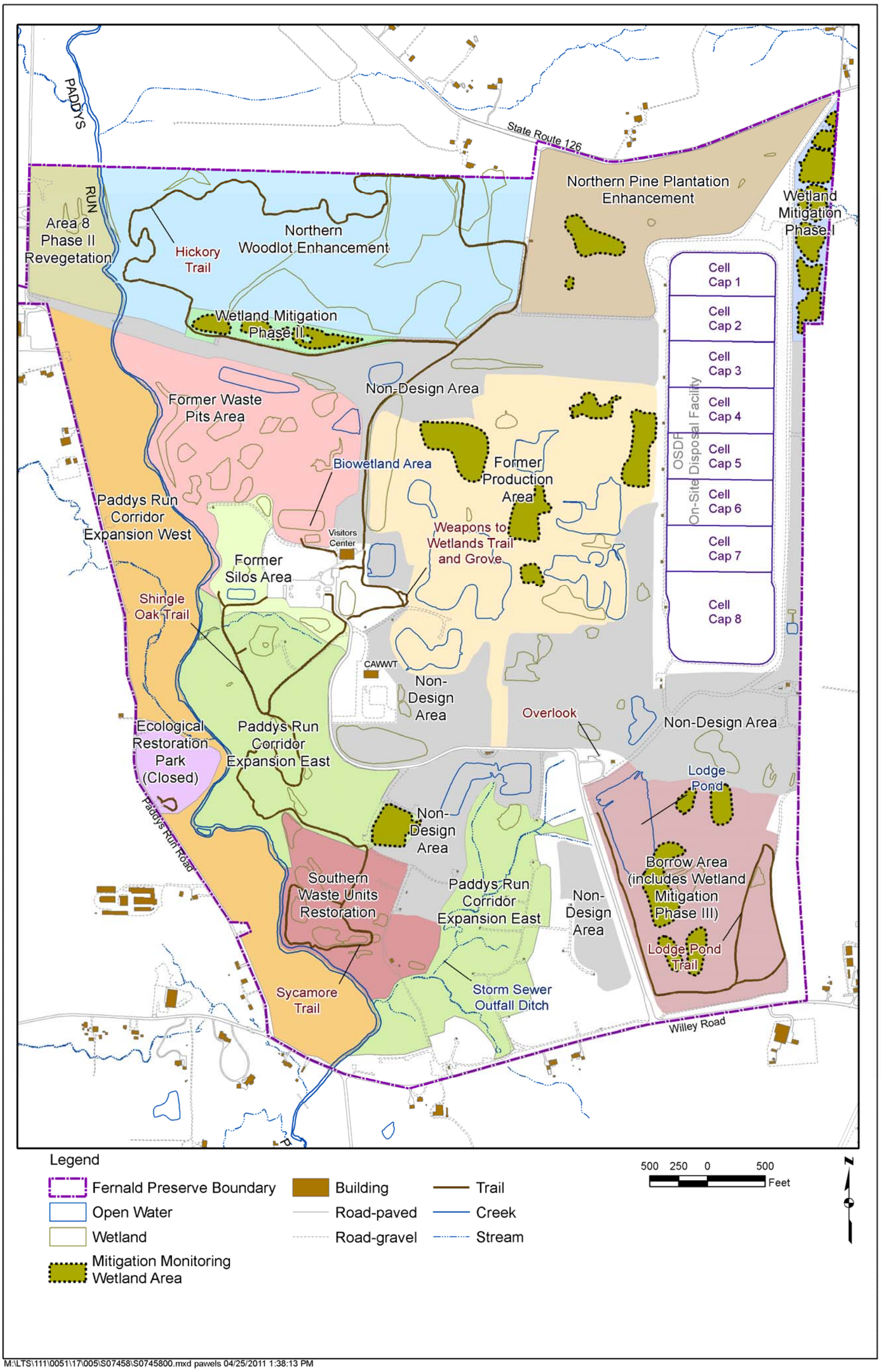

Figure D–1. Ecological Monitoring

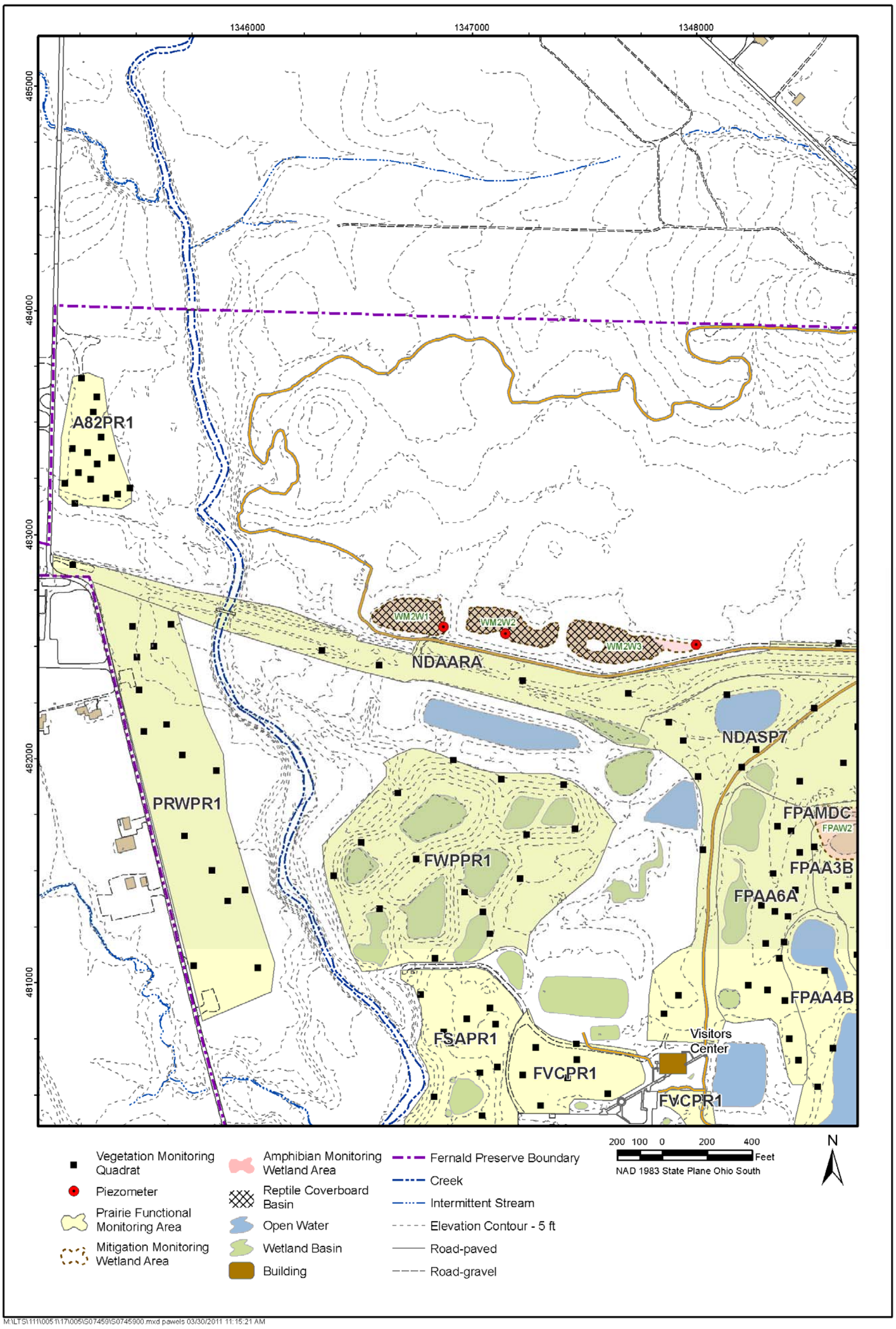

Figure D–2A. Ecological Monitoring Survey Areas – Northwest Site Quadrant

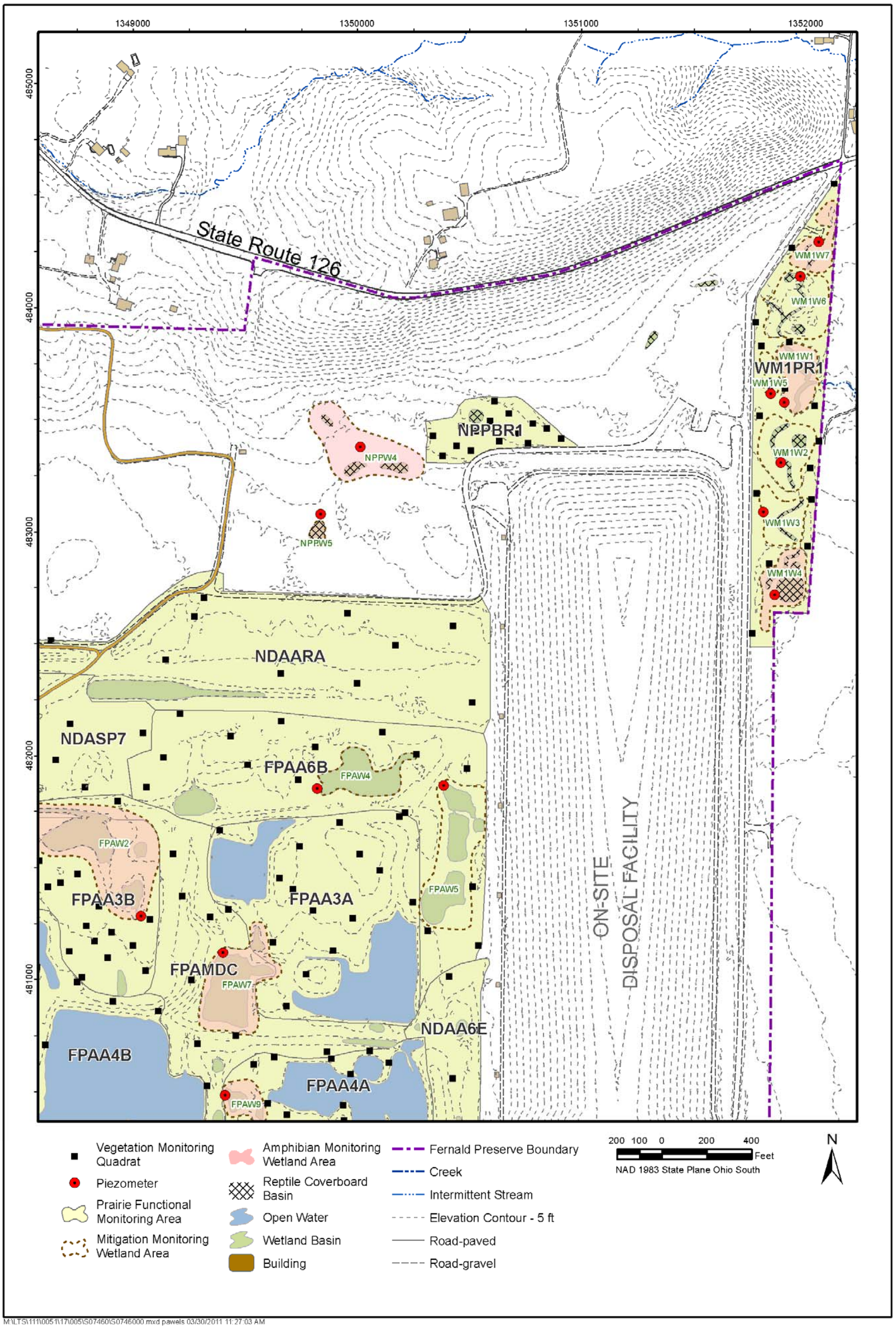

Figure D–2B. Ecological Monitoring Survey Areas – Northeast Site Quadrant

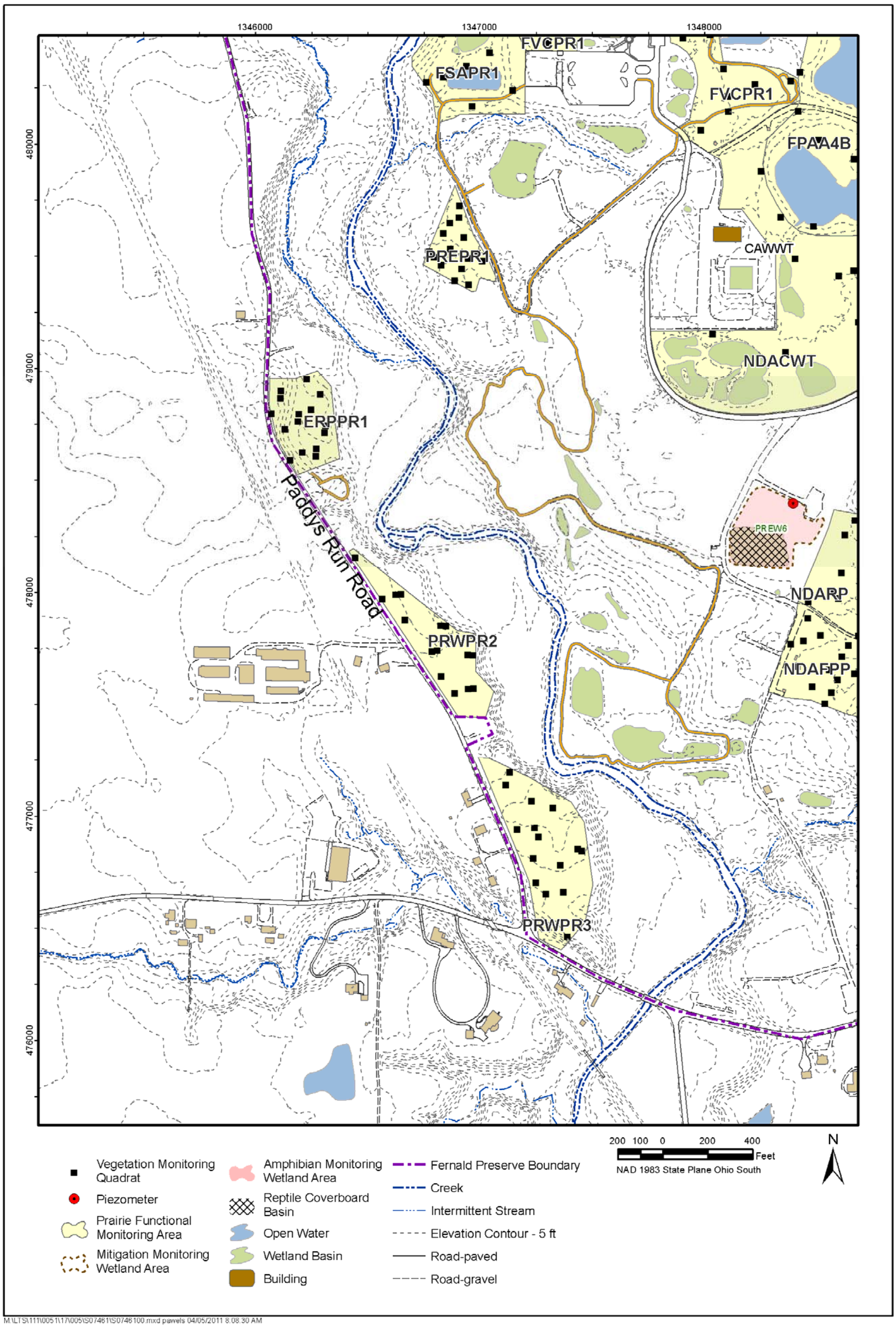

Figure D–2C. Ecological Monitoring Survey Areas – Southwest Site Quadrant

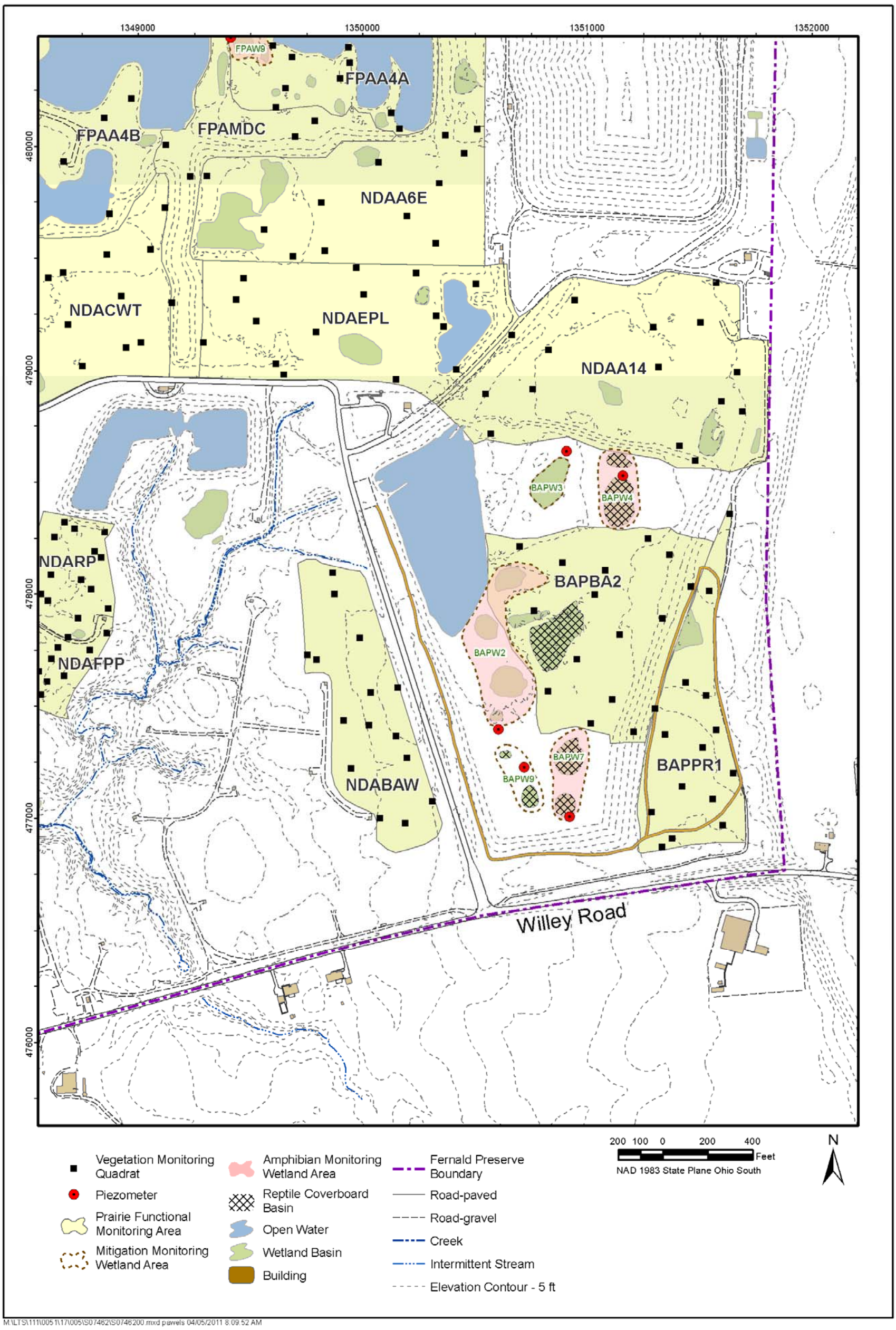

Figure D–2D. Ecological Monitoring Survey Areas – Southeast Site Quadrant

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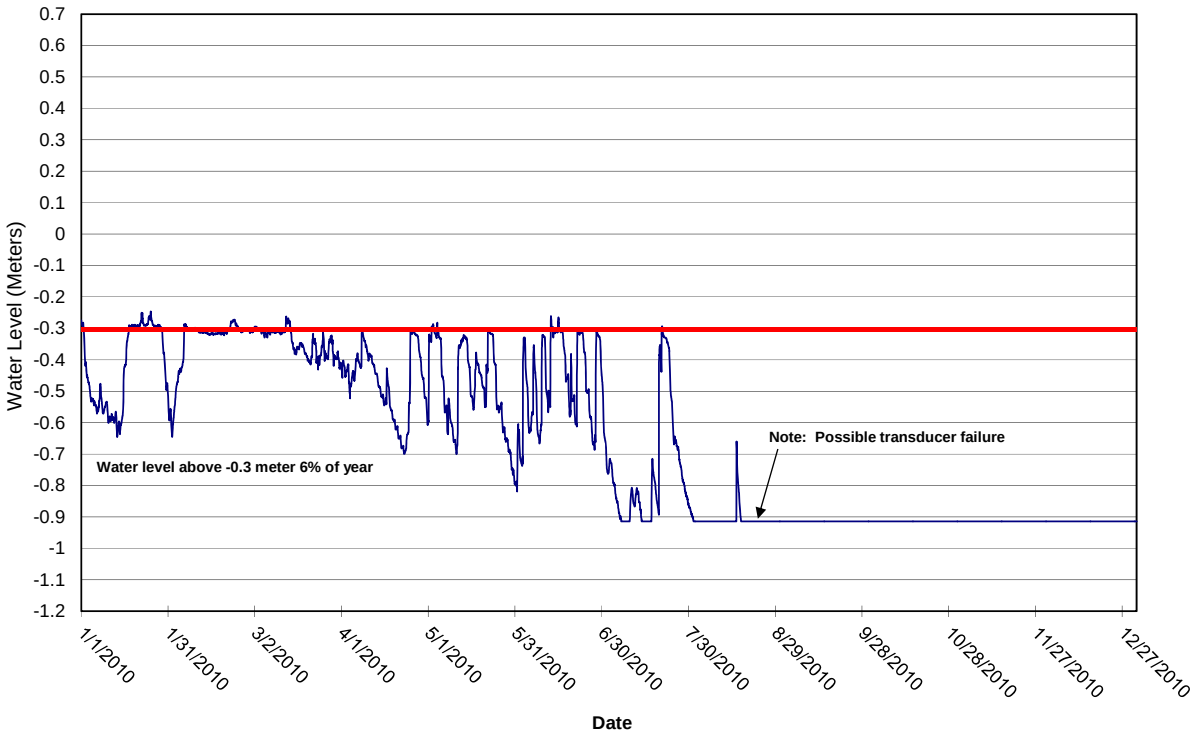

Figure D–3A. Wetland Area BAPW2 Hydrograph

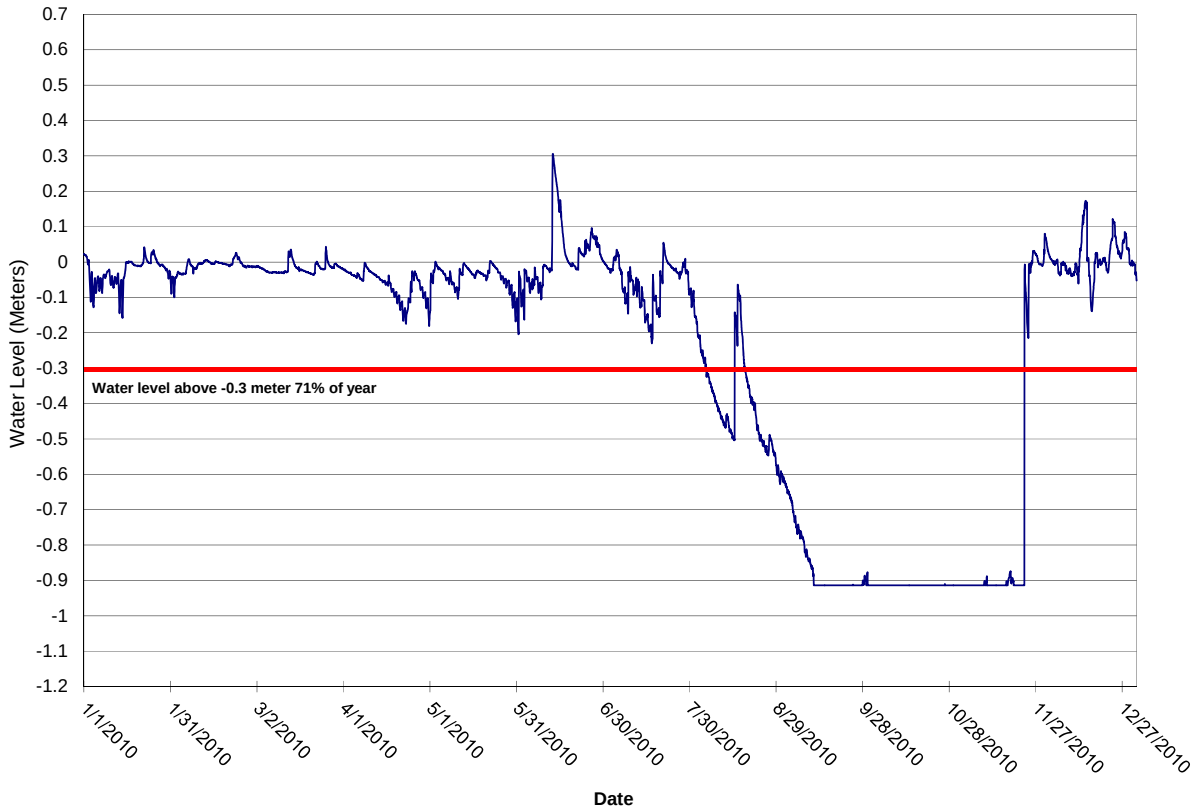

Figure D–3B. Wetland Area BAPW3 Hydrograph

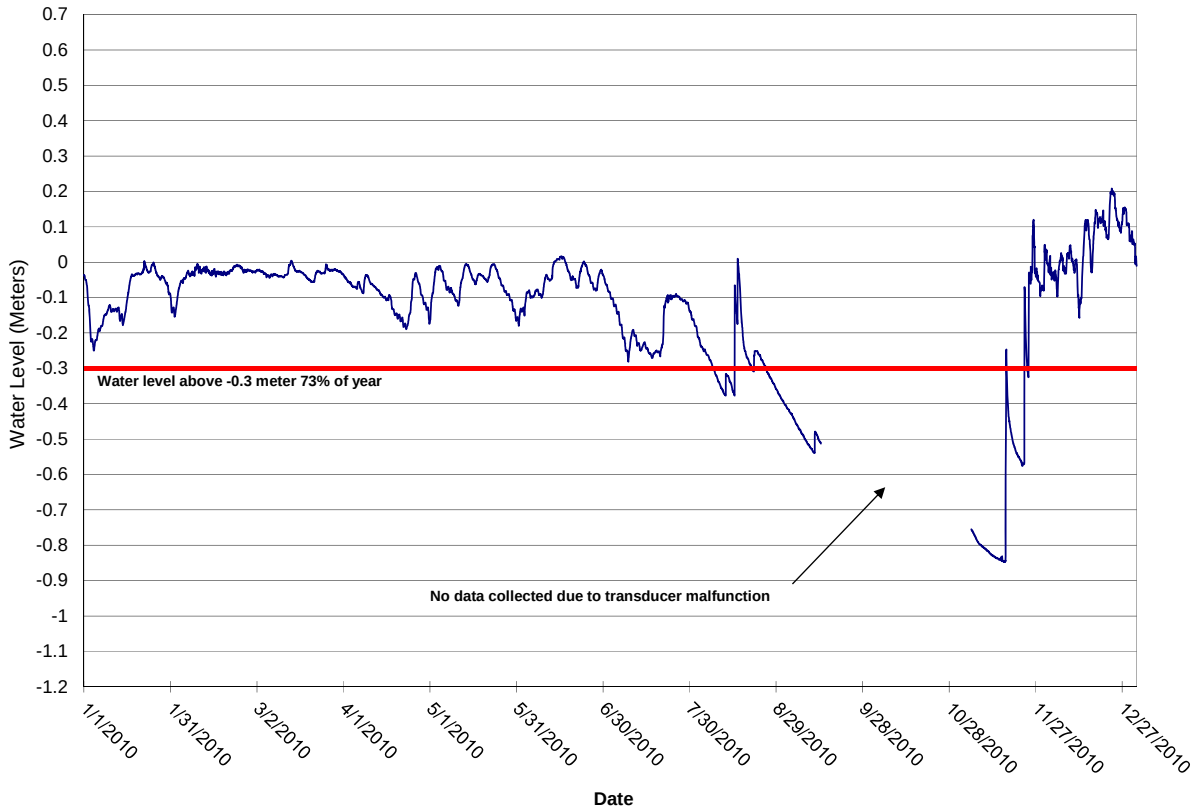

Figure D–3C. Wetland Area BAPW4 Hydrograph

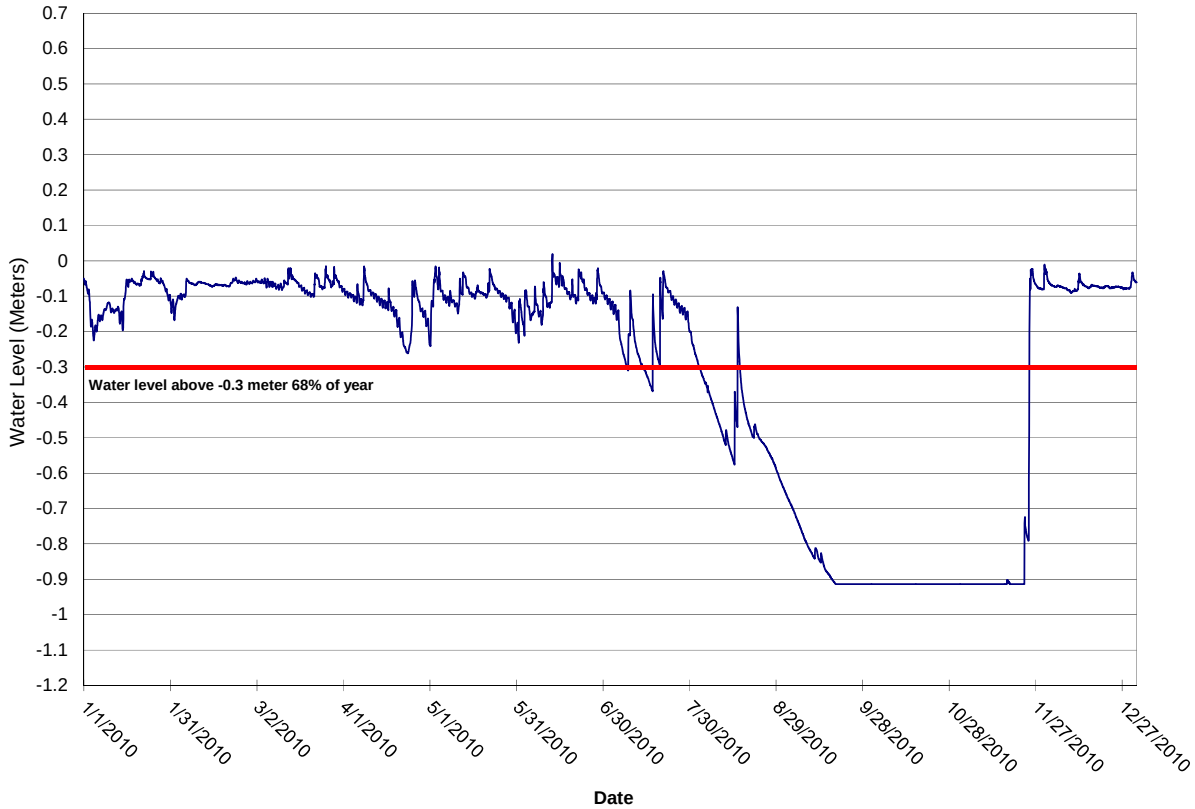

Figure D–3D. Wetland Area BAPW7 Hydrograph

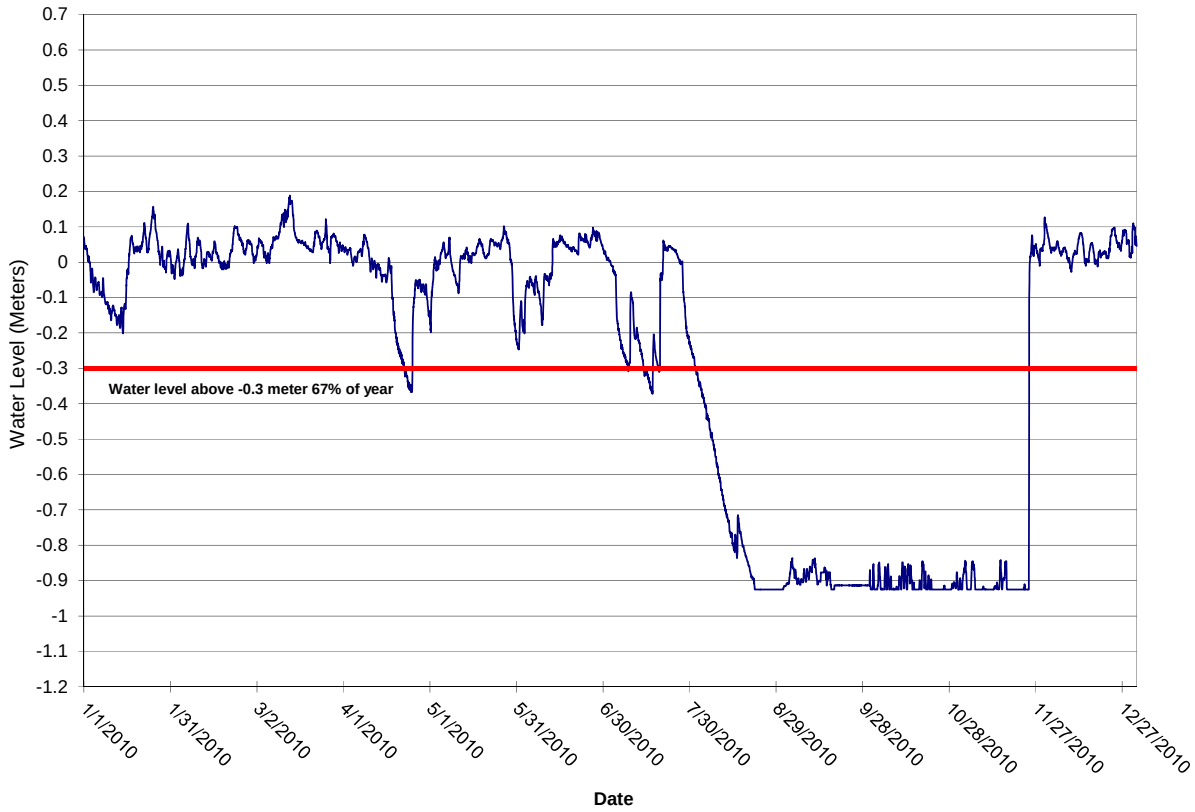

Figure D–3E. Wetland Area BAPW9 Hydrograph

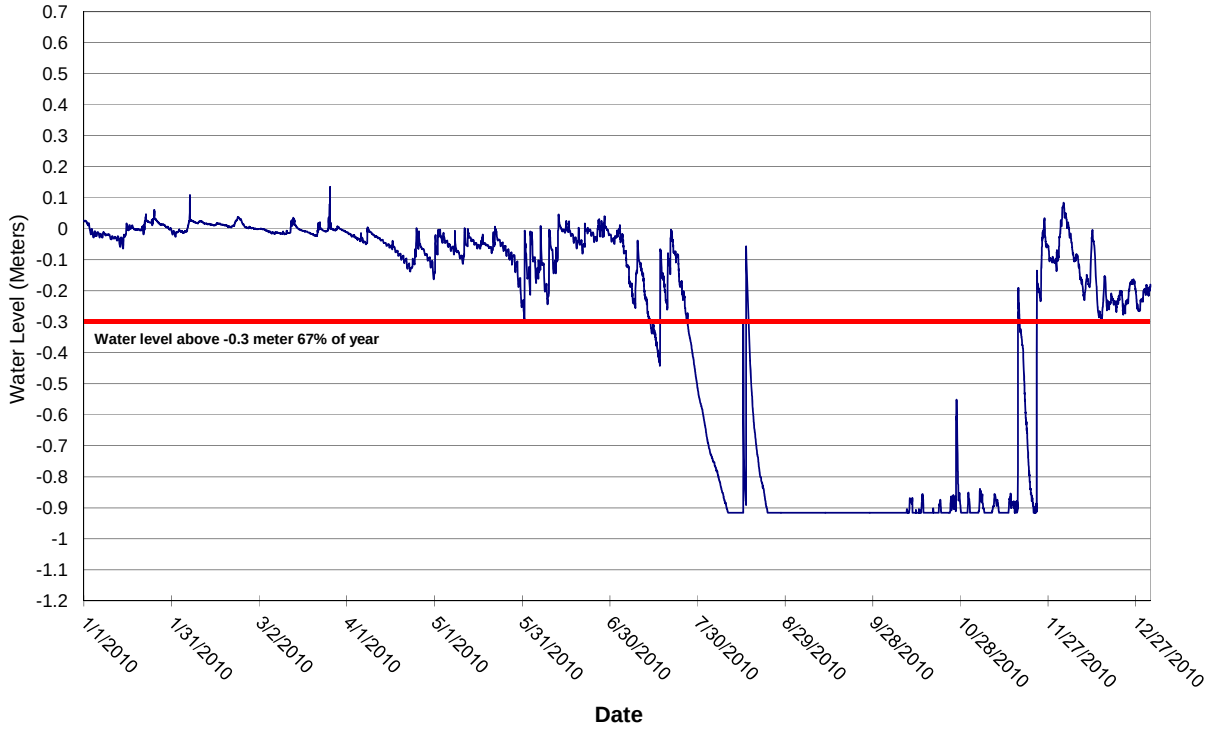

Figure D–3F. Wetland Area FPAW2 Hydrograph

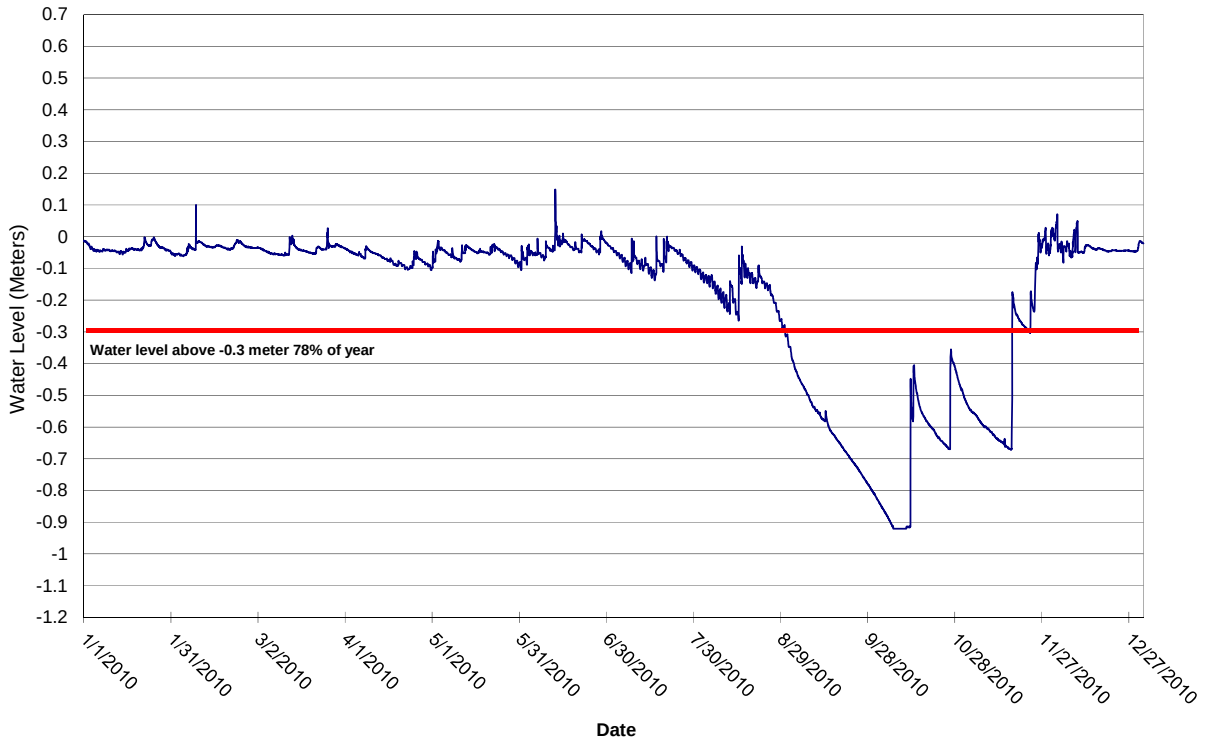

Figure D–3G. Wetland Area FPAW4 Hydrograph

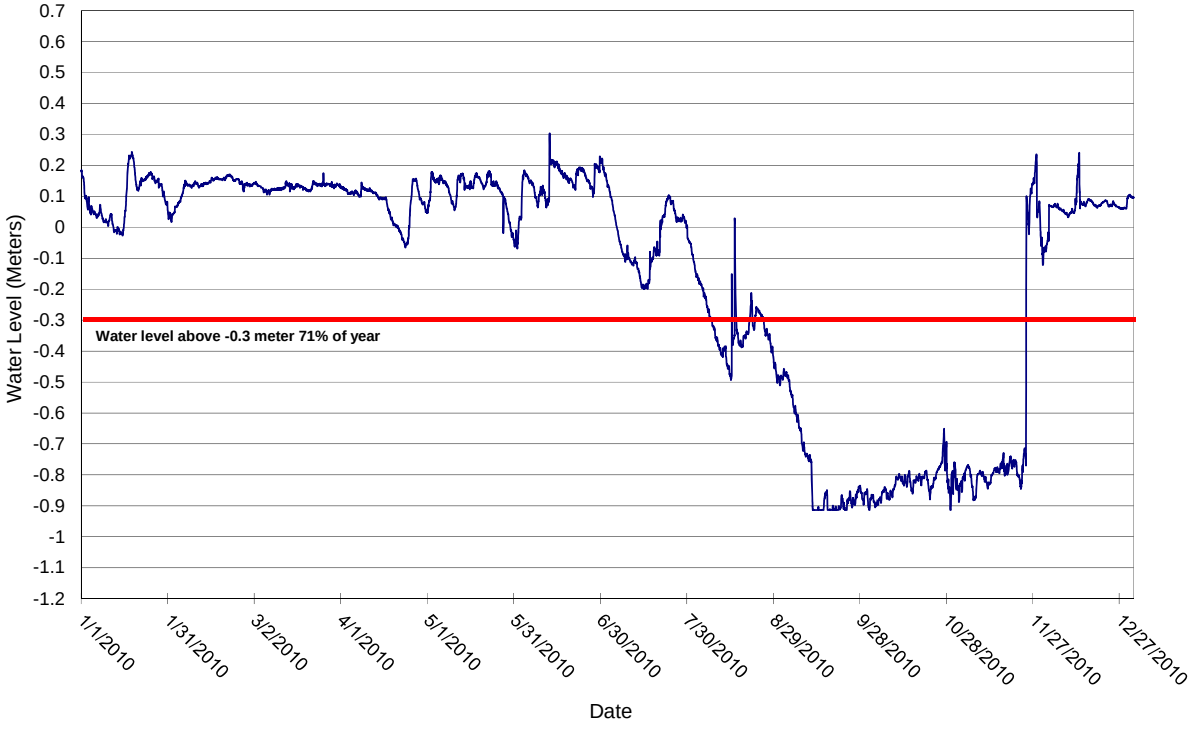

Figure D–3H. Wetland Area FPAW5 Hydrograph

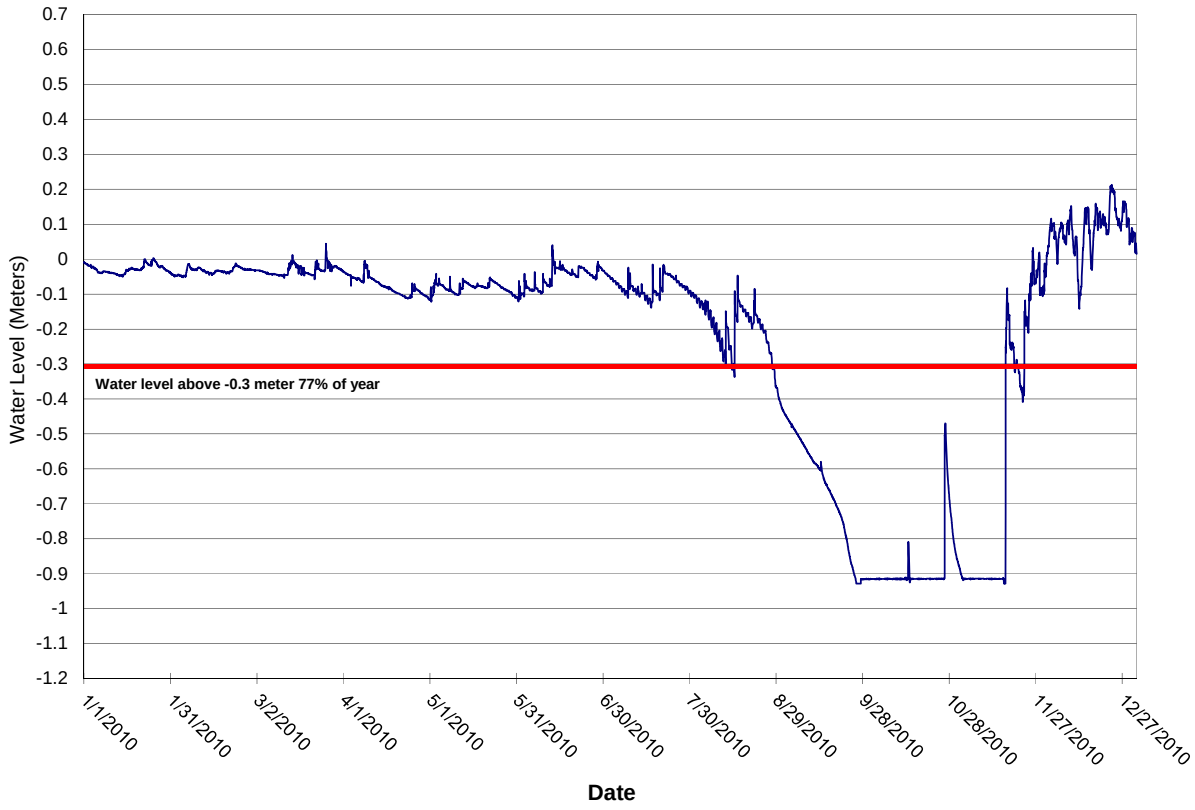

Figure D–3I. Wetland Area FPAW7 Hydrograph

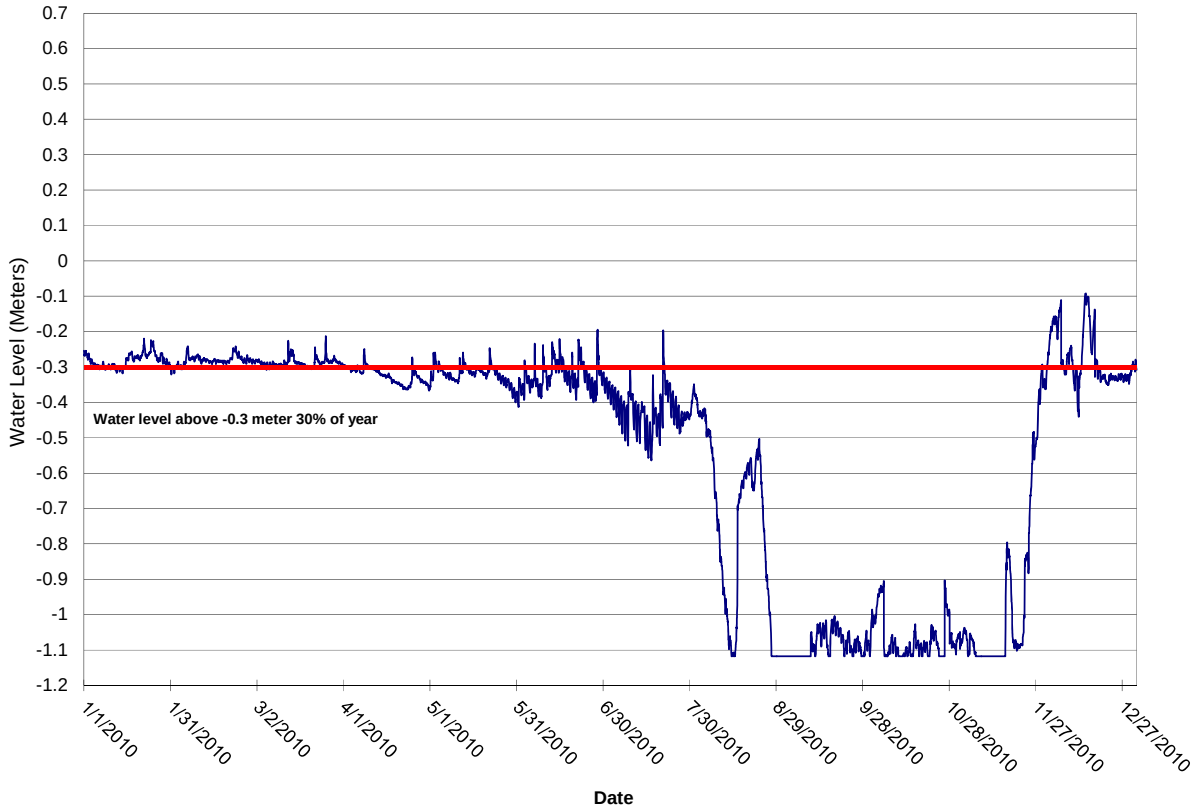

Figure D–3J. Wetland Area FPAW9 Hydrograph

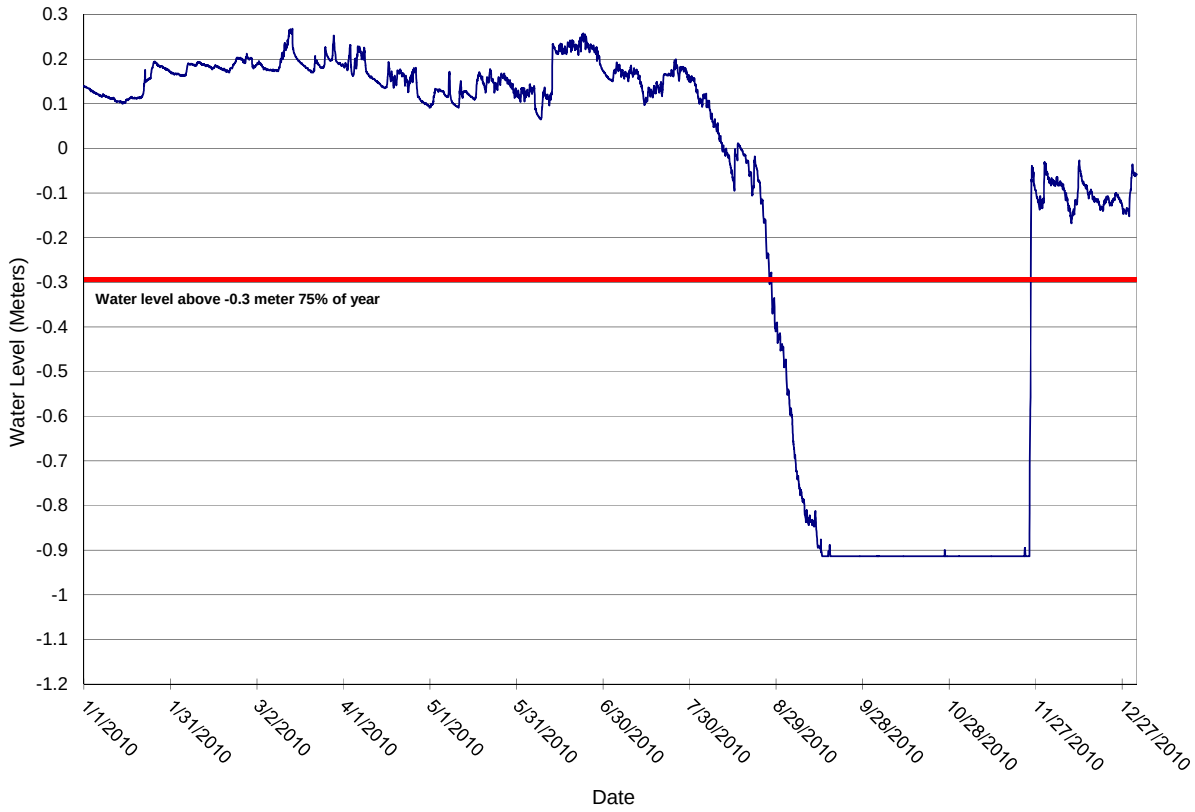

Figure D–3K. Wetland Area PREW6 Hydrograph

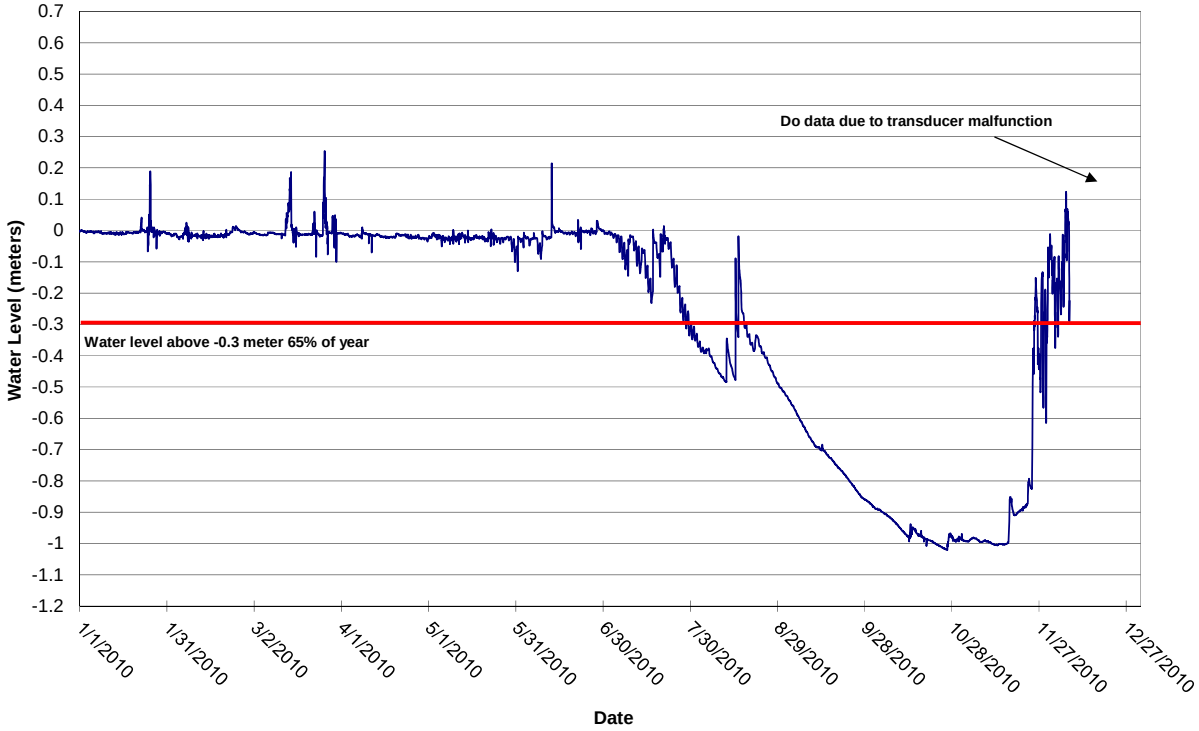

Figure D–3L. Wetland Area NPPW4 Hydrograph

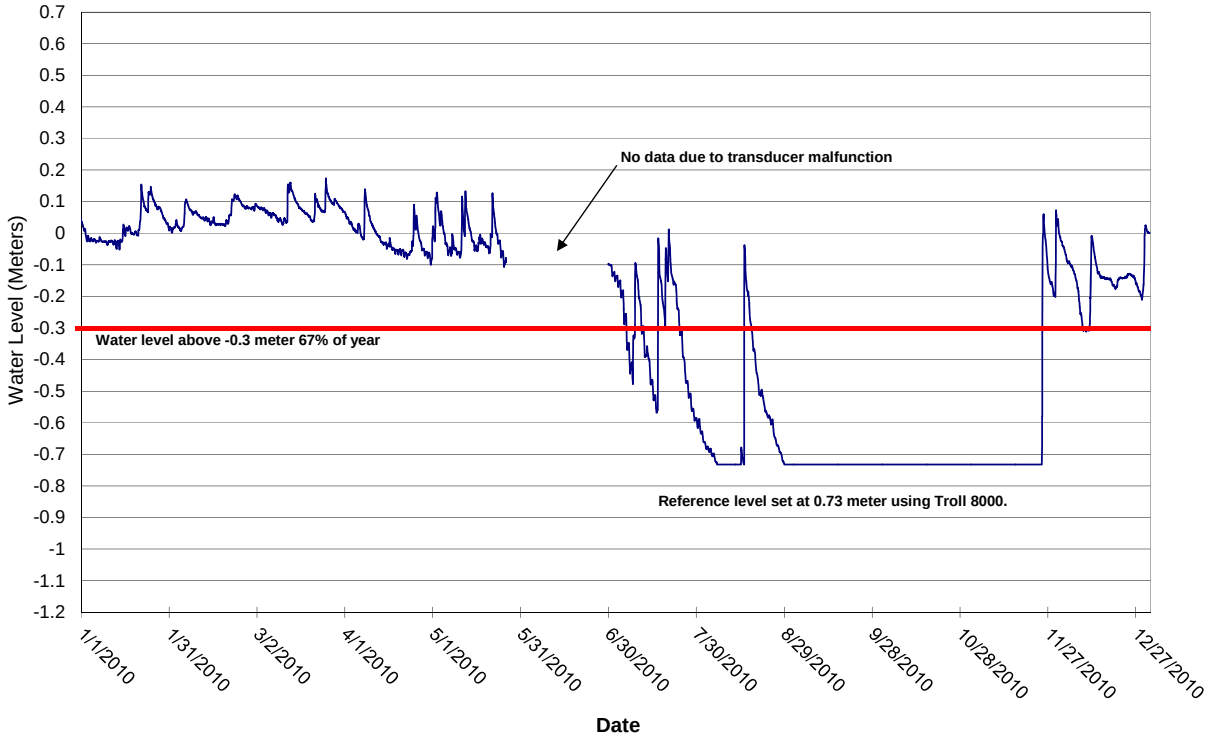

Figure D–3M. Wetland Area NPPW5 Hydrograph

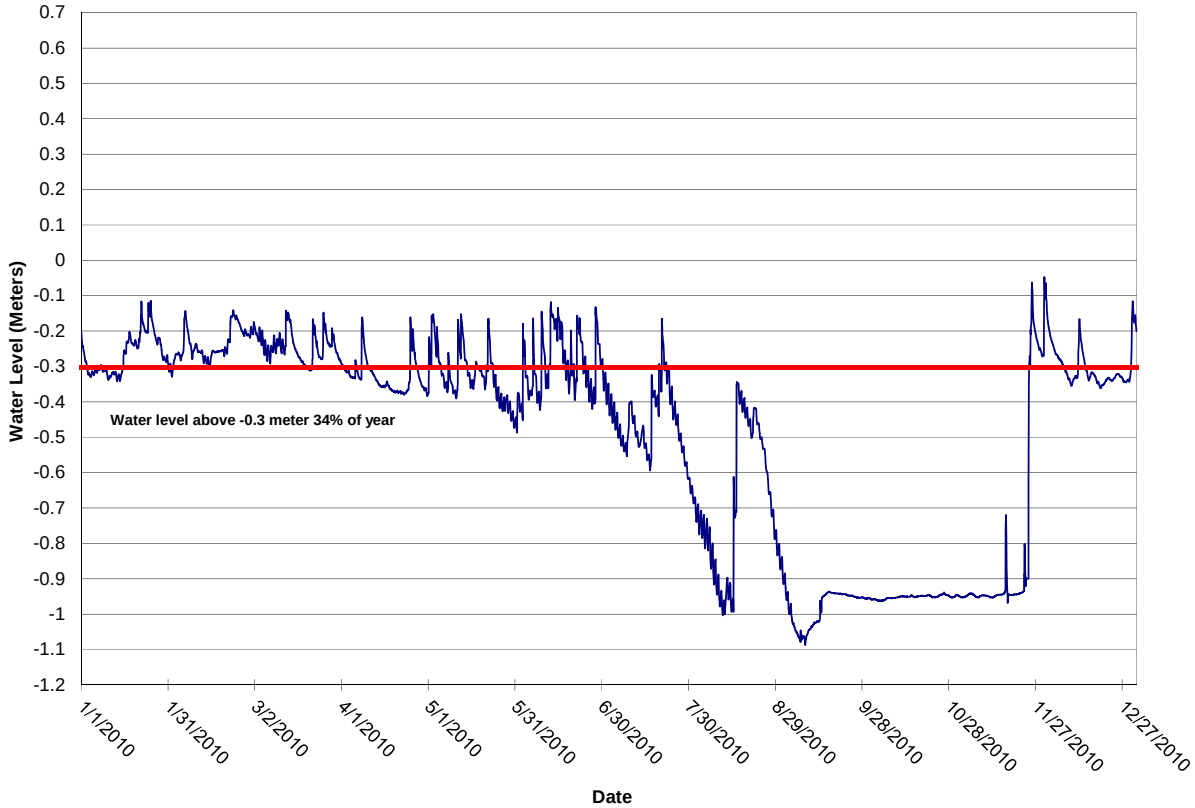

Figure D–3N. Wetland Area WM1W1 Hydrograph

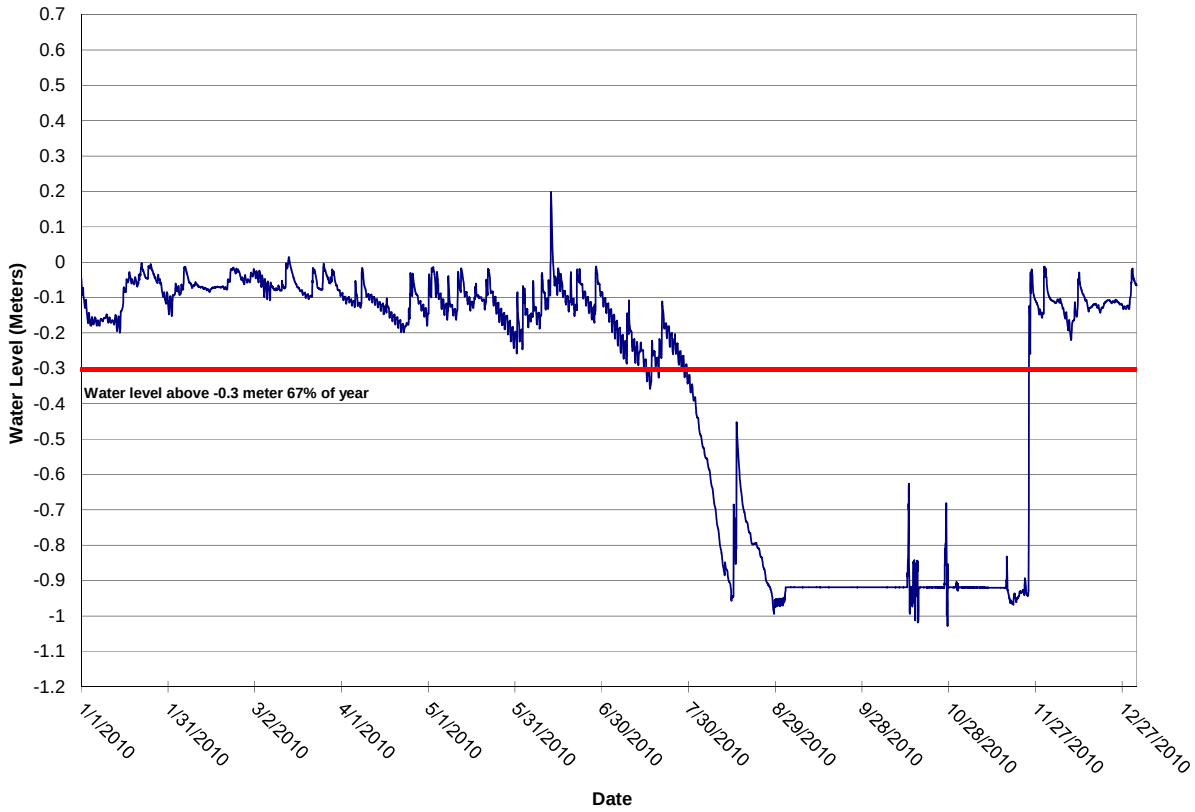

Figure D–3O. Wetland Area WM1W2 Hydrograph

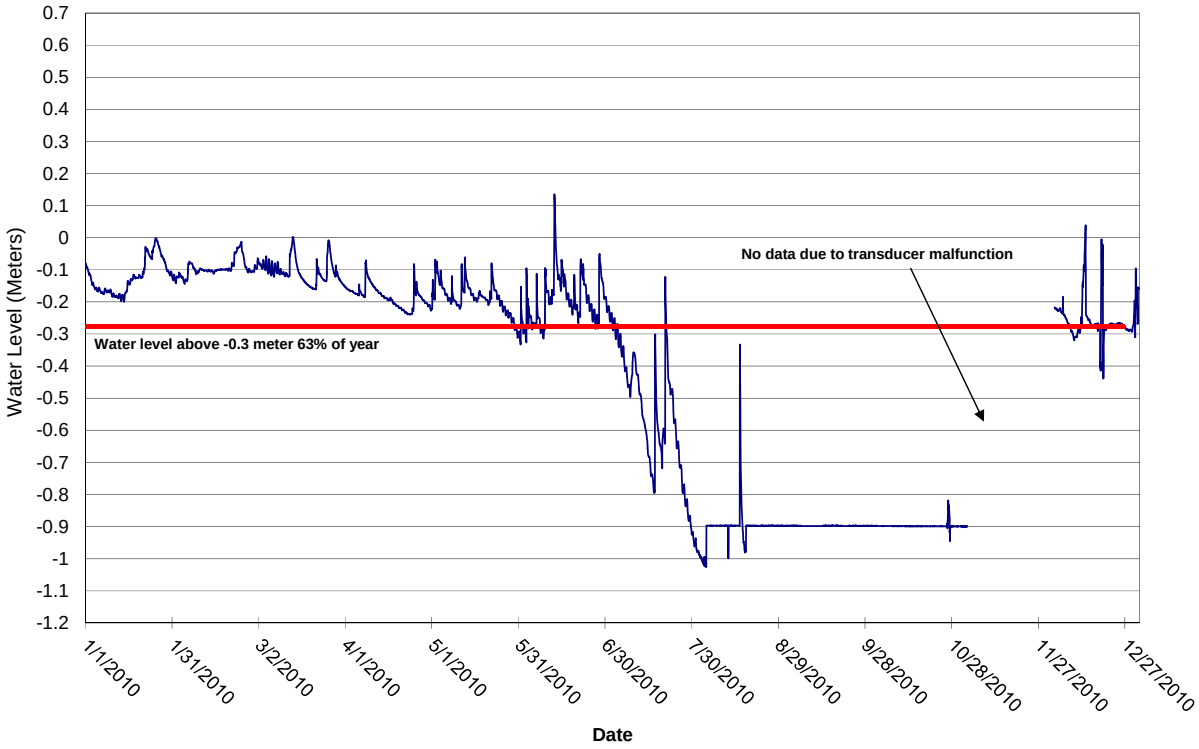

Figure D–3P. Wetland Area WM1W3 Hydrograph

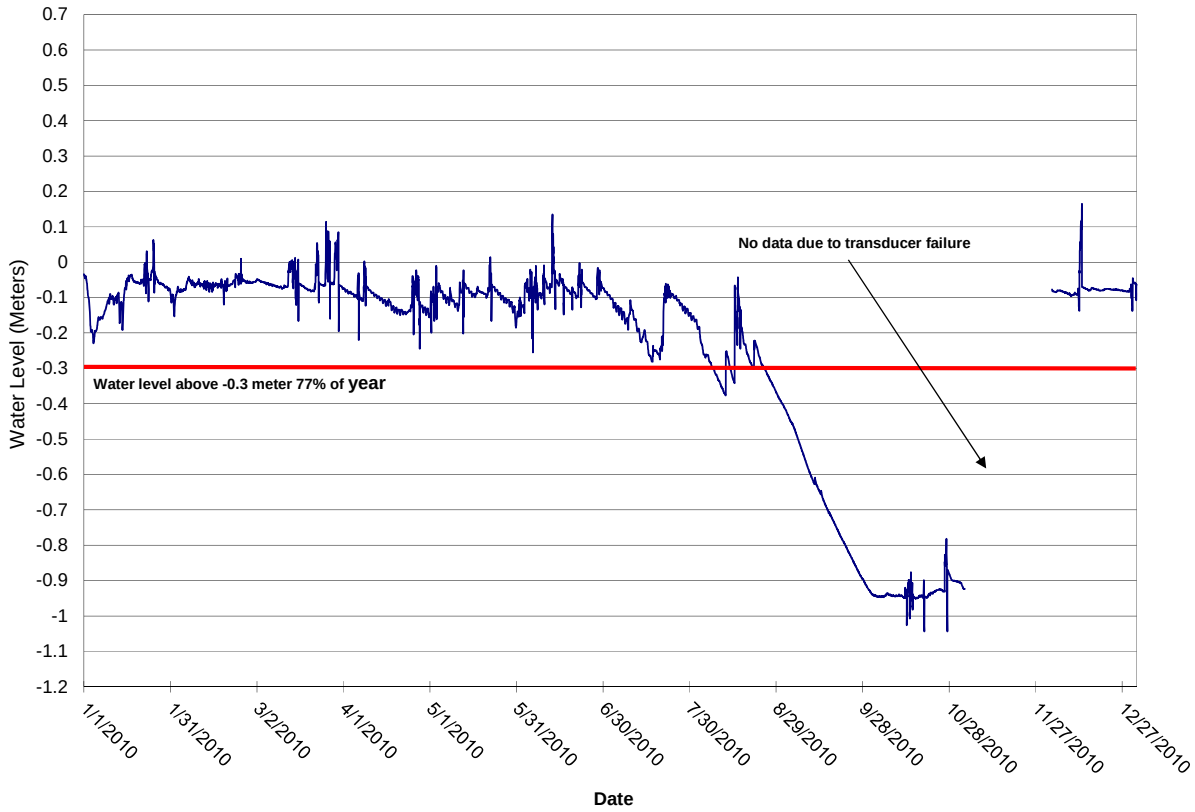

Figure D–3Q. Wetland Area WM1W4 Hydrograph

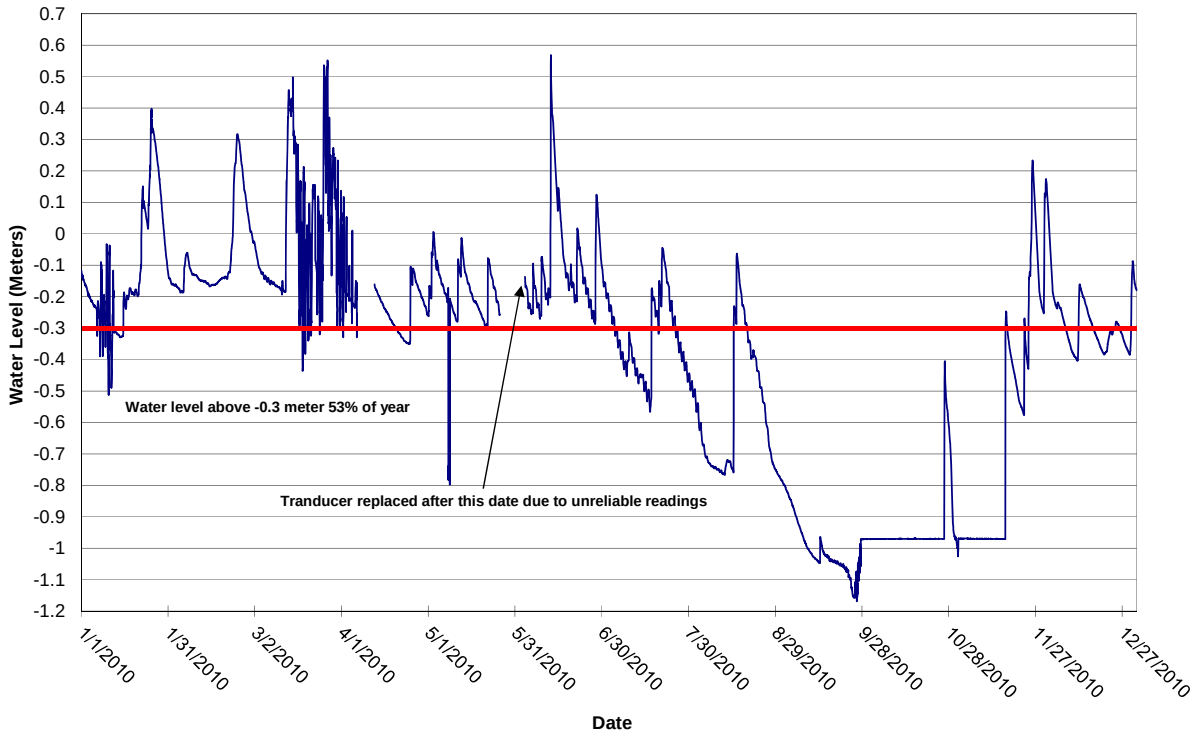

Figure D–3R. Wetland Area WM1W5 Hydrograph

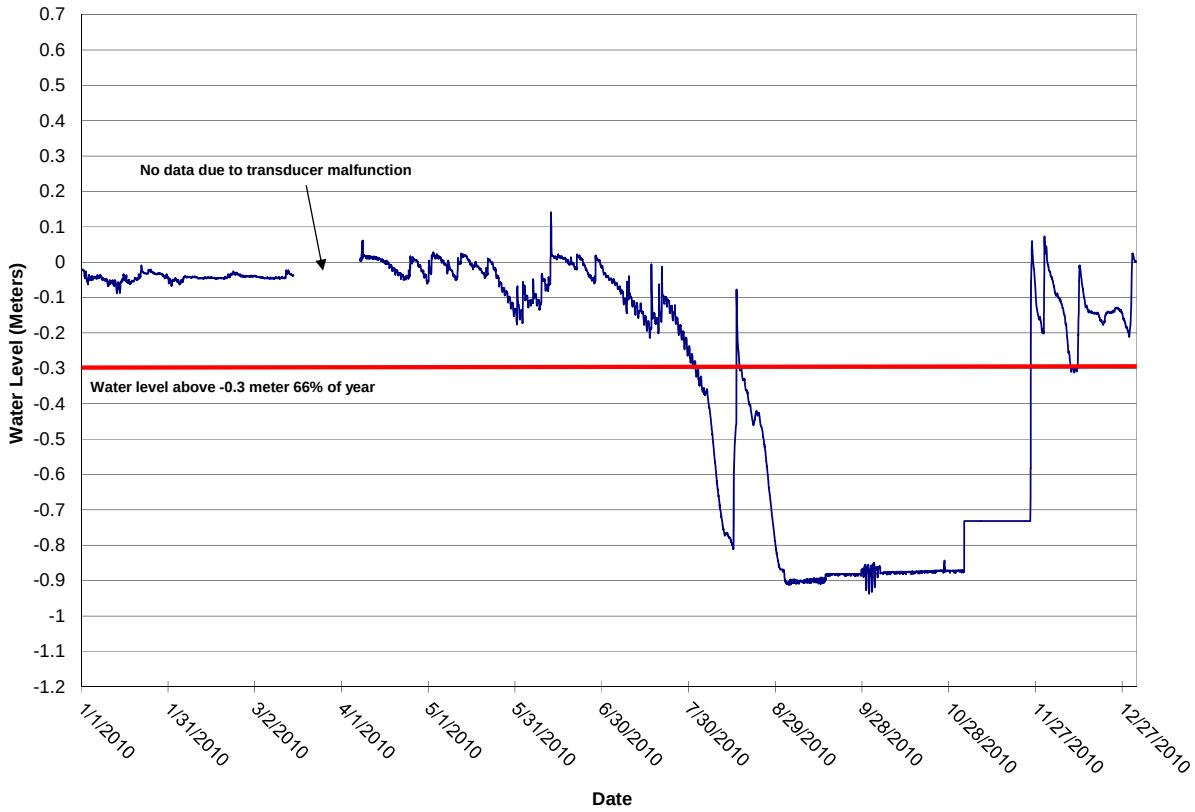

Figure D–3S. Wetland Area WM1W6 Hydrograph

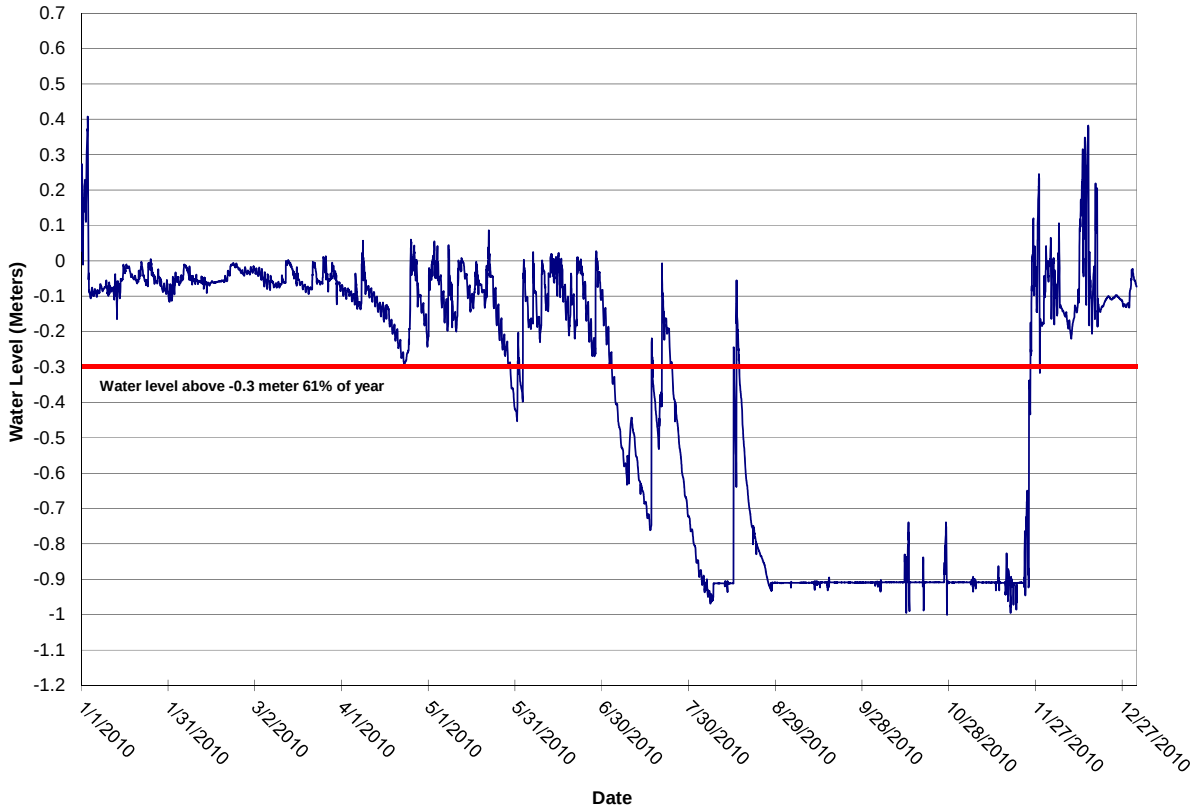

Figure D–3T. Wetland Area WM1W7 Hydrograph

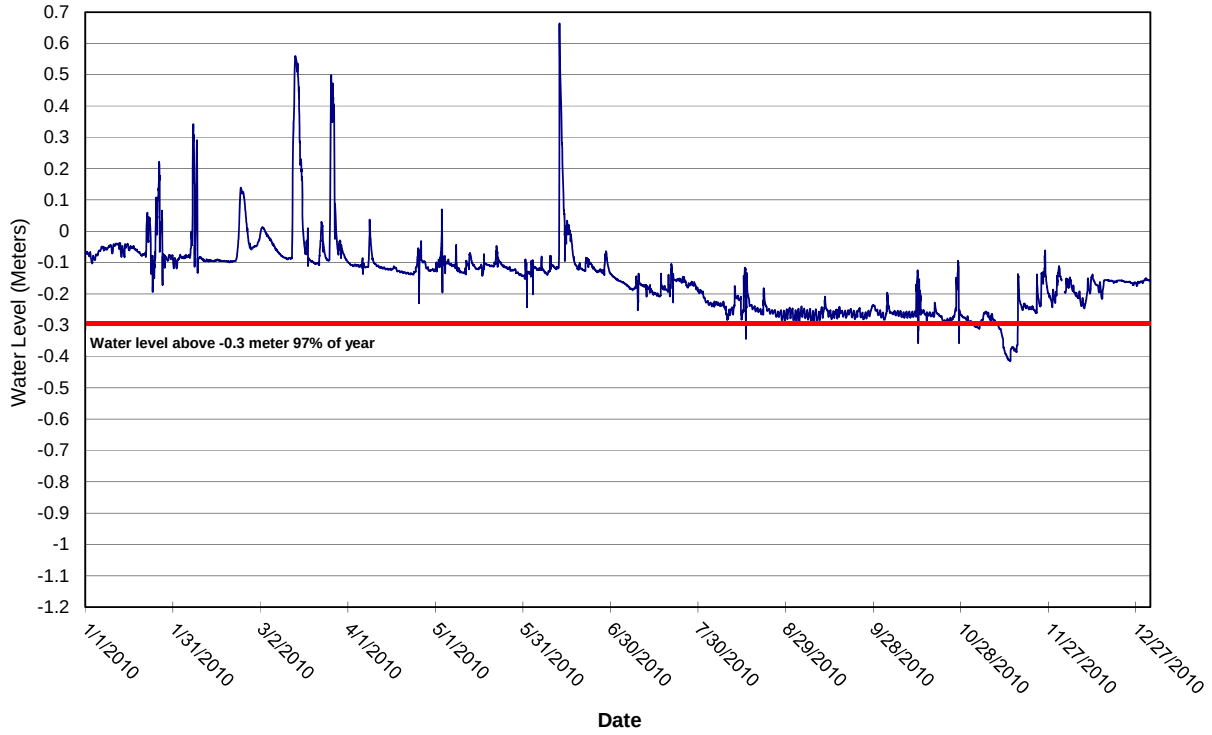

Figure D–3U. Wetland Area WM2W1 Hydrograph

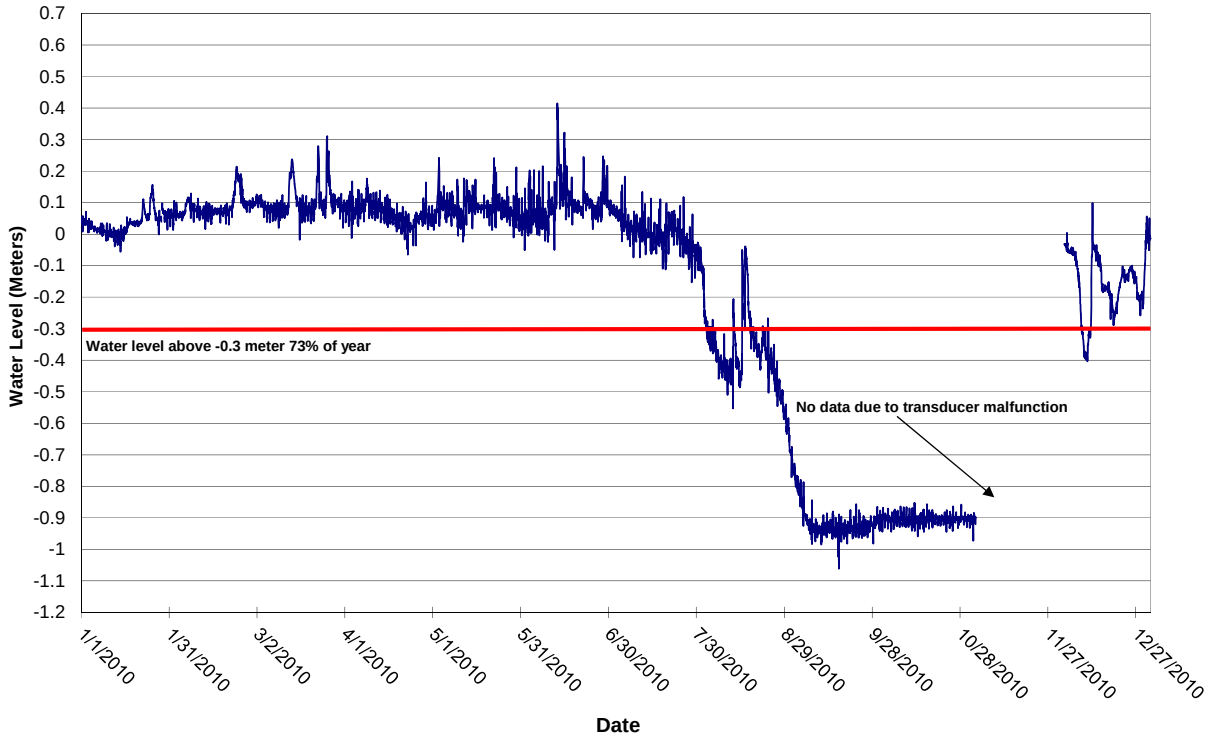

Figure D–3V. Wetland Area WM2W2 Hydrograph

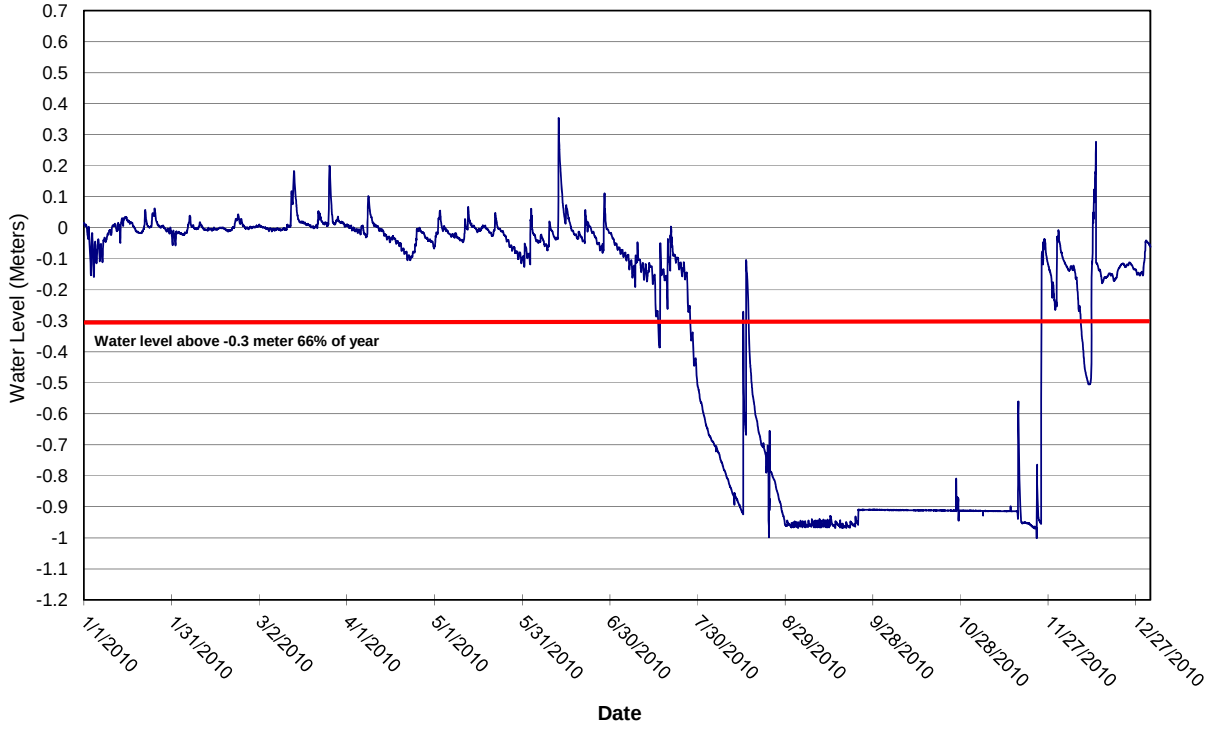

Figure D–3W. Wetland Area WM2W3 Hydrograph