

Montana Ecological Integrity Assessment Field Form 2018

| ASSESSMENT AREA (AA) INFORMATION | | | | |
|---|-------------------------------|---|--|---|
| Project Name | | Site Visit # | Date(s) | |
| Site ID | | Level 2 <input type="radio"/> Level 3 <input type="radio"/> | Observer(s) | |
| Site Name | | | | |
| County | Nearest Town | | | |
| General Land Ownership | | Mitigation wetland? Y N | | |
| Specific Ownership | | Pre-construct. Visit # _____ Post-construct. Visit # _____ | | |
| Site Access: | | Data Availability: | | |
| <input type="radio"/> Public | <input type="radio"/> Private | <input type="radio"/> Unrestricted | <input type="radio"/> Restricted | <input type="radio"/> All <input type="radio"/> Spatial Only <input type="radio"/> None |
| Comments | | Comments | | |
| Slope & Aspect: Measure aspect while pointing downhill/down the slope | | % Upland in AA (CAN'T be >10%): | | |
| Slope 1 (°) | Aspect 1 (°) | | AA is: <input type="checkbox"/> Centered on original target coordinates <input type="checkbox"/> Shifted and >60m from original target coordinates <input type="checkbox"/> Shifted but ≤60 m from original target coordinates <input type="checkbox"/> No original target coordinates | |
| Slope 2 (°) | Aspect 2 (°) | | | |
| Slope 3 (°) | Aspect 3 (°) | | | |
| Target AA Center Coordinates: | | | | |
| Latitude (Y) | | Longitude (X) | | Dimensions of AA: <input type="checkbox"/> 40 m radius circle <input type="checkbox"/> Rectangle, width _____ length _____ <input type="checkbox"/> Other, describe below and take a GPS track |
| GPS Unit Info. & Unit #: | | | | |
| Actual AA Center Coordinates: | | | | |
| Waypoint ID | | Latitude (Y) | Longitude (X) | |
| Datum | UTM Zone | Elevation (m) | | Accuracy (m) |
| If AA is a rectangle, record GPS coordinate information below: | | | | |
| AA Corner # | Waypoint ID | Latitude (Y) | Longitude (X) | Accuracy (m) |
| #1 | | | | |
| #2 | | | | |
| #3 | | | | |
| #4 | | | | |
| AA Track | Track Name: | Comments: | | |
| General AA description, including surrounding uplands | | | | |
| | | | | |
| Directions to AA: | | | | |
| | | | | |

REQUIRED SITE PHOTOS

Camera Info (make/model/ID #/color):

| From AA Center | Photo # | Aspect (°) | Description | From AA Center | Photo # | Aspect (°) | Description |
|----------------|---------|------------|-------------|----------------|---------|------------|-------------|
| North | | 0 | | South | | 180 | |
| East | | 90 | | West | | 270 | |

| Overview | Photo # | Aspect (°) | Waypoint ID | Latitude (Y) | Longitude (X) | Accuracy (m) |
|----------------------------|---------|------------|-------------|--------------|---------------|--------------|
| Location #1 w/ Photo Board | | | | | | |

Description

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|----------------------|--|--|--|--|--|--|
| Location #1 No Board | | | | | | |
|----------------------|--|--|--|--|--|--|

Description

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|---------------------------------------|--|--|--|--|--|--|
| Location #2 w/ Photo Board (optional) | | | | | | |
|---------------------------------------|--|--|--|--|--|--|

Description

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|---------------------------------------|--|--|--|--|--|--|
| Location #2 No Photo Board (optional) | | | | | | |
|---------------------------------------|--|--|--|--|--|--|

Description

OPTIONAL SITE PHOTOS

Optional photos may include interesting features in the AA or the buffer (i.e., inlets/outlets, springs, beaver dams, AA corner photos from polygonal AAs, additional overview photos, culverts), human impacts (ATV tracks, roads), rare or unknown plants, animals, field crews, etc.

| Optional Photos | Photo # | Aspect (°) | Waypoint ID | Latitude (Y) | Longitude (X) | Accuracy (m) |
|-----------------|---------|------------|-------------|--------------|---------------|--------------|
| Other | | | | | | |

Description

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| Other | | | | | | |
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Description

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| Other | | | | | | |
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| Other | | | | | | |
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Description

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| Other | | | | | | |
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Description

Soil Profile Photos – See Pages 17-18.

LEVEL 3 EIAs ONLY: Level 3 Vegetation Module Photos – See Page 21.

ECOLOGICAL CLASSIFICATION

Site Geography (check one in each field):

| Topographic Position | % AA Covered by Standing Water | Estimated Depth Standing Water | Surface Water Permanence |
|----------------------|--------------------------------|--------------------------------|--------------------------|
| slope | none | N/A (check if not water in AA) | Saturated |
| toeslope | 1-25% | < 0.5 m | Permanent |
| basin floor | 26-50% | 0.5 - < 1 m | Semipermanent |
| floodplain | 51-75% | 1 - 2 m | Seasonal |
| valley bottom | 76-100% | > 2 m | Temporary |

| | |
|--|---|
| Has this wetland been anthropogenically altered (impounded, diked, ditched, drained, etc.)? Comments: YES <input type="radio"/> NO <input type="radio"/> | Has this wetland been artificially created, enhanced, or restored? Comments: YES <input type="radio"/> NO <input type="radio"/> |
|--|---|

Ecological System (check one - use Key to Ecological Systems):

| | | |
|--|--|--|
| <input type="checkbox"/> GP Prairie Pothole | <input type="checkbox"/> NRM Wooded Vernal Pool | <input type="checkbox"/> RM LM-F Riparian Woodland/Shrubland |
| <input type="checkbox"/> IM Prairie Pothole | <input type="checkbox"/> NRM Conifer Swamp | <input type="checkbox"/> NRM LM Riparian Woodland/Shrubland |
| <input type="checkbox"/> WGP Saline Depression | <input type="checkbox"/> RM S-M Riparian Shrubland | <input type="checkbox"/> RM A-M Wet Meadow |
| <input type="checkbox"/> WGP Open Depression | <input type="checkbox"/> RM S-M Riparian Woodland | <input type="checkbox"/> WGP Wooded Draw/Ravine |
| <input type="checkbox"/> WGP Closed Depression | <input type="checkbox"/> NWGP Riparian | <input type="checkbox"/> IM Basin Greasewood Flat |
| <input type="checkbox"/> NAAW Emergent Marsh | <input type="checkbox"/> NWGP Floodplain | <input type="checkbox"/> RM S-M Fen (see Soil p.15-16) |

Confidence Level: Very High High Medium Low

What attributes led you to this Ecological System in the key?

HGM Class (check one - use Key to Hydrogeomorphic Classes—then check with description below):

Slope – occurs on a slope (slope can be very gradual or nearly flat) where groundwater is the primary hydrologic input, and water flows in one direction, discharging as sheet flow or subsurface flow via seeps or springs with no channel formation. Small rivulets may form to direct water away from wetland, but no channel will convey surface flow into wetland and these rivulets are not subject to overbank flooding. Water does not pond except occasionally in small depressions or behind hummocks. Examples: fens, shrub-carrs, swales.

Lacustrine Fringe – occurs adjacent to large lakes (>8 ha/>20 acres) with >30% non-vegetated, open water (>2.5m/8.2 ft deep). Water elevation of lake maintains the water table in the wetland, though wetland may receive groundwater from upslope wetlands. Vegetation experiences bidirectional flow as result of vertical water level fluctuations of lake. Examples: fringe wetlands around Flathead Lake, Canyon Ferry Lake, Ennis Lake.

Depressional – occurs in topographic depression that allows for accumulation of surface water or surface is saturated at some time during the year. May or may not have an inlet or outlet. If outlet present, it will be higher than the bottom of the depression. Examples: prairie potholes, playas, vernal pools, oxbows that do not flood regularly.

Flat – occurs in broad, flat plains with precipitation the dominant source of water; groundwater and surface runoff are not major hydrologic sources. Usually underlain by a hardpan soil layer which prevents percolation of water into the soil. Example: greasewood flat.

Riverine (floodplain) – occurs in active valley or floodplain associated with a stream/river channel that is inundated by overbank flooding at least every two years. Dominant hydrologic sources are overbank flooding or hyporheic (subsurface moving water adjacent/connected to stream) connections between the stream channel and wetlands. Oxbows and other wetlands in the floodplain receiving floodwaters or hyporheic water as their primary hydrologic source are Riverine. Examples: willow/alder thickets along streams, oxbows that flood regularly.

Confidence Level: Very High High Medium Low

What attributes led you to this HGM Class in the key?

Cowardin Classification: Record ALL Cowardin zones present in AA in the table at the bottom of the page (use Appendix C for definitions & RESTRICTIONS to identify Cowardin Codes. Choose one code from each category to create each Cowardin Code.

| | | | | | |
|---|---|---|---|--|---|
| SYSTEM | RIVERINE (R): wetlands & deep water contained within stream/river channel, unless vegetated with non-pioneer sp. | LACUSTRINE (L): Either 1) ≥8ha (20 ac), in a depression or dammed river channel, & <30% veg; OR 2) ≥2.5m deep at low water | PALUSTRINE (P): ALL of following: <2.5m deep at low water, <8ha (20 ac), & no wave/bedrock shores *no subsystems | | |
| SUBSYSTEM | RIVERINE | | | LACUSTRINE | |
| | Lower Perennial (2): low gradient, water all year, sand/mud substrate, well-developed floodplain | Upper Perennial (3): high gradient, water all year, rock/cobble/gravel substrate, little floodplain development | Intermittent (4): high or low gradient, flowing water only part of year, substrate variable-may be vegetated | Limnetic (1): ≥2.5m at low water | Littoral (2): near shore & <2.5m deep at low water OR max depth of nonpersistent emergents |
| CLASS & SUBCLASS *IF trees <30% & shrubs <30%, but trees + shrubs ≥30% = SS | CLASS (Use Soil Appendix for fragment size chart) | | | SUBCLASS | |
| | Rocky Shore (RS): stones, boulders, bedrock ≥75% cover & <30% vegetation | | | Bedrock (RS1/RB1/SB1) | Rubble (RS2/RB2/SB2) |
| | Rock Bottom (RB): stones, boulders, bedrock ≥75% cover | | | Cobble-gravel (US1/UB1/SB3) | Sand (US2/UB2/SB4) |
| | Streambed (SB): R4 channels only | | | | |
| | Unconsolidated Bottom (UB): <30% veg cover, ≥25% substrate < stone size | | | Mud (US3/UB3/SB5) | Organic (US4/UB4/SB6) |
| | Unconsolidated Shore (US): <30% veg cover (other than pioneer sp.), <75% substrate is stones, boulders, bedrock | | | Vegetated (pioneer sp. only) (US5/SB7) | |
| | Aquatic bed (AB): floating/submerged plants are tallest layer with ≥30% cover | | | Algal (1) | Aquatic moss (2) |
| | | | | Rooted vascular (3) | Floating vascular (4) |
| | Moss-Lichen (ML): moss + lichens ≥30% cover AND EM + SS + FO <30% cover | | | Moss (1) | Lichen (2) |
| | Emergent (EM): herbaceous, erect, rooted veg are tallest layer with ≥30% cover | | | Persistent (1) | Nonpersistent (2) |
| | Scrub-shrub (SS): shrubs, saplings &/or short trees (≤6m) are tallest layer with ≥30% cover | | | Broad-leaf decid. (1) | Needle-leaf decid. (2) |
| | | | | Broad-leaf evergr. (3) | Needle-leaf evergr. (4) |
| Forested (FO): trees (>6m) are tallest layer with ≥30% cover | | | Dead (5) | | |
| WATER REGIMES (MINERAL SOIL) | Intermittently flooded (J): substrate usually exposed; flooding irregular, may have weeks, months, years between flooding | | | | |
| | Temporarily flooded (A): surface water for few days to weeks; water table usually well below surface most of growing season | | | | |
| | Seasonally flooded (C): surface water present at least a month, dry by end of growing season; soil saturation highly variable | | | | |
| | Semipermanently flooded (F): surface water throughout growing season most years, when absent water table at or near surface | | | | |
| | Intermittently exposed (G): surface water covers substrate throughout year except in years of extreme drought | | | | |
| | Permanently flooded (H): surface water covers substrate throughout the year in all years | | | | |
| | Artificially flooded (K): amount & duration of flooding controlled by artificial means: pumps, siphons, dikes, berms, dams | | | | |
| WATER REGIMES (ORG. SOIL) | Seasonally saturated (B): saturated at or near surface most of growing season, but unsaturated by end of season most years | | | | |
| | Continuously saturated (D): saturated at or near surface throughout year; can have surface water in shallow depressions | | | | |
| | Seasonally flooded-saturated (E): surface water present >1mo, absent by end of growing season; remains saturated at/near surface | | | | |
| MODIFIERS | Beaver (b) | Diked/impounded (h) | Partially ditched/drain (d) | Excavated (x) – For basins or channels | |
| | Farmed (f) | Artificial substrate (r) | Managed (m) – Water inputs controlled for specific mgmt. | Spoil (s) – Spoil = primary substrate | |
| NOTE: Not all Cowardin systems, subsystems, classes, subclasses, and water regimes are compatible. For example, intermittent streams (R4) are limited to the streambed (SB) class and its 7 subclasses. Some subclasses work with more than one class. You <u>must</u> use the Water Regime Restriction Table provided in Appendix C to make sure your codes are legal. | | | | Be sure to coordinate all Cowardin Codes in this table with the Cowardin Codes in the Plant Zones table on p. 5! | |
| SYSTEM | SUBSYSTEM | CLASS | SUBCLASS | Cowardin/Rp Code | % of AA |
| RIPARIAN (Rp): next to rivers or lakes, vegetation species different or just more robust than adjacent upland vegetation | 1 Lotic 2 Lentic | FO Forested | 5 Dead 6 Deciduous 7 Evergreen 8 Mixed | | |
| | | SS Scrub-shrub) | | | |
| | | EM Emergent | | | |
| | | | | | |
| Confidence Level: <input type="radio"/> Very High <input type="radio"/> High <input type="radio"/> Medium <input type="radio"/> Low | | | | | |
| What attributes led you to the Cowardin/Riparian Code(s)? | | | | | |
| | | | | + Upland (see p. 1) | |
| | | | | TOTAL | 100% |

PLANT ZONES WITHIN ENTIRE ASSESSMENT AREA

Identify and describe the plant zones that occur within the assessment area. Identify the dominant plant species within each stratum. To be considered a separate plant zone, it must make up more than 5% of the AA (e.g., 250 m² for an AA of 0.5 ha).

| Height Class | | | | Cover Class | | | |
|--------------|---------|----|----------|-------------|--------|----|---------|
| 1 | <0.5 m | 6 | 10-<15 m | 1 | Trace | 6 | 10-<25% |
| 2 | 0.5-1 m | 7 | 15-<20 m | 2 | <1% | 7 | 25-<50% |
| 3 | 1-<2 m | 8 | 20-<35 m | 3 | 1-<2% | 8 | 50-<75% |
| 4 | 2-<6 m | 9 | 35-<50 m | 4 | 2-<5% | 9 | 75-<95% |
| 5 | 6-<10 m | 10 | ≥50 m | 5 | 5-<10% | 10 | ≥95% |

| Stratum | | Avg. Water Depth | | Biophysical Setting for Each Plant Zone | |
|---|--|------------------|-------------|---|--|
| FO | Forest/Woodland (Trees/Shrubs >6 m) | 1 | Dry | AB | Aquatic Bed |
| SH | Shrubland (Shrubs 0.5-6 m) | 2 | Moist | ShMa | Shallow Marsh |
| H | Herbaceous (e.g., Graminoids, Forbs, Ferns) | 3 | Saturated | DeMa | Deep Marsh |
| DS | Dwarf Shrubland (<0.5 m) | 4 | < 5 cm | SeMe | Sedge Meadow |
| NV | Nonvascular (Bryophytes, cryptogamic crusts) | 5 | 5-<10 cm | WeMe | Wet Meadow |
| SD | Standing Dead (>45° angle) | 6 | 10-<20 cm | WWMP | Wet to Wet-Mesic Prairie |
| SV | Sparsely Vegetated (including bare ground) | 7 | 20-<30 cm | SFM | Seasonally Flooded Mudflat |
| CW | Coarse Woody Debris (≥ 7.6 cm diameter) | 8 | 30-<40 cm | SFBDF | Seasonally Flooded Basin/Depression/Flat |
| FW | Fine Woody Debris (≤ 7.5 cm diameter) | 9 | 40-<50 cm | HF | Herbaceous Fen |
| V | Vines | 10 | 0.5-<0.75 m | SSF | Scrub-Shrub Fen |
| Collecting unknown plant specimens: collect a specimen to press, assign it a unique number (U1, U2, etc) and record that in the Collect # column for each Plant Zone. | | 11 | 0.75-<1 m | SSW | Coniferous Fen |
| | | 12 | 1-<1.5 m | CF | Coniferous Wetland |
| | | 13 | 1.5-<2.5 m | CW | Coniferous Fen |
| | | 14 | ≥2.5 m | FF | Floodplain Forest |
| | | | | SD | Saline Depression |

Summary of Each Plant Zone Within the AA

| Plant Zone | % of AA | Cowardin/Riparian Code | Avg. H2O Depth | Biophysical Setting | Comments |
|--------------|-------------|--|----------------|---------------------|----------|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| Other* | | --- | | --- | |
| Upland | | --- | --- | --- | |
| TOTAL | 100% | Coordinate Plant Zone codes & %'s w/Cowardin info (p.4) *Other = Zones <5% of AA + non-vegetated classes | | | |

Plant Zone #1 (indicate location on site drawing)

| Collect # | Stratum | Dominant Species | Height Class | Cover Class | Comments |
|-----------|---------|------------------|--------------|-------------|----------|
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| Plant Zone #2 (indicate location on site drawing) | | | | | |
|---|---------|------------------|--------------|-------------|----------|
| Collect # | Stratum | Dominant Species | Height Class | Cover Class | Comments |
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| Plant Zone #3 (indicate location on site drawing) | | | | | |
| Collect # | Stratum | Dominant Species | Height Class | Cover Class | Comments |
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| Plant Zone #4 (indicate location on site drawing) | | | | | |
| Collect # | Stratum | Dominant Species | Height Class | Cover Class | Comments |
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| Plant Zone #5 (indicate location on site drawing) | | | | | |
| Collect # | Stratum | Dominant Species | Height Class | Cover Class | Comments |
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ASSESSMENT AREA DRAWING – Darken the below circle IF it's used for AA assessment. Otherwise, draw own AA dimensions.

Check these off as they are added to the AA drawing:

North arrow

Plant zones

Surface water inlets and outlets w/SOLID arrows

Veg plot/modules

Soil pits (S1 & S2)

Groundwater/subsurface drainage w/DASHED arrows

Anthropogenic features, i.e., culverts, berms, roads...

***ALSO INDICATE ALL PLANT ZONES ON AERIAL PHOTO, IF POSSIBLE**



Notes:

Blank space for notes.

List of Physical Patch Types within the Assessment Area

NO PHYSICAL PATCH TYPES PRESENT IN AA:

| PHYSICAL PATCH TYPE | Cover Class | Comments |
|--|-------------|----------|
| Cover Classes 1: trace 2: <1% 3: 1-<2% 4: 2-<5% 5: 5-<10% 6: 10-<25% 7: 25-<50% 8: 50-<75% 9: 75-<95% 10: ≥95% | | |
| Open water-pond or lake: Medium to large natural water body | | |
| Open water -pools: Areas that hold stagnant or slow moving water from groundwater discharge but are not associated with a defined channel. | | |
| Open water-river/stream: Areas of flowing water associated with a sizeable channel. | | |
| Open water-small rivulet: Areas of flowing water associated with a narrow stream channel. | | |
| Open water-oxbow/backwater channel: Areas holding stagnant or slow moving water that have been partially or completely disassociated from the primary river channel. | | |
| Open water-tributary/secondary channel: Areas of flowing water entering the main channel from a secondary source. | | |
| Open water-beaver pond: Areas that hold stagnant or slow moving water behind a beaver dam. | | |
| Active beaver dam: Debris damming a stream clearly constructed by beaver (note gnawed ends of branches) | | |
| Beaver canals: Canals cut through emergent vegetation by beaver. | | |
| Braided river channel: River channel consisting of a network of small channels separated by small and often temporary islands or bars. | | |
| Adjacent or onsite springs/seeps: Localized point of emerging groundwater, often on or at the base of a sloping hillside. | | |
| Debris jams/woody debris: Aggregated woody debris in a stream channel deposited by high flows. | | |
| Deadfall/woody debris: Aggregated clumps of coarse woody debris from dead or downed tree or large shrubs. | | |
| Pool/riffle complex: Deep, slow-moving pools alternating with shallow, fast-moving riffles along the relatively straight course of a stream or river. | | |
| Point bars: A low ridge of sediment (sand or gravel) formed on the inner bank of a meandering stream. | | |
| Bank slumps or undercut banks: A bank slump is the portion of a stream or other wetland bank that has broken free from the rest of the bank but has not eroded away. Undercut banks are areas along a stream bank or shoreline of a wetland that have been excavated by waves or flowing water. | | |
| Mudflats: An accumulation of mud at the edge of shallow waters, such as a lake or pond. Often intermittently flooded or exposed. | | |
| Salt flat/alkali flat: Dry open area of fine-grained sediment and accumulated salts. Often wet in the winter months or with heavy precipitation. | | |
| Animal mounds or burrows: Mounds or holes associated with animal foraging, denning, predation, or other behaviors. | | |
| Plant hummocks: A mound composed of herbaceous plant material resulting in a raised pedestal of persistent roots or rhizomes. | | |
| Tree hummocks: Raised mounds of tree roots surrounding a tree, often with soil and debris, on which various plants often grow. | | |
| Water tracks/hollows: Depressions between hummocks or mounds that remain permanently saturated or inundated with slow moving surface water. | | |
| Natural island: Naturally occurring islands surrounded by water. Island can be dominated by either wetland or upland vegetation. | | |
| Anthropogenic island: Island created by artificial means, often for nesting waterfowl. | | |
| Floating mat: Mats of peat held together by roots and rhizomes of sedges. Floating mats are underlain by water and /or very loose peat. | | |
| Marl/limonite beds: Marl is a calcium carbonate precipitate often found in calcareous fens. Limonite forms in iron-rich fens when iron precipitates from the groundwater incorporating organic matter. | | |
| Other: | | |

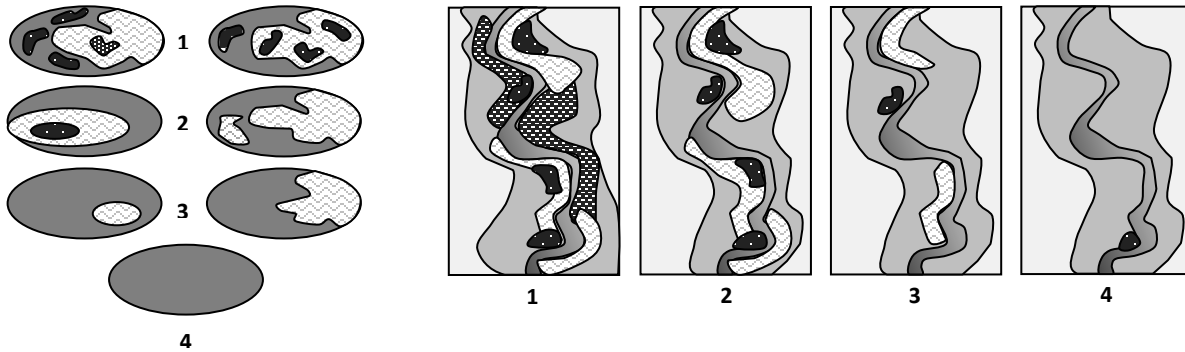
1. Landscape Context Metrics —Circle the applicable number

| LANDSCAPE CONTEXT | | | |
|--|--|---|---------------------------------------|
| Landscape Connectivity within 200 m of the AA perimeter | | | |
| Type of Wetland (check one): | | Non-Riverine <input type="radio"/> | Riverine <input type="radio"/> |
| <i>Use the site map to select the statement that best describes the landscape connectivity within a 200 m envelope around the AA perimeter (non-riverine wetlands) or within a 200 m envelope upstream and downstream of the AA perimeter (riverine wetlands).</i> | Intact: AA embedded in >90-100% unfragmented, natural landscape. | | 1 |
| | Variegated: AA embedded in >75-90% unfragmented, natural landscape. | | 2 |
| | Fragmented: AA embedded in >50-75% unfragmented, natural landscape. | | 3 |
| | Severely fragmented: AA embedded in 25-50% unfragmented, natural landscape. | | 4 |
| | Relictual: AA embedded in <25 % unfragmented, natural landscape. | | 5 |
| Buffer Length (Perimeter) | | | |
| <i>Select the statement that best describes the buffer length around the AA perimeter.</i> | A buffer of at least 30 m occurs around 76-100% of the AA perimeter. | | 1 |
| | A buffer of at least 30 m occurs around 51-75% of the AA perimeter. | | 2 |
| | A buffer of at least 30 m occurs around 25-50% of the AA perimeter. | | 3 |
| | A buffer of at least 30 m occurs around <25% of the AA perimeter, OR NO BUFFER EXISTS. | | 4 |
| Buffer Width: Select the statement that best describes the buffer width of the AA. Estimate width up to 200 m from AA perimeter at eight evenly spaced intervals. Draw a 'pie' on your aerial photo and determine buffer width for each section. | | | |
| N | S | Average buffer width between edge of the AA and the edge of the buffer is >200 m. | 1 |
| NE | SW | Average buffer width between edge of AA and the edge of the buffer is >100-200 m. | 2 |
| E | W | Average buffer width between edge of the AA and the edge of the buffer is 50-100 m. | 3 |
| SE | NW | Average buffer width between edge of the AA and the edge of the buffer is <50 m, OR no buffer exists. | 4 |
| Average Buffer Width: _____ | | | |
| Buffer Condition within 200 m of the AA perimeter | | | |
| <i>Select the statement that best describes the plant species composition within a 200 m envelope around the AA perimeter.</i> | Abundant (>95%) native vegetation cover and little or no (<5%) cover of non-native plants. | | 1 |
| | Substantial (>75–95%) native vegetation cover and low (5–25%) cover of non-native plants. | | 2 |
| | Moderate (50-75%) native vegetation cover. | | 3 |
| | Low (<50%) cover of native vegetation, OR NO BUFFER EXISTS. | | 4 |
| <i>Select the statement that best describes the extent of soil disturbance composition within a 200 m envelope around the AA perimeter.</i> | Soils are intact. | | 1 |
| | Soils are slightly to moderately disturbed. | | 2 |
| | Soils are moderately to extensively disturbed. | | 3 |
| | Soils are highly disturbed OR ground is unnaturally bare, OR NO BUFFER EXISTS. | | 4 |
| <i>Select the statement that best describes the extent of trash or evidence of human visitation within 200 m of the AA perimeter.</i> | No trash present OR no evidence of human visitation or recreation. | | 1 |
| | Little trash OR evidence of minor human visitation or recreation. | | 2 |
| | Moderate or greater amounts of trash OR evidence of moderate human visitation/recreation. | | 3 |
| | Excessive amounts of trash OR evidence of high intensity human visitation/recreation, OR NO BUFFER EXISTS. | | 4 |
| Landscape Comments: | | | |

2. Vegetation Metrics—Circle the applicable number

| VEGETATION | | |
|--|---|----------|
| Relative cover of native plant species within the AA | | |
| <p>Select the statement that best describes the relative cover of native plant species within the AA.</p> | >99% of the vegetation cover within the AA is comprised of native vegetation. | 1 |
| | 95-99% of the vegetation cover within the AA is comprised of native vegetation. | 2 |
| | 80-94% of the vegetation cover within the AA is comprised of native vegetation. | 3 |
| | 50-79% of the vegetation cover within the AA is comprised of native vegetation. | 4 |
| | <50% of the vegetation cover within the AA is comprised of native vegetation. | 5 |
| Relative cover of listed noxious weed species within the AA (see State/County Noxious Weed list) | | |
| <p>Select the statement that best describes the relative cover of listed noxious weed species within the AA.</p> <p>Identify and rank the three most common noxious weed species observed in the AA.</p> <p>1) _____</p> <p>2) _____</p> <p>3) _____</p> | No noxious weed species are present in the AA. | 1 |
| | <1-3% of the vegetation cover within the AA is comprised of noxious weed species. If weeds occur in patches, then patches are small & isolated (1-2 patches) within the AA. | 2 |
| | >3-10% of the vegetation cover within the AA is comprised of noxious weed species. If weeds occur in patches, then patches are moderate in size and common (3-5 patches) within the AA. | 3 |
| | >10% of the vegetation cover within the AA is comprised of noxious weed species. If weeds occur in patches, then patches are relatively large and abundant (>5 patches) within the AA. | 4 |
| Relative cover of aggressive graminoids within the AA | | |
| <p>Select the statement that best describes the relative cover of aggressive graminoids within the AA.</p> <p>Identify and rank the three most common aggressive graminoids observed in the AA.</p> <p>1) _____</p> <p>2) _____</p> <p>3) _____</p> | No aggressive graminoid species are present in the AA. | 1 |
| | Aggressive graminoids are present in the AA, but with low cover (<10% relative cover of cattails or <5% cover of reed canarygrass, common reed, smooth brome, Kentucky bluegrass, common timothy, or meadow foxtail). | 2 |
| | Aggressive graminoids are common in the AA (10-25% relative cover of cattails or 5-10% relative cover of reed canarygrass, common reed, smooth brome, Kentucky bluegrass, common timothy, or meadow foxtail). | 3 |
| | Aggressive graminoids are abundant in the AA (>25-50% relative cover of cattails or 10-25% relative cover of reed canarygrass, common reed, smooth brome, Kentucky bluegrass, common timothy, or meadow foxtail). | 4 |
| | Aggressive graminoids are dominant in the AA (>50% relative cover of cattails or >25% relative cover of reed canarygrass, common reed, smooth brome, Kentucky bluegrass, common timothy, or meadow foxtail). | 5 |
| Herbaceous Litter/Woody Debris Accumulation within the AA | | |
| <p>Select the statement that best describes the herbaceous litter/woody debris accumulation of the site. Note: Woody debris only applies to sites with shrubs/trees.</p> | Site has moderate amount of fine litter/woody debris. New growth is more prevalent than previous years' growth. Layers of litter in pools or areas of topographic lows are thin. | 1 |
| | Site is characterized by small amounts of litter/woody debris, little plant recruitment | 2 |
| | Litter/woody debris is somewhat excessive. | |
| | Site has scant litter/woody debris | 3 |
| | Litter/woody debris is excessive and is blocking plant recruitment. | |
| Interspersion of Plant Zones within the AA | | |
| <p>Select the statement that best describes the patch interspersion of the site (use the associated schematics at the top of p. 11).</p> | Horizontal structure consists of a very complex array of nested or interspersed irregular biotic patches with no single dominant type. | 1 |
| | Horizontal structure consists of a moderately complex array of nested or interspersed irregular biotic patches with no single dominant type. | 2 |
| | Horizontal structure consists of a simple array of nested or interspersed irregular biotic patches with no single dominant type. | 3 |
| | Horizontal structure consists of one dominant patch type with no interspersion. | 4 |

Plant Zone Interspersion Schematic



| Woody Species Establishment and Regeneration within the AA | | |
|---|---|----------|
| <i>Select the statement that best describes woody species establishment and regeneration within the AA.</i> | Woody species are naturally uncommon or absent. | 1 |
| | All age classes of native woody species present. | |
| | Middle age group(s) absent with all other well-represented | 2 |
| | Early successional saplings only. | |
| | Seedlings and saplings and middle age group(s) absent. The stand is comprised mainly of mature species. | 3 |
| | Woody species predominately consist of relict or dying individuals | 4 |
| AA has a > 5% canopy cover of Russian Olive and/or Salt Cedar. | | |
| Tree and Shrub Utilization within the AA | | |
| <i>Select the statement that best describes the utilization of trees and shrubs in the AA.</i> | Woody species are naturally uncommon or absent. | 1 |
| | 0-5% of the available second year and older stems are browsed. | |
| | >5%-25% of the available second year and older stems are browsed. | 2 |
| | >25%-50% of the available second year and older stems are browsed. | 3 |
| | More than 50% of the available second year and older stems are browsed. | 4 |
| Vegetation Comments: | | |

3. Physicochemical Metrics—Circle the applicable number.

| PHYSICOCHEMICAL | | |
|--|---|----------|
| Soil Surface Integrity within the AA | | |
| <i>Select the statement that describes the soil surface integrity within the AA.</i> | Soil disturbance is limited to naturally caused disturbances such as flood deposition or game trails. | 1 |
| | Soil disturbance due to human causes (including livestock) is present but minimal. Depth of disturbance is limited to a few inches and does not show evidence of ponding or channeling water. Site will recover within a few years after disturbance removal. | 2 |
| | Soil disturbance due to human causes is common and will be slow to recover. Damage is not excessive and the site will recover with the removal of degrading human influences and moderate recovery times. | 3 |
| | Soil disturbance is widespread and substantially degrades the site. Water, if present, would be channeled or ponded. The site will not recover without restoration and/or long recovery times. | 4 |

| Water Quality: Select the statements that best describe the following water quality indicators within the AA. | | |
|--|--|-----|
| <i>Algae</i> | No water present in AA at time of visit. | N/A |
| | No visual evidence of degraded water quality. No potential source of water quality degradation observed. Water is clear with minimal algae growth. | 1 |
| | Some negative water quality indicators are present and/or some potential sources of water quality degradation observed. Algae are limited to small and localized areas within the wetland. Water may have a minimal greenish tint, cloudiness, or sheen. | 2 |
| | Algal growth occurs in large patches throughout the AA. Potential sources of water quality degradation are apparent. Water may have a moderate greenish tint or sheen. | 3 |
| | Algal mats may be extensive, blocking light to the bottom. Potential sources of water quality degradation are apparent. Water has strong greenish tint, sheen, or turbidity. The bottom is difficult to see during the growing season. | 4 |
| <i>Turbidity</i> | No water present in AA at time of visit. | N/A |
| | No visual evidence of degraded water quality. No potential source of water quality degradation observed. | 1 |
| | Water is slightly cloudy and/or some potential sources of water quality degradation observed, but there is no obvious source of sedimentation | 2 |
| | Water is cloudy, but the bottom is still visible. Potential sources of water quality degradation are apparent. | 3 |
| | Water is milky and/or muddy. The bottom is no longer visible. Potential sources of water quality degradation are apparent. | 4 |
| <i>Sheen (petroleum-based)</i> Note: Sheens can be caused by bacteria. When disturbed, a bacterial sheen will break up into small platelets; petroleum sheens will quickly reform. | No water present in AA at time of visit. | N/A |
| | No visual evidence of degraded water quality. No potential source of water quality degradation observed. Water is clear with no sheen. | 1 |
| | Some negative water quality indicators are present and/or some potential sources of water quality degradation observed. Sheen on the water is limited to small and localized areas within the AA. | 2 |
| | Sheen occurs in large patches throughout the surface water of the AA. Potential sources of water quality degradation are apparent. Water may have a moderate sheen. | 3 |
| | Sheen is extensive throughout the surface of the water in the AA. Potential sources of water quality degradation are apparent. Water has a strong sheen. | 4 |
| Physicochemical Comments: | | |

4. Hydrologic Metrics—Circle the applicable number.

| HYDROLOGY | | | | |
|--|--|-------------|--------------------------|--------------|
| Water Inputs into the AA | | | | |
| <i>Select the statement that best describes the water sources into the AA during the growing season.</i> | Sources are precipitation, groundwater, and/or natural runoff, or natural flow from an adjacent freshwater body, or the AA naturally lacks water in the growing season. | | | 1 |
| | Sources are mostly natural but can include occasional or small effects of modified hydrology. No large point sources or dams control the overall hydrology. | | | 2 |
| | Sources are primarily from anthropogenic sources (e.g., urban runoff, pumped water, impoundments, regulated releases through a dam). | | | 3 |
| | Natural sources have been eliminated based on the following indicators: impoundment of all possible wet season inflows, diversions of all dry-season inflows, predominance of xeric vegetation, etc. | | | 4 |
| <i>Rank major water sources observed in the AA, or observed to potentially impact the AA, starting with 1 being the most dominant through 3. Mark all others present with a 4 and those not present as NA.</i> | Natural Sources/Inflow | Rank | Discrete Inlets | Count |
| | Overbank flooding | | Channels | |
| | Alluvial storage/hyporheic flow | | Spring | |
| | Throughflow (if yes, rank in Outputs) | | Ditches | |
| | Non-channelized flow from contiguous wetland area | | Culvert | |
| | Groundwater discharge | | Pipes | |
| | Precipitation (ONLY if major hydrologic driver) | | Pumps | |
| | Snowmelt (ONLY if major hydrologic driver) | | Other/Comments: | |
| | Anthropogenic Sources/Inflow | Rank | | |
| | Irrigation run-off/ditches | | | |
| | Urban run-off | | | |
| | Pipes directly feeding into wetland | | | |
| | Culvert | | | |
| | Pumps | | | |
| Other: | | | | |
| Water Outputs from the AA | | | | |
| <i>Select the statement that best describes the water outlet of the AA during the growing season.</i> | Water leaves the site through natural runoff, natural flow, evaporation, or outlet is blocked by natural features (e.g., beaver dam), OR the site naturally lacks water in the growing season. | | | 1 |
| | Outflow is mostly natural, but there is some modification due to anthropogenic restrictions (e.g., filling or development, channelization). | | | 2 |
| | Withdrawals are primarily from anthropogenic sources, and outflow has been significantly altered by flow obstructions (culverts, paved stream crossings, impoundments, ditching). | | | 3 |
| | Natural outflow has been completely eliminated due to the following indicators: dike/levees, railroads, or roads with no culverts. | | | 4 |
| <i>Rank major water outlets observed in the AA, or observed to potentially impact the AA, starting with 1 being the most dominant through 3. Mark all others present with a 4 and those not present as NA.</i> | Natural Outflow | Rank | Discrete Outlets: | Count |
| | Channelized flow (headwater wetland) | | Channels | |
| | Recharge to adjacent stream | | Culvert | |
| | Throughflow (if yes, rank in Sources/Inflow) | | Ditches | |
| | Non-channelized flow to contiguous wetland area | | Pumps | |
| | No natural outlet | | Other/Comments: | |
| | Anthropogenic Outflow | Rank | | |
| | Culverts under roadways / trails | | | |
| | Ditches established to drain wetland | | | |
| | Natural outlet blocked/bermed | | | |
| | Water is being pumped out of wetland | | | |
| | Other: | | | |

| Hydroperiod of the AA | | | |
|---|----------|---|----------|
| Select the statement that best describes the hydroperiod of the AA. CHOOSE ONE of the following wetland types | | | |
| NON-FEN (Depressional, Lacustrine, Slope) | | FEN | |
| Hydroperiod of the AA is characterized by natural patterns of filling or inundation and drying or drawdowns. | 1 | Hydroperiod of the AA is characterized by stable, saturated hydrology, or by naturally damped cycles of saturation and partial drying. | 1 |
| The filling or inundation patterns in the AA are of greater magnitude or duration than would be expected under natural conditions, but thereafter the AA is subject to natural drawdown or drying. | 2 | Hydroperiod of the AA experiences minor altered inflows or drawdown/drying, as compared to more natural wetlands (e.g., ditching). | 2 |
| Hydroperiod of the AA is characterized by natural patterns of filling or inundation, but thereafter, is subject to more rapid or extreme drawdown or drying, as compared to more natural wetlands. OR the filling or inundation patterns in the AA are of substantially lower magnitude or duration than would be expected under natural conditions, but thereafter, the AA is subject to natural drawdown or drying. | 3 | Hydroperiod of the AA is somewhat altered by greater increased inflow from runoff, or experiences moderate drawdown or drying, as compared to more natural wetlands (e.g., ditching). | 3 |
| Both the inundation and drawdown of the AA deviate from natural conditions (either increased or decreased in magnitude and/or duration). | 4 | Hydroperiod of the AA is greatly altered by increased inflow from runoff or experiences large drawdown or drying, as compared to more natural wetlands (e.g., ditching). | 4 |
| Surface Water Connectivity of the AA | | | |
| Select the statement that best describes the surface water connectivity of the AA. CHOOSE ONE of the following wetland types | | | |
| NON-FEN (Depressional, Lacustrine, Slope) | | FEN | |
| Water, when present, has unrestricted access into or out of the wetland. There are no artificial obstructions to surface water flow. | 1 | No natural surface water connectivity with surrounding water bodies. | 1 |
| Artificial obstructions limit the access of surface water into or out of the wetland, but the limitations exist for < 50% of the AA perimeter. | 2 | Partial surface water connectivity with surrounding water bodies exists via artificial means (e.g., ditching or draining to dry the fen). | 2 |
| Artificial obstructions limit the access of surface water into or out of the wetland for 50–90% of the AA perimeter. Flood flows may exceed the obstructions, but drainage into or out of the AA is probably obstructed. | 3 | Substantial to full surface water connectivity exists via artificial means that has obvious drying effects on the peat body. | 3 |
| Artificial obstructions limit the access of surface water into or out of the wetland for >90% of the AA perimeter. | 4 | | |
| Hydrology Comments: | | | |

Onsite and Surrounding Disturbances—Indicate Scope and Impact of disturbances (see tables p. 16).

| Disturbances Observed <i>and</i> Expected to Impact the Site | Scope | | Impact | | Field Indicator Observed | LEVEL 3 EVALUATION ONLY |
|--|-------|----|--------|----|--------------------------|--|
| | 200 m | AA | 200 m | AA | | |
| Only record a Scope/Impact rating if a disturbance is present. Do not use "0" to indicate the absence of a disturbance; "0" indicates a Scope Rating. IF THERE IS NO DISTURBANCE LEAVE THE FIELD BLANK. | | | | | | |
| Transportation Disturbances | | | | | | Total length (m) within 200m buffer |
| Paved surfaces (e.g., roads, parking lots) | | | | | | |
| Unpaved roads | | | | | | |
| Railroads | | | | | | |
| Land Use Disturbances-Development or Recreation | | | | | | % 200m buffer affected |
| Domestic or commercial development | | | | | | |
| Intensively managed sports fields, golf courses | | | | | | |
| Recreation or human visitation | | | | | | |
| Filling or dumping of sediment or fill | | | | | | |
| Trash or refuse dumping | | | | | | |
| Land Use Disturbances-Agriculture | | | | | | % 200m buffer affected |
| Dryland farming (e.g., wheat, barley, etc.) | | | | | | |
| Open range livestock grazing | | | | | | |
| Horse paddock or private barnyard | | | | | | |
| Feedlot operation | | | | | | |
| Irrigated cropland | | | | | | |
| Irrigated hay pasture | | | | | | |
| Irrigation ditches affecting wetland | | | | | | |
| Permanent tree plantation | | | | | | |
| Cropland treated with pesticides | | | | | | |
| Disturbed fallow lands dominated by exotic species | | | | | | |
| Haying of native grassland | | | | | | |
| Fallow fields (no human use in past 10 years) | | | | | | |
| Fields with recent plowing or discing | | | | | | |
| Shelterbelts | | | | | | |
| Fences (score for potential to impede wildlife movement/migration) | | | | | | |
| Land Use Disturbances-Resource Extraction | | | | | | % 200m buffer affected |
| Gravel pits, open pit mining | | | | | | |
| Small scale mining activity or abandoned mines | | | | | | |
| Abandoned oil/gas wells | | | | | | |
| Oil/gas pump jacks (active) | | | | | | |
| Injection wells, tank batteries, collection facilities, or other oil/gas-associated infrastructure | | | | | | |
| Intensive logging (50-75% trees of >50 cm diameter removed) | | | | | | |
| Selective logging (<50% of trees >50 cm diameter removed) | | | | | | |

| Disturbances Observed <i>and</i> Expected to Impact the Site | Scope | | Impact | | Field Indicator Observed | LEVEL 3 EVALUATION ONLY |
|---|-------|----|--------|----|--------------------------|-------------------------|
| | 200 m | AA | 200 m | AA | | |
| Land Use Disturbances-Vegetation Removal/Conversion | | | | | | % 200m buffer affected |
| Chemical vegetation control | | | | | | |
| Evidence of intentional burning | | | | | | |
| Mechanical vegetation removal | | | | | | |
| Vegetation conversion (e.g., from shrubland to grassland) | | | | | | |
| Natural or Environmental Disturbances | | | | | | % 200m buffer affected |
| Beetle-killed <i>Pinus</i> species | | | | | | |
| Other diseased conifers | | | | | | |
| Evidence of recent fire (<5 years) | | | | | | |
| Beaver activity | | | | | | |
| Evidence of prolonged drought | | | | | | |
| Browsing of woody vegetation by native ungulates | | | | | | |
| Hydrologic Disturbances | | | | | | % 200m buffer affected |
| Upstream spring box | | | | | | |
| Impoundment of flowing water | | | | | | |
| Potential for agricultural runoff | | | | | | |
| Potential for urban runoff | | | | | | |
| Culvert | | | | | | |
| Upstream dam | | | | | | |
| Reservoir/stock pond | | | | | | |
| Weir or drop structure | | | | | | |
| Dredged inlet/outlet channel | | | | | | |
| Engineered channel (e.g., riprap) | | | | | | |
| Pumps, diversions, or ditches that move water <i>into</i> wetland | | | | | | |
| Pumps, diversions, or ditches that move water <i>out of</i> wetland | | | | | | |
| Berms/Dikes/Levees | | | | | | |

Scope and Impact Ratings

| Scope of Disturbances | | Impact of Disturbances | |
|-----------------------|---|---|--|
| 5 | Pervasive – Affects nearly all (>75%) of the envelope or AA. | 4 | Extreme – likely to extremely modify, degrade, destroy, or eliminate the wetland. |
| 4 | Large – Affects most (>50-75%) of the envelope or AA. | 3 | Serious – likely to seriously modify, degrade or reduce wetland function or condition. |
| 3 | Moderate – Affects much (>25-50%) of the envelope or AA. | 2 | Moderate – likely to moderately modify, degrade or reduce wetland function or condition. |
| 2 | Restricted – Affects some (>10-25%) of the envelope or AA. | 1 | Slight – likely to only slightly modify, degrade, or reduce wetland function or condition. |
| 1 | Small – Affects a small (>1-10%) portion of the envelope or AA. | NOTE: There is no 0 score for Impact. If you record a score for Scope you must record a score for Impact (i.e., a 0 Scope would get an Impact score of 1 at a minimum, though it could be higher). | |
| 0 | Nil – Affects little to none (≤1%) of the envelope or AA. | | |

| | | | |
|---|---|----------------------|---|
| Soil Pit #: _____ | SOIL PROFILE DATA FORM — Dig soil pit to a least 80 cm depth if possible. Draw soil pit locations on site drawing. | | |
| Plant Zone <u>OR</u> Module (circle ONE) | GPS Waypoint ID: _____ | Accuracy (m): _____ | Depth of standing water (cm) (NP=not present): _____ |
| Located in: #: _____ | Latitude (Y): _____ | Longitude (X): _____ | Depth to Saturation (cm) (NP=not present): _____ |
| | | | Depth to free water in pit (cm) (NP=not present): _____ |

SOIL PROFILE DESCRIPTION

*To determine soil texture: Rub sample b/w fingers 10x. If gritty, mineral soil. If greasy, organic. Use hand lens to est. % visible fibers: Peat: ≥40%, Mucky Peat: 16.6 - <40%, Muck: <16.6%

| Soil Layer | Depth to Lower Boundary of Layer (cm) | Mineral Soils | | Organic Soil Texture: P = Peat M = Muck MP = Mucky Peat | % Visible plant fibers | Soil Matrix Color (must be majority color)* | | | Redox Concentration Features | | | Redox Depletion Features | | | | | |
|------------|---------------------------------------|-------------------------|--|--|------------------------|---|---|---|------------------------------|--------------------|---|--------------------------|-------------------------------|------------------------|---|---|--|
| | | Soil Texture (Required) | Soil Texture Modifier (Optional - see below) | | | H** | V | C | Redox Conc. Abundance (%) | Redox Conc. Color* | | | Redox Depletion Abundance (%) | Redox Depletion Color* | | | |
| | | | | | | | | | | H** | V | C | | H** | V | C | |
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| Commonly Observed Hydric Soil Indicators (check all that apply): | Soil Profile Photos | Photo Description |
|--|---------------------|-------------------|
| A1. Histosol (≥40 cm of upper 80 cm is organic soil, i.e., P, MP, or M) | Photo # | |
| A2. Histic Epipedon (Top layer is ≥20 cm of organic soil over mineral layer) | Photo # | |
| A4. Sulfidic (rotten eggs) odor | Photo # | |
| Gleyed or Low Chroma Colors | Photo # | |
| Other | Photo # | |

| | |
|---|----------|
| Soil Texture Modifiers: *Note that these <u>ONLY</u> describe a MINERAL Soil Texture: 'Mucky' (mineral soil w/ high organic content) *Add prefix 'VERY' if 'Gravelly' (15-<35% of >2mm-7.6 cm fragments) 35-<60% fragments; Add 'Cobbly' (15-<35% of >7.6-25 cm fragments) 'EXTREMELY' if 60-<90% 'Stony' (15-<35% of >25-60 cm fragments) If ≥90%, layer is Gravel, 'Bouldery' (15-<35% of >60 cm fragments) Cobble, Stone, Boulder. | Remarks: |
|---|----------|

*To determine the soil matrix color: If soils are dry, wet sample until it no longer changes color. Always have the sun at your back when comparing to color chart to find best match.
 ** Munsell Soil Color Chart: H = Hue, V = Value, C = Chroma

| | | | |
|--|---|----------------------|---|
| Soil Pit #: _____ | SOIL PROFILE DATA FORM — Dig soil pit to a least 80 cm depth if possible. Draw soil pit locations on site drawing. | | |
| Located in: Plant Zone <u>OR</u> Module (circle ONE) #: _____ | GPS Waypoint ID: _____ | Accuracy (m): _____ | Depth of standing water (cm) (NP=not present): _____ |
| | Latitude (Y): _____ | Longitude (X): _____ | Depth to Saturation (cm) (NP=not present): _____ Depth to free water in pit (cm) (NP=not present): _____ |

SOIL PROFILE DESCRIPTION

*To determine soil texture: Rub sample b/w fingers 10x. If gritty, mineral soil. If greasy, organic. Use hand lens to est. % visible fibers: Peat: ≥40%, Mucky Peat: 16.6 - <40%, Muck: <16.6%

| Soil Layer | Depth to Lower Boundary of Layer (cm) | Mineral Soils | | Organic Soil Texture: P = Peat M = Muck MP = Mucky Peat | % Visible plant fibers | Soil Matrix Color (must be majority color)* | | | Redox Concentration Features | | | Redox Depletion Features | | | | | |
|------------|---------------------------------------|-------------------------|--|--|------------------------|---|---|---|------------------------------|--------------------|---|--------------------------|-------------------------------|------------------------|---|---|--|
| | | Soil Texture (Required) | Soil Texture Modifier (Optional - see below) | | | H** | V | C | Redox Conc. Abundance (%) | Redox Conc. Color* | | | Redox Depletion Abundance (%) | Redox Depletion Color* | | | |
| | | | | | | | | | | H** | V | C | | H** | V | C | |
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| Commonly Observed Hydric Soil Indicators (check all that apply): | Soil Profile Photos | Photo Description |
|--|---------------------|-------------------|
| A1. Histosol (≥40 cm of upper 80 cm is organic soil, i.e., P, MP, or M) | Photo # | |
| A2. Histic Epipedon (Top layer is ≥20 cm of organic soil over mineral layer) | Photo # | |
| A4. Sulfidic (rotten eggs) odor | Photo # | |
| Gleyed or Low Chroma Colors | Photo # | |
| Other: | Photo # | |
| Soil Texture Modifiers: *Note that these ONLY describe a MINERAL Soil Texture: 'Mucky' (mineral soil w/ high organic content) *Add prefix 'VERY' if 'Gravelly' (15-<35% of >2 mm-7.6cm fragments) 35-<60% fragments; Add 'Cobbly' (15-<35% of >7.6-25 cm fragments) 'EXTREMELY' if 60-<90% 'Stony' (15-<35% of >25-60 cm fragments) If ≥90%, layer is Gravel, 'Bouldery' (15-<35% of >60 cm fragments) Cobble, Stone, Boulder. | Remarks: | |

*To determine the soil matrix color: If soils are dry, wet sample until it no longer changes color. Always have the sun at your back when comparing to color chart to find best match.
 **Munsell Soil Color Chart: H = Hue, V = Value, C = Chroma