2022 UTAH RAPID ASSESSMENT PROTOCOL FIELD SURVEY FORM

LOCATION AND GENERAL SITE INFORMATION

Unique Site ID: _____ **Site Name**:_____

Date (mm/dd/yyyy): _____**Surveyor IDs**: _____

AA Dimensions:	Aspect (deg): _____ OR Flat OR N/A
__ 40-m radius circle	Slope (deg): _____ OR Flat OR N/A
__ Rectangle, width___, length___	Circle Flat when you cannot discern the aspect because the site is so flat and N/A when there are multiple aspects and none are dominant
__ Freeform (collect GPS track of edge)	

AA Placement and Dimension Comments:

Reason Moved: ◯ not moved ◯ more than one wetland ◯ no wetland present ◯ inclusions too large
◯ multiple Ecological Systems ◯ other:

ENVIRONMENTAL DESCRIPTION AND CLASSIFICATION OF AA

Composition of AA	**Wetland origin**
___ % AA with target wetland	___ Natural feature with minimal disturbance
___ % AA with non-wetland riparian area	___ Natural feature, but altered or augmented
___ % AA with >1 m standing water	___ Non-natural feature created by passive or active management
___ % AA with upland inclusions	___ Origin unknown

Livestock grazing (evaluate based on freshness of dung and tracks, presence of livestock and fencing, etc.)
__ AA grazed in current year prior to survey __AA likely routinely grazed but not yet grazed in current year
__ AA historically or rarely grazed __ No physical evidence suggests that AA has ever been regularly grazed

Hydrology actively managed for wildlife or conservation	___Yes ___No ___Uncertain
Barriers (such as above-grade culverts, levees**) impeding aquatic connectivity are nonexistent** or easily passed by most aquatic animals (e.g., fish, tadpoles). Evaluated connectivity between AA and surrounding waterbodies, at a distance up to 100-m from the AA.	___TRUE ___FALSE ___NA
Evidence of invasive species management (burning, mowing, etc.)	___Yes ___No ___Uncertain
Haying or agricultural management on site	___Yes ___No ___Uncertain

Rocky Mountain Ecological System (pick only one) Fidelity: High Med Low
___Lower Montane_Foothill Riaprian Woodland and Shrubland ___Subalpine-Montane Riparian Woodland
___Subalpine-Montane Fen ___Emergent Marsh ___Alpine-Montane Wet Meadow
Classification Comments:

Cowardin System/Subsystem **Riverine :** Intermittent__ Lower Perennial__ Upper Perennial__ **Lacustrine:** Limnetic __ Littoral__ **Palustrine:** __

Cowardin System Fidelity: High Med Low

Site Features (select all that apply; see reference card for definitions) __partly drained/ditched __beaver
__farmed __ diked (obstruct inflow) __ impounded (obstruct outflow) __ artificial substrate __ excavated

Classification Comments:

HGM Class (pick only one) Fidelity: High Med Low

___ Riverine ___ Depressional ___ Mineral Soil Flats ___ Lacustrine Fringe ___ Slope

___ Depressional Impoundment ___ Depressional Impoundment Fringe ___ Impoundment Release

Classification Comments, including whether more than one HGM class present:

RIVERINE-SPECIFIC CLASSICATION OF AA: Fill out if AA has a stream/river channel or is located in stream floodplain

Confined vs. Unconfined Valley Setting

_____ Confined Valley Setting (valley width < 2x bankfull width)

_____ Unconfined Valley Setting (valley width ≥ 2x bankfull width)

AA Proximity to Channel

AA includes: ___ channel and one bank ___ channel and two banks

___ no channel and one bank ___ no channel and no bank

For sites with no channel, record distance from AA edge to channel center: _____ m

Stream Flow Duration

_____ Perennial

_____ Intermittent

_____ Ephemeral

Stream Depth at Time of Survey (if evaluated):

Channel is : Dry In Pools Only Flowing

Depth: _____ cm OR ≥ 1 m

AA REPRESENTATIVENESS

Is AA the entire wetland/riparian area? ___ Yes ___ No

If no, how representative is AA of larger wetland/riparian area ___ Low ___ Moderate ___ High

Provide comments:

URAP WETLAND CONDITION METRICS

LANDSCAPE CONTEXT

Percent buffer (Evaluate at edge of AA; buffer must extend 10 m along perimeter and 10 m from edge of AA to count)

Rank	State
A	Buffer land cover surrounds 100% of the AA.
A-	Buffer land cover surrounds >75–<100% of the AA.
B	Buffer land cover surrounds >50–75% of the AA.
C	Buffer land cover surrounds >25–50% of the AA.
D	Buffer land cover surrounds ≤25% of the AA.

Comments:

Buffer Width (Evaluate up to 100 m from AA edge

Transect	Length (m)	Rank	State
N		A	Mean width >95 m
NE		A-	Mean width >75 and ≤95 m
E		B	Mean width >50 and ≤75 m
SE		C	Mean width >25 and ≤50 m
S		D	Mean width <25 or no buffer exists
SW		Buffer land cover includes all natural land cover, rangeland, vegetated pastures that are not subject to mechanical vegetation removal (but not feedlots or holding pens with mostly bare soil), low-use tracks at grade that are predominantly vegetated and not maintained, vegetated levees, natural substrate ditches, and recreational features with low substrate disturbance (narrow, natural substrate hiking or biking trails)	
W			
NW			
Mean			

Comments:

Buffer Condition- Soil and Substrate (Evaluate in *buffer land cover only* within 100-m of AA edge)

Rank	State
A	Intact soils. Unnatural bare patches, pugging, and soil compaction are absent or extremely rare with minimal impact (e.g. one or a few shallow vegetated single-use ATV tracks). Cryptobiotic soil, if expected, is present and undisturbed.
B	Moderately disrupted soils. Some amount of bare soil, pugging, compaction or other disturbance exists, but extent and impact are minimal. Areas with more severe disturbances are absent or rare.
C	Extensive moderately disrupted soils. Areas with more severe disturbance may occur in a few sections of the buffer or disturbance may be more widespread and of moderate impact.
D	Unnaturally barren ground, highly compacted soils, or other severe soil disturbance covers a moderate to large portion of the buffer or more moderate disturbance covers the entire buffer.
NA	No buffer land cover present.

Comments:

Buffer Condition-Vegetation (Evaluate in *buffer land cover only* within 100-m of AA edge; collect dominant plant species if nativity unknown)

Rank	State
A	Abundant (≥95%) ***relative*** cover native vegetation and little or no (<5%) cover of non-native plants.
B	Substantial (≥75–95%) ***relative*** cover of native vegetation and low (5–25%) cover of non-native plants.
C	Moderate (≥50–75%) ***relative*** cover of native vegetation.
D	Low (<50%) ***relative*** cover of native vegetation.
NA	No buffer land cover present.

Comments:

Percent Intact Landscape- buffer land cover within 500-m and directly connected to site

Rank	State
A	Intact: AA embedded in >90–100% unfragmented, natural landscape.
B	Variegated: AA embedded in >60–90% unfragmented, natural landscape.
C	Fragmented: AA embedded in >20–60% unfragmented, natural landscape.
D	Relictual: AA embedded in ≤20% unfragmented, natural landscape.

Comments:

PHYSICAL STRUCTURE

Substrate and Soil Disturbance (Evaluate in terms of the combination of severity and extent)

A	No soil disturbance within AA. Little bare soil OR bare soil areas are limited to naturally caused disturbances such as flood deposition or game trails OR soil is naturally bare (e.g., playas). No pugging, soil compaction, or sedimentation.
B	Minimal soil disturbance within AA. Some amount of bare soil, pugging, compaction, or sedimentation present due to human causes, but the extent and impact are minimal. Mild disturbance that does not show evidence of altering hydrology or causing ponding or channeling may occur across a large portion of the site, or more moderate disturbance may occur in one or two small patches of the AA. Any disturbance is likely to recover within a few years after the disturbance is removed.
C	Moderate soil disturbance within AA. Bare soil areas due to human causes are common and will be slow to recover. There may be pugging due to livestock resulting in several inches of soil disturbance. ORVs or other machinery may have left some shallow ruts. Sedimentation may be filling the wetland. The site could recover to potential with the removal of degrading human influences and moderate recovery times.
D	Substantial soil disturbance within AA. Bare soil areas substantially degrade the site and have led to severely altered hydrology or other long-lasting impacts. Deep ruts from ORVs or machinery may be present, or livestock pugging and/or trails are widespread. Sedimentation may have severely impacted the hydrology. The site will not recover without active restoration and/or long recovery times.

Comments:

HYDROLOGIC CONDITION

Major Water Sources (only check those that are substantial contributors to sites, put a star by dominant water source)

Natural Sources	*Unnatural Sources*
___ overbank flooding from channel	___ irrigation via direct application (incl. managed ditch)
___ overbank flooding from lake	___ irrigation via seepage (e.g. leaking ditch)
___ groundwater discharge/high groundwater from spring or seep	___ irrigation via tail water run-off (irrigation return flows)
___ alluvial aquifer (elevated water table, us. near river/stream)	___ discharge from impoundment release
___ natural surface flow	___ urban run-off/culverts
___ direct precipitation	___ pipes directly feeding wetlands
___ direct snowmelt	___ other (list)_____

Hydropattern

Rank	State
A	Hydropattern within the AA is natural. There are no major hydrologic stressors that impact the hydropattern. There may be long-established, distant sources of groundwater or surface water extraction within contributing area to the AA, but these only have minimal impact on dampening the water levels in the AA and do not change the overall pattern of water level fluctuation within the AA.
B	Hydropattern deviates slightly from natural conditions. Minor modifications at site or in contributing area affect inflow and outflow of water. Some examples include slightly increased timing and flashiness from impervious surfaces, decrease in inundation due to dams on tributaries, small inputs of tailwater irrigation, small alterations to size of channels or berms, secondary flooding at the end of the growing season, or pugging or rutting that moderately affect hydrology. *If wetland is artificially controlled,* the management regime closely mimics a natural analogue (it is very unusual for a purely artificial wetland to be rated in this category).
C	Hydropattern deviates moderately from natural conditions. The hydropattern may be predominantly or entirely created (e.g.-managed impoundment), though it still somewhat resembles a natural analogue. For example, seepage from a canal during the growing season may create conditions somewhat similar to a natural seep or spring. Artificially impounded sites that are inundated and allowed to draw down in a somewhat natural pattern will usually fall into this category. Site may have hummocking or other soil disturbance that substantially impacts hydrology. *If wetland is artificially controlled,* the management regime approaches a natural analogue. Site may be passively managed, meaning that the hydropattern is still connected to and influenced by natural high flows timed with seasonal water levels.
D	Hydropattern is extremely different from natural conditions. Site may receive all water from flood irrigation with no connection to natural seasonal fluctuations or may be severely limited or eliminated due to groundwater pumping or dams blocking flow. *If wetland is artificially controlled,* the site is actively managed and not connected to any natural season fluctuations. Sites in this category experience extreme changes in hydropattern such as groundwater pumping causing a spring to run dry, dikes blocking all flow except in extreme flood years, or detention basins that undergo short fill and release cycles.

Comments:

Turbidity and Pollutants (evaluate visual signs of degradation not considering algae)	
Rank	**State**
NA	No water present in AA
A	No visual evidence of degraded water quality. No visual evidence of turbidity or other pollutants.
B	Some negative water quality indicators are present but limited to small and localized areas within the wetland. Water is slightly cloudy, but there is no obvious source of sedimentation or other pollutants.
C	Water is cloudy or has unnatural oil sheen, but the bottom is still visible. Sources of water quality degradation are apparent (identify in comments below). Note: If the sheen breaks apart when you run your finger through it, it is a natural bacterial process and not water pollution.
D	Water is milky and/or muddy or has unnatural oil sheen. The bottom is difficult to see. There are obvious sources of water quality degradation (identify in comments below). Note: If the sheen breaks apart when you run your finger through it, it is a natural bacterial process and not water pollution.
Comments:	

Algae Growth. **Evaluate areas with standing water, as well as areas that obviously recently had standing water, such as drying pond edges or areas with dried algal mats. Lack of dried algal mats in the absence of surface water should not be taken as evidence of an *A* or *B* rating for this metric. Take photo if rated below B. Ignore macroalgae (*Chara* spp.) in the evaluation.**	
Rank	**State- Surface Water**
NA	No surface water at site and no evidence of dried algal mats in recently inundated areas.
A	Water is clear with minimal algal growth. Dried algal mats, if present, minimal.
B	Algal growth is limited to small and localized areas of the wetland. Water may have a greenish tint or cloudiness. Dried algal mats, if present, minimal.
C	Algal growth occurs in moderate to large patches throughout the AA. Water may have a moderate greenish tint or sheen. Site may have evidence of moderate to large patches of dried algae mats in recently inundated areas.
D	Algal mats are extensive, blocking light to the bottom. Water may have a strong greenish tint and the bottom is difficult to see. Site may have evidence of extensive dried algal mats in recently inundated areas.
Comments:	

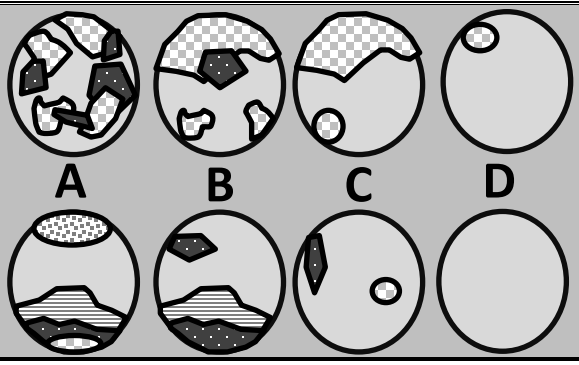
Connectivity **Evaluate connectivity up to 10 m from the edge of the AA.**	
AA edge	**State**
A	Rising water has unrestricted access to adjacent upland without levees or other obstructions to the lateral movement of flood waters. Channel, if present, is not entrenched and is still connected to the floodplain with no dikes, rip rap or elevated culverts.
B	Unnatural features such as levees or road grades limit the amount of adjacent transition zone or the lateral movement of floodwaters, relative to what is expected for the setting, but limitations exist for <25% of the AA boundary. Restrictions may be intermittent along the margins of the AA, or they may occur only along one bank or shore. Channel, if present, is somewhat entrenched, but overbank flow occurs during most floods and <25% of stream banks are affected by dikes, rip rap or elevated culverts. If playa, surrounding vegetation does not interrupt surface flow.
C	The amount of adjacent transition zone or the lateral movement of flood waters to and from the AA is limited, relative to what is expected for the setting, by unnatural features for 25–75% of the boundary of the AA. Features may include levees or road grades. Flood flows may exceed the obstructions, but drainage out of the AA is probably obstructed. Channel, if present, may be moderately entrenched and disconnected from the floodplain except in large floods and 25%-75% of stream bank may be affected by dikes, rip rap, concrete or elevated culverts. If playa, surrounding vegetation may interrupt surface flow.
D	Essentially no hydrologic connection to adjacent landscape. Most or all stages may be contained within artificial banks, levees, or comparable features. Channel, if present, is severely entrenched and entirely disconnected from the floodplain. If playa, surrounding vegetation may dramatically restrict surface flow.
Comments:	

Water Quality: For all wetlands, assess directly within AA and area within 500 m of AA that is likely to contribute runoff. Also, consider the frequency with which water travels through each stressor to reach the wetland. For depressional and riverine wetlands, also assess the contributing area of any channels that provide water to the site and for lacustrine sites, consider the water quality of the adjacent lake. If sites have *most* of the features listed under a rank, consider selecting one rank lower.	
A	**There are no water quality stressors likely to impact site.** *All Sites:* Within the AA, soils are intact with no evidence of damaging soil disturbance or excessive manure inputs. Any anthropogenic stressors within 500 m up-gradient from the AA must be minor (e.g., small areas with unnatural bare ground or lightly grazed pasture, a few fertilized lawns, etc.) and unlikely to impact the site (e.g., separated from site by at least 50 m of thick vegetation and on a shallow slope from site). *For Sites receiving most water from channels:* The land cover of the contributing area for any channels reaching sites is predominantly natural with no point source dischargers that are likely to impact the site's water quality.
B	**Site likely to receive infrequent or minor inputs of water quality stressors.** *All Sites:* Within the AA, some minor dung and soil disturbance from livestock (if grazing impacts very light, may be an A); up-gradient stressors within 500 m of site are minor, somewhat buffered from site, or well-buffered if more severe (e.g., runoff from dirt road with narrow buffer or expansive area of exposed sediment with 100-m vegetated buffer). *For sites receiving most water from channels:* The entire contributing area has <20% development or cropland; entire contributing area has a few minor point source dischargers; streams and lakes that contribute directly to the site are not listed on the 303d list.
C	***Site likely to receive moderate input of water quality stressors.*** *All Sites:* Within the AA, moderate dung and soil disturbance from livestock or up-gradient stressors that occur within 500 m of the site that are more moderate in extent or severity and less well-buffered from site (e.g., runoff from low-density development directly reaching site or nutrient input from a farm; consider both the slope leading to the site and the land cover between the stressor and the site; vegetated very low slope may be B and unvegetated very steep slope may be D). *For sites receiving most water from channels:* The entire contributing area has ~20-60% development or cropland, or has point source dischargers that are distant from site or only a few that are closer; streams and lakes that contribute to the site are not listed on the 303d or are listed, but water quality is likely to be attenuated or improved before reaching the wetland by passing through reservoirs or emergent vegetation.
D	**Site likely to receive substantial water quality stressors.** *All Sites:* Stressors may include: high levels of dung and soil disturbance from livestock within AA or, up-gradient stressors such as irrigation return flow water, fertilizer and pesticide application, and erosion from fires, construction, off-road vehicles, and dirt roads *discharging directly into sites.* May be considered C if run-off from the features is likely to occur infrequently, if slope is shallow, or if only a small area of the AA receives these stressors. Stressors may occur immediately adjacent or within sites or may be minimally buffered from sites (e.g., up a steep hill with very narrow or unvegetated buffer). *For sites receiving most water from channels:* The entire contributing area has>60% development or cropland, a high number of point source dischargers; or streams and lakes that directly contribute to the site are listed as impaired on the 303d list with no attenuation
Comments	

VEGETATION STRUCTURE

Horizontal Interspersion

Evaluate number and arrangement of patches of water and distinct vegetation patches. Individual patches must be at least 10 m² (approximately 3.2 m x 3.2 m in a 0.5 ha AA) and each patch type must cover at least 5% of the AA. Distinct vegetation patches are patches that share similar physiognomy and species composition.



Rank	State
A	High degree of horizontal interspersion. AA is characterized by a complex array of nested or interspersed zones. AA has both a high number of zones and a high degree of interspersion of those zones.
B	Moderate degree of horizontal interspersion.
C	Low degree of horizontal interspersion.
D	Minimal horizontal interspersion. AA characterized by one dominant zone with little to no other zones.

Comments

Litter Accumulation

Rank	State
AB	AA characterized by normal amounts of herbaceous and/or deciduous litter accumulation for the wetland type. In some wetlands, this may mean that new growth is more prevalent than previous years' and that litter and duff layers in pools and topographic lows are thin. Undisturbed playas may be lacking in litter altogether. Marshes may have high levels of litter accumulation, but litter should not prevent new growth or be too dense to allow more than one species to persist.
C1	AA characterized by small amounts of litter compared to what is expected.
C2	Litter is somewhat excessive.
D1	AA lacks litter.
D2	Litter is extensive, often limiting new growth.

Comments:

Woody Debris

NA	There are no obvious inputs of woody debris and none are expected for the wetland type. Inputs are not available within site, along site edge, or along nearby up-gradient hydrologically connected flowpaths.
AB	AA characterized by moderate amount of coarse and fine woody debris, relative to expected conditions. For riverine wetlands, debris is sufficient to trap sediment, but does not inhibit stream flow. A wide size-class diversity of downed woody debris and standing snags is present and common where expected. For non-riverine wetlands, woody debris provides structural complexity, but does not overwhelm the site.
C1	AA characterized by small amounts of woody debris.
C2	Debris in AA is somewhat excessive.
D	AA lacks woody debris, even though inputs are available.

Comments:

Woody Species Regeneration (see ratings chart, below)	
Rank	**State**
NA	Woody species are naturally uncommon or absent.
A	All age/size classes of desirable (native) woody species present.
B	Age/size classes restricted to mature (full size) individuals and young sprouts. Middle age/size groups absent. Regeneration moderately impacted for some reason (describe).
C1	Stand comprised of mainly mature (full size) individuals, with seedlings and sapling (smaller individuals) absent.
C2	Stand mainly evenly aged/sized young sprouts that choke out other vegetation.
D1	Woody species predominantly consist of decadent or dying individuals. Decadent individuals are those with greatly reduced growth, such as which often occurs at sites where species have been over-browsed.
D2	AA has >5% canopy cover of *Elaeagnus angustifolia* (Russian olive) and/or *Tamarix* (tamarisk) or other invasive woody species. If you select this state, select an additional statement that describes native regeneration in AA.
Comments	

Woody Species Regeneration Age Classes

Information for guidance only; classes may differ for certain species. Classes are from Burton, T.A., Smith, S.J., And Cowley, E.R., 2011, Multiple indicator monitoring of stream channels and streamside vegetation: U.S. Bureau of Land Management technical reference 1737-23, 155 p.

Class	Single-stemmed species (e.g., cottonwood)	Multi-stemmed species (e.g., most willows and alder)
Seedling	Stem is <1 m tall or <2.5 cm in diameter at 50% of height from ground level.	1 stem <0.5 cm in diameter at the base and <0.5 m tall.
Young (Middle)	Stem is >1 m tall and 2.5 cm to 7.6 cm in diameter at 50% of height from ground level.	2 to 10 stems less than 1 m tall or 1 stem >0.5 cm in diameter at the base and less than 1 m tall
Mature	Stem is > 1 m tall and >7.6 cm in diameter at 50% of height from ground level.	>10 stems over 1 m tall

VEGETATION COMPOSITION

Relative Cover of Native Plant Species	
Rank	**State**
AB	AA contains >95% relative cover of native plant species.
C	AA contains 80–95% relative cover of native plant species.
C-	AA contains 50–80% relative cover of native plant species.
D	AA contains <50% relative cover of native plant species
Comments:	

Absolute Cover of Noxious Weeds (see current noxious species list)	
Rank	**State**
A	Noxious weeds absent.
B	Noxious weeds present, but sporadic (<3% absolute cover).
C	Noxious weeds common (3–10% cover).
D	Noxious weed abundant (>10%) cover.
Comments:	

Columbia Spotted Frog

Site ID:	**Date:**

For the following, select only for waterbodies *within* the AA	
	Breeding Waterbodies
A	Waterbodies suitable for breeding present. Waterbodies large enough not to dry up in summer and deep enough not to freeze solid at night during the breeding season with minimal flow. Examples include **beaver ponds, oxbows,** and **springs-fed pools.**
B	Stock ponds (excluding those that are spring-fed, which belong above); shallower sections of spring complexes.
C	Lotic systems (rivers or streams) OR lentic but very small or uniformly shallow (e.g., temporary pools, small puddles).
D	No surface water typically present at site or site with water regime of A or drier (score waterbody metrics as D).
	Waterbody substrate
A	Deep organic mud or silt is common at bottom of waterbodies (soft enough to be burrowed into)
B	Substrate of deep mud/silt present but uncommon.
C	Gravel/sand predominant waterbody substrate with deep mud/silt absent OR substrate is hard-packed mud or silt.
D	Cobble, boulder, bedrock predominant substrate with deep mud/silt absent.
	Vegetation growing in waterbody shallows (areas <1 m deep) in potential breeding waterbodies
A	At least 20% of waterbody shallows have some type of emergent, floating, or submerged vegetation and no more than 50% of shallows have emergent vegetation (score one grade lower if emergent vegetation is very dense, e.g., hard to see through to water surface).
B	Waterbody shallows either have between 10 and 20% cover of any vegetation or between 50 and 80% of emergent vegetation, potentially over-shading site (score one grade lower if emergent vegetation is very dense, e.g., hard to see through to water surface).
C	Waterbody shallows with either >1 to 10% vegetation or between 80 and 95% emergent vegetation with few openings in the water (score one grade lower if emergent vegetation is very dense, e.g., hard to see through to water surface)
D	No or <1% vegetation in waterbody shallows or emergent vegetation densely covers entire waterbody.
	Waterbodies for overwintering habitat (needs non-freezing water and oxygenation) (within 100 m of AA)
A	Waterbodies include well-oxygenated areas unlikely to freeze, particularly perennially flowing streams (including oxbows), springhead pools, or ponded water at least 1 m deep at deepest point. Waterbodies include ample hibernation features such as overhangs, holes, log debris, or loose soil that can provide protection from freezing.
B	Moderately suitable waterbodies for hibernation present. Waterbodies include the above types, but hibernation features may be less common or waterbodies may occasionally freeze to bottom.
C	Hibernation features present , but there are only marginally suitable waterbodies present (water not particularly well oxygenated or may only some years not freeze; this includes areas of shallow spring overflow)
D	No potential overwintering habitat near AA (e.g. there is no water present or all water is likely to freeze or dry up.)

Livestock [both boreal toad and CSF]		**Distance to impervious surface**	
A	No evidence of livestock grazing in AA or buffer	A	>300 m
B	Low intensity grazing in buffer; no grazing in AA.	B	200-300
C	High intensity buffer grazing or winter AA grazing, or low intensity AA summer grazing.	C	100-200
D	High intensity grazing in AA in summer	D	<100 m

Notes for any of the above metrics:

Y N	Evidence of current/historic mining in AA or buffer (mine tailings, mine shafts, etc.)?

Boreal Toad

If surface water typically present, but dried up due to drought or survey late in the growing season, select C for types of waterbodies and estimate slope & north shoreline.	
Types of Waterbodies Within or Immediately Abutting AA	
A	lentic and large enough not to dry up and deep enough not to freeze solid at night during summer including lakes, ponds (especially beaver ponds), and large pools (including artificially created ponds and pools).
B	lotic: low-velocity, low-gradient streams or springs.
C	lotic: rivers, streams OR lentic but very small or uniformly shallow: temporary pools, small puddles.
D	No surface water typically present at site (e.g., less than a few weeks of surface water per growing season) or surface water present intermittently throughout summer (e.g., field flood irrigated and then completely dried out periodically all summer) (skip the next three metrics)
Presence of North Shore (Long Axis of Waterbody)	
A	Ample north shore present (shore on north side of waterbody).
B	Moderate amount of north shore present.
C	Minor amount of north slope present.
D	Little or no north shore present OR waterbody densely covered in emergent/woody vegetation with no openings.

Slope and Water Depth Near Shore		**Daytime Summer Temp. in Shallows**	
A	Mostly gentle slopes and/or large area, esp. along north shores, with gentle slopes; water <10 cm common. Changes in water levels typically lead to much greater horizontal rather than vertical change.	A	28–34 °C
B	Mixture of gentle and steeper slopes with some areas with <10 cm deep water; gentle slopes common but not predominant, not occupying the majority of the north shores.	B	16–27 °C or 35 °C
C	Gentle slopes present, but uncommon. Few areas with water <10 cm deep.	C	11–15 °C or 36 °C
D	All shorelines with steep slopes. Water <10 cm not present.	D	≤10 °C or ≥37 °C

Hibernation Features (within AA and 100 m buffer)	
A	Features such as burrows (esp. ground squirrels), interstices of beaver dams, old beaver lodges, overhanging stream banks, rocky chambers near streams, cavities under boulders or tree roots, loose soil, and/or woody debris piles common and connected to summertime habitat.
B	Above features present but not abundant. Some area with features may be disconnected from summertime habitat due to low use roads or other low severity fragmentation, but some connected features present.
C	Above features present but rare and/or only present on very steep slopes or disconnected from summertime habitat by busy roads, development, or other severe fragmentation.
D	None of the above features present or no surface water typically present.
Observed Hibernation Features (circle one or more feature): None observed Burrows Beaver Dam Beaver Lodge Undercut Stream Bank Boulders Loose Soil Woody debris piles	

Understory-Forming Shrubs or Tall Forbs (e.g., goldenrod, coneflower); Evaluate along stream floodplain or in valley bottom within AA and buffer. Cover estimates pertain to area without standing	
A	Ample cover near waterbodies. Generally this will entail 33 to 60% of the area along a stream floodplain or valley bottom near a pond or lake with moderate to dense cover of understory-forming species.
B	Moderate cover near waterbodies, with approximately 21 to 33% of area with moderate/dense cover, or cover abundant, but very patchy
C1	Low cover near waterbodies, with approximately 5 to 20% of area with moderate/dense cover.
C2	Overly abundant cover near waterbodies. Between 60% and 80% of non-water area along stream floodplain or valley bottom with understory species. Little basking habitat present
D1	No or only a few scattered areas with cover present (<4% cover)
D2	Extremely abundant cover near waterbodies. Over 80% of non-water area along stream floodplain or valley bottom with understory cover. Basking habitat extremely rare.

Habitat metric notes

URAP Topographic Complexity and Land Use Index

Site ID: _____ Date:_____

MAJOR VEGETATION PATCHES ZONES WITHIN AA

Patches are distinct vegetation patches that share similar physiognomy and species composition. Individual patches must be at least 10 m² (~ 3.2 m x 3.2 m) in a 0.5 ha AA and must cover a total of at least 5% of the AA. Unvegetated patches (included under water) can be listed if individual patches are at least 5% of the AA; otherwise, their cover should be included with the vegetation they are surrounded by. Record remaining cover as "other"; cover should add up to 100%

Type: E for emergent, S for Scrub-scrub, F for forested, AB for aquatic bed/floating, and O for other

If Other, write Rock Bottom, Unconsolidated Bottom, Streambed, Rocky Shore, or Unconsolidated Shore for Dominant Species based on the Cowardin key

Water Regimes: A (brief then low wt); B (seasonal sat.); D (continuous sat.); C (early, wt variable); E (B + C) ; F (all growing season); G (all year – drought); H (all year, all years); J (intermittent)

P1: Type: E S F AB O Regime: _____ Dominant Species:_____ Height:_____ cm % AA:____

P2: Type: E S F AB O Regime: _____ Dominant Species:_____ Height:_____ cm % AA:____

P3: Type: E S F AB O Regime: _____ Dominant Species:_____ Height:_____ cm % AA:____

P4: Type: E S F AB O Regime: _____ Dominant Species:_____ Height:_____ cm % AA:____

P5: Type: E S F AB O Regime: _____ Dominant Species:_____ Height:_____ cm % AA:____

P6: Type: E S F AB O Regime: _____ Dominant Species:_____ Height:_____ cm % AA:____

Topographic Complexity

Elevation gradients must be at least 15 cm in height difference and can include features such as benches, slopes of varying steepness, channels, and pools. Gradients must have an edge of at least 8 m (e.g., length of channel, perimeter of pools or higher elevation "island", length of edge between two slopes) or cover at least 5% of the AA. Micro-topography includes woody debris, boulders, sediment mounds, vegetation hummocks, tufted herbaceous litter, gently undulating terrain and other similar features.

Elevation Gradient	**Description** (e.g., pools throughout site, main channel, high bench, etc.)	**Micro-topography**
Gradient 1		<10% micro-topography
Gradient 2		≥10-29% micro-topography
Gradient 3		≥30-49% micro-topography
Gradient 4		≥50% micro-topography

Comments and list features creating microtopography:

URAP Topographic Complexity and Land Use Index

Structural Patch Richness

Only list patch size for features with <1% total cover, i.e. features that occupy less than 50 m^2 in standard AA.

Structural Patch		Description	% Cover	Patch Size (m^2)	Wet or Dry?
Bare Ground	Mudflats, sandflats	A flat is a non-vegetated area of silt, clay, sand, or a mix of abiotic substrates (mud) that adjoins the wetland foreshore and can be intermittently flooded or exposed.			W D
	Salt flat/alkali flat	Dry open area of fine-grained sediment and accumulated salts. Often wet in the winter months or with heavy precipitation or supported by high groundwater.			
	Soil cracks	Cracks formed by repeated wetting and drying of fine grain soil. Cracks must be a minimum of 2.5 cm deep to qualify.			
	Wallows or similar animal excavations	Any depression in the land surface that is caused by animals sitting, lying, or rolling on the ground surface or digging into it.			
	Animal tracks	Native (e.g. elk) or introduced (e.g. cattle) tracks that are deep enough to hold water.			
Litter	Wrack or organic debris in channel or on floodplain	Wrack is an accumulation of natural or unnatural floating debris along the high water line of a wetland. The organic debris must be free of its original growth position. Senesced plant material that is still attached to the parent plant does not count (for example, last year's cattail or bulrush growth)			
Mounds and Rocks	Animal mounds or burrows	Mounds or holes associated with animal foraging, denning, predation, or other behaviors.			
	Plant hummocks (naturally formed)	A mound composed of plant material resulting in a raised pedestal of persistent roots or rhizomes.			
	Sediment mounds	Depositional features formed from repeated flood flows depositing sediment on the floodplain, similar to hummocks but lacking plant cover.			
	Cobbles and boulders	The middle axis of a cobble ranges from 6.4 cm to <25.6 cm and for a boulder is ≥ 25.6 cm. The middle axis is the longest axis that is perpendicular to the true longest axis of the rock			
Channel and Channel-Like	Swales on floodplain or along shoreline	Swales are broad, elongated, vegetated, shallow depressions that can sometimes help to convey flood flow to and from vegetated floodplains. They lack obvious banks, regularly spaced deeps and shallows, or other characteristics of channels.			W D
	River/stream	Areas of flowing water associated with a sizeable channel			W D
	Tributary/Secondary channel/Rivulet	Channels of varying size that convey flood flows, including the diverging and converging secondary channels found in braided and anastomosing fluvial, channels that originate in the wetland and that only convey flow between the wetland and the primary channel, and diffuse channels found near outlets of wet meadows or at the very headwaters of a stream. Also includes channels leaving springheads			W D
	Oxbow/backwater channel	Areas holding stagnant or slow moving water that have been partially or completely disassociated from the primary river channel.			W D
	Pools or depressions in channels	Pools are areas along fluvial channels that are much deeper than the average depths of their channels and that tend to retain water longer than other areas of the channel during periods of low or no surface flow			W D
	Riffles or rapids	Riffles and rapids are areas of relatively rapid flow, standing waves and surface turbulence in fluvial channels. A steeper reach with coarse material (gravel or cobble) in a dry channel indicates presence.			W D
	Interfluves on floodplain	The area between two adjacent streams or stream channels flowing in the same general direction			
	Point bars	Patches of transient bedload sediment that can form along the inside of meander bends or in the middle of straight channel reaches, sometimes supporting vegetation. They are convex in profile and their surface material varies in size from finer on top to larger along their lower margins.			
	Debris jams/woody debris in channel	Aggregated woody debris in a stream channel deposited by high flows.			

URAP Topographic Complexity and Land Use Index

	Structural Patch	Description	% Cover	Patch Size (m^2)	Wet or Dry?
Pool or Pond-Like	Pond or lake	Natural water body with areas of open water deeper than 2 m in depth that do not support emergent vegetation			W D
	Beaver dam	Debris dam clearly constructed by beaver (note gnawed ends of branches)			
	Beaver pond	Areas that hold stagnant or slow-moving water behind a beaver dam.			W D
	Springhead pools	Pools associated with groundwater discharge at springheads. Associated channels will be listed under "Tributary/Secondary channel/Rivulet"			W D
	Pools- filled by overland flow	A shallow topographic basin lacking vegetation but existing on a well-vegetated wetland plain that fills with water at least seasonally due to overland flow.			W D
	Pool- other	Pool other than those described above. Add comment below on type of pool.			W D
Shore or Bank	Bank slumps in channel or along shoreline	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 in channel or along shoreline	Undercut banks are areas along the bank or shoreline of a wetland that have been excavated by waves or flowing water.			
	Variegated or crenulated foreshore	As viewed from above, the foreshore of a wetland can be mostly straight, broadly curving (i.e., arcuate), or variegated (e.g., meandering). In plan view, a variegated shoreline resembles a meandering pathway.			
Miscellaneous Water-Associated Features	Seeps	Localized point of emerging groundwater not associated with a definite pool			W D
	Floating mat	Mats of peat held together by roots and rhizomes of sedges. Floating mats are underlain by water and /or very loose peat and are found on the edges of ponds and lakes and are slowing encroaching into open water.			
	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.			
	Beaver canals	Canals cut through emergent vegetation by beaver.			
	Water tracks/hollows	Depressions between hummocks or mounds that remain permanently saturated or inundated with slow moving surface water.			
	Islands (exposed at high-water stage)	An island is an area of land above the usual high water level and, at least at times, surrounded by water. Islands differ from hummocks and other mounds by being large enough to support trees or large shrubs			
	Woody vegetation in water	Live trees or woody vegetation in water. This does not including riparian woody vegetation at the edge of the wetland but rather trees or large shrubs that are within the water.			
	Concentric or parallel high water marks	Evidence of repeated variation in water level in the wetland, such as water marks etched in substrate or concentric bands of vegetation that result from water level-driven differences in soil moisture, chemistry, etc. The variation in water level might be natural (e.g., seasonal) or anthropogenic.			

Comments

URAP Topographic Complexity and Land Use Index

LAND USE INDEX

Land Use Categories	Coefficient	500-m Envelope	
		% Area	Score
Paved roads, parking lots, domestic, commercial, and industrial buildings	0		
Gravel pit operations, open pit mining, strip mining, abandoned mines	0		
Unpaved roads (e.g., driveway, tractor trail, 4-wheel drive roads)	1		
Resource extraction (oil and gas)	1		
Tilled agricultural crop production (corn, wheat, soy, etc.)	2		
Intensively managed golf courses, sports fields, lawns	2		
Vegetation conversion (chaining, cabling, rotochopping, clearcut)	3		
Heavy grazing by livestock	3		
Logging or tree removal with 50-75% of large trees removed	4		
Intense recreation (ATV use, camping, popular fishing spot, etc.)	4		
Permanent crop agriculture (hay pasture, vineyard, orchard)	4		
Dam sites and disturbed shorelines around water storage reservoirs. Include open water of reservoir if there is intensive recreation, such as boating.	5		
Old fields and other disturbed fallow land dominated by nonnative species	5		
Moderate grazing on rangeland	6		
Moderate recreation (high-use trail)	7		
Selecting logging or tree removal with <50% of large trees	8		
Light grazing on rangeland	9		
Light recreation (low-use trail)	9		
Natural area / land managed for native vegetation	10		
Total Land Use Score			

Grazing Class	Description
Light	Lots of seed stalks visible on grasses. Leading tips of woody plants show little to no use.
Moderate	Most of accessible area shows use, seed stalks may be sparse in areas, but grasses are not short-cropped, except in small areas. Woody plants show uniform use and ~50% of leaders remain intact.
Heavy	Sedges and grasses short-cropped with few if any seed stalks visible, low value plants show signs of grazing. Most woody plant leaders show use.
Heavy	Sedges and grasses cropped to roots, signs of digging, low value plants show heavy grazing. Evidence of browse on 2nd and 3rd year woody growth, <20% of current year's leaders remain, woody plants show club-like appearance.

Comments:

BUFFER DISTURBANCES: Walk the N, E, S, W buffer transects if possible, substitute NE, SE, etc. if necessary, or walk a portion of transects (and estimate percent walked) to estimated disturbances. Search an area about 1 m to either side of transect. Record sources of bare patches, if present, in comments.

Transect Direction (N, E, etc.)	% Walked or Able to be Estimated	# of Cow Patties	Livestock trails	Livestock prints / pugging >22 cm deep	Unnatural bare soil patches at least 1 m^2 (comment on source)
		0 1-10 >10-100 >100	Present Not observed	Present Not observed	Present Not observed
		0 1-10 >10-100 >100	Present Not observed	Present Not observed	Present Not observed
		0 1-10 >10-100 >100	Present Not observed	Present Not observed	Present Not observed
		0 1-10 >10-100 >100	Present Not observed	Present Not observed	Present Not observed

Comments:

Site ID:	**Survey Date:**

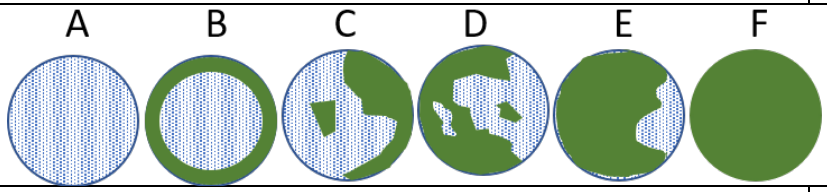
Species Observations: Score based on observations of *wildlife* and *wildlife signs* (e.g. footprints, scat, beaver dams, etc.) within the assessment area. Do not record species that are merely flying over or are adjacent to the site. Record the common names of species to the highest level of detail known (e.g., red-tailed hawk vs. hawk vs. raptor vs. bird).

Present?	Functional Group	Observation Notes and Common Name
Bird Groups		
Y N	Piscivorous birds (e.g., gull, tern, grebe, cormorant, pelican)	
Y N	Diving ducks (e.g., redhead, goldeneye, ruddy duck)	
Y N	Dabbling ducks (e.g., mallard, pintail, cinnamon teal)	
Y N	Ducks, unknown group	
Y N	Wading birds (e.g., egret, heron, ibis)	
Y N	Secretive marsh birds (e.g., moorhen, coot, sora, rail, bittern)	
Y N	Shorebirds (plover, sandpiper, stilt, avocet)	
Y N	Other bird species	
Other Wildlife		
Y N	Reptiles (snake, lizard, turtle)	
Y N	Amphibians (frog, toad, salamander, including tadpoles)	
Y N	Fish	
Y N	Dragonflies/damselflies	
Y N	Beaver or evidence of beaver activity (dams, gnawed logs)	
Y N	Non-beaver mammals (deer, raccoon, coyote, etc.)	
Y N	Mollusks	
Y N	Other wildlife	

HABITAT TYPES PRESENT *AT SITE* (OR ADJACENT IF SPECIFIED BY INDICATOR)

	Habitat type must be present in the indicated depth range in majority of spring (April, May, June) or Fall (July, August, September). Habitat must occupy at least 5% of the assessment area and no more than 10 patches can be combined to meet the size threshold.	**In AA?**
HT1	**Deep open water**. Slow or not flowing open water with depth >35 to 100+ cm. Can have submergents or floating species, but no emergent species (i.e. cattails, sedges, rushes). Map codes: UB or AB class, F, G, or H water regimes.	True False
HT2	**Shallow open water** . Slow or not flowing open water with depth >10 to 35 cm, usually with submergent vegetation but no emergents. Map codes: UB or AB class, F, G, or H water regimes.	True False
HT3	**Deep emergent water.** Emergent vegetation in water depth of >25 to 60 cm. Map codes: PEMF or PEMG.	True False
HT4	**Shallow emergent water.** Emergent vegetation in water depth 5 to 25 cm. Map codes: PEMF or PEMG.	True False
HT5	**Tall emergent water**. Emergent vegetation at least 0.75 to 2 m tall in water depth of 5 to 25 cm. Map codes: PEMF or PEMG. May be same as shallow emergent water. Map codes: PEMF or PEMG.	True False
	Interspersed emergent vegetation: Areas with interspersion between emergent vegetation in standing water and open water, with approximately 20 to 50% emergent species and the remaining water. Water depth between 5 and 60 cm. See diagram below.	True False

C and D are considered interspersed emergent vegetation. A and F only have one habitat type, B has no interspersion of the vegetation, and E has too much emergent with no interspersion.



HT6	**Partially vegetated mudflat.** Area seasonally flooded and then exposed with 0 and 5 cm water depth. Mudflats may have species such as saltgrass, pickleweed, or seepweed, but will not be densely vegetated with build-up litter. Map codes: US class, A or C water regime.	True False
HT7	**Wet meadow.** Fresh, saline, or alkaline wet meadows that are saturated or with intermittent shallow surface flooding. Typical meadow species include sedges, rushes, and a mixture of grass species. Map codes: PEM with A, B, C, D, or E water regimes.	True False
HT8	**Natural upland** within 5 meters from edge of AA and connected by buffer land cover to AA (mark under *In AA*) or within 1 km of AA. Natural uplands include all upland buffer land.	True False

URAP Stressors

STRESSOR CHECKLIST

1. Use imagery in combination with what you can field check to complete the Stressors Checklist.
2. Assess stressors in the 100-m envelope for their effects on the land surrounding the AA (NOT how they may impact the AA itself).
3. Assess vegetation soils stressors within the full AA. Assess factors that affect the site hydrology looking at both the contributing basin and the site itself.
4. Severity has been pre-assigned for many stressors. If the severity differs from the pre-assigned value, cross it out and note the true severity. Circle the appropriate value if more than one value is listed.
5. To comment, note the stressor number before writing comments.

SCOPE OF THREAT (% affected by direct threat)	
1 = small	Affects small portion (1-10%) of AA or landscape
2 = restricted	Affects some (11-30%) of AA or landscape
3 = large	Affects much (31-70%) of AA or landscape
4 = pervasive	Affects all or most (71-100%) of AA or landscape
SEVERITY OF THREAT (degree of degradation to AA or landscape)	
1 = slight	Likely to slightly degrade/reduce
2 = moderate	Likely to moderately degrade/reduce
3 = serious	Likely to seriously degrade/reduce
4 = extreme	Likely to extremely degrade/destroy or eliminate

		Stressor	100-m Landscape			Plot Vegetation			Plot Soil			Hydrology			Comments
			Scope	Severity	Impact	Scope	Severity	Impact	Scope	Severity	Impact	Scope	Severity	Impact	
Development	1	Development and associated pavement (3=residential, 4=industrial)		3, 4											
	2	Oil and gas wells, well pads, and footprint		4											
	3	Roads (dirt=1, gravel=2, paved=3, highway=4, railroad=3)		2, 3, 4											
	4	Agriculture (fallow field/hay field=2, orchard/row crop=3)		2, 3			2, 3								
	5	Utility/power line/pipeline corridor		1, 2, 3			1, 2, 3								
	6	Other Development (including sports fields, golf courses)													
Recreation	7	Non-motorized recreation (hunting, fishing, camping, hiking, birding, canoe/kayak/rafting)		1			1								
	8	Motorized recreation (atv, motor boats)		3			3								
	9	Other Recreation													
Vegetation	10	Tree resource extraction (clear cut= 3 or 4, selective cut = 2 or 3)		2, 3, 4			2, 3, 4								
	11	Non-chemical vegetation management (cutting, mowing)		2			2								
	12	Livestock grazing, excessive herbivory by native species (low=1, moderate=2, high=3) *note species in comments		1, 2, 3			1, 2, 3								
	13	Insect pest damage (low=1, mod=2, high=3)		1, 2, 3			1, 2, 3								
	14	Non-native or invasive plant species (non-native = 2, mostly noxious = 3)		2, 3			2, 3								
	15	Direct application of agricultural chemicals, herbicide spraying		2, 3			2, 3								
	16	Other Vegetation													
Natural	17	Evidence of recent fire (low=1, mod=2, severe=3)		1, 2, 3			1, 2, 3								
	18	Recent beaver dam blowout		1, 2			1, 2								
	19	Other Natural													

URAP Stressors

		Stressor	100-m Landscape			Plot Vegetation			Plot Soil			Hydrology			Comments
			Scope	Severity	Impact	Scope	Severity	Impact	Scope	Severity	Impact	Scope	Severity	Impact	
Soils	20	Excessive deposition of sediment or organic debris (inputs from recently logged sites, sedimentation in playas)													
	21	Excessive erosion or loss of organic matter (sheet or rill erosion, gullying, decay of organic soils)													
	22	Trash or refuse dumping													
	23	Substrate removal (excavation, peat mining)													
	24	Soil disturbance by animals (loafing areas, trampling, trails, soil displacement)													
	25	Indirect soil disturbance by humans (hiking trails, vehicle ruts)													
	26	Hummock/pedestal formation (unnatural formation)													
	27	Physical resource extraction (rock, sand, gravel, minerals, etc.)													
	28	Obvious excess salinity (dead or stressed plants, salt crusts)													
	29	Other Soils (including plowing, discing)													
Hydrology	30	PS Discharge (wastewater treatment, factory discharge, septic)													
	31	NPS discharge (urban/stormwater runoff)													
	32	NPS discharge (agricultural runoff, excess irrigation, excess manure)													
	33	NPS discharge (mine runoff, discharge from oil and gas)													
	34	Large dams/reservoirs													
	35	Impoundments, berms, dikes, levees that hold water in or out													
	36	Canals, diversion, ditches, pumps that move water in or out													
	37	Excavation for water retention (gravel ponds, pitted playas, dug stock pond)													
	38	Groundwater extraction (mark if evidence of dewatering exists, then check in office for evidence of groundwater extraction)													
	39	Flow obstruction (culverts, paved stream crossings)													
	40	Engineered channels (riprap, armored channel bank, bed)													
	41	Control of flow and energy (weir/drop structures, dredging)													
	42	Other Hydrology													
	43	Direct water source is impaired													

Additional Comments:

SiteID

Wetland name or number

Depressional Wetlands Water Quality Functions	points
D 1.0 Does the site have the potential to improve water quality?	
D 1.1 Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet (*water unlikely to leave wetland via surface flow, even during large storm events)* points = 5 Wetland has an intermittently flowing outlet *(e.g., seasonal or during thunderstorm, irrigation water that pools on site but also overflows onto adjacent fields, groundwater-fed playa where surface water runs off to adjacent area in floods)* **OR** Wetland has a highly constricted permanently flowing outlet *(e.g., managed impoundment*) points = 3 Wetland has a permanently flowing unconstricted surface outlet points = 1 *(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")*	
D 1.2 The soil 5 cm below the surface (or duff layer) is clay (sandy clay, silty clay, clay) or organic *(Use NRCS soil texture flow chart)* YES = 3 NO = 0	
D 1.3 Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) *(Vegetated areas include areas with ≥ 30% cover of the listed Cowardin classes, which excludes open water, aquatic bed, mudflats, etc. Plant must be persistent and not mowed or grazed, unless they are ≥ 15cm in height at time when flooding occurs. Plants do not have to be alive at visit, dead stalks also provide vertical structure to trap pollutants)* Wetland has persistent, vegetation for > 2/3 of area points = 5 Wetland has persistent, vegetation from 1/3 to 2/3 of area points = 3 Wetland has persistent, vegetation from 1/10 to < 1/3 of area points = 1 Wetland has persistent, vegetation < 1/10 of area points = 0	
D 1.4 Characteristics of season ponding or inundation (*Ponded area must be inundated for at least 2 consecutive months, then dry part of year)* Area seasonally ponded >1/2 total area of wetland points = 3 Area seasonally ponded is 1/4 – 1/2 total area of wetland points = 1 Area seasonally ponded is <1/4 total area of wetland points = 0	
Total for D 1 Add the points in the boxes above	
Rating of Site Potential If score is: ____12-16=H _____6-11=M _____0-5=L	
D 2.0 Does the landscape have the potential to support the water quality function of the site?	
D 2.1 Does the wetland receive stormwater discharges? Yes = 1 No = 0 *(Answer yes if there is a connection via pipe, stream, or ditch to stormwater ponds, parking lots, roads, and other impervious surfaces)*	
D 2.2 Is >10% of the area within 45 m of the wetland in land uses that generate pollutants? *(i.e., farming, grazing, golf course, residential/commercial/urban areas. If land use and associated pollutants are very light (e.g.-only a small number of cow pies and little to no evidence of grazing or soil disturbance rare/historic with minimum observable impacts) consider rating as "No."* Yes = 1 No = 0	
D 2.3 Are there septic systems within 75 m of the wetland? *(Look for residences within 75 m, septic more common in rural areas, esp. outside city limits with lots ≥ ½ acres)* Yes = 1 No = 0	
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? *(e.g., point source dischargers or agriculture inputs in contributing stream or ditch, sediment inputs, activities that generate pollutants within the wetland itself such as grazing, nutrient inputs from heavy use by geese. If land use and associated pollutants are very light (e.g.-only a small number of cow pies and little to no evidence of grazing or soil disturbance rare/historic with minimum observable impacts) consider rating as "No.")* Source_____ Yes = 1 No = 0	
Total for D 2 Add the points in the boxes above	
Rating of Landscape Potential If score is: ____3 or 4 = H ____1 or 2 = M ____0=L	
D 3.0 Is the water quality improvement provided by the site valuable to society?	
D 3.1 Does the wetland discharge directly (within 1.5 km) to a stream, river, or lake that is on the 303(d) list? *(via ditch, channel, or other discharge; check office eval)* Yes = 1 No = 0	
D 3.2 Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource? *(303(d) list, eutrophic lakes, problems with nuisance and toxic algae, see office eval)* Yes = 1 No = 0	
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? *(answer YES if there is a TMDL for the drainage or basin in which the wetland is found, check office eval)* Yes = 2 No = 0	
Total for D3 Add the points in the boxes above	
Rating of value If score is: ____2-4=H _____1=M _____0=L	
Subjective Overall Water Quality Rating	

SiteID

Wetland name or number

Subjective rating for site performing this function (ignore societal value)? ____H _____M _____L
Rationale for rating, including any cause for disagreement with rating above:

Depressional Wetlands

Hydrologic Function – Indicators that the site functions to reduce flooding and erosion.

D 4.0 Does the site have the potential to reduce flooding and erosion?

D 4.1 Characteristics of surface water outflows from the wetland:

Wetland has no surface water outlet. (*water unlikely to leave wetland via surface flow, even during large storm events)* points=8

Wetland has an intermittently flowing outlet *(e.g., seasonal or during thunderstorm, irrigation water that pools on site but also overflows onto adjacent fields, groundwater-fed playa where surface water runs off to adjacent area in floods)*

OR

Wetland has a highly constricted permanently flowing outlet *(e.g., managed impoundment*) points = 4

Wetland has a permanently flowing unconstricted surface outlet points = 0

(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")

D 4.2 Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry)*

Tip: use water marks on shore if dry, depth of water along inward edge of emergent plants if wet.

	points
Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding	8
Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding	6
The wetland is a headwater wetland	4
Seasonal ponding: 1 ft - < 2 ft	4
Seasonal ponding: 6 in - < 1 ft	2
Seasonal ponding: < 6 in or wetland has only saturated soils	0

Total for D 4 Add the points in the boxes above

Rating of Site Potential If score is____12-16=H _____6-11=M _____0-5L

D 5.0 Does the landscape have the potential to support the hydrologic functions of the site?

D 5.1 Does the wetland receive stormwater discharges? Yes = 1 No = 0

(Answer yes if there is a connection via pipe, stream, or ditch to stormwater ponds, parking lots, roads, and other impervious surfaces)

D 5.2 Is >10% of the area within 45m of the wetland in a land use that generates runoff?

(i.e., farming, grazing, golf course, residential/commercial/urban areas). If land use and associated pollutants are very light (e.g.-only a small number of cow pies and little to no evidence of grazing or soil disturbance rare/historic with minimum observable impacts) consider rating as "No."

Yes = 1 No = 0

D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?

(e.g., residential at > 1 residence/0.5 ha, urban, commercial, agriculture) Yes = 1 No = 0

Total for D 5 Add the points in the boxes above

Rating of Landscape Potential If score is _____3=H _____1 or 2=M _____0=L

D 6.0 Are the hydrologic functions provided by the site valuable to society?

D 6.1 The wetland is in a landscape that has flooding problems

Choose the description that best matches conditions around the wetland being rated. Do not add points.

Choose the highest score if more than one condition is met.

The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or wildlife habitat), AND

Flooding occurs in sub-basin that is immediately down-gradient of wetland points = 2

Surface flooding problems are in a sub-basin farther down-gradient points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. (*e.g., wetland along dammed lake or road acting as a levee or wetland receives irrigation water or groundwater with little other surface inputs*) Explain why_____ points = 0

There are no problems with flooding downstream of the wetland points = 0

Total for D 6 Add the points in the boxes above

Rating of Value If score is: _____2=H ___1=M ____0=L

Subjective Overall Hydrologic Function Rating

Subjective rating for site performing this function (ignore societal value)? _____H _____M _____L
Rationale for rating, including any cause for disagreement with rating above:

SiteID

Wetland name or number

Riverine Wetlands	
Water Quality Functions – Indicators that the site functions to improve water quality	points
R 1.0 Does the site have the potential to improve water quality	
R 1.1 Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: *(Count only depressions that hold water for more than a week after a flood; depressions with finer textured sediments than surrounding area indicate water present for longer periods)* Depressions cover > 1/3 area of wetland — points = 6 Depressions cover > 1/10 area of wetland — points = 3 Depressions present but cover < 1/10 area of wetland — points = 1 No depressions present — points = 0	
R 1.2 Structure of plants in the wetland (areas with >90% cover at person height; **not** Cowardin classes): *(Do not include SAV; can be grazed but should have time to grow before flooding season and be ≥ 15cm at the time of flooding)* Forest or shrub > 2/3 the area of the wetland — points = 10 Forest or shrub 1/3 – 2/3 area of the wetland — points = 5 Ungrazed, herbaceous plants >2/3 area of wetland — points = 5 Ungrazed, herbaceous plants 1/3 – 2/3 area of wetland — points = 2 Forest, shrub, and ungrazed herbaceous <1/3 area of wetland — points = 0	
Total for R 1 — Add the points in the boxes above	
Rating of Site Potential If score is: ____12-16=H _____6-11=M _____0-5=L	
R 2.0 Does the landscape have the potential to support the water quality function of the site?	
R 2.1 Is the wetland within an incorporated city? *(check office eval)* — Yes = 2 No = 0	
R 2.2 Does the contributing basin include an incorporated area? *(check office eval)* — Yes = 1 No = 0	
R 2.3 Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? *(check imagery in collector app)* — Yes = 1 No = 0	
R 2.4 Is > 10% of the area within 45 m of wetland in land uses that generate pollutants? (*i.e., farming, grazing, golf course, residential/commercial/urban areas*). *If land use and associated pollutants are very light (e.g.-only a small number of cow pies and little to no evidence of grazing or soil disturbance rare/historic with minimum observable impacts) consider rating as "No."* Yes = 1 No = 0	
R 2.5 Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? *(e.g., point source dischargers or agriculture inputs in contributing stream or ditch, sediment inputs, activities that generate pollutants within the wetland itself such as grazing, nutrient inputs from heavy use by geese. If land use and associated pollutants are very light (e.g.-only a small number of cow pies and little to no evidence of grazing or soil disturbance rare/historic with minimum observable impacts) consider rating as "No."* Source_____ — Yes = 1 No = 0	
Total for R 2 — Add the points in the boxes above	
Rating of Landscape Potential If scores is: _____3-6=H _____1 or 2=M ____0=L	
R 3.0 Is the water quality improvement provided by the site valuable to society?	
R 3.1 Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	
R 3.2 Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? — Yes = 1 No =0	
R 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the drainage in which the wetland is found.* — Yes = 2 No = 0	
Total for R 3 — Add the points in the boxes above	
Rating of Value If scores is: ____2-4=H _____1=M ____0=L	
Subjective Overall Water Quality Rating	
Subjective rating for site performing this function (ignore societal value)? _____H _____M _____L Rationale for rating, including any cause for disagreement with rating above.	

SiteID

Wetland name or number

Riverine Wetlands Hydrologic Functions – Indicators that site functions to reduce flooding and stream erosion	points
R 4.0 Does the site have the potential to reduce flooding and erosion?	
R 4.1 Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).* If the ratio is more than 2 points=10 If the ratio is 1-2 points=8 If the ratio is 1/2 - < 1 points=4 If the ratio is 1/4 - < 1/2 points=2 If the ratio is < 1/4 points=1	
R 4.2 Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Do not include SAV. Choose the points appropriate for the best description (polygons need to have > 90% cover at person height. These are NOT Cowardin classes.)* Forest or shrub for more than 2/3 the area of the wetland points = 6 Forest or shrub for > 1/3 area OR emergent plants > 2/3 area points=4 Forest or shrub for > 1/10 area OR emergent plants > 1/3 area points=2 Plants do not meet above criteria points=0	
Total for R 4 Add the points in the boxes above	
Rating of Site Potential If scores is: ____12-16=H _____6-11=M ____0-5=L	
R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
R 5.1 Is the stream or river adjacent to the wetland downcut? Yes = 0 No = 1	
R 5.2 Does the up-gradient watershed include an incorporated area? Yes = 1 No = 0 (*check office eval hydrology notes and collector map*)	
R 5.3 Is the up-gradient stream or river controlled by dams? Yes = 0 No = 1 *(check office eval hydrology notes and collector map)*	
Total for R 5 Add the points in the boxes above	
Rating of Landscape Potential If score is:_____3 = H ___1 or 2 = M _____0 = L	
R 6.0. Are the hydrologic functions provided by the site valuable to society?	
R 6.1 Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site.* The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources points=2 Surface flooding problems are in a basin farther down-gradient points=1 No flooding problems anywhere downstream points=0	
Total for R 6 Add the points in the boxes above	
Rating of Value If score is:___2 = H ___1 = M __0 = **L**	
Subjective Overall Hydrologic Function Rating	
Subjective rating for site performing this function (ignore societal value)? ____H _____M _____L Rationale for rating, including any cause for disagreement with rating above.	

SiteID

Wetland name or number

Lake Fringe Wetlands Water Quality Functions – Indicators that the site functions to improve water quality.	points
L 1.0. Does the site have the potential to improve water quality?	
L 1.1. Average width of plants along the lakeshore *(including aquatic bed; use polygons of Cowardin classes)*: Plants are more than 10 m wide points = 6 Plants are more than 5 m and < 10 m wide points = 3 Plants are more than 2 m and < 15 m wide points = 1 Plants are less than 2 m wide points = 0	
L 1.2 Characteristics of the plants in the wetland: *Choose the appropriate description that results in the highest points. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of cover is total cover in the wetland, but it can be in patches. Herbaceous does not include aquatic bed*. Cover of herbaceous plants is > 90% of the vegetated area points = 6 Cover of herbaceous plants is > 2/3 of the vegetated area points = 4 Cover of herbaceous plants is > 1/3 of the vegetated area points = 3 Other plants that are not aquatic bed > 2/3 wetland points = 3 Other plants that are not aquatic bed in > 1/3 vegetated area points = 1 Aquatic bed plants and open water cover > 2/3 of the wetland points = 0	
Total for L 1 Add the points in the boxes above	
Rating of Site Potential If score is:____**8-12 = H** _____**4-7 = M** _____**0-3 = L**	
L 2.0 Does the landscape have the potential to support the water quality function of the site?	
L 2.1. Is the lake used by power boats? *(e.g., impoundments used for hunting, include small outboards < 10hp; look for boat ramps and accessibility; see office eval)* Yes = 1 No = 0	
L 2.2. Is > 10% of the area within 45 m of wetland on the upland side in land uses that generate pollutants? (*i.e., farming, grazing, golf course, residential/commercial/urban areas. If land use and associated pollutants are very light (e.g.-only a small number of cow pies and little to no evidence of grazing or soil disturbance rare/historic with minimum observable impacts) consider rating as "No."* Yes = 1 No = 0	
L 2.3. Does the lake have problems with algal blooms or excessive plants such as milfoil? *(see office eval)* Yes = 1 No = 0	
Total for L 2 Add the points in the boxes above	
Rating of Landscape Potential If score is:_____2 or 3 = H _____1 = M _____0 = L	
L 3.0. Is the water quality improvement provided by the site valuable to society?	
L 3.1. Is the lake on the 303(d) list of degraded aquatic resources? Yes = 1 No = 0	
L 3.2. Is the lake in a sub-basin where water quality is an issue (at least one aquatic resource in the basin is on the 303(d) list)? Yes = 1 No = 0	
L 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the lake or basin in which wetland is found.* Yes = 2 No = 0	
Total for L 3 Add the points in the boxes above	
Rating of Value If score is: ____2-4 = H _____1 = M _____0 = L	
Subjective Overall Water Quality Function rating	
Subjective rating for site performing this function (ignore societal value)? ____H ___M ____L Rationale for rating, including any cause for disagreement with rating above.	

SiteID

Wetland name or number

Lake Fringe Wetlands Hydrologic Functions – Indicators that the wetland unit functions to reduce shoreline erosion	points
L 4.0. Does the site have the potential to reduce shoreline erosion?	
L 4.1 Distance along shore and average width of Cowardin classes along the lakeshore (**do not** include Aquatic Bed): *Choose the highest scoring description that matches conditions in the wetland.* > 3/4 of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide — points = 6 > 3/4 of distance is Scrub-shrub or Forested at least 6 ft (2 m) wide — points = 4 > 1/4 distance is Scrub-shrub or Forested at least 33 ft (10 m) wide — points = 4 Plants are at least 6 ft (2 m) wide (do not include Aquatic Bed) — points = 2 Plants are less than 6 ft (2 m) wide (do not include Aquatic Bed) — points = 0	
Rating of Site Potential Hydrologic function If score is: _____**6 = M** _____**0-5 = L**	
L 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
L 5.1. Is the lake used by power boats with more than 10 hp? Yes = 1 No = 0 *(e.g., impoundments used by duck hunters; see office eval)*	
L 5.2. Is the fetch on the lake side of the wetland at least 1 mile (1.6km) in distance? *(fetch is uninterrupted distance the wind can blow without a significant change in direction; measure farthest distance to another shore or obstruction)* Yes = 1 No = 0	
Total for L 5 Add the points in the boxes above	
Rating of Landscape Potential If score is:_____**2 = H** _____**1 = M** ____**0 = L**	
L 6.0. Are the hydrologic functions provided by the site valuable to society?	
L 6.1 Are there resources, both human and natural, along the shore that can be impacted by erosion? *If more than one resource is present, choose the one with the highest score.* There are human structures within 7.6 m of OHWM of the shore in the wetland *(OHWM=ordinary high water mark)* Points = 2 There are nature trails or other paths and recreational activities within 7.6 m of OHWM — points = 1 Other resources that could be impacted by erosion — points = 1 There are no resources that can be impacted by erosion along the shores of the wetland — points = 0	
Rating of Value If score is:__**2 = H** ___**1 = M** __**0 = L**	
Subjective Overall Hydrologic Function Rating	
Subjective rating for site performing this function (ignore societal value)? _____H _____M _____L Rationale for rating, including any cause for disagreement with rating above.	

SiteID

Wetland name or number

Slope Wetlands Water Quality Functions – Indicators that the site functions to improve water quality	points
S 1.0 Does the site have the potential to improve water quality?	
S 1.1. Characteristics of average slope of wetland: *(a 1% slope has a 30 cm vertical drop in elevation for every 30 m of horizontal distance. If slope varies in wetland, use upper and lowermost boundaries to calculate*) Slope is 1% or less — points = 3 Slope is > 1% - 2% — points = 2 Slope is > 2% - 5% — points = 1 Slope is greater than 5% — points = 0	
S 1.2. The soil 5 cm below the surface (or duff layer) is clay (sandy clay, silty clay, clay) or organic *(Use NRCS soil texture flow chart)* — Yes = 3 No = 0	
S 1.3 Characteristics of the plants in the wetland that trap sediments and pollutants: *Choose the points appropriate for the description that best fits the plants in the wetland. Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 15 cm.* Dense, uncut, herbaceous plants > 90% of the wetland area — points = 6 Dense, uncut, herbaceous plants > 1/2 of area — points = 3 Dense, woody, plants > 1/2 of area — points = 2 Dense, uncut, herbaceous plants > 1/4 of area — points = 1 Does not meet any of the criteria above for plants — points = 0	
Total for S 1 — Add the points in the boxes above	
Rating of Site Potential If score is:_____12 = H _____6-11 = M _____0-5 = L	
S 2.0 Does the landscape have the potential to support the water quality function at the site?	
S 2.1. Is > 10% of the area within 45 on the uphill side of the wetland in land uses that generate pollutants? *(i.e., farming, grazing, golf course, residential/commercial/urban areas). If land use and associated pollutants are very light (e.g.-only a small number of cow pies and little to no evidence of grazing or soil disturbance rare/historic with minimum observable impacts) consider rating as "No."* Yes = 1 No = 0	
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? *(e.g., point source dischargers or agriculture inputs in contributing stream or ditch, sediment inputs, activities that generate pollutants within the wetland itself such as grazing, nutrient inputs from heavy use by geese. If land use and associated pollutants are very light (e.g.-only a small number of cow pies and little to no evidence of grazing or soil disturbance rare/historic with minimum observable impacts) consider rating as "No."* Other sources _____ — Yes = 1 No = 0	
Total for S 2 — Add the points in the boxes above	
Rating of Landscape Potential If score is:_____1-2 = M _____0 = L	
S 3.0 Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly to a stream, river, or lake that is on the 303(d) list (*within 1.6 km*)? *(Answer yes if there is a connection via pipe, stream, or ditch)* — Yes = 1 No = 0	
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list*. — Yes = 1 No = 0	
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (*answer YES if there is a TMDL for the drainage or basin in which wetland is found*) — Yes = 2 No = 0	
Total for S 3 — Add the points in the boxes above	
Rating of Value If score is:____**2-4 = H** _____**1 = M** ____**0 = L**	
Subjective Overall Water Quality Rating	
Subjective rating for site performing this function (ignore societal value)? ____H _____M _____L Rationale for rating, including any cause for disagreement with rating above.	

SiteID

Wetland name or number

Slope Wetlands Hydrologic Functions – Indicators that the site functions to reduce flooding and erosion	
S 4.0 Does the site have the potential to reduce flooding and erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: *Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > 1/8 in [3mm]) or dense enough to remain erect during surface flows.* Dense, uncut rigid plants cover >90% of the area of the wetland points=1 All other conditions points=0	
Rating of Site Potential If score is:___1 = M __0 = L	
S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses that generate excess surface runoff? *(e.g., agriculture, grazing, residential/commercial/urban areas). If land use and associated pollutants are very light (e.g.-only a small number of cow pies and little to no evidence of grazing or soil disturbance rare/historic with minimum observable impacts) consider rating as "No."* Yes = 1 No = 0	
Rating of Landscape Potential If score is:_____1 = M __0 = L	
S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources (e.g., houses or sensitive habitat) points=2 Surface flooding problems are in a sub-basin farther down-gradient points=1 No flooding problems anywhere downstream points=0	
Total for S 6 Add the points in the boxes above	
Rating of Value If score is:_____2 = H _____1 = M ___0 = L	
Subjective Overall Hydrologic Function Rating	
Subjective rating for site performing this function (ignore societal value)? ____H _____M _____L Rationale for rating, including any cause for disagreement with rating above.	

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Wetland name or number

These questions apply to wetlands of all HGM Classes

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the wetland have the potential to provide habitat for many species?

H 1.1. Structure of the plant community

Check the vegetation classes present, for classes that cover >=10% of wetland. Examine water and mudflats for evidence of dried or senesced aquatic bed. You may combine up to 10 patches together to reach the 10% threshold.

____Aquatic bed

____Emergent plants 0-30 cm high are the highest layer and have > 30% cover

____Emergent plants >30-100 cm high are the highest layer with >30% cover

____Emergent plants > 100 cm high are the highest layer with >30% cover

____Scrub-shrub (areas where woody species <6 m tall have >30% cover and are highest layer)

____Forested (areas where woody species >6 m have >30% cover)

Scoring

>=4 checks: points = 3

3 checks: points = 2

2 checks: points = 1

1 check: points = 0

H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0

H 1.3. Surface water

H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least 10% of its area during the spring (March to early June) OR early fall (August to the end of September)?

Answer YES for Lake Fringe wetlands. **Yes** = 3 points & go to H 1.4 **No** = go to H 1.3.2

Assume NO if entire wetland vegetated and assume YES if standing water present in July or October or if wetland has unvegetated mudflats present.

H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0

H 1.4. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2 (1 m^2). Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)

# of species ____

Scoring:

> 9 species: points = 2

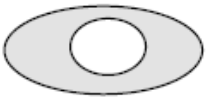
4-9 species: points = 1

< 4 species: points = 0

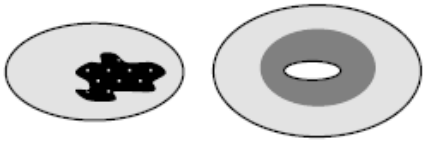
H 1.5. Interspersion of habitats

Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and at least 10% open water, the rating is always high. Several isolated patches of one structural category should be considered the same as one patch with many lobes.

None = 0 points

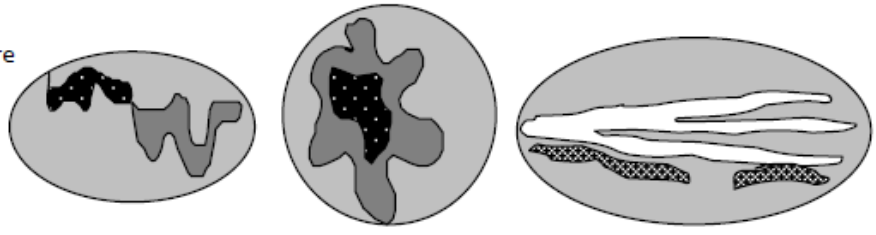


Low = 1 point



Moderate = 2 points

All three diagrams in this row are **High** = 3 points



Riparian braided channels with 2 classes

H 1.6. Special habitat features

Check the habitat features that are present in the wetland. The number of checks is the number of points.

____Loose rocks OR large, downed, woody debris > 4 in diameter within the area of surface ponding or in stream.

____Cattails or bulrushes are present within the wetland.

____Standing snags (diameter at the bottom > 10 cm) in the wetland or within 30 m of the edge.

____Emergent or shrub vegetation in areas that are permanently inundated/ponded.

SiteID

Wetland name or number

____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope, banks must be at least 10 m long and 60 cm high within or immediately adjacent to wetland) OR signs of recent beaver activity ____Noxious weed species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover) [Examples include Cirsium arvense, Lythrum salicaria, Phalaris arundinacea, Phragmites australis, and Tamarix]		
Total for H 1 Add the points in the boxes above		
Rating of Site Potential If score is: ___15-18 = H ____7-14 = M ____0-6 = L		

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: *Calculate:* % undisturbed habitat _____ **+** [(% moderate and low intensity land uses)/2] ____ **=**_____% > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1km Polygon points = 2 10-19% of 1km Polygon points = 1 <10% of 1km Polygon points = 0	
H 2.2. Low-disturbance habitat in 1 km Polygon around wetland. *Calculate:* % undisturbed habitat _____ **+** [(% moderate and low intensity land uses)/2] ____ **=**_____% > 50% of Polygon points = 3 10 - 50% and in 1-3 patches points = 2 10 - 50% and > 3 patches points = 1 < 10% of Polygon points = 0	
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use points = (- 2) Does not meet criterion above points = 0	
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* Yes = 3 No = 0	
Total for H 2 Add the points in the boxes above	
Rating of Landscape Potential If score is: ____**4-9 = H** ____**1-3 = M** ____**< 1 = L**	
H 3.0. Is the habitat provided by the site valuable to society?	

Check which of the following priority habitats from the Utah Wildlife Action Plan are present within 100 m of site ___Aspen-Conifer (Aspen or aspen mixed with conifer) ___Desert Grassland (drought-tolerant bunchgrasses, sometimes interspersed with shrubs like sagebrush) ___Gambel Oak (Gambel oak alone or mixed with other mesic shrubs) ___Lowland or Mountain Sagebrush (sagebrush sometimes mixed with other shrub species) ___Mojave Desert Shrub (shrub species such as creosotebush, white bursage, paloverde, or cacti) ___Mountain Meadow (often forb-dominated mesic montane meadows with species such as Mertensia, Erigeron, Thalictrum, Rudbeckia, and grasses such as Deschampsia and some Carex species) ___Mountain Shrub (mountain mahogany, bigtooth maple, Rhus, Ribes, Symphoricarpos or similar species) ___Riparian (non-wetland riparian areas along streams or lake edges)	Scoring (# checks) >=3: points = 2 1 or 2: points = 1 0: points = 0	
Rating of Value If score is: ____**2 = H** ____**1 = M** ____**0 = L**		
Subjective Overall Habitat Function Rating		
Subjective rating for site performing this function (ignore societal value)? ____H _____M _____L Rationale for rating, including any cause for disagreement with rating above.		

Site ID:	Surveyors:	Date:

Ground Cover and Vertical Strata (all estimates in % unless otherwise stated)

To help with estimation of soil versus litter, drop a pin in 10 locations near one another in each quadrat of the plot to determine soil vs. litter

Ground Cover Type **AA/Plot**	**AA**	**1**	**2**	**3**	**4**
Cover of *visibly exposed* soil / sand / sediment (including mudflats and salt encrustations)[1]					
Cover of *remaining* soil / sand / sediment (e.g., bare ground hidden by vegetation)[1]					
Cover of gravel / cobble (~2–250 mm)[1]					
Cover of bedrock / rock / boulder (>250 mm)[1]					
Area of AA with dense canopy of litter mostly >10-20 cm ***above*** wetland surface (dense enough to obscure boots) incl. litter in water					
Area of AA with dense canopy of litter mostly reaching down to wetland surface (dense enough to obscure boots) incl. litter in water					
Cover of remaining litter (too low to hide a boot in- i.e. all litter not as above) incl. litter in water					
Total litter cover in areas with surface water (WetLit)	—	—	—	—	—
Predominant litter type (C = coniferous, E = broadleaf evergreen, D = deciduous, S = sod/thatch, F = forb)					
Actual *cover of water (any depth, vegetated or not, standing or flowing)*					
Sum of above covers (subtract WetLit, should add up to 95-100%)					
Actual cover of shallow water <20 cm					
Actual cover of deep water ≥20 cm					
Actual cover of open water with no vegetation					
Actual cover of water with submergent or floating aquatic vegetation[2]					
Actual cover of water with emergent vegetation					
Potential cover of shallow water <20 cm at ordinary high water					
Potential cover of deep water ≥20 cm at ordinary high water					
Cover of standing dead trees (>5 cm diameter at breast height (DBH)- 1.4 m)					
Cover of standing dead shrubs/small trees (<5 cm DBH- 1.4 m)					
Cover of downed coarse woody debris (fallen trees, rotting logs, >5 cm diameter)					
Cover of downed fine woody debris (<5 cm diameter)					
Cover bryophytes (including under water, vegetation or litter)					
Cover lichens (including under water, vegetation, litter, and on trees)					
Cover algae(including under water, vegetation or litter)					
Cover of desiccated/dried algae					
Cover of wet filamentous algae					
Cover of macroalgae (chara, etc.)					
Epiphytic "algae" ("biofilm" covering submerged vegetation)[3]	N L M H	N L M H	N L M H	N L M H	N L M H
Substrate algae (algae covering rocks, litter, etc.)[3]	N L M H	N L M H	N L M H	N L M H	N L M H
For measures below, do not look at the exact cover (i.e. the shadow produced when the sun is directly overhead). Rather, identify regions of overlap.					
Circle all layers present (in at least 5% of suitable area), Submerged (Su), Floating (Fl), Short <0.5 m (Sh), Medium 0.5-1.5 m (Me), Tall 1.5-3.0 m (Ta), and Very Tall > 3.0 m (VT); height of layers must also be at least 20 cm apart	Su Fl Sh Me Ta VT	Su Fl Sh Me Ta VT	Su Fl Sh Me Ta VT	Su Fl Sh Me Ta VT	Su Fl Sh Me Ta VT
Area of AA with overlap of three or more plant layers (layers listed above)					
Area of AA with overlap of two plant layers (layers listed above)					

[1]Features should not be covered by litter or water, but can have algae cover.
[2]Can overlap with other water cover, such as emergent vegetation
[3]Select Not present/trace (N), low (L), medium (M), or high (H)

Comments:

Site ID:	Surveyors:	Date:
Site Sketch: Define scale for grid, add north arrow. Mark inlets and outlet if present in or adjacent to AA.		

Site ID:	Surveyors:	Date:

Plant Species Table: List all plant species found in AA and estimate height, percent cover and dominant phenology
Height class (H): A: <0.5 m **B**: 0.5–1 m **C**: 1-2 m **D**: 2–5 m **E**: 5- 10 m **F:** >10 m **G:** submerged/floating **50 m² = 1% of standard AA**
2 m= 6 ½ ft person; 7.5 m ~ 2 story house; conifers with heights of 5 and 10 m commonly have DBHs around 6 cm and 12 cm, respectively
Phenology (P): V: Vegetative , **Fl:** Flowering **Fr:** Fruiting **SD:** standing dead (current year only!)
Record low cover species as either <1 or T for Trace; the latter for very small cover.

Determine the number of plant communities in the AA. The initial search time will be 30 minutes for the first community plus 20 minutes for each additional community. If 3 or more new species are encountered in the last 10 minutes of the survey, add 10 additional minutes to the survey time. Continue until < 3 new species are found in 10 minutes.

Scientific Name/Pseudonym	Time	Coll #	H	P	% AA	% 1	% 2	% 3	% 4

Measure litter depth and water depth at four representative locations in the AA or, for Level III, in four locations within each plot. If there is no litter or water of the specified depth, enter a dash, NOT a zero.

All measurements in cm	AA		Plot 1		Plot 2		Plot 3		Plot 4	
Litter depth										
Water depth < 20 cm										
Water depth ≥ 20 cm										

Site ID:	Surveyors:	Date:

Plant Species Table: List all plant species found in AA and estimate height, cover, and dominant phenology

Height class (H): A: <0.5 m **B**: 0.5–1 m **C**: 1-2 m **D**: 2–5 m **E**: 5- 10 m **F:** >10 m **G:** submerged/floating **50 m^2 = 1% of standard circular AA**

2 m= 6 ½ ft person; 7.5 m ~ 2 story house; conifers with heights of 5 and 10 m commonly have DBHs around 6 cm and 12 cm, respectively

Phenology (P): V: Vegetative , **Fl:** Flowering **Fr:** Fruiting **SD:** standing dead (from current year, not previous years)

Record low cover species as either <1 or T for Trace; the latter for very small cover.

Scientific Name/Pseudonym	Time	Coll #	H	P	% AA	% 1	% 2	% 3	% 4

SITE ID:_____ OBSERVER:_____

Soil Profile

Veg Patch #:_____ PHOTO # (# from tablet):_____ Pit Depth (cm): _____ Settling Time Begin (Time):_____ Settling Time End (Time):_____

Settling Time (mins): _____ Depth to saturated soil OR NA[1] (cm): _____ Depth to free water OR NA[1] (cm): _____ MAKE NOTE IF SOIL PIT IS SLOWLY FILLING

List dominant plant species within 1 m of soil pit (ask vegetation specialist for assistance): _____

[1]depths below the soil surface are recorded as positive values and depths above the soil surface are recorded as negative

Layer Form[1]	Depth	Matrix	Dominant Redox Features			Secondary Redox Features				%	%
	(cm)	Color (moist)	Feature Type[2]	Color (moist)	%	Feature Type[2]	Color (moist)	%	Texture	Coarse	Roots

[1]Mineral, Mucky Mineral, Organic (list peat, muck, mucky peat under Texture) [2]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains, SC- Secondary Color

Hydric Soil Indicators: See field manual for descriptions and circle all that apply

**only Arid West, **only Mtn problem soils*

Organic Soil Layer: A1 A2 A3

Muck Layer*: A10** A9*

Mucky Mineral: S1 F1

Hydrogen Sulfide Odor: A4

Gleyed Matrix: S4 F2 A11 A12

Depleted Matrix: A11 A12 F3 F9*

Redox Concentrations: S5 F6 F8

Redox Depletions: S6 F7

Problem Soil: TF2 TF12** F18*

Indicators of Site Hydrology for WMVC: See field manual for descriptions and circle all that apply

Observation of Surface Water or Saturated Soils: A1 A2 A3

Evidence of Recent Inundation: B1 B2 B3 B4 B5 B6 B7 B8 B9 **B10** B11 B13

Evidence of Current or Recent Soil Saturation: C1 **C2** C3 C4 C6 **C9**

Evidence from Other Site Conditions or Data: **D2** **D3** **D5** **D7**

Bold- Secondary Indicators

Soil Pit Notes:

Water Chemistry for Soil Pit: Depth to water indicates depth from the surface of the wetland to water in the hole. If surface water is present, record information with water chemistry data

Unique Soil ID (#)	Location (circle)	Depth to Water (cm)	Meter	pH	EC Out of Range	EC (mS or uS)	Temp (C°)	Notes
	Soil Pit OR Well		Low High		☐			

SITE ID_____ **Date:**_____

WQ Start Time: _____ (24-hr time) **End Time:** _____ (24-hr time) **Wind:** Calm Light Strong

72 hour rainfall estimate : none light/drizzle heavy/storm **Air temperature**:____°C

Current Weather: Mostly Clear (0-10% cloud) Partly Cloudy (10-50%) Mostly Cloud (50-99%) Overcast (100%) Rain Snow

Waterbody 1

WB TYPE: (circle one) permanent lake/pond temporary pool/pond springhead pool springhead channel stream ditch active beaver pond inactive beaver pond wet meadow with standing water other:_____

Not channel-like: wetted area[1]: <10m² 10-<100m² 100-<1000m² 1000-5000m² >5000m² **Channel-like, average width:** _____ cm

Waterbody with Depth…. <0.2 m _____% 0.2- 1 m _____% 1-2 m_____% >2 m _____% (add to 100)

PRIMARY SUBSTRATE: Silt/mud Sand/gravel Cobble Boulder/Bedrock Other:

% WATER WITH EMERGENT VEG.	0	1-25	>25-50	>50	% SURFACE ALGAE	0	1-25	>25-50	>50
% WATER WITH SUBMERGENT VEG.	0	1-25	>25-50	>50	% CHARA	0	1-25	>25-50	>50

TURBIDITY: Mostly turbid Mixture of turbid/clear Mostly clear

Notes:

Waterbody 2

WB TYPE: (circle one) permanent lake/pond temporary pool/pond springhead pool springhead channel stream ditch active beaver pond inactive beaver pond wet meadow with standing water other:_____

Not channel-like: wetted area[1]: <10m² 10-<100m² 100-<1000m² 1000-5000m² >5000m² **Channel-like, average width:** _____ cm

Waterbody with Depth…. <0.2 m _____% 0.2- 1 m _____% 1-2 m_____% >2 m _____% (add to 100)

PRIMARY SUBSTRATE: Silt/mud Sand/gravel Cobble Boulder/Bedrock Other:

% WATER WITH EMERGENT VEG.	0	1-25	>25-50	>50	% SURFACE ALGAE	0	1-25	>25-50	>50
% WATER WITH SUBMERGENT VEG.	0	1-25	>25-50	>50	% CHARA	0	1-25	>25-50	>50

TURBIDITY: Mostly turbid Mixture of turbid/clear Mostly clear

Notes:

Waterbody 3

WB TYPE: (circle one) permanent lake/pond temporary pool/pond springhead pool springhead channel stream ditch active beaver pond inactive beaver pond wet meadow with standing water other:_____

Not channel-like: wetted area[1]: <10m² 10-<100m² 100-<1000m² 1000-5000m² >5000m² **Channel-like, average width:** _____ cm

Waterbody with Depth…. <0.2 m _____% 0.2- 1 m _____% 1-2 m_____% >2 m _____% (add to 100)

PRIMARY SUBSTRATE: Silt/mud Sand/gravel Cobble Boulder/Bedrock Other:

% WATER WITH EMERGENT VEG.	0	1-25	>25-50	>50	% SURFACE ALGAE	0	1-25	>25-50	>50
% WATER WITH SUBMERGENT VEG.	0	1-25	>25-50	>50	% CHARA	0	1-25	>25-50	>50

TURBIDITY: Mostly turbid Mixture of turbid/clear Mostly clear

Notes:

Water Chemistry Data

PHOTO ID	*Shore (N, NE E, etc.)*	*Stand. or Flow.*	*Depth of water (cm)*	*pH*	*EC*	*EC units or Out of Range*	*Temp (°C)*	*Color*	*Turbidity Tube*	*Shaded >1/3 day?*
		S F				*uS mS OOR*		Clear Stained	> *or* = (circle one): _____ cm	Yes No
		S F				*uS mS OOR*		Clear Stained	> *or* = (circle one): _____ cm	Yes No
		S F				*uS mS OOR*		Clear Stained	> *or* = (circle one): _____ cm	Yes No

[1]Regular Full Size Ford F-150 (excluding mirrors) is about 12.5 m², Baseball diamond is about 750m², football field is about 5300 m²