

West Virginia Wetland Rapid Assessment Datasheet

Identifiers (refer to page 22 of WVWRAM User Manual)

Site name _____	Date _____	SiteEventCode _____
Crew leader name _____	Field crew name(s) _____	
Time (24 hr) Start _____ End _____	<input type="checkbox"/> gear decontaminated prior to entering site (p. 19) <input type="checkbox"/> all datasheets checked by crew leader at end of sampling	
Directions to site: _____		

Notes on land use history, site conditions, wildlife observed, discussions with landowner or other on-site personnel, or deviations from protocol:

GPS make/model _____	GPS datum: <input type="checkbox"/> NAD83 <input type="checkbox"/> other _____	<input type="checkbox"/> Photos of inlet, outlet, NWI types, soils, stressors, and any other key features (p.23)
Coordinates (decimal degrees): _____		

Assessment Area <i>Check one (p.25)</i> <input type="checkbox"/> AA is the entire Wetland Unit (most sites). <input type="checkbox"/> AA is a portion of the very large WU (> 25 acres) <input type="checkbox"/> AA is only the Project Area, smaller than the WU - permission unobtainable to sample entire WU Comment _____	Purpose of Assessment <i>Check one</i> <input type="checkbox"/> pre-impact or pre-restoration <input type="checkbox"/> post-impact <input type="checkbox"/> monitoring or general Comment _____ Special Conservation Concern <i>Check one(p.32)</i> _____ B-rank. If not known, check topmost box that applies. Read definitions in manual! <input type="checkbox"/> old-growth swamp (B3) <input type="checkbox"/> large bog or fen (B4) <input type="checkbox"/> mature forested swamp (B5) <input type="checkbox"/> summit sinkhole (Ridge&Valley only)(B5) <input type="checkbox"/> no known special concern Comment _____	PERIMETER AND NATURAL BUFFER (p.33) Natural perimeter <i>Check one (p.34)</i> <input type="checkbox"/> 100% <input type="checkbox"/> 75-99% <input type="checkbox"/> < 75% 50m (164') natural buffer for water quality <i>Check one (p.35)</i> <input type="checkbox"/> > 90% <input type="checkbox"/> 75-90% <input type="checkbox"/> 50-75% <input type="checkbox"/> < 50% Contiguous 300m (984') natural wildlife buffer <i>Check one (p.35)</i> <input type="checkbox"/> > 90% <input type="checkbox"/> 60-90% <input type="checkbox"/> < 60%
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NON-REGULATORY ADDITIONAL INFORMATION *For land acquisition and full functional scores (p.36)*

Ownership/Access <i>Check one (p.36)</i> <input type="checkbox"/> public, or private with permanent unrestricted access <input type="checkbox"/> private, with seasonal, partial, or case-by-case access <input type="checkbox"/> private, without public access Comment _____	Investment <i>Check one (p.36)</i> <input type="checkbox"/> compensatory mitigation site <input type="checkbox"/> conservation easement <input type="checkbox"/> other conservation investment <input type="checkbox"/> no known conservation investment Comment _____	Recreation Infrastructure <i>Check all that apply (p.37)</i> <input type="checkbox"/> maintained parking <input type="checkbox"/> boardwalk <input type="checkbox"/> informational kiosk or brochure <input type="checkbox"/> maintained road w/i 30m (100') with view <input type="checkbox"/> maintained trail <input type="checkbox"/> boat access <input type="checkbox"/> no infrastructure Comment _____
Planning or scientific use <i>Check all that apply (p.37)</i> <input type="checkbox"/> water quality plan includes wetland <input type="checkbox"/> habitat plan includes wetland <input type="checkbox"/> monitored > 2yrs, non-regulatory, data available to public <input type="checkbox"/> no known planning or sustained scientific use Comment _____	Other Public Use <i>Check all that apply (p.38)</i> <input type="checkbox"/> wetland visible from public area <100m (328') <input type="checkbox"/> evidence of non-consumptive use <input type="checkbox"/> evidence of consumptive use <input type="checkbox"/> no evidence of public use Comment _____	

TOPOGRAPHY AND STRUCTURE (p.38) Depressions <i>Check one (p.38)</i> <input type="checkbox"/> none <input type="checkbox"/> trace-10% <input type="checkbox"/> 10-33% <input type="checkbox"/> >33% Microtopographic complexity <i>Check one (p.39)</i> <input type="checkbox"/> < 3% <input type="checkbox"/> 3-40% <input type="checkbox"/> > 40% Karst topography <i>Check all that apply (p.39)</i> <input type="checkbox"/> limestone spring <input type="checkbox"/> sinkhole <input type="checkbox"/> sinking stream (not on mined land) <input type="checkbox"/> isolated closed depression over limestone <input type="checkbox"/> limestone/dol outcrop <input type="checkbox"/> cave adjacent <input type="checkbox"/> no evidence of karst	Structural Patch Type. $\geq 3 \text{ m}^2$ (32 ft ²) patch unless otherwise specified. <i>Check all that apply (p.40)</i> <input type="checkbox"/> Open water <input type="checkbox"/> Oxbows, secondary channels, swales <input type="checkbox"/> Pools inaccessible to fish <input type="checkbox"/> Springs or upwelling groundwater <input type="checkbox"/> Non-vegetated flats (mudflats, sandflats) <input type="checkbox"/> Animal mounds or burrows <input type="checkbox"/> Beaver dams or lodges <input type="checkbox"/> Abundant deciduous leaf litter <input type="checkbox"/> Plant hummocks or tussocks <input type="checkbox"/> Plant hummocks or tussocks > 25% cover of wetland (abundant) <input type="checkbox"/> Coarse woody debris at least 10 cm (4") diameter and 91 cm (36") long <input type="checkbox"/> Coarse woody debris, abundant: > 3% cover of wetland <input type="checkbox"/> Standing snags at least 7.6 cm (3") diameter and 137 cm (4.5') tall <input type="checkbox"/> Standing snags, abundant: $\geq 3/\text{acre}$ with dbh > 25 cm (10") <input type="checkbox"/> Upturned tree root wads (tip-up mounds) and pits Comment _____
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Site name _____ Date _____

VEGETATION STRUCTURE (p.43)

Forested NWI wetland types (combine all PFO...) Check all that apply
 Stratum covers ≥ 5% of PFOs or occupies ≥ 0.1 acre: (p.44)
 Canopy Understory Shrub Herb Moss

Emergent NWI wetland types (combine all PEM...) Check all that apply
 Height stratum covers ≥ 5% of PEMs or occupies ≥ 0.1 acre: (p.44)
 < 30 cm (1 ft) 30-100 cm (1-3.3 ft) > 100 cm (3.3 ft)

Forest regeneration Check one (p.44)
 All native tree canopy species with >10% cover are present in the sapling layer.
 Yes No

Tall (>100 cm) gaminoid marsh Check one (p.45)
 Tall marsh with at least seasonal standing water and cattails, sedges, bluejoint grass, or bulrushes occupies ≥ 0.1 acre.
 Yes No

Vegetation fringing open water Check one (p.45)
 At least 90% of open water (lake, pond ≥ 0.1 acre, perennial stream) boundaries are fringed by band of wetland vegetation ≥ 10 m (33 ft) wide.
 Yes No ("no" includes sites not adjacent to open water)

Mowed or grazed wetland Check one (p.46)
 Mowed < 15 cm (6") tall or livestock-grazed areas
 none trace - 33% 33-67% > 67%

HYDROLOGY (p.46)

Check one (p.46)
 Floodplain Wetland Unit (≥10% of wetland receives overland flow in 100-yr flood or more frequently, or major beaver influence in headwater wetlands)
 Non-floodplain Wetland Unit (may have stream associated with it but overland flow or beavers impact <10% of wetland)

Largest water source Check one; note stream order if perm. flowing (p.47)
 relatively permanently flowing and→ 1st or 2nd 3+ order
 intermittent or ephemeral
 underground spring
 no visible inlet (dispersed groundwater and precipitation only)
 bidirectional (no stream; water level follows lake level or river flood stage)

Largest outlet is... Check one (p.48)
 relatively permanently flowing
 relatively permanently flowing but highly constricted
 intermittent or ephemeral
 no surface outlet (groundwater only)

If largest water source is a surface stream: Check one if applicable
 natural altered or constructed

If largest outlet is a surface stream: Check one if applicable
 natural altered or constructed

Comment _____

Comment _____

Overbank flooding and connection to river continuum Check all that are observed within the wetland. Skip if no stream nearby/potentially connected. (pp.49-52)

- active beaver dam
- flood deposits (sediment deposits, debris, drift deposits, flood wrack)
- vegetation flattened and aligned along flow lines
- tree trunks with flood lines (water marks, silt coatings, staining, moss or lichen trim lines) or flood impact scars
- absence of leaf litter under deciduous trees as a result of flooding (not livestock impacts)
- braided stream channels, backwater sloughs, backchannels, or other flood drainage patterns present
- flood-prone area (inundated at 2 x maximum bankfull depth) overlaps at least 10% of wetland

Disconnection from river continuum Check all that are observed at the stream that controls the floodplain. Skip if no stream potentially connected. (pp.49-52)

- physical barriers between wetland & stream (roads, railbeds, hardened levees)
- artificial drainage of floodplain between wetland and stream (ditches, drains, grading of land to improve drainage)
- stream channel hardened (riprap, gabions, concrete)
- stream channel straightened and/or moved to toeslope (meanders eliminated)
- dam upstream significantly reduces flooding
- land subsidence or significant streamflow reduction (sinking stream) in mined areas NOT on karst
- stream channel banks are steep, eroding, have abundant bank slides or slumps, have < 50% cover of roots, or are unvegetated
- stream is entrenched or moderately entrenched (Rosgen ER < 2.2 or Rosgen types A, F, G, B). Entrenchment is calculated as the flood-prone width divided by the bankfull width. Flood-prone width is measured at the elevation equal to twice the maximum bankfull depth. Maximum bankfull depth is the height of bankfull flow above the thalweg.
- stream is incised; bank height ratio (BHR) > 1.5. Bank height ratio is calculated as the height of lowest bank divided by maximum bankfull depth.
- flood prone area (inundated at 2 x maximum bankfull depth) does not extend to more than 10% of wetland

Optional workspace for entrenchment, incisement, and flood-prone area measurements (pp.50-52)

See user manual for diagrams and definitions. Any units may be used as long as they are consistent.

maximum bankfull depth: _____

_____ / _____ = _____

2 x maximum bankfull depth: _____

flood-prone width / bankfull width = entrenchment ratio (ER)

bankfull width: _____

flood-prone width: _____

_____ / _____ = _____

lowest bank height: _____

lowest bank height / maximum bankfull depth = bank height ratio (BHR)

Site name _____

Date _____

Hydrology Stressors. Check all that apply, then review total disturbance below. (p.52)

- Ditch
- Tile or drain
- Weir, spillway, standing pipe or water control structure
- Impoundment impacting hydrology (excluding beaver dams)
- Berm
- Road or impervious surface (paved and/or not at grade)
- RR track
- Undersized or perched culvert
- Pump, spring box, water well
- Filling/excavating/grading the land surface
- Dredging of aquatic bed
- Point source discharge
- Stormwater input
- Agricultural runoff
- Invasive vegetation concentrated along watercourses, with at least twice as much invasive cover as areas away from watercourses
- Adjacent stream channel/riparian zone aggrading, with fresh splays of sediment, partially buried culverts, or bar formation
- More than 25% of the upland-wetland edge is abrupt and straight, not a gradual and complex transition zone > 3 meters (10 ft) wide
- Other _____

Review the total hydrologic disturbances above and rank severity of impact by checking one box below.

- Intact: Hydrologic regime is characterized by natural patterns, with no major hydrologic stressors present.
- Mild on-going disturbance and/or past disturbance but now essentially recovered. For example, small ditches or diversions; berms or roads at/near grade; or minor flow additions.
- Moderate on-going disturbance and/or in the process of recovering from more severe disturbance in the past. For example, dams upstream or downstream moderately affect hydroperiod; ditches or diversions < 1 m (3.3 ft) deep; two lane roads; culverts adequate for base stream flow but not flood flow; or moderate flow additions. Outlets may be moderately constricted, but flow is still possible.
- Severe on-going disturbance. For example, dams upstream or downstream moderately to substantially affect hydroperiod; a 4-lane highway; diversions upstream or > 1 m (3.3 ft) deep that withdraw a significant portion of flow; large amounts of fill or excavation; significant artificial groundwater pumping; or heavy flow additions. Outlets may be substantially constricted, blocking most flow.
- Hydrology is entirely artificial; no natural inflows. E.g., a water treatment wetland constructed below the outflow from a wastewater treatment plant.

Water Quality Stressors. Check all that apply. (p.53)

- No water quality stressors observed.
- Discharges to the wetland: stormwater discharges, livestock or agricultural runoff, straight pipes, drainage ditches, industrial discharges, oil slicks, sediment plumes, algal mats, odors, adjacent spoil piles, leaking silt fences, road salt, ROW herbicide, or erosion on the upland edges.
- Contiguous water body has algal bloom, power boat use, or other observable impairment.
- Other _____

Vegetation Removal or Alteration. Check one box that best describes the wetland. (p.53)

- Minimal or no signs of anthropogenic vegetation removal or alteration OR impacts occurred in the past (typically > 80 years ago) and the wetland appears to have recovered to near-natural conditions. Examples: mature forested swamps, undisturbed beaver systems, undisturbed peatlands.
- Moderate. Vegetation removal or alteration is on-going and has moderate impact in terms of either severity or extent OR impacts occurred in the past and wetland is still in the process of recovering. Examples: successional swamps (black willow, box elder), young/unstructured swamps, many shrub/emergent.
- Severe. More than half of wetland is impacted by regular mowing, clearing, grazing, timbering, farming, dredging of aquatic bed, herbicide/pesticide/fertilizer application, burning, excessive herbivory or other form of on-going vegetation removal or alteration. Comment _____

Soil Stressors. Check all that apply, then review total disturbance below. (p.54)

- Livestock (trampling, pugging, compaction, or heavy grazing that leads to erosion)
- Machinery (plowing, filling, grading, dredging, compaction)
- ATV or vehicles (ruts, compaction, other disturbance)
- Removal of soil (mining, excavation)
- Replacement of soil with waste or fill (mining spoil, landfill)
- Other trampling or soil compaction
- Other erosion, sedimentation, or stressor. Comment _____

Review the total soil disturbances above and rank severity of impact by checking one box below.

- Intact: no anthropogenic disturbance.
- Small to moderate stress to soil profile. On-going stressors affect < 10% of wetland OR impacts occurred in the past and the soil profile has largely recovered. Depth of disturbance typically < 10 cm (4"); ponding/channeling of water in disturbed areas has little or no impact on overall site hydrology.
- Substantial stress to soil profile with extensive and long-lasting impacts; depth of disturbance > 10 cm (4"), may cause significant ponding or channeling of water that alters hydrology and vegetation.

Site name _____ Date _____

NWI Wetland Types Refer to NWI code sheets. List all NWI codes present in assessment area; minimum 1 soil sample per each NWI code; minimum 1 soil sample per each 2 acres; NWI codes may be sampled more than once.
 Assign System, Class, and Subclass of the NWI code based on vegetation (ex. PEM1). Then sample soil and assign Water Regime, pH, and Soil organic/mineral modifiers. Add Special modifiers if present (ex. PEM1Abtn). (p.55)

NWI Wetland Type Code (refer to NWI Codes diagram)						Sampled	Not sampled (permanently ponded)	Soil notes Optional notes on soil profile or soil features
NWI System & Class	Sub-class	Wat. reg.	Spe-cial	pH	Soil			
Ex. PEM	1	B	d	t	n	<input type="checkbox"/>	<input type="checkbox"/>	
1.						<input type="checkbox"/>	<input type="checkbox"/>	
2.						<input type="checkbox"/>	<input type="checkbox"/>	
3.						<input type="checkbox"/>	<input type="checkbox"/>	
4.						<input type="checkbox"/>	<input type="checkbox"/>	
5.						<input type="checkbox"/>	<input type="checkbox"/>	
6.						<input type="checkbox"/>	<input type="checkbox"/>	

NWI Water Regime Refer to NWI code diagram, NWI Water Regime Non-tidal Modifiers, and NWI Water Regime Restriction reference sheets. (p.56)

Add Water Regime modifier to NWI code at top of page:

- temporarily flooded (A) continuously saturated (D) intermittently exposed (G) artificially flooded (K)
- seasonally saturated (B) seasonally flooded-saturated (E) permanently flooded (H)
- seasonally flooded (C) semipermanently flooded (F) intermittently flooded (J)

Special Modifiers Only if applicable. Refer to NWI Code diagram and definitions. (p.57)

If applicable, add Special modifier to NWI code at top of page. Add only the first applicable modifier, in this order: b, d, f, m, h, r, s, x

- beaver (b) farmed (f) diked/impounded (h) spoil (s)
- partly ditched/draind (d) managed (m) artificial substrate (r) excavated (x)

Soil pH pH value of soil at 10 cm (4") below the surface (p.58)

Soil sampling site #							Add pH modifier to NWI code at top of page:
Ex. 1	2	3	4	5	6		pH < 5.5 = acid (a)
5.7							pH 5.5-7.4 = circumneutral (t)
							pH > 7.4 = alkaline (i)

Organic Material

2 cm (0.8") Organic Material Near Surface Remove duff layer. Collect sample from top 8 cm (3") of soil profile. Refer to Organic Soils reference sheet. Peat, mucky peat, muck, or mucky modified mineral soil in top 8 cm (3") below the soil surface. (p.59)

Soil sampling site #						
1	2	3	4	5	6	
<input type="checkbox"/>	Present: at least 2 cm (0.8") thick organic layer or mucky modified mineral layer					
<input type="checkbox"/>	Not present					

Total Depth of Surficial Organic Material (not required for impact assessment; required for condition & restoration monitoring)

Soil sampling site #						
Ex. 1	2	3	4	5	6	
6.5						<input type="checkbox"/> cm
						<input type="checkbox"/> inches

Deep Organic Soil. Excavate each soil hole to either 40 cm (16") depth of organic soil, or 80 cm (32") total soil depth, whichever comes first.

Histosol: Peat, mucky peat, or muck soil with at least 12-18% organic matter by weight and >= 40 cm (16") deep within the upper 80 cm (32") of soil profile.

Histic epipedon: Peat, mucky peat, or muck soil with at least 12-18% organic matter by weight and >= 20 cm (8") thick, but < 40 cm (16") thick, as a surface horizon. Aquic conditions or artificial drainage is required. (p.60)

Soil sampling site #						Add Soil modifier to NWI code at top of page:
1	2	3	4	5	6	organic (g)
<input type="checkbox"/>	mineral (n)					
<input type="checkbox"/>	Histosol present; NWI soil modifier = organic (g)					
<input type="checkbox"/>	Histic epipedon present, but no histosol; NWI soil modifier = mineral (n)					
<input type="checkbox"/>	Neither histosol nor histic epipedon present; NWI soil modifier = mineral (n)					

Site Name: _____

Date: _____

Ferns

(p.65)

NW1 wetland type #

NW1 wetland type #

NW1 wetland type #

1 2 3

1 2 3

1 2 3

____ *Dennstaedtia punctilobula*____ *Osmunda cinnamomea*____ *Thelypteris noveboracensis*____ *Onoclea sensibilis*____ *Osmunda regalis* var. *spectabilis***Forbs** (broad-leaved herbs, excluding true aquatics which are in the first section of the checklist)____ *Acorus calamus*____ *Lobelia cardinalis*____ *Sagittaria latifolia*____ *Alisma subcordatum*____ *Ludwigia palustris*____ *Saururus cernuus*____ *Apocynum cannabinum*____ *Lycopus uniflorus*____ *Scutellaria lateriflora*____ *Asclepias incarnata*____ *Lycopus virginicus*____ *Solidago canadensis*____ *Asclepias syriaca*____ *Lysimachia ciliata*____ *Solidago gigantea*____ *Bidens frondosa*____ *Lysimachia nummularia*____ *Solidago rugosa*____ *Boehmeria cylindrica*____ **Lythrum salicaria**____ *Solidago uliginosa*____ *Caltha palustris*____ *Mimulus ringens*____ *Sparganium americanum*____ *Chelone glabra*____ *Nasturtium officinale*____ *Sparganium eurycarpum*____ *Dipsacus fullonum*____ *Oxypolis rigidior*____ *Symphyotrichum lanceolatum*____ *Doellingeria umbellata*____ *Packera aurea*____ *Symphyotrichum prenanthoides*____ *Eupatorium perfoliatum*____ *Peltandra virginica*____ *Symphyotrichum puniceum*____ *Euthamia graminifolia*____ *Pilea pumila*____ *Symplocarpus foetidus*____ *Galium aparine*____ *Polygonum amphibium*____ *Trifolium pratense*____ *Galium tinctorium*____ *Polygonum caespitosum longisetum*____ *Veratrum viride*____ *Glechoma hederacea*____ **Polygonum cuspidatum**____ *Verbena hastata*____ *Hibiscus laevis*____ *Polygonum hydropiperoides*____ *Verbesina alternifolia*____ *Hibiscus moscheutos*____ **Polygonum perfoliatum**____ *Vernonia noveboracensis*____ *Hypericum mutilum*____ *Polygonum punctatum*____ *Viola cucullata*____ *Hypericum punctatum*____ *Polygonum sagittatum*____ *Xanthium strumarium*____ *Impatiens capensis*____ *Ranunculus acris*____ **Iris pseudacorus**____ *Ranunculus hispidus* var. *nitidus*____ *Justicia americana*____ *Ranunculus repens*____ *Laportea canadensis*____ *Rudbeckia laciniata***Graminoids** (grasses, sedges, rushes)____ *Acorus calamus*____ *Dichanthelium clandestinum*____ *Leersia virginica*____ *Agrostis gigantea*____ *Dichanthelium dichotomum*____ **Microstegium vimineum**____ *Agrostis hyemalis*ssp. *microcarpon*____ **Phalaris arundinacea**____ *Andropogon gerardii*____ *Dulichium arundinaceum*____ **Phragmites australis**____ *Anthoxanthum odoratum*____ *Echinochloa crus-galli*____ *Phleum pratense*____ **Arthraxon hispidus**____ *Eleocharis obtusa*____ *Poa compressa* or *P. pratensis*____ *Calamagrostis canadensis*____ *Eleocharis palustris*____ *Poa palustris*____ *Carex atlantica*____ *Eleocharis tenuis*____ *Rhynchospora alba*____ *Carex canescens*____ *Eriophorum virginicum*____ *Schoenoplectus tabernaemontani*____ *Carex crinita*____ *Glyceria laxa*____ *Scirpus atrovirens*____ *Carex echinata*____ *Glyceria melicaria*____ *Scirpus cyperinus*____ *Carex folliculata*____ *Glyceria striata*____ *Scirpus polyphyllus*____ *Carex gynandra*____ *Holcus lanatus*____ *Sparganium americanum* or____ *Carex intumescens*____ *Juncus acuminatus*S. *eurycarpum*____ *Carex lupulina*____ *Juncus brevicaudatus* or____ **Typha latifolia, Typha sp.**____ *Carex lurida*J. *subcaudatus*____ *Carex prasina*____ *Juncus effusus*____ *Carex scoparia*____ *Juncus tenuis*____ *Carex stipata*____ *Leersia oryzoides*____ *Carex stricta*____ *Carex trisperma*____ *Carex utriculata*____ *Carex vulpinoidea*____ *Cinna arundinacea*____ *Cinna latifolia*____ *Cyperus odoratus*____ *Danthonia compressa***Dominant species worksheet** (sum cover values across all strata within each wetland type)

Sum of Species Cover

____ Stop when all dominant plant species ($\geq 10\%$ total cover across all strata) and highly invasive (bolded) plants have been identified AND the sum of species cover is $\geq 80\%$. For NW1 wetland types with total vegetative cover of $< 100\%$ (e.g., aquatic bed, mudflats), the sum of species must be $\geq 80\%$ of the total vegetative cover.

(p.66)

West Virginia Wetland Rapid FQA Datasheet (extra pages for sites with > 3 wetland types)

(refer to WVWRAM User Manual pages 61-70)

WVWRAM Field Form

Site name _____		Date _____	
NW1 Wetland Type Code (p.65)	Dominant species identified	% of AA	Total veg cover if < 100%
<i>NWI codes must match codes on Soils sheet</i>	<i>see worksheet on back</i>	<i>field estimate or GIS (p.65)</i>	<i>ex. aquatic bed, mudflat (p.65)</i>
#. _____	(see worksheet on back) <input type="checkbox"/>		
#. _____	<input type="checkbox"/>		
#. _____	<input type="checkbox"/>		
Species Checklist. Circle space when species has at least 10% cover in wetland type. At the end of each wetland type meander, record cover within circles. Highly invasive wetland species are <u>underlined</u> and must be recorded even if they have < 10% cover. Write in any dominant species not listed. Use absolute cover, not relative cover. Typical cover values are 0.1, 1, 3, 5, 10, 20, 30, 40, 50, 60, 70, 80, 90, or 100 percent.			
Aquatic Plants (true aquatic plants that are submergent or have floating leaves) (p.65)			
NWI wetland type #_ #_ #_	NWI wetland type #_ #_ #_	NWI wetland type #_ #_ #_	
_____ <i>Brasenia schreberi</i>	_____ <i>Lemna valdiviana</i>	_____ <i>Potamogeton crispus</i>	
_____ <i>Callitriche heterophylla</i>	_____ <u><i>Myriophyllum aquaticum</i></u>	_____ <i>Potamogeton sp.(not P. crispus)</i>	
_____ <i>Ceratophyllum demersum</i>	_____ <u><i>Myriophyllum spicatum</i></u>	_____ <i>Wolffia brasiliensis</i>	
_____ <u><i>Hydrilla verticillata</i></u>	_____ <i>Nuphar lutea ssp. advena</i>	_____ _____	
_____ <i>Lemna minor</i>	_____ <i>Nymphaea odorata</i>	_____ _____	
Trees (woody plants that typically mature to a maximum height > 6 m)			
_____ <i>Abies balsamea</i>	_____ <i>Fagus grandifolia</i>	_____ <i>Quercus alba</i>	
_____ <i>Acer negundo</i>	_____ <i>Fraxinus americana</i>	_____ <i>Quercus bicolor</i>	
_____ <i>Acer rubrum</i>	_____ <i>Fraxinus nigra</i>	_____ <i>Quercus palustris</i>	
_____ <i>Acer saccharinum</i>	_____ <i>Fraxinus pennsylvanica</i>	_____ <i>Quercus rubra</i>	
_____ <i>Acer saccharum</i>	_____ <i>Juglans nigra</i>	_____ <i>Robinia pseudoacacia</i>	
_____ <i>Aesculus flava</i>	_____ <i>Liquidambar styraciflua</i>	_____ <i>Salix alba</i>	
_____ <i>Ailanthus altissima</i>	_____ <i>Liriodendron tulipifera</i>	_____ <i>Salix nigra</i>	
_____ <i>Betula alleghaniensis</i>	_____ <i>Nyssa sylvatica</i>	_____ <i>Tsuga canadensis</i>	
_____ <i>Betula lenta</i>	_____ <i>Picea rubens</i>	_____ <i>Ulmus americana</i>	
_____ <i>Betula nigra</i>	_____ <i>Pinus rigida</i>	_____ <i>Ulmus rubra</i>	
_____ <i>Carpinus caroliniana ssp. virg.</i>	_____ <i>Platanus occidentalis</i>	_____ _____	
_____ <i>Carya cordiformis</i>	_____ <i>Populus tremuloides</i>	_____ _____	
_____ <i>Carya ovata</i>	_____ <i>Prunus serotina</i>	_____ _____	
Shrubs (woody plants with that typically mature to a maximum height < 6 m, often multi-stemmed)			
_____ <i>Alnus incana ssp. rugosa</i>	_____ <i>Kalmia latifolia</i>	_____ <i>Sambucus nigra ssp. canadensis</i>	
_____ <i>Alnus serrulata</i>	_____ <i>Lindera benzoin</i>	_____ <i>Spiraea alba</i>	
_____ <i>Aronia melanocarpa</i>	_____ <i>Lonicera morrowii</i>	_____ <i>Spiraea tomentosa</i>	
_____ <i>Asimina triloba</i>	_____ <i>Physocarpus opulifolius</i>	_____ <i>Vaccinium angustifolia</i>	
_____ <i>Cephalanthus occidentalis</i>	_____ <i>Rhododendron maximum</i>	_____ <i>Vaccinium myrtilloides</i>	
_____ <i>Cornus amomum</i>	_____ <u><i>Rosa multiflora</i></u>	_____ <i>Vaccinium oxycoccos</i>	
_____ <i>Gaylussacia baccata</i>	_____ <i>Rosa palustris</i>	_____ <i>Viburnum dentatum</i>	
_____ <i>Hypericum densiflorum</i>	_____ <i>Rubus pensilvanicus</i>	_____ <i>Viburnum nudum var. cassinoides</i>	
_____ <i>Ilex mucronata</i>	_____ <i>Salix caroliniana</i>	_____ <i>Viburnum recognitum</i>	
_____ <i>Ilex verticillata</i>	_____ <i>Salix sericea</i>	_____ _____	
Woody Vines			
_____ <i>Apios americana</i>	_____ <u><i>Lonicera japonica</i></u>	_____ <i>Toxicodendron radicans</i>	
_____ <i>Clematis virginiana</i>	_____ <i>Rubus hispidus</i>	_____ _____	
Non-vascular Plants (note that non-vascular species are not included in the dominant species calculations)			
_____ <i>Sphagnum spp.</i>	_____ <i>Filamentous Algae</i>	_____ _____	
_____ <i>Total mosses & liverworts</i>	_____ _____	_____ _____	

Site Name: _____

Date: _____

Ferns (p.65)

NW1 wetland type #_ #_ #_	NW1 wetland type #_ #_ #_	NW1 wetland type #_ #_ #_
_____ <i>Dennstaedtia punctilobula</i>	_____ <i>Osmunda cinnamomea</i>	_____ <i>Thelypteris noveboracensis</i>
_____ <i>Onoclea sensibilis</i>	_____ <i>Osmunda regalis</i> var. <i>spectabilis</i>	_____

Forbs (broad-leaved herbs, excluding true aquatics which are in the first section of the checklist)

_____ <i>Acorus calamus</i>	_____ <i>Lobelia cardinalis</i>	_____ <i>Sagittaria latifolia</i>
_____ <i>Alisma subcordatum</i>	_____ <i>Ludwigia palustris</i>	_____ <i>Saururus cernuus</i>
_____ <i>Apocynum cannabinum</i>	_____ <i>Lycopus uniflorus</i>	_____ <i>Scutellaria lateriflora</i>
_____ <i>Asclepias incarnata</i>	_____ <i>Lycopus virginicus</i>	_____ <i>Solidago canadensis</i>
_____ <i>Asclepias syriaca</i>	_____ <i>Lysimachia ciliata</i>	_____ <i>Solidago gigantea</i>
_____ <i>Bidens frondosa</i>	_____ <i>Lysimachia nummularia</i>	_____ <i>Solidago rugosa</i>
_____ <i>Boehmeria cylindrica</i>	_____ <u>Lythrum salicaria</u>	_____ <i>Solidago uliginosa</i>
_____ <i>Caltha palustris</i>	_____ <i>Mimulus ringens</i>	_____ <i>Sparganium americanum</i>
_____ <i>Chelone glabra</i>	_____ <i>Nasturtium officinale</i>	_____ <i>Sparganium eurycarpum</i>
_____ <i>Dipsacus fullonum</i>	_____ <i>Oxypolis rigidior</i>	_____ <i>Symphyotrichum lanceolatum</i>
_____ <i>Doellingeria umbellata</i>	_____ <i>Packera aurea</i>	_____ <i>Symphyotrichum prenanthoides</i>
_____ <i>Eupatorium perfoliatum</i>	_____ <i>Peltandra virginica</i>	_____ <i>Symphyotrichum puniceum</i>
_____ <i>Euthamia graminifolia</i>	_____ <i>Pilea pumila</i>	_____ <i>Symplocarpus foetidus</i>
_____ <i>Galium aparine</i>	_____ <i>Polygonum amphibium</i>	_____ <i>Trifolium pratense</i>
_____ <i>Galium tinctorium</i>	_____ <i>Polygonum caespitosum longisetum</i>	_____ <i>Veratrum viride</i>
_____ <i>Glechoma hederacea</i>	_____ <u>Polygonum cuspidatum</u>	_____ <i>Verbena hastata</i>
_____ <i>Hibiscus laevis</i>	_____ <i>Polygonum hydropiperoides</i>	_____ <i>Verbesina alternifolia</i>
_____ <i>Hibiscus moscheutos</i>	_____ <u>Polygonum perfoliatum</u>	_____ <i>Vernonia noveboracensis</i>
_____ <i>Hypericum mutilum</i>	_____ <i>Polygonum punctatum</i>	_____ <i>Viola cucullata</i>
_____ <i>Hypericum punctatum</i>	_____ <i>Polygonum sagittatum</i>	_____ <i>Xanthium strumarium</i>
_____ <i>Impatiens capensis</i>	_____ <i>Ranunculus acris</i>	_____
_____ <u>Iris pseudacorus</u>	_____ <i>Ranunculus hispidus</i> var. <i>nitidus</i>	_____
_____ <i>Justicia americana</i>	_____ <i>Ranunculus repens</i>	_____
_____ <i>Laportea canadensis</i>	_____ <i>Rudbeckia laciniata</i>	_____

Graminoids (grasses, sedges, rushes)

_____ <i>Acorus calamus</i>	_____ <i>Dichanthelium clandestinum</i>	_____ <i>Leersia virginica</i>
_____ <i>Agrostis gigantea</i>	_____ <i>Dichanthelium dichotomum</i>	_____ <u>Microstegium vimineum</u>
_____ <i>Agrostis hyemalis</i>	_____ ssp. <i>microcarpon</i>	_____ <u>Phalaris arundinacea</u>
_____ <i>Andropogon gerardii</i>	_____ <i>Dulichium arundinaceum</i>	_____ <u>Phragmites australis</u>
_____ <i>Anthoxanthum odoratum</i>	_____ <i>Echinochloa crus-galli</i>	_____ <i>Phleum pratense</i>
_____ <u>Arthraxon hispidus</u>	_____ <i>Eleocharis obtusa</i>	_____ <i>Poa compressa</i> or <i>P. pratensis</i>
_____ <i>Calamagrostis canadensis</i>	_____ <i>Eleocharis palustris</i>	_____ <i>Poa palustris</i>
_____ <i>Carex atlantica</i>	_____ <i>Eleocharis tenuis</i>	_____ <i>Rhynchospora alba</i>
_____ <i>Carex canescens</i>	_____ <i>Eriophorum virginicum</i>	_____ <i>Schoenoplectus tabernaemontani</i>
_____ <i>Carex crinita</i>	_____ <i>Glyceria laxa</i>	_____ <i>Scirpus atrovirens</i>
_____ <i>Carex echinata</i>	_____ <i>Glyceria melicaria</i>	_____ <i>Scirpus cyperinus</i>
_____ <i>Carex folliculata</i>	_____ <i>Glyceria striata</i>	_____ <i>Scirpus polyphyllus</i>
_____ <i>Carex gynandra</i>	_____ <i>Holcus lanatus</i>	_____ <i>Sparganium americanum</i> or
_____ <i>Carex intumescens</i>	_____ <i>Juncus acuminatus</i>	_____ <i>S. eurycarpum</i>
_____ <i>Carex lupulina</i>	_____ <i>Juncus brevicaudatus</i> or	_____ <u>Typha latifolia, Typha sp.</u>
_____ <i>Carex lurida</i>	_____ <i>J. subcaudatus</i>	_____
_____ <i>Carex prasina</i>	_____ <i>Juncus effusus</i>	_____
_____ <i>Carex scoparia</i>	_____ <i>Juncus tenuis</i>	_____
_____ <i>Carex stipata</i>	_____ <i>Leersia oryzoides</i>	_____

Dominant species worksheet (sum cover values across all strata within each wetland type)

Sum of Species Cover

_____ Stop when all dominant plant species (≥ 10% total cover across all strata) and highly invasive (bolded) plants have been identified AND the sum of species cover is ≥ 80%. For NW1 wetland types with total vegetative cover of < 100% (e.g., aquatic beds, mudflats), the sum of species must be ≥ 80% of the total vegetative cover.

West Virginia Wetland Rapid Assessment Datasheet - overflow notes

Site name _____ **Date** _____

Directions to site:

Notes on land use history, site conditions, wildlife observed, discussions with landowner or other on-site personnel, or deviations from protocol:

Other overflow notes (include datasheet heading):

West Virginia Wetland Rapid Assessment Datasheet - Plant Voucher *(p.70 of WVWRAM User Manual)*

Site name _____ Date _____

NWI code _____ Percent cover within the NWI code area _____

Collector _____ Collection # _____

Species name or pseudonym _____

Additional notes (optional):

West Virginia Wetland Rapid Assessment Datasheet - Plant Voucher

Site name _____ Date _____

NWI code _____ Percent cover within the NWI code area _____

Collector _____ Collection # _____

Species name or pseudonym _____

Additional notes (optional):

West Virginia Wetland Rapid Assessment Datasheet - Plant Voucher

Site name _____ Date _____

NWI code _____ Percent cover within the NWI code area _____

Collector _____ Collection # _____

Species name or pseudonym _____

Additional notes (optional):