

## Pilot Method to Apply Rapid Ecological Integrity Assessments in Wetlands of Riparian Areas in Maryland: Upper Coastal Plain

### Scoring Tables and Diagrams for Field Metrics

- Refer to section indicated in field manual for further information
- Apply criteria for Key Wildlife Habitat being evaluated
- Assign score to category with majority of features present on field form

**SOIL/SUBSTRATE (Section 4.4)** *Assessment of soil health using easily observable factors. Prior to fieldwork, review expected reference soil characteristics as mapped for the site.*

### Biogeochemical Cycling: Redox Concentrations

All KWH (NOTE: if the floodplain does not naturally have hydric soils, and still does not have hydric soils under current conditions, skip this metric.)	
Score	Assign rating to category with majority of features present
Excellent = 4	Biogeochemical cycling excellent, with redox concentrations starting 0 to 6" from the soil surface and covering >10% of the surface area.
Good = 3	Biogeochemical cycling good, with redox concentrations starting >6" to 12" from the soil surface and covering >10% of the surface area OR redox concentrations start 0-6" from the soil surface and represent <10% of the surface area.
Fair = 2	Biogeochemical cycling fair, with redox concentrations starting >12" to 18" from the soil surface and covering >10% of the surface area OR redox concentrations start >6" to 12" from the soil surface and represent <10% of the surface area.
Poor = 1	Biogeochemical cycling poor, with redox concentrations starting >12" to 18" from the soil surface and covering <10% of the surface area OR no redox concentrations within 18" of the soil surface.

### Microtopography

All KWH (NOTE: if the floodplain does not naturally have hydric soils, and still does not have hydric soils under current conditions, skip this metric.)	
Score	Assign rating to category with majority of features present
Excellent = 4	More than 50% of the AA shows at least a 3" increase in elevation over the base elevation of the AA.
Good = 3	30-49% of the AA shows at least a 3" increase in elevation over the base elevation of the AA.
Fair = 2	10-29% of the AA shows at least a 3" increase in elevation over the base elevation of the AA.
Poor = 1	<10% of the AA shows at least a 3" increase in elevation over the base elevation of the AA.

### Soil Organic Matter

All KWH (NOTE: if the floodplain does not naturally have hydric soils, and still does not have hydric soils under current conditions, skip this metric.)	
Score	Assign rating to category with majority of features present
Excellent = 4	Organic surface horizon present (any thickness).
Good = 3	Mineral surface layer(s) are $\geq 4$ " thick.
Fair = 2	Mineral surface layer(s) are <4" thick with matrix value $\leq 3$ and chroma $\leq 2$ .
Poor = 1	Mineral surface layer(s) are <4" thick with matrix value >3 and $\leq 4$ or chroma >2 and $\leq 3$ .

## Organic Matter Accumulation

All KWH (NOTE: if the floodplain does not naturally have hydric soils, and still does not have hydric soils under current conditions, skip this metric.)	
Score	Assign rating to category with majority of features present
Excellent = 4	Organic matter accumulation from root turnover is high as herbaceous ground cover is >75%.
Good = 3	Organic matter accumulation from root turnover is moderate as herbaceous ground cover is >50-74%.
Fair = 2	Organic matter accumulation from root turnover is low as herbaceous ground cover is >25-50%.
Poor = 1	Organic matter accumulation from root turnover is minimal as herbaceous ground cover is ≤25%.

## HYDROLOGY (Section 4.5)

**Water Source (Section 4.5.1)** *The forms, or places, of direct inputs of water to the AA, as well as any unnatural diversions of water from the AA.*

Coastal Plain Floodplain: Groundwater discharge not a major input	
Score	Assign rating to category with majority of features present
Excellent = 4	Water source is natural. Lacks point charge discharges into or adjacent to the site. No unnatural obstructions to water source or impact on overland flow and overbank flooding. Plant community reflective of characteristic KWH or not altered by natural changes to water source.
Good = 3	Water source is mostly natural, but wetland directly receives occasional or small amounts of inflow from anthropogenic sources such as some road runoff, small storm drains, or other minor point source discharges emptying into the wetland. Up to 25% of stream banks are affected due to dikes, rip rap and/or elevated culverts, or increased discharge due to other causes. Little change in plant community resulting from unnatural alterations.
Fair = 2	Water sources are moderately impacted by anthropogenic sources, but are still a mix of natural and non-natural sources. Between 25-75% of stream banks are affected (e.g., dikes, rip rap, concrete, and elevated culverts) or increased discharge due to other causes. Wetlands still present due to groundwater or other water inputs, but potentially reduced in extent and showing some plant community changes; or plant community changes due to increased unnatural water inputs.
Poor = 1	Water source contains a substantial amount of inflow from anthropogenic sources, such as major point source discharges into or adjacent to the wetland. > 75% of stream banks are affected (for example due to dikes, rip rap, concrete, and elevated culverts) or increased discharge due to other causes. Wetlands are reduced in extent unless high groundwater or other surface water inputs maintain them. Plant community changes are observed due to unnatural water inputs.

Coastal Plain Floodplain: Mixed hydrologic regime	
Score	Assign rating to category with majority of features present
Excellent = 4	Water source is natural. Lacks point charge discharges into or adjacent to the site. No unnatural obstructions to lateral or vertical movement of ground or surface water. Plant community reflective of characteristic KWH or not altered by natural changes to water source.
Good = 3	Water source is mostly natural, but wetland directly receives occasional or small amounts of inflow from anthropogenic sources such as some road runoff, small storm drains, or other minor point source discharges emptying into the wetland. Minor restrictions to the lateral or vertical movement of ground or surface waters by unnatural features. Little change in plant community resulting from unnatural alterations.
Fair = 2	Water sources are moderately impacted by anthropogenic sources, but are still a mix of natural and non-natural sources. Wetland is still connected to its natural water source (e.g., modified ponds on a floodplain that are still connected to alluvial aquifers, natural stream channels that now receive substantial irrigation return flows, many small/few large storm drains), but moderately disconnected from floodplain due to multiple geomorphic modifications. Moderate restrictions to the lateral or vertical movement of ground or surface waters by unnatural features. Wetlands still present due to groundwater or other water inputs, but limited reduction in extent and showing some plant community changes; or some limited plant community changes due to increased unnatural water inputs.
Poor = 1	Water source contains a substantial amount of inflow from anthropogenic sources, such as major point source discharges into or adjacent to the wetland. Wetland has reduced connection to natural water source (e.g., loss of overbank flow). Wetlands are potentially reduced in extent if no other surface water inputs maintain them. Plant community changes are observed due to unnatural water inputs.

### **Water Source (Section 4.5.1)**

<b>All other KWH:</b> Predominantly groundwater or precipitation water source, with potential limited flooding from small stream in relation to wetlands in riparian system	
<b>Score</b>	<b>Assign rating to category with majority of features present</b>
Excellent = 4	Water source is natural. Lacks point charge discharges into or adjacent to the site. Groundwater or precipitation dominant or only water source; otherwise, no unnatural obstructions to lateral or vertical movement of ground or surface water, or, if perched water table, impermeable soil layer is intact. Plant community reflective of characteristic KWH or not altered by natural changes to water source.
Good = 3	Water source is mostly natural, but wetland directly receives occasional or small amounts of inflow from anthropogenic sources such as some road runoff, small storm drains, or other minor point source discharges emptying into the wetland. Minor restrictions to the lateral or vertical movement of ground or surface waters by unnatural features, such as levees or excessively high banks (less than 25% of the site). If perched, impermeable soil layer partly disturbed. Little change in plant community resulting from water source alterations.
Fair = 2	Water source is moderately impacted by anthropogenic sources, but still a mix of natural and non-natural sources. Moderate restrictions to the lateral or vertical movement of ground or surface waters by unnatural features or alteration. Between 25-75% of the site is restricted by barriers to drainage. If perched, impermeable soil layer moderately disturbed. Drainage back to the wetland is incomplete due to impoundment. Wetlands still present due to groundwater or other water inputs, but limited reduction in extent and showing some plant community changes; or some limited plant community changes due to water source alterations.
Poor = 1	Water source contains a substantial amount of inflow from anthropogenic sources, such as major point source discharges into or adjacent to the wetland. Most or all water stages are contained within artificial banks, levees, or comparable features. Greater than 75% of wetland is restricted by barriers to drainage. If perched, impermeable soil layer strongly disturbed. Wetlands reduced in extent and show plant community changes due to water source alterations.

**Channel (section 4.5.2)** *Evidence of channel degradation or aggradation and connection to the floodplain. Assess for channel in project area, which will apply to all AA. Refer to Table 20 in text for field indicators of equilibrium, degradation, and aggradation.*

<b>Channel in Project Area</b>	
<b>Score</b>	<b>Assign rating to category with majority of features present</b>
Excellent = 4	Indicators of channel equilibrium present. Minimal or no evidence of degradation or aggradation leading to channel instability or migration. Channel is not unnaturally entrenched. If calculated, BEHI/NBS scores low.
Good = 3	Minor channel incision. Channel is somewhat entrenched (overbank flow occurs during most floods). Some evidence of degradation or aggradation leading to a minimal level of channel instability or migration. If calculated, BEHI/NBS scores low.
Fair = 2	Channel is incised. Channel is moderately entrenched (overbank flow only occurs during moderate to severe floods, functioning at risk). Uncharacteristic aggradation or degradation is present leading to a moderate level of channel instability or migration. BEHI/NBS scores moderate.
Poor = 1	Channel is incised. Channel is substantially entrenched (overbank flow never occurs or only during severe floods-not functioning). Channel entirely or extensively disconnected from the floodplain. BEHI/NBS scores high, very high, or extreme.

**Hydroperiod and Hydrologic Connectivity (section 4.5.3)** *Characteristic frequency, level, and duration of inundation or saturation of a wetland; ability of water to flow into or out of the wetland. Refer to Table 20 in text for field indicators of changes in extent and duration of inundation or saturation.*

Coastal Plain Floodplain	
___Low natural variation of hydroperiod ___High natural variation of hydroperiod	
<b>Score</b>	<b>Assign rating to category with majority of features present</b>
Excellent = 4	Evidence of recent overbank flooding. Completely connected to floodplain (backwater sloughs and channels). No major hydrologic stressors present that impact natural hydroperiod or impact due to natural events (e.g., beaver dams). No unnatural obstructions to lateral or vertical movement of ground or surface water.
Good = 3	Evidence of overbank flooding. Minimally disconnected from floodplain. Minor alterations in frequency, levels, or duration of hydroperiod. Minor restrictions to the lateral or vertical movement of ground or surface waters by unnatural features. Flooding at 2-year storm interval.
Fair = 2	Some evidence of overbank flooding, likely during larger storm events. Moderately disconnected from floodplain due to multiple geomorphic modifications. Moderate restrictions to the lateral or vertical movement of ground or surface waters by unnatural features. Moderate flooding at 2-year storm interval.
Poor = 1	Overbank flooding generally no longer occurs. Disconnected from floodplain, likely causing some drainage of groundwater. Flooding may or may not occur at 100-year or greater storm interval.

**Hydroperiod and Hydrologic Connectivity (section 4.5.3)**

<b>Other KWH</b>	
___Low natural variation of hydroperiod ___High natural variation of hydroperiod	
<b>Score</b>	<b>Assign rating to category with majority of features present</b>
Excellent = 4	Overbank flooding present and recent but not predominant water source to wetland. No unnatural obstructions to lateral or vertical movement of ground or surface water.
Good = 3	Evidence of overbank flooding but not predominant water source to wetland. Hydroperiod with minor alterations in frequency, levels, or duration due to groundwater and other inputs. Minor restrictions to the lateral or vertical movement of ground or surface waters by unnatural features.
Fair = 2	Some evidence of overbank flooding, likely during larger storm events. Hydroperiod with moderate alterations in frequency, levels, or duration due to groundwater and other inputs. Moderate restrictions to the lateral or vertical movement of ground or surface waters by unnatural features.
Poor = 1	Overbank flooding generally no longer occurs. Hydroperiod with substantial alterations in frequency, levels, or duration due to groundwater and other inputs. Substantial restrictions to the lateral or vertical movement of ground or surface waters by unnatural features.

**KEY WILDLIFE HABITAT AND VEGETATION COMPOSITION**

**Interspersion and Patch Richness (section 4.6.1)** *Interspersion of vegetation patches and number of different obvious types of physical surfaces or features that may provide habitat for aquatic, wetland, or riparian animal species.*

Calculate the mean of the Interspersion and Patch Richness metrics below. Use the following table to assign an overall score for this metric.

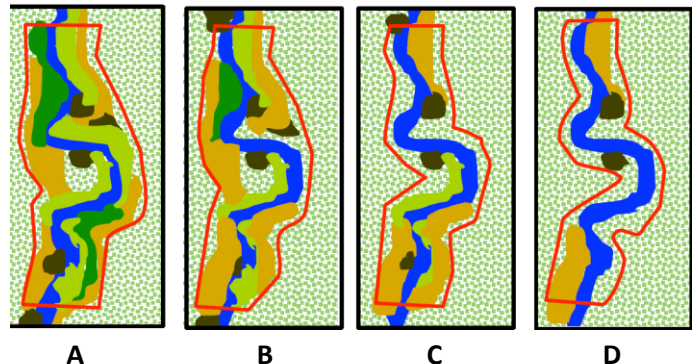
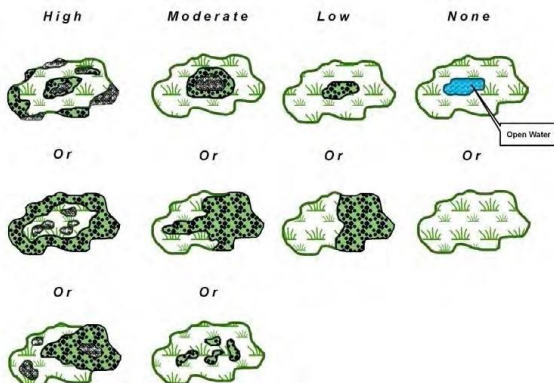
Score	Mean of Interspersion and Patch Richness Metric Scores
Excellent = 4	3.5 – 4
Good = 3	2.6 - 3.4
Fair = 2	1.6 – 2.5
Poor = 1	1 – 1.5

**Interspersion:** \_\_\_\_

**Patch Richness:** \_\_\_\_

The interspersion metric is scored using the diagrams below. Vegetative patches should represent at least 5% of the AA in single or multiple locations.

<p><b>Coastal Plain Seepage Swamp, Coastal Plain Bog and Fen, Coastal Plain Flatwood and Depression Swamp, Vernal Pool, Spring.</b> (Source: US ACE 2015 Texas Rapid Assessment Method)  <b>Scoring: High = 4, Moderate = 3, Low = 2, None = 1</b></p>	<p><b>Coastal Plain Floodplain:</b> The red box represents the boundary of the AA and each color represents a unique plant zone. The speckled background represents the background matrix vegetation zone, and the blue represents the stream.                  (Source: California Rapid Assessment Methods for Wetlands Riverine Wetlands Field Book 2013)  <b>Scoring: A = 4, B = 3, C = 2, D = 1</b></p>
--	--

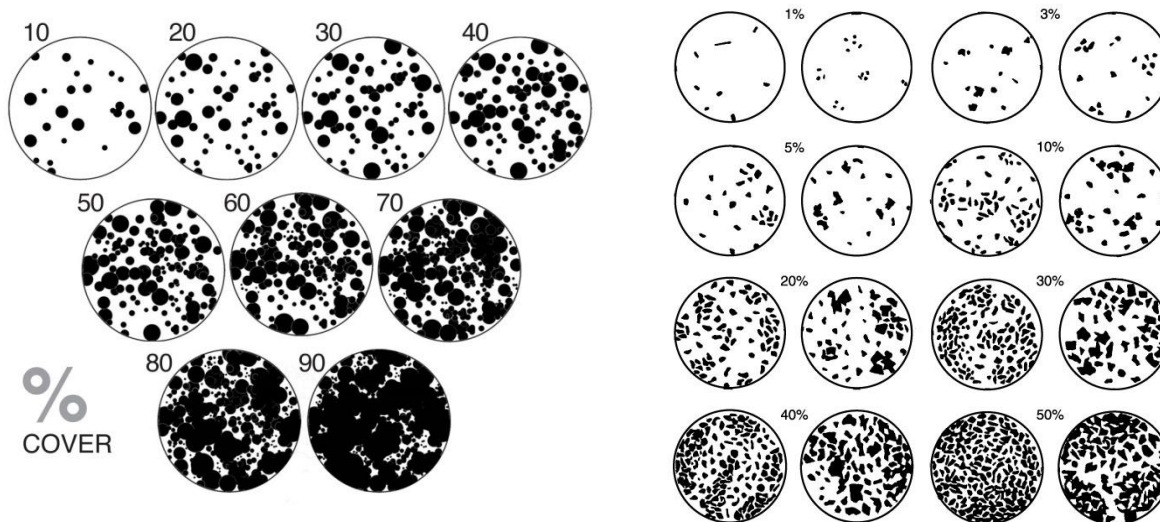


**Patch Richness:** *These components represent potential wildlife habitat. Count the number of the following features present in the AA and also within 10m of the AA boundary, as they also contribute.*

**Features:** Spring or upwelling groundwater; Depression; Vegetated pool ; Unvegetated pool; Unvegetated flat; Island; Animal mound or burrow; Beaver dam or lodge; Oxbow, swale, secondary channel; Wind-thrown tree hole; Mound; Bank overhang with tree roots; Tip-up tree root mound; Brush piles; Abundant deciduous leaf litter; Partially buried natural debris; Debris jam; Plant hummock/tussocks; Other wildlife habitat

Score	Coastal Plain Floodplain, Coastal Plain Seepage Bog and Fen, Coastal Plain Seepage Swamp	Coastal Plain Flatwood and Depression Swamp	Vernal Pool/Spring
4	≥ 6	≥ 7	≥ 4
3	5-6	6-7	3-4
2	3-4	4-5	2
1	≤ 3	≤ 4	≤ 2

**% Cover Estimation Diagrams** (*johnmuirlaws.com and Terry and Chilingar 1955*)



**Vertical Structure (section 4.6.2)** *Assess the woody layers and presence of large trees in the AA according to KWH type.*

Coastal Plain Floodplain, Coastal Plain Flatwood and Depression Swamp, Coastal Plain Seepage Swamp  
 Vernal Pool: assess vegetation structure in area surrounding basin, as only limited to sparse herbaceous vegetation is usually present in the basin area.  
 Note: Recent beaver activity may lead to deviations from rating descriptions for Coastal Plain Floodplain. This should be noted on the data sheet and taken into account.

Score	Assign rating to category with majority of features present
Excellent = 4	Tree canopy or highest woody level present is a heterogeneous mosaic of patches of different ages or sizes. Gaps also of varying size. Multiple layers are created through presence of trees of varying ages and heights and the shrub layer. Large trees (>60 cm or 24" dbh) expected to be present. Large trees may be absent in early-seral stands, but, if so, then large stumps are not present (or few) and evidence of natural disturbance event is present (e.g., large downed wood from wind storms or fire scars, beaver activity).
Good = 3	Tree canopy or highest woody level present is largely heterogeneous in age or size. Multiple layers are present, but one layer missing or little variation in ages and heights of woody vegetation in at least one layer. Considering the natural stand development stage, there are more large trees (>60 cm or 24" dbh) than large cut stumps. Some (10-30%) of the old trees have been harvested. Minor presence of cutting, browsing, grazing and other degradation such as forest pest/pathogens.
Fair = 2	Tree canopy or highest woody level present is somewhat homogeneous in age or size. More than one layer present, but one or more layers missing. Little variation in ages and heights of woody vegetation in layers. Considering the natural stand development stage, there are around as many large trees as large cut stumps. Many (over 30%) of the old trees have been harvested. Moderate levels of cutting, browsing, or grazing, or other degradation such as forest pest/pathogens.
Poor = 1	Tree canopy or highest woody level present is very homogeneous, in age or size. Only one or two layers present. Considering the natural stand development stage, most, if not all, old trees have been harvested. None or rare old trees present. Major cutting, heavy browsing, grazing, or other degradation such as forest pest/pathogens.

<b>Coastal Plain Seepage Bog and Fen</b>	
Score	Assign rating to category with majority of features present
Excellent = 4	Woody vegetation mortality is due to natural factors. Excellent potential for site recovery given structure present and lack of degradation (past or present). <u>Bogs/acidic fens:</u> Peatland structure includes shrub and herb strata (some tall and some short). When present (peatland not too wet), trees are relatively short and stunted with rounded tops and furrowed bark. Shrubs are < 50 cm and open enough to allow for a nearly continuous ground cover of <i>Sphagnum</i> and other expected vegetation around tree/shrub bases AND in low hummocks, hollows, or other low areas. <u>Circumneutral/rich fens:</u> Primarily short-statured vegetation and nearly continuous cover of mosses (except in tall sedge fens - which are naturally more vigorous, homogenous, and often with little bryophyte cover). Shrubs may be present as a mosaic with open areas. Tree species, when present, do not form a closed canopy. <i>Sphagnum</i> and other mosses actively growing. Never more than local, small patches of degenerating <i>Sphagnum</i> .
Good = 3	Minor negative anthropogenic influences present, or the site is still recovering from major past human disturbances. Mortality or degradation due to grazing, peat mining, limited timber harvesting, or other anthropogenic factors may be present, though not widespread. The site can be expected to meet minimally disturbed conditions in the near future if negative influences do not continue. <u>Bogs/acidic fens:</u> Shrubs and herbs show minor alterations from expected conditions. A few areas of dense and tall shrubs (> 1 m) may occur (dense enough to eliminate <i>Sphagnum</i> /moss growth). Some trees may have been or killed due to anthropogenic stressors. <u>Circumneutral/rich fens:</u> Shrubs and herbs show minor alterations from expected conditions.
Fair = 2	Expected structural classes are not present. Shrubs and herbs moderately altered from expected conditions. The site will recover to minimally disturbed conditions only with the removal of degrading influences and moderate recovery times. <u>Bogs/acidic fens:</u> Shrub cover averages > 1 m tall and is beginning to reduce <i>Sphagnum</i> cover. Many trees have been cut or killed due to anthropogenic stressors. <u>Circumneutral/rich fens:</u> Trampling or other physical disturbance has moderately reduced moss cover where expected. Overall, evidence of degradation includes moderate levels of cutting, mowing, browsing, fire or grazing. <i>Sphagnum</i> still regenerating in open areas.
Poor = 1	Expected peatland structure is absent or much degraded due to anthropogenic factors, such as peat mining. Overall, evidence of degradation includes major cutting, mowing, browsing, fire or grazing. Woody regeneration is minimal and existing structure is in poor condition, unnaturally sparse, or depauperate. Shrubs and herbs substantially altered from expected conditions. Recovery to minimally disturbed condition is questionable without restoration, or will take many decades. <u>Bogs/acidic fens:</u> Most if not all <i>Sphagnum</i> cover has been eliminated due to extremely dense and tall (> 1 m) shrubs. Trees have all been cut or killed by anthropogenic stressors. <u>Circumneutral/rich fens:</u> Trampling or other physical disturbance has eliminated moss cover where it is expected. <i>Sphagnum</i> not regenerating, even in open areas.

<b>Spring</b>	
Score	Assign rating to category with majority of features present
Excellent = 4	Expected levels of abundance and diversity (some tall and some short) and/or low cover of shrubs or trees where appropriate. Overall, no evidence and little to no structural indicators of degradation evident.
Good = 3	For the most part, expected levels of abundance and diversity (some tall and some short) and/or low cover of shrubs or trees where appropriate. Minor structural degradation (cutting, mowing, browsing, grazing).
Fair = 2	Structural indicators of degradation are moderate. Overall, evidence of degradation includes moderate levels of cutting, mowing, browsing or grazing.
Poor = 1	Vegetation structure is greatly altered from minimally disturbed natural conditions. Structural indicators of degradation are strong. Overall, evidence of human and degradation includes major cutting, mowing, browsing or grazing.

**Standing and Downed Woody Debris (section 4.6.3)** *Estimate coarse woody debris, including standing and downed wood, based on a walkthrough of the entire AA if possible.*

<b>Coastal Plain Floodplain, Coastal Plain Flatwood and Depression Swamp, Coastal Plain Seepage Swamp</b>	
<b>Vernal Pool and Spring:</b> assess presence in immediate surrounding area as well as basin, which may only have scattered coarse woody debris, if any. If non-natural sources have created standing and/or downed woody debris, such as cutting or forest pests/pathogens, indicate this on the data sheet.	
Score	Assign rating to category with majority of features present
Excellent = 4	Wide diversity of sizes for both standing and downed logs, including larger sizes [> 30 cm (12 in) DBH and > 2 m (6 ft) long]] present with 5 or more snags per ha (2.5 ac), but not excessive numbers (suggesting disease or other problems). Downed logs are in various stages of decay, from sound and intact to soft pieces that no longer maintain their shape.
Good = 3	Moderate diversity of sizes for both standing and downed logs, but larger sizes [> 30 cm (12 in) DBH and > 2 m (6 ft) long]] are rare. Larger size class present with 2-4 snags per ha, or an increased but not excessive number of snags (suggesting disease or other problems). Downed logs are in various stages of decay, with few soft pieces that no longer maintain their shape.
Fair = 2	Moderate-low diversity of sizes for both standing and downed logs, but larger sizes [> 30 cm (12 in) DBH and > 2 m (6 ft) long]] very rare or not present. Larger size class present with 1-2 snags per ha, or moderately excessive numbers (suggesting disease or other problems). Downed logs are in various stages of decay, but few to no soft pieces that no longer maintain their shape.
Poor = 1	Low diversity of sizes for both standing and downed logs. Larger size class [> 30 cm (12 in) DBH and > 2 m (6 ft) long]] present with < 1 snag per ha, or very excessive numbers (suggesting disease or other problems). Downed logs are mostly in early stages of decay.

Coastal Plain Seepage Bog and Fen	
Score	Assign rating to category with majority of features present
Excellent = 4	Typical of the system. Woody vegetation mortality is due to natural factors. Peat accumulation appears to be stable or actively growing. <u>Bogs/acidic fens</u> : <i>Sphagnum</i> is nearly continuous and growing around tree/shrub bases AND in low hummocks, hollows, or other low areas. <u>Circumneutral/rich fens</u> : Dominant species are active peat-formers.
Good = 3	Minor alterations to system present. <u>Bogs/acidic fens</u> : Mortality or degradation of peat surface due to grazing, limited timber harvesting, anthropogenic fire or other anthropogenic factors may be present, but not widespread. <u>Circumneutral/rich fens</u> : Mortality or degradation of peat surface due to grazing, limited timber harvesting, anthropogenic fire or other anthropogenic factors may be present, but not widespread.
Fair = 2	Moderate alterations to system present. <u>Bogs/acidic fens</u> : Ground cover has as much bare peat as <i>Sphagnum</i> cover, or nearly so. <u>Circumneutral/rich fens</u> : Dominance of active peat-formers is being reduced in favor of non-peat-forming grasses and forbs.
Poor = 1	Substantial alterations to system present. <u>Bogs/acidic fens</u> : Ground cover is almost all bare peat with very little <i>Sphagnum</i> cover. <u>Circumneutral/rich fens</u> : Cover of active peat-formers dramatically reduced and site is now dominated by non-peat-forming grasses and forbs.

**Invasive Species (section 4.6.4)** Note the cover of invasive species and impact on the AA.

Coastal Plain Floodplain, Coastal Plain Flatwood and Depression Swamp, Coastal Plain Seepage Swamp, Coastal Plain Bog and Fen	
<b>Vernal Pool and Spring</b> : assess vegetation structure in area surrounding basin, as only limited to sparse vegetation may be present in the basin area.	
Score	Assign rating to category with majority of features present
Excellent = 4	Invasive species are absent from all layers or absolute cover in any one woody layer (if present) and herbaceous layer is <1%.
Good = 3	Invasive species are sporadic (no more than 5% absolute cover in any layer).
Fair = 2	Absolute cover of Invasive species is 5-10% in any one woody layer (if present) and/or present with moderate absolute cover (5-30%) in the herbaceous layer. Patches of native vegetation are reduced in size and complexity due to the presence of invasive species.
Poor = 1	Absolute cover of Invasive species is over 10% in any one woody layer (if present) and/or is very abundant (over 30%) in the herbaceous layer. Vegetation reduced in size and complexity due to human disturbance. Patches of native vegetation are reduced in size and complexity due to the presence of invasive species.

**Native Species (section 4.6.5)** Native species composition in all layers, including diagnostic species- see Table 13.

Coastal Plain Floodplain, Coastal Plain Flatwood and Depression Swamp, Coastal Plain Seepage Swamp, Coastal Plain Bog and Fen (see Table for diagnostic native species)	
<b>Vernal Pool and Spring</b> : assess vegetation structure in area surrounding basin, as only limited to sparse vegetation is usually present in the basin area. <b>Note</b> : Recent beaver activity may lead to deviations from rating descriptions for Coastal Plain Floodplain. This should be noted on the data sheet and taken into account.	
Score	Assign rating to category with majority of features present
Excellent = 4	Herbaceous and woody layers (if present) dominated by diagnostic native species. Layers may be sparse and patchy in areas with deeper flooding, with patches of vegetation confined to hummocks. In other areas, diverse native vegetation present unless there has been a recent natural disturbance. <u>Bog and Fen, some Springs</u> : <i>Sphagnum</i> is nearly continuous and growing around tree/shrub bases AND in low hummocks, hollows, or other low areas.
Good = 3	Some diagnostic native species absent or substantially reduced in abundance OR low cover (<10%) of native species indicative of human disturbance. Layer may be sparse and patchy in areas with deeper flooding. <u>Bog and Fen, some Springs</u> : <i>Sphagnum</i> and other mosses actively growing, but may be eliminated from some areas due to disturbance or invasive species.
Fair = 2	Few diagnostic species are present. Native species indicative of human disturbance are present with moderate cover (10-30%). Patches of native vegetation are reduced in size and complexity due to human disturbance. <u>Bog and Fen, some Springs</u> : <i>Sphagnum</i> cover reduced but still regenerating in open areas. Dominance of active peat-formers is being reduced in favor of non-peat-forming grasses and forbs.
Poor = 1	Few to no diagnostic species are present. Native species indicative of human disturbance are present with >30% cover. Patches of native vegetation are reduced in size and complexity due to human disturbance. <u>Bog and Fen, some Springs</u> : Very little <i>Sphagnum</i> cover. Cover of active peat-formers dramatically reduced and site is now dominated by non-peat-forming grasses and forbs.