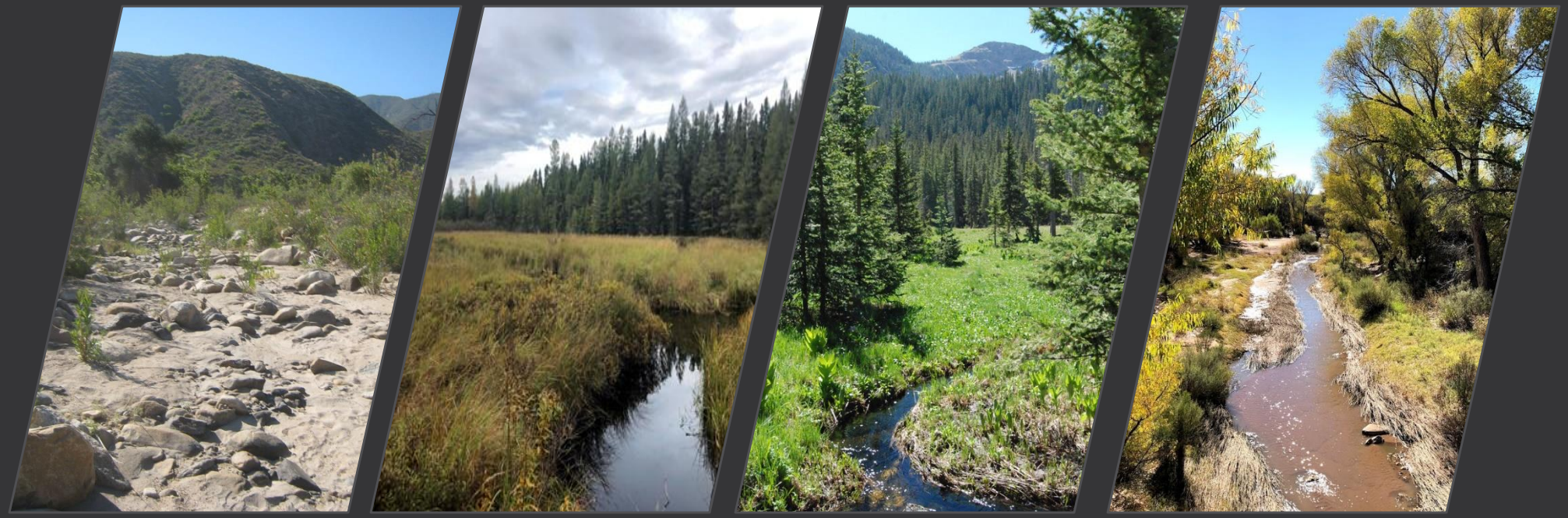
EPA United States Environmental Protection Agency

US Army Corps of Engineers

ERDC

Great Plains Streamflow Duration Assessment Method: Differences in vegetation



Video Training

2025

The Great Plains SDAM is based on 8 indicators:

All eight indicators are measured in the **field.**

*Indicators evaluated along the entire length of the assessment reach

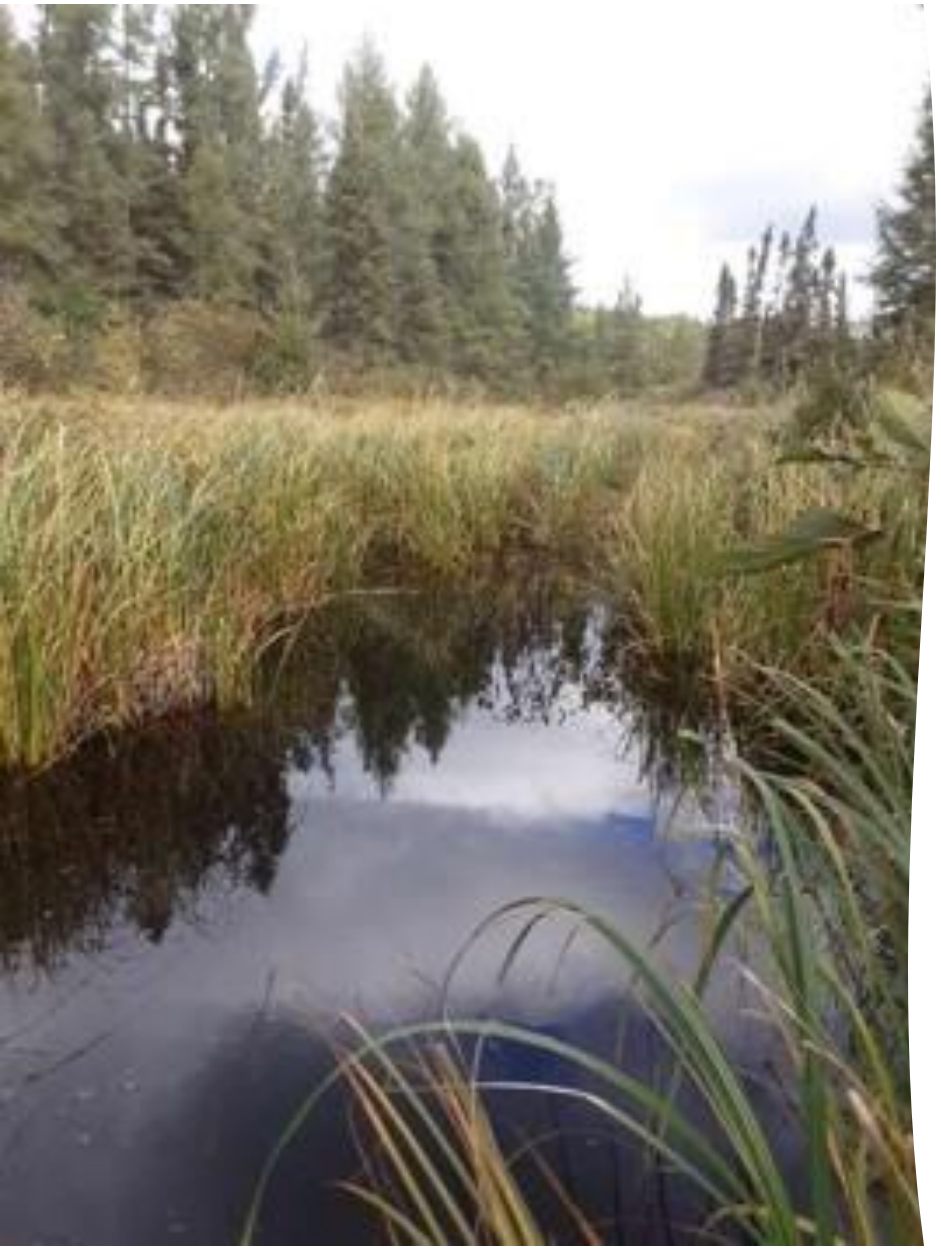
In recommended order of data collection:

- Bankfull channel width
- Total aquatic macroinvertebrate abundance
- Number of hydrophytic plant species*
- Presence/absence of rooted upland plants in the streambed*
- **Differences in vegetation***
- Riffle-pool sequence*
- Particle size or stream substrate sorting*
- Sediment on plants or debris*

Differences in vegetation for Great Plains

Differences in vegetation

- This indicator is based on the distinctiveness of the vegetation band immediately surrounding the stream or river channel from the vegetation further away from the assessment reach in the uplands.
- In reaches with long-duration flows, adapted species may dominate the riparian corridor.
- These species are typically absent or rare from adjacent uplands, and/or grow more vigorously near the channel.
- For this indicator, an 'upland' species is not defined by its NWPL indicator status (e.g., FAC) but is specific to its location relative to the channel.
- Where upland vegetation cannot be assessed due to development, consider comparable areas outside the reach.



Difference in vegetation for Great Plains

Differences in vegetation

Distinctness between riparian and upland vegetation based on:

- Composition
- Vigor
- Density

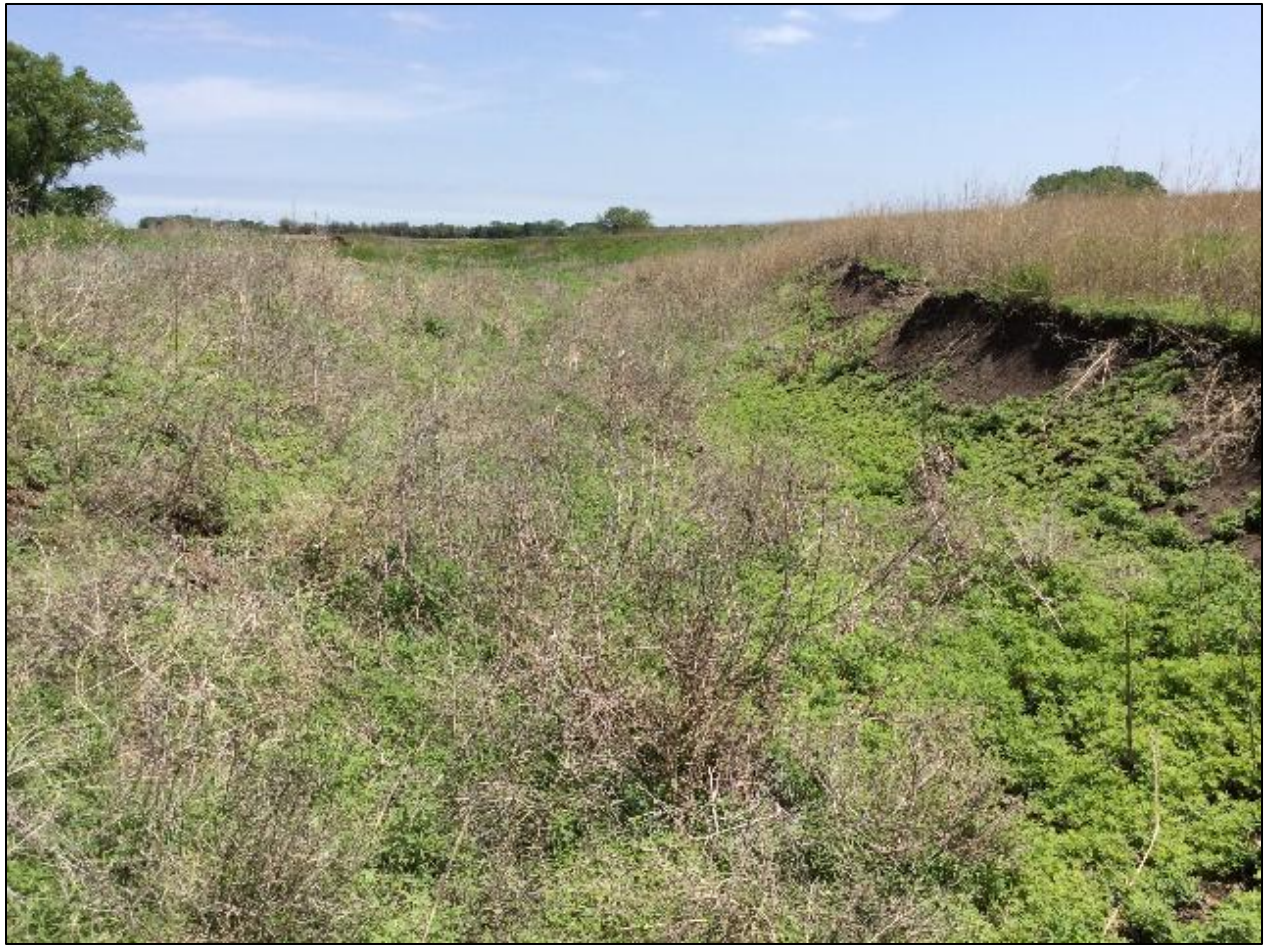
Score	Evidence of perennial flows	Guidance
0	Poor	No compositional or density differences in vegetation are present between the banks and the adjacent uplands
1	Weak	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two
2	Moderate	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach
3	Strong	Dramatic compositional differences in vegetation are present between the banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach – riparian, aquatic, or wetland species dominate the length of the reach

Differences in vegetation

POOR

Indicator is based on a visual estimate of differences in composition and/or vigor between the streamside and upland area scored on an ordinal scale, where half scores are allowed:

- **Poor (0): No compositional or density differences in vegetation are present between the streambanks and adjacent uplands.**

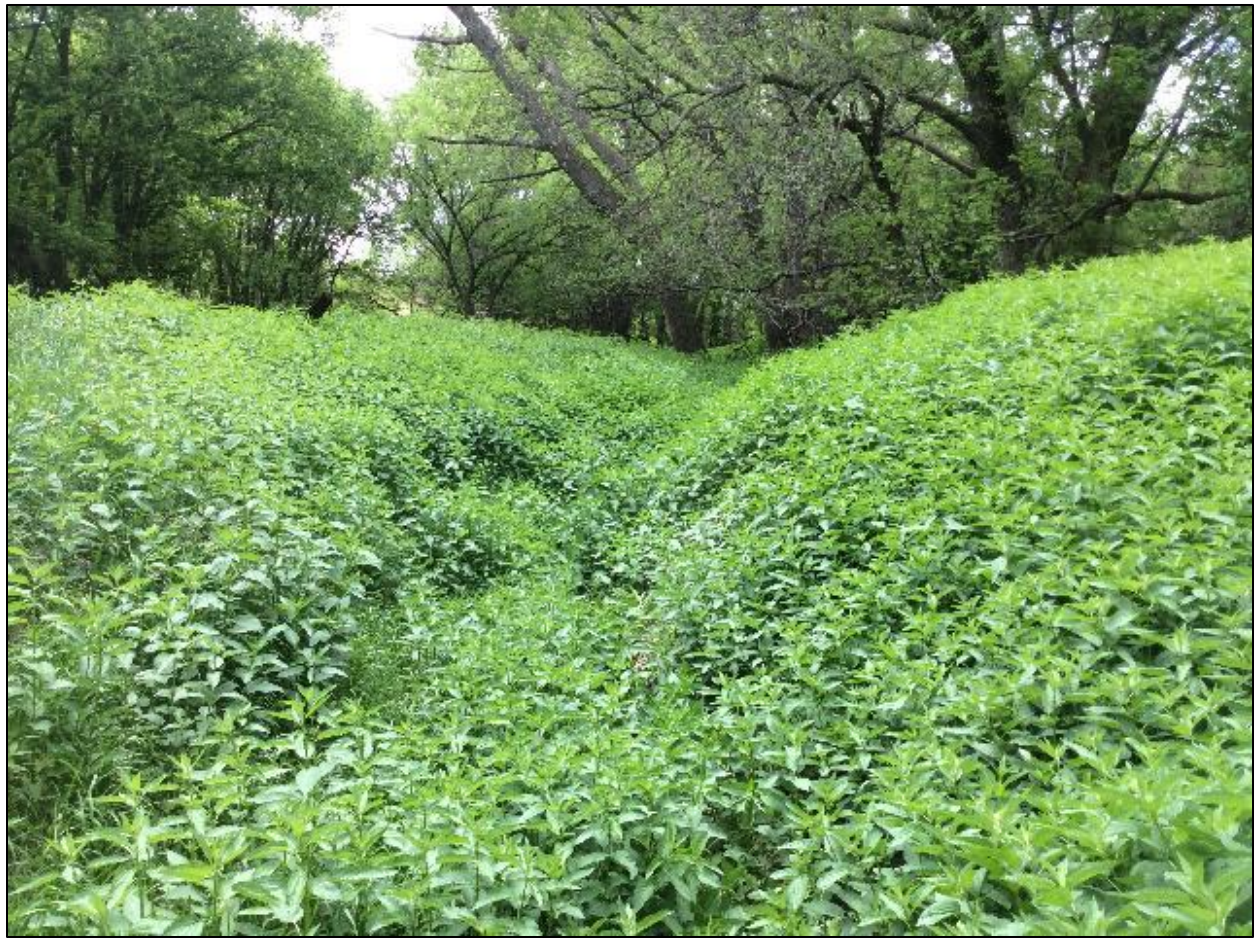


The vegetation along the reach is similar in composition and vigor to surrounding uplands.

Differences in vegetation

Indicator is based on a visual estimate of differences in composition and/or vigor between the streamside and upland area scored on an ordinal scale, where half scores are allowed:

- Poor (0): No compositional or density differences in vegetation are present between the streambanks and adjacent uplands.
- **Weak (1): Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two areas.**



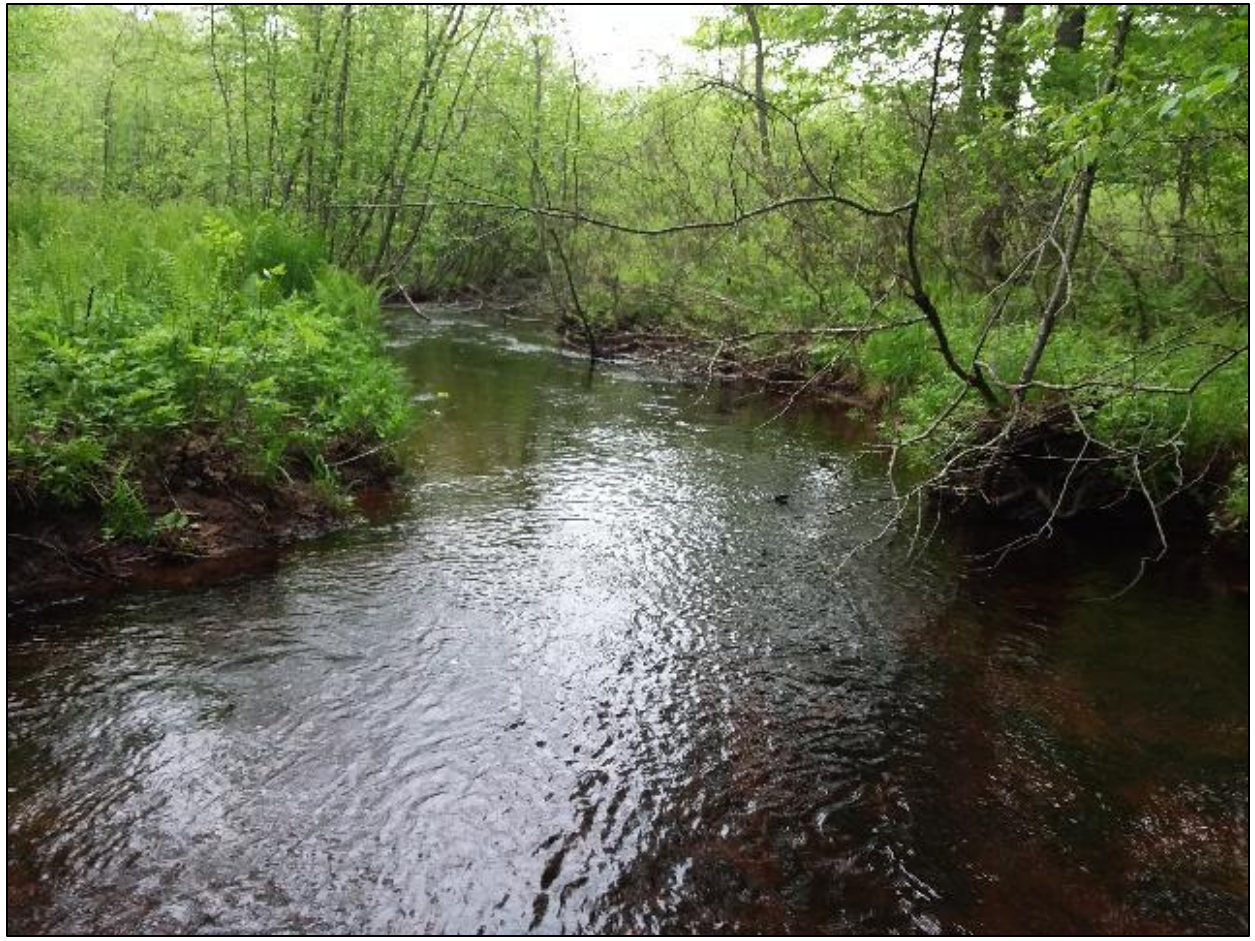
While the plant community composition is similar, the riparian vegetation is growing with more vigor.

Differences in vegetation

MODERATE

Indicator is based on a visual estimate of differences in composition and/or vigor between the streamside and upland area scored on an ordinal scale, where half scores are allowed:

- Poor (0): No compositional or density differences in vegetation are present between the streambanks and adjacent uplands.
- Weak (1): Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two.
- **Moderate (2): A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach.**



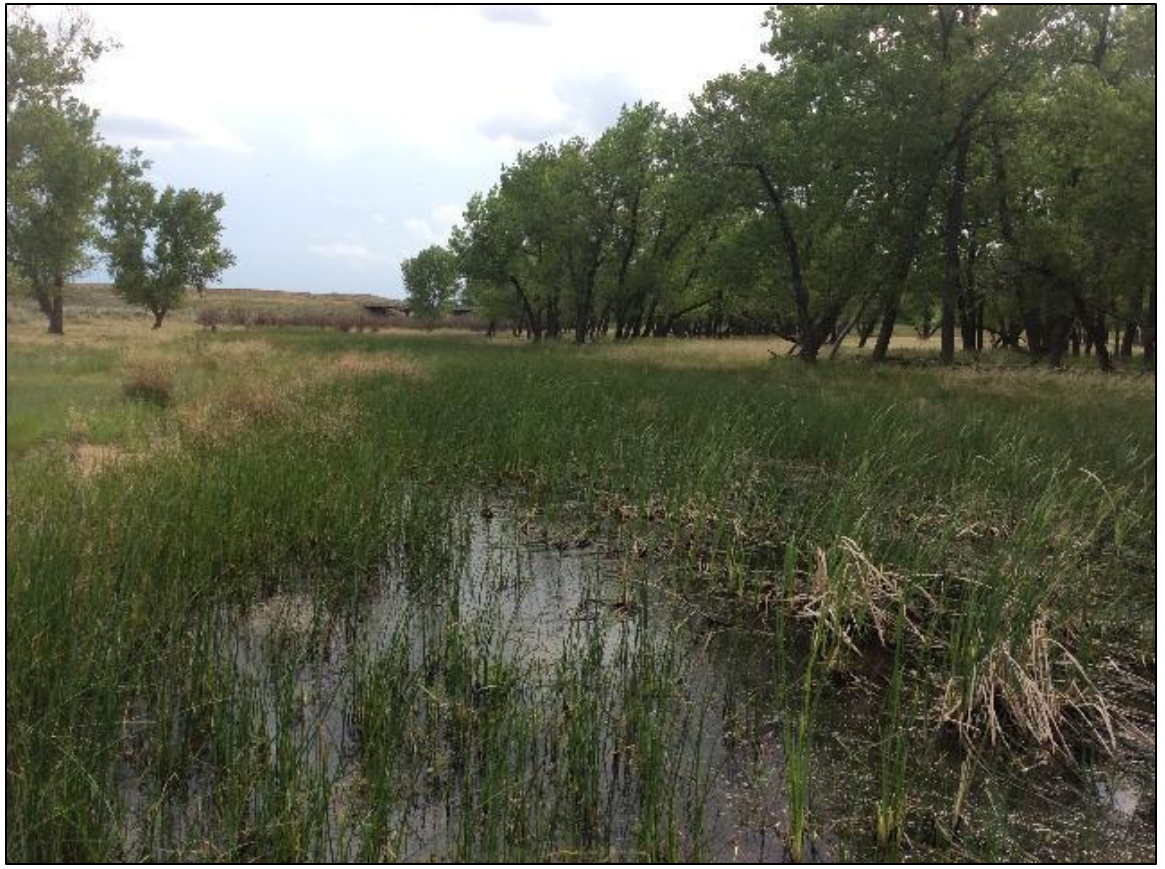
The riparian corridor is a mix of upland (e.g., *Phegopteris connectilis*) and hydrophytic (e.g., *Alnus* spp.) vegetation while hydrophytic vegetation is absent from the surrounding uplands.

Differences in vegetation

STRONG

Indicator is based on a visual estimate of differences in composition and/or vigor between the streamside and upland area scored on an ordinal scale, where half scores are allowed:

- Poor (0): No compositional or density differences in vegetation are present between the streambanks and adjacent uplands.
- Weak (1): Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two.
- Moderate (2): A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach.
- **Strong (3): Dramatic compositional differences in vegetation are present between the stream banks and adjacent uplands. A distinct riparian corridor exists along the entire reach. Riparian, aquatic, or wetland species dominate the length of the reach.**



The streambanks are dominated by hydrophytes (e.g., *Eleocharis palustris*, *Schoenoplectus pungens*) that are absent in adjacent uplands.

Record on the field form

5. Differences in vegetation

____ (0-3) *Half scores (0.5, 1.5, 2.5) are allowed.*	Compare the composition and density of plants growing on the banks and riparian areas to plants in the adjacent uplands. For this indicator, upland vegetation is not defined by its wetland indicator status but by its location relative to the channel. 0. (Poor) No compositional or density differences in vegetation are present between the streambanks and adjacent uplands. 1. (Weak) Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two. 2. (Moderate) A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach. 3. (Strong) Dramatic compositional differences in vegetation are present between the stream banks and adjacent uplands. A distinct riparian corridor exists along the entire reach. Riparian, aquatic, or wetland species dominate the length of the reach.
Notes on differences in vegetation:	

Differences in vegetation for Great Plains

Knowledge check!

Which characteristics are used in scoring the differences in vegetation indicator for the Great Plains SDAM?
Select all that apply.

A. Riffle vs pool cover
B. Upland vs riparian vegetation density
C. Number of OBL vs FACW present
D. Living vs dead biomass
E. Riparian vs upland plant composition
F. Vigor of plants near the stream vs plants distant from the stream

Knowledge check!

Which characteristics are used in scoring the differences in vegetation indicator for the Great Plains SDAM?
Select all that apply.

A. Riffle vs pool cover

B. Upland vs riparian vegetation density

C. Number of OBL vs FACW present

D. Living vs dead biomass

E. Riparian vs upland plant composition

F. Vigor of plants near the stream vs plants distant from the stream

Density of plants in riparian corridor vs uplands

Species composition in riparian vs uplands

Vigor of vegetation in riparian vs uplands

For more information about SDAMs:

https://www.epa.gov/streamflow-duration-assessment