

# Ecological site F094DY017WI Wet Sandy Floodplains

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## General information

**Provisional.** A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

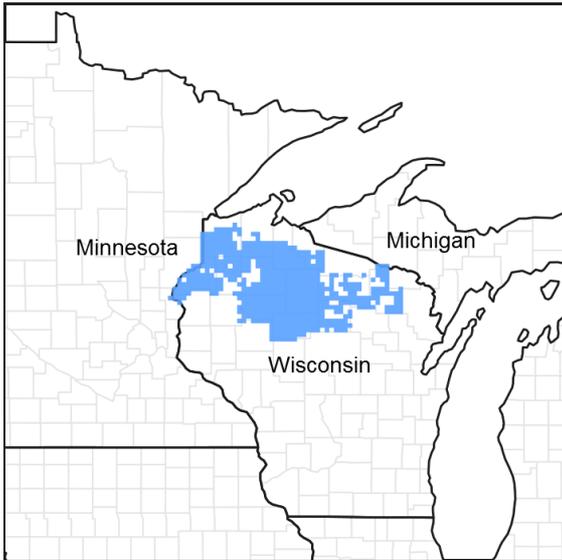


Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

## MLRA notes

Major Land Resource Area (MLRA): 094D–Northern Highland Sandy Pitted Outwash

The Wet Sandy Floodplains ecological site occupies about 5000 acres in MLRA 94D.

## Ecological site concept

**ATTENTION:** This ecological site meets the NESH 2014 requirements for PROVISIONAL. A provisional ecological site is established after broad ecological site concepts are identified and an initial state-and-transition model is drafted. Following quality control and quality assurance reviews of the ecological site concepts, an identification number and name for the provisional ecological site are entered into ESIS. A provisional ecological site may include literature reviews, land use history information, some soils data, legacy data, ocular estimates for canopy and/or species composition by weight, and even some line-point intercept information. A provisional ecological site does not meet the NESH 2014 standards for an Approved ESD, but does provide the conceptual framework of soil-site correlation for the development of the ESD. For more information about this ecological site, please contact your local NRCS office.

The Wet Sandy Floodplains ecological site is occasionally flooded and has a poorly drained sandy soil stratified with thin loamy layers and a thin mucky surface layer. This is a wetland site on which woody vegetation is common, however the tree canopy cover is only about 25 to 50%. There is a high shrub abundance, but there are also areas dominated by grasses, sedges and rushes. Numerous alluvial landforms and features such as natural levees, low

stream terraces, cutbanks and meander scars occur on this site; the result is patchwork of sites that provide a variety of habitats for both wetland and upland plants.

### Associated sites

F094DY016WI	<b>Mucky Floodplains</b> Wet Sandy Floodplains occasionally have Mucky Floodplains within them.
F094DY018WI	<b>Lower Riparian Terraces</b> This site is often upslope from Wet Sandy Floodplains ecological sites.

### Similar sites

F094DY010WI	<b>Wet Sandy Depressions</b> This site has similar wetness, but without the flooding.
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Table 1. Dominant plant species

Tree	(1) <i>Acer rubrum</i> (2) <i>Fraxinus nigra</i>
Shrub	(1) <i>Alnus incana</i> (2) <i>Salix discolor</i>
Herbaceous	(1) <i>Calamagrostis canadensis</i> (2) <i>Eupatorium maculatum</i>

### Physiographic features

Physiographic Feature Narrative: The Wet Sandy Floodplains ecological sites occur on relatively recent alluvial sediments which may contain thin loamy layers within the otherwise sandy typical soil profile. These sites have 0 to 2 percent slopes and they occupy low portions of the floodplains that were not wet enough to produce organic soils, unlike the Mucky Floodplains ecological site. Essentially, these sites occur on the lowest mineral deposits near a creek or river, and the hydraulic gradient on these sites trends toward that creek or river such that parts of this site drain well enough to preclude frequent ponding. However, these sites also include abandoned meanders and small overflow channels, which are typically ponded for a longer duration starting in spring and often continuing into the summer months.

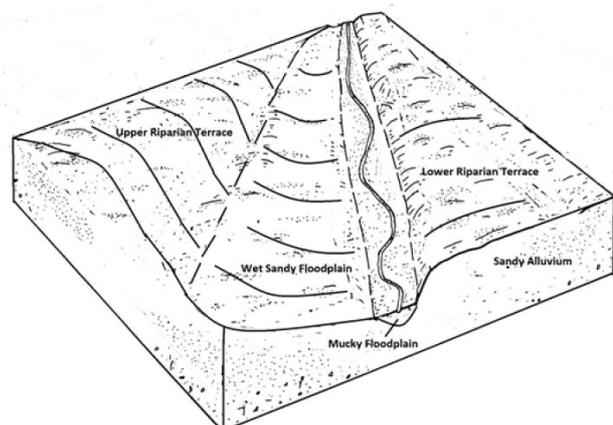


Figure 2. Mucky Floodplains

Table 2. Representative physiographic features

Landforms	(1) Flood plain
Flooding duration	Brief (2 to 7 days) to long (7 to 30 days)
Flooding frequency	Frequent

Ponding duration	Brief (2 to 7 days) to long (7 to 30 days)
Ponding frequency	Occasional to frequent
Elevation	1,390–1,870 ft
Slope	0–2%
Ponding depth	0–6 in
Water table depth	0–24 in
Aspect	Aspect is not a significant factor

## Climatic features

The climate is humid continental with very cold winters and warm summers. As is common across northern Wisconsin, two-thirds of the precipitation falls as rain during the relatively short growing season of late May to early September. Most of the rainfall is transpired by plants. Snow cover is likely in the months of November through April. Snow cover prevents deep frost penetration which promotes groundwater recharge.

**Table 3. Representative climatic features**

Frost-free period (average)	96 days
Freeze-free period (average)	123 days
Precipitation total (average)	34 in

## Climate stations used

- (1) LONG LAKE DAM [USC00474829], Eagle River, WI
- (2) NORTH PELICAN [USC00476122], Rhinelander, WI
- (3) REST LAKE [USC00477092], Manitowish Waters, WI
- (4) WILLOW RSVR [USC00479236], Hazelhurst, WI

## Influencing water features

### Soil features

The soils on this ecological site were formed in stratified alluvium with a thin (less than 8 inches) mucky surface layer. The stratified alluvium has silty layers that are thicker in areas of loamy-mantled upland soils and are thinner to absent in areas of sandy upland soils. These are the Fordum and Totagatic components respectively. These soils are poorly drained with a water table within one foot of the surface at the beginning of the growing season and after heavy rain. Brief ponding can occur in the lower spots on this site. There is brief, occasional flooding on this site.

**Table 4. Representative soil features**

Surface texture	(1) Muck
Family particle size	(1) Sandy
Drainage class	Poorly drained
Permeability class	Moderate to very rapid
Soil depth	80 in
Surface fragment cover <=3"	0–3%
Surface fragment cover >3"	0–1%
Available water capacity (0-40in)	5–10 in

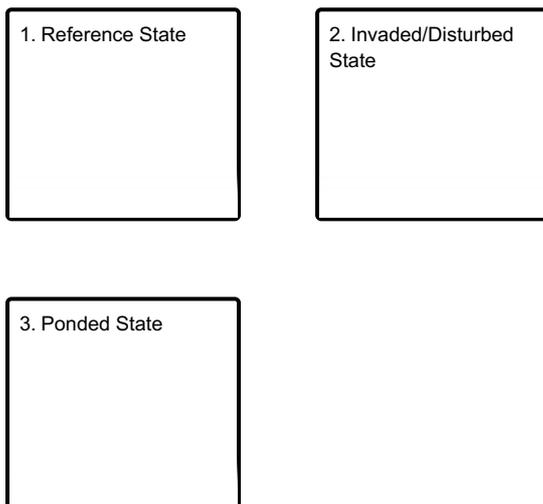
Calcium carbonate equivalent (0-40in)	0%
Electrical conductivity (0-40in)	0–2 mmhos/cm
Sodium adsorption ratio (0-40in)	0
Soil reaction (1:1 water) (0-40in)	5.4–6.1
Subsurface fragment volume <=3" (Depth not specified)	0–2%
Subsurface fragment volume >3" (Depth not specified)	0–1%

## Ecological dynamics

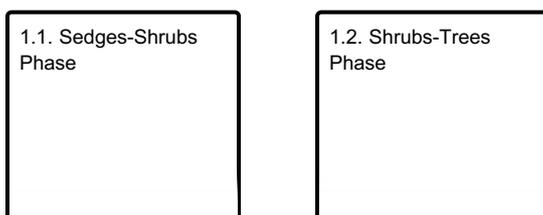
Wet Sandy Floodplains are hydrologically active sites; water tables fluctuate repeatedly in the soils and the surface is often reworked by floodwater. Moreover, these sites serve as groundwater conduits that maintain stream flow. This function alone places these sites in the critically-important habitat category. There are three main vegetation states on this site: the Reference State, which is the most common state; the Invaded State, which is becoming more common; and the Poned State, which is the least common state.

## State and transition model

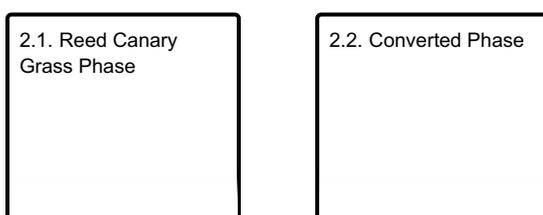
### Ecosystem states



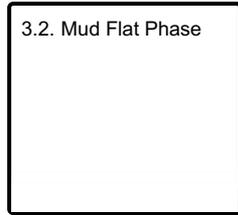
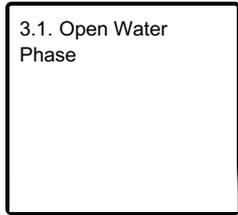
### State 1 submodel, plant communities



### State 2 submodel, plant communities



**State 3 submodel, plant communities**



**State 1  
Reference State**

**Community 1.1  
Sedges-Shrubs Phase**

This community phase is governed by water level. Any more water in the system would push it toward the aquatic, Pondered State, less water would increase woody vegetation. Seemingly, a delicate balance is maintained. The factor that acts a safety valve for maintaining this phase is the open drainage afforded by the stream or river. As long as that particular water course is flowing the hydrologic system on this site can equilibrate toward a lower water level and the terrestrial nature of the site is maintained.

**Community 1.2  
Shrubs-Trees Phase**

**State 2  
Invaded/Disturbed State**

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**Community 2.1  
Reed Canary Grass Phase**

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**Community 2.2  
Converted Phase**

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**State 3  
Pondered State**

**Community 3.1  
Open Water Phase**

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**Community 3.2  
Mud Flat Phase**

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**Additional community tables**

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## Contributors

Mark Krupinski

## Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

## Indicators

1. **Number and extent of rills:**

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2. **Presence of water flow patterns:**

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3. **Number and height of erosional pedestals or terracettes:**

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

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5. **Number of gullies and erosion associated with gullies:**

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6. **Extent of wind scoured, blowouts and/or depositional areas:**

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7. **Amount of litter movement (describe size and distance expected to travel):**
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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**
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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**
- 
12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**
- Dominant:
- Sub-dominant:
- Other:
- Additional:
- 
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**
- 
14. **Average percent litter cover (%) and depth ( in):**
- 
15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**
- 
16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**

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17. **Perennial plant reproductive capability:**

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