

Ecological site F111XC009IN Overflow

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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.

MLRA notes

Major Land Resource Area (MLRA): 111X–Indiana and Ohio Till Plain

A PROVISIONAL ECOLOGICAL SITE is a conceptual grouping of soil map unit components within a Major Land Resource Area (MLRA) based on the similarities in response to management. Although there may be wide variability in the productivity of the soils grouped into a Provisional Site, the soil vegetation interactions as expressed in the State and Transition Model are similar and the management actions required to achieve objectives, whether maintaining the existing ecological state or managing for an alternative state, are similar. Provisional Sites are likely to be refined into more precise group during the process of meeting the APPROVED ECOLOGICAL SITE DESCRIPTION criteria. This PROVISIONAL ECOLOGICAL SITE has been developed to meet the standards established in the National Ecological Site Handbook. The information associated with this ecological site does not meet the Approved Ecological Site Description Standard, but it has been through a Quality Control and Quality Assurance processes to assure consistency and completeness. Further investigations, reviews and correlations are necessary before it becomes an Approved Ecological Site Description. 111C – Indiana and Ohio Till Plain, Northwestern Part. This MLRA is in the glaciated part of north-central Indiana and is dominated by glacial till plains broken in places by lake plains, outwash plains, and flood plains. Areas that parallel most of the major rivers and streams have deposits of sand. Although it is an important agricultural region, MLRA 111C hosts a large proportion of Indiana's biodiversity.

Classification relationships

Major Land Resource Area (MLRA)(USDA-Natural Resources Conservation Service, 2006) USFS Ecological Regions (USDA, 2007): Sections - Central Till Plains, Beech Maple (222H), South Central Great Lakes (222J), Central Till Plains and Grand Prairies (251D) Subsections - Kalamazoo-Elkhart Moraines and Plains (222Jh), Steuben Interlobate Moraines (222Ji), Bluffton Till Plains (222Ha), Entrenched Valleys (222Hf), Miami-Scioto Plain-Tipton Till Plain (222Hb), Kankakee Sands (251Dg) and Eastern Grand Prairie (251Dd). NatureServe Systems anticipated (NatureServe, 2011): Agriculture-Pasture/Hay, Agriculture-Cultivated Crops and Irrigated Agriculture, Harvested Forest-Grass Regeneration, Harvested Forest-Herbaceous Regeneration, Introduced Upland Vegetation – Treed, North-Central Interior Dry Oak Forest & Woodland, North-Central Interior Dry-Mesic Oak Forest & Woodland, North-Central Interior Maple-Basswood Forest. LANDFIRE Biophysical Settings anticipated (USGS, 2010): North-Central Interior Dry-Mesic Oak Forest and Woodland, North-Central Interior Dry Oak Forest and Woodland, North-Central Interior Beech-Maple Forest, North-Central Interior Maple-Basswood Forest, South-Central Interior Mesophytic Forest.

Ecological site concept

This site is an upland site formed on glacial outwash and colluvium parent materials in soils that are somewhat poorly to moderately well drained. There are 4 distinct states: 1. outwash forest (reference state), 2. fire suppressed state, 3. agriculture state, 4. old field state. Low severity surface fires maintained the dominance of oak and hickory trees with a return interval between 20-40 years. Currently, roughly 90%, of the site is in agricultural production, with the majority being used for growing corn and soybeans.

Associated sites

R111XC008IN	Wet Overflow Generally lower on the landscape with less drainage.
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R111XC010IN	Well Drained Overflow Higher on the landscape and more steeply sloped.
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Similar sites

F111XC007IN	Glacial Ridge Similar composition of dominant canopy species, but not as much cover due to shorter fire return interval.
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Table 1. Dominant plant species

Tree	(1) <i>Quercus alba</i> (2) <i>Carya ovata</i>
Shrub	(1) <i>Rubus</i>
Herbaceous	Not specified

Physiographic features

This site is located in the 111C - Indiana and Ohio Till Plain, Northwestern Part major land resource area. It is classified as an upland site. The site was formed in outwash and colluvium on outwash plains and terraces.

Figure 1. Block Diagram for F111CY009IN - (Budd-Brady)

Table 2. Representative physiographic features

Landforms	(1) Outwash plain (2) Outwash terrace
Runoff class	Low to high
Flooding duration	Very brief (4 to 48 hours) to brief (2 to 7 days)
Flooding frequency	Rare to frequent
Ponding frequency	None to rare
Slope	0 – 10 %
Water table depth	20 – 60 cm

Aspect	Aspect is not a significant factor
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Climatic features

The climate is humid continental in nature typified by large season temperature differences, with warm to hot, humid summers and cold winters. Precipitation is relatively well distributed year-round.

The average first frost should occur around October 12 and the last freeze of the season should occur around April 25.

Climate stations used

- (1) RENSSELAER [USC00127298], Rensselaer, IN
- (2) ROCHESTER [USC00127482], Rochester, IN
- (3) CHALMERS 5 W [USC00121417], Chalmers, IN
- (4) DELPHI 2 N [USC00122149], Delphi, IN
- (5) GOSHEN 3SW [USC00123418], Goshen, IN
- (6) FRANCESVILLE [USC00123078], Francesville, IN
- (7) LOGANSPOUT CICOTT ST [USC00125117], Logansport, IN
- (8) WEST LAFAYETTE 6 NW [USC00129430], West Lafayette, IN
- (9) WINAMAC 2SSE [USC00129670], Winamac, IN

Influencing water features

This being an upland site, it is not influenced by water from a wetland or stream.

Soil features

In a representative profile for the Overflow ecological site, the soils of the site are a very dark or dark grayish brown at the surface and very deep. Taxonomically most of the soils for this site are Hapludalfs or Endoaqualfs.

Table 3. Representative soil features

Surface texture	(1) Loam (2) Sandy loam
Family particle size	(1) Loamy
Drainage class	Somewhat poorly drained to moderately well drained
Permeability class	Moderate to moderately rapid
Soil depth	120 – 150 cm
Surface fragment cover <=3"	0 – 30 %
Subsurface fragment volume <=3" (Depth not specified)	0 – 30 %

Ecological dynamics

The historic plant community of the Overflow ecological site is an outwash forest. The forest canopy is dominated by white oak and shagbark hickory with high level of canopy cover. The site was maintained by periodic surface fires that occurred every 25-65 years. Once this fire return interval exceeded 40 years, less fire tolerant species such as sugar maple and beech would invade the understory. Continued absence of fire would lead to their dominance in the canopy to the exclusion of the oaks and hickories. Since settlement, 90% of the site has been converted to agricultural use with the majority being used to grow corn and soybeans.

State and transition model

Additional community tables

Table 4. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 5. Community 2.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 6. Community 2.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 7. Community 3.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 8. Community 3.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 9. Community 4.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 10. Community 4.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 11. Community 4.3 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Inventory data references

Site concept developed through expert opinion, review of the literature, and field reconnaissance.

Other references

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Contributors

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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	09/16/2026
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. Number and extent of rills:

2. Presence of water flow patterns:

3. Number and height of erosional pedestals or terracettes:

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

5. Number of gullies and erosion associated with gullies:

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

7. Amount of litter movement (describe size and distance expected to travel):

8. Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):

9. Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):

10. Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:

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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