

Major Land Resource Area 111X

Indiana and Ohio Till Plain

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Ecological site keys

111A_ES_KEY

1a. Organic parent material

- 2a. Underlying material is mineral [Mineral Muck Prairie]
- 2b. Underlying material is organic
 - 3a. Underlying material is limnic [Mucky Prairie]
 - 3b. Underlying material is not limnic [Deep Muck Wetland]

1b. Non-organic parent material

- 4a. Active floodplain, alluvium parent material
 - 5a. Soils are very poorly to somewhat poorly drained [Floodplain Forest]
 - 5b. Soils are moderately well or well drained [Dry Floodplain Forest]
- 4b. Other landforms, not in floodplain, non-alluvium parent material
 - 5a. Residuum of weathering bedrock
 - 6a. Depth to restrictive layer is less than 100 cm (40 inches)
 - 7a. Depth to restrictive layer is less than 50 cm (20 inches) [Shallow Restricted woodland]
 - 7b. Depth to restrictive layer is between 50 and 100 cm (20 and 40 inches) [Mixed Forest]
 - 6b. Depth to restrictive layer is greater than 100 cm (40 inches) [Mesic Forest]
 - 5b. Unconsolidated deposits
 - 8a. Ice-transported unstratified deposits (glacial till)
 - 9a. Site is located in a depression landscape position
 - 10a. Soil Munsell surface color is lighter than 3/2 and/or an alfisol; no ponding [Mesic Forest]
 - 10b. Soil Munsell surface color is 3/2 or darker and/or a mollisol; occasional to frequent ponding [Till Flatwood]
 - 9b. Site is located in a swell (convex) landscape position
 - 11a. Soil Munsell surface color is lighter than 3/2
 - 12a. Soils are poorly or somewhat poorly drained [Till Mesic Forest]
 - 12b. Soils are moderately well or well drained [Till Ridge Forest]
 - 11b. Soil Munsell surface color is 3/2 or darker and/or a mollisol [Till Mesic Prairie]
 - 8b. Non-ice-transported stratified deposits (wind and water deposits)
 - 13a. Water-transported deposits (lacustrine and outwash)
 - 14a. Deposited in non-flowing water, lacustrine parent material
 - 15a. Soils are poorly or somewhat poorly drained [Flatwood Forest]
 - 15b. Soils are somewhat poorly to well drained [Mesic Forest]
 - 14b. Deposited in flowing water, outwash parent material
 - 16a. Soil Munsell surface color is lighter than 3/2
 - 17a. Soils are somewhat poorly or moderately well drained [Outwash Forest]
 - 17b. Soils are well to excessively drained [Oak-Hickory Forest]

- 16b. Soil Munsell surface color is darker than 3/2
 - 18a. Soils are very poorly to somewhat poorly drained [Wet prairie]
 - 18b. Soils are moderately well to excessively drained [Tallgrass Prairie]
- 13b. Wind-transported or sandy deposits (Loess, Sandy Deposits)
 - 19a. Wind-transported silt, loess parent material [Flatwood Forest]
 - 19b. Sandy parent material
 - 20a. Site is located on an interdunal landscape position [Oak Woodland-Prairie]
 - 20b. Site is located on a dune landscape position [Dry Sand Savanna]

111B_ES_KEY

- 1a. Organic parent material
 - 2a. Underlying material is mineral [Mineral Muck]... R111XB001IN ... R111XB001IN – Mineral Muck
 - 2b. Underlying material is organic
 - 3a. Underlying material is limnic [Limnic Muck]... R111XB002IN ... R111XB002IN – Limnic Muck
 - 3b. Underlying material is not limnic and/or greater than 75 cm (30 inches) from the surface [Deep Muck]... R111XB003IN ... R111XB003IN – Deep Muck
- 1b. Non-organic parent material
 - 4a. Active floodplain, alluvium parent material
 - 5a. Soil Surface dark in color (3/2 Munsell or darker)
 - 6a. Soils are in the aquic taxonomic suborder [Wet Alluvium Floodplain]... F111XB201IN ... F111XB201IN – Wet Alluvium Floodplain
 - 6b. Soils are not in the aquic taxonomic suborder [Dry Alluvium Floodplain]... F111XB202IN ... F111XB202IN – Dry Alluvium Floodplain
 - 5b. Soil surface light in color (lighter than 3/2 Munsell)
 - 7a. Soils are very poorly to somewhat poorly drained [Wet Alluvium Forest]... F111XB203IN ... F111XB203IN – Wet Alluvium Forest
 - 7b. Soils are moderately well or well drained [Dry Alluvium Forest]... F111XB204IN ... F111XB204IN – Dry Alluvium Forest
 - 4b. Other landforms, not in floodplain, non-alluvium parent material
 - 8a. Residuum of weathering bedrock
 - 9a. Soil surface dark in color 3/2 Munsell or darker [Dark Bedrock Prairie]... R111XB301IN ... R111XB301IN – Dark Bedrock Prairie
 - 9b. Soil surface light in color (lighter than 3/2 Munsell)
 - 10a. Soils are poorly or somewhat poorly drained [Mesic Bedrock Forest]... F111XB302IN ... F111XB302IN – Mesic Bedrock Forest
 - 10b. Soils are moderately well drained or drier [Dry Bedrock Forest]... F111XB303IN ... F111XB303IN – Dry Bedrock Forest
 - 8b. Unconsolidated deposits
 - 11a. Ice-transported unstratified deposits (glacial till)
 - 12a. Site is on a concave landscape position and/or very poorly or poorly drained [Till Depression]... F111XB501IN ... F111XB501IN – Till Depression
 - 12b. Site is on a convex landscape position
 - 13a. Soils are somewhat poorly drained [Wet Till Ridge]... F111XB502IN ... F111XB502IN – Wet Till Ridge

- 13b. Soils are moderately well or well drained [Till Ridge]... F111XE503IN ... F111XE503IN – Till Ridge
- 11b. Non-ice-transported stratified deposits (water deposits)
 - 14a. Deposited in non-flowing water, lacustrine parent material
 - 15a. Soils are very poorly or poorly drained [Lacustrine Flatwood]... F111XB101IN ... F111XB101IN – Lacustrine Flatwood
 - 15b. Soils are somewhat poorly or moderately well drained [Lacustrine Forest]... F111XB102IN ... F111XB102IN – Lacustrine Forest
 - 14b. Deposited in flowing water, outwash parent material
 - 16a. Soil surface dark in color 3/2 Munsell or darker
 - 17a. Soils are in the aquic suborder and/or very poorly or poorly drained [Wet Outwash Mollisol]... R111XB401IN ... R111XB401IN – Wet Outwash Mollisol
 - 17b. Soils are not in the aquic suborder and/or they are SWPD or drier [Dry Outwash Integrate]... R111XB402IN ... R111XB402IN – Dry Outwash Integrate
 - 16b. Soil surface light in color lighter than 3/2 Munsell
 - 18a. Soils are very poorly to somewhat poorly drained [Outwash Upland]... F111XB403IN ... F111XB403IN – Outwash Upland
 - 18b. Soils are moderately well drained or drier [Dry Outwash Upland]... F111XB404IN ... F111XB404IN – Dry Outwash Upland

111C_ES_KEY

- 1a. Organic parent material
 - 2a. Underlying material is mineral [mineral muck prairie]
 - 2b. Underlying material is organic
 - 3a. Underlying material is limnic [mucky prairie]
 - 3b. Underlying material is not limnic [deep muck wetland]
- 1b. Non-organic parent material
 - 4a. Active floodplain, alluvium parent material
 - 5a. Soils are very poorly to somewhat poorly drained [floodplain forest]
 - 5b. Soils are moderately well or well drained [dry floodplain forest]
 - 4b. Other landforms, not in floodplain, non-alluvium parent material
 - 6a. Ice-transported unstratified deposits (glacial till)
 - 7a. Site is located in a depression landscape position [wet prairie]
 - 7b. Site is located in a swell (convex) landscape position
 - 8a. Soil Munsell surface color is lighter than 3/2, and slope generally greater than 4% [till mesic woodland]
 - 8b. Soil Munsell surface color is 3/2 or darker and/or a mollisol, and slope usually less than or equal to 4% [till mesic prairie]
 - 6b. Non-ice-transported stratified deposits (wind and water deposits)
 - 9a. Water-transported deposits (outwash)
 - 10a. Site is located in a depression landscape position
 - 11a. Site is hydric (poorly drained and very poorly drained) [wet prairie]
 - 11b. Site is non-hydric (moderately well drained and somewhat poorly drained) [outwash forest]
 - 10b. Site is located in a swell (convex) landscape position [tallgrass savanna]

9b. Wind-transported or sandy deposits (dunes)

12a. Site is located on an interdunal landscape position

13a. Site is hydric (poorly drained and very poorly drained) [wet sand prairie]

13b. Site is non-hydric (moderately well drained and somewhat poorly drained) [oak woodland]

12b. Site is located on a dune landscape position [dry sand savanna]

[Label] [Criteria]

111D_ES_KEY

1a. Organic parent material

2a. organic material depth less than 130 cm (51 inches) [Muck Prairie]

2b. organic material depth 130 cm (51 inches) or greater [Deep Muck]

1b. Non-organic parent material

3a. Active floodplain, alluvium parent material

4a. Soils are very poorly to somewhat poorly drained [Floodplain Forest]

4b. Soils are moderately well or well drained [Dry Floodplain Forest]

3b. Other landforms, not in floodplain, non-alluvium parent material

5a. Residuum of weathering bedrock

6a. Depth to restrictive layer is less than 100 cm (40 inches)

7a. Depth to restrictive layer is less than 50 cm (20 inches) [Shallow Restricted woodland]

7b. Depth to restrictive layer is between 50 and 100 cm (20 and 40 inches) [Mixed Forest]

6b. Depth to restrictive layer is greater than 100 cm (40 inches) [Mesic Forest]

5b. Unconsolidated deposits

8a. Ice-transported unstratified deposits (glacial till)

9a. Site is located in a concave landscape position

10a. Soil Munsell surface color is lighter than 3/2 and/or an alfisol [Mesic Forest]

10b. Soil Munsell surface color is 3/2 or darker

11a. Soil Surface color is less than 25 cm (10 inches) deep [Tall-Grass Savanna]

11a. Soil Surface color is 25 cm (10 inches) or deeper

12a. Soils are well drained [Till Prairie]

12b. Soils are very poorly or poorly drained [Till Flatwood]

9b. Site is located in a convex landscape position

13a. Soil Munsell surface color is lighter than 3/2

14a. Soils are poorly or somewhat poorly drained [Till Mesic Forest]

14b. Soils are moderately well or well drained [Till Ridge Forest]

13b. Soil Munsell surface color is 3/2 or darker

15a. Soil surface color is less than 25 cm (10 inches) deep [Savanna]

15b. Soil surface color is 25 cm (10 inches) or deeper [Till Mesic Prairie]

8b. Non-ice-transported stratified deposits (wind and water deposits)

16a. Water-transported deposits (lacustrine and outwash)

17a. Deposited in non-flowing water, lacustrine parent material

18a. Soils are very poorly or poorly drained [Flatwood Forest]

18b. Soils are somewhat poorly or moderately well drained [Mesic Forest]

17b. Deposited in flowing water, outwash parent material

- 19a. Soil surface color is lighter than 3/2
 - 20a. Soils are somewhat poorly or moderately well drained [Outwash Forest]
 - 20b. Soils are well to excessively drained [Oak-Hickory Forest]
- 19b. Soil surface color is darker than 3/2
 - 21a. Surface color is less than 25 cm (10 inches) deep [Savanna]
 - 21b. Surface color is 25 cm (10 inches) or deeper
 - 22a. Soils are very poorly to somewhat poorly drained [Wet prairie]
 - 22b. Soils are moderately well to excessively well drained [Tallgrass Prairie]
- 16b. Wind-transported or sandy deposits (Loess, Sandy Deposits)
 - 23a. Wind-transported silt, loess parent material
 - 24a. Soils are very poorly or poorly drained and/or are a mollisol [Flatwood Forest]
 - 24b. Soils are somewhat poorly to well drained and/or are an alfisol [Loess Forest]
 - 23b. Sandy parent material
 - 25a. Site is located on an interdunal landscape position [Oak Woodland-Prairie]
 - 25b. Site is located on a dune landscape position
 - 26a. Soil surface color is 3/2 or darker to a depth of 25 cm (10 inches) or greater [Sand Dune Prairie]
 - 26b. Soil surface is lighter than that 3/2 munsell or less than 25 cm (10 inches) [Dry Sand Savanna]

111E_ES_KEY

- 1a. Organic parent material
 - 2a. Underlying material is mineral [big bluestem -switchgrass]
 - 2b. Underlying material is organic
 - 3a. Underlying material is limnic (coprogenous earth) [big bluestem - eastern gamagrass???
 - 3b. Underlying material is not limnic [bulrush - cattail]
- 1b. Non-organic parent material
 - 4a. Active floodplain, alluvium parent material
 - 5a. Soil surface dark in color (3/2 Munsell or darker)
 - 6a. Soils are very poorly drained [cottonwood - sycamore]
 - 6b. Soils are moderately well to well drained [Ohio buckeye - red maple]
 - 5b. Soil surface light in color (lighter than 3/2 Munsell)
 - 7a. Soils are poorly to somewhat poorly drained [silver maple - swamp white oak]
 - 7b. Soils are moderately well to well drained [sugar maple - American basswood]
 - 4b. Other landforms, not in floodplain, non-alluvium parent material
 - 8a. Residuum of weathering bedrock
 - 9a. Soils are somewhat poorly drained [sugar maple - American beech]
 - 9b. Soils are moderately well to well drained [white oak - red oak]
 - 8b. Unconsolidated deposits
 - 10a. Ice-transported unstratified deposits (glacial till)
 - 11a. Site is on a concave landscape position (toeslope and/or footslope) AND frequently ponded [pin oak -swamp white oak]
 - 11b. site is on a convex landscape position (summit, shoulder, backslope)

- 12a. Soils are somewhat poorly drained [sugar maple - American beech]
 - 12b. Soils are moderately well to well drained [sugar maple - American beech]
 - 10b. Non-ice-transported stratified deposits
 - 13a. Deposited in non-flowing water, lacustrine parent material
 - 14a. Soils are very poorly or poorly drained [pin oak - swamp white oak]
 - 14b. Soils are somewhat poorly drained or drier [sugar maple - American beech]
 - 13b. Deposited in flowing water, outwash-colluvium parent material
 - 15a. Soil surface dark in color (3/2 Munsell or darker)
 - 16a. Soils are very poorly or poorly drained [prairie cordgrass - big bluestem]
 - 16b. Soils are somewhat poorly drained or drier [white oak - bur oak / little bluestem - big bluestem]
 - 15b. Soil surface light in color (lighter than 3/2 Munsell)
 - 17a. Soils are very poorly, poorly or somewhat poorly drained [sugar maple - red oak]
 - 17b. Soils are moderately well drained or drier [oaks / prairie understory]
- [Label] [Criteria]

111A Outline

I. Organic PM

- A. Underlying material is mineral ... R111XA001IN – Mineral Muck
- B. Underlying material is organic
 - i. Underlying material is limnic ... R111XA002IN – Limnic Muck
 - ii. Underlying material is not limnic ... R111XA003IN – Deep Muck

II. Non-Organic PM

- A. Alluvium PM
 - i. Soils are very poorly to somewhat poorly drained ... F111XA004IN – Wet Alluvium
 - ii. Soils are moderately well or well drained ... F111XA005IN – Dry Alluvium
- B. Glacial till PM
 - i. Site is located in a depression landscape position
 - a. Soil surface color (SC) is lighter than 3/2 and/or an alfisol; no ponding ... F111XA006IN – Till Depression
 - b. Soil SC is 3/2 or darker and/or a mollisol; occasional to frequent ponding ... F111XA007IN – Till Depression Flatwood
 - ii. Site is located in a swell (concave) landscape position
 - a. Soil surface is lighter than 3/2
 - Soils are poorly or somewhat poorly drained ... F111XA008IN – Wet Till Ridge
 - Soils are moderately well or well drained ... F111XA009IN – Till Ridge
 - b. Soil surface color is 3/2 or darker and/or a mollisol ... R111XA010IN – Till Ridge Prairie
- C. Lacustrine PM
 - i. Soils are poorly or somewhat poorly drained ... F111XA011IN – Wet Lacustrine Forest
 - ii. Soils are somewhat poorly to well drained ... F111XA012IN – Lacustrine Forest
- D. Loess PM ... F111XA013IN – Loess Upland
- E. Outwash PM
 - i. Soils surface color is lighter than 3/2

- a. Soils are somewhat poorly or moderately well drained .F111AY014IN
- b. Soils are well to excessively drained ... F111XA015IN – Dry Outwash Upland
- ii. Soils surface color is darker than 3/2
 - a. Soils are very poorly to somewhat poorly drained ... R111XA016IN – Outwash Mollisol
 - b. Soils are moderately well to excessively drained ... R111XA017IN – Dry Outwash Mollisol
- F. Residuum PM
 - i. Depth to restrictive layer is less than 20 inches ... F111XA018IN – Shallow Restricted
 - ii. Depth to restrictive layer is between 20 and 40 inches ... F111XA019IN – Moderately Deep Restricted
 - iii. Depth to restrictive layer is greater than 40 inches ... F111XA020IN – Deep Restricted
- G. Sand PM
 - i. Site is located on an interdunal landscape position ... F111XA021IN – Sandy Interdune
 - ii. Site is located on a dune landscape position ... R111XA022IN – Sand Dune

111B Outline

- I. Organic PM
 - A. Underlying material is mineral ... R111XB001IN – Mineral Muck
 - B. Underlying material is organic
 - i. Underlying material is limnic ... R111XB002IN – Limnic Muck
 - ii. Underlying material is not limnic and/or greater than 30 inches from the surface ... R111XB003IN – Deep Muck
- II. Mineral PM
 - A. Lacustrine Parent Material
 - i. Soils are very poorly or poorly drained ... F111XB101IN – Lacustrine Flatwood
 - ii. Soils are somewhat poorly or moderately well drained ... F111XB102IN – Lacustrine Forest
 - B. Alluvium Parent Material
 - i. Soil Surface dark in color (3/2 Munsell or darker)
 - a. Soils are in the aquic taxonomic suborder ... F111XB201IN – Wet Alluvium Floodplain
 - b. Soils are not in the aquic taxonomic suborder ... F111XB202IN – Dry Alluvium Floodplain
 - ii. Soil surface light in color (lighter than 3/2 Munsell)
 - Soils are very poorly to somewhat poorly drained ... F111XB203IN – Wet Alluvium Forest
 - Soils are moderately well or well drained ... F111XB204IN – Dry Alluvium Forest
 - C. Bedrock Parent Material
 - i. Soil surface dark in color 3/2 Munsell or darker ... R111XB301IN – Dark Bedrock Prairie
 - ii. Soil surface light in color (lighter than 3/2 Munsell)
 - a. Soils are poorly or somewhat poorly drained ... F111XB302IN – Mesic Bedrock Forest
 - b. Soils are moderately well drained or drier ... F111XB303IN – Dry Bedrock Forest
 - D. Outwash Parent Material
 - i. Soil surface dark in color 3/2 Munsell or darker
 - a. Soils are in the aquic suborder and/or very poorly or poorly drained ... R111XB401IN – Wet Outwash Mollisol
 - b. Soils are not in the aquic suborder and/or they are SWPD or drier ... R111XB402IN – Dry Outwash Integrate
 - ii. Soil surface light in color lighter than 3/2 Munsell

- a. Soils are very poorly to somewhat poorly drained ... F111XB403IN – Outwash Upland
- b. Soils are moderately well drained or drier ... F111XB404IN – Dry Outwash Upland

E. Glacial Till Parent Material

- i. Site is on a concave landscape position and/or very poorly or poorly drained ... F111XB501IN – Till Depression
- ii. Site is on a convex landscape position
 - a. Soils are somewhat poorly drained ... F111XB502IN – Wet Till Ridge
 - b. Soils are moderately well or well drained ... F111XE503IN – Till Ridge

111D Outline

I. Organic PM

- A. organic material depth less than 51 inches ... R111XD001IN – Shallow Muck
- B. organic material depth 51 inches or greater ... R111XD002IN – Deep Muck

II. Mineral PM

A. Alluvium PM

- A. Soils are very poorly to somewhat poorly drained ... F111XD003IN – Wet Alluvium
- B. Soils are moderately well to excessively drained ... F111XD004IN – Dry Alluvium

B. Glacial Till

- A. Site is located in a concave landscape position
 - i. Soil surface color is lighter than 3/2 and/or an alfisol ... F111XD005IN – Till Depression
 - ii. Soil surface color is 3/2 Munsell or darker
 - a. Soil Surface color is less than 10 inches deep ... R111XD006IN – Mollic Till Depression
 - b. Soil surface color is 10 inches or deeper
 - 1) Soils are well drained ... R111XD007IN – Till Depression Prairie
 - 2) Soils are very poorly or poorly drained ... F111XD008IN – Till Depression Flatwood
- B. Site is located in a convex landscape position
 - i. Soil surface color is lighter than 3/2
 - a. Soil is poorly or somewhat poorly drained ... F111XD009IN – Wet Till Ridge
 - b. Soil is moderately well or well drained ... F111XD010IN – Till Ridge
 - ii. Soil surface color is 3/2 or darker
 - a. Soil surface color is less than 10 inches deep ... R111XD011IN – Mollic Till Ridge
 - b. Soil surface color is 10 inches or deeper ... R111XD012IN – Till Ridge Prairie

C. Lacustrine PM

- A. Soils are very poorly or poorly drained ... F111XD013IN – Wet Lacustrine Forest
- B. Soils are somewhat poorly or moderately well drained Lacustrine Forest ... F111XD014IN – Lacustrine Forest

D. Loess PM

- A. Soils are very poorly or poorly drained and/or are a mollisol ... F111XD015IN – Wet Loess Upland
- B. Soils are somewhat poorly to well drained and/or are an alfisol ... F111XD016IN – Dry Loess Upland

E. Outwash PM

- A. Soil surface color is lighter than 3/2
 - i. Soils are somewhat poorly or moderately well drained ... F111XD017IN – Outwash Upland
 - ii. Soils are well to excessively drained ... F111XD018IN – Dry Outwash Upland

- B. Soil surface color is darker than 3/2
 - i. Surface color is less than 10 inches deep ... R111XD019IN – Outwash Integrate
 - ii. Surface color is 10 inches or deeper
 - 1) Soils are very poorly to somewhat poorly drained ... R111XD020IN – Wet Outwash Mollisol
 - 2) Soils are moderately well to excessively well drained ... R111XD021IN – Dry Outwash Mollisol
- F. Residuum PM
 - A. Depth to restrictive layer is less than 20 inches ... F111XD022IN – Shallow Restricted
 - B. Depth to restrictive layer is between 20 and 40 inches ... F111XD023IN – Moderately Deep Restricted
 - C. Depth to restrictive layer is greater than 40 inches ... F111XD024IN – Deep Restricted
- G. Sand PM
 - A. Site is located on an interdunal landscape position ... F111XD025IN – Sandy Interdune
 - B. Site is located on a dune landscape position
 - i. Soil surface color is 3/2 or darker to a depth of 10 inches or greater ... R111XD026IN – Sand Dune Prairie
 - ii. Soil surface is lighter than that 3/2 munsell ... R111XD027IN – Sand Dune

111E Outline

- I. Organic Parent Material
 - A. Underlying material is mineral ... R111XE001OH – Mineral Muck
 - B. Underlying material is organic
 - 1 Underlying material is limnic (coprogenous earth) ... R111XE002OH – Limnic Muck
 - 2 Underlying material is not limnic ... R111XE003OH – Deep Muck
- II. Non-Organic/Mineral Parent Material
 - A. Lacustrine Parent Material
 - 1 Soils are very poorly or poorly drained ... F111XE101OH – Lacustrine Flatwood
 - 2 Soils are somewhat poorly drained or drier ... F111XE102OH – Lacustrine Forest
 - B. Alluvium Parent Material
 - 1 Soil surface dark in color (3/2 Munsell or darker)
 - i. Soils are very poorly drained ... F111XE201OH – Wet Alluvium Floodplain
 - ii. Soils are moderately well to well drained ... F111XE202OH – Dry Alluvium Floodplain
 - 2 Soil surface light in color (lighter than 3/2 Munsell)
 - i. Soils are poorly to somewhat poorly drained ... F111XE203OH – Wet Alluvium Forest
 - ii. Soils are moderately well to well drained ... F111XE204OH – Dry Alluvium Forest
 - C. Residuum Parent Material
 - 1 Soils are somewhat poorly drained ... F111XE301OH – Wet Restricted
 - 2 Soils are moderately well to well drained ... F111XE302OH – Dry Restricted
 - D. Outwash-Colluvium Parent Material
 - 1 Soil surface dark in color (3/2 Munsell or darker)
 - i. Soils are very poorly or poorly drained ... R111XE401OH – Wet Outwash Mollisol
 - ii. Soils are somewhat poorly drained or drier ... R111XE402OH – Dry Outwash Mollisol
 - 2 Soil surface light in color (lighter than 3/2 Munsell)
 - i. Soils are very poorly, poorly or somewhat poorly drained ... F111XE403OH – Outwash Upland
 - ii. Soils are moderately well drained or drier ... F111XE404OH – Dry Outwash Upland

E. Glacial Till Parent Material

1 Site is on a concave landscape position (toeslope and/or footslope) AND frequently ponded ...

F111XE501OH – Till Depression

2 site is on a convex landscape position (summit, shoulder, backslope)

i. Soils are somewhat poorly drained ... F111XE502OH – Wet Till Ridge

ii. Soils are moderately well to well drained ... F111XE503OH – Till Ridge