PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 18 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_009
Site ID: S2015ND093009

Pedon ID: S2015ND093009

Site Note: This site is used for Range and Wildlife Habitat.; little blue stem was present on this site. ; During the progressive soil survey of Stutsman county; this site was part of Map Unit 23D (Barnes-Buse loams; 9 to 15 percent slopes). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C135D (Zahl-Williams loams; 9 to 15 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Buse is a Typic Calciudoll and Zahl is a Typic Caciustoll.

Pedon Note: little Blue stem was the vegetation present on this location.
Lab Source ID: KSSL
Lab Pedon #: 16N0383
Soil Name as Described/Sampled: Zahl
Classification: Fine-loamy, mixed, superactive, frigid Typic Calciustolls
Soil Name as Correlated: Zahl
Classification: Fine-loamy, mixed, active, frigid Typic Calciustolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: taxadjunct
Associated Soils: Williams, Zahill
Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on backslope of side slope of moraine on till plain
Upslope Shape: linear
Cross Slope Shape: convex
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 36 cm.
free carbonates 0 to 100 cm.
calcic horizon 20 to 63 cm.

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota
Map Unit:

Pit Location:

Quad Name:
Std Latitude: 47.1460000
Std Longitude: -99.2330000

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation:
Parent Material: fine-loamy till
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015ND093009 **Pedon ID:** S2015ND093009

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
18.0		90						well		

A--0 to 20 centimeters (0.0 to 7.9 inches); very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2), moist; moderate fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; fine roots throughout; 1 percent nonflat subangular indurated 75 to 250-millimeter Mixed rock fragments and 3 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01585

Bk1--20 to 36 centimeters (7.9 to 14.2 inches); dark grayish brown (2.5Y 4/2) clay loam, dark olive brown (2.5Y 3/3), moist; moderate medium prismatic parts to moderate medium subangular blocky structure; hard, firm, slightly sticky, slightly plastic; very fine roots throughout and fine roots throughout; carbonate, finely disseminated; 1 percent nonflat subangular indurated 75 to 250-millimeter Mixed rock fragments and 5 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01586

Bk2--36 to 63 centimeters (14.2 to 24.8 inches); light olive brown (2.5Y 5/3) clay loam, olive brown (2.5Y 4/3), moist; moderate coarse prismatic parts to moderate coarse subangular blocky structure; hard, firm, slightly sticky, slightly plastic; fine roots throughout; 10 percent faint clay films on all faces of peds; 5 percent fine irregular carbonate masses in matrix and 10 percent medium irregular carbonate masses in matrix; 2 percent nonflat subangular indurated 75 to 250-millimeter Mixed rock fragments and 5 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; violent effervescence, by HCl, 1 normal; gradual wavy boundary. Lab sample # 16N01587

BCk--63 to 100 centimeters (24.8 to 39.4 inches); light olive brown (2.5Y 5/3) loam, olive brown (2.5Y 4/3), moist; weak very coarse subangular blocky structure; hard, firm, slightly sticky, slightly plastic; very fine roots throughout; 2 percent fine prominent irregular 7.5YR 4/6), moist, masses of oxidized iron In matrix and 5 percent medium distinct irregular 2.5Y 5/6), moist, masses of oxidized iron In matrix; 5 percent medium irregular carbonate masses in matrix; 2 percent nonflat subangular indurated 75 to 250-millimeter Mixed rock fragments and 5 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal. Lab sample # 16N01588

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 18 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_010
Site ID: S2015ND093010

Pedon ID: S2015ND093010

Site Note: This site is used for Range and Wildlife Habitat. ; This site had the vegetation recently burned-off. ; During the progressive soil survey of Stutsman county; this site was part of Map Unit 47B (Renshaw-Sioux loams; 0 to 6 percent slopes). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C849B (Lehr-Wabek loams; 2 to 6 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Sioux is a Sandy-skeletal; mixed; frigid Entic Hapludoll and Wabek is a Sandy-skeletal; mixed; frigid Entic Haplustoll.

Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0384
Soil Name as Described/Sampled: Wabek
Classification: Fine-loamy over sandy or sandy-skeletal, mixed, frigid Typic Haplustolls
Soil Name as Correlated: Wabek
Classification: Loamy-skeletal, mixed, frigid Entic Haplustolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: taxadjunct
Associated Soils: Lehr
Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on shoulder of crest of rise on outwash plain
Upslope Shape: convex
Cross Slope Shape: linear
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 30 cm.
calcic horizon 30 to 100 cm.

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota
Map Unit:

Pit Location:

Quad Name:
Std Latitude: 47.1465000
Std Longitude: -99.2256730

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation:
Parent Material: glaciofluvial deposits
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015ND093010 **Pedon ID:** S2015ND093010

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
7.0		270						excessively		

A--0 to 18 centimeters (0.0 to 7.1 inches); very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2), moist; moderate fine granular, and moderate medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; very fine roots throughout; 5 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 16N01589

Bw--18 to 30 centimeters (7.1 to 11.8 inches); dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2), moist; moderate medium prismatic parts to moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; very fine roots throughout; 10 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01590

BCk--30 to 100 centimeters (11.8 to 39.4 inches); light yellowish brown (2.5Y 6/4) very gravelly loamy coarse sand, light olive brown (2.5Y 5/4), moist; weak very coarse subangular blocky parts to single grain; loose, loose, nonsticky, nonplastic; very fine roots throughout; 25 percent carbonate coats on bottom of rock fragments; carbonate, finely disseminated throughout; 50 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal. Lab sample # 16N01591. Thin layer with prismatic structure at top of horizon.

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 18 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_013
Site ID: S2015ND093013

Pedon ID: S2015ND093013

Site Note: This site is used for Range and Wildlife Habitat.; During the progressive soil survey of Stutsman county; this site was part of Map Unit 24E (Barnes-Svea-Buse loams; 9 to 25 percent slopes). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C156F (Zahl-Max-Bowbells loams; 9 to 35 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes.

Pedon Note: The silty clay loam surface texture is not typical for the Wyard series; however; up-slope from this site is a small; ice-walled lake plain. Apparently; some of the lake plain material was deposited on top of the glacial till where the Wyard soil formed.

Lab Source ID: KSSL
Lab Pedon #: 16N0385
Soil Name as Described/Sampled: Wyard
Classification: Fine-loamy, mixed, superactive, frigid Typic Endoaquolls
Soil Name as Correlated: Typic Caciaquoll
Classification: Fine, smectitic, frigid Typic Calciaquolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: family
Associated Soils: Bowbells, Max, Zahl
Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on footslope of base slope of swale on moraine on till plain
Upslope Shape: concave
Cross Slope Shape: linear
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS

Diagnostic Features: mollic epipedon 0 to 34 cm.
redox depletions with chroma 2 or less 34 to 100 cm.
redox concentrations 34 to 100 cm.

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota
Map Unit:

Pit Location:

Quad Name:

Std Latitude: 47.1360000
Std Longitude: -99.2330000

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation:
Parent Material: fine-loamy till
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015ND093013 **Pedon ID:** S2015ND093013

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
4.0		45						somewhat poorly		

A--0 to 25 centimeters (0.0 to 9.8 inches); greenish black (10Y 2/1) silty clay loam, very dark gray (10YR 3/1), dry; weak medium subangular blocky parts to moderate fine granular, and moderate medium granular structure; slightly hard, friable, moderately sticky, moderately plastic; very fine roots throughout and medium roots throughout and fine roots throughout; 2 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01592

Bw--25 to 34 centimeters (9.8 to 13.4 inches); very dark grayish brown (2.5Y 3/2) clay loam, olive brown (2.5Y 4/3), dry; moderate medium subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; very fine roots throughout and fine roots throughout; 2 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 16N01593

Bk--34 to 60 centimeters (13.4 to 23.6 inches); dark grayish brown (2.5Y 4/2) clay loam, grayish brown (2.5Y 5/2), dry; moderate medium prismatic parts to moderate medium subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; very fine roots throughout; 3 percent medium faint 2.5Y 5/1), moist, iron depletions In matrix and 5 percent medium prominent 10YR 4/6), moist, masses of reduced iron In matrix; 2 percent fine irregular 2.5Y 8/1), moist, carbonate masses in matrix; 5 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; violent effervescence, by HCl, 1 normal; gradual wavy boundary. Lab sample # 16N01594

BCk--60 to 100 centimeters (23.6 to 39.4 inches); grayish brown (2.5Y 5/2) clay loam, light brownish gray (2.5Y 6/2), dry; weak coarse prismatic parts to weak coarse subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; very fine roots throughout; 1 percent fine distinct 10YR 4/6), moist, iron-manganese masses In matrix and 2 percent medium faint 2.5Y 5/1), moist, iron depletions In matrix and 21 percent medium prominent 10YR 4/6), moist, masses of reduced iron In matrix; 3 percent medium irregular carbonate masses in matrix; 5 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; violent effervescence, by HCl, 1 normal. Lab sample # 16N01595

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 4 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_017
Site ID: S2015ND093017

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota

Pedon ID: S2015ND093017
Map Unit:

Site Note: This site is used for Range and Wildlife Habitat. ; During the progressive soil survey of Stutsman county; this site was part of Map Unit 44E (Sioux-Arvilla sandy loams; 9 to 35 percent slopes). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C870E (Wabek-Lehr-Appam complex; 9 to 25 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Sioux is a Sandy-skeletal; mixed; frigid Entic Hapludoll and Wabek is a Sandy-skeletal; mixed; frigid Entic Haplustoll.

Pit Location:

Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0386
Soil Name as Described/Sampled: Wabek
Classification: Sandy, mixed, frigid Entic Haplustolls
Soil Name as Correlated: Schaller
Classification: Sandy, mixed, frigid Entic Haplustolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: series
Associated Soils: Appam, Lehr

Quad Name:
Std Latitude: 47.1310000
Std Longitude: -99.2340000

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on backslope of side slope of rise on outwash plain
Upslope Shape: linear
Cross Slope Shape: convex
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation:
Parent Material: glaciofluvial deposits
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Diagnostic Features: mollic epipedon 0 to 26 cm.
free carbonates 26 to 45 cm.

Cont. Site ID: S2015ND093017 **Pedon ID:** S2015ND093017

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
4.0		180						excessively		

A--0 to 26 centimeters (0.0 to 10.2 inches); very dark grayish brown (10YR 3/2) sandy loam, very dark brown (10YR 2/2), moist; weak medium subangular blocky parts to weak fine granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine roots throughout and common fine roots throughout; 5 percent nonflat subrounded indurated 2 to 5-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; abrupt wavy boundary. Lab sample # 16N01596

Bw--26 to 45 centimeters (10.2 to 17.7 inches); yellowish brown (10YR 5/4) loamy coarse sand, dark yellowish brown (10YR 4/4), moist; single grain; loose, loose, nonsticky, nonplastic; few very fine roots throughout and few fine roots throughout; 2 percent faint carbonate coats on bottom of rock fragments; 8 percent nonflat subrounded indurated 20 to 76-millimeter Mixed rock fragments; very slight effervescence, by HCl, 1 normal; abrupt wavy boundary. Lab sample # 16N01597

Bk--45 to 100 centimeters (17.7 to 39.4 inches); pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 5/3), moist; single grain; loose, loose, nonsticky, nonplastic; few very fine roots throughout and few fine roots throughout; carbonate, finely disseminated throughout and 3 percent fine irregular 10YR 7/2), dry, and 10YR 6/2), moist, carbonate masses in matrix; 20 percent nonflat subrounded indurated 2 to 76-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; This horizon contains Fe stains 2.5Y 5/6 moist. ; gradual wavy boundary. Lab sample # 16N01598

C1--100 to 178 centimeters (39.4 to 70.1 inches); light yellowish brown (2.5Y 6/3) gravelly sand, light olive brown (2.5Y 5/3), moist; single grain; loose, loose, nonsticky, nonplastic; carbonate, finely disseminated throughout; 20 percent nonflat subrounded indurated 2 to 76-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; This horizon contains Fe stains 2.5Y 5/6 moist. ; gradual wavy boundary. Lab sample # 16N01599

C2--178 to 200 centimeters (70.1 to 78.7 inches); light yellowish brown (2.5Y 6/3) gravelly sand, light olive brown (2.5Y 5/4), moist; single grain; loose, loose, nonsticky, nonplastic; 1 percent fine distinct irregular extremely weakly cemented 2.5Y 3/1), moist, manganese masses In matrix; carbonate, finely disseminated throughout; 20 percent nonflat subrounded indurated 2 to 76-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; This horizon contains Fe stains 2.5Y 5/6 moist. . Lab sample # 16N01600

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 3 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_019
Site ID: S2015ND093019

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota

Pedon ID: S2015ND093019

Map Unit:

Site Note: This site is used for Range and Wildlife Habitat.; Big blue stem; little blue stem; Brome; Marigolds; Wild parrie rose; and Canadian thistle were present on this site. ; During the progressive soil survey of Stutsman County; this site was part of Map Unit 25E (Barnes-Buse-Parnell complex; 0 to 35 percent slopes). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C165F (Zahl-Max-Parnell complex; 0 to 35 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Barnes is a Calcic Hapludoll and Max is a Typic Haplustoll.

Pit Location:

Pedon Note:

Quad Name:

Lab Source ID: KSSL
Lab Pedon #: 16N0387
Soil Name as Described/Sampled: Williams
Classification: Fine-loamy, mixed, superactive, frigid Typic Argiustolls
Soil Name as Correlated: Max
Classification: Fine-loamy, mixed, active, frigid Typic Haplustolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: series
Associated Soils: Bowbells, Zahl

Std Latitude: 47.1465530
Std Longitude: -99.2452160

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on backslope of side slope of moraine on till plain
Upslope Shape: linear
Cross Slope Shape: linear
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation:
Parent Material: fine-loamy till
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Diagnostic Features: mollic epipedon 0 to 29 cm.
argillic horizon 14 to 47 cm.
calcic horizon 29 to 100 cm.

Cont. Site ID: S2015ND093019 **Pedon ID:** S2015ND093019

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
8.0		270						well		

A--0 to 14 centimeters (0.0 to 5.5 inches); very dark gray (10YR 3/1) loam, black (10YR 2/1), moist; moderate fine granular, and moderate medium granular structure; hard, friable, slightly sticky, slightly plastic; very fine roots throughout and medium roots throughout and fine roots throughout; common medium tubular pores; 1 percent nonflat subangular indurated 2 to 20-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 16N01601. 1/2cm of undecomposed material (leaves & roots) on surface.

Bt--14 to 29 centimeters (5.5 to 11.4 inches); olive brown (2.5Y 4/3) clay loam, dark olive brown (2.5Y 3/3), moist; moderate medium prismatic parts to moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; very fine roots throughout and fine roots throughout; common medium tubular pores; 2 percent distinct 10YR 2/1), moist, organic stains on all faces of peds and 10 percent faint 2.5Y 3/1), moist, clay films on vertical faces of peds; 1 percent nonflat subangular indurated 2 to 76-millimeter Mixed rock fragments; noneffervescent, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01602

Btk--29 to 47 centimeters (11.4 to 18.5 inches); light yellowish brown (2.5Y 6/3) clay loam, light olive brown (2.5Y 5/3), moist; moderate medium prismatic parts to moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; very fine roots between peds; common medium tubular pores; 25 percent distinct 2.5Y 3/1), moist, clay films on vertical faces of peds; carbonate, finely disseminated throughout and 3 percent fine irregular 2.5Y 8/1), moist, carbonate masses in matrix; 3 percent nonflat subangular indurated 2 to 76-millimeter Mixed rock fragments; violent effervescence, by HCl, 1 normal; clear irregular boundary. Lab sample # 16N01603

Bk--47 to 100 centimeters (18.5 to 39.4 inches); light brownish gray (2.5Y 6/2) loam, light olive brown (2.5Y 5/3), moist; weak coarse prismatic parts to moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; very fine roots between peds; common medium tubular pores; carbonate, finely disseminated throughout and 3 percent fine irregular 2.5Y 8/1), moist, carbonate masses in matrix; 1 percent nonflat subangular indurated 250 to 600-millimeter Mixed rock fragments and 3 percent nonflat subangular indurated 2 to 76-millimeter Mixed rock fragments; violent effervescence, by HCl, 1 normal; clear irregular boundary. Lab sample # 16N01604

BCk--100 to 200 centimeters (39.4 to 78.7 inches); light brownish gray (2.5Y 6/2) loam, light olive brown (2.5Y 5/3), moist; weak very coarse subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; 2 percent fine prominent 10YR 2/1), moist, manganese masses In matrix and 4 percent medium distinct 2.5Y 3/2), moist, iron depletions In matrix and 4 percent fine prominent 5YR 5/6), moist, masses of oxidized iron In matrix; carbonate, finely disseminated throughout and 4 percent medium irregular 2.5Y 8/1), moist, carbonate masses in matrix; 3 percent nonflat subangular indurated 2 to 76-millimeter Mixed rock fragments; violent effervescence, by HCl, 1 normal. Lab sample # 16N01605

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 3 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_021
Site ID: S2015ND093021

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota

Pedon ID: S2015ND093021
Site Note: This site is used for Wildlife Habitat.; During the progressive soil survey of Stutsman County; this site was part of Map Unit 1 (Southam silty clay loam). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C5A (Southam silty clay loam; 0 to 1 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Southam has an aquic moisture regime and is correlated in both MLRAs.

Map Unit:

Pit Location:

Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0388
Soil Name as Described/Sampled: Colvin
Classification: Fine-silty, mixed, superactive, frigid Typic Calciaquolls
Soil Name as Correlated: Vallers
Classification: Fine-loamy, mixed, active, frigid Typic Calciaquolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: taxadjunct
Associated Soils: Parnell, Southam

Quad Name:
Std Latitude: 47.1460000
Std Longitude: -99.2440000

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on dip depression on moraine on till plain
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Marshland
Existing Vegetation:
Parent Material: local silty and clayey alluvium
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Diagnostic Features: aquic conditions 0 to 200 cm.
mollic epipedon 18 to 34 cm.
free carbonates 18 to 200 cm.
redox concentrations 34 to 200 cm.
reduced matrix 34 to 200 cm.
calcic horizon 34 to 110 cm.

Cont. Site ID: S2015ND093021 **Pedon ID:** S2015ND093021

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
0.0								poorly		

Oe--0 to 18 centimeters (0.0 to 7.1 inches); black (10YR 2/1) mucky peat; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 16N01606

A--18 to 34 centimeters (7.1 to 13.4 inches); black (10YR 2/1) silty clay loam, black (10YR 2/1), dry; 25 percent clay; weak fine prismatic parts to weak fine subangular blocky structure; friable, moderately sticky, moderately plastic; very slight effervescence, by HCl, 1 normal; clear irregular boundary. Lab sample # 16N01607. Water table is present in and under this horizon.

Bkg1--34 to 80 centimeters (13.4 to 31.5 inches); grayish brown (2.5Y 5/2) silty clay loam, light brownish gray (2.5Y 6/2), dry; 25 percent clay; moderate coarse prismatic parts to moderate medium subangular blocky structure; moderately sticky, moderately plastic; 10YR 6/4), moist, reduced matrix and 2 percent fine faint 2.5Y 6/2), moist, iron depletions In matrix and 5 percent fine prominent 10YR 5/6), moist, masses of oxidized iron In matrix; 1 percent fine irregular 2.5Y 8/1), moist, carbonate masses in matrix; strong effervescence, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01608

Bkg2--80 to 110 centimeters (31.5 to 43.3 inches); dark grayish brown (2.5Y 4/2) silty clay loam, light yellowish brown (2.5Y 6/3), dry; 30 percent clay; moderate coarse prismatic parts to moderate medium subangular blocky structure; very sticky, very plastic; 2.5Y 5/1), moist, reduced matrix and 5 percent fine faint 2.5Y 5/1), moist, iron depletions In matrix and 7 percent fine distinct 2.5Y 5/4), moist, masses of oxidized iron In matrix; 5 percent fine irregular 2.5Y 8/1), moist, carbonate masses in matrix; strong effervescence, by HCl, 1 normal; gradual wavy boundary. Lab sample # 16N01609

Cg--110 to 200 centimeters (43.3 to 78.7 inches); grayish brown (2.5Y 5/2) silty clay loam, light brownish gray (2.5Y 6/2), dry; 30 percent clay; massive; moderately sticky, moderately plastic; reduced matrix and 5 percent fine faint 2.5Y 5/1), moist, iron depletions In matrix and 7 percent fine distinct 10YR 5/4), moist, masses of oxidized iron In matrix; 1 percent fine irregular 2.5Y 8/1), moist, carbonate masses in matrix; 3 percent nonflat subrounded indurated 5 to 20-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal. Lab sample # 16N01610

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 3 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_022
Site ID: S2015ND093022

Pedon ID: S2015ND093022

Site Note: This site is used for Wildlife Habitat.; Cattails were present on this site. ; During the progressive soil survey of Stutsman County; this site (Southam soil) was an inclusion in Map Unit 23C (Barnes-Buse loams; 6 to 9 percent slopes). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C132C (Williams-Zahl-Zahill complex; 6 to 9 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Southam has an aquic moisture regime and is correlated in both MLRAs.

Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0389
Soil Name as Described/Sampled: Southam
Classification: Fine, smectitic, calcareous, frigid Vertic Endoaquolls
Soil Name as Correlated: Roliss
Classification: Fine-loamy, smectitic, superactive, calcareous, frigid Typic Endoaquolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: series
Associated Soils: Vallers
Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on dip depression on moraine on till plain
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS

Diagnostic Features: aquic conditions 0 to 200 cm.
mollic epipedon 18 to 54 cm.
free carbonates 18 to 200 cm.
redox concentrations 54 to 100 cm.
reduced matrix 54 to 100 cm.
lithologic discontinuity 100 to 200 cm.

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota
Map Unit:

Pit Location:

Quad Name:
Std Latitude: 47.1461000
Std Longitude: -99.2660000

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Marshland
Existing Vegetation:
Parent Material: local silty and clayey alluvium over fine-loamy till
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015ND093022 **Pedon ID:** S2015ND093022

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
0.0								very poorly		

Oe--0 to 18 centimeters (0.0 to 7.1 inches); mucky peat; sulfurous odor; noneffervescent, by HCl, 1 normal; clear smooth boundary. Lab sample # 16N01611. Water table is present within 18 cm.

A--18 to 54 centimeters (7.1 to 21.3 inches); black (10YR 2/1) mucky silt loam, very dark gray (10YR 3/1), dry; weak coarse subangular blocky parts to weak fine subangular blocky structure; slightly sticky, slightly plastic; 2 percent nonflat subangular indurated 250 to 600-millimeter Mixed rock fragments and 2 percent nonflat subangular indurated 76 to 250-millimeter Mixed rock fragments; sulfurous odor; strong effervescence, by HCl, 1 normal; clear smooth boundary. Lab sample # 16N01612. Between the A and BCg a stone line is present. Comprised of stones and cobbles.; Rock fragments are concentrated in the lower half of the horizon.

BCg--54 to 100 centimeters (21.3 to 39.4 inches); olive gray (5Y 5/2) silty clay, gray (2.5Y 6/1), dry; weak coarse subangular blocky structure; very sticky, very plastic; 1 percent fine prominent 10YR 2/1), moist, iron-manganese concretions In matrix and 5 percent fine distinct 2.5Y 5/4), moist, masses of oxidized iron In matrix and 5 percent fine distinct 5GY 5/2), moist, iron depletions In matrix; 2 percent nonflat subangular indurated 76 to 250-millimeter Mixed rock fragments; sulfurous odor; strong effervescence, by HCl, 1 normal; gradual wavy boundary. Lab sample # 16N01613

2Cg--100 to 200 centimeters (39.4 to 78.7 inches); gray (5Y 5/1) clay loam, light brownish gray (2.5Y 6/2), dry; massive; moderately sticky, moderately plastic; 5 percent fine distinct 5GY 5/2), moist, iron depletions In matrix and 5 percent fine distinct 2.5Y 5/4), moist, masses of oxidized iron In matrix; 5 percent nonflat subangular indurated 5 to 76-millimeter Mixed rock fragments; sulfurous odor; strong effervescence, by HCl, 1 normal. Lab sample # 16N01614

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Oct 29 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_026
Site ID: S2015ND093026

Pedon ID: S2015ND093026

Site Note: This site is used for Wildlife Habitat.; Bull rush and cattails were present on this site. ; During the progressive soil survey of Stutsman County; this site was part of Map Unit 1 (Southam silty clay loam). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C5A (Southam silty clay loam; 0 to 1 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Southam has an aquic moisture regime and is correlated in both MLRAs.

Pedon Note: The depth to carbonates in this pedon is 75 cm. This about 13 cm shallower than currently in the Parnell series Range in Characteristics.

Lab Source ID: KSSL
Lab Pedon #: 16N0390
Soil Name as Described/Sampled: Parnell
Classification: Fine, smectitic, frigid Vertic Argiaquolls
Soil Name as Correlated: Parnell
Classification: Fine, smectitic, frigid Vertic Argiaquolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: series
Associated Soils: Southam
Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on dip depression on moraine on till plain
Upslope Shape: concave
Cross Slope Shape: concave
Particle Size Control Section: 36 to 100 cm.
Description origin: NASIS
Diagnostic Features: aquic conditions 0 to 200 cm.
mollic epipedon 2 to 75 cm.
redox concentrations 36 to 200 cm.
argillic horizon 36 to 100 cm.
reduced matrix 75 to 200 cm.

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota
Map Unit:

Pit Location:

Quad Name:

Std Latitude: 47.1510720
Std Longitude: -99.2530180

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Marshland
Existing Vegetation:
Parent Material: local silty and clayey alluvium
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015ND093026 **Pedon ID:** S2015ND093026

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
0.0								very poorly		

Oi--0 to 2 centimeters (0.0 to 0.8 inches); black (10YR 2/1) slightly decomposed plant material; shell fragments; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 16N01615. Shells present within this horizon.

A1--2 to 18 centimeters (0.8 to 7.1 inches); black (10YR 2/1) silty clay loam, black (10YR 2/1), dry; moderate fine granular, and weak fine granular structure; moderately sticky, moderately plastic; shell fragments; noneffervescent, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01616. Shells present within this horizon.

A2--18 to 36 centimeters (7.1 to 14.2 inches); very dark gray (2.5Y 3/1) silty clay loam, dark gray (2.5Y 4/1), dry; moderate fine subangular blocky parts to weak fine granular structure; moderately sticky, moderately plastic; very slight effervescence, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01617

Btg1--36 to 75 centimeters (14.2 to 29.5 inches); very dark gray (2.5Y 3/1) clay, dark gray (2.5Y 4/1), dry; weak coarse prismatic parts to weak medium subangular blocky structure; very sticky, very plastic; 3 percent medium distinct 2.5Y 5/2), moist, iron depletions In matrix and 3 percent fine distinct 2.5Y 5/2), moist, iron depletions In matrix and 5 percent fine distinct 2.5Y 5/4), moist, masses of oxidized iron In matrix; 1 percent nonflat subrounded indurated 2 to 76-millimeter Sedimentary rock fragments; noneffervescent, by HCl, 1 normal; gradual wavy boundary. Lab sample # 16N01618

Btg2--75 to 100 centimeters (29.5 to 39.4 inches); grayish brown (2.5Y 5/2) clay, light gray (2.5Y 7/2), dry; moderate coarse prismatic parts to weak coarse subangular blocky structure; very sticky, very plastic; reduced matrix and 4 percent fine distinct 2.5Y 4/4), moist, masses of oxidized iron In matrix and 4 percent medium distinct 2.5Y 6/2), moist, iron depletions In matrix; shell fragments and 3 percent fine irregular 2.5Y 8/1), moist, carbonate masses in matrix; 1 percent nonflat subrounded indurated 2 to 76-millimeter Sedimentary rock fragments; strong effervescence, by HCl, 1 normal; gradual wavy boundary. Lab sample # 16N01619. Shells present within this horizon.

BCkg--100 to 133 centimeters (39.4 to 52.4 inches); grayish brown (2.5Y 5/2) silty clay, light brownish gray (2.5Y 6/2), dry; weak very coarse subangular blocky structure; moderately sticky, moderately plastic; reduced matrix and 5 percent medium prominent irregular 2.5Y 5/6), moist, masses of oxidized iron In matrix and 5 percent medium faint irregular 5Y 5/1), moist, iron depletions In matrix; carbonate, finely disseminated throughout and 3 percent fine faint irregular 2.5Y 8/1), moist, carbonate masses in matrix; 3 percent nonflat subrounded indurated 2 to 76-millimeter Sedimentary rock fragments; slight effervescence, by HCl, 1 normal; gradual wavy boundary. Lab sample # 16N01620

2Cg--133 to 200 centimeters (52.4 to 78.7 inches); grayish brown (2.5Y 5/2) stratified silty clay to clay, light brownish gray (2.5Y 6/2), dry; massive; very sticky, very plastic; reduced matrix and 6 percent fine prominent 10YR 4/6), moist, masses of oxidized iron In matrix and 6 percent medium faint 2.5Y 5/1), moist, iron depletions In matrix; 5 percent nonflat subrounded indurated 2 to 76-millimeter Sedimentary rock fragments; slight effervescence, by HCl, 1 normal. Lab sample # 16N01621

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 2 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_028
Site ID: S2015ND093028

Pedon ID: S2015ND093028

Site Note: This site is used for Range and Wildlife Habitat.; During the progressive soil survey of Stutsman County; this site was part of Map Unit 25E (Barnes-Buse-Parnell complex; 0 to 35 percent slopes). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C165F (Zahl-Max-Parnell complex; 0 to 35 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Parnell has an aquic moisture regime and is correlated in both MLRAs.

Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0391
Soil Name as Described/Sampled: Parnell
Classification: Fine, smectitic, frigid Vertic Argiaquolls
Soil Name as Correlated: Parnell
Classification: Fine, smectitic, frigid Vertic Argiaquolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: series
Associated Soils: Foxlake
Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on dip depression on moraine on till plain
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 28 to 53 cm.
Description origin: NASIS

Diagnostic Features: aquic conditions 0 to 200 cm.
mollic epipedon 5 to 28 cm.
argillic horizon 28 to 53 cm.
redox concentrations 28 to 200 cm.
redox depletions with chroma 2 or less 53 to 200 cm.

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota
Map Unit:

Pit Location:

Quad Name:
Std Latitude: 47.1405680
Std Longitude: -99.2520370

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Other grass/herbaceous cover
Existing Vegetation:
Parent Material: local silty and clayey alluvium over till
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015ND093028 **Pedon ID:** S2015ND093028

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
0.0								poorly		

Oi--0 to 5 centimeters (0.0 to 2.0 inches); greenish black (10Y 2/1) slightly decomposed plant material; noneffervescent, by HCl, 1 normal; abrupt wavy boundary. Lab sample # 16N01622

A--5 to 28 centimeters (2.0 to 11.0 inches); black (10YR 2/1) silty clay loam, very dark gray (10YR 3/1), dry; 28 percent clay; weak medium subangular blocky, and moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many fine roots throughout and many coarse roots throughout; noneffervescent, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01623

Btg--28 to 53 centimeters (11.0 to 20.9 inches); dark grayish brown (2.5Y 4/2) silty clay, gray (2.5Y 5/1), dry; 38 percent clay; moderate medium prismatic parts to moderate fine angular blocky structure; hard, firm, very sticky, very plastic; common very fine roots throughout and common fine roots throughout; 90 percent distinct 2.5Y 4/1), moist, clay films on all faces of peds; 5 percent fine distinct 2.5Y 5/4), moist, masses of oxidized iron In matrix; noneffervescent, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01624

Bkg--53 to 105 centimeters (20.9 to 41.3 inches); grayish brown (2.5Y 5/2) silty clay loam, light brownish gray (2.5Y 6/2), dry; 28 percent clay; moderate coarse prismatic parts to moderate coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine roots throughout; 2 percent fine prominent 10YR 2/1), moist, manganese masses In matrix and 3 percent fine faint 2.5Y 6/2), moist, iron depletions In matrix and 7 percent fine prominent 10YR 4/6), moist, masses of oxidized iron In matrix; 7 percent fine irregular 2.5Y 8/1), moist, carbonate masses in matrix; 1 percent flat very angular very weakly cemented 2 to 5-millimeter Shale fragments and 2 percent nonflat subangular indurated 2 to 76-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01625

2BCg--105 to 160 centimeters (41.3 to 63.0 inches); dark grayish brown (2.5Y 4/2) clay loam, light brownish gray (2.5Y 6/2), dry; 30 percent clay; massive; hard, firm, moderately sticky, moderately plastic; 2 percent fine distinct 10YR 2/1), moist, manganese masses In matrix and 5 percent fine faint 2.5Y 4/1), moist, iron depletions In matrix and 10 percent fine prominent 10YR 4/6), moist, masses of oxidized iron In matrix; 2 percent fine irregular 2.5Y 8/1), moist, carbonate masses in matrix; 8 percent nonflat subangular indurated 2 to 20-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01626

2Cg--160 to 200 centimeters (63.0 to 78.7 inches); olive brown (2.5Y 4/3) clay, light olive brown (2.5Y 5/3), dry; 38 percent clay; massive; hard, firm, moderately sticky, moderately plastic; 1 percent fine distinct 10YR 2/1), moist, manganese masses In matrix and 5 percent fine prominent 10YR 5/6), moist, masses of oxidized iron In matrix and 7 percent fine distinct 2.5Y 4/1), moist, iron depletions In matrix; 1 percent fine irregular 2.5Y 8/1), moist, carbonate masses in matrix; 7 percent nonflat subangular indurated 2 to 20-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal. Lab sample # 16N01627

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 4 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_029
Site ID: S2015ND093029

Pedon ID: S2015ND093029

Site Note: This site is used for Range and Wildlife Habitat.; Cattails were present on this site. ; During the progressive soil survey of Stutsman County; this site was part of Map Unit 4 (Hamerly-Parnell complex; 0 to 3 percent slopes). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C276A (Hamerly-Tonka-Parnell complex; 0 to 3 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Parnell has an aquic moisture regime and is correlated in both MLRAs. The delineation where this site occurs is a narrow; long depression lying between glacial till and glacial outwash uplands.

Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0392
Soil Name as Described/Sampled: McDonaldsville
Classification: Clayey over sandy or sandy-skeletal, siliceous, frigid Vertic Epiaquolls
Soil Name as Correlated: McDonaldsville
Classification: Loamy-skeletal, mixed, superactive, frigid Typic Calciaquolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: taxadjunct
Associated Soils: Hamerly, Marysland, Parnell, Tonka
Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on dip depression on outwash plain on till plain
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: aquic conditions 0 to 100 cm.
free carbonates 1 to 100 cm.
mollic epipedon 10 to 41 cm.
cambic horizon 41 to 61 cm.
reduced matrix 41 to 100 cm.
redox depletions with chroma 2 or less 41 to 100 cm.
redox concentrations 41 to 100 cm.
strongly contrasting particle size class 61 to 100 cm.

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota
Map Unit:

Pit Location:

Quad Name:
Std Latitude: 47.1220000
Std Longitude: -99.2390000

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Marshland
Existing Vegetation:
Parent Material: local silty and clayey alluvium over sandy and gravelly glaciofluvial deposits
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015ND093029 **Pedon ID:** S2015ND093029

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
0.0								very poorly		

Oi--0 to 1 centimeters (0.0 to 0.4 inches); slightly decomposed plant material; noneffervescent, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 16N01628

A1--1 to 25 centimeters (0.4 to 9.8 inches); black (10YR 2/1) mucky silt loam, very dark gray (10YR 3/1), dry; weak fine subangular blocky parts to weak fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots throughout and common coarse roots throughout; slight effervescence, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01629

A2--25 to 41 centimeters (9.8 to 16.1 inches); black (10YR 2/1) silty clay loam, very dark gray (10YR 3/1), dry; moderate medium subangular blocky parts to moderate fine granular structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine roots throughout and common fine roots throughout; 1 percent shell fragments; 1 percent nonflat subangular indurated 2 to 5-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01630. Shells present within this horizon.

Bg--41 to 61 centimeters (16.1 to 24.0 inches); dark grayish brown (2.5Y 4/2) clay, grayish brown (2.5Y 5/2), dry; weak coarse prismatic structure; hard, firm, very sticky, very plastic; reduced matrix and 1 percent medium distinct 5Y 5/4), moist, masses of oxidized iron In matrix and 2 percent fine distinct 5Y 5/4), moist, masses of oxidized iron In matrix and 20 percent medium distinct 10Y 5/2), moist, iron depletions In matrix; 2 percent nonflat subangular indurated 75 to 250-millimeter Mixed rock fragments and 10 percent nonflat subangular indurated 20 to 76-millimeter Mixed rock fragments; very slight effervescence, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01631. Stone line in bottom of horizon, cracks of A horizon material in upper horizon.

2Cg--61 to 100 centimeters (24.0 to 39.4 inches); olive gray (5Y 5/2) very gravelly loamy sand, light brownish gray (2.5Y 6/2), dry; single grain; loose, loose, nonsticky, nonplastic; reduced matrix and 1 percent medium distinct 5Y 5/4), moist, masses of oxidized iron In matrix and 2 percent fine distinct 5Y 5/4), moist, masses of oxidized iron In matrix and 20 percent medium faint 5Y 6/1), moist, iron depletions In matrix; 35 percent nonflat subrounded indurated 2 to 76-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal. Lab sample # 16N01632

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 2 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_030
Site ID: S2015ND093030

Pedon ID: S2015ND093030

Site Note: This site is used for Wildlife Habitat.; During the progressive soil survey of Stutsman County; this site was part of Map Unit 1 (Southam silty clay loam). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C5A (Southam silty clay loam; 0 to 1 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Southam has an aquic moisture regime and is correlated in both MLRAs.

Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0393
Soil Name as Described/Sampled: Southam
Classification: Fine, smectitic, calcareous, frigid Cumulic Vertic Endoaquolls
Soil Name as Correlated: SND
Classification: none listed
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: series
Associated Soils: Parnell
Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on dip marsh on moraine on till plain
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: aquic conditions 0 to 200 cm.
free carbonates 0 to 200 cm.
mollic epipedon 15 to 107 cm.
reduced matrix 15 to 200 cm.
redox depletions with chroma 2 or less 107 to 133 cm.
redox concentrations 107 to 200 cm.

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota
Map Unit:

Pit Location:

Quad Name:
Std Latitude: 47.1379250
Std Longitude: -99.2434180

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Marshland
Existing Vegetation:
Parent Material: local silty and clayey alluvium
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015ND093030 **Pedon ID:** S2015ND093030

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
0.0								very poorly		

Oe--0 to 15 centimeters (0.0 to 5.9 inches); dark grayish brown (2.5Y 4/2) mucky peat; slight effervescence, by HCl, 1 normal; abrupt smooth boundary. Lab sample # 16N01633. 80% fibers unrubbed, 40 % fibers rubbed.

Ag1--15 to 23 centimeters (5.9 to 9.1 inches); black (2.5Y 2.5/1) mucky silt loam, dark gray (2.5Y 4/1), dry; weak fine granular structure; slightly sticky, slightly plastic; slight effervescence, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01634

Ag2--23 to 38 centimeters (9.1 to 15.0 inches); very dark gray (2.5Y 3/1) silty clay loam, dark gray (2.5Y 4/1), dry; weak fine subangular blocky parts to weak fine granular structure; moderately sticky, moderately plastic; slight effervescence, by HCl, 1 normal; gradual wavy boundary. Lab sample # 16N01635

Ag3--38 to 107 centimeters (15.0 to 42.1 inches); very dark gray (2.5Y 3/1) silty clay loam, dark gray (2.5Y 4/1), dry; weak fine subangular blocky parts to weak fine granular structure; moderately sticky, moderately plastic; shell fragments; slight effervescence, by HCl, 1 normal; gradual wavy boundary. Lab sample # 16N01636.

Cg1--107 to 133 centimeters (42.1 to 52.4 inches); dark grayish green (5GY 4/2) silty clay, gray (5Y 5/1), dry; massive; very sticky, very plastic; reduced matrix and 2 percent medium distinct 2.5Y 4/3), moist, masses of oxidized iron In matrix and 2 percent fine distinct 2.5Y 4/3), moist, masses of oxidized iron In matrix; strong effervescence, by HCl, 1 normal; gradual wavy boundary. Lab sample # 16N01637

Cg2--133 to 200 centimeters (52.4 to 78.7 inches); dark gray (2.5Y 4/1) clay, gray (2.5Y 5/1), dry; massive; very sticky, very plastic; reduced matrix and 2 percent medium distinct 2.5Y 4/4), moist, masses of oxidized iron In matrix and 2 percent fine distinct 2.5Y 4/4), moist, masses of oxidized iron In matrix; shell fragments; strong effervescence, by HCl, 1 normal. Lab sample # 16N01638. This horizon has a thin sand lens.

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 18 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_042
Site ID: S2015ND093031

Pedon ID: S2015ND093031

Site Note: This site is used for Range and Wildlife Habitat.; During the progressive soil survey of Stutsman County; this site was part of Map Unit 44E (Sioux-Arvilla sandy loams; 9 to 35 percent slopes). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C870E (Wabek-Lehr-Appam complex; 9 to 25 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Sioux and Arvilla are udic soils; Wabek; Lehr; and Appam are ustic soils. The pedon described (Tonka) is an inclusion with an aquic moisture regime. It is correlated in both MLRAs.

Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0394
Soil Name as Described/Sampled: Tonka
Classification: Fine, smectitic, frigid Argiaquic Argialbolls
Soil Name as Correlated: Tonka
Classification: Fine, smectitic, frigid Argiaquic Argialbolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: series
Associated Soils:
Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on dip depression on moraine on till plain
Upslope Shape: linear
Cross Slope Shape: concave
Particle Size Control Section: 35 to 85 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 29 cm.
aquic conditions 0 to 200 cm.
albic materials 29 to 35 cm.
argillic horizon 35 to 100 cm.
redox concentrations 70 to 200 cm.

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota
Map Unit:

Pit Location:

Quad Name:
Std Latitude: 47.1280000
Std Longitude: -99.2430000

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Other grass/herbaceous cover
Existing Vegetation:
Parent Material: local silty and clayey alluvium over fine-loamy till
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015ND093031 **Pedon ID:** S2015ND093031

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0								poorly		

A--0 to 29 centimeters (0.0 to 11.4 inches); very dark brown (10YR 2/2) silt loam, very dark grayish brown (10YR 3/2), dry; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots throughout and many fine roots throughout; many very fine tubular and many fine tubular pores; noneffervescent, by HCl, 1 normal. Lab sample # 16N01639

EB--29 to 35 centimeters (11.4 to 13.8 inches); dark grayish brown (10YR 4/2) silt loam, grayish brown (10YR 5/2), dry; slightly hard, friable, moderately sticky, moderately plastic; many very fine roots throughout and many fine roots throughout; many very fine tubular and many fine tubular pores; noneffervescent, by HCl, 1 normal. Lab sample # 16N01640

Bt1--35 to 70 centimeters (13.8 to 27.6 inches); black (10YR 2/1) clay, very dark gray (10YR 3/1), dry; hard, firm, very sticky, very plastic; common very fine roots between peds and common fine roots between peds; common very fine tubular and common fine tubular pores; noneffervescent, by HCl, 1 normal. Lab sample # 16N01641

Bt2--70 to 100 centimeters (27.6 to 39.4 inches); black (10YR 2/1) clay, very dark grayish brown (10YR 3/2), dry; hard, firm, very sticky, very plastic; common very fine roots between peds and common fine roots between peds; common very fine tubular and common fine tubular pores; 3 percent fine prominent 7.5YR 5/6), moist, masses of oxidized iron In matrix and 7 percent fine faint 2.5Y 7/3), moist, iron depletions In matrix; noneffervescent, by HCl, 1 normal. Lab sample # 16N01642

Bk--100 to 108 centimeters (39.4 to 42.5 inches); light yellowish brown (2.5Y 6/3) silt loam, pale yellow (2.5Y 7/3), dry; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots throughout and common fine roots throughout; common very fine tubular and common fine tubular pores; 3 percent fine prominent 7.5YR 5/6), moist, masses of oxidized iron In matrix and 7 percent fine faint 2.5Y 7/3), moist, iron depletions In matrix; carbonate, finely disseminated throughout; violent effervescence, by HCl, 1 normal.

2BCk--108 to 200 centimeters (42.5 to 78.7 inches); light olive brown (2.5Y 5/4) clay loam, olive yellow (2.5Y 6/6), dry; hard, firm, moderately sticky, moderately plastic; 1 percent fine distinct 2.5Y 5/6), moist, masses of oxidized iron In matrix; carbonate, finely disseminated throughout and 3 percent fine irregular 2.5Y 7/3), dry, and 2.5Y 5/3), moist, carbonate masses throughout; 3 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal.

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 18 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_043
Site ID: S2015ND093032

Pedon ID: S2015ND093032

Site Note: This site is used for Range and Wildlife Habitat.; During the progressive soil survey of Stutsman County; this site was part of Map Unit 44E (Sioux-Arvilla sandy loams; 9 to 35 percent slopes). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C870E (Wabek-Lehr-Appam complex; 9 to 25 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Sioux and Arvilla are udic soils; Wabek; Lehr; and Appam are ustic soils. The pedon described (Makoti) is an inclusion of glaciolacustrine soils in the large map unit.

Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0395
Soil Name as Described/Sampled: Makoti
Classification: Fine-silty, mixed, superactive, frigid Pachic Haplustolls
Soil Name as Correlated: Roseglen
Classification: Fine-loamy, mixed, superactive, frigid Pachic Haplustolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: series
Associated Soils: Bowdle
Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on talf lake plain on till plain
Upslope Shape: concave
Cross Slope Shape: linear
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 66 cm.
calcic horizon 66 to 100 cm.

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota
Map Unit:

Pit Location:

Quad Name:
Std Latitude: 47.1320000
Std Longitude: -99.2430000

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation:
Parent Material: fine-silty glaciolacustrine deposits
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015ND093032 **Pedon ID:** S2015ND093032

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
3.0								moderately well		

A--0 to 44 centimeters (0.0 to 17.3 inches); very dark gray (10YR 3/1) silt loam, black (10YR 2/1), moist; weak fine subangular blocky parts to weak fine granular structure; soft, friable, slightly sticky, slightly plastic; many very fine roots throughout and many fine roots throughout; common very fine tubular and common fine tubular pores; noneffervescent, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01643

Bw--44 to 66 centimeters (17.3 to 26.0 inches); dark grayish brown (10YR 4/2) silty clay loam, very dark grayish brown (10YR 3/2), moist; slightly hard, friable, moderately sticky, moderately plastic; many very fine roots throughout and many fine roots throughout; common very fine tubular and common fine tubular pores; noneffervescent, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01644

Bk--66 to 100 centimeters (26.0 to 39.4 inches); brown (10YR 5/3) silty clay loam, brown (10YR 4/3), moist; slightly hard, friable, moderately sticky, moderately plastic; few very fine roots throughout and few fine roots throughout; few very fine tubular and few fine tubular pores; 5 percent faint 10YR 4/1), moist, clay films on vertical faces of peds; carbonate, finely disseminated throughout; 1 percent nonflat subrounded indurated 2 to 75-millimeter Mixed rock fragments; violent effervescence, by HCl, 1 normal; clear wavy boundary. Lab sample # 16N01645

BCk--100 to 200 centimeters (39.4 to 78.7 inches); light yellowish brown (10YR 6/4) silt loam, yellowish brown (10YR 5/4), moist; soft, very friable, slightly sticky, slightly plastic; few very fine roots throughout and few fine roots throughout; few very fine tubular and few fine tubular pores; carbonate, finely disseminated throughout; 2 percent nonflat subrounded indurated 2 to 75-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal.

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 18 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_044
Site ID: S2015ND093033

Pedon ID: S2015ND093033

Site Note: This site is used for Range and Wildlife Habitat.; During the progressive soil survey of Stutsman County; this site was part of Map Unit 47B (Renshaw-Sioux loams; 0 to 6 percent slopes). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C819B (Lehr-Wabek loams; 2 to 6 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Sioux and Renshaw are udic soils; Wabek and Lehr are ustic soils. The pedon described (Great Bend) is an inclusion of glaciolacustrine soils in the large map unit.

Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0396
Soil Name as Described/Sampled: Bryant
Classification: Fine-silty, mixed, superactive, frigid Typic Haplustolls
Soil Name as Correlated: Tansem
Classification: Coarse-loamy, mixed, active, frigid Typic Haplustolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: taxadjunct
Associated Soils:
Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on backslope of side slope of lake plain on till plain
Upslope Shape: linear
Cross Slope Shape: convex
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: mollic epipedon 0 to 30 cm.
calcic horizon 30 to 100 cm.

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota
Map Unit:

Pit Location:

Quad Name:
Std Latitude: 47.1281060
Std Longitude: -99.2437910

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation:
Parent Material: fine-silty glaciolacustrine deposits
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015ND093033 **Pedon ID:** S2015ND093033

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
4.0								well		

Ap--0 to 20 centimeters (0.0 to 7.9 inches); very dark brown (10YR 2/2) silt loam, black (10YR 2/1), moist; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots throughout and many fine roots throughout; common very fine tubular and common fine tubular pores; noneffervescent, by HCl, 1 normal. Lab sample # 16N01646

Bw--20 to 30 centimeters (7.9 to 11.8 inches); grayish brown (2.5Y 5/2) silt loam, very dark grayish brown (2.5Y 3/2), moist; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots throughout and many fine roots throughout; common very fine tubular and common fine tubular pores; noneffervescent, by HCl, 1 normal. Lab sample # 16N01647

Bk--30 to 100 centimeters (11.8 to 39.4 inches); light yellowish brown (2.5Y 6/4) silt loam, light olive brown (2.5Y 5/4), moist; soft, friable, slightly sticky, slightly plastic; common very fine roots throughout and common fine roots throughout; common very fine tubular and common fine tubular pores; 3 percent fine prominent 7.5YR 4/6), moist, masses of oxidized iron In matrix and 3 percent fine prominent 7.5YR 5/8), moist, masses of oxidized iron In matrix; carbonate, finely disseminated throughout; violent effervescence, by HCl, 1 normal. Lab sample # 16N01648

PEDON DESCRIPTION -- NEON Site WOOD

Print Date: Jul 3 2018
Description Date: Nov 18 2015
Describer: Perry Sullivan
NEON Plot ID: WOOD_045
Site ID: S2015ND093034

Pedon ID: S2015ND093034

Site Note: This site is used for Range and Wildlife Habitat.; During the progressive soil survey of Stutsman county; this site was part of Map Unit 25E (Barnes-Buse-Parnell complex; 0 to 35 percent slopes). After the MLRA updates and adjustment of the MLRA boundary between MLRA 53B and 55B; it is now located in Map Unit C165F (Zahl-Max-Parnell complex; 0 to 35 percent slopes). The site is on the east side of the Missouri Coteau in the transition area between the ustic and udic moisture regimes. Buse is a Typic Calciudoll and Zahl is a Typic Caciustoll.

Pedon Note:
Lab Source ID: KSSL
Lab Pedon #: 16N0397
Soil Name as Described/Sampled: Zahl
Classification: Fine-loamy, mixed, superactive, frigid Typic Calciustolls
Soil Name as Correlated: Zahl
Classification: Coarse-loamy, mixed, superactive, frigid Typic Calciustolls
Pedon Type: undefined observation
Pedon Purpose: research site
Taxon Kind: taxadjunct
Associated Soils: Max, Parnell
Physiographic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:
Geomorphic Setting: on shoulder of side slope of moraine on till plain
Upslope Shape: linear
Cross Slope Shape: convex
Particle Size Control Section: 25 to 100 cm.
Description origin: NASIS
Diagnostic Features: free carbonates 0 to 100 cm.
mollic epipedon 0 to 20 cm.
calcic horizon 20 to 100 cm.

Country:
State: North Dakota
County: Stutsman
MLRA: 53B -- Central Dark Brown Glaciated Plains
Soil Survey Area: ND093 -- Stutsman County, North Dakota
10-BIS -- Bismarck, North Dakota
Map Unit:

Pit Location:

Quad Name:
Std Latitude: 47.1280000
Std Longitude: -99.2450000

Latitude:
Longitude:
Datum: WGS84
UTM Zone: 14
UTM Easting:
UTM Northing:

Primary Earth Cover: Grass/herbaceous cover
Secondary Earth Cover: Grassland rangeland
Existing Vegetation:
Parent Material: fine-loamy till
Bedrock Kind:
Bedrock Depth:
Bedrock Hardness:
Bedrock Fracture Interval:
Surface Fragments:
Description database: KSSL

Cont. Site ID: S2015ND093034 **Pedon ID:** S2015ND093034

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost-Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
7.0								well		

Ap--0 to 20 centimeters (0.0 to 7.9 inches); very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2), moist; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots throughout and many medium roots throughout and many fine roots throughout; common medium tubular and common fine tubular pores; carbonate, finely disseminated throughout; 3 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; slight effervescence, by HCl, 1 normal. Lab sample # 16N01649

ABk--20 to 36 centimeters (7.9 to 14.2 inches); brown (10YR 5/3) loam, 10Y 4/3 (10Y 4/3), moist; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots throughout and common medium roots throughout and common fine roots throughout; common very fine tubular pores; carbonate, finely disseminated throughout; 1 percent nonflat subangular indurated 75 to 250-millimeter Mixed rock fragments and 6 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; violent effervescence, by HCl, 1 normal. Lab sample # 16N01650

Bk--36 to 70 centimeters (14.2 to 27.6 inches); pale brown (10YR 6/3) loam, brown (10YR 5/3), moist; slightly hard, friable, slightly sticky, slightly plastic; common medium roots throughout and common fine roots throughout; common very fine tubular pores; carbonate, finely disseminated throughout; 2 percent nonflat subangular indurated 75 to 250-millimeter Mixed rock fragments and 10 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; violent effervescence, by HCl, 1 normal. Lab sample # 16N01651. A ston line is at the bottom of the horizon.

BCk--70 to 100 centimeters (27.6 to 39.4 inches); light yellowish brown (2.5Y 6/4) loam, light olive brown (2.5Y 5/4), moist; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots throughout; common fine tubular pores; carbonate, finely disseminated throughout; 10 percent nonflat subangular indurated 2 to 75-millimeter Mixed rock fragments; strong effervescence, by HCl, 1 normal. Lab sample # 16N01652. stone line in this horizon at 70cm.