
Association of
Women Soil Scientists
PSCI
Professional
Soil Classifiers
of Iowa
ISCA
MAPSS
Missouri Association of
Professional Soil Scientists
ILLINOIS
SOIL
CLASSIFIERS
ASSOCIATION

10YR 10/27

ISCA/AWSS/MAPSS/PSCI Joint Fall Field Trip
October 27-28, 2010

Location: Mississippi River Valley in Adams and Hancock Counties near Quincy and Warsaw, Illinois

Agenda

Wednesday, October 27, 2010

6:00 – 7:00 pm	Registration
7:00 – 9:00 pm	Presentations

Large Scale Geomorphology, Hydrology, and Land Cover Relationships and Impacts from Development of the Upper Mississippi River System by Dr. Charles Theiling, US Army Corps of Engineers, Rock Island, IL

Mississippi River Ecosystem: A Century of Changes by Candy Chambers, US Fish and Wildlife, Clarence Cannon and Great River National Wildlife Refuges, Annada, MO

Application of Optically Stimulated Luminescence Dating (OSL) on Loess and Dune Sand in Illinois by Dr. Xiaodong Miao – Illinois Geological Survey, Champaign, IL

9:00 pm - ? Social time for interaction with fellow soil scientists

Thursday, October 28, 2010

8:00-8:15 am	Depart from Stony Creek Inn
9:00 am	Stop 1: Arrive at the Lima Lake bottoms to examine soils formed in a low-energy sedimentary environment. Texturing contest and refreshments available.
10:00 am	Stop2: Toe slope positions along the bluff to look at a soil pit (Jasper series) formed in silty/loamy material over outwash. Soil judging contest.
11:00 am	Stop 3: is along a road cut into the bluff. Identify parent material exposures
12:00 pm	End of tour, depart for home.

Acknowledgements

We would like to thank the following individuals for their time and effort in helping to create this tour:

Matt Lemaire, Adams County District Conservationist, USDA-NRCS
Lori Bollin, Hancock County District Conservationist, USDA-NRCS
Abbie Sperry, Resource Conservationist, Hancock SWCD
Candy Chambers, Wildlife Refuge Specialist, US Fish and Wildlife Service
Charles Theiling, Large River Ecologist, US Army Corps of Engineers
Xiaodong Miao, Geologist, Illinois State Geological Survey
Don Walker
Ron Collman
Rick Francen
Bob Tegler
Mark Bramstadt
Roger Windhorn
Bob McLeese

And special thank you to those landowners who have given us permission to use their land for tour stops and soil core extractions:

Adwell Corp.
Dave McMurray
Andy and Ruby Wetzel
Joe Zumwalt
Sam Zumwalt

Directions to Site 1 from hotel:

Turn left (east) from hotel and proceed to I-172, turn north.

Drive 5 miles to Highway 24, turn west.

Drive 3 miles to Highway 96, turn north (right)

Drive 11 ½ miles to Lima, turn west on N. 2850th Avenue

Drive 2 miles to 500E., turn north (right)

Drive approximately 3 miles north to 150N, turn west (left).

Drive 1 mile to site

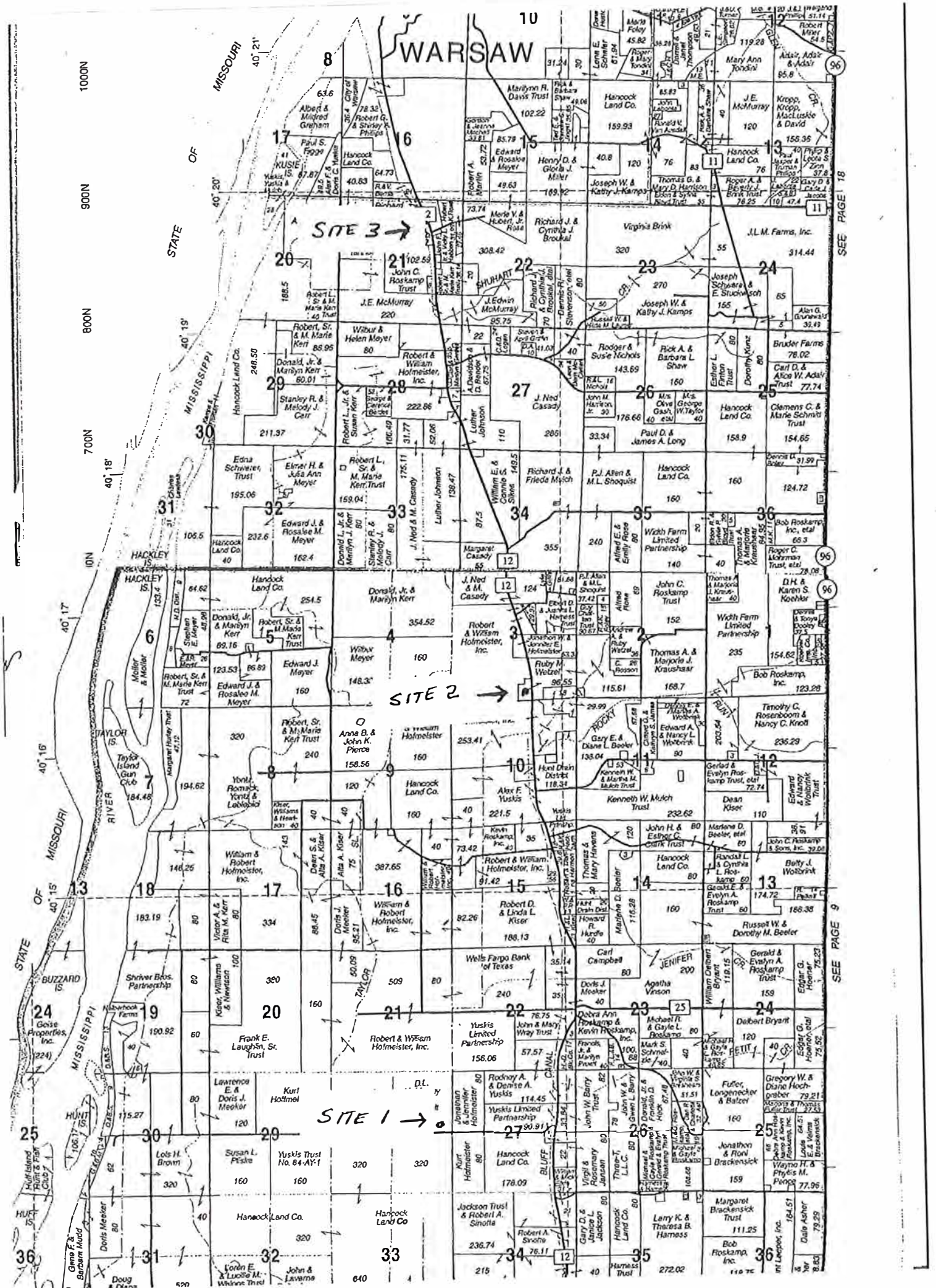
Directions to Site 2

Return to county road 500E, turn north (left) and drive 3 ½ miles to site on left side of road.

Direction to Site 3

Continue north on county road 500E about 3 ¾ miles. Park at the pump station on left hand side of road.

Map of Ursa, IL


WARSAW
SITE 3
SITE 2
SITE 1
SEE PAGE 18
SEE PAGE 9
MISSOURI
MISSISSIPPI
STATE
HACKLEY IS.
TAYLOR IS.
BUZZARD IS.
HUNT IS.
HUFF IS.
KUSIE IS.
1000N
900N
800N
700N
40° 21'
40° 20'
40° 19'
40° 18'
40° 17'
40° 16'
40° 15'

Site 1 – Lima Lake Bottoms

Lima Lake – consisted of a low-energy sedimentary environment.
Historical records indicate that Lima Lake was about 2 miles wide and 5 miles long. Many bayous and backswamps.
Area was leveed in the late 1800's, drainage began in 1920's
Most soils in the actual lake are Titus with some Zook and Darwin
Hancock has about 4500 acres of Titus and Zook.
Adams has about 5100 acres of Darwin and Titus
Beaucoup and Sawmill soils on floodplain and adjacent to the lake bottoms
Hancock has about 1240 acres of Beaucoup and 1500 acres of Sawmill on Mississippi bottoms
Adams has about 2000 acres of "wet" Beaucoup on Mississippi bottoms

Beaucoup – fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls
Very deep, poorly and very poorly drained soils formed in silty alluvium.
Located on shallow floodplains
Slopes – 0-2 percent
RIC - Mollic epipedon – 10-24 inches thick
Clay content of the PSC section – 27-35 percent

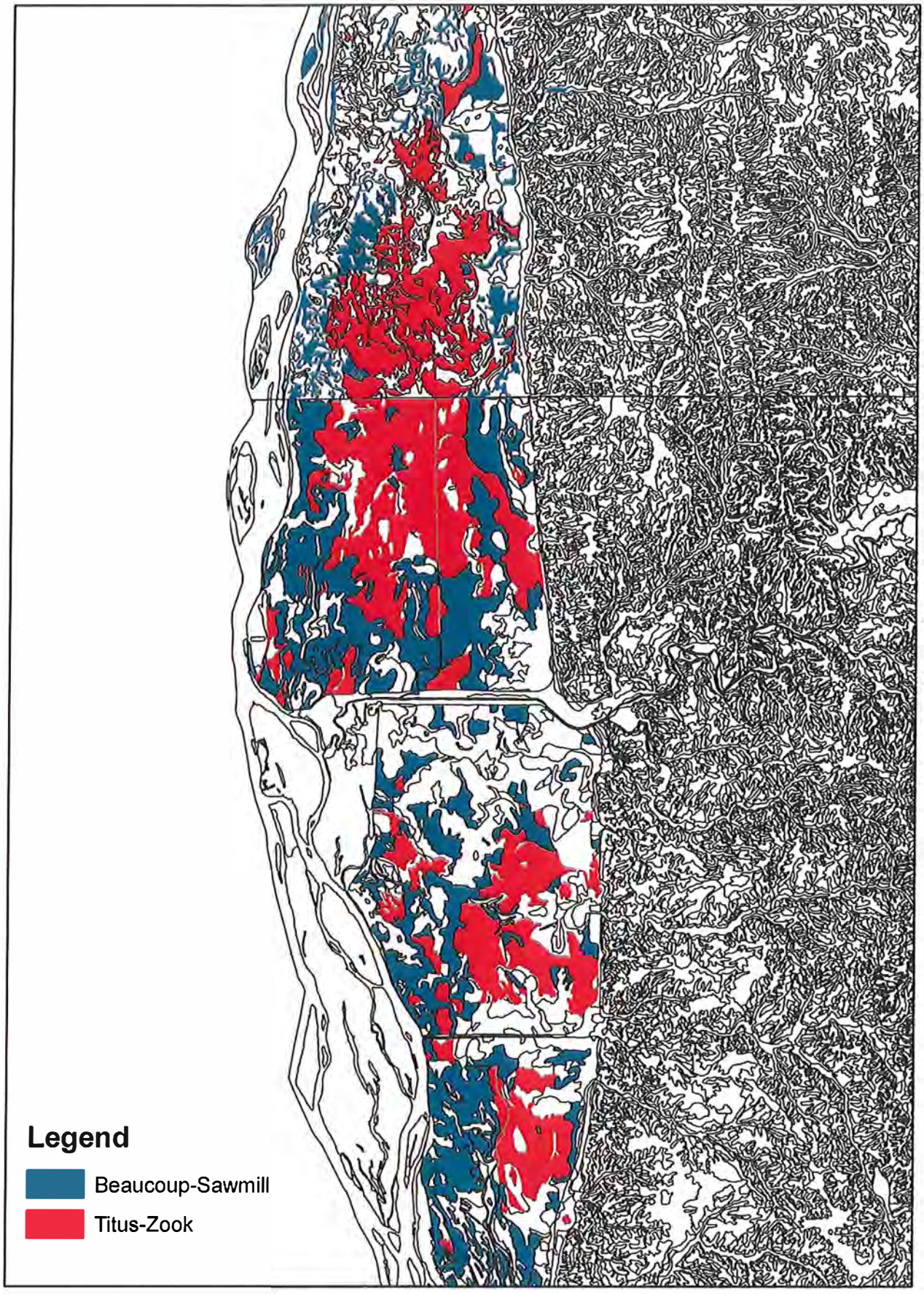
Sawmill – fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
Very deep, poorly drained soils formed in alluvium of Wisconsin-aged sediment.
Located on nearly level floodplains and drainageways
Slopes – 0-2 percent
RIC - Mollic epipedon – 24-36 inches thick
Clay content of the PSC section – 27-35 percent

Titus – fine, smectitic, mesic Vertic Endoaquolls
Very deep, poorly drained soils formed slackwater sediments.
Located on shallow depressions and backswamps
Slopes – 0-2 percent
RIC - Mollic epipedon – 10-24 inches thick
Clay content of the PSC section – 35-45 percent

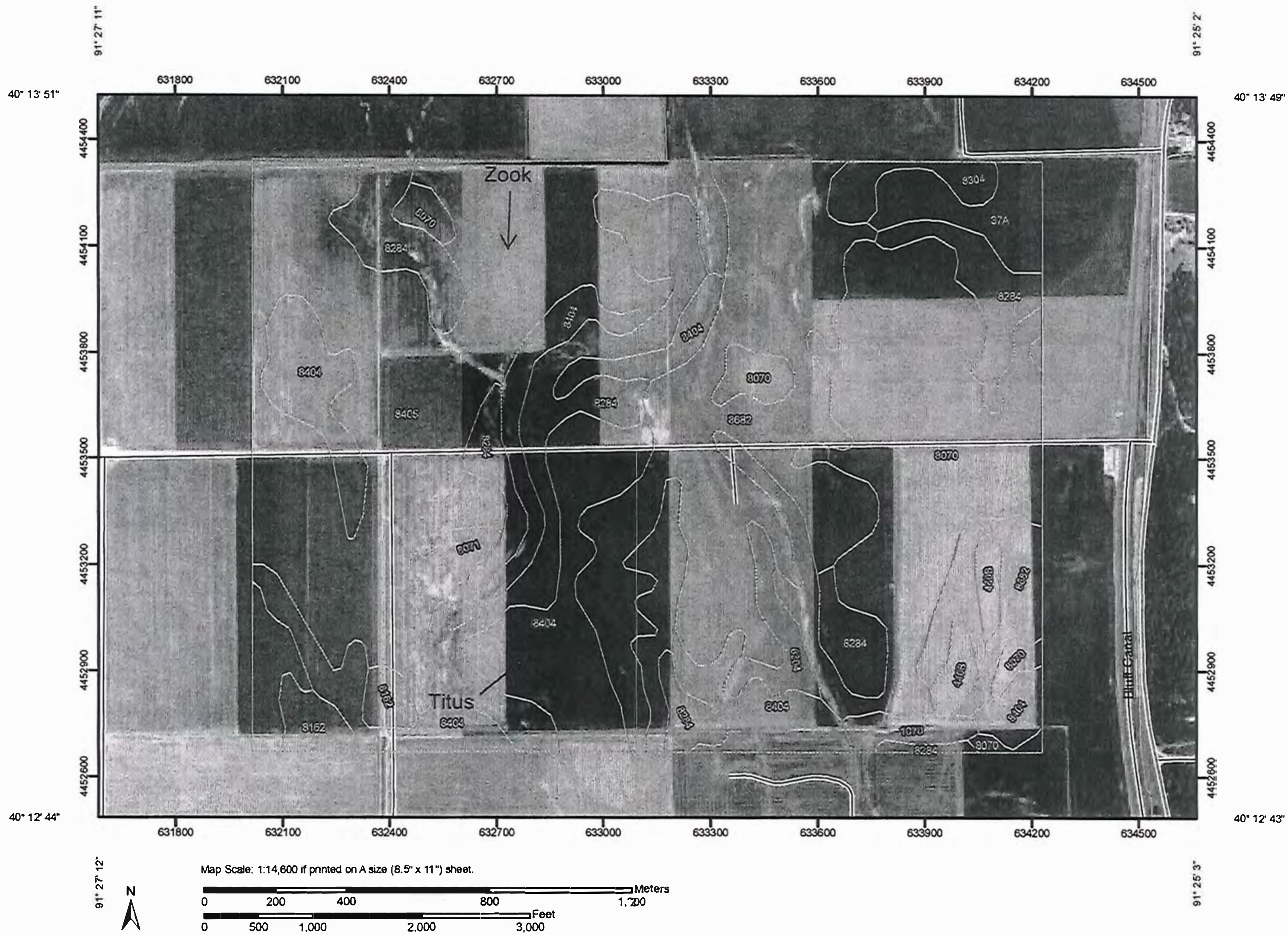
Zook– fine, smectitic, mesic Cumulic Vertic Endoaquolls
Very deep, poorly drained soils formed in alluvium.
Located on floodplains and drainageways
Slopes – 0-2 percent
RIC - Mollic epipedon – 35-60 in.
Content of clay in PSC section – 35-45 percent

Darwin – fine, smectitic, mesic Fluvaquentic Vertic Endoaquolls
Very deep, poorly and very poorly drained soils formed slackwater sediments.
Located on shallow depressions and backswamps
Slopes – 0-2 percent
RIC - Mollic epipedon – 10-24 inches thick
Clay content of the PSC section – 45-55 percent

Wabash – fine, smectitic, mesic Cumulic Vertic Endoaquolls
Very deep, poorly and very poorly drained soils formed in alluvium.
Located on floodplains (shallow floodplain depressions and backswamps in Illinois)
Slopes – 0-2 percent
RIC - Mollic epipedon – 10-24 inches thick
Clay content of the PSC section – 45-55 percent


Legend
Beaucoup-Sawmill
Titus-Zook

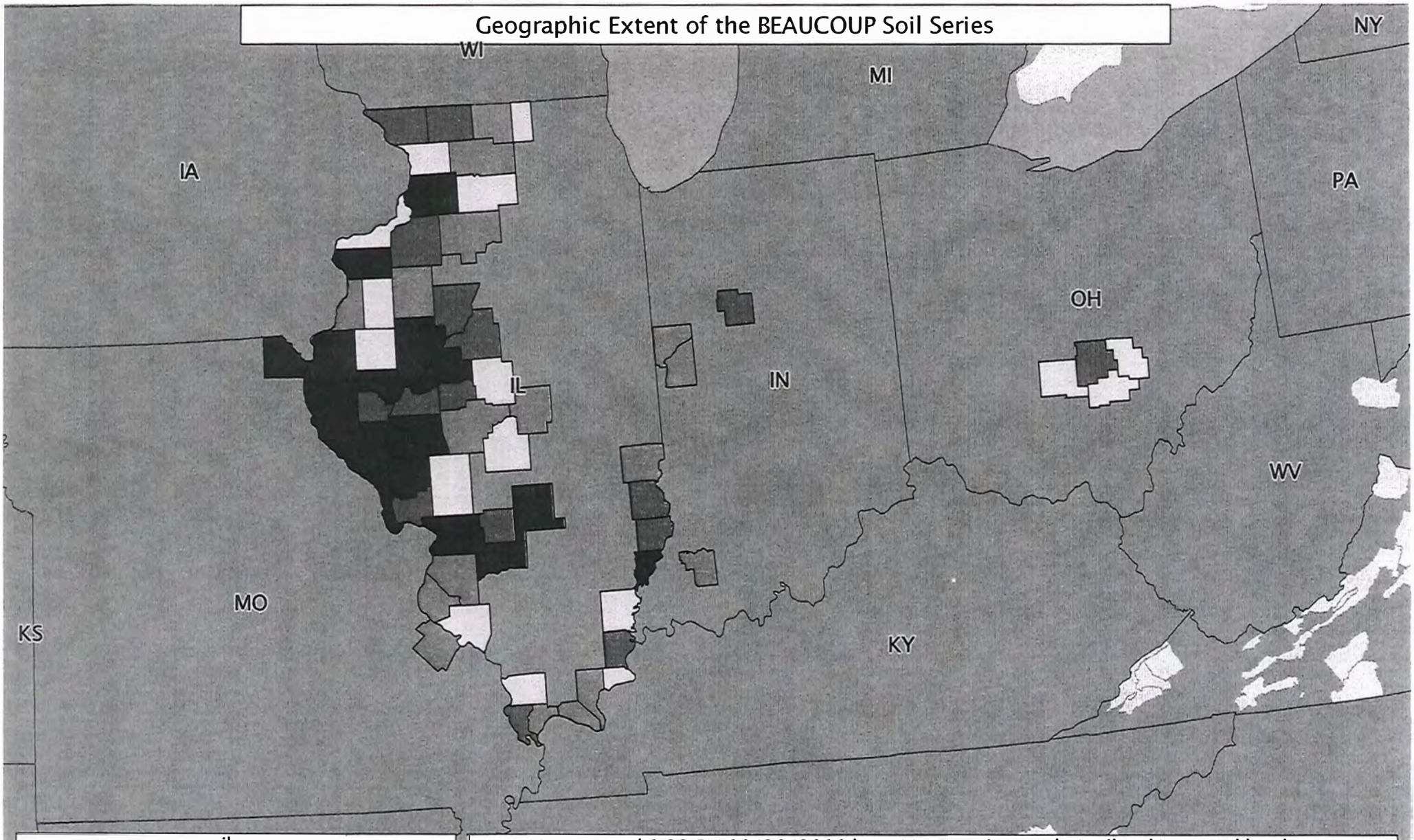
Soil Map—Hancock County, Illinois



Map Unit Legend

Hancock County, Illinois (IL067)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
37A	Worthen silt loam, 0 to 2 percent slopes	20.0	2.2%
440B	Jasper loam, 1 to 5 percent slopes	9.4	1.0%
1070	Beaucoup silty clay loam, undrained	7.5	0.8%
8070	Beaucoup silty clay loam, occasionally flooded	151.2	16.5%
8071	Darwin silty clay, occasionally flooded	4.7	0.5%
8162	Gorham silty clay loam, occasionally flooded	13.0	1.4%
8284	Tice silt loam, occasionally flooded	122.9	13.4%
8304	Landes loam, occasionally flooded	21.3	2.3%
8404	Titus silty clay loam, occasionally flooded	166.0	18.2%
8405	Zook silty clay loam, occasionally flooded	229.4	25.1%
8682	Medway loam, occasionally flooded	168.7	18.5%
Totals for Area of Interest		**914.1**	**100.0%**

Geographic Extent of the BEAUCOUP Soil Series



acres per soil survey area
- Data available
- Data not available
- No acres reported
- 94 or less
- 104 to 1365
- 1411 to 3722
- 3915 to 25819

Map created 1:22 PM 10/20/2010 http://www.cei.psu.edu/soiltool/semtool.html

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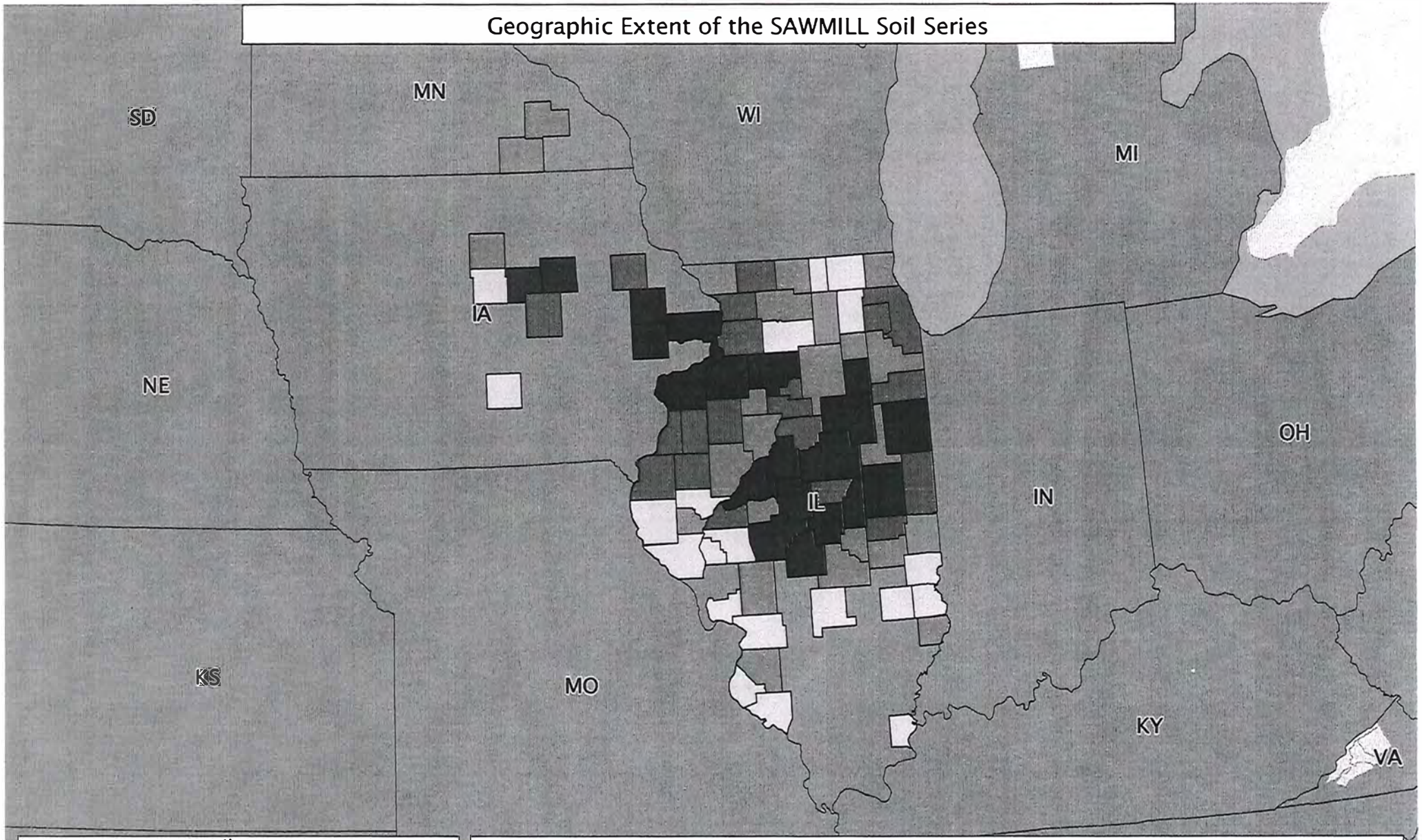
Cooperative Ecological Studies Unit (CESU) Cooperative Agreement # 68-3A75-4-104

Geographic Extent of the SAWMILL Soil Series



acres per soil survey area
- Data available
- Data not available
- No acres reported
- 1276 or less
- 1407 to 4199
- 4261 to 6755
- 6864 to 25658

Map created 1:20 PM 10/20/2010 http://www.cei.psu.edu/soiltool/semtool.html

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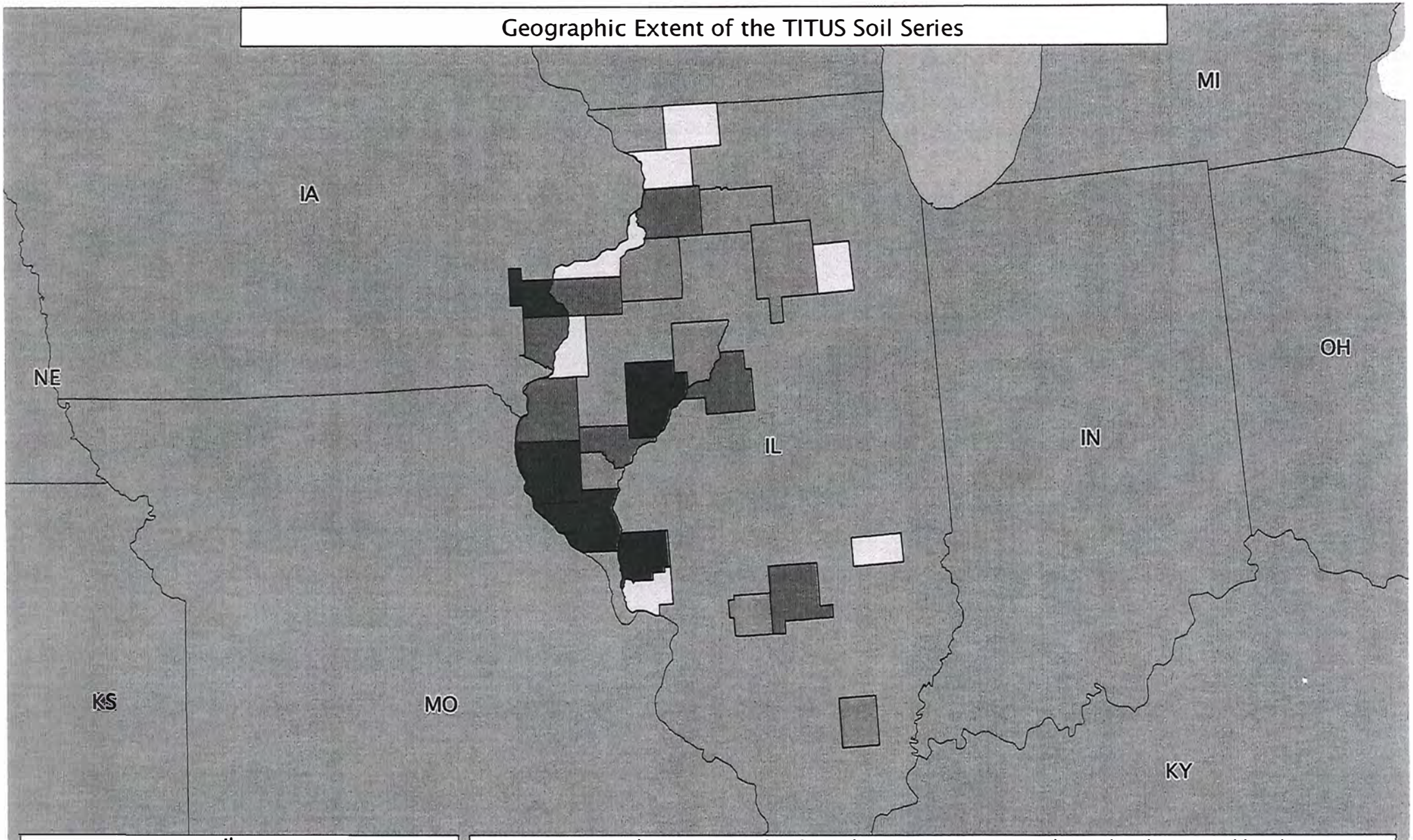
Geographic Extent of the TITUS Soil Series



acres per soil survey area
- Data available
- Data not available
- No acres reported
- 422 or less
- 517 to 1809
- 2366 to 7322
- 8092 to 15038

Map created 1:09 PM 10/20/2010 http://www.cei.psu.edu/soiltool/semtool.html

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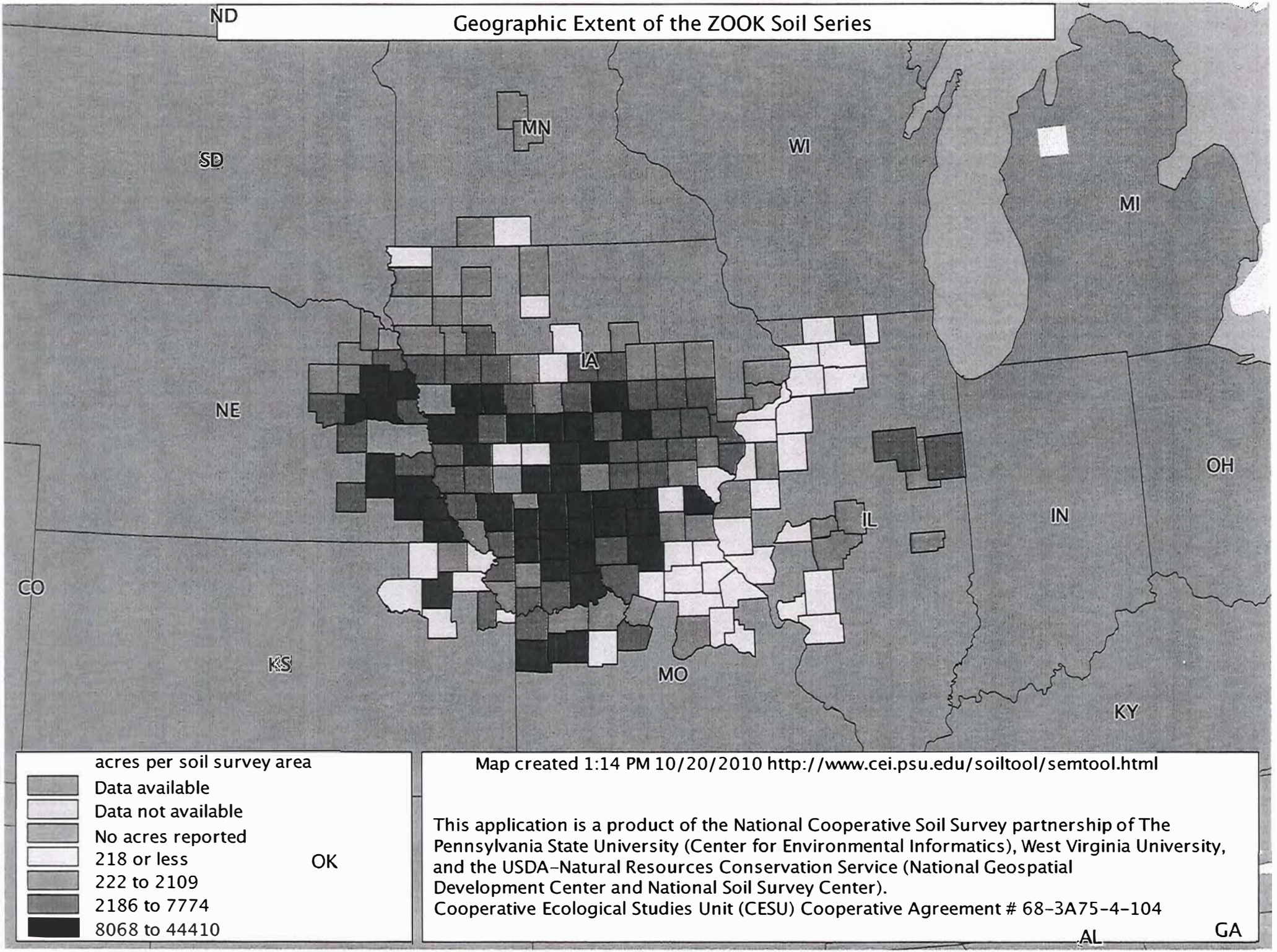
Geographic Extent of the ZOOK Soil Series



acres per soil survey area
- Data available
- Data not available
- No acres reported
- 218 or less
- 222 to 2109
- 2186 to 7774
- 8068 to 44410

Map created 1:14 PM 10/20/2010 http://www.cei.psu.edu/soiltool/semtool.html

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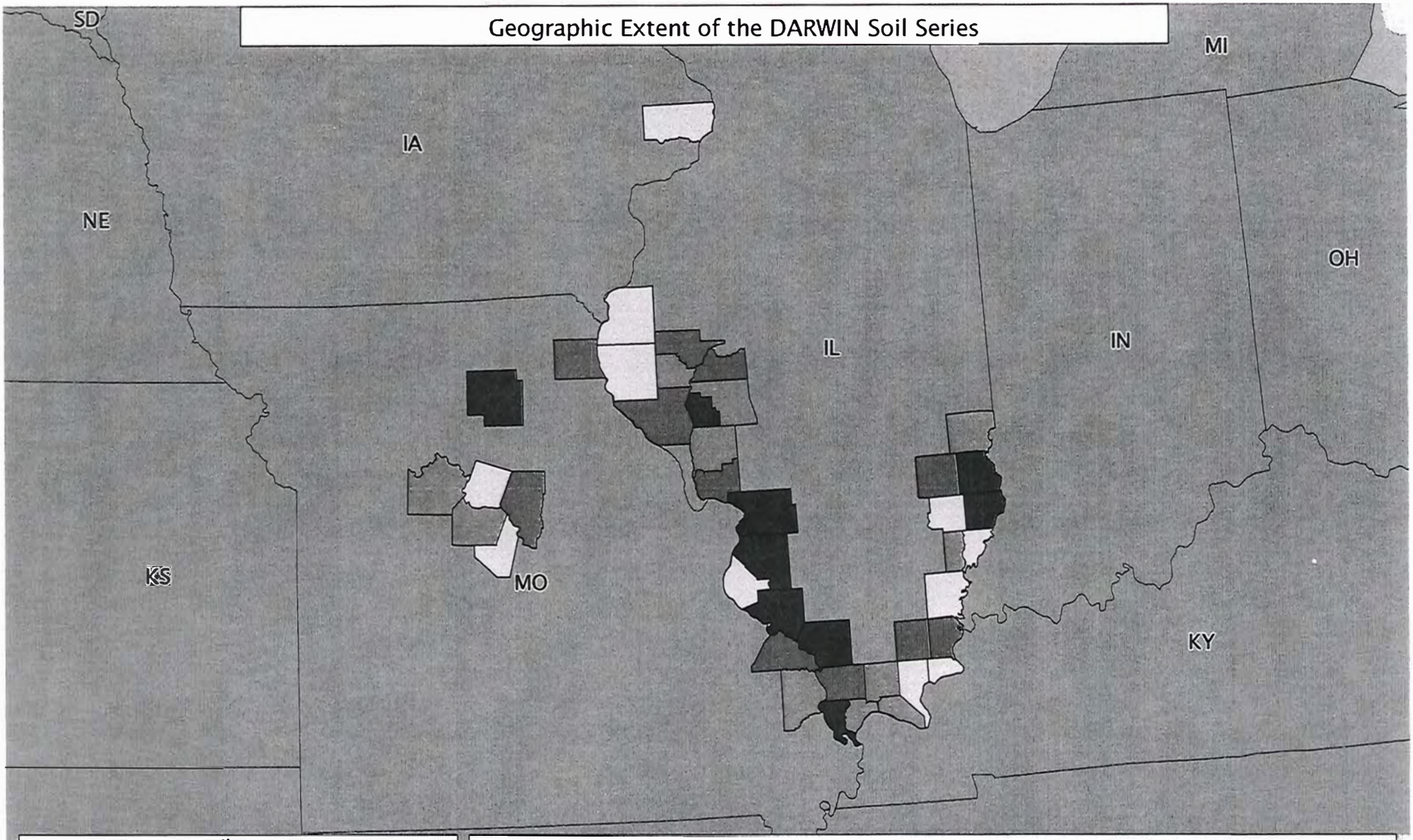
Geographic Extent of the DARWIN Soil Series



acres per soil survey area
- Data available
- Data not available
- No acres reported
- 305 or less
- 316 to 2082
- 2180 to 5548
- 5764 to 14310

Map created 1:12 PM 10/20/2010 http://www.cei.psu.edu/soiltool/semtool.html

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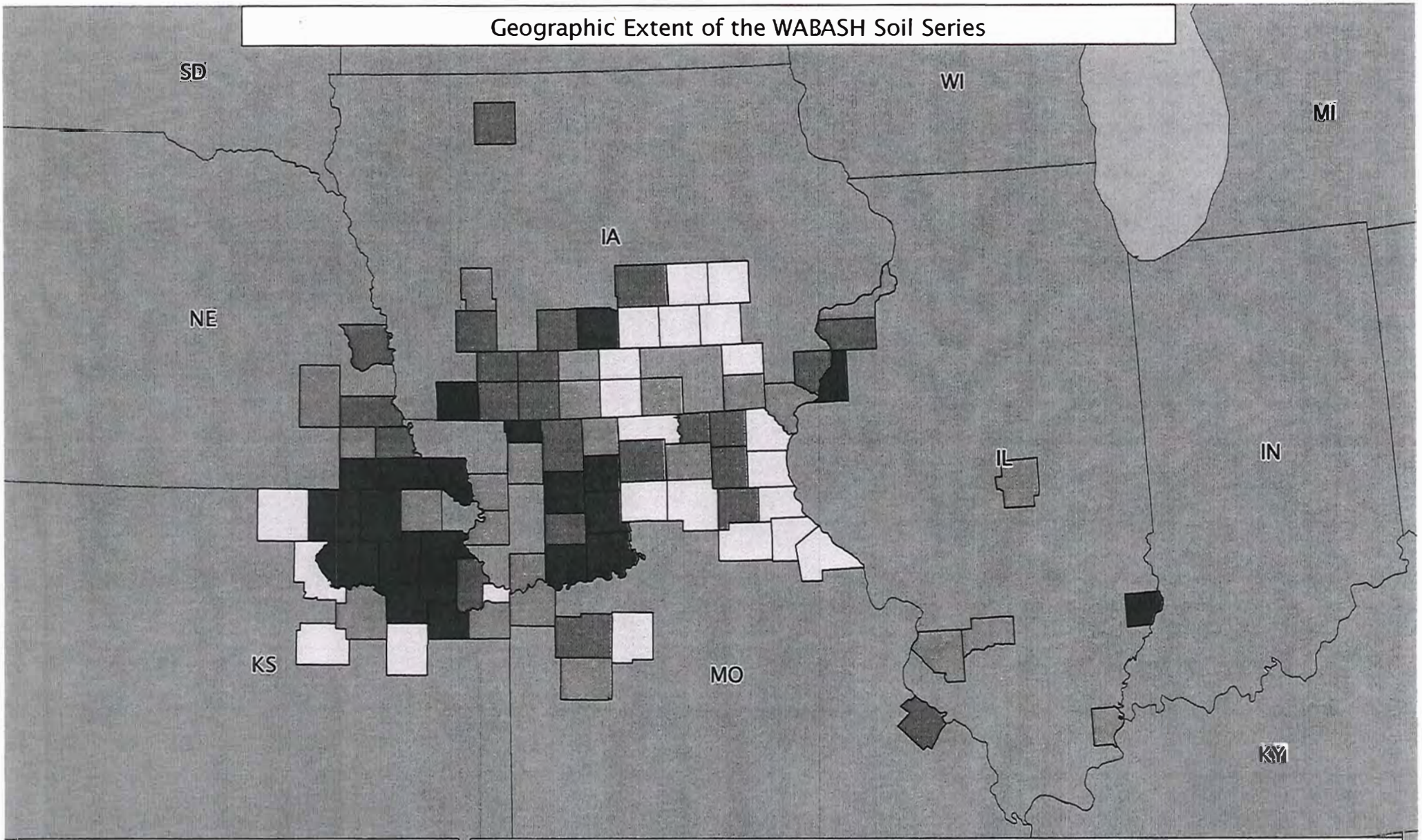
Geographic Extent of the WABASH Soil Series



acres per soil survey area
- Data available
- Data not available
- No acres reported
- 340 or less
- 367 to 1860
- 1877 to 6208
- 6448 to 17095

Map created 1:16 PM 10/20/2010 http://www.cei.psu.edu/soiltool/semtool.html

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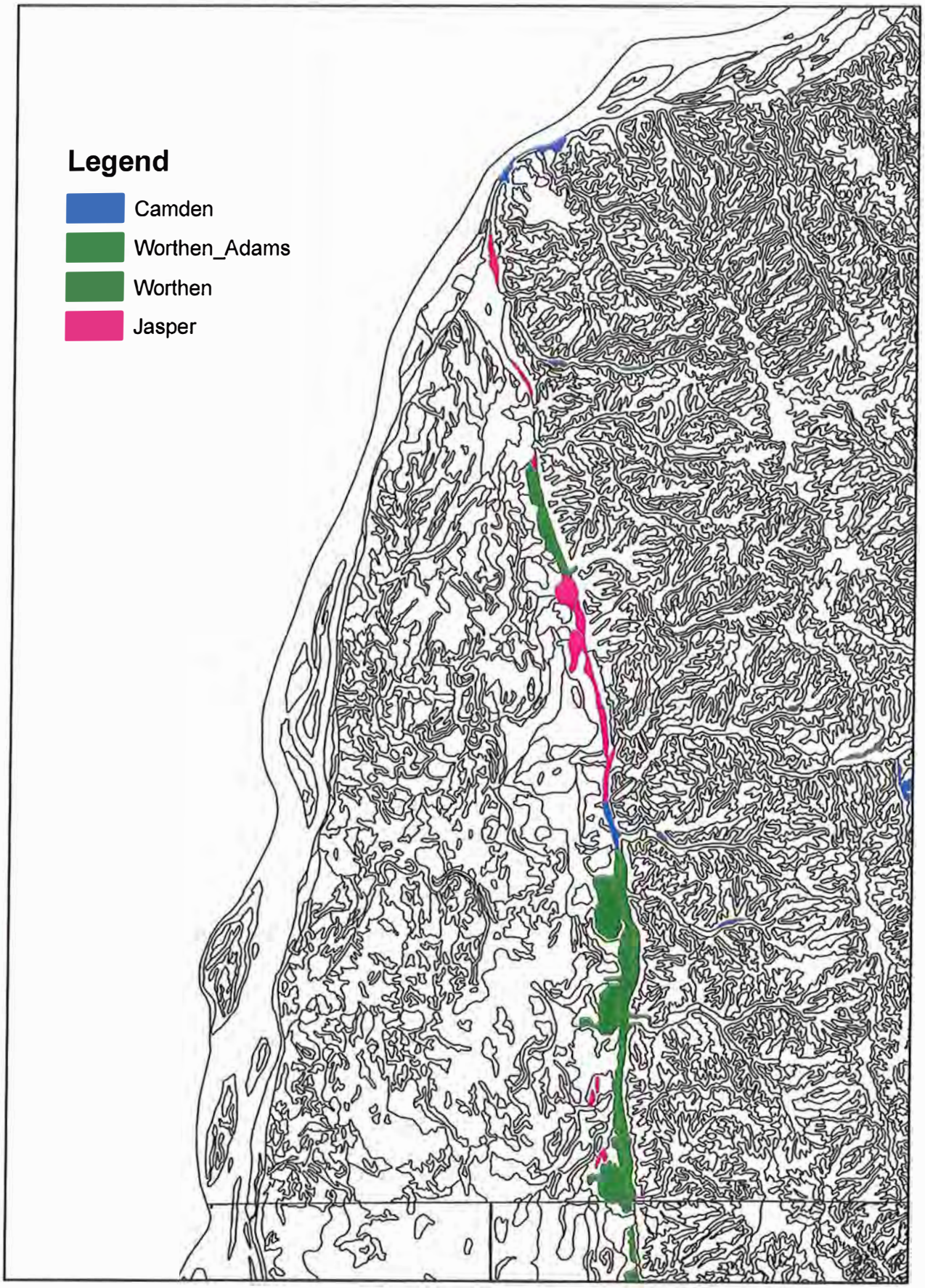
Site 2 – Jasper fine sandy loam, 5 to 10 percent slopes, eroded

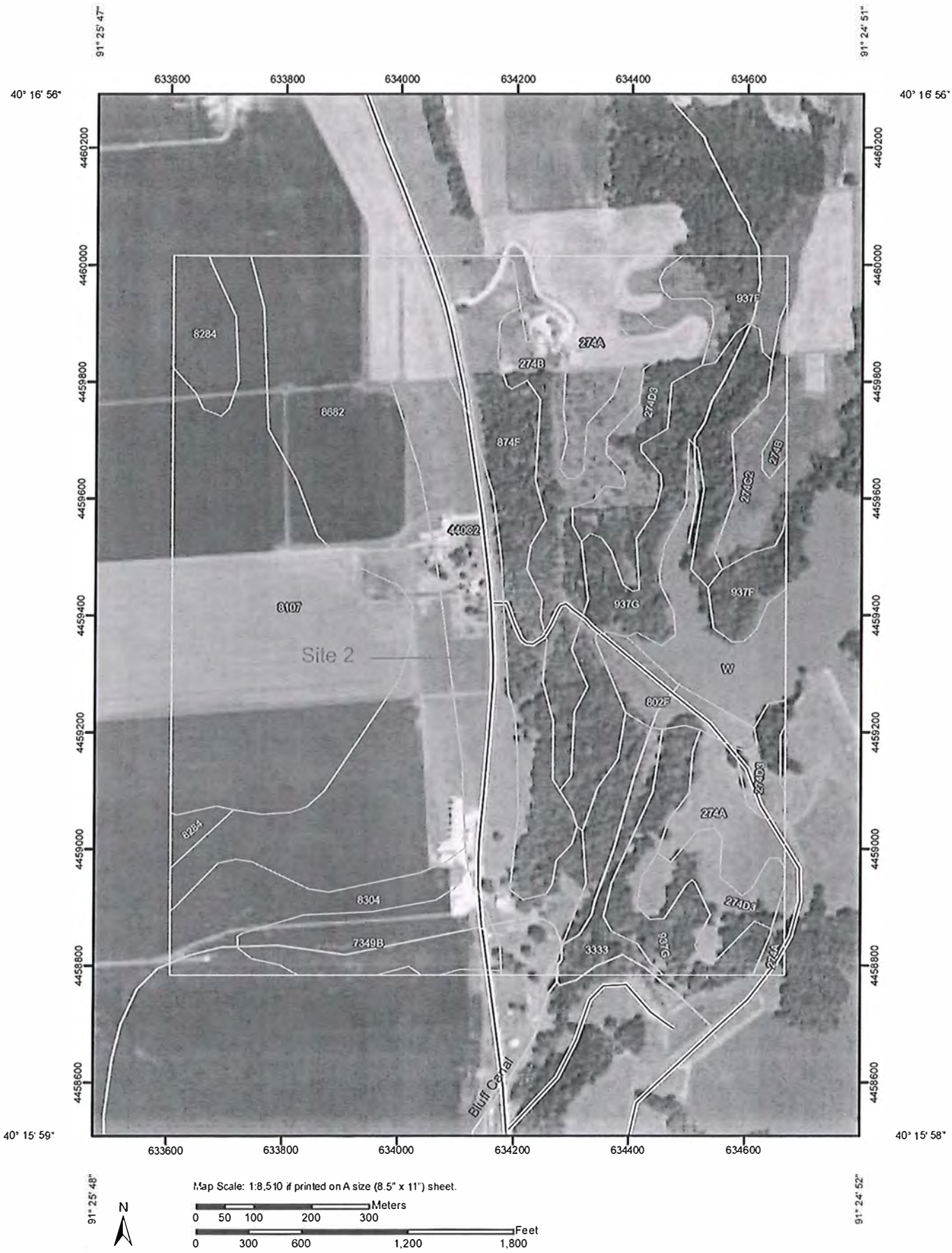
About 770 acres in Hancock County.
Worthen, Drury and Camden and are commonly mapped on footslopes. (deep loess or loess over outwash)
Bedrock colluvial soils are mapped as Lacrescent

Jasper – fine-loamy, mixed, superactive, mesic Typic Argiudolls

Very deep, well drained soils formed in loamy material and stratified sediments on outwash plains (OSD says of Wisconsin age).
Some have a thin mantle of loess.
Slopes – 0-18 percent

RIC - Mollic epipedon – 10-20 inches thick
Depth to base of the argillic – 35-60 inches
Depth to carbonates – greater than 35 inches
Clay content of the PSC section – 20-32 percent
Sand content of the PSC section – 15-55 percent fine sand and coarser

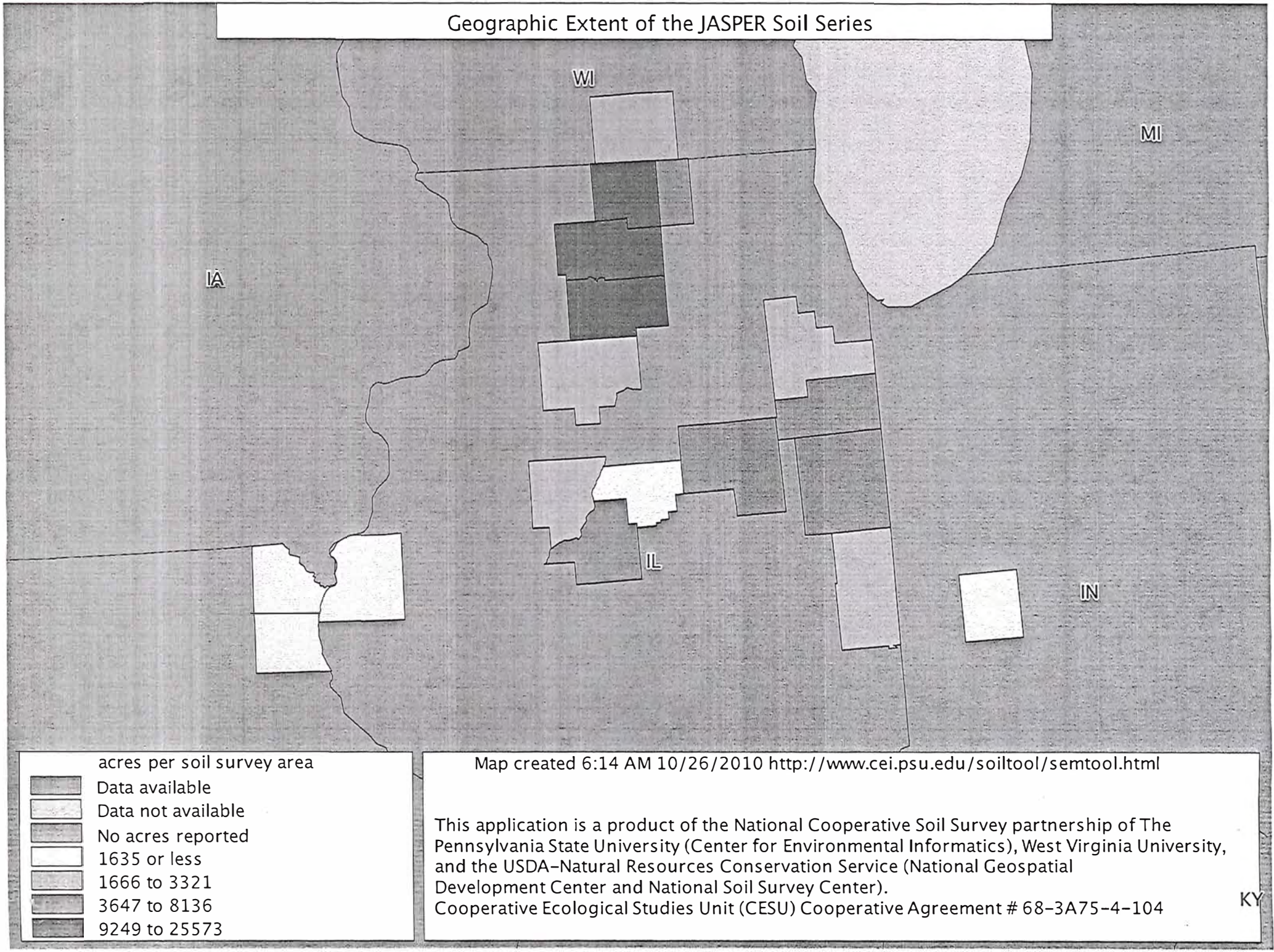

Legend
Camden
Worthen_Adams
Worthen
Jasper


91° 25' 47"
91° 24' 51"
633600
633800
634000
634200
634400
634600
40° 16' 56"
40° 15' 59"
40° 15' 58"
4460200
4460000
4459800
4459600
4459400
4459200
4459000
4458800
4458600
8284
8682
8107
8304
7349B
3333
274A
274B
274D3
274C2
937F
937G
874F
802F
W
Site 2
Bluff Canal
91° 25' 48"
91° 24' 52"
N
Map Scale: 1:8,510 if printed on A size (8.5" x 11") sheet.
Meters
0 50 100 200 300
Feet
0 300 600 1,200 1,800

Map Unit Legend

Hancock County, Illinois (IL067)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
274A	Seaton silt loam, 0 to 2 percent slopes	17.2	5.3%
274B	Seaton silt, 2 to 5 percent slopes	19.1	5.9%
274C2	Seaton silt loam, 5 to 10 percent slopes, eroded	6.2	1.9%
274D3	Seaton silt loam, 10 to 18 percent slopes, severely eroded	19.8	6.1%
440C2	Jasper fine sandy loam, 5 to 10 percent slopes, eroded	31.8	9.8%
802F	Orthents, loamy, steep	5.2	1.6%
874F	Dickinson-Hamburg complex, 10 to 60 percent slopes	23.9	7.4%
937F	Seaton-Hickory complex, 15 to 30 percent slopes	9.9	3.0%
937G	Seaton-Hickory complex, 30 to 60 percent slopes	30.5	9.4%
3333	Wakeland silt loam, frequently flooded	9.1	2.8%
7349B	Zumbro loamy fine sand, 1 to 5 percent slopes, rarely flooded	11.5	3.6%
8107	Sawmill silty clay loam, occasionally flooded	55.6	17.2%
8284	Tice silt loam, occasionally flooded	7.3	2.3%
8304	Landes loam, occasionally flooded	11.6	3.6%
8682	Medway loam, occasionally flooded	54.4	16.8%
W	Water	10.8	3.3%
Totals for Area of Interest		**323.7**	**100.0%**

Geographic Extent of the JASPER Soil Series



acres per soil survey area

- Data available
- Data not available
- No acres reported
- 1635 or less
- 1666 to 3321
- 3647 to 8136
- 9249 to 25573

Map created 6:14 AM 10/26/2010 http://www.cei.psu.edu/soiltool/semtool.html

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Site 3 – Dickinson-Hamburg complex, 10 to 60 percent slopes

Hancock is the only county in Illinois that has mapped this complex
Only 330 acres in Hancock County.
Seaton-Timula or Stookey-Timula are more commonly mapped on bluffs.

Dickinson – coarse-loamy, mixed, superactive, mesic Typic Hapludolls

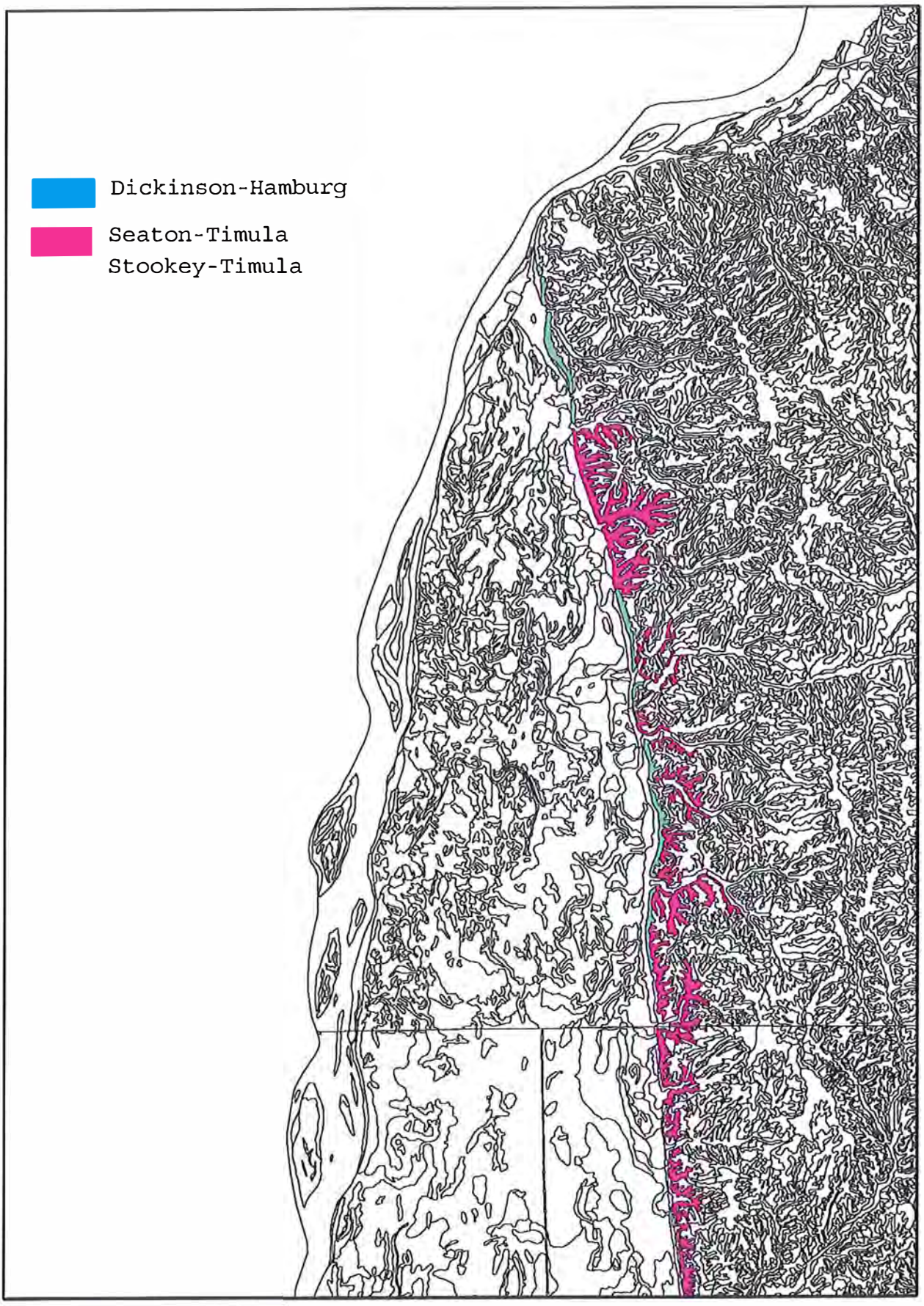
Deep, well drained soils formed in glacial or alluvial deposits and reworked by wind.
Located on uplands; or on treads and risers on stream terraces in river valleys
Slopes – 0-30 percent

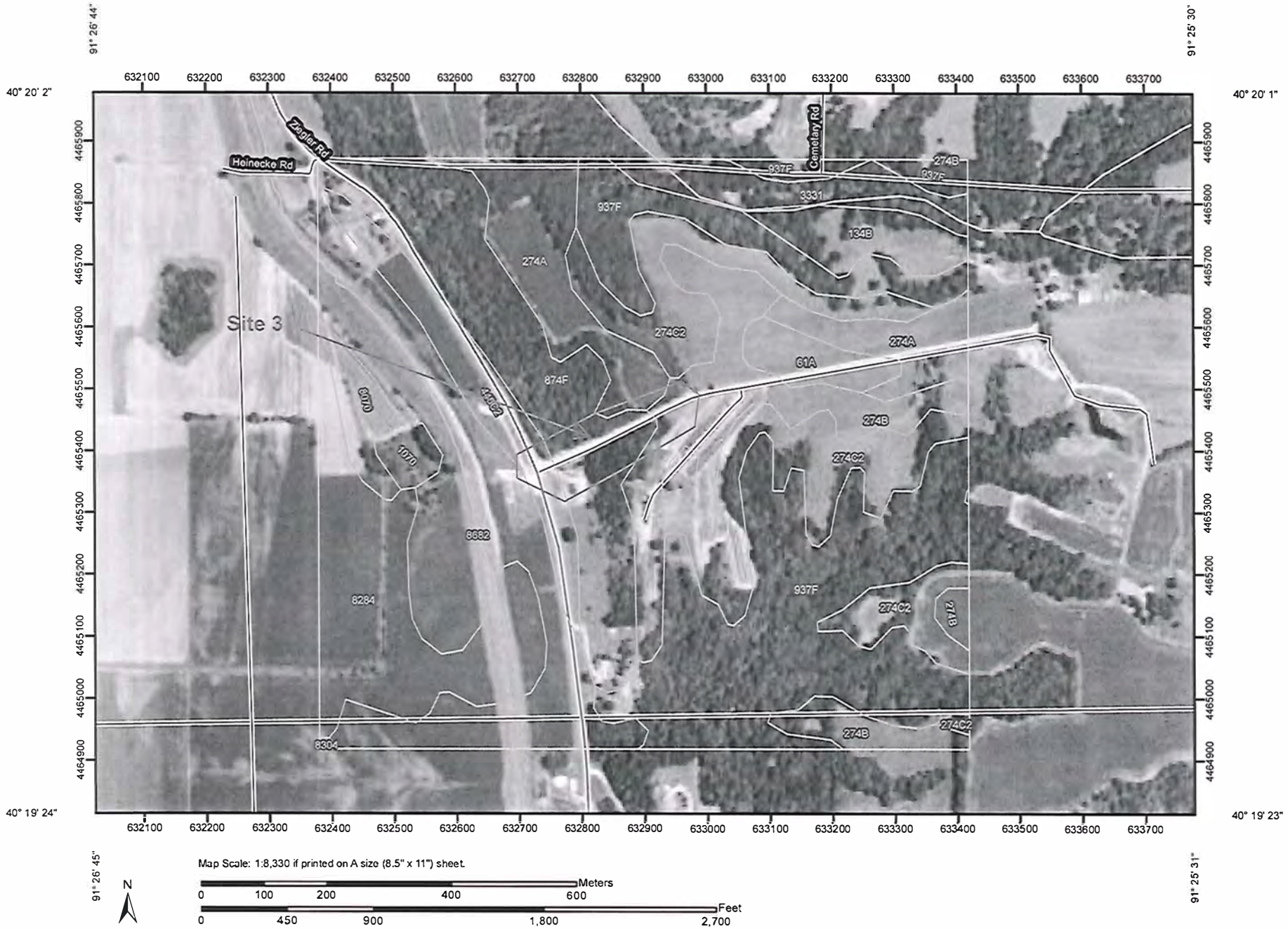
RIC - Mollic epipedon – 12-19 inches thick
Depth to loamy sand or sand – 20-43 inches
Depth to carbonates – greater than 60 inches
Clay content of the PSC section – 10-18 percent
Sand content of the PSC section – 60-80 percent, less than 50 percent medium and coarser sand

Hamburg – coarse-silty, mixed, superactive, calcareous, mesic Typic Udorthents

Very deep, somewhat excessively drained soils on moderately steep to very steep convex shoulders or backslopes on uplands.
Formed in calcareous loess
Slopes – 20-90 percent

RIC - Depth to carbonates – less than 6 inches
Content of clay in PSC section – 6-12 percent
Content of sand in PSC section – 10-50 percent total sand, dominantly very fine sand, less than 3 percent fine sand and coarser.
Coarse silt to fine silt ratio 2-3 times as much coarse silt as fine silt.

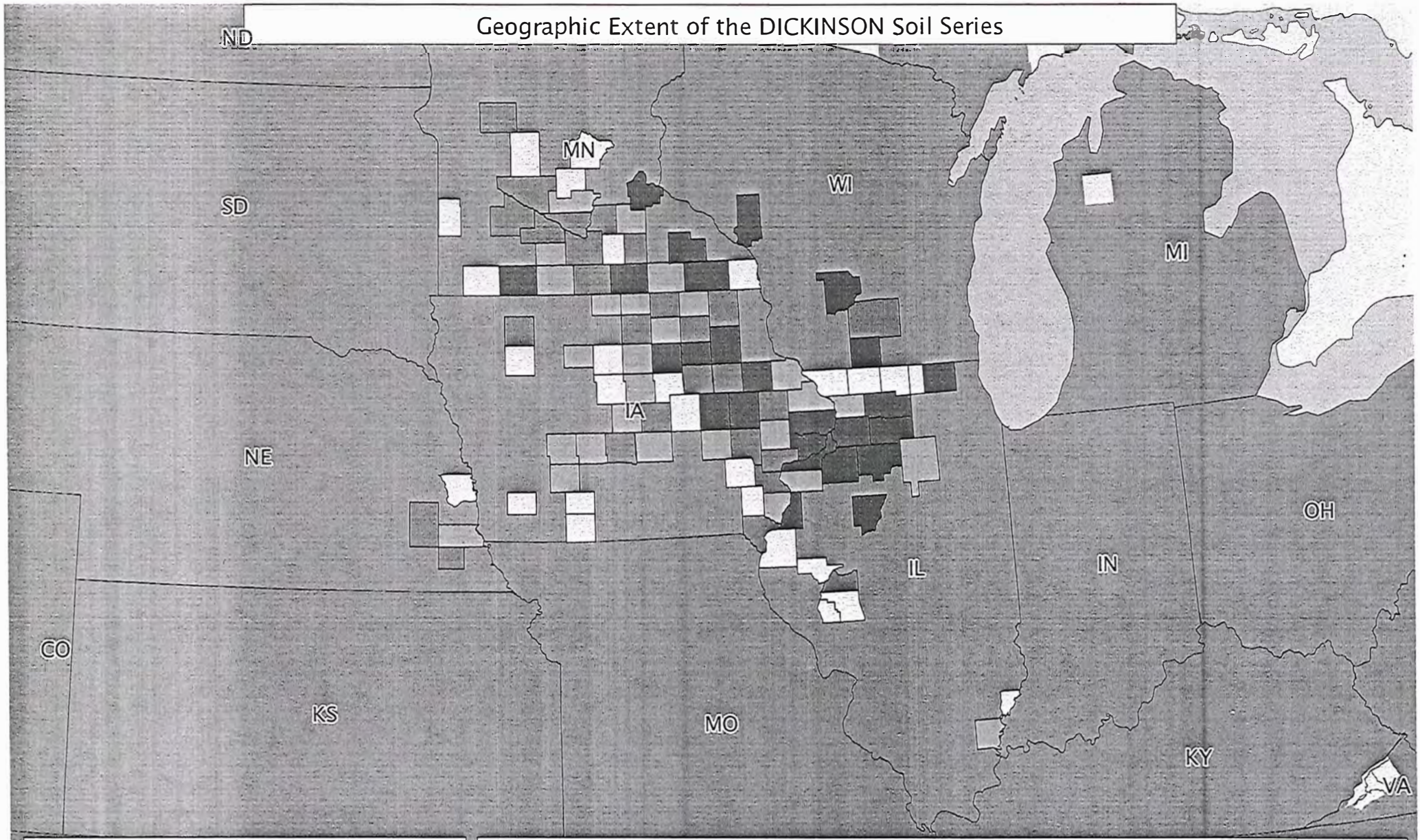

Dickinson-Hamburg
Seaton-Timula
Stookey-Timula


91° 26' 44"
91° 25' 30"
40° 20' 2"
40° 20' 1"
632100 632200 632300 632400 632500 632600 632700 632800 632900 633000 633100 633200 633300 633400 633500 633600 633700
4465900 4465800 4465700 4465600 4465500 4465400 4465300 4465200 4465100 4465000 4464900
Zeigler Rd
Heinecke Rd
Cemetary Rd
Site 3
937F
274B
3331
134B
274A
274C2
61A
874F
8070
1070
8682
8284
8304
Map Scale: 1:8,330 if printed on A size (8.5" x 11") sheet.
N
Meters
0 100 200 400 600
Feet
0 450 900 1,800 2,700
40° 19' 24"
40° 19' 23"
91° 26' 45"
91° 25' 31"

Map Unit Legend

Hancock County, Illinois (IL067)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
61A	Atterberry silt loam, 0 to 2 percent slopes	4.2	1.7%
134B	Camden silt loam, 2 to 5 percent slopes	6.6	2.7%
274A	Seaton silt loam, 0 to 2 percent slopes	18.3	7.5%
274B	Seaton silt, 2 to 5 percent slopes	22.5	9.2%
274C2	Seaton silt loam, 5 to 10 percent slopes, eroded	30.5	12.5%
440C2	Jasper fine sandy loam, 5 to 10 percent slopes, eroded	10.1	4.1%
874F	Dickinson-Hamburg complex, 10 to 60 percent slopes	28.3	11.6%
937F	Seaton-Hickory complex, 15 to 30 percent slopes	53.8	22.0%
1070	Beaucoup silty clay loam, undrained	2.1	0.9%
3331	Haymond silt loam, frequently flooded	7.6	3.1%
8070	Beaucoup silty clay loam, occasionally flooded	3.5	1.4%
8284	Tice silt loam, occasionally flooded	23.0	9.4%
8304	Landes loam, occasionally flooded	0.1	0.0%
8682	Medway loam, occasionally flooded	34.3	14.0%
Totals for Area of Interest		**244.9**	**100.0%**

Geographic Extent of the DICKINSON Soil Series



acres per soil survey area

- Data available
- Data not available
- No acres reported
- 525 or less
- 555 to 1844
- 1855 to 3349
- 3404 to 25617

Map created 6:52 AM 10/26/2010 http://www.cei.psu.edu/soiltool/semtool.html

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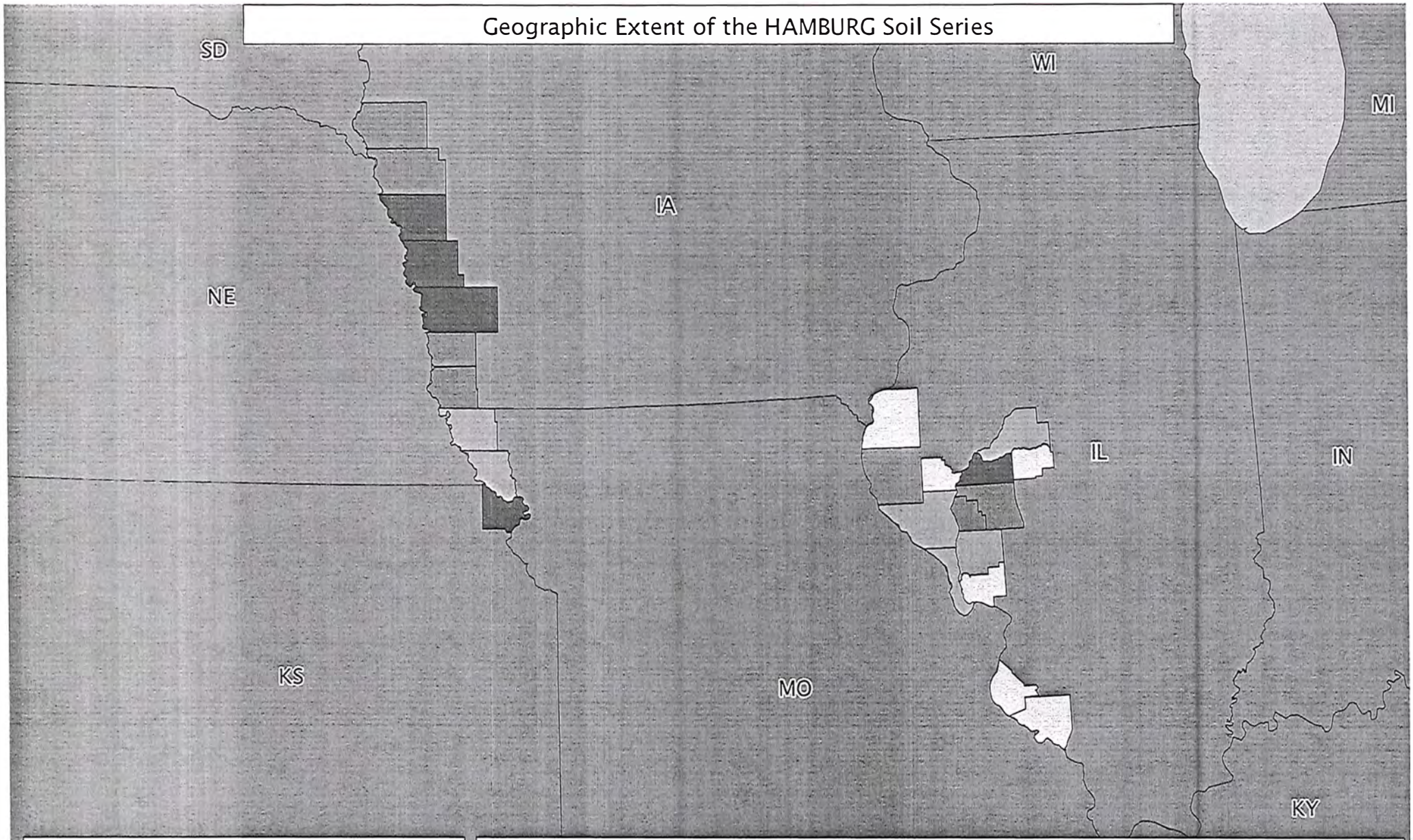
Geographic Extent of the HAMBURG Soil Series



acres per soil survey area
- Data available
- Data not available
- No acres reported
- 513 or less
- 684 to 1533
- 1678 to 2880
- 4004 to 12782

Map created 6:50 AM 10/26/2010 http://www.cei.psu.edu/soiltool/semtool.html

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