

# Restoring Native Plant Communities:

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Soil and hydrology suited planning  
using the Iowa Native Plant  
Community Database

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# Restoration in the name of diversity:

This planning process is based on data gathered from remnant plant communities.



# Iowa Native Plant Communities

- Database can be found on the Iowa NRCS Technical Resources website:

<http://www.ia.nrcs.usda.gov/technical/RestorationTools.html>

- Saving the database to your computer will improve speed vs. using the database across the website.
- Based on the plant community alliances and associations listed in NatureServe's Plant Communities of the Upper Midwest ([www.natureserve.org](http://www.natureserve.org)).
  - Environmental conditions
  - Species lists
  - Plant community composition and structure
  - Maintenance processes

# Example Site in Scott County



SMU	NAME	TEXT	FLD FQ	NTVEG	PMAT	WTBL	DRNGCL
54	ZOOK	SCL	OCC	P	A	0 TO 3	P
961	AMBRAW	CL	OCC	P	A	0 TO 2	P
484	LAWSON	SL	OCC	P	A	1 TO 3	M
354	AQUOLL						
539	PERKS	SL	OCC	F	SA	>6	E
926	CANOE	SL	RAR	T	A	2 TO 4	SP
175B	DICKINSON	FSL	NON	P	E	>6	SE

# Query Page:

Iowa NRCS Plant Community Query Database

Click on the button to the left to enter site characteristics for your query. Your entry must match the text in the soil texture, soil drainage class, and soil parent material option boxes below.

**Soil Texture Options**

- Loam
- Clay Loam
- Sandy Loam
- Loamy Sand
- Silt Loam
- Peat
- Sand
- Silt
- Silty Clay
- Gravelly
- Muck
- Mineral Soil
- Clay
- Sandy Clay
- Exposed Bedrock
- Banded Aquoll
- Loamy Clay

**Soil Drainage Class Options**

- Excessively Drained
- Somewhat Excessively Drained
- Well Drained
- Moderately Well Drained
- Somewhat Poorly Drained
- Poorly Drained
- Very Poorly Drained

**Soil Parent Material Options**

- Glacial Till
- Outwash
- End Moraines
- Shallow to Bedrock
- Lake Plains
- Loess
- Alluvium
- Sandstone
- Limestone/Dolostone
- Muck
- Peat
- Eolian Sand
- Gravel
- Sand
- Bedrock

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Natural Resource Conservation Service

Iowa NRCS Plant Community Query  
This community query is based on the Community Association and it's over-riding Community Alliance descriptions as provided by NatureServe (www.natureserve.org/explorer). Where necessary, community site conditions were adapted as recommended by Iowa plant community experts.

Record: 1 of 1  
Form View

On the main page of the Iowa NRCS plant community query database, click on the button to begin entering information for the soil map unit of interest.

In this illustration, we'll start with the Ambraw soil map unit of the example site.

# Soil Surface Texture

Iowa NRCS Plant Community Query Database

Click on the button to the left to enter site characteristics for your query. Your entry must match the text in the soil texture, soil drainage class, and soil parent material option boxes below.

**Soil Texture Options**

- Loam
- Clay Loam
- Sandy Loam
- Loamy Sand
- Silt Loam
- Peat
- Sand
- Silt
- Silty Clay
- Gravelly
- Muck
- Mineral Soil
- Clay
- Sandy Clay
- Exposed Bedrock
- Ponded Aquoll
- Loamy Clay

**Soil Drainage Class Options**

- Excessively Drained
- Somewhat Excessively Drained
- Well Drained
- Moderately Well Drained
- Somewhat Poorly Drained
- Poorly Drained
- Very Poorly Drained

**Soil Parent Material Options**

- Glacial Till
- Outwash
- End Moraines
- Shallow to Bedrock
- Lake Plains
- Loess
- Alluvium
- Sandstone
- Limestone/Dolostone
- Muck
- Peat
- Eolian Sand
- Gravel
- Sand
- Bedrock

Enter Parameter Value

Enter Soil Texture

Clay Loam

OK Cancel

Record: 1 of 1

Form View

After clicking the query button, the first parameter box displays. Enter the surface soil texture for the soil map unit of interest and click okay. For the example Ambraw soil, we enter Clay Loam exactly as it's found in the soil texture option box.

# Soil Drainage Class

Iowa NRCS Plant Community Query - [MainPage : Form]

File Edit View Insert Format Records Tools Window Help Adobe PDF

Type a question for help

## Iowa Native Plant Community Query Database

Click on the button to the left to enter a parameter value. Your entry must match the text in the soil texture, soil drainage class, or soil parent material option boxes below.

**Soil Texture Options**

- Loam
- Clay Loam
- Sandy Loam
- Loamy Sand
- Silt Loam
- Peat
- Sand
- Silt
- Silty Clay
- Gravelly
- Muck
- Mineral Soil
- Clay
- Sandy Clay
- Exposed Bedrock
- Ponded Aquoll
- Loamy Clay

**Soil Drainage Class Options**

- Excessively Drained
- Somewhat Excessively Drained
- Well Drained
- Moderately Well Drained
- Somewhat Poorly Drained
- Poorly Drained
- Very Poorly Drained

**Soil Parent Material Options**

- Glacial Till
- Outwash
- End Moraines
- Shallow to Bedrock
- Lake Plains
- Loess
- Alluvium
- Sandstone
- Limestone/Dolostone
- Muck
- Peat
- Eolic Sand
- Gravel
- Sand
- Bedrock

Record: 1 of 1

Form View NUM

When the second parameter box automatically displays, enter the soil drainage class for the soil map unit of interest and click okay. For the example Ambraw soil, we enter Poorly Drained exactly as it's found in the soil drainage class option box.

# Soil Parent Material

Iowa NRCS Plant Community Query Database

Click on the button to the left to enter the soil texture, soil drainage class, or soil parent material. Your entry must match the text in the boxes below.

**Soil Texture Options**

- Loam
- Clay Loam
- Sandy Loam
- Loamy Sand
- Silt Loam
- Peat
- Sand
- Silt
- Silty Clay
- Gravelly
- Muck
- Mineral Soil
- Clay
- Sandy Clay
- Exposed Bedrock
- Ponded Aquoll
- Loamy Clay

**Soil Drainage Class Options**

- Excessively Drained
- Somewhat Excessively Drained
- Well Drained
- Moderately Well Drained
- Somewhat Poorly Drained
- Poorly Drained
- Very Poorly Drained

**Soil Parent Material Options**

- Glacial Till
- Outwash
- End Moraines
- Shallow to Bedrock
- Lake Plains
- Loess
- Alluvium
- Sandstone
- Limestone/Dolostone
- Muck
- Peat
- Eolian Sand
- Gravel
- Sand
- Bedrock

Enter Parameter Value

Enter Parent Material

Alluvium

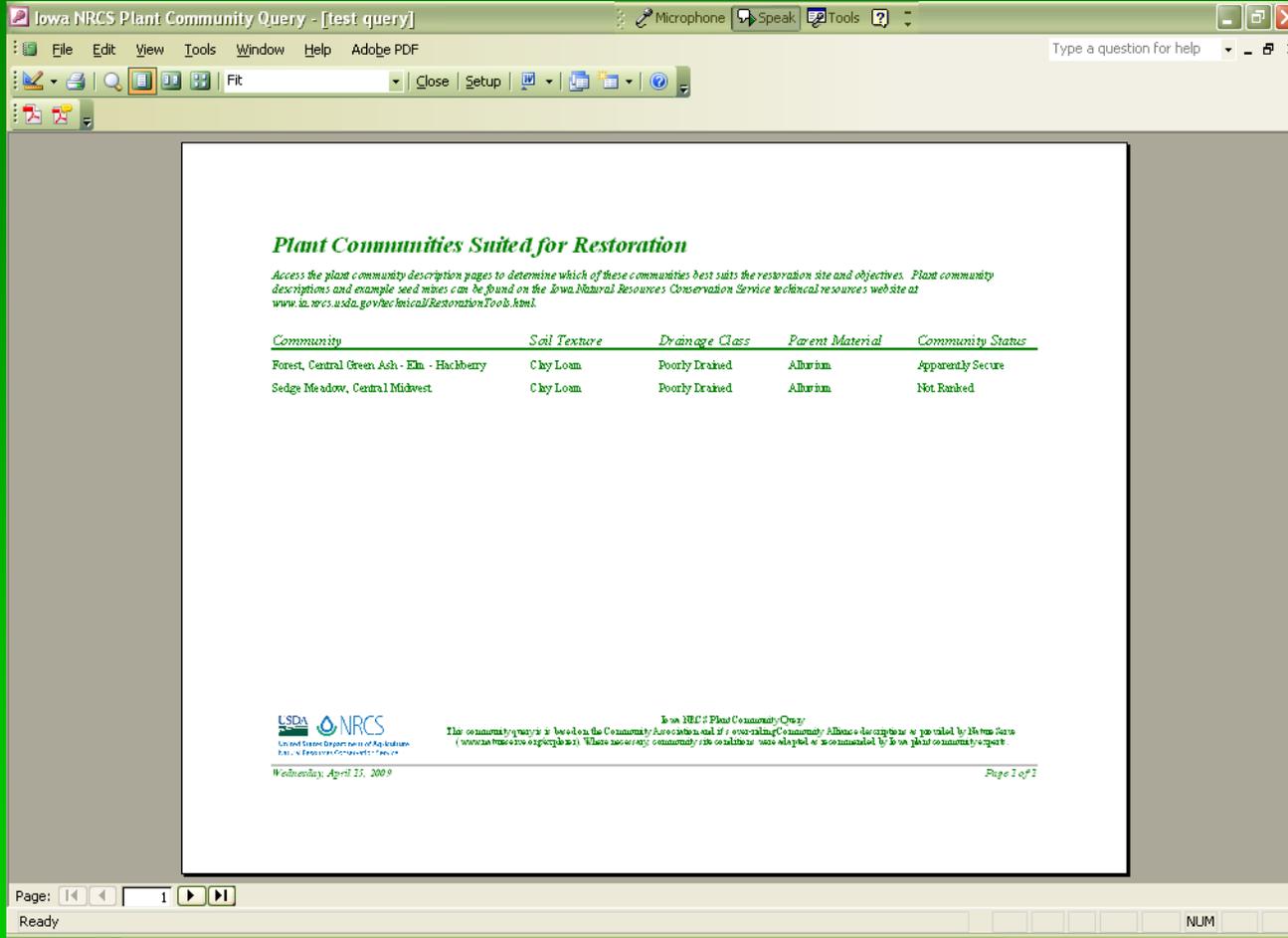
OK Cancel

Record: 1 of 1

Form View

When the third parameter box automatically displays, enter the soil parent material for the soil map unit of interest and click okay. For the example Ambraw soil, we enter Alluvium exactly as it's found in the soil parent material option box.

# Plant communities suited for restoration report



The screenshot shows a web browser window titled "Iowa NRCS Plant Community Query - [test query]". The browser's address bar contains "http://www.ia.nrcs.usda.gov/technical/RestorationTools.html". The page content includes a title "Plant Communities Suited for Restoration" and a paragraph of text: "Access the plant community description pages to determine which of these communities best suits the restoration site and objectives. Plant community descriptions and example seed mixes can be found on the Iowa Natural Resources Conservation Service technical resources web site at [www.ia.nrcs.usda.gov/technical/RestorationTools.html](http://www.ia.nrcs.usda.gov/technical/RestorationTools.html)." Below this text is a table with five columns: Community, Soil Texture, Drainage Class, Parent Material, and Community Status. The table lists two communities: "Forest, Central Green Ash - Elm - Hackberry" and "Sedge Meadow, Central Midwest". The footer of the page includes the USDA NRCS logo, a disclaimer, and the date "Wednesday, April 22, 2009".

Community	Soil Texture	Drainage Class	Parent Material	Community Status
Forest, Central Green Ash - Elm - Hackberry	Clay Loam	Poorly Drained	Albion	Apparently Secure
Sedge Meadow, Central Midwest	Clay Loam	Poorly Drained	Albion	Not Ranked

Once all three soil parameter boxes have been populated correctly, the database produces a report of plant communities that may be suited for restoration under these conditions.

The plant community descriptions may be accessed to determine which community better meets site conditions and objectives.

Plant community descriptions & example seed mixes can be found on the Iowa NRCS website: <http://www.ia.nrcs.usda.gov/technical/RestorationTools.html>

This process is repeated for each soil type, and site-suited plant community(s) are assigned accordingly. On the example site, three seed mixes would be necessary. The ponded Aquolls were already vegetated and did not require seeding.



The two wet/sedge meadow communities fall within Zone C and can be combined to make one Zone C mix, while separate mixes are developed for Zones D and EX (according to Iowa Technical Note 27).