

# **Tools for Hydrogeologic Investigations**

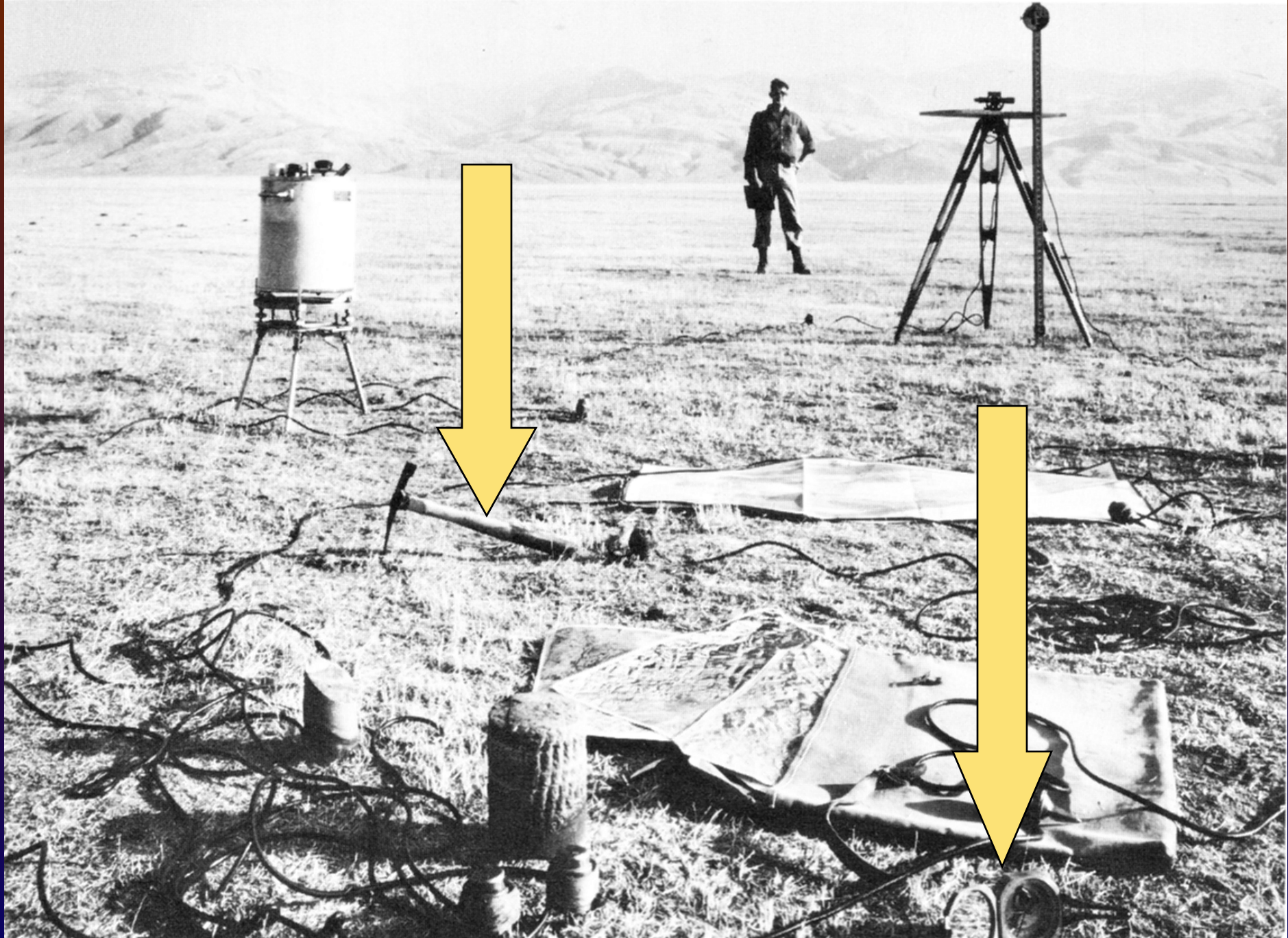
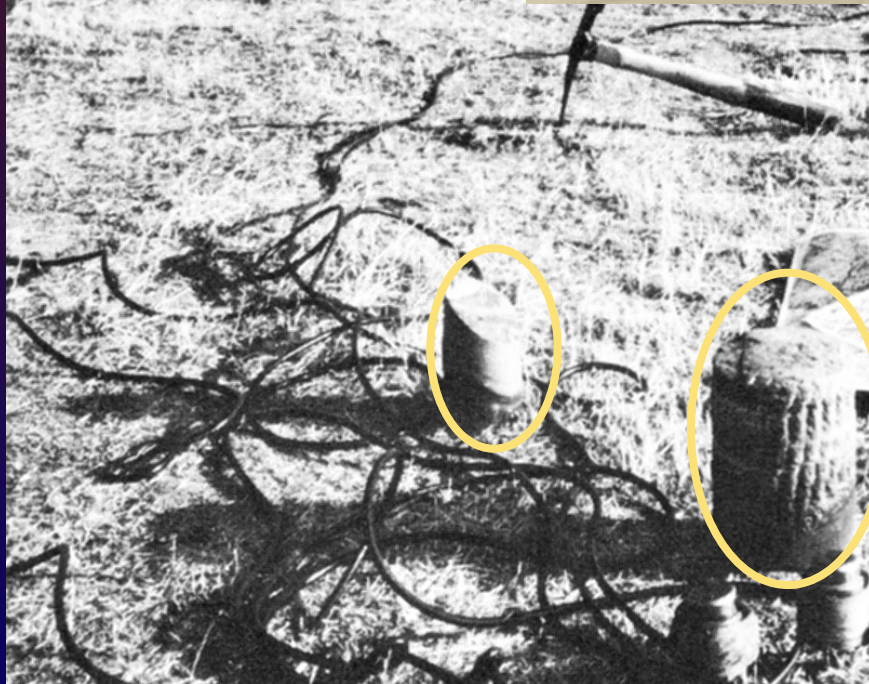
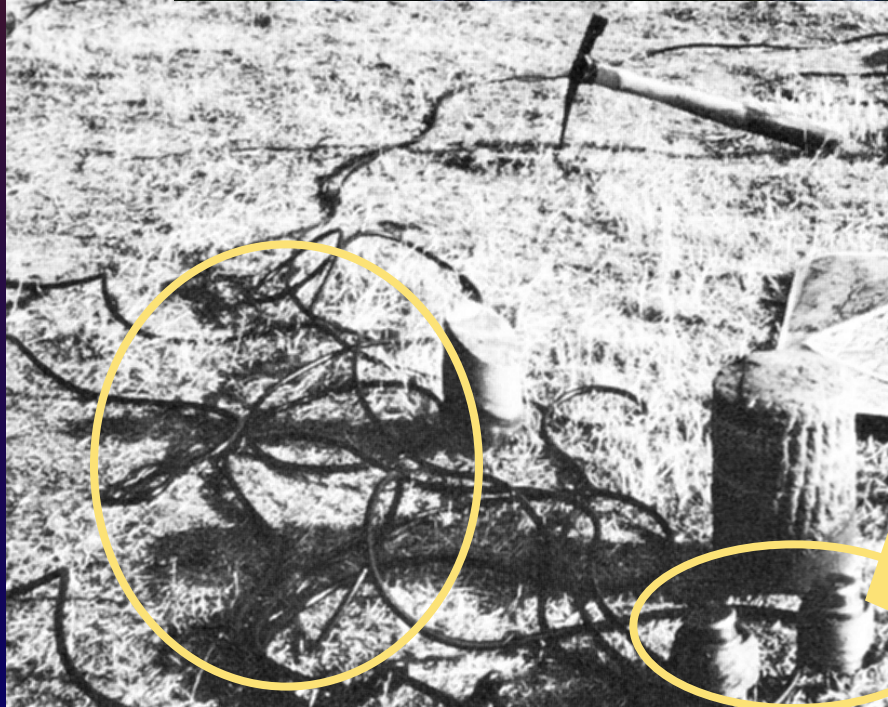


Photo credit: Standard Oil of California circa 1960; from: Essentials of Earth History, Wm. Lee Stokes, 1960.

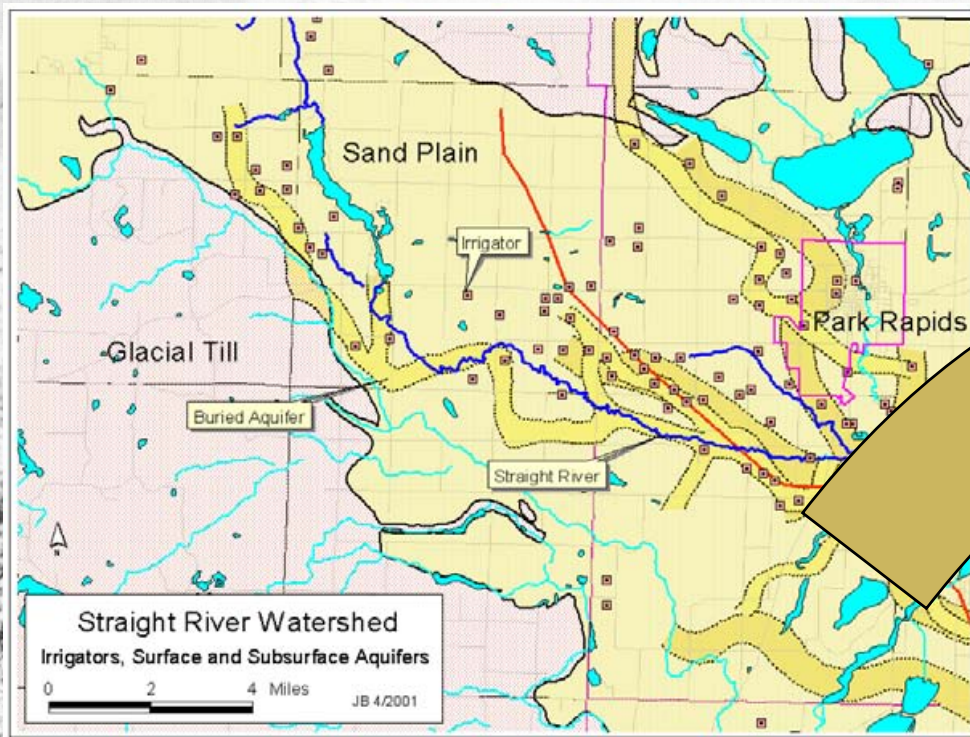




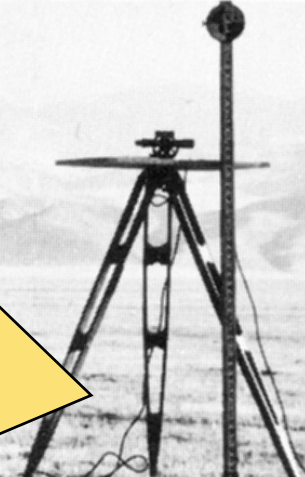




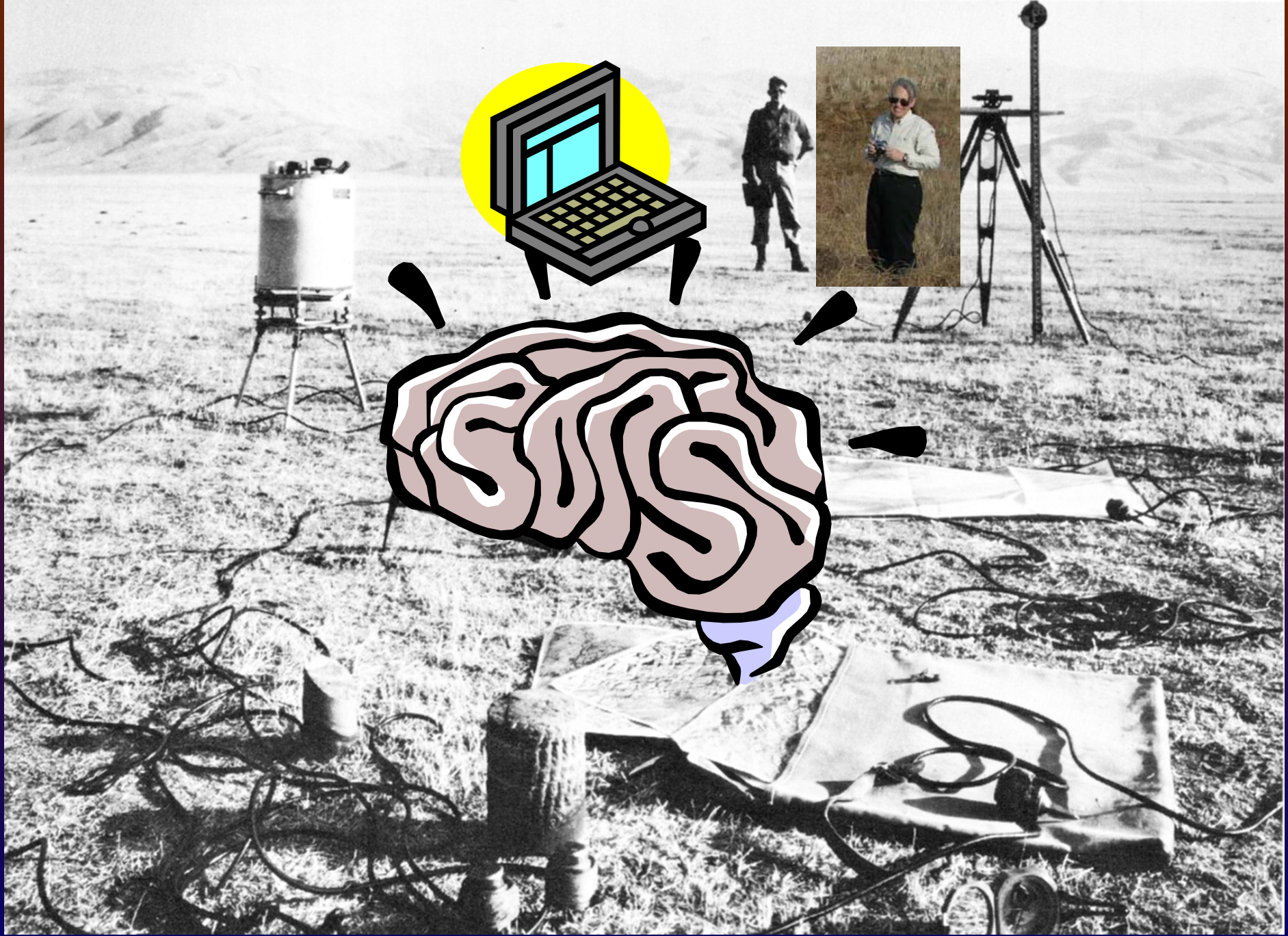














# On-Line Data Access

finding government agency  
water resource data





# Water Resource Data Available from or through the Department of Natural Resources Waters Division



starting point =

[www.dnr.state.mn.us/waters](http://www.dnr.state.mn.us/waters)







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## Division of Waters

*"Helping people ensure the future of our water resources."*

Kent Lokkesmoe, Director

Information: (651) 296-4800



click on a water resource topic



### Recent Developments

- **Public Waters Work Permit Program**
  - [New General Permit Issued by DNR to MnDOT](#), February 2004 [PDF](#) (0.54 Mb)
- **Floodplain Management Program**
  - [Minnesota Plan for FEMA Map Modernization](#), January 2004 [PDF](#) (1.6 Mb)
- **Ground Water featured in *Conservation Volunteer Magazine***
  - [Minnesota Profile: Ground Water](#), Conservation Volunteer, Jan-Feb 2004
  - [Ground Water Provinces](#), additional details on ground water region characteristics
- **Lake Sarah (Hennepin County) Outlet Analysis**, December 2003 [PDF](#) (1.1 Mb)
- **Water Use Fee Increase**
  - [Letter to Permit Holders About Fee Increase](#) [PDF](#)
  - [Answers to questions about the new fee rates](#)
- **Shoreline Alteration Information Sheets**
  - [Beach Sand Blanket](#) [PDF](#) (0.7 Mb)
  - [Lakescaping](#) [PDF](#) (1.1 Mb)
  - [Ice Ridges](#) [PDF](#) (0.5 Mb)
  - [Riprap](#) [PDF](#) (0.9 Mb)

### Frequently Requested Items

- **Public Waters Work Permit Application Forms**
  - [for projects involving lakes, wetlands, rivers and streams](#)
  - [for public transportation/public utility projects](#)
- **Water Appropriation Permit Application Forms**

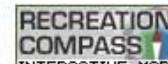
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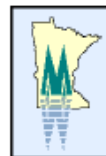


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## Ground Water Level Data Retrieval DNR Waters

Retrieve all observations for a chosen observation well number.

1000 QBAAQBAA 243459 sort by unique #

Show tabular data: ☒ precipitation departure ☐

[Click here to get observation well data.](#)

[Click here to set to well nearest location chosen from a map.](#)

Data are provided 'as is' with no guarantee implied as to accuracy or suitability.  
For further information please contact [ObvWell database manager](#).

## Ground Water Level Data Retrieval DNR Waters

Retrieve all observations for a chosen observation well number.

71018 QWTAQWTA 244456

sort by unique #

71018 QWTAQWTA 244456

on departure ☐

71019 QWTAQWTA 244457

vation well data.

71020 CMTSCMSH 217950

71021 QWTAQWTA 244458

71022 QWTAQWTA 244459

o well nearest location chosen from a map.

71023 QBAAQBAA 114496

71024 QWTAQWTA 198650

71025 QBAAQBAA 400711

71026 QBAAQBAA 400712

tee implied as to accuracy or suitability.

73000 QWTAQWTA 244460

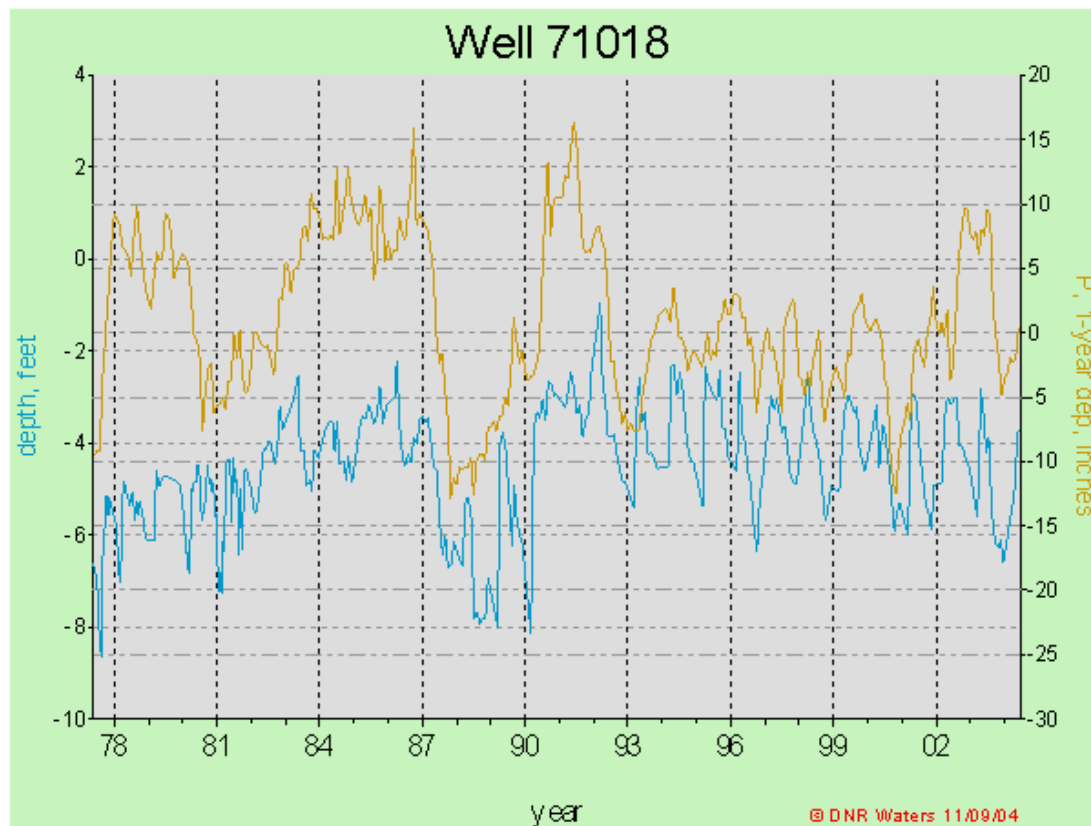
[byWell database manager](#).

73001 QWTAQWTA 244461



[Click here to set to well nearest location chosen from a map.](#)

## Hydrograph:



Strongest correlation between depth to water and precipitation for the location was a cumulative precipitation departure from normal over a 12 month time span. (r-square = 0.002)

## Well Details:

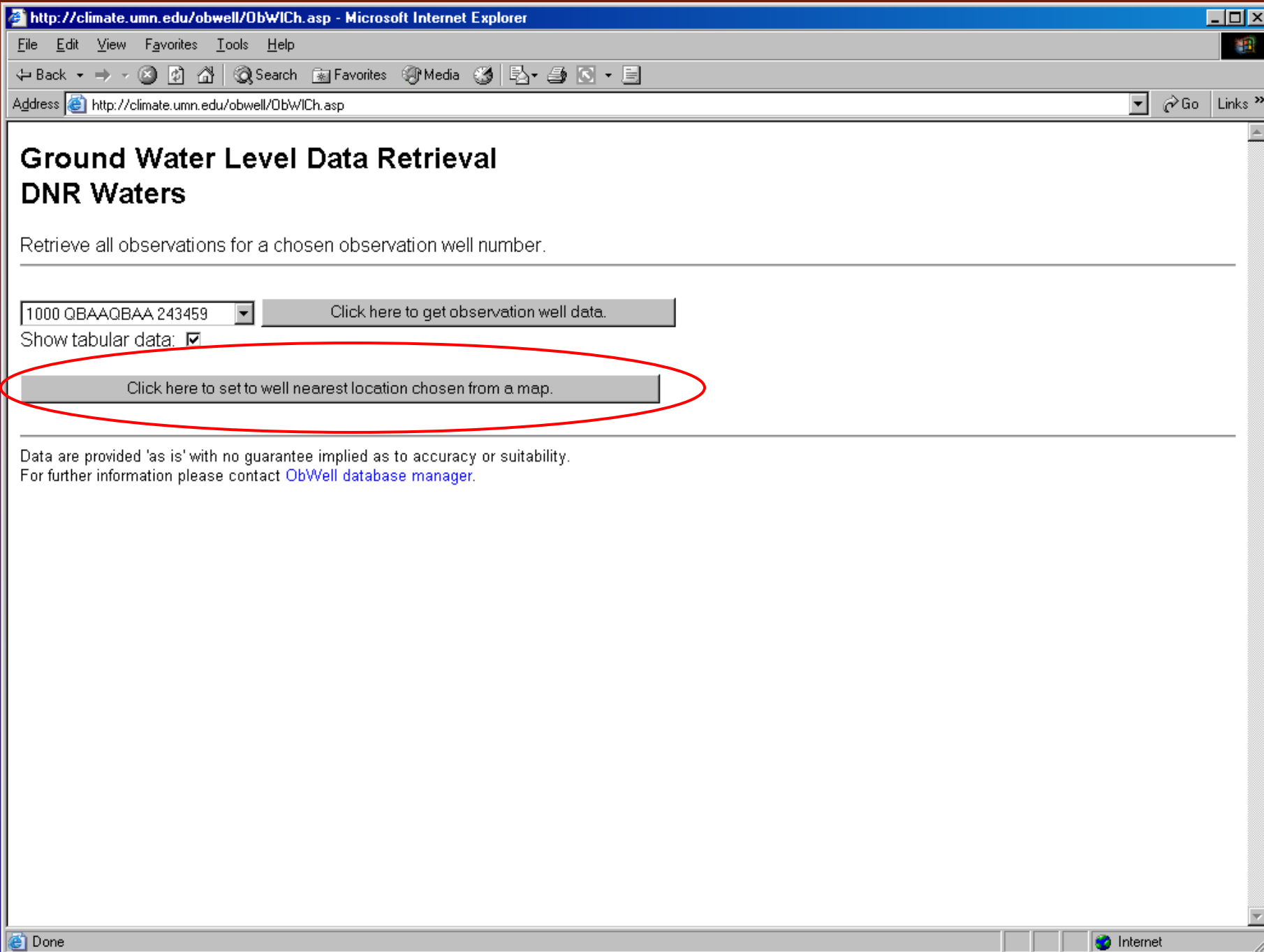
**Well Details:****DNR Obwell Number:** 71018**MN Unique Well Number:** 244456**Nearby Town:** SANTIAGO**Location (Txxx Rxx Sxx):** 35, 27, 7**Well Completion Date:** 5/16/1977**Construction Details:****Well Depth (ft):** 16**Well Diameter (in):** 1.25**Casing Depth (ft):** 14**Screen Length (ft):** 2**Casing Material:** S**Measuring Point Height (ft):** 3**Ground Elevation (ft):** 995.1**Elevation Determination Method:** LEVEL**Aquifer Type:** Water Table**Aquifer Code:** QWTAQWTA**Measurement Status Code:** YES**Measured By:** SWCD**Water Level and Precipitation Data:**

Date	Depth to Water (ft. bgl)	Precipitation 12 month Cumulative Departure from Normal (inches)
5/16/1977,	6.62,	
5/31/1977,	,	-9.55
6/30/1977,	,	-9.11
7/2/1977,	6.96,	
7/16/1977,	7.89,	
7/30/1977,	8.15,	
7/31/1977,	,	-9.25
8/18/1977,	8.66,	
8/31/1977,	,	-3.31
9/5/1977,	5.89,	
9/23/1977,	5.83,	
9/30/1977,	,	-0.14
10/10/1977,	5.13,	
10/30/1977,	5.59,	
10/31/1977,	,	3.10
11/13/1977,	5.19,	
11/30/1977,	,	6.58
12/31/1977,	5.62,	9.30
1/21/1978,	5.79,	



## Water Level and Precipitation Data:

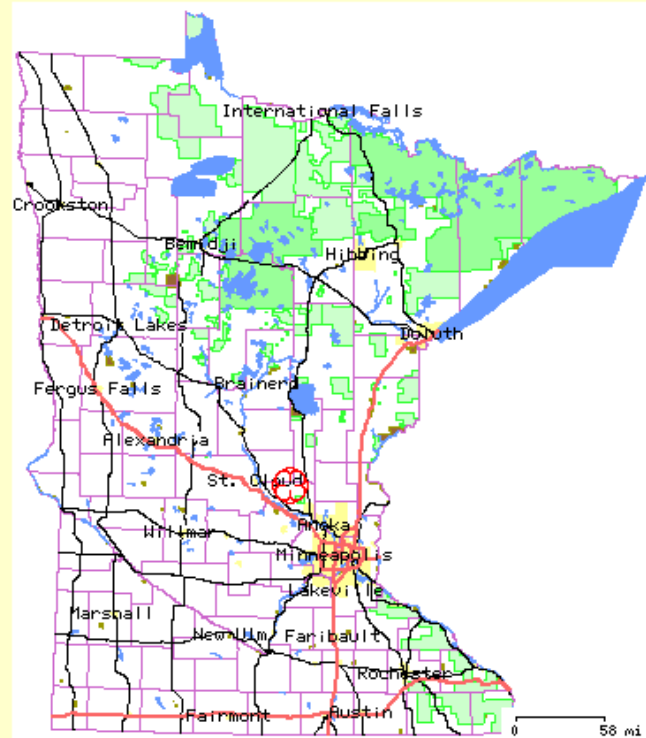
Date	Depth to Water (ft. bgl)	Precipitation 12 month Cumulative Departure from Normal (inches)
5/16/1977,	6.62,	
5/31/1977,	,	-9.55
6/30/1977,	,	-9.11
7/2/1977,	6.96,	
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9/23/1977,	5.83,	
9/30/1977,	,	-0.14
10/10/1977,	5.13,	
10/30/1977,	5.59,	
10/31/1977,	,	3.10
11/13/1977,	5.19,	
11/30/1977,	,	6.58
12/31/1977,	5.62,	9.30
1/21/1978,	5.79,	
1/31/1978,	,	8.86
2/20/1978,	6.82,	
2/28/1978,	,	8.29
3/10/1978,	7.04,	
3/26/1978,	5.40,	
3/31/1978,	,	6.63
4/9/1978,	4.82,	
4/27/1978,	4.90,	
4/30/1978,	,	6.37
5/14/1978,	5.14,	
5/27/1978,	5.14,	
5/31/1978,	,	5.92
6/10/1978,	5.37,	
6/26/1978,	5.25,	
6/30/1978,	,	4.45
7/14/1978,	5.05,	
7/30/1978,	5.42,	
7/31/1978,	,	7.70
8/12/1978,	5.70,	
8/25/1978,	5.27,	
8/31/1978,	,	9.90
9/10/1978,	5.57,	
9/29/1978,	5.25,	
9/30/1978,	,	7.32
10/14/1978,	5.40,	
10/31/1978,	5.56,	5.25
11/14/1978,	5.88,	
11/30/1978,	,	3.40
12/15/1978,	6.12,	
12/31/1978,	,	3.56





## Minnesota location selector

Click on map **or** choose from options and click on "update target" button after selection is made.



### Select by nearest community

community-county

### Select by map coordinates

Xutm:

Yutm:

latitude

longitude

township

range

section

county name-township name

Latitude/Longitude and UTM values are all NAD83.

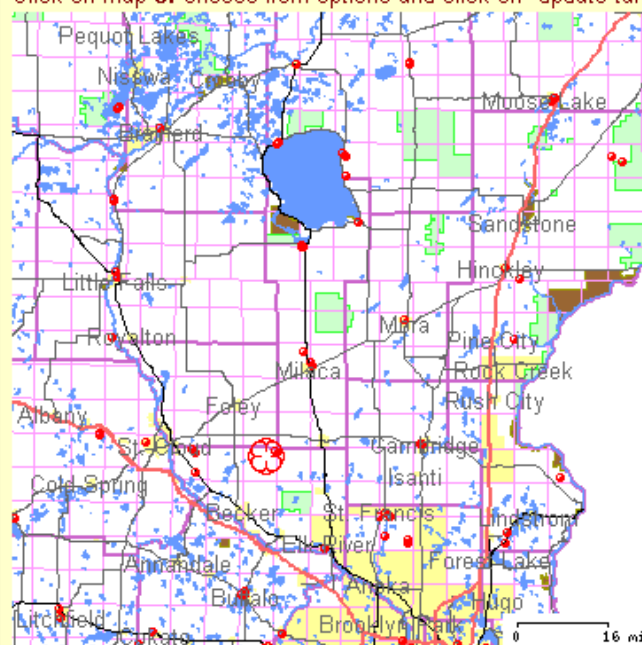
State Climatology Office - MnDNR - Waters, 1999-2002

MapServer is used to generate this page and its contents.

e-mail: [State Climatology Office](mailto:State Climatology Office)

## Minnesota location selector

Click on map **or** choose from options and click on "update target" button after selection is made.



### Select by nearest community

community-county

Santiago-Sherburne

### Select by map coordinates

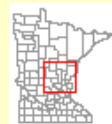
Xutm: 438000 Yutm: 5042400

latitude 45.53238 longitude 93.79404

township 35 range 28 section 11

county name-township name

Sherburne-Santiago



update target

zoom  
in

zoom  
out

done/return

cancel

help

topo

Latitude/Longitude and UTM values are all NAD83.

State Climatology Office - MnDNR - Waters, 1999-2002

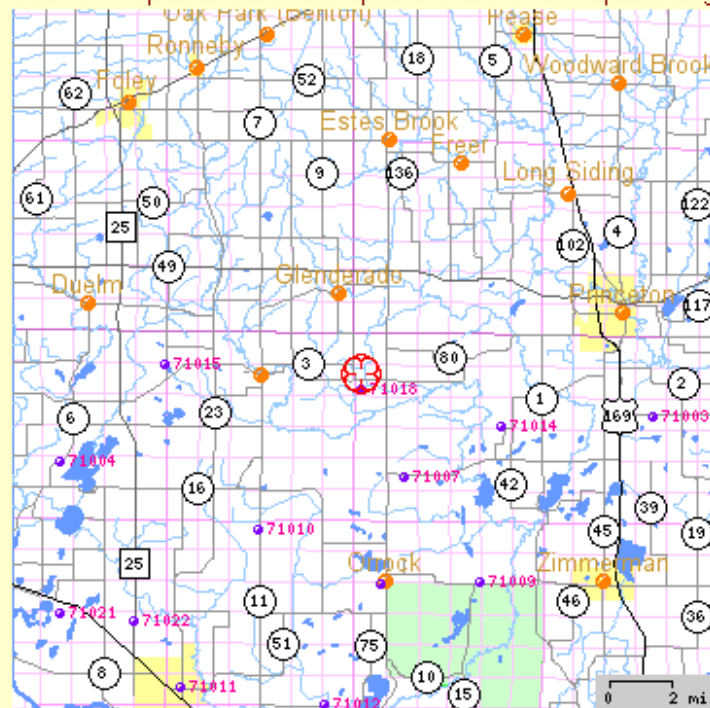
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## Minnesota location selector

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### Select by nearest community

community-county

Glendora-Benton

### Select by map coordinates

Xutm:

441200

Yutm:

5044000

latitude

45.54705

longitude

93.75325

township

35

range

27

section

6

county name-township name

Sherburne-Blue hill



update target

zoom  
in

zoom  
out

done/return

cancel

help

topo

Latitude/Longitude and UTM values are all NAD83.

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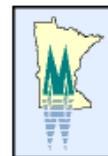


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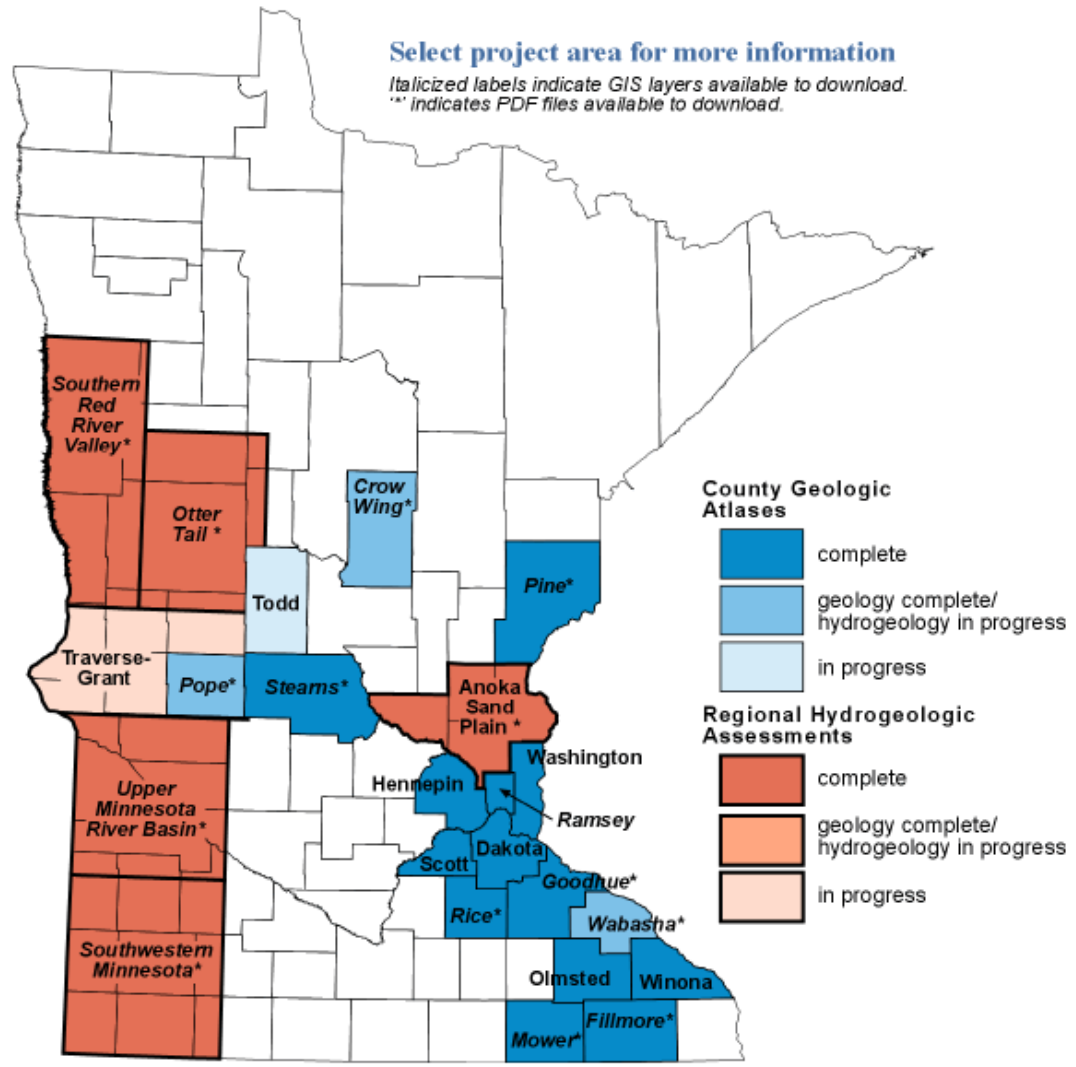
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County Atlas - Regional Assessment Program

Study areas completed or in progress

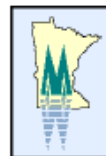


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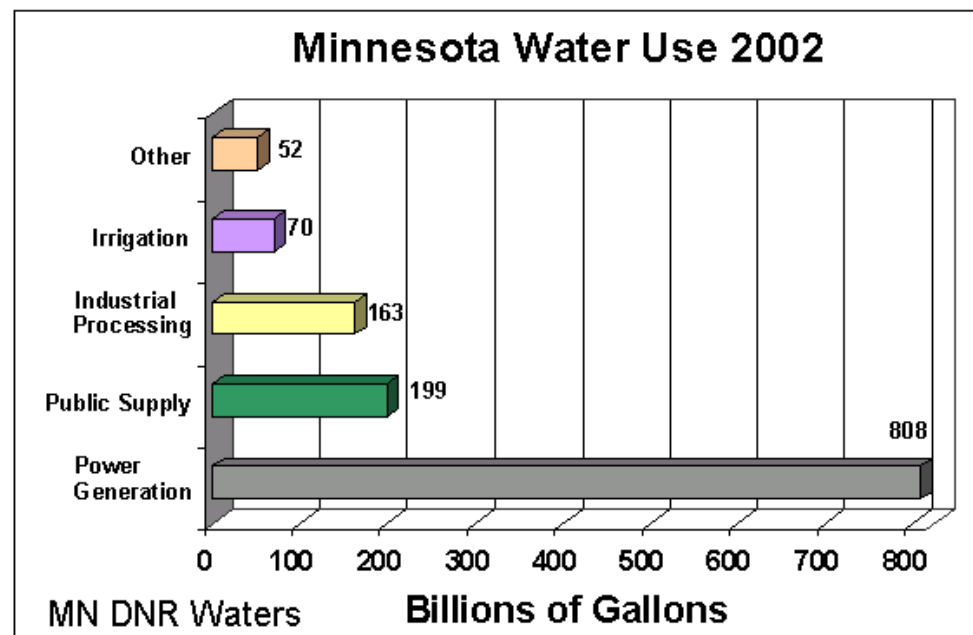


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## Water use - Water Appropriations Permit Program

Minnesota water use data were gathered from permit holders who report the volume of water used each year.



### Major Water Use Categories

**Power Generation** - water used to cool power generating plant equipment. This is historically the largest volume of use and relies almost entirely on surface water sources. Power Generation use is primarily non-consumptive, in that most of the water withdrawn is returned to its original source.

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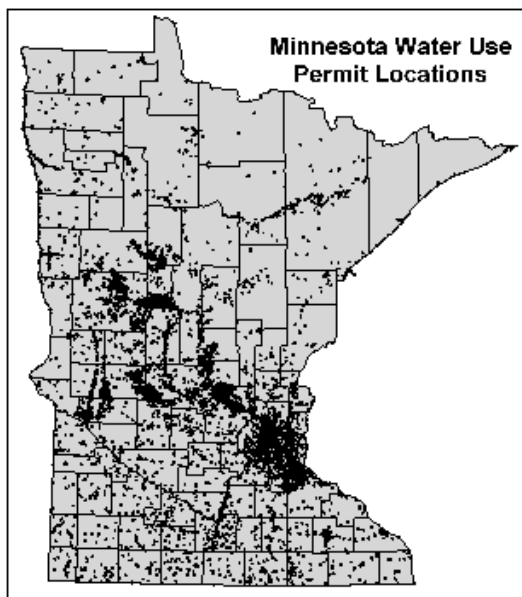
Year

1998 1999 2000 2001 2002

## Active Permit Information

Permit information reports are generated directly from the main database files. The Permit Information Report was created 8/22/2003:

- Water use data 1998 to 2002
  - [MS Excel 5.0](#) 1377Kb (stored as a ZIP file)
- Water use data 1998 to 2002 (PDF 1Mb each) sorted by
  - [county, location](#)
  - [permit number](#)
  - [permit holder name](#)

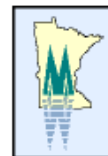


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## Stream Hydrology Program products

Information on statewide stream flow conditions is presented as [Stream Flow Reports](#).

The DNR Waters Stream Hydrology staff monitors streams for short-term (1-2 years) projects. Some of these projects are published in reproducible reports. Check the [list of current and past monitoring stations](#).

Sources of stream flow information (external links) include the following:

- [U.S. Geological Survey - Minnesota, Water Resources Data](#)
- ~~[National Weather Service River Forecast Center - Chanhassen](#)~~
- [U.S. Army Corps of Engineers - St. Paul District](#)
- [duluthstreams.org - Funded by U.S. Environmental Protection Agency](#)
  
- [U.S. Geological Survey - Wisconsin](#)
- [U.S. Geological Survey - North Dakota](#)

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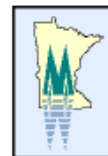
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### SEARCH DNR:

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## LAKE FINDER

Shortcuts: go!

[Site Map](#) | [Contact the DNR](#) | [What's New?](#) | [Newsroom](#) | [Events](#) | [Search](#)
[MN DNR Home](#) >

## Lake Finder

## FIND A LAKE:

Lake Name/ID: 

AND/OR

County: 

Get lake data

The Lake Finder contains data for more than 4,500 lakes and rivers throughout Minnesota, including: [lake surveys](#), [lake depth maps](#), [lake water quality data](#) and [lake water clarity data](#) (from the [Pollution Control Agency](#)), [satellite-based water clarity information](#) (from the University of Minnesota), lake notes, and [fish consumption advice](#) (from the [Department of Health](#)).

Check the [list of lakes infested with invasive species](#) [PDF](#) and see [selected infestation maps](#).

## STOCKING REPORTS:

Report Year: 

AND

County: 

AND/OR

Species: 

Generate Report

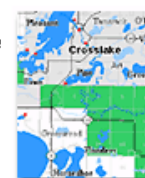
The stocking report section of the **Lake Finder** provides access to 1998-2001 stocking activity by fish species and/or county. Reports are comprised of information for many lakes and are intended as a summary. [Making sense of stocking reports](#).

[Need help?](#)

## Top 10 Most Requested Lakes

- Leech Lake, Cass County: [survey/map](#)
- Lake Mille Lacs, Mille Lacs County: [survey/map](#)
- Lake Winnibigoshish, Cass County: [survey/map](#)
- Lake Vermilion, St. Louis County: [survey/map](#)
- Lake of the Woods, Lake of the Woods County: [survey](#)
- Upper Red Lake, Beltrami County: [survey](#)
- Otter Tail Lake, Otter Tail County: [survey/map](#)
- Lake Minnetonka, Hennepin County: [survey/map](#)

If you'd rather browse information for a number of lakes, or can't remember a lake name, then use our [Recreation Compass](#) interactive mapping tool. With it, you can zoom in to the part of the state you're interested in and get information by just clicking in a lake. Other shortcuts are provided to help you get to a particular city, lake or park fast.







Shortcuts: go!

[Site Map](#) | [Contact the DNR](#) | [What's New?](#) | [Newsroom](#) | [Events](#) | [Search](#)[MN DNR Home](#) > [Lake Finder](#) >

## Search Results

[How to use these results](#)  
[Search again](#)

	lake survey	lake maps	lake water levels	fish consumption advisory MDH	lake water quality	lake water clarity	lake water clarity by satellite	recreation compass	topographic maps
Mille Lacs - 48000200 Mille Lacs	✓	✓	✓	✓	✓	✓	✓	✓	✓
Notes: <a href="#">Eurasian watermilfoil</a> present, confirmed 1998.									

[How to use these results](#)  
[Search again](#)

### How to use these results:

Click on the ✓ in the table above to retrieve specific information for a particular lake. Click on the column headers for general information about that type of data.

[Back to top](#)[Back to top](#)

Main Categories: [About the DNR](#) | [Education & safety training](#) | [Grants](#) | [Jobs](#) | [Maps](#) | [Natural resources](#) | [Outdoor activities](#) | [Regulations, licenses, permits](#) | [Public input](#) | [Publications](#) | [Stewardship in your backyard](#) | [Volunteering](#)

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## LAKE FINDER

Shortcuts: [Site Map](#) | [Contact the DNR](#) | [What's New?](#) | [Newsroom](#) | [Events](#) | [Search](#)[MN DNR Home](#) > [Lake Finder](#) >**Lake water level report**

Lake name: Mille Lacs

County: Mille Lacs

**Water Level Data**

Period of record: 06/11/1931 to 10/06/2003

# of readings: 22090

Highest recorded: 1253.43 ft (08/22/1972)

[Highest known](#): 1253.6 ft

Lowest recorded: 1245.74 ft (10/19/1936)

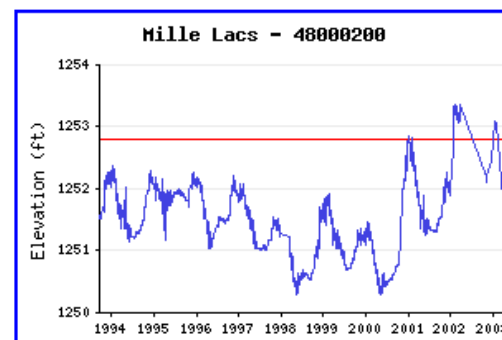
Recorded range: 7.69 ft

Average water level: 1250.85 ft

Last reading: 1251.47 ft (10/06/2003)

[OHW](#) elevation: 1252.8 ft

Datum: 1929 (ft)

Download lake level data as: [dBase](#) [ASCII](#) (If you have trouble try right clicking on the appropriate link and choosing the "Save ... As" option.)

Last 10 years of data, click to enlarge.

**Benchmarks**

Elevation: 1254.26 ft

Date Set: 06/06/2000

Datum: 1929 (ft)

**Benchmark Location**

Township: 42 Range: 26 Section: 22

Description: A chiseled square on concrete apron at lakeside door to boat house at the Cove Bay public access on south side of lake.

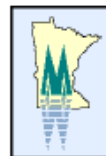
Main Categories: [Outdoor Activities](#) | [Regulations, Licenses, Permits](#) | [Natural Resources](#) | [Education & Safety](#) | [About the DNR](#) | [Maps](#) | [Publications](#) | [Employment](#) | [Volunteering](#) | [Technical & Financial Assistance](#) | [Public Input](#)

[Site Map](#) | [Contact the DNR](#) | [What's New?](#) | [Newsroom](#) | [Events](#)[MN DNR Home](#) > [Waters](#) >

## Water resources data

DNR Waters programs create a wide variety of data. This is a list of links to data that can be viewed online or downloaded.

- [Ground Water Level Data](#) - View hydrographs and acquire data for wells in DNR Waters' [Observation Well Program](#).
- [Ground-Water Resources and Pollution Sensitivity](#) - Download Geographic Information Systems (GIS) layers created by the [Groundwater Mapping Program](#).
- [Water Use Data](#) - Maps, tabular data and ArcView files of water use information from the [Water Appropriation Permit Program](#).
- [Stream Flow Data](#) - View maps of stream flow data on a weekly or monthly basis. The [Stream Hydrology Program](#) creates this data.
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## Climatology Working Group

State Climatology Office - DNR Waters

Extension Climatology Office - MES

Academic Climatology - U of Minnesota

Climate Monitor

\*Present Weather \*Rainfall/Snow Depth Maps and Tables  
\*Climate Narratives \*Drought Monitor

Retrieve Historical Data

\*Interactively Retrieve Climate Data \*Storm Events  
Data for Legal Purposes

Summaries/Publications

\*Climate Normals \*Climate Extremes  
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#### latest developments

- dry mid-summer through autumn
- drought information resources

#### Quick Links

[Twin Cities Climate Data](#)  
[Mark Seeley's WeatherTalk](#)  
[Snow Depth/Trail Conditions](#)

#### Other Topics

[Kuehnast Lecture Series](#)  
["Snow Rules!" - North Shore Snow Project](#)  
[Statement on Climate Change](#)

[About Us](#)  
[Comments/Questions](#)

URL: <http://climate.umn.edu>  
Last modified: December 5, 2003

Affiliations:  
[Department of Natural Resources - Division of Waters](#)  
[University of Minnesota - Department of Soil, Water, and Climate](#)

"... and bring warm clothes!"





## 'Closest Station' Climate Data Retrieval

The high density precipitation archive of volunteer precipitation data in Minnesota and/or the 'summary of the day' data set of the National Weather Service Cooperative program are searched for data which is closest to the target location. Values from the sites closest to your target along location information for each month of data are returned to you at the bottom of the page. Please be patient, it may take a minute to retrieve your data.

[Obtaining Data for Legal Purposes](#)

Target location is Lat: Lon:

set location

☐ retrieve **only** this station: 210146

years: 2004 to 2004

number of **missing days** allowed per month: 3

retrieve data from the following data sources:

- ☐ **Precipitation** from *High Density Network*
- ☐ **Precipitation** from *National Weather Service*
- ☐ **Temperature** from *National Weather Service*
- ☐ **Snow** from *National Weather Service*

get monthly

get daily

return to retrieval selection

File Edit View Favorites Tools Help

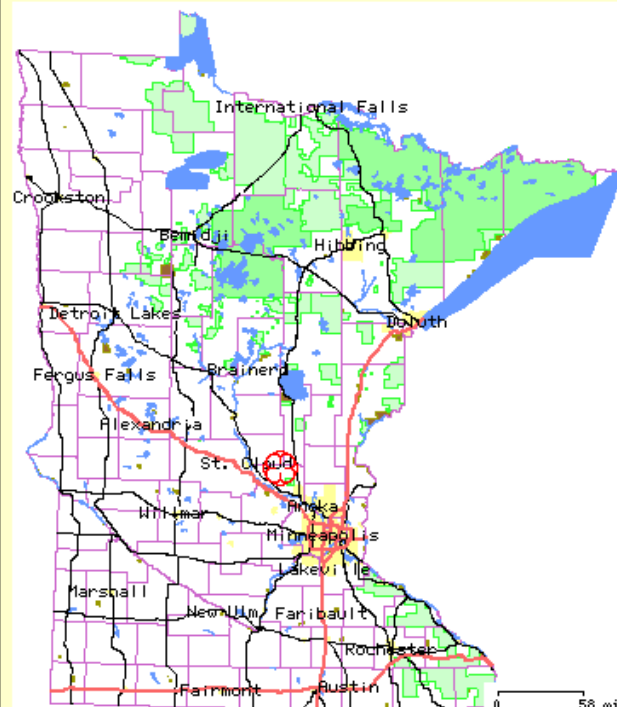
Back Forward Stop Home Search Favorites Media Print Copy Paste

Address <http://climate.umn.edu/MNlocMS/MNlocNew.asp>

Go Links »

## Minnesota location selector

Click on map or choose from options and click on "update target" button after selection is made.



### Select by nearest community

community-county

### Select by map coordinates

Xutm:

Yutm:

latitude

longitude

township range section

county name-township name

Latitude/Longitude and UTM values are all NAD83.

State Climatology Office - MnDNR - Waters, 1999-2002

[MapServer](#) is used to generate this page and its contents.

e-mail: [State Climatology Office](#)

File Edit View Favorites Tools Help

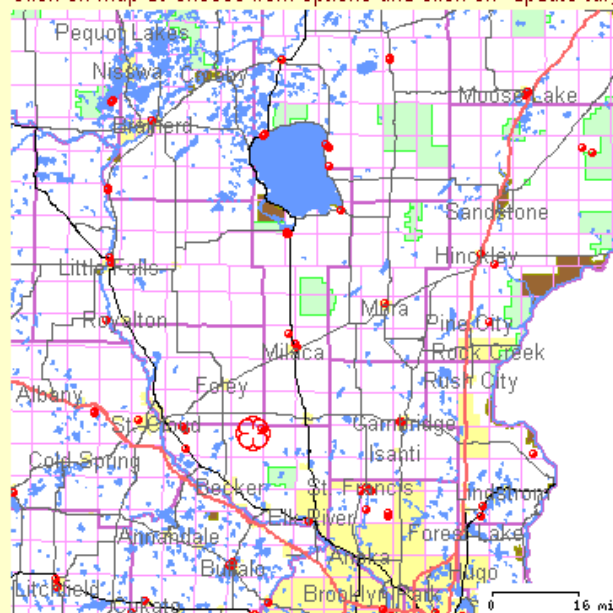
Back Forward Stop Home Search Favorites Media Print Copy Paste

Address <http://climate.umn.edu/MNlocMS/MNlocNew.asp>

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### Select by nearest community

community-county

### Select by map coordinates

Xutm:

Yutm:

latitude

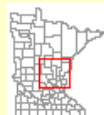
longitude

township

range

section

county name-township name



Latitude/Longitude and UTM values are all NAD83.

State Climatology Office - MnDNR - Waters, 1999-2002

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[Obtaining Data for Legal Purposes](#)

**Target** location is Sherburne Santiago 35N 28W S11  
Lat: 45.53238 Lon: 93.79404

set location

☐ retrieve **only** this station: 217502 SANTIAGO 3E

years: 2004 to 2004

number of **missing days** allowed per month: 3

retrieve data from the following data sources:

- ☐ **Precipitation** from *High Density Network*
- ☐ **Precipitation** from *National Weather Service*
- ☐ **Temperature** from *National Weather Service*
- ☐ **Snow** from *National Weather Service*

get monthly

get daily

☐ retrieve **only** this station: 217502 SANTIAGO 3E

years: 1977 to 2003

number of **missing days** allowed per month: 3

retrieve data from the following data sources:

- ☐ **Precipitation** from *High Density Network*  
☒ **Precipitation** from *National Weather Service*  
☐ **Temperature** from *National Weather Service*  
☐ **Snow** from *National Weather Service*

get monthly

get daily

Target: T35 R28 S11

mon	year	cc	tttN	rrW	ss	nnnn	oooooooo	pre	aaaaaa	Tmx	Tmn	aaaaaa	sno	SnD	dis
Jan	1977							217502	.93						1 mi.
Feb	1977							217502	1.72						1 mi.
Mar	1977							217502	4.29						1 mi.
Apr	1977							217502	2.57						1 mi.
May	1977							217502	3.76						1 mi.
Jun	1977							217502	3.25						1 mi.
Jul	1977							217502	2.89						1 mi.
Aug	1977							217502	8.11						1 mi.
Sep	1977							217502	2.97						1 mi.
Oct	1977							217502	3.19						1 mi.
Nov	1977							217502	3.21						1 mi.
Dec	1977							217502	2.11						1 mi.
Jan	1978							217502	.13						1 mi.
Feb	1978							217502	.07						1 mi.
Mar	1978							217502	.82						1 mi.
Apr	1978							217502	4.58						1 mi.
May	1978							217502	3.18						1 mi.
Jun	1978							217502	3.04						1 mi.
Jul	1978							217502	6.17						1 mi.
Aug	1978							217502	6.07						1 mi.
Sep	1978							217502	4.26						1 mi.
Oct	1978							217502	.35						1 mi.
Nov	1978							217502	.64						1 mi.



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- dry mid-summer through autumn
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[Mark Seeley's WeatherTalk](#)  
[Snow Depth/Trail Conditions](#)

#### Other Topics

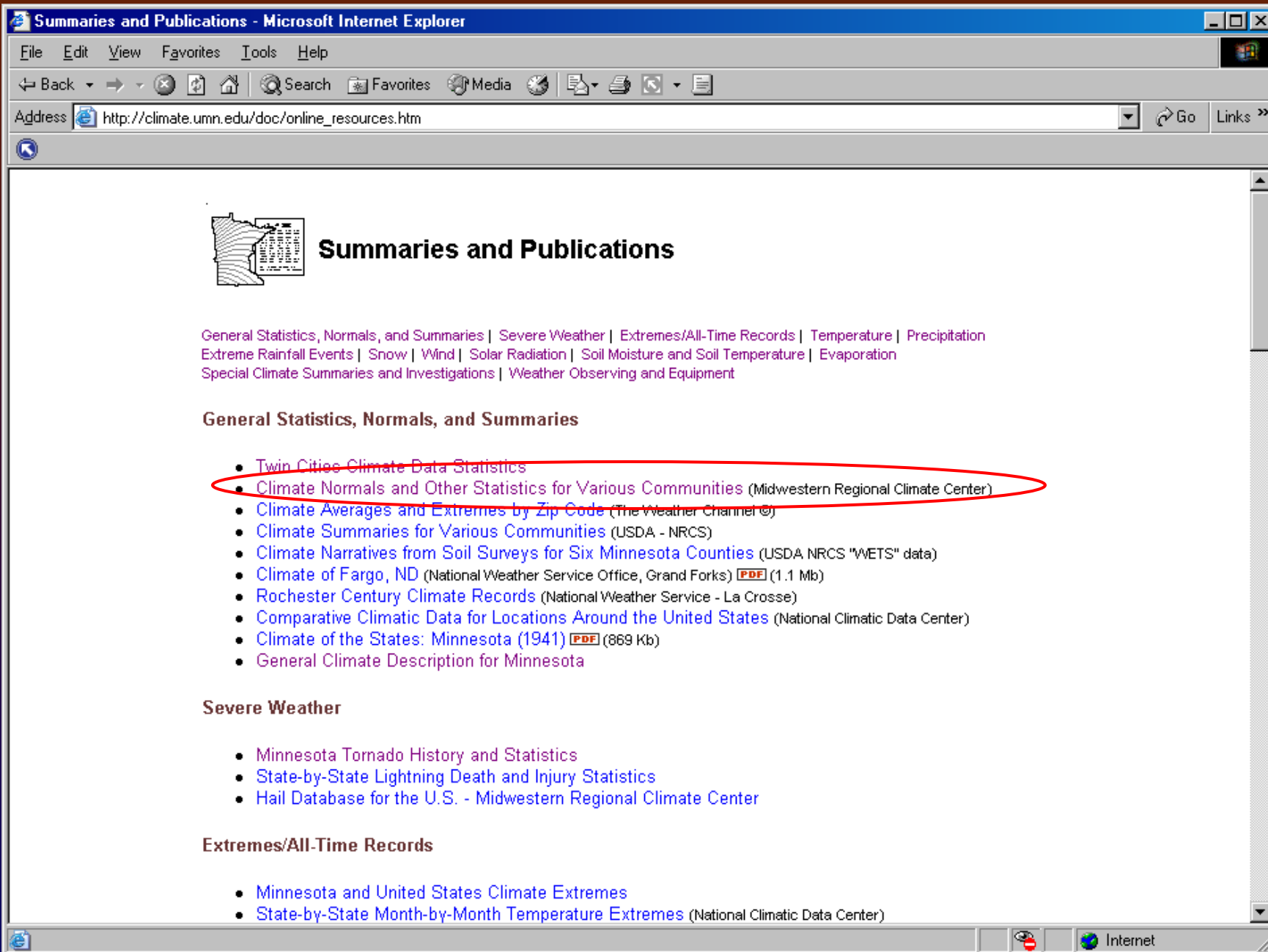
[Kuehnast Lecture Series](#)  
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"... and bring warm clothes!"





Historical Climate Summaries Online Data | Historical Climate Summeries - Microsoft Internet Explorer

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Address [http://mcc.sws.uiuc.edu/html/MWclimate\\_data\\_summeries.htm#](http://mcc.sws.uiuc.edu/html/MWclimate_data_summeries.htm#) Go Links »

Midwest Climate Watch

MICIS

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Significant Events

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[ Great Lakes Net Basin ]

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 COMMENTS

The source of the data in these products comes from the U.S. Cooperative Network, augmented by observations from the relatively small number of NWS sites. These cooperative sites are operated by volunteer observers using approved instruments and observing techniques. It is only through their efforts that we have long-term data for such a large number of sites.

Choose a State:

Minnesota

Choose a Station:

ST CLOUD MUNICIPAL AP

ST CLOUD MUNICIPAL AP

ST FRANCIS 4 S

ST JAMES FILT PLANT

ST PAUL

ST PETER 2 SW

SANDY LAKE DAM LIBBY

SANTIAGO 3 E

SPRINGFIELD 1 NW

SPRING GROVE

STEWART

STILLWATER 1 SE

Go

☐ Temperature ☒ Precipitation

Go to ST CLOUD MUNICIPAL AP

Internet

Precipitation Summary - 217294 ST CLOUD WSO AP, MN - Microsoft Internet Explorer

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Address [http://mcc.sws.uiuc.edu/Precip/MN/217294\\_psum.html](http://mcc.sws.uiuc.edu/Precip/MN/217294_psum.html) Go Links >>

## Historical Climate Data

### Precipitation Summary

Station: 217294 ST CLOUD WSO AP, MN

#### 1971-2000 NCDNC Normals

Element	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Precip (in)	0.76	0.59	1.50	2.13	2.97	4.51	3.34	3.93	2.93	2.24	1.54	0.69	27.13

#### Precipitation Extremes

Period of Record: 1893-2001

Month	High (in)	Year	Low (in)	Year	1-Day Max (in)	Date
JAN	2.75	1897	0.00	1898	1.90	01-03-1897
FEB	2.94	1922	0.00	1894	1.81	02-28-1951
MAR	4.53	1897	0.10	1959	2.00	03-19-1897
APR	8.42	2001	0.05	1987	3.52	04-22-2001
MAY	9.68	1912	0.20	1900	5.00	05-16-1894
JUN	10.56	1920	0.05	1988	3.46	06-26-1983
JUL	12.81	1897	0.21	1975	4.80	07-02-1903
AUG	9.28	1900	0.42	1933	4.57	08-03-1956
SEP	10.72	1926	0.07	1952	3.62	09-08-1985
OCT	7.95	1899	0.00	1895	3.21	10-01-1950
NOV	4.16	1922	0.00	1916	2.02	11-09-1977
DEC	2.04	1969	0.00	1895	1.07	12-25-1893
Annual	41.01	1897	14.64	1910	5.00	05-16-1894
Winter	5.34	1922	0.53	1902	1.90	01-03-1897

Done Internet

# Other Data Resources

- County Well Index data
- Barometric pressure data from **AnythingWeather.com**
- Water Quality data from MPCA

Environmental Data Access (EDA) Project



# Other Data Resources

- County Well Index data





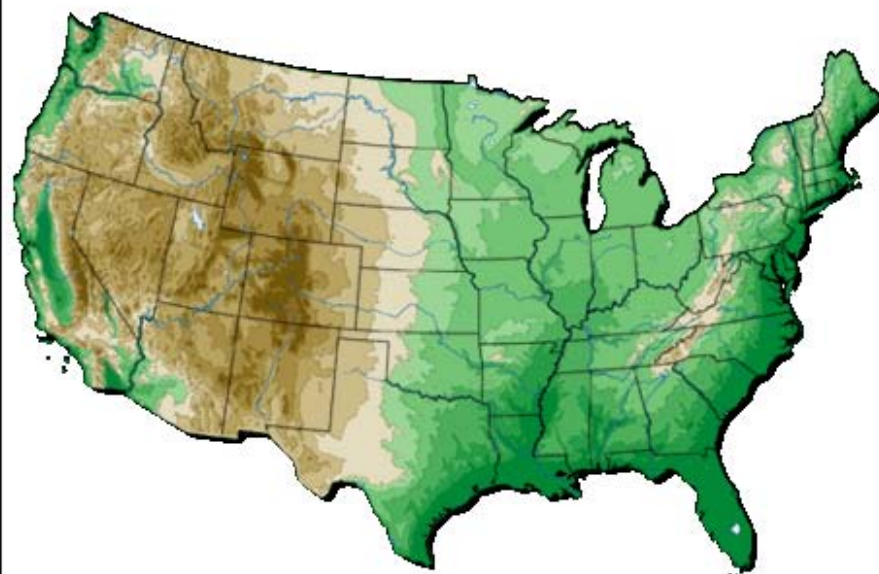
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Click on a state for complete weather data.

LOCAL WEATHER

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- **Real-Time "MetWatch" Weather Services.** Our meteorologists provide for YOU:
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  - Monitoring of all inclement and severe weather;
  - Personal notification of such weather in your area.
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# Minnesota Products

Minnesota [Surface Plot](#)  
Minnesota [Wind Vector Plot](#)

NWS Forecast Products

NWS Forecast Discussions

NWS Climate/Record Event Products

NWS Local Storm Reports

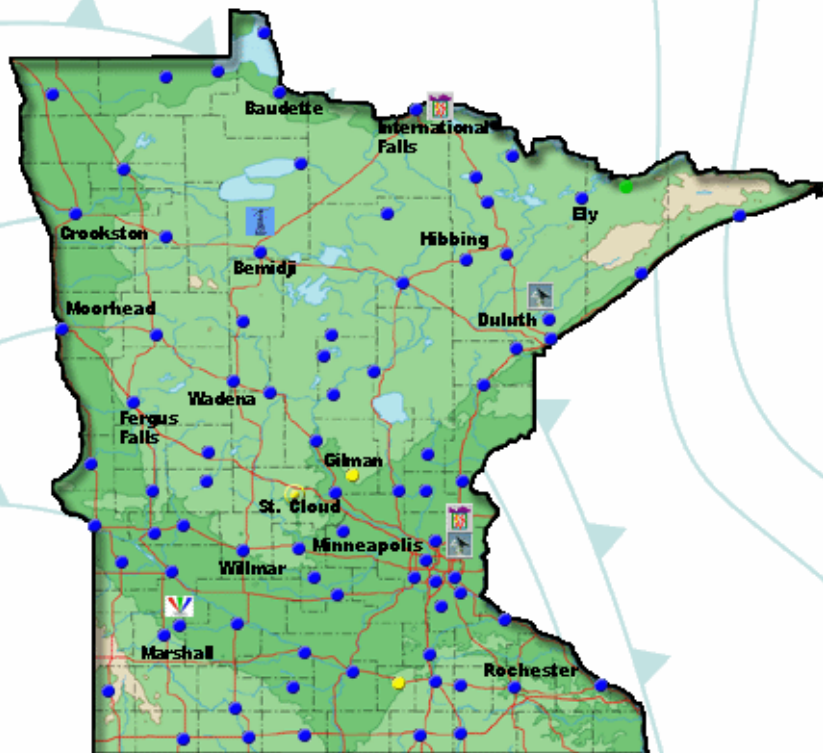
NWS Temperature/Precipitation Reports

NWS Weather Special Statements & Watches

NWS Weather Warnings (Latest Only)

NWS Misc.

NWS Doppler Radar



Anything Weather Station NWS Station Forest Service Stations Private Station Flood District Station Live Web Cam Doppler Radar Skew T Plot Profiler NOAA Wx Radio

[Click on the legend to learn more about each site.](#)



# AnythingWeather Daily Report

## February 10, 2004

[previous day](#)
[next day](#)
**Daily Summary:**

High Temperature: 21.0°F 9:35:00 PM

Low Temperature: -5.0°F 7:55:00 AM

High Humidity: 86% 8:35:00 PM

Low Humidity: 70% 8:15:00 AM

Total Rainfall (Precipitation): 0.00"

Peak Wind Gust: 16 mph 3:15:00 PM

**Station Location:**

Fergus Falls Municipal Automatic Reporting Station

Fergus Falls, MN

Elevation: 1,184 Feet

Lat: 46.28N Long: 096.15W

[Use metric units](#)[Back to Current Conditions](#)[Go to printer friendly Daily Report](#)

Time	Temp. (°F)	Humidity (%)	Dew Pt. (°F)	Barometric Pressure (in.)	Wind Speed (mph)	Peak Gust (mph)	Wind Direction	Rainfall (in.)
00:15	13.0	79	8.0	30.09	11	--	NNW	0.00
00:35	13.0	79	8.0	30.09	8	--	NNW	0.00
00:55	13.0	79	8.0	30.08	9	--	NW	0.00
01:15	13.0	79	8.0	30.08	14	--	NNW	0.00
01:35	13.0	72	6.0	30.08	14	--	NW	0.00
01:55	13.0	79	8.0	30.08	10	--	NNW	0.00
02:15	12.0	78	6.0	30.08	11	--	NNW	0.00
02:35	12.0	78	6.0	30.08	8	--	NNW	0.00
02:55	12.0	78	6.0	30.08	9	--	NNW	0.00
03:15	12.0	78	6.0	30.08	9	--	NW	0.00
03:35	12.0	78	6.0	30.08	11	--	NNW	0.00
03:55	12.0	78	6.0	30.08	10	--	NNW	0.00
04:15	12.7	79	7.3	30.08	10	--	NW	0.00
04:35	12.0	78	6.0	30.07	10	--	NW	0.00
04:55	12.0	78	6.0	30.06	11	--	NW	0.00
05:15	12.0	78	6.0	30.06	10	--	NW	0.00
05:35	8.0	78	3.0	30.06	8	--	NW	0.00
05:55	6.0	78	1.0	30.05	5	--	WNW	0.00
06:15	3.0	84	0.0	30.05	5	--	W	0.00
06:35	1.0	84	-2.0	30.05	5	--	W	0.00
06:55	0.0	77	-5.0	30.04	5	--	W	0.00
07:15	0.0	77	-5.0	30.04	5	--	W	0.00
07:35	-2.0	77	-7.0	30.04	5	--	W	0.00
07:55	-5.0	84	-9.0	30.04	5	--	W	0.00





# Other Data Resources

- Water Quality data from MPCA

Environmental Data Access  
(EDA) Project





## Minnesota Pollution Control Agency

[Home](#) | [Site Index](#) | [Glossary](#) | [What's New](#) | [Ask MPCA](#) | [Visitor Center](#)

Search



This Web site contains [PDF documents](#) that require Adobe Acrobat for viewing.

[MPCA Home](#) > [MPCA Searchable Environmental Data](#) > Environmental Data Access

## Environmental Data Access

### Water quality data and conditions of Minnesota's lakes, rivers and streams

Through this Web page you can find and download data from water quality monitoring sites located in Minnesota.

Where available, you can also view the conditions of lakes, rivers or streams that have been assessed.

### Search for monitoring sites or information about water quality conditions

- [View Surface Water Monitoring Sites and Data](#)
- [View Surface Water Conditions \(Assessments\)](#)

### Additional information to help you understand what you might find

- [Typical water quality conditions](#)
- [Downloading data](#)
- [How data is collected](#)
- [Background and future features of Environmental Data Access project](#)
- [Glossary of terms](#)
- [Comments and questions](#)
- [Disclaimer](#)
- [Fact sheet about Environmental Data Access project](#)
- [Related Links](#)

### View Surface Water Monitoring Sites and Data

There are two ways for users to find surface water monitoring sites and data.



## Explore Surface Water Monitoring Sites

Environmental Data Access

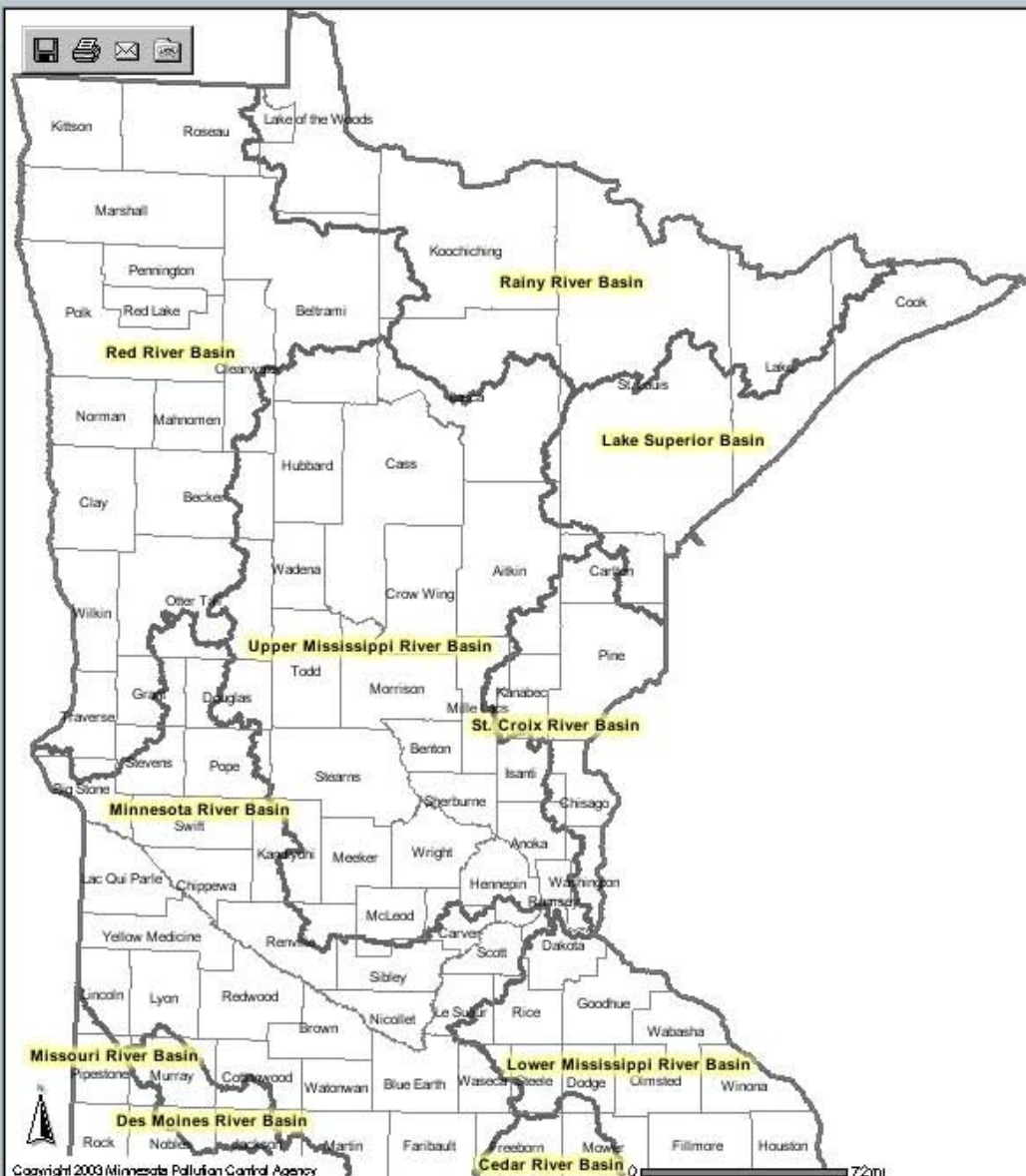
### Map Tools

- Zoom In
- Zoom Out
- Pan Map
- Back
- Reset Map
- New Search
- ID Location
- View Data
- Clear
- Print
- Help

Exit

### Pop-up blockers

should be disabled for the map viewer to work properly.



Copyright 2003 Minnesota Pollution Control Agency

### Search

Station Name:

Find

**Tip:** Type any part of a waterbody name to find the stations on that waterbody.

OR

**Example:** Brule, Rice, Mille Lacs

Watershed:

04010101 (1): Lake Superior (North)

### Layers

Show

- ☐ City Names
- ☒ County
- ☒ Basins
- ☐ DNR Major Watersheds

### Legend

- ☐ County
- ☒ Basins





## Explore Surface Water Monitoring Sites

Environmental Data Access

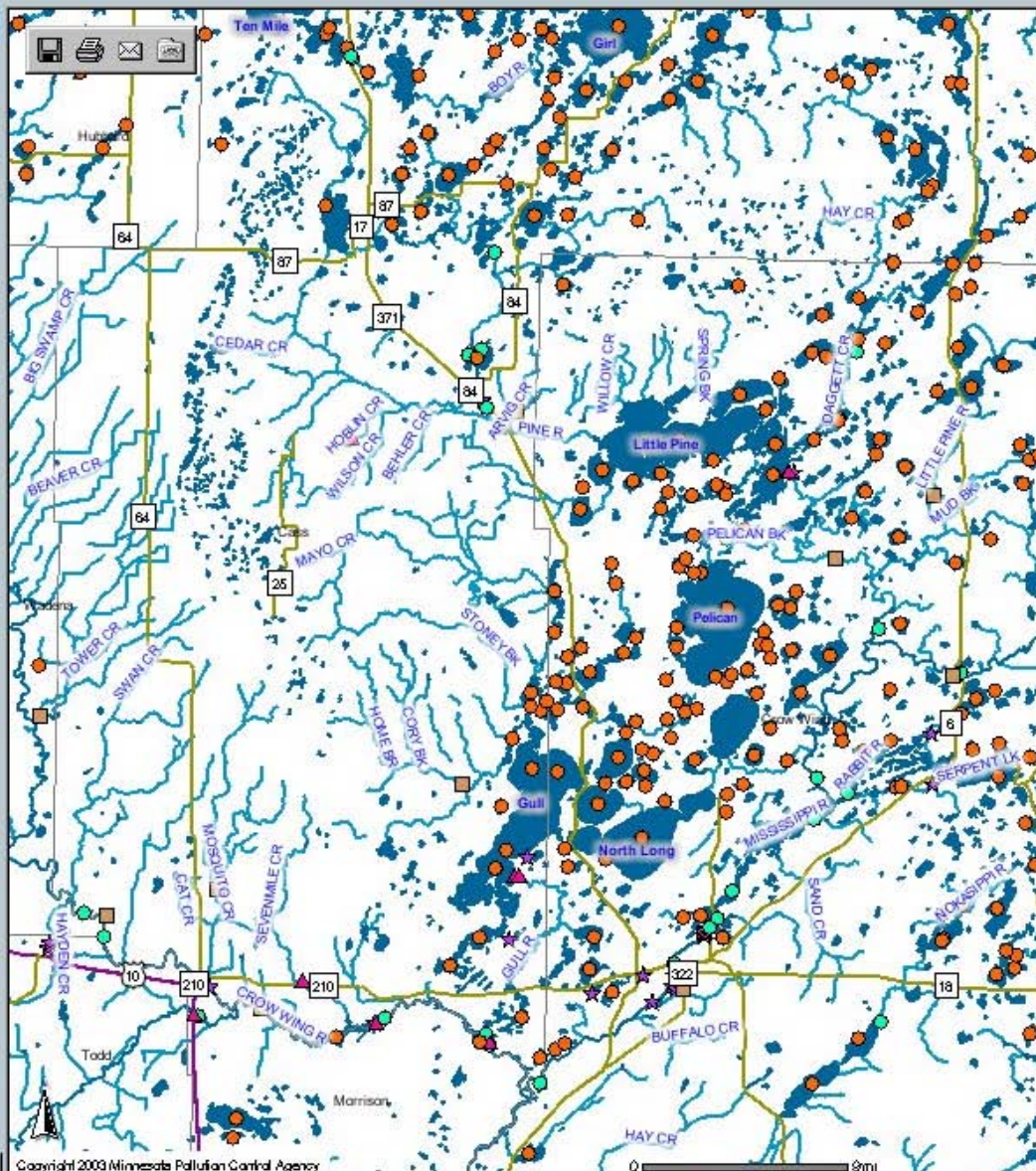
### Map Tools

- Zoom In
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**Tip:** Type any part of a waterbody name to find the stations on that waterbody.

OR

Watershed:

04010101 (1): Lake Superior (North)

**Example:** Brule, Rice, Mille Lacs

### Layers

Show

- ☒ Monitoring Stations
- ☐ City Names
- ☒ County
- ☐ DNR Major Watersheds
- ☒ Highways
- ☒ Lake or Large River
- ☐ Swamp/Marsh
- ☒ Streams/Rivers
- ☐ City/Township Boundary

### Legend

#### Monitoring Stations

- Lake
- Stream
- USGS
- Biological
- Discharger
- County
- Highways
- Interstate
- US Highways
- State Highways
- Lake or Large River
- Streams/Rivers

# GIS Data Deli

Only source of statewide UTM (Zone 15) data







GIS

Shortcuts:

go!

[Site Map](#) | [Contact the DNR](#) | [What's New?](#) | [Newsroom](#) | [Events](#)> [MN DNR Home](#) > [About the DNR](#) > [Bureaus](#) > [Management Information Services](#) >

## GIS

Welcome to the Minnesota Department of Natural Resource's Geographic Information Systems page.

GIS has been a part of tool used by DNR Staff since the early 1970s. During that time work was performed by a few DNR units, on a project by project basis, in coordination with the Minnesota Land Management Information System (MLMIS) at the University of Minnesota. At that time most of the work was done using early versions of what now is EPPL7.

In the mid 1980s, GIS began to make some major headway in the Department, when the Division of Forestry purchased "Hal", a PRIME 2250 minicomputer, to manage forest inventories using ARC/INFO.

In 1991, the DNR's first GIS UNIX workstations were purchased and GIS data layers, map products and tools began to be developed by various DNR units.

In 1994, the GIS Section in the Management Information Services (MIS) Bureau worked with GIS staff throughout the DNR and developed the "DNR GIS strategic plan" which set the basis for the future of GIS in the DNR. Since that time GIS has become integral to DNR's working environment with hundreds of users spread throughout the department. At the same time the GIS Section has strived to achieve the mission put forth in 1994 which is to "Improve resource management decisions by making quality geographic information, applications and analyses accessible to clients using GIS".

The links below lead to various maps, applications and educational materials that the GIS section has developed in pursuit of our mission. We hope you find them useful!

<a href="#">ArcView Resources</a>	ArcView extensions, tips, and training materials developed within the DNR
<a href="#">DNR GIS Technical Specifications</a>	Technical documents that describe the GIS infrastructure at the DNR.
<a href="#">Data Resources</a>	Link to the DNR Data Deli where users may obtain GIS data and metadata
<a href="#">Map Gallery</a>	A number of examples of how GIS is being used in the department

[Contact Information](#)[Back to top](#)

Main Categories: [About the DNR](#) | [Education & safety training](#) | [Grants](#) | [Jobs](#) | [Maps](#) | [Natural resources](#) | [Outdoor activities](#) | [Regulations, licenses, permits](#) | [Public input](#) | [Publications](#) | [Stewardship in your backyard](#) |

### SEARCH DNR:

go

### RELATED PAGES:

#### Bureaus

[Facilities & Operations Support](#)[Human Resources](#)[Information & Education](#)[License](#)[Management & Budget Services](#)[Management Information Services](#)[About the DNR](#)



GIS

Search the DNR

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## ArcView Resources

Welcome to the Minnesota Department of Natural Resource's ArcView GIS Resources WWW Page! This page was developed to support the distribution of ArcView GIS Resources to DNR Staffers and to the general GIS public.

All of these resources are provided free of charge and accordingly, are not warranted for any specific use. We do, however, strive to produce high quality software and would appreciate any comments that you may have.

There are a number of resources available from this page. Select from the following links

<b>UPDATED</b> 12/04/01	<a href="#">ArcView Extensions</a>	A collection of DNR created or customized extensions designed to make life easier.
<b>UPDATED</b> 12/01/01	<a href="#">GIS/GPS Training Materials</a>	The Training Materials are a collection of GIS/GPS classes, tipsheets, and extension documentation that have been developed by DNR Staffers.

### [Contact Information](#)

\*\*\*\*\*

**MN GIS/LIS Consortium  
13th Annual Fall Conference & Workshops  
RiverCentre Touchstone Energy® Place  
St. Paul, Minnesota  
October 8 - 10, 2003**

#### Description

Through workshops, conference sessions, tours and exhibits, field experts will cover a variety of technical GIS/LIS-related topics including "Web Mapping with OGC/WMS Using Existing Map Services," "GIS for Public Works" and "Project Management for GIS Techies." The conference is designed to appeal to a wide variety of people within the GIS/LIS fields from government official to academic and business specialists. However, the program is open to anyone interested in learning more about GIS/LIS in Minnesota.

**To register or receive more information,  
contact the MN GIS/LIS Consortium's office.**

Tel: (651) 203-7242

Fax: (651) 290-6279

E-mail: [jessicam@ewald.com](mailto:jessicam@ewald.com)Web Site: [www.mnqislls.org](http://www.mnqislls.org)

### RELATED PAGES:

#### Bureaus

[Facilities & Operations Support](#)[Human Resources](#)[Information & Education](#)[License](#)[Management & Budget Services](#)[Management Information Services](#)[About the DNR](#)

## ArcView Extensions

*The extensions found on this page were developed to help users be more productive with ArcView. Many of the extensions are generic in nature and of interest to many different users. Some of the extensions are directed at a particular audience for example, the DNR Forestry CSA Extension was built specifically for folks who use the DNR's Cooperative Stand Assessment (CSA) data and most likely not at all of interest to anyone else.*

*The GIS section strives to create and produce software that is of high quality and sufficiently documented (some better than others). We hope you find these programs useful. We are interested in any comments or suggestions you might have.*

	<a href="#">ArcView -&gt; EPPL7 Extension</a> Current Version 2.04 Date: 5/7/99	This extension integrates ArcView with the raster GIS EPPL7 and works with GeoTiff files. This gives the user some raster analysis capabilities including Image Rectification, Image Clipping, Image Rotation and others to come.
	<a href="#">ArcView Tools Extension</a> Current Version 1.3	This extension contains a number of utility tools including Clipping, Mosaic, Buffer, etc.
	<a href="#">DOQ/DRG Tools Extension</a> Current Version 1.3 Build Date: 12/21/98	A variety of tools for viewing DOQ's and DRG's. Allows the user to create DOQ Themes straight from a USGS County based DOQ CDROM without having to uncompress!
<del>Updated</del> 12/4/2000	<a href="#">Roadway Symbolology Extension</a> Current Version 1.4	This little beauty does a great job of doing roadway symbols in Arc/View. It supports the automatic generation of four types of road symbols and works off a roads database.
<del>Updated</del> 7/8/2004	<a href="#">DNR Random Sample Generator</a> Current Version 2.1 Build Date: 7/06/2004	This extension helps users create random and regularly spaced point samples and random transects.
<del>Updated</del> 12/4/2000	<a href="#">Recreation Symbolology Extension</a> Current Version 1.2 Build Date: 4/14/99	This extension includes a true-type font of 118 recreation symbols commonly used on map products. You can place these symbols as points or using leader lines.
<del>Updated</del> 8/15/2000	<a href="#">Stream Mode Digitizing Extension</a> Current Version 1.05	This extension provides the functionality to do on-screen stream digitizing of lines and polygons.
<del>Updated</del> 9/23/2004	<a href="#">Garmin GPS Extension</a> Current Version 4.4.2 Build Date: 09/23/2004	This extension allows users to upload and download Waypoints and Tracks from a Garmin GPS reciever and ArcView GIS. Now with USB connectivity support!
<del>Updated</del> 6/5/2001	<a href="#">DNR Forestry CSA Utilities</a> Current Version 1.5 Build Date: 07/12/2000	This extension was written for DNR staff that are using the Cooperative Stand Assessment (CSA) data for their work
<del>Updated</del> 4/24/2002	<a href="#">DNR Waters Extension</a> Current Version 2.0 Build Date: 2/22/2000	This extension creates a lithology stick (borehole) diagram and/or a well construction stick diagram from selected County Well Index (CWI) data. The extension will draw the stick diagram in scaled vertical cross section..

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## MAIN CATEGORIES:

**EDUCATION  
& SAFETY  
TRAINING****OUTDOOR  
ACTIVITIES  
& PLACES****MINNESOTA'S  
NATURAL  
RESOURCES****REGULATIONS,  
LICENSES,  
& PERMITS****ABOUT  
the DNR**[Recreation compass](#)[Lake finder](#)[Community forums](#)[Open the outdoors](#)[Stewardship in your  
backyard](#)[Minnesota Conservation Volunteer  
magazine](#)**Current conditions at  
St. Paul:** [Change city](#)

50° F and mostly sunny.

[Wildfire information](#)[Maps](#) | [Publications](#) | [Jobs](#) | [MN Conservation Corps](#) | [Volunteering](#) | [Grants](#) | [Public input](#) | [Seasonal FAQ](#)

## DNR NEWS:

**11/09/2004:** Special regulations for Lake of the Woods and the Rainy River aim to maintain walleye, sauger populations [Full story](#)**11/09/2004:** DNR encourages public input on proposed experimental regulations for Leech Lake; open houses scheduled for mid-December in Walke [Full story](#)**11/09/2004:** DNR proposes changes in classification and trail, road designations for Beltrami Island State Forest; public meeting scheduled [Full story](#)**Get DNR news by  
email!**[More DNR News Releases](#)

## EVENTS:

**11/20/04** Fort Snelling State Park[Hibernation](#)**11/20/04** Lost Valley Prairie - Washington County[Volunteer Work Day at Lost Valley Prairie SNA](#)**Chronic wasting disease info**

## CONTACT THE DNR:

(651) 296-6157 (Metro area) or  
(888) MINN-DNR (elsewhere)[Email the DNR](#)[State of Minnesota Website](#)DNR Divisions: [Ecological Services](#) | [Enforcement](#) | [Fish & Wildlife](#) | [Forestry](#) | [Lands & Minerals](#) | [Parks & Recreation](#) | [Trails & Waterways](#) | [Waters](#)DNR Mission Statement: *Our mission is to work with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to*

- [Timber harvest plans](#)
- [ToMO \(Tons of Maps Online\)](#)
- [Wildfire location maps](#)

## Online maps (printable)

### Recreation

- [Airphotos Online](#)
- [Lake depth maps](#)
- [Off-highway vehicle trails](#)
- [Scientific and natural areas](#)
- [State canoe routes](#)
- [State forests](#)
- [State parks](#)
- [State trails](#)
- [Trout streams - Southeastern Minnesota](#)
- North Shore Fishing Guide ([part 1](#) | [part 2](#))
- [Water access](#)

### Hunting

- [Bear hunting](#)
- [Deer hunting statistics](#)
- [Grouse drumming counts](#)
- [Moose hunting](#)
- [Pheasant roadside counts](#)
- [Wild turkey hunting](#)

### Natural resource management

- [Aggregate resource maps](#)
- [Regional hydrogeologic assessment maps](#)
- [Natural community and rare species county maps](#) (Minnesota County Biological Survey)
- [Public Waters Inventory \(PWI\) maps](#)

## Mapping resources

- [Data deli](#)

### Maps

- [Natural resources](#)
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- [Public input](#)
- [Publications](#)
- [Regulations, licenses, permits](#)
- [Stewardship in your backyard](#)
- [Volunteering](#)

### Ordering

#### Maps for free

Many maps are free; please limit requests only to those maps you will use in a year. Maps are available from:

DNR Information Center  
500 Lafayette Road  
St. Paul, MN 55155-4040  
e-mail: [info@dnr.state.mn.us](mailto:info@dnr.state.mn.us)

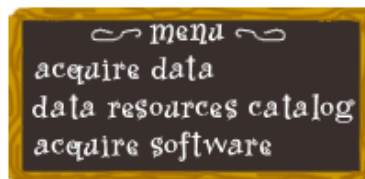
tel. (651) 296-6157  
toll free: 888-MINNDNR  
Telecommunications device for the deaf (TDD): (651) 296-5484  
TDD toll-free: (800) 657-3929.

[Map and brochure order form](#) [PDF](#)

#### Maps to purchase

[Minnesota Bookstore](#)  
Buy PRIM and other recreation maps.





**Welcome to the Minnesota Department of Natural Resources GIS Data Deli**, an internet-based spatial data acquisition site that allows users to download raw computer-readable data for use in their Geographic Information System (GIS), image processing system, or traditional database environment. The site includes links to extensive and summary level data descriptions (metadata) to support our users.

#### Recent Additions

- [FSA Color Orthophotos \(2002\)](#)
- [Karst Feature Inventory Points](#)
- [24K Streams by Watershed](#)

**This site does not enable you to compose or view maps on-line.**

Visit the main [DNR website](#) for online mapping applications. To uncover additional GIS data, visit the [Minnesota GeoGateway](#).

#### Deli 2 Beta!

A beta version of our new and improved Data Deli is [now available](#)! The new site features more data, a refined user interface, access to web services with more planned.

Please give it a try and let us know [what you think](#).

**Note:** The interactive portions of the site make extensive use of javascript and java so a version 4 browser, either Netscape Communicator/Navigator or Microsoft Internet Explorer, is **required**. One notable exception is Netscape Communicator 4.6 which has a broken java environment. Version 4.61 works fine.

To use the data present on this site, you must own or have rights to software that is capable of reading the data files. The data on this site is primarily targeted for ARCVIEW® and

ARC/INFO® the most commonly used GIS software products in Minnesota. All users must have the capability to uncompress PKZIP format archives.

We hope that you find the site useful!



Contents © 1999. Minnesota Department of Natural Resources  
[questions@deli.dnr.state.mn.us](mailto:questions@deli.dnr.state.mn.us)



# The DNR Data Deli

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**Welcome** to the Minnesota Department of Natural Resources [GIS Data Deli](#), an internet-based spatial data acquisition site that allows users to download raw computer-readable data for use in their Geographic Information System (GIS), image processing system, or traditional database environment. The site includes links to extensive and summary level data descriptions (metadata) to support our users.

**What's New?** Well, lot's of stuff. The Deli has been reworked to take advantage of a new DNR Core GIS architecture. This means that more datasets will be made available and updated in near-realtime. Data are also being made available in more portable formats such as shapefiles or geotiff. In addition, the Deli has undergone a technical upgrade, including:

- improved support for new browsers, less reliance on Java
- support for [OpenGIS Consortium](#) (OGC) Web Mapping Service (WMS) protocols so Deli content can be leveraged in new ways (more details soon)
- improved data search and retrieval

**Browser Requirements:** This site makes extensive use of JavaScript and is best viewed with: Internet Explorer 6+, Netscape 6+ and Mozilla 1+.

We hope you enjoy using this service!

Contents © 1999-2004. Minnesota Department of Natural Resources

Questions or comments should be sent to: [questions@deli.dnr.state.mn.us](mailto:questions@deli.dnr.state.mn.us).

Last site update: Mon Nov 15 04:30:00 CST 2004

## quick downloads (less than 20Mb)

Census 2000 Minor Civil Division Population

please enter your email address

get data

reset

Note: This list includes datasets that are statewide in extent and small volume. More data is available via the [Data Search](#) page.



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## The DNR Data Deli

The Minnesota Data Deli has finished processing your request: d1485244049149

The following are a choice of links that will allow you download a Winzip archive with the data you requested:

<http://carson.dnr.state.mn.us/deliver/deli/d1485244049149.zip>

<ftp://carson.dnr.state.mn.us/pub/deliver/deli/d1485244049149.zip>

The following GIS data layers were included in the bundle:

Census 2000 Minor Civil Division Population (bdry\_mcd00py2)

Bundle unpacking instructions can be found at:

[http://maps.dnr.state.mn.us/deli/unpacking\\_instructions.pdf](http://maps.dnr.state.mn.us/deli/unpacking_instructions.pdf)

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please enter your email address

get data

reset

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Large data is available via the [Data Search](#) page.



- [State Wildlife Management Area Public Facilities - lines](#)
- [State Wildlife Management Area Public Facilities - points](#)
- [Water Access Sites in Minnesota](#)

## Geology and Soils

- [Ecological Land Type Associations of Minnesota](#)
- [Ecological Provinces of Minnesota](#)
- [Ecological Sections of Minnesota](#)
- [Ecological Subsections of Minnesota](#)
- [Geomorphology of Minnesota](#)
- [Geomorphology of Minnesota - Isolated Landform Structures](#)
- [Karst Feature Inventory Points](#)

## Hydrography

- [DNR 100K Streams](#)
- [DNR 100K Wetlands](#)
- [DNR 100k Hydrography](#)
- [DNR 100k Lakes and Rivers](#)
- [DNR 24K Lakes](#)
- [DNR 24K Streams](#)
- [FEMA Floodways](#)
- [Lake Basin Fetch and Maximum Length/Width](#)
- [Lake Basin Littoral Zone - 15 Foot Standard](#)
- [Lake Basin Littoral Zone - Observed](#)
- [Lake Basin Morphology](#)
- [Lake Bathymetric Aquatic Vegetation](#)
- [Lake Bathymetric Contours](#)
- [Lake Bathymetric DEM Shaded Relief Image](#)
- [Lake Bathymetric Digital Elevation Model \(DEM\)](#)
- [Lake Bathymetric Outline](#)
- [Major Watershed Index](#)
- [Minnesota Trout Streams](#)
- [Minnesota Watersheds](#)
- [National Wetlands Inventory Lines](#)
- [National Wetlands Inventory Points](#)
- [National Wetlands Inventory Polygons](#)
- [PLS Sections with Designated Trout Streams](#)
- [Restorable Depressional Wetland Inventory](#)

## Land Cover



# The DNR Data Deli

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*Metadata Product ID:* 26000022

*Layer Name:* wsh\_minorpy3

*Long Name:* Minnesota Watersheds

*Abstract:* Statewide minor watershed delineations with major/minor watershed identifiers and names for provinces, major watersheds, and basins. Also included are watershed outlet positions and selected gaging station locations. This data set is an update to the Watershed Basins (1995) data set, which has been retained for historical purposes. The Minnesota Watersheds layer is the maintenance version of watershed delineations for the Minnesota DNR.

*Intended Application:* The coverage was originally created to support wetlands mitigation and water quality monitoring programs.

*Usage Tips:* Users may wish to use the PEDIGREE and PEDYEAR columns in the attribute table to determine currentness and originator of the watershed delineation.

*Spatial Extent:* Statewide

**report type:** [full](#) | [brief](#) | [attributes](#) | [data sample](#) | [contact information](#)



# The DNR Data Deli

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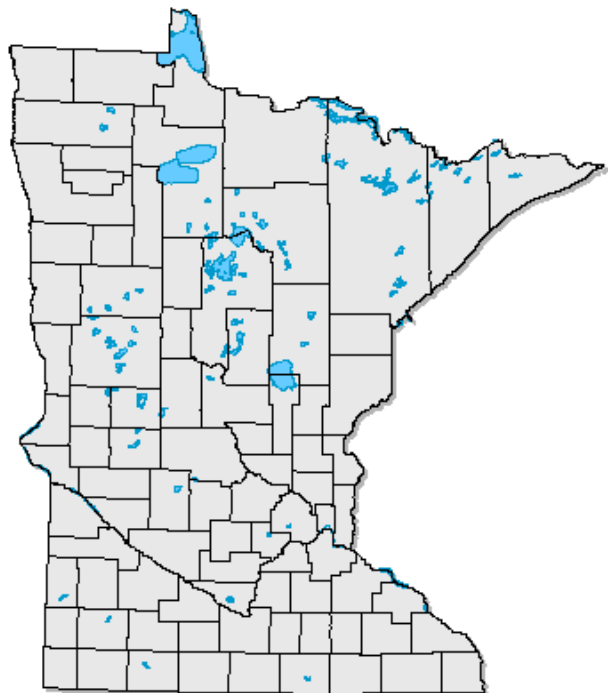
reset

Note: This list includes datasets that are statewide in extent and small volume.  
Large data is available via the [Data Search](#) page.



# The DNR Data Deli

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## Place Name Search

## Search Options

- ☒ by area/point  
☐ by county

## Thematic Classes

All Classes

## Available Layers

1:100k Digital Raster Graphic - Collars Removed  
1:24k Digital Raster Graphic - Collars Removed  
1:250k Digital Raster Graphic - Collars Removed  
Census 2000 Block Population  
Census 2000 Minor Civil Division Population

HINT: Press the Shift and CTRL keys while clicking to select more than one layer that can be downloaded as part of a single bundle!

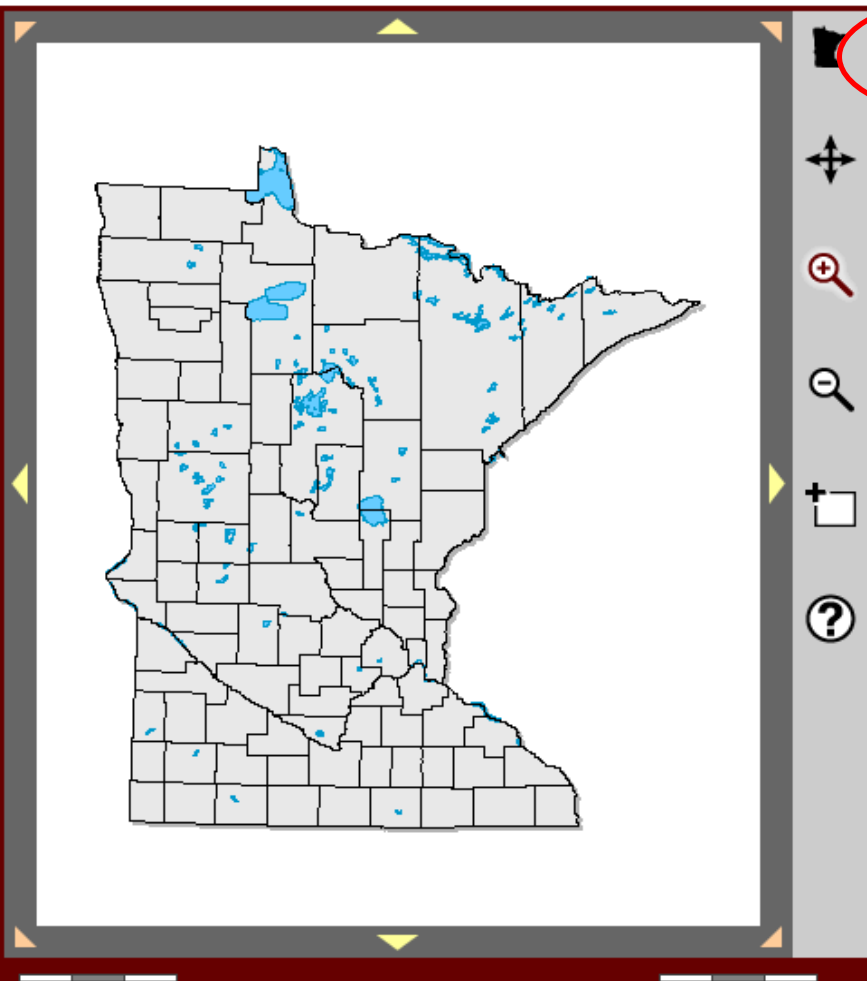
## Reference Map





# The DNR Data Deli

[home](#) [data catalog](#) [data search](#) [data status](#) [web services](#) [about](#) [FAQ](#) [contact us](#)



## Place Name Search

## Search Options

- ☒ by area/point  
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## Thematic Classes

All Classes

## Available Layers

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1:250k Digital Raster Graphic - Collars Removed  
Census 2000 Block Population  
Census 2000 Minor Civil Division Population

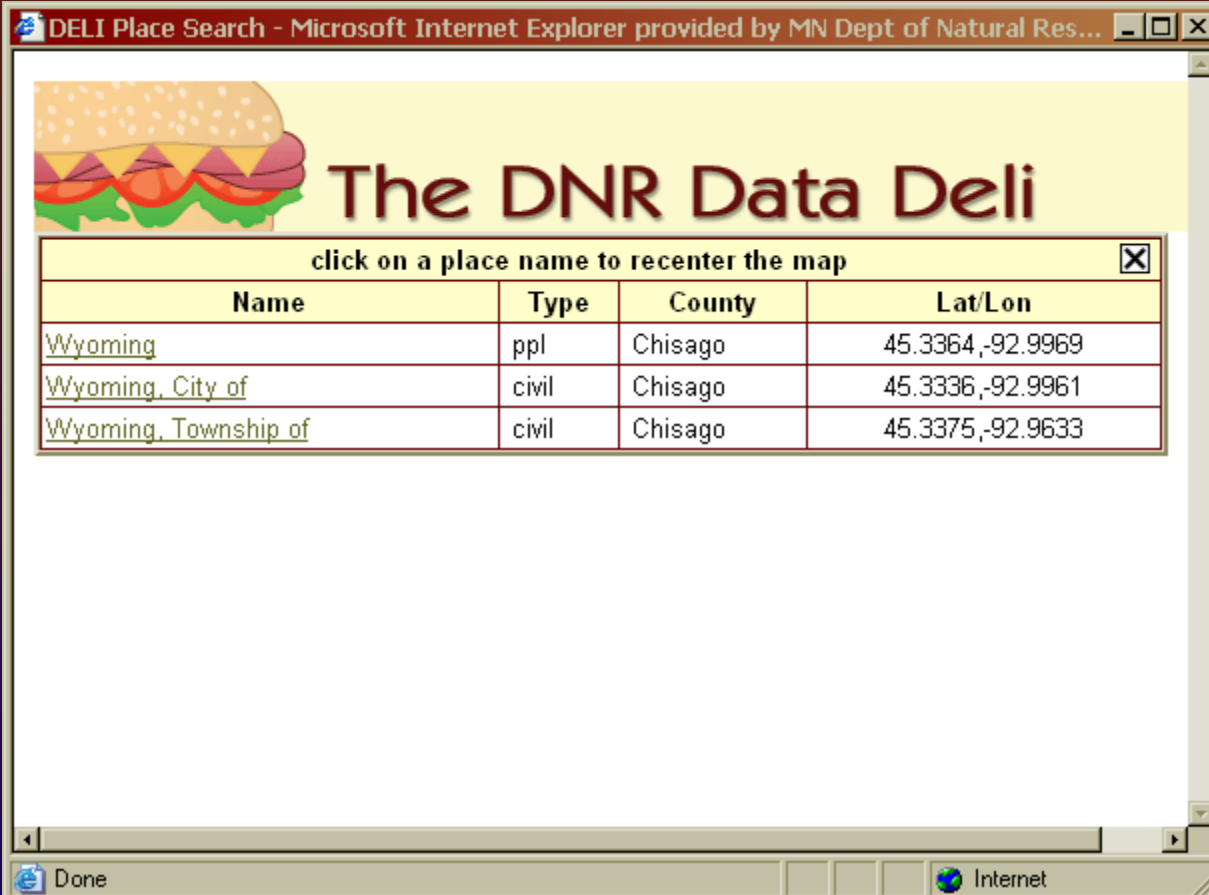


HINT: Press the Shift and CTRL keys while clicking to select more than one layer that can downloaded as part of a single bundle!

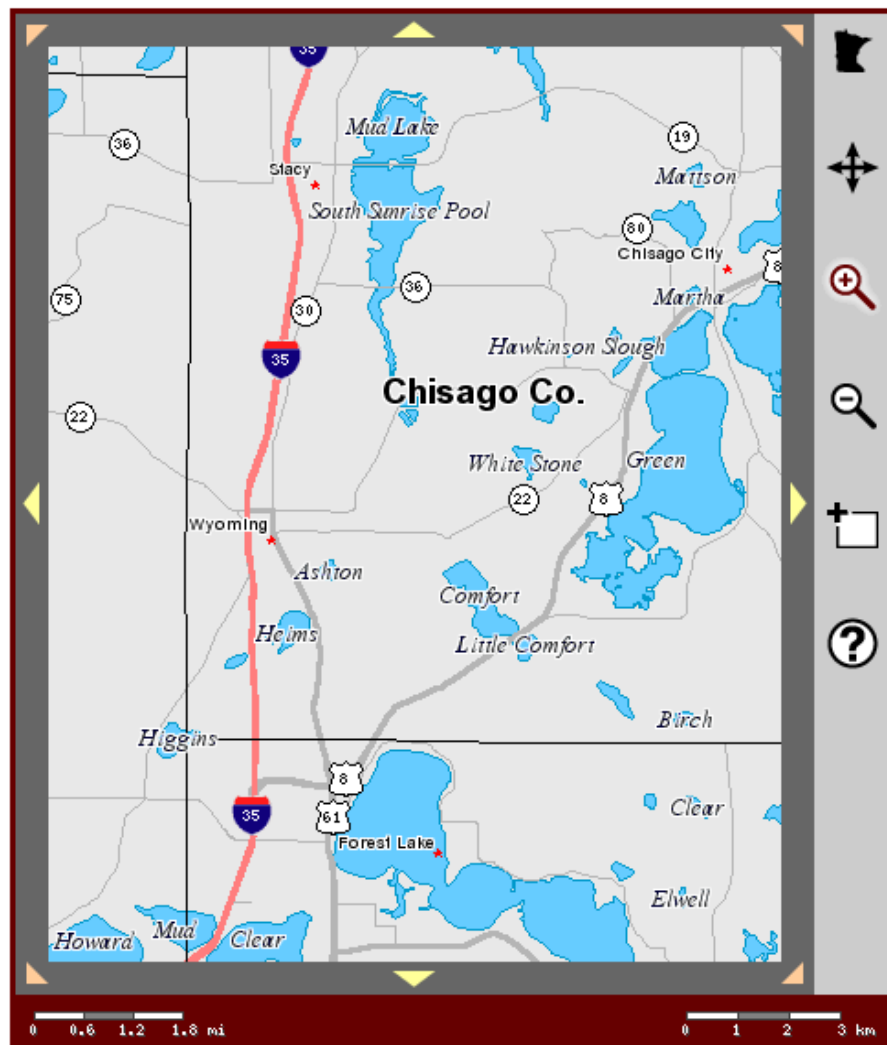
## Reference Map







# The DNR Data Deli

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## Place Name Search

## Search Options

- ☒ by area/point  
☐ by county

## Thematic Classes

## Available Layers

1:100k Digital Raster Graphic - Collars Removed  
1:24k Digital Raster Graphic - Collars Removed  
1:250k Digital Raster Graphic - Collars Removed  
Census 2000 Block Population  
Census 2000 Minor Civil Division Population

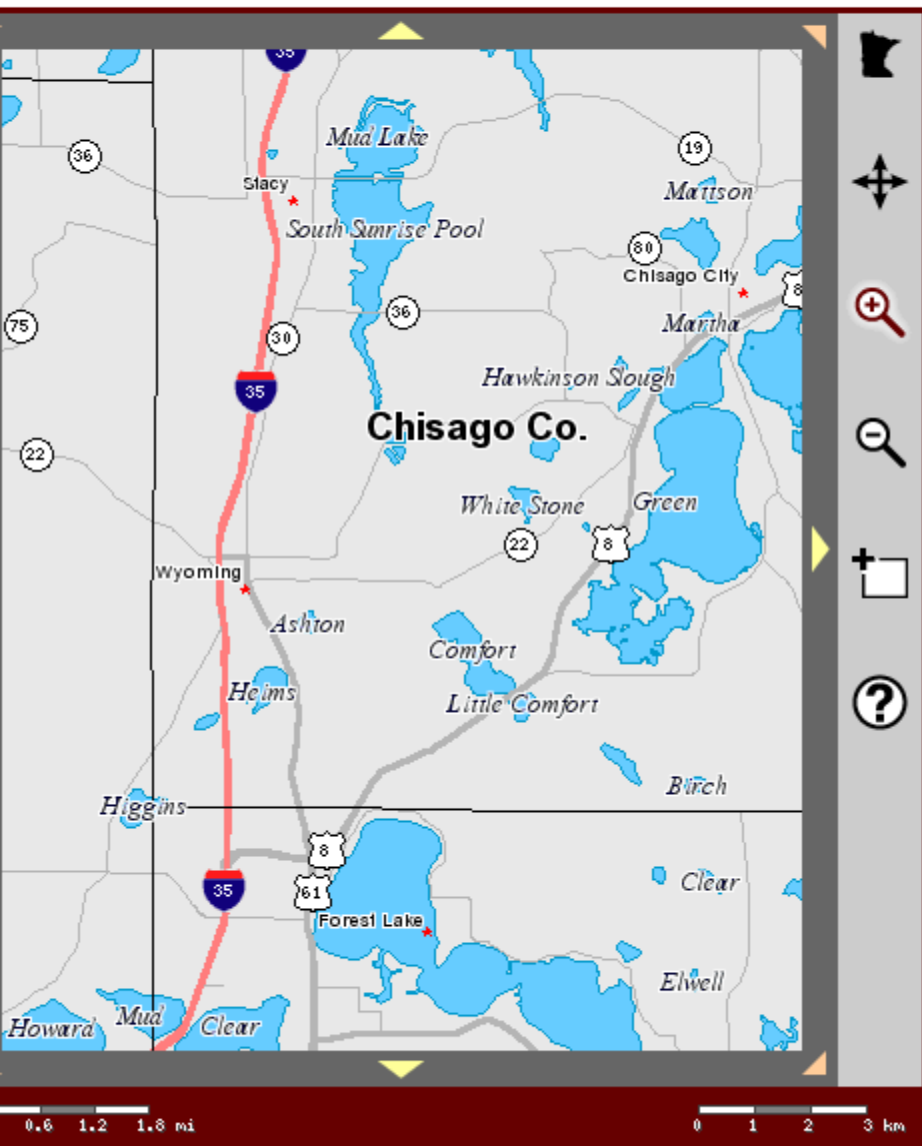
HINT: Press the Shift and CTRL keys while clicking to select more than one layer that can be downloaded as part of a single bundle!

## Reference Map



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## Place Name Search

## Search Options

- ☒ by area/point
- ☐ by county

## Thematic Classes

All Classes

All Classes

Administrative Features

Control

Demographics

Events and Sitings

Facilities

Geology and Soils

Hydrography

Land Cover

Land Imagery

Metadata

c - Collars Removed

c - Collars Removed

c - Collars Removed

on

vision Population

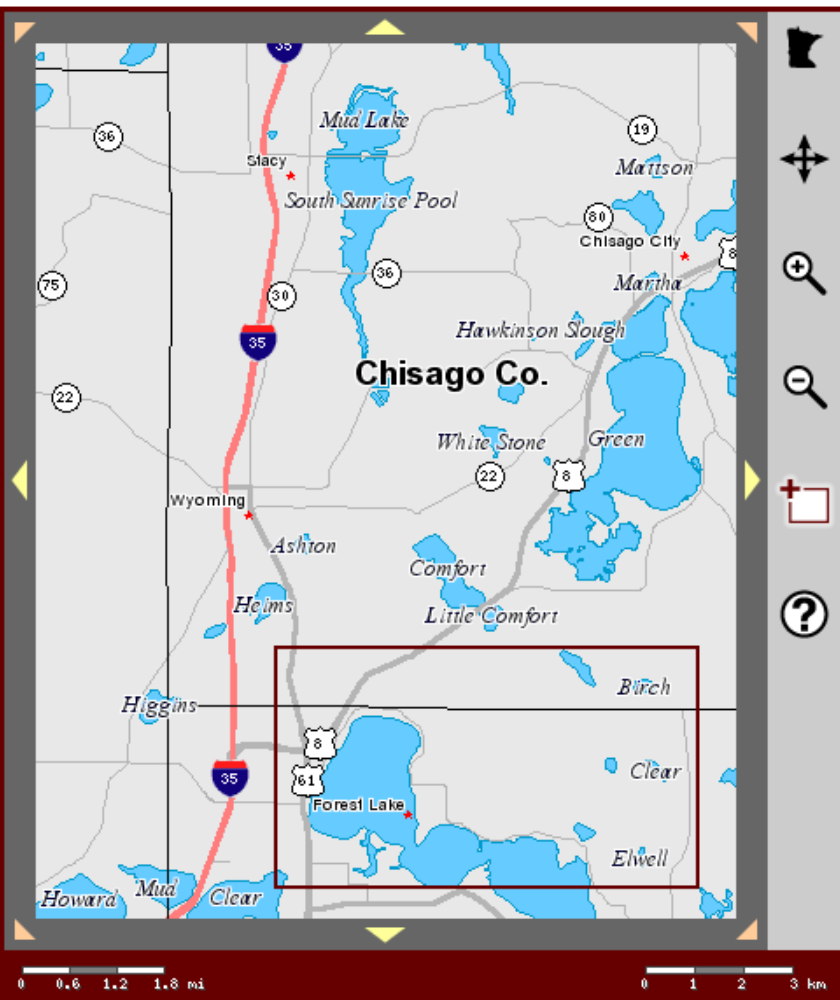
RL keys while clicking to select more than one layer that can downloaded as part of a single batch.

## Reference Map



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## Place Name Search

## Search Options

- ☒ by area/point  
☐ by county

## Thematic Classes

Hydrography

## Available Layers

- DNR 24K Lakes
- DNR 24K Streams
- FEMA Floodways
- Lake Basin Fetch and Maximum Length/Width
- Lake Basin Littoral Zone - 15 Foot Standard

HINT: Press the Shift and CTRL keys while clicking to select more than one layer that can downloaded as part of a single bundle!

## Reference Map





## The DNR Data Deli

OK, here's what we've found. Now you get to select the data you wish to download. When you've done that scroll to the bottom of the page and click the "get data" button to begin the download process. Please note that if you select more than 20Mb of data your datasets will be processed when our servers have time. The maximum bundle size is 500Mb. You will be e-mailed with the URL for your data when the process is complete. Orders less that 20Mb in size will be processed immediately. -DNR GIS/Web Staff-

### FEMA Floodways

tiling scheme: County

[metadata](#) | [preview](#)

1 tile found:

☐ Washington (2,799 kb)

E-Mail address:  (required)

get data

reset

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[questions@deli.dnr.state.mn.us](mailto:questions@deli.dnr.state.mn.us)



0 Kb selected (0 files)



Internet





# The DNR Data Deli

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**Welcome** to the Minnesota Department of Natural Resources GIS Data Deli, an internet-based spatial data acquisition site that allows users to download raw computer-readable data for use in their Geographic Information System (GIS), image processing system, or traditional database environment. The site includes links to extensive and summary level data descriptions (metadata) to support our users.

**What's New?** Well, lot's of stuff. The Deli has been reworked to take advantage of a new DNR Core GIS architecture. This means that more datasets will be made available and updated in near-realtime. Data are also being made available in more portable formats such as shapefiles or geotiff. In addition, the Deli has undergone a technical upgrade, including:

- improved support for new browsers, less reliance on Java
- support for [OpenGIS Consortium](#) (OGC) Web Mapping Service (WMS) protocols so Deli content can be leveraged in new ways (more details soon)
- improved data search and retrieval

**Browser Requirements:** This site makes extensive use of JavaScript and is best viewed with: Internet Explorer 6+, Netscape 6+ and Mozilla 1+.

We hope you enjoy using this service!

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Questions or comments should be sent to: [questions@deli.dnr.state.mn.us](mailto:questions@deli.dnr.state.mn.us).

Last site update: Mon Nov 15 04:30:00 CST 2004

## quick downloads (less than 20Mb)

Census 2000 Minor Civil Division Population

please enter your email address

get data

reset

Note: This list includes datasets that are statewide in extent and small volume.  
Large data is available via the [Data Search](#) page.



# The DNR Data Deli

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Thematic classes:

All Classes

Available Layers:

Farm Services Administration (FSA) Color Orthophotos 2003-2004

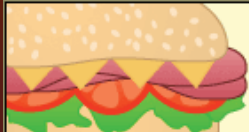
## layer status information



### Farm Services Administration (FSA) Color Orthophotos 2003-2004

theme class: Land Imagery  
feature class: grid  
product type: ECW  
tiling scheme: USGS 1:62,500K Quad  
data volume: 29,615,017 kb

[access metadata](#)[previous](#) [next](#)



# The DNR Data Deli

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*Metadata Product ID:* 39000378

*Layer Name:* img\_fsa01aim4

*Long Name:* Farm Services Administration (FSA) Color Orthophotos 2003-2004

*Abstract:* This 1 meter resolution, natural color imagery is derived directly from the original uncompressed TIFF quarter-quad orthophotos as provided by LMIC. The Minnesota DNR has

- Re-projected the images that were originally rectified to UTM Zone 14 to UTM Zone 15
- Mosaicked the images into uncompressed 15 minute tiles
- Compressed the resulting tiles to ECW (enhanced wavelet compression) format using ER Mapper image processing software.

Enjoy!

*Intended Application:* To provide the FSA DOQ - 2003-2004 series photography in a seamless image catalog.

*Usage Tips:* Requires the installation of the ER Mapper ECW Viewer extension for ArcView. Link: <http://www.ermapper.com/downloads/>

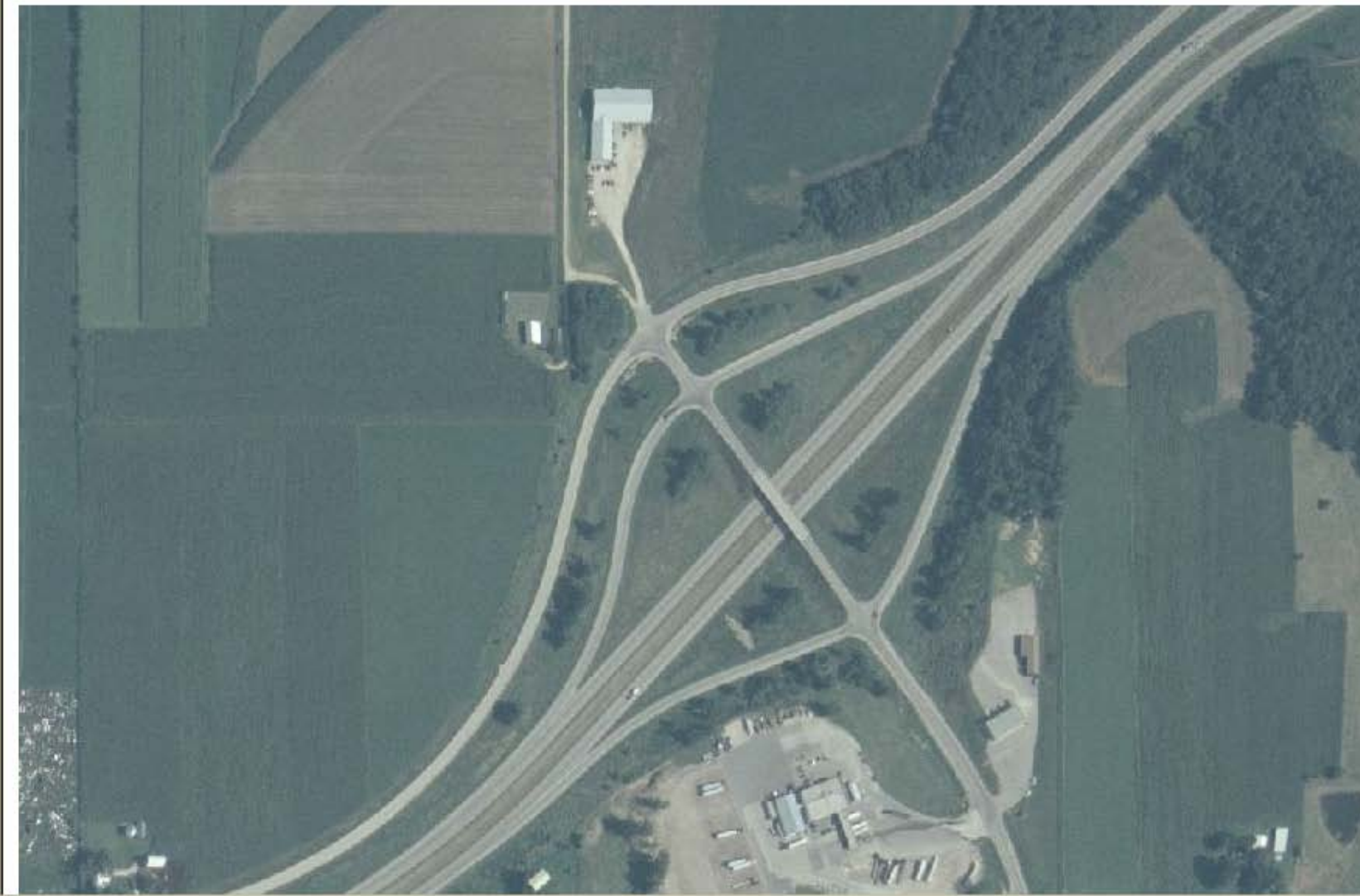
*Spatial Extent:* Statewide

**report type:** [full](#) | [brief](#) | [attributes](#) | [data sample](#) | [contact information](#)

Minnesota Department of Natural Resources

GIS Data Sample for: **Farm Services Administration (FSA) Color Orthophotos 2002**

*Comments:* Small portion of the Pickwick SW quarter-quad (in Winona County) sample image in JPG format





[www.dnr.state.mn.us/waters](http://www.dnr.state.mn.us/waters)

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