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DNR 24K Streams

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Metadata created using [Minnesota Geographic Metadata Guidelines](#)

Metadata Summary

<i>Originator</i>	Minnesota DNR - MIS Bureau
<i>Abstract</i>	1:24,000 scale streams captured from USGS seven and one-half minute quadrangle maps, with perennial vs. intermittent classification, and connectivity through lakes, rivers, and small wetland basins. Streams are also coded for their status as designated trout streams. Data originated with the MnDOT basemap stream traces. The data are fully integrated with the DNR 24K Lakes layer in the sense that overland streams terminate at lake and river shorelines.
<i>Use Tips</i>	Data exhibit significant positional off-sets associated with complex meandered streams. Overall digitizing quality is highly variable. This data set, with its connectivity through water bodies, is designed to serve as the basis for hydrologic modelling efforts. It will also serve as the basis for a statewide stream referencing system. Strm_type codes greater than 32 are types of artificial connectors, and may be best dropped when creating cartographic products. Trout_flag values > 0 indicate designated trout streams (trout_flag=1) or protected tributaries to designated trout streams (trout_flag=2) as identified in Minnesota Rules Chapter 6264. See http://www.revisor.leg.state.mn.us/arule/6264/0050.html for legal descriptions and related restrictions. See also Minnesota Trout Streams layer (strm_troutln3) and PLS Sections with Designated Trout Streams layer (pls_troutpy3) for easier visualization of designated trout streams and tributaries. Users of trout stream information should be aware that the trout_flag code does not fully describe the extent of protected watercourses with regard to trout habitat or other state restrictions.
<i>Browse Graphic</i>	View a sample of the data.
<i>Time Period of Content Date</i>	1/1/1980
<i>Currentness Reference</i>	Data vary widely as to their currentness. Data have been tested for completeness, and attribute coding correctness against the most recent 24K Digital Raster Graphics (DRGs), which vary in vintage from early 1980s photorevisions to recently published maps. This layer is subject to continual linework editing and revision to improve stream representation.
<i>Access Constraints</i>	Access to the data are non-restricted
<i>Use Constraints</i>	Use of the data are constrained only by the DNR GIS Data License Agreement
<i>Distributor Organization</i>	DNR-MIS
<i>Ordering Instructions</i>	See Online Linkage or Distribution Contact
<i>Online Linkage</i>	http://deli.dnr.state.mn.us/

Full Metadata

DNR 24K Streams

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Section 1 Identification Information

Originator Minnesota DNR - MIS Bureau

Title DNR 24K Streams

Abstract 1:24,000 scale streams captured from USGS seven and one-half minute quadrangle maps, with perennial vs. intermittent classification, and connectivity through lakes, rivers, and small wetland basins. Streams are also coded for their status as designated trout streams. Data originated with the MnDOT basemap stream traces. The data are fully integrated with the DNR 24K Lakes layer in the sense that overland streams terminate at lake and river shorelines.

Use Tips Data exhibit significant positional off-sets associated with complex meandered streams. Overall digitizing quality is highly variable. This data set, with its connectivity through water bodies, is designed to serve as the basis for hydrologic modelling efforts. It will also serve as the basis for a statewide stream referencing system. Strm_type codes greater than 32 are types of artificial connectors, and may be best dropped when creating cartographic products. Trout_flag values > 0 indicate designated trout streams (trout_flag=1) or protected tributaries to designated trout streams (trout_flag=2) as identified in Minnesota Rules Chapter 6264. See <http://www.revisor.leg.state.mn.us/arule/6264/0050.html> for legal descriptions and related restrictions. See also Minnesota Trout Streams layer (strm_troutln3) and PLS Sections with Designated Trout Streams layer (pls_troutpy3) for easier visualization of designated trout streams and tributaries. Users of trout stream information should be aware that the trout_flag code does not fully describe the extent of protected watercourses with regard to trout habitat or other state restrictions.

Purpose A 1:24K hydrography basemap to serve as the development of a statewide connected stream-trace network. Identification and coding of officially designated trout streams in Minnesota. To serve as the basis for a master stream-reach identification scheme.

**Time Period
of Content
Date** 1/1/1980

**Currentness
Reference** Data vary widely as to their currentness. Data have been tested for completeness, and attribute coding correctness against the most recent 24K Digital Raster Graphics (DRGs), which vary in vintage from early 1980s photorevisions to recently published maps. This layer is subject to continual linework editing and revision to improve stream representation.

Progress Complete

**Maintenance
and Update
Frequency** As Needed

Spatial Extent of Data Statewide

Bounding Coordinates -97.5
-89
49.5
43

Place Keywords Minnesota

Theme Keywords hydrography, hydrology, streams, stream traces, trout, inlandWaters

Theme Keyword Thesaurus None

Access Constraints Access to the data are non-restricted

Use Constraints Use of the data are contrained only by the DNR GIS Data License Agreement

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Browse Graphic [View a sample of the data.](#)

Browse Graphic File Description

Associated Data Sets

Section 2 Data Quality Information

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Attribute Accuracy

Logical Consistency Data are topologically correct using ARC/INFO 7.0.3. All lines intersect where intended. Some feature representation inconsistencies appear in the southeastern portion of the state, where river representation varies from a perennial stream classification (strm_type = 20) to river centerline (strm_type = 62), sometimes along USGS 7 1/2 minute quadrangle boundaries.

Completeness Data are complete when compared to stream traces presented on USGS 7 1/2 minute Quadrangle maps. Coding of designated trout streams and tributaries has been completed statewide; however, future revisions of trout designations are possible. Some streams have been coded with a Kittle Number (DNR Fisheries Stream ID#) and Kitname (DNR Fisheries common stream name); however, coding is in

progress (April 2004) and incomplete statewide.

***Horizontal
Positional
Accuracy***

Source layer dnrstln3: Horizontal positional accuracy is highly variable. Rectilinear features are probably accurate to 55 feet (based on estimated production errors and a mean sum square estimation). Feature representation of sinuous streams is especially variable, with accuracies in the 55 foot range present in some areas, and non-systematic offsets (especially as coarse generalizations) present in other areas of up to 150 feet. Quality typically varies along 7 1/2 quadrangle borders, with the most significant and consistent offsets observed in the northeastern portion of the state, and the best representations found in Southern Minnesota.

***Vertical
Positional
Accuracy***

Source layer dnrstln3: Not Applicable

Lineage

Attribute Lineage for source table STRM_BASELN3.DBF: In the initial DNR production effort, the data were plotted at scale and overlaid on paper versions of the USGS Quadrangle maps from which the data were originally derived. Attribute coding errors were identified and corrected in ARCEDIT. Center lines through hydrographic area features were also added and coded to reflect the type of feature being connected through. Next the data were joined and overlaid on a master lakes file. This step served as the basis for lake connector attribute coding. All data were brought into an ARCVIEW environment for coding of trout streams. DNR Fisheries staff, had previously manually highlighted designated trout streams on 7 1/2 minute quadrangles. These were used by DNR staff to flag streams with this special status. The data were previously overlaid with section lines to support this process, since the trout designations are referenced to and defined by section lines. In the Summer of 2001, a major restructuring of the data was implemented. This consisted of the following: resplitting the data into a major watershed-based library, addition of several columns to hold EPA river reach, Mankato State University-assigned stream and ditch names, and DNR Kittle numbers. Most features do not hold this information. The additional columns were added to receive information associated with on-going, long-term, maintenance and development activity. A route subclass was also created to hold Kittle watercourses as complex (multi-part) line features.

***Source Scale
Denominator***

Source layer dnrstln3: 24000

Section 3 Spatial Data Organization Information

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***Native Data
Set
Environment***

Arc/Info 8.0

***Geographic
Reference for
Tabular Data***

Not Applicable

***Spatial Object
Type***

vector

***Vendor
Specific
Object Types***

line

***Tiling
Scheme***

majwshed

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Section 4 Spatial Reference Information

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<i>Horizontal Coordinate Scheme</i>	UTM
<i>Ellipsoid</i>	GRS1980
<i>Horizontal Datum</i>	NAD83
<i>Horizontal Units</i>	meters
<i>Distance Resolution</i>	Source layer dnrstln3: Horizontal positional accuracy is highly variable. Rectilinear features are probably accurate to 55 feet (based on estimated production errors and a mean sum square estimation). Feature representation of sinuous streams is especially variable, with accuracies in the 55 foot range present in some areas, and non-systematic offsets (especially as coarse generalizations) present in other areas of up to 150 feet. Quality typically varies along 7 1/2 quadrangle borders, with the most significant and consistent offsets observed in the northeastern portion of the state, and the best representations found in Southern Minnesota.
<i>Altitude Datum</i>	Not Applicable
<i>Altitude Units</i>	Not Applicable
<i>Depth Datum</i>	Not Applicable
<i>Depth Units</i>	Not Applicable
<i>Cell Width</i>	
<i>Cell Height</i>	
<i>Latitude Resolution</i>	
<i>Longitude Resolution</i>	
<i>UTM Zone Number</i>	15
<i>SPCS Zone Identifier</i>	
<i>County Coordinate Zone Identifier</i>	
<i>Coordinate Offsets or Adjustments</i>	Not Applicable
<i>Map Projection Name</i>	Transverse Mercator

**Map
Projection
Parameters** Not Applicable

**Other
Coordinate
System's
Definition** Not Applicable

Section 5 Entity and Attribute Information

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Entity and Attribute Overview

Data Elements for Attribute Table STRM_BASELN3.DBF:

STRM_TYPE: Roughly analogous to the feature-type field in the MnDOT Source data

STRM_LONG: Long description of values (as described above under strm_type)

STRM_SRC: Source of feature

TROUT_FLAG: Denotes whether a stream segment is a designated trout stream or tributary according to Minnesota Rules 6264. Designation is defined on the basis of PLS sections.

STRM_NAME: Holds stream named derived from USGS quad map sources

DITCH_ABBR: Ditch name abbreviation

DITCH_NAME: Ditch name obtained from various large scale sources

RCH_CODE: Environmental Protection Agency River Reach Code. Not implemented.

RCH_NAME: Environmental Protection Agency stream name. Not implemented.

RCH_DATE: Environmental Protection Agency date of reach assignment. Not implemented

KITTLE_NO: DNR Kittle Number (Fisheries stream identifier). Currently implemented on a limited basis on this layer.

KITTNAME: DNR Kittle Watercourse Name (Fisheries stream name). If an alternate name exists, only one is specified here. Currently implemented on a limited basis on this layer.

PROD_SRC: Source organization for production work

PROD_PER: Year production work was done by source organization (see Prod_src); [range 1996-current year]

STRM_BRK: Arc break code, for DNR Waters Lakeshed Delineation Project.

PWI_FLAG: Denotes whether a stream segment is a protected watercourse as designated by Protected Waters Inventory.

Entity and Attribute Detailed Citation

Value Domain for Data Element STRM_TYPE:

20 = Perennial stream

21 = Intermittent Stream or Creek

22 = Unknown Stream

23 = Underground Stream (Karst areas, SE MN)

40 = Drainage Ditch (Perennial)
41 = Drainage Ditch (Intermittent)
42 = Drainage Ditch (Undifferentiated)
43 = Aqueduct (Elevated or Tunnel)
60 = Connector (Lake)
61 = Connector (Wetland)
62 = Centerline (River)
63 = Connector (River)
64 = River Outflow Connector
70 = Road Culvert
71 = Underground Storm Sewer
72 = Force Main
73 = Drain Tile Line
80 = Interpreted Arc Connector
81 = Arbitrary Overland Flow Connector
90 = Superseded Natural Channel

Value Domain for Data Element STRM_LONG:

Value Domain for Data Element STRM_SRC:

1 = Original MnDOT
2 = Captured from MPCA/EPA stream cover. Produced from digital sources.
3 = Captured from other MnDOT basemap layer using split/copy process. Produced from digital sources
4 = Integrated/captured from LGU digital source. Data provided by Local Government Unit, WMO, Lake Asso
51 = Manually digitized from USGS Quad map. Produced by manually digitizing identifiable features.
52 = Digitized on screen from DRGs. The digitized arc represents a delineated feature visible on quad map
53 = Digitized on screen from DOQs. The digitized arc represents a delineated feature visible on DOQ.
54 = Manually digitized from LGU drainage maps. Map provided by Local Government Unit, WMO, Lake Assoc.
55 = Interpreted from DRGs. Arcs do not represent a visible feature on USGS quad map.
56 = Digitized onscreen from DOQ's. Arcs do not represent a visible feature on DOQ.
60 = Digitized onscreen based on local knowledge and DOQ/DRG. Not visible feature on DOQ.
61 = A GPS unit was used in the field to get coordinate location of feature.
71 = Interpreted by Fisheries field staff using local knowledge, DOQ/DRG. Feature not visible on basemap

Value Domain for Data Element TROUT_FLAG:

0 = Not a designated trout stream or tributary
1 = Designated trout stream
2 = Designated trout stream tributary

Value Domain for Data Element STRM_NAME:

Value Domain for Data Element DITCH_ABBR:

Value Domain for Data Element DITCH_NAME:

Value Domain for Data Element RCH_CODE:

Value Domain for Data Element RCH_NAME:

Value Domain for Data Element RCH_DATE:

Value Domain for Data Element KITTLE_NO:

Value Domain for Data Element KITNAME:

Value Domain for Data Element PROD_SRC:

1 = St. Cloud State University

10 = JOR Engineering
 2 = BRW, Inc.
 3 = Met Council Watershed Mapping Project
 4 = DNR Waters Lakeshed Mapping Project
 5 = DNR MIS
 6 = DNR Fisheries
 7 = Mankato State University (MSU)
 8 = MNDOT
 9 = USGS (MN)

Value Domain for Data Element PROD_PER:

Value Domain for Data Element STRM_BRK:

0 = Code used for Lakeshed Delineation Project; Arc break = no (null value).
 1 = Code used for Lakeshed Delineation Project; Arc break = yes

Value Domain for Data Element PWI_FLAG:

0 = Watercourse not indicated on PWI Maps
 1 = Protected watercourse on PWI; indicated on PWI Maps
 2 = Protected Public Ditch; indicated on PWI Maps
 3 = Non-protected Public Ditch; not indicated on PWI Maps
 4 = Non-protected watercourses that drain less than 5 sq. mi.; not indicated on PWI Maps

Section 6 Distribution Information

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Publisher Minnesota DNR - MIS Bureau

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Distributor's Data Set Identifier strm_baseIn3

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Transfer Format Name Shapefile

Transfer Format Not Applicable

***Version
Number******Transfer Size*** 186***Ordering
Instructions*** See Online Linkage or Distribution Contact***Online
Linkage*** <http://deli.dnr.state.mn.us/>**Section 7 Metadata Reference Information**[Top of
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metadata](#) [Top
of
page](#)***Metadata
Date*** 2008-09-22 09:57:18.0***Contact
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Standard
Name*** Minnesota Geographic Metadata Guidelines***Metadata
Standard
Version*** 1.2***Metadata
Standard
Online
Linkage*** <http://www.gis.state.mn.us/stds/metadata.htm>

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