SECTION 1: Identification Information

Originator:	University of Minnesota-Duluth Geology Department; MN Geological Survey, MN DNR
Title:	Geomorphology of Minnesota
Metadata Product ID:	28000006
Abstract:	1:100,000 scale geomorphology data describing a wide variety of conditions related to surficial geology within a hierarchical classification scheme that was devised for use within Minnesota.
Purpose:	To serve as an essential information source in the development of level 4 Ecological Classification System (ECS) delineations (Land Type Associations).
Usage Tips:	To serve as an essential information source in the development of level 4 Ecological Classification System (ECS) delineations (Land Type Associations). Data were derived from a wide variety of image and hardcopy data sources of varying vintages.
Time Period of Content:	1997
Currentness Reference:	Data were derived from a wide variety of image and hardcopy data sources of varying vintages.
Progress:	Complete
Maintenance Frequency:	as needed
Spatial Extent of Data:	Statewide
Bounding Coordinates:	E = -89 W = -97.5 N = 49.5 S = 43
Place Keywords:	Minnesota
Theme Keywords:	geomorphology, surficial geology, landforms, geoscientificInformation
Theme Keyword Thesaurus:	None
Access Constraints:	None
Use Constraints:	None
Data Use Contact:	Contact
Sample Graphic:	Data Sample

SECTION 2: Data Quality Information

Attribute Accuracy: *lfrm_geopy2.dbf:* The data were scrubbed for validity of codes and code combinations. Source materials were reviewed during the initial conversion process from Autocad to ARC/INFO for completeness and accuracy.

Logical Consistency: Data are topolocially correct using ARC/INFO 7.0.3. All polygons are closed and lines intersect where intended.

Completeness: Statewide coverage is available

Horizontal Positional Accuracy: Unknown

Vertical Positional Accuracy: Not Applicable

Lineage:

Attribute Lineage:

lfrm_geopy2.dbf: DNR was the principal party responsible for the development and maintenance of a standard database design and valid codes lists. This coverage underwent extensive data scrubbing to locate all attribute coding errors across quad boundaries and also to verify non-valid geomorphic codes and code combinations. Corrections were made where necessary.

Cartographic Lineage:

Geomorphology Areas: This data set contains information derived from NHAP air photos (1:80,000), USGS 1:100,000 and 1:24,000 scale topographic maps and from a variety of source products related to surface geology. The data were developed by two separate parties, each under contract with the Minnesota Department of Natural Resources (DNR). The northern half of the state, delineated by latitude 96 degrees (except for the Grantsburg (q3142) and Lake Minnewaska (q3118) 100K sheets), were developed under the direction of Dr. Howard Mooers, at the Department of Geology, University of Minnesota-Duluth (UMD). All of the data south of this boundary were developed by the Minnesota Geological Survey (MGS) in St. Paul. The UMD-developed data were developed almost exclusively through review of existing map sources, especially topographic expression as a basis for delineating landforms. This part of the effort did not include a field survey component. The data were mapped to the USGS 1:100,000 scale base (sheets published in 1/2 by 1 degree blocks). These data were originally digitized in AutoCAD and later converted and processed in ARC/INFO. DNR conducted fairly extensive manual and automated data reviews during this process in ensure consistency in the product. The MGS data were also developed using the USGS 1:100,000 scale base from similar sources. However, in performing their work, MGS incorporated a variety of other

data sources, including some that relied on field survey-verification of interpretations. The MGS work was performed entirely in ARC/INFO. DNR was the principal party responsible for the development and maintenance of a standard database design and valid codes lists, and coordinating the boundary reconciliation between the two mapping efforts. Once complete, all quads were edgematched and then merged into a single statewide coverage. This coverage underwent extensive data scrubbing to locate all errors across quad boundaries and also to verify non-valid geomorphic codes and code combinations. Corrections were made where necessary. The coverage was then projected to UTM Zone 15, NAD83, unshifted coordinates and broken into 100k tiles based on a mathematically defined 100k tile coverage. A county-tiled version of the layer has also been developed and is in extensive distribution.

Source Scale Denominator:	100000

SECTION 3: Spatial Data Organization Information

Native Data Set Environment:	ARC/INFO 7.x
Geographic Reference for Tabular Data:	None
Tiling Scheme:	county
Spatial Object Type:	polygon
Vendor Specific Object Types:	polygon

SECTION 4: Spatial Reference Information

Horizontal Coordinate Scheme:	UTM
Ellipsoid:	GRS1980
Horizontal Datum:	NAD83
Horizontal Units:	meters
Altitude Datum:	Not Applicable
Altitude Units:	Not Applicable
Depth Datum:	Not Applicable
Depth Units:	Not Applicable
Cell Width:	0
Cell Height:	0
Latitude Resolution:	0

Longitude Resolution:	0
UTM Zone Number:	15
SPCS Zone Identifier:	null
County Coordinate Zone Identifier:	null
Coordinate Offsets or Adjustments:	Not Applicable
Map Projection Name:	Transverse Mercator
Map Projection Parameters:	Not Applicable
Other Coordinate System Definition:	Not Applicable

SECTION 5: Entity and Attribute Information

Entity and Attribute Overview:	Polygon features attributized for geomorphic association; glacial phase, ice margin association or phase; general topographic expression; sedimentary association/rock type; qualifier. Line features denoting polygon feature boundary types
Entity and Attribute Citation:	Geomorphology of Minnesota --LANDFNE2.PAT-- GEOMORPH: Full landform code, which is a combination of Glacial Association, Association Phase, Topographic Expression, Sedimentary Association and any qualifiers. GEO_ASSOC: Geomorphic Association PHASE: Glacial phase, ice margin association or age. TOPO: General Topographic Expression SED_ASSOC: Sedimentary Association / Rock Type QUAL: Additional Information or Qualifiers. A landform may have more than one qualifier. All qualifiers are stored in this item and multiple qualifiers are separated by commas. All qualifiers are lower case. SOURCE: Field that store information on the party responsible for delineating and/or assigining attributes to the feature. --LANDFNE2.AAT-- LINE_CODE: This item contains values designed to store the original values as digitized in Autocad. As Autocad does not support topology or attributing, codes were assigned to linework to help identify what types of landforms the polygon features represented. DESC: This item stores descriptions of line values based on a collapsed classification of the LINE_CODE items. LINE_CODES that were included in each of the classes are indicated in parenthesis.
Attribute Tables:	Data Table

SECTION 6: Distribution Information

Publisher:	University of Minnesota-Duluth Geology Department; MN Geological Survey, MN DNR
Publication Date:	6/30/1997
Distribution Contact	Contact

Distributor Data Set Identifier:	lfrm_geopy2
Distribution Liability:	The Minnesota Department of Natural Resources makes no representation or warranties, express or implied, with respect to the reuse of data provided herewith, regardless of its format or the means of its transmission. There is no guarantee or representation to the user as to the accuracy, currency, suitability, or reliability of this data for any purpose. The user accepts the data 'as is', and assumes all risks associated with its use. By accepting this data, the user agrees not to transmit this data or provide access to it or any part of it to another party unless the user shall include with the data a copy of this disclaimer. The Minnesota Department of Natural Resources assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data.
Transfer Format Name:	Shapefile
Transfer Format Version:	Not Applicable
Ordering Instructions:	Visit the DNR Data Deli at the link provided.
Online Linkage:	http://deli.dnr.state.mn.us/

SECTION 7: Metadata Reference Information

Metadata Content Contact:	Contact
Metadata Standard Name:	Minnesota Geographic Metadata Guidelines
Metadata Standard Date:	4/4/2001
Metadata Standard Version:	1.2
Metadata Standard Online Linkage:	http://www.gis.state.mn.us/stds/metadata.htm

report type: full | brief | attributes | data sample | contact information

Last site update: Mon Sep 16 06:15:02 CDT 2013