

Watershed Context Report Appendix – Links to WHAF Maps

Instructions

- Click the Context Report topic name to open a map of related data.
- After the data displays in the map, click 'Add Data' to turn layers on and off, drag to reorder, or view attributes for a feature.
- Click 'Legend' to interpret the symbols used for each data layer.

Note: Data displayed in the map may be more recent than data summarized in the Watershed Context Report.

Physical Characteristics

[Topography](#)

Minnesota LiDAR Derived Digital Elevation Model (DEM). Various sources, data made available by Minnesota Geospatial Information Office. Available online at <https://gis-data.mn.gov/>. 2006-2012.

[Hydrologic Position](#)

Catchment watersheds symbolized based on a modeled streamflow. Streamflow is modeled through custom regression analysis that predicts discharge based on upstream area, upstream land cover, and observed precipitation.

[Ecological Classification](#)

Ecological Provinces of Minnesota. Minnesota Department of Natural Resources. 1999.

Ecological Sections of Minnesota. Minnesota Department of Natural Resources. Available online at <https://gisdata.mn.gov/>. 1999.

[Ecological Classification](#)

Ecological Subsections of Minnesota. Minnesota Department of Natural Resources. 1999.

Land Type Associations of Minnesota. Minnesota Department of Natural Resources. Available online at <https://gisdata.mn.gov/>. 1999.

[Soils, Silt and Sand](#)

Soil Survey Staff. Gridded Soil Survey Geographic (gSSURGO) Database & the U.S. General Soil Map (STATSGO2) for Minnesota. United States Department of Agriculture, Natural Resources Conservation Service. Available online at <http://datagateway.nrcs.usda.gov/>. 2015 official release.

[Soils, Clay and OM](#)

Soil Survey Staff. Gridded Soil Survey Geographic (gSSURGO) Database & the U.S. General Soil Map (STATSGO2) for Minnesota. United States Department of Agriculture, Natural Resources Conservation Service. Available online at <http://datagateway.nrcs.usda.gov/>. 2015 official release.

Groundwater

Groundwater Provinces. Minnesota Department of Natural Resources – County Geologic Atlas Program. Available online at www.mndnr.gov/groundwater/provinces/index.html. 2001.

Adams, R. 2016. Pollution Sensitivity of Near-Surface Materials. St. Paul, Minnesota Department of Natural Resources. Minnesota Hydrogeology Atlas Series HG-02, report and plate, accessible at http://www.dnr.state.mn.us/waters/programs/gw_section/mapping/platesum/mha_ps-ns.html

Climate

Normal Annual Precipitation Average, Minnesota, 1981-2010. MN Department of Natural Resources, State Climatology Office. Available online at <https://gisdata.mn.gov/>. 2010.

30-yr Normal Mean Temperature, Annual: 1989-2018

Landscape Alteration

Historic Land Cover

Presettlement Vegetation (1895). Minnesota Department of Natural Resources. Available online at <https://gisdata.mn.gov/>. 1994.

NLCD Land Cover

National Land Cover Database (NLCD), Land Cover 2016. Multi-Resolution Land Characteristics Consortium. Available online at <http://www.mrlc.gov/index.php>. 2014.

Homer, C.G., Dewitz, J.A., Yang, L., Jin, S., Danielson, P., Xian, G., Coulston, J., Herold, N.D., Wickham, J.D., and Megown, K., 2015, *Completion of the 2011 National Land Cover Database for the conterminous United States-Representing a decade of land cover change information*. Photogrammetric Engineering and Remote Sensing, v. 81, no. 5, p. 345-354

CDL (Crop) Land Cover

USDA National Agricultural Statistics Service Cropland Data Layer. 2019. Published crop-specific data layer [Online]. Available at <https://nassgeodata.gmu.edu/Crop-Scape/> (accessed 3/15/2016; verified 3/2/2016). USDA-NASS, Washington, DC

MBS Biodiv. Significance

MBS Sites of Biodiversity Significance. Minnesota Department of Natural Resources, Minnesota Biological Survey. Available online at <https://gisdata.mn.gov/>. 2016.

Change in Water Storage, Wetlands

Soil Survey Staff. Gridded Soil Survey Geographic (gSSURGO) Database & the U.S. General Soil Map (STATSGO2) for Minnesota. United States Department of Agriculture, Natural Resources Conservation Service. Available online at <http://datagateway.nrcs.usda.gov/>. 2015 official release.

National Wetland Inventory, Minnesota, 1980-1986. Minnesota Department of Natural Resources – Division of Waters. Available online at <https://gisdata.mn.gov/>. 1994.

National Wetland Inventory Update for Minnesota. Minnesota Department of Natural Resources; Ducks Unlimited; St. Mary's University of Minnesota. Available online at <https://gisdata.mn.gov/>. 2015.

[Change in Water Storage, Streams](#)

Statewide Altered Watercourse Project. Minnesota Geospatial Information Office for the Minnesota Pollution Control Agency. Available online at <https://gisdata.mn.gov/>. 2014.

Human Aspects

[Population](#)

Census 2010. U.S. Department of Commerce, U.S. Census Bureau. Generated using American FactFinder. Available online at <http://factfinder2.census.gov>. 2015.

TIGER 2010 Census. U.S. Department of Commerce, U.S. Census Bureau. Available online at <https://gdg.sc.egov.usda.gov/>. 2015.

[Transportation](#)

Roads, Minnesota, 2012. Minnesota Department of Transportation (MnDOT). Available online at <https://gisdata.mn.gov/>. 2012.

National Land Cover Database (NLCD), Percent Developed Imperviousness 2011. Multi-Resolution Land Characteristics Consortium. Available online at <http://www.mrlc.gov/index.php>. 2014.

Reference Data and Basemaps

MN DNR Watershed Suite. Minnesota Department of Natural Resources. Available online at <https://gisdata.mn.gov/>. 2014.

ESRI Basemap Service Layers:

World Imagery - Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

World Street Map - Sources: Esri, DeLorme, HERE, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (HongKong), Esri (Thailand), MapmyIndia, TomTom

Light Gray Canvas Maps - Sources: Esri, DeLorme, HERE, MapmyIndia

World Dark Gray Base - Sources: Esri, HERE, DeLorme, MapmyIndia, INCREMENT P, ©OpenStreetMap contributors, and the GIS user community