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**National [Soils Home Page:](http://www.nrcs.usda.gov/wps/portal/nrcs/site/soils/home/)**<http://www.nrcs.usda.gov/wps/portal/nrcs/site/soils/home/>

 From this site, most of the NRCS SOILS links below are accessible.

***[Soil Surveys by State](http://www.nrcs.usda.gov/wps/portal/nrcs/soilsurvey/soils/survey/state)****<http://www.nrcs.usda.gov/wps/portal/nrcs/soilsurvey/soils/survey/state>*

 Provides links to archived soil survey reports and to WSS

 Web Soil Survey: <http://websoilsurvey.nrcs.usda.gov/app/>

Web Soil Survey (WSS) is the source for official data of the Cooperative Soil Survey. It has the most up to date information available to the public. The WSS offers several methods to attain data in both tabular and spatial formats. There are many capabilities included in WSS for the user to locate, interpret, and publish data into reports or manuscript style reports.

Soil Data Access: <https://sdmdataaccess.nrcs.usda.gov/>

 This link provides a portal for advanced users who know SQL to make queries on the official database without running WSS.

 Soil Data Access Query HELP <https://sdmdataaccess.nrcs.usda.gov/QueryHelp.aspx>

[***Technical References***  *http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/ref/*](http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/ref/)Provides links to NCSS Technical references including National Soil Survey handbook, Soil Survey Manual, Soil Taxonomy, technical Soil Services Handbook, Land Capability classifications, Technical Notes, and Field Guides.

[***Soil Education***](http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/edu)[*http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/edu*](http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/edu)

 Provides links for educators and to training and job aids for soils

[**State Soils**](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/?cid=stelprdb1236841) -- find out about your state soil

**[Videos and Webinars http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\_054315](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/?cid=nrcs142p2_054315)**

NRCS-National Soil Survey Center: <https://www.youtube.com/user/nrcsnssc>

USDA-Natural Resources Conservation Service: <https://www.youtube.com/channel/UCDZND69Db-WE0d1ITEiuSjQ>

[**NCSS Training and Job Aids**](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/?cid=nrcs142p2_054320)-- directed to employees of agencies participating in the National Cooperative Soil Survey (NCSS)

[Job Aids](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/?cid=nrcs142p2_054322)

[**Soil Classification**](http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/survey/class) <http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/survey/class>

 Provides links to Taxonomy, OSDs, and other Soil Series information

[**Soil Research**](http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/research) <http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/research>

 Provides links to National Soil Characterization Data and other data sources and projects

**[Information for TEACHERS](https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/edu/)**

**Symphony of the Soil** <http://www.symphonyofthesoil.com/>

**Hugh Hammond Bennett-**USDA Natural Resources Conservation Service (NRCS) presents a documentary on soil conservation pioneer Hugh Hammond Bennett, the history of our agency and the birth of the private lands conservation movement in the U.S. <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/about/history/?cid=NRCSEPRD1356274>

[**Information for City and County Planners**](http://www.nrcs.usda.gov/wps/portal/nrcs/asr/soils/planners/?atype=City%20and%20County%20Planners)

[**Information for Geographers**](http://www.nrcs.usda.gov/wps/portal/nrcs/asr/soils/geography/?atype=Geographers)

[**Information for Land Use Managers**](http://www.nrcs.usda.gov/wps/portal/nrcs/asr/soils/managers/?atype=Land%20Use%20Managers)

[**Information for Soil Scientists**](http://www.nrcs.usda.gov/wps/portal/nrcs/asr/soils/scientists/?atype=Soil%20Scientists)

The Food and Agriculture Organization (FAO) of the United Nations is heading up efforts along with the [Global Soil Partnership](http://links.govdelivery.com:80/track?type=click&enid=ZWFzPTEmbWFpbGluZ2lkPTIwMTUwNTAxLjQ0NjE1NDIxJm1lc3NhZ2VpZD1NREItUFJELUJVTC0yMDE1MDUwMS40NDYxNTQyMSZkYXRhYmFzZWlkPTEwMDEmc2VyaWFsPTE3MzI2Mjc0JmVtYWlsaWQ9Y2hhcmxpZS5vZ2dAYWwudXNkYS5nb3YmdXNlcmlkPWNoYXJsaWUub2dnQGFsLnVzZGEuZ292JmZsPSZleHRyYT1NdWx0aXZhcmlhdGVJZD0mJiY=&&&105&&&http://www.fao.org/globalsoilpartnership) <http://www.fao.org/globalsoilpartnership/en/> .

**Illinois NRCS Soils Home Page –** <https://www.nrcs.usda.gov/wps/portal/nrcs/il/soils/> This link is within the Illinois NRCS Website (<https://www.nrcs.usda.gov/wps/portal/nrcs/il/home/> ) and provides additional links to soils information as well as soils information specific to Illinois.

[Illinois Soil Regions](https://www.nrcs.usda.gov/wps/portal/nrcs/il/soils/%22%20%5Cl%20%22IL%20Soil%20Regions)

[Illinois Suite of Maps :](https://www.nrcs.usda.gov/wps/portal/nrcs/il/soils/surveys/NRCS141P2_030697/) <https://www.nrcs.usda.gov/wps/portal/nrcs/il/soils/surveys/NRCS141P2_030697/> [**Illinois Suite of Maps**](https://www.nrcs.usda.gov/wps/portal/nrcs/il/soils/surveys/NRCS141P2_030697/)

**Electronic Field Office Technical Guide** [**eFOTG**](https://efotg.sc.egov.usda.gov/#/details)**-** the NRCS electronic Field Office Technical Guide. Within the Electronic Field Office Technical Guide, there is information on several technical aspects of Soil Conservation Practices. Soils and Site information including Generated Non-technical descriptions for all soils, archived correlation documents, Frozen soil lists, Hydric soils, and Productivity and Yield indices. These links in addition to Soil LINKS for Field Offices are in eFOTG under section 2. [**Go to Your State's FOTG**](https://efotg.sc.egov.usda.gov/#/details)

**Geospatial Links and Data servers**

For linkage in ARCGIS

 **University of Illinois:** [https://data.isgs.illinois.edu/arcgis/rest/services/](https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fdata.isgs.illinois.edu%2Farcgis%2Frest%2Fservices%2F&data=02%7C01%7C%7Cf00573e30da24a416eae08d7d7127fcf%7Ced5b36e701ee4ebc867ee03cfa0d4697%7C0%7C0%7C637214346758452770&sdata=W1%2BDAel3rJSK0Mv%2FDALPJ71OkfCNDhykVY47PvIdeAk%3D&reserved=0)

**USDA:** <http://geodata.sc.egov.usda.gov/arcgis/services>

USDA: GIS server: Soils layer for whole state at <http://geodatastates.sc.egov.usda.gov/arcgis/rest/servicesGis.apfo.usda.gov>

**USDA World Data:** <http://geodatacache.sc.egov.usda.gov/arcgis/services>

**APFO:** [https://gis.apfo.usda.gov/arcgis/services](https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fgis.apfo.usda.gov%2Farcgis%2Fservices&data=02%7C01%7C%7Cf00573e30da24a416eae08d7d7127fcf%7Ced5b36e701ee4ebc867ee03cfa0d4697%7C0%7C0%7C637214346758452770&sdata=7%2FmIzSzi6F16ptIaBffW1XQbE4ReJNJQdHlZm33aevM%3D&reserved=0)

**SURDEX:** <http://gissvr.surdex.net/arcgis/>

[Geospatial Data Gateway http://datagateway.nrcs.usda.gov/](Geospatial%20Data%20Gateway%20%20http%3A//datagateway.nrcs.usda.gov/)Soils and other GIS layers may be found at the Geospatial Data Gateway. This includes several datasets available for county based or state based data including gSSURGO.

Gridded National Soil Survey Geographic Database (gNATSGO) <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/geo/?cid=nrcseprd1464625>

ISGS **** <http://clearinghouse.isgs.illinois.edu/>

[**Illinois Height Modernization Program (ILHMP): LiDAR Data**](https://clearinghouse.isgs.illinois.edu/data/elevation/illinois-height-modernization-ilhmp-lidar-data)

[**2011 Illinois Department of Transportation (IDOT) Orthophotos**](https://clearinghouse.isgs.illinois.edu/data/imagery/2011-illinois-department-transportation-idot-orthophotography)

[**1937 - 1947 Historical Aerial Photographs**](https://clearinghouse.isgs.illinois.edu/data/imagery/1937-1947-illinois-historical-aerial-photography)

USGS Geospatial Platform: <https://www.geoplatform.gov/>

USGS National Map Viewer: <https://www.usgs.gov/core-science-systems/ngp/tnm-delivery/> [National Map](http://nationalmap.gov)

USGS Map Locator and Downloader TOPOS and ORTHOS (FREE): <http://store.usgs.gov/>

Terra Server: <http://www.webgis.com/terraserver.html>

U of I – ISGS – USGS – IDNR – IEPA Resource Management Mapping Service <https://cigi-rmms19prod.cigi.illinois.edu/> (USE CHROME)

U of I- IDEALS – ISGS, INHS, Other University Publications and Research: <https://www.ideals.illinois.edu/>

Soil Geochemistry Spatial database: <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/research/?cid=nrcs142p2_053632>

Soil Data Viewer: <http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/home/?cid=nrcs142p2_053620>

SDV Rules manager: <http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053198.pdf>

Geospatial Census Data: <https://www.census.gov/programs-surveys/geography.html>

TIGER/Line Shapefiles <https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html>

**Geospatial Services**

**LAB Data and Soil Series Data**

Soil Survey Lab Characterization Data (Point data): <http://ncsslabdatamart.sc.egov.usda.gov/>

Official Series Descriptions: <http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/home/?cid=nrcs142p2_053587>

Soil Series Classification Database (SC): <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/class/?cid=nrcs142p2_053583>

Soil Series Extent Explorer: <https://casoilresource.lawr.ucdavis.edu/see/>

 **Soil Data Explorer:** [**https://casoilresource.lawr.ucdavis.edu/sde/?series**](https://casoilresource.lawr.ucdavis.edu/sde/?series)

NSSL GOOGLE point data: <https://nrcs.maps.arcgis.com/apps/webappviewer/index.html?id=956154f98fc94edeaa2dbad99bb224af>

NRCS Maps, Data, Mobile Apps-- <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/home/?cid=stelprdb1049255>

**The APPs**

**GeoCam**  GeoCam is a powerful tool designed for creation and preview of geophotos – i.e. photos supplied with additional information, such as geographic coordinates, camera orientation at the moment of shooting, comments, etc.<https://play.google.com/store/apps/details?id=com.myway&hl=en_US>

<https://geocam-pro.en.softonic.com/iphone>

Soil Web APPs <http://casoilresource.lawr.ucdavis.edu/soilweb-apps/> stand alone apple or android app AND a KML/KMZ file to add to Google Earth.

[SoilWeb](http://casoilresource.lawr.ucdavis.edu/gmap/)

[SoilWeb Earth](http://casoilresource.lawr.ucdavis.edu/soil_web/kml/SoilWeb.kmz)

[SEE: Soil Series Extent Explorer](http://casoilresource.lawr.ucdavis.edu/see/) Updated. Adds characterization points for data within the distribution

[Soil Data Explorer](https://casoilresource.lawr.ucdavis.edu/sde/?series=drummer)

[Soil Properties App](http://casoilresource.lawr.ucdavis.edu/ca-soil-properties/) (California) NEW

ISEE—NOT JUST Illinois on iPad: Teaching Soil Science via Isee –<http://guides.lib.purdue.edu/agronomy/ISEE> Integrating Spatial Educational Experiences

Isee iPad app: <https://appsto.re/us/nbdy7.i> APP

SoilExplorer.net

**SoilExplorer.net** [**https://soilexplorer.net/**](https://soilexplorer.net/)

SoilExplorer.net runs in any browser that has JavaScript enabled, even smart phones, so this will greatly expand the accessibility of our work. Check out SoilExplorer.net and let me know what you think. We are open to suggestions for additional improvements. We should be able to get the GPS dot on the screen, but that is not yet implemented. Also, at this time, the only descriptive popup text that is populated is for the surface soil color for Indiana. As we get more text populated, it will automatically show up. SoilExplorer.net is the work of Rachel Moore and Mike Hill and is made possible by a grant from the USDA NRCS.

**Spatial Disaggregation:** [**SoLIM: Limitations in the Current Soil Survey**](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=14&cad=rja&uact=8&ved=0ahUKEwi4pbe3zIHLAhXHsh4KHb-vAmQ4ChAWCDAwAw&url=http%3A%2F%2Fsolim.geography.wisc.edu%2Fabout%2Fmethod1.htm&usg=AFQjCNESAyFVvTQlULp2Tal7mk5bHqMBHQ)<http://solim.geography.wisc.edu/about/method1.htm>

[ArcSIE Home](file:///D%3A%5CA_SSS%5CMeetings%5CCooperative%20Soil%20Survey%5CIllinois%5CISSC2019%5CArcSIE%20Home) <http://www.arcsie.com/index.htm>

**Reports Available for Use**

<https://nasis.sc.egov.usda.gov/NasisReportsWebSite/limsreport.aspx?report_name=WEB-Masterlist>

**GPS\GIS: Topographic and Location Information Illinois uses, Garmin, Trimble, and Archer**

<http://earthexplorer.usgs.gov>. link to online sales for USGS map, aerial photographs, and digital datasets

<http://geonames.usgs.gov/> the USGS Geographic Names Information System (GNIS) site, all named features, and coordinates, on USGS maps are here in a searchable database

NASA Earth Science data and services GIS and MAPPING: <http://gcmd.gsfc.nasa.gov/KeywordSearch/Home.do?Portal=GCMD_Services&MetadataType=1>

NOAA- National Oceanic and Atmospheric Administration [www.noaa.gov](http://www.noaa.gov) marine chart source

NOAA- National Geodetic Survey [http://www.ngs.noaa.gov/](http://www.ngs.noaa.gov/%20)  go to the *geodetic tool kit* link on the web page for magnetic declination calculators, other useful software, information on geoids, ellipsoids

National Park Service <http://www.nps.gov/gis/gps/gps_info.html> GPS, maps UTM tutorial, how tos

Convert and calculate UTM to Lat\Long: <http://leware.net/geo/utmgoogle.htm>

Find points and get direction from Google: <http://leware.net/geo/utmgoogleapp.htm>

UTM grid ones of the world [www.dmap.co.uk/utmworld.htm](http://www.dmap.co.uk/utmworld.htm) information about UTM Zones

<http://www.flourish.org/upsidedownmap/> a slightly different look at the world

GPS Utility Homepage: first (see [www.gpsu.co.uk](http://www.gpsu.co.uk/) below for the software)

Geocaching for learning: [www.geocaching.com](http://www.geocaching.com) great website for geo-cache activities, including many in Colorado

DNR GPS application: [**https://www.dnr.state.mn.us/mis/gis/DNRGPS/DNRGPS.html**](https://www.dnr.state.mn.us/mis/gis/DNRGPS/DNRGPS.html) an update to the popular DNRGarmin application. DNRGPS and its predecessor were built to transfer data between Garmin handheld GPS receivers and GIS software.

DNRGPS was released as Open Source software with the intention that the GPS user community will become stewards of the application, initiating future modifications and enhancements.

**SCALE**

The Scale of the Universe: <http://htwins.net/scale2/>

Orders of Soil Surveys: <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054254>

Geographic Scale and related landscape site description: <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_054252>

YOU SHOULD NOT MIX MAP SCALES or DATA of Different Scales, Or INTERPRETATIONS of Different Scales!

Soil Survey Manual - Chapter Seven | NRCS Soils: <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054257>

**EROSION**

SOIL EROSION CALCULATION: RUSLE II files for download: <http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm>

National Soil Erosion Research Lab (ARS): <http://www.ars.usda.gov/main/site_main.htm?modecode=36-02-15-00>

**CLIMATE**

NOAA National Climate: <http://www.ncdc.noaa.gov/oa/ncdc.html>

NRCS Climate: <http://www.wcc.nrcs.usda.gov/>

National Drought Monitor: <http://droughtmonitor.unl.edu/>

Illinois Climate Summaries: <https://statesummaries.ncics.org/chapter/il/>

Soil Temperatures: <http://www.isws.illinois.edu/warm/soil/>

National Weather Service: <https://www.weather.gov/>

[Illinois Real-Time Precipitation Data In Google Maps](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0ahUKEwit8aCqz4HLAhUBhiYKHe7IDe4QFggqMAE&url=http%3A%2F%2Fil.water.usgs.gov%2Fgmaps%2Fprecip%2F&usg=AFQjCNG2zWzcyFCrC1eowRR-aV83dq7S6w) <http://il.water.usgs.gov/gmaps/precip/>

[National Climate Change and ... - USGS](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwii6arO34HLAhXK6yYKHZ8qCuAQFggcMAA&url=https%3A%2F%2Fnccwsc.usgs.gov%2F&usg=AFQjCNH_1_FkK86Fc6GoVR_Fwg28FNdJ1A) <https://nccwsc.usgs.gov/>

World Climate: <http://www.worldclimate.com/>

Water and Atmospheric Resources Monitoring Program (WARM): <https://www.isws.illinois.edu/warm/>

**WATER**

Illinois State Water Survey ISWS - Water Data: <https://www.isws.illinois.edu/dat>

USGS Surface Water for Illinois Peak Streamflow: <http://nwis.waterdata.usgs.gov/il/nwis/peak?search_criteria=county_cd&submitted_form=introduction>

USGS Gage-Linked Inundation Maps: <http://il.water.usgs.gov/ifhp>

USGS StreamStats Watershed Delineation Maps: <http://water.usgs.gov/osw/streamstats/>

Real-time data from USGS gages are transmitted <http://water.usgs.gov/wateralert/>

WARM - Well Level Data: <http://www.isws.illinois.edu/warm/groundwater/>

**Illinois Soil Health Website:** <http://www.nrcs.usda.gov/wps/portal/nrcs/main/il/soils/health/>

**Soil Quality Information Sheets (6); Introduction, Compaction, Deposition, Erosion, Indicators, Aggregate Stability, Organic Matter, and Soil Crusts; NRCS/ARS, April 1996**

[Soil Health Assessment](http://soils.usda.gov/sqi/assessment/assessment.html)

[Soil Quality Indicator Information Sheets](http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/health/assessment/?cid=stelprdb1237387)

[Soil Biology](http://soils.usda.gov/sqi/concepts/soil_biology/biology.html)

Bioturbation - Worms at Work Wim van Egmond <https://www.youtube.com/watch?v=n3wsUYg3XV0>

Worms At Work - 20 Days Time Lapse Of Vermicomposting <https://www.youtube.com/watch?v=n9Mnf9ysNSs> [Gregor Skoberne](https://www.youtube.com/channel/UCnDrhu5DCQpD1VB3I3bVJJQ)

New Zealand Indicator worksheet: <https://sindi.landcareresearch.co.nz/calculator/createsample>

**PLANTS\ECOSITES**

Illinois Natural History Survey: <http://www.inhs.illinois.edu/resources/dataresources.html>

ILPIN: <https://www.nrs.fs.fed.us/data/il/ilpin/>

Fire Effects Information System <http://www.feis-crs.org/beta/> LIKE ILPIN

Silvics of Trees of North America <http://www.na.fs.fed.us/spfo/pubs/silvics_manual/table_of_contents.htm> Commercial species

CTAP: INHS site: <http://wwx.inhs.illinois.edu/research/ctap/>

Shawnee national Forest: <https://www.fs.usda.gov/shawnee>

U of I- IDEALS – ISGS, INHS, Other University Publications and Research: <https://www.ideals.illinois.edu/>

Natural Communities of Illinois: <http://www.inhs.illinois.edu/~kenr/natural_communities.html>

NRCS Plants Database: <http://plants.usda.gov/>

**University of Illinois crop yield data:** <http://soilproductivity.nres.illinois.edu/> for Base values

eFOTG, Illinois, Any County, Section 2 from drop down, Soil and Site Information folder, Productivity and Yield Indices: [http://efotg.sc.egov.usda.gov/treemenu.aspx#](http://efotg.sc.egov.usda.gov/treemenu.aspx) for adjusted values

Data and Visualizations: Williams paleo Lab: <https://williamspaleolab.github.io/datavis/>

NCAR-UCAR Climate Data Guide: <https://climatedataguide.ucar.edu/climate-data/fossil-surface-pollen-data>

Paleoclimatology-Fossil and Surface Pollen Data: <http://www.ncdc.noaa.gov/paleo/pollen.html>

Pollen Viewer- <https://serc.carleton.edu/resources/23227.html>

<https://www1.ncdc.noaa.gov/pub/data/paleo/pollen/>

<https://www1.ncdc.noaa.gov/pub/data/paleo/pollen/viewer/>

Pollen data linked to Google maps: <http://apps.neotomadb.org/explorer/> May not be working…

ESIS (Ecological Site Information System: <https://esis.sc.egov.usda.gov/>

Bureau of Land management (BLM) ecological sites: http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=33943.wba

NTSC Ecological Site Descriptions and restoration: <http://conference.ifas.ufl.edu/ncer2009/PPTPDF_pres/2-Tuesday/6-Santa%20Monica%20A/PM/0200%20W%20Gilgert.pdf>

The Green Toolbox Species Selector: <http://www.landcareresearch.co.nz/resources/tools/green-toolbox> Example of what could be done. Similar to VegSpec

NEON <http://www.neoninc.org/> The National Ecological Observatory Network is a continental-scale observation system for examining ecological change over time.

Adaption Workbook from the Climate Adaption Knowledge Exchange: <http://cakex.org/tools/adaptation-workbook?utm_source=April+2015+Slice+of+CAKE&utm_campaign=April+2015+Slice&utm_medium=email>

<http://www.adaptationworkbook.org/>

Ecology and Succession: Crash Course: <https://www.youtube.com/watch?v=jZKIHe2LDP8>

Ecosystem Ecology: Links in the Chain – Crash Course: <https://www.youtube.com/watch?v=v6ubvEJ3KGM>

The Hydrologic and Carbon Cycles: Always Recycle! - Crash Course: <https://www.youtube.com/watch?v=2D7hZpIYlCA>

Nitrogen & Phosphorus Cycles: Always Recycle! - Crash Course: <https://www.youtube.com/watch?v=leHy-Y_8nRs>

5 Human Impacts on the Environment: (Importance of Biodiversity) Crash Course: <https://www.youtube.com/watch?v=5eTCZ9L834s>

Pollution: Crash Course: <https://www.youtube.com/watch?v=kdDSRRCKMiI>

Conservation and Restoration Ecology: Crash Course: <https://www.youtube.com/watch?v=Kaeyr5-O2eU>

**REFERENCE**

The Library of Congress: <https://www.loc.gov/>

Internet Archive: Digital Library: <https://archive.org/index.php>

National Archives: <https://www.archives.gov/>

Hathi Trust: <https://www.hathitrust.org/>

Google books: <https://books.google.com/>

University of Illinois Library: <http://www.library.illinois.edu/>

**STATISTICS**

National Ag Stats: <http://www.nass.usda.gov/>

USDA Census of Ag: <http://www.agcensus.usda.gov/>

**General Statistics**

Statistical Analysis Handbook: <http://www.statsref.com/HTML/index.html>

Handbook of Biological Statistics: <http://www.biostathandbook.com/index.html>

**R**

R Programming Tutorials: <https://www.youtube.com/playlist?list=PLqzoL9-eJTNBDdKgJgJzaQcY6OXmsXAHU>

Quick R: <http://www.statmethods.net/>

R tutorials: <http://ww2.coastal.edu/kingw/statistics/R-tutorials/index.html>

R Tutorial Series: <http://rtutorialseries.blogspot.com/>

Geographic Data Analysis and Visualization: <http://geog.uoregon.edu/geogr/topics/>

Spatial Analyst.NET: <http://spatial-analyst.net/wiki/index.php?title=Main_Page>

**Soils emphasis**

Algorithms for Quantitative Pedology: <http://aqp.r-forge.r-project.org/>

California Research Lab-UC Davis Advanced R: <http://casoilresource.lawr.ucdavis.edu/software/r-advanced-statistical-package/>

[Webinar - Soil Data Aggregation Using R (3/2015) by NRCS NSSC](https://www.youtube.com/watch?v=wD9Y0Qpv5Tw)  <https://www.youtube.com/watch?v=wD9Y0Qpv5Tw>

**GAMES**

 Scoop On Soil [**http://urbanext.illinois.edu/soil/game.html**](http://urbanext.illinois.edu/soil/game.html)

**Illinois Soil Classifiers Association (ISCA):** <http://www.illinoissoils.org/> This site provides links to Announcements, Newsletters and other soil resources.

**Laws, Regulations, Policy, DIRECTIVES**

USA.GOV: <https://www.usa.gov/>

United States Code (USC): <https://www.gpo.gov/fdsys/browse/collectionUScode.action?collectionCode=USCODE&searchPath=Title+7&oldPath=&isCollapsed=true&selectedYearFrom=2016&ycord=400>

Code of Federal Regulations (CFR): <https://www.gpo.gov/fdsys/browse/collectionCfr.action?selectedYearFrom=2017&go=Go>

CFR, Title 7, Agriculture: <https://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR&searchPath=Title+7&oldPath=&isCollapsed=true&selectedYearFrom=2017&ycord=400>

eDirectives, General Manual, Manuals and technical Guidance: <http://directives.sc.egov.usda.gov/default.aspx?l=180>

The link for GSA Advantage is: <https://www.gsaadvantage.gov/advantage/main/start_page.do>

USDA Laws and Regulations: <https://www.usda.gov/our-agency/about-usda/laws-and-regulations>

**IT and Computer**

OCIO certification:

**BPA:**

ASTM Standards: <https://www.astm.org/>

**Legend Export Certification History, Export Metadata**

This report generates the Legend Export Certification History, Export Metadata for all completed projects for a specified soil survey area by fiscal year to paste into the Export Metadata. A few things are assumed for this report to work properly. The project must be checked as approved. The milestone "Project Completed Date" must be entered within the fiscal year. The old map unit must be additional and the new MLRA map unit must be in the legend as correlated. The project must also contain "MLRA" in the project name. For comments, suggestion, or errors refer to email link at the bottom of the report.
[**https://nasis.sc.egov.usda.gov/NasisReportsWebSite/limsreport.aspx?report\_name=WEB-PROJECT-LMU\_TEXT\_METADATA\_BY\_AREASYMBOL**](https://nasis.sc.egov.usda.gov/NasisReportsWebSite/limsreport.aspx?report_name=WEB-PROJECT-LMU_TEXT_METADATA_BY_AREASYMBOL)

**Reports Available for Use**

<https://nasis.sc.egov.usda.gov/NasisReportsWebSite/limsreport.aspx?report_name=WEB-Masterlist>

[Major Land Resource Areas of Illinois](https://efotg.sc.egov.usda.gov/references/public/IL/ilmlraJan2005.pdf)

Soil Colors of the United States: <http://munsell.com/wp-content/uploads/2016/08/color-slices.gif>

Dr. Dylan Beaudette (USDA-NRCS in California) developed a lot of these types of maps.  He is a great resource for displaying soil information in an understandable way.

**Don’t forget YOUTUBE! USDA, NRCS, ALMOST ANY SUBJECT!**

RAD GIS Lab staff continue work with Meghan Wilson, the MRBI Initiatives Coordinator, on finalizing the FY2015 MRBI map, showing changes in focus areas and providing background data for these areas.

**SOIL ART**

Janis Lang is the USDA-NRCS Soil Artist I am familiar with.

Her work appears in the 2004 and 2005 calendars.

<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/?cid=nrcseprd1250008>

She still works for USDA-NRCS at the National Soil Survey Lab in Lincoln,NE.

Dr. Jay Noller is a colleague and he is a soils professor at Oregon State University.

<http://soilscapestudio.com/index.html>

**CYBER GIS-** National Center for Supercomputing Applications University of Illinois at Urbana-Champaign [**http://www.ncsa.illinois.edu/**](http://www.ncsa.illinois.edu/)

[**https://bluewaters.ncsa.illinois.edu/training**](https://bluewaters.ncsa.illinois.edu/training)

**NCSA Blue Waters** [**https://www.youtube.com/watch?v=p\_vCWpaLq9w**](https://www.youtube.com/watch?v=p_vCWpaLq9w)

**Blue Waters is changing how science is done in the Arctic** [**https://www.youtube.com/watch?v=fnykQK9RSDc**](https://www.youtube.com/watch?v=fnykQK9RSDc)

Simulating 4-D Subduction and Mantle Flow<https://www.youtube.com/watch?v=AV9kfw3s8jE>

Parallel I/O best practices <https://www.youtube.com/watch?v=OEEytT3zJGk>

GPU performance nuggets <https://www.youtube.com/watch?v=ReQWjJ3o8us>

Understanding Blue Waters Topology and the Topology… <https://www.youtube.com/watch?v=-ZU__KfjyWg>

Tips and Tools for CPU Performance <https://www.youtube.com/watch?v=Zf3gREWjfyA>

Makeflow and WorkQue: Scaling up form laptops <https://www.youtube.com/watch?v=s4NitYI6BXg>

**Field Office Links:**

**Mapununit Brief Generated Soil Description:** [**https://nasis.sc.egov.usda.gov/NasisReportsWebSite/limsreport.aspx?report\_name=WEB-Staging\_Server\_Pre\_Checks\_5**](https://nasis.sc.egov.usda.gov/NasisReportsWebSite/limsreport.aspx?report_name=WEB-Staging_Server_Pre_Checks_5)

**eFOTG, Illinois, Section 2.**

**Technical References/Manuals/eFOTG:** <https://efotg.sc.egov.usda.gov/#/details>

 **Subject List of references (Soils) – eFOTG Sec 1**

 **Soils, Climate, Plants**

**Land Capability Classification, Agricultural Handbook No. 210 (1973, USDA, SCS, NSSH Exhibit 622-2).**

<http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf>

**Technical Reference File, Section II-C - Capability Classification**

**Agriculture Handbook No. 296, Land Resource Regions and Major Land Resource Areas of the U.S., 2006**

<http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051845.pdf>

**Technical Reference File, Section III-1 - Land Use of Management Systems**

**Soils of Illinois, Bulletin No. 778, U of IL.**

**Soils of Illinois:**[Illinois Soil Regions](https://www.nrcs.usda.gov/wps/portal/nrcs/il/soils/#IL Soil Regions)

[Keys to Illinois Soils](https://www.nrcs.usda.gov/wps/portal/nrcs/il/soils/#Keys)

[Illinois Suite of Maps](https://www.nrcs.usda.gov/wps/portal/nrcs/il/soils/#IL Suite of Maps)

**Soil Health**

[Illinois NRCS Soil Health](https://www.nrcs.usda.gov/wps/portal/nrcs/il/soils/health)

[National NRCS Soil Health](https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health)

**Soil Quality Information Sheets (6); Introduction, Compaction, Deposition, Erosion, Indicators, Aggregate Stability, Organic Matter, and Soil Crusts; NRCS/ARS, April 1996**

[Soil Health Assessment](http://soils.usda.gov/sqi/assessment/assessment.html)

[Soil Quality Indicator Information Sheets](http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/health/assessment/?cid=stelprdb1237387)

[Soil Biology](http://soils.usda.gov/sqi/concepts/soil_biology/biology.html)

**Understanding Soil Risks and Hazards, Using Soil Survey to Identify Areas with Risks and Hazards to Human Life and Property, Gary B. Muckel, USDA-NRCS, National Soil Survey Center, Lincoln, Nebraska. 2004.**

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/use/?cid=nrcs142p2_053956>

[Understanding Soils Risks and Hazards Low Resolution (PDF; 3.8 MB)](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052508.pdf)

[Understanding Soils Risks and Hazards High Resolution (Printing Version) (PDF; 12.9 MB)](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053170.pdf)

**Urban Soil Primer, 2005.**

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/use/urban/?cid=nrcs142p2_053993>

[Viewing Version: Urban Soil Primer (PDF; 3.41 MB)](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052835.pdf)

[Printing Version: Urban Soil Primer (PDF; 8.49 MB)](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052836.pdf)

[http://efotg.sc.egov.usda.gov//efotg\_locator.aspx](http://efotg.sc.egov.usda.gov/efotg_locator.aspx)

**Probable Natural veg. Tech Note IL-84(87) – FOTG hard copy**

**Prime and Important farmland (USE Web Soil Survey)** [**https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm**](https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm)

**Illinois Yield Data Bulletins 811 and 810**

<http://soilproductivity.nres.illinois.edu/>

[Illinois Drainage Guide (Online) - University of Illinois](http://wq.illinois.edu/DG/DrainageGuide.html) <http://wq.illinois.edu/DG/DrainageGuide.html>

**Soil Survey Appeals (taxes)**

[[IDOR’s Soil Survey Appeal Guide -https://www2.illinois.gov/rev/search/pages/results.aspx?k=soil%20survey%20appeal](http://www.revenue.state.il.us/publications/pubs/pub-122.pdf)](https://www2.illinois.gov/rev/research/publications/pubs/Documents/pub-122.pdf#search=soil%20survey%20appeal)

<http://tax.illinois.gov/Publications/LocalGovernment/PTAX1004.pdf>

**Source of Authority**

**The sources of authority for the policies and procedures contained in this manual are as follows:**

**Farm Security and Rural Investment Act of 2002 (2002 Farm Bill), Section 2502 (Section 1240N of the Food Security Act of 1985, as amended) 7 CFR Part 636 and Final Rule**

Freedom of Information Act [General Manual Title 120, Part 408](http://policy.nrcs.usda.gov/scripts/lpsiis.dll/GM/GM_120.htm) <https://directives.sc.egov.usda.gov/34978.wba> for NRCS policy regarding the FOIA and Privacy Act. https://www.foia.gov/

eDIRECTIVES:<http://directives.sc.egov.usda.gov/default.aspx>

[General Manual Title 120, Part 408](http://policy.nrcs.usda.gov/scripts/lpsiis.dll/GM/GM_120_408.htm) Need to navigate to general manual, title 120, Part 408 for procedures outlined

**Related Manuals and Handbooks**

General Manual, Handbooks, Manuals, National Bulletins, Instructions, Technical Notes: <https://directives.sc.egov.usda.gov/default.aspx>

[National Planning Procedures Handbook (NPPH)](http://directives.sc.egov.usda.gov/viewerFS.aspx?hid=33232)

Equitable Relief from Ineligibility for Conservation Programs <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/?&cid=nrcs143_008446>

https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/?&cid=nrcs143\_008446 [440-CPM, Part 510, Appeals and Mediation](http://directives.sc.egov.usda.gov/17108.wba)

[190-National Biology Manual](http://directives.sc.egov.usda.gov/24445.wba)

[210-National Engineering Manual](http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17900.wba)

National Resource Inventory <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/nra/nri/>

[Field Office Technical Guides (FOTG)](http://directives.sc.egov.usda.gov/2867.wba)

Title 310, Part 523 FPPA Farmland Protection Policy Act. Link no longer works. Navigate to General Manual Title 310, Parts 401, 402, 403, 404. <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/fppa/>

**Soil Survey Data/GIS Data**

**Soil Data Viewer**

[Soil Data Viewer: http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/home/?cid=nrcs142p2\_053620](http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/home/?cid=nrcs142p2_053620)

**Provides links to archived soil survey reports and to WSS**

[Soil Surveys by State http://www.nrcs.usda.gov/wps/portal/nrcs/soilsurvey/soils/survey/state](http://www.nrcs.usda.gov/wps/portal/nrcs/soilsurvey/soils/survey/state)

National Food Security Act Manual: <https://directives.sc.egov.usda.gov/RollupViewer.aspx?hid=29340>

Swampbuster: [https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/wetlands/?cid=stelprdb1043554](https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.nrcs.usda.gov%2Fwps%2Fportal%2Fnrcs%2Fdetailfull%2Fnational%2Fwater%2Fwetlands%2F%3Fcid%3Dstelprdb1043554&data=02%7C01%7C%7C3455bd7b70e94a58508d08d7da3f839b%7Ced5b36e701ee4ebc867ee03cfa0d4697%7C0%7C0%7C637217838631050975&sdata=joeR0K4Os28n3vRu2ttnQhjSR4YbUS60tDxt5H4IFqk%3D&reserved=0)

[Illinois State Offsite Methods (SOSM) July 2016](https://efotg.sc.egov.usda.gov/references/public/IL/IL_SOSM_July_2016.pdf)

[Illinois Climate Station Zones for Wetland Determinations](https://efotg.sc.egov.usda.gov/references/public/IL/climate_zones300c_10-01-2015.pdf)

[Summary of Normal Precipitation Years](https://efotg.sc.egov.usda.gov/references/public/IL/Summary_of_Normal_Precipitation_Years_10-01-2015.xlsx)

<https://efotg.sc.egov.usda.gov/> <http://agacis.rcc-acis.org/?fips=17019>

**Corps of Engineers 1987 Wetland Delineation Manual**

1987 Corps Wetland Delineation Manual

<http://www.lrh.usace.army.mil/Portals/38/docs/USACE%2087%20Wetland%20Delineation%20Manual.pdf>

**FWS Wetland Maps**

<http://www.fws.gov/wetlands/Data/Mapper.html>

**[NRCS Plant Database](http://plants.usda.gov/index.html)** [- http://plants.usda.gov/index.html](http://plants.usda.gov/index.html)

**Field Indicators of Hydric Soils in the United States, Guide for Identifying and Delineating**

[Field Indicators of Hydric Soils, version 8.2, 2018 (PDF; 14.9 MB)](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053171.pdf%22%20%5Ct%20%22_blank)

**WETS tables and climate reports**

<http://www.wcc.nrcs.usda.gov/climate/wets_doc.html>

<http://www.wcc.nrcs.usda.gov/climate/clim-reports.html>

**WETS table access was change in the mid 2000's. The process to get to individual tables for individual sites by county is accessed ONLY through eFOTG; BY COUNTY; SECTION 2; CLIMATE.**

**FOR WETLANDS COMPLIANCE in ILLINOIS, ONLY those sites that have 30 year averages are used and summarized to determine "NORMAL" Years for 35mm SLIDE review.**

**The summaries will be posted in SECTION 2 of eFOTG for access**

**Hydric Soils List**

<http://websoilsurvey.nrcs.usda.gov/app/>

**eFOTG Sec 2:** [**https://efotg.sc.egov.usda.gov/#/details**](https://efotg.sc.egov.usda.gov/#/details)

**[CODE OF FEDERAL REGULATIONS](https://www.ecfr.gov/cgi-bin/ECFR?page=browse)** TITLE7: AGRICULTURE <https://www.ecfr.gov/cgi-bin/text-idx?SID=d8d026a4dea6e8fddfcbbf132e599dc6&mc=true&tpl=/ecfrbrowse/Title07/7tab_02.tpl>

Title 7, Subpart B, Chapter 4—NRCS: <https://www.ecfr.gov/cgi-bin/text-idx?SID=d8d026a4dea6e8fddfcbbf132e599dc6&mc=true&tpl=/ecfrbrowse/Title07/7cfrv6_02.tpl#600>

2018 Farm Bill: Farmers.gov- <https://www.farmers.gov/manage/farmbill>

<https://www.ers.usda.gov/agriculture-improvement-act-of-2018-highlights-and-implications/>

Programs and Management: <https://www.ecfr.gov/cgi-bin/text-idx?SID=d8d026a4dea6e8fddfcbbf132e599dc6&mc=true&tpl=/ecfrbrowse/Title07/7CXIVsubchapB.tpl>

EQIP: <https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=1&SID=d8d026a4dea6e8fddfcbbf132e599dc6&ty=HTML&h=L&mc=true&n=pt7.10.1466&r=PART>

CSP: <https://www.ecfr.gov/cgi-bin/text-idx?SID=d8d026a4dea6e8fddfcbbf132e599dc6&mc=true&node=pt7.10.1470&rgn=div5>

**“FY 2015 Mississippi River Basin Healthy Watersheds Initiative: High-Priority Watersheds” Data and Maps:** The revised map can be found in the following link: <http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/initiatives/?cid=stelprdb1048200> .