



## Sources of Imagery and GIS Data Layers

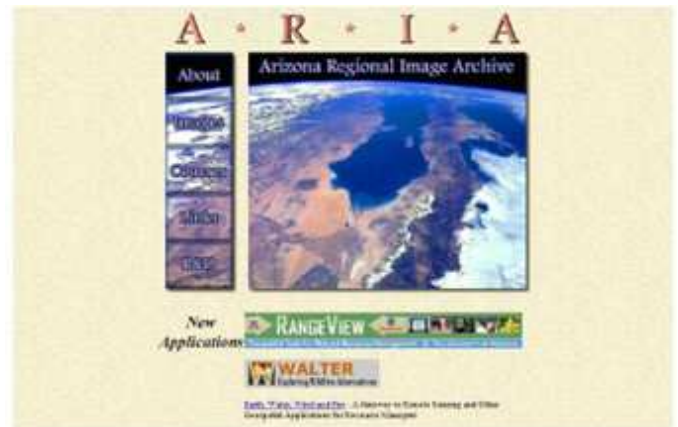
(Last updated October 2005)

The question of where to find data is one often asked by beginners in precision agriculture and other geospatial projects. The following is a list of national and state GIS data servers that contain data ranging from census and road layers to Landsat and USGS orthophotos. This is not an exhaustive list, nor are they necessarily the best sites. This list contains many sources that we have used and are particularly nice—most are free! They are listed alphabetically.

### Arizona Regional Image Archive (ARIA)

<http://aria.arizona.edu/>

- This archive is hosted by the University of Arizona. It contains primarily Arizona data plus some of its neighboring states.
- The following datasets can be found : ADAR, AVHRR, AVIRIS, DEM, DRG, DOQQ, Landsat (MSS, TM), SPOT, ERS/SAR, SIR-C



### Foreign Agriculture Service / Crop Explorer

<http://www.pecad.fas.usda.gov/cropexplorer/>

- This site allows you to monitor how crops are growing throughout the world. It also offers historical data to show trends. The spatial resolution for this data is very coarse and is not good for pin-point accuracy. It is good for general observations and for predicting world wide crop production.
- The following datasets can be found: climate and weather data, soils moisture, SPOT-NDVI (daily 1km NDVI), MODIS, State/Region specific vegetation imagery and charts, world-wide crop production maps, lake and reservoir height data.



This review was performed, written, and edited by S. Chod Stephens, Greg Searle, Rachel Smith, and V. Philip Rasmussen as part of the ongoing Utah Geospatial Extension Program of Utah State University in Logan, Utah.



### Geodata.gov (Version 2)

<http://gos2.geodata.gov/wps/portal/gos>

- This is not so much an archive as it is a portal to different federal and state geospatial data sites. It links to almost all of the data that this review mentions.
- The biggest problem when using this site is finding specific datasets. It isn't the easiest to navigate.
- The following datasets are examples of those that can be found here: Census, TIGER, road and water layers, climate, soils, hunting, air quality, fire, watershed, DEM, DOQQ, DRG, declassified spy satellite imagery, and a host of other datasets.



### INSIDE Idaho

<http://inside.uidaho.edu/>

- This is one of several state specific sites which focuses on data either purchased by the state or data that it has access to. Specific state GIS clearinghouses should be the first stop for anyone looking for GIS data.
- The following datasets can be found: Climate and weather data, DRG, DEM, DOQQ, boundaries, roads, waterways, LIDAR, NAIP, Landsat, SPOT, hunting, fishing, census, and other county data.



### Intermountain Region Digital Image Archive Center (IRDIAC)

<http://earth.gis.usu.edu/>

- IRDIAC is a regional image archive hosted by Utah State University through a NASA grant. It covers all areas within Utah and most of the surrounding states.
- The following datasets can be found: Comprehensive archive of Landsat MSS and TM, ASTER, boundary, water layers
- This archive specializes in those datasets that are not easy to obtain without paying for them. Both Landsat and ASTER scenes will cost money from other sites. IRDIAC is free.



## NASA EOS Data Gateway

<http://eos.nasa.gov/imswelcome/>

- The NASA EOS Data Gateway is the source of almost ALL NASA sensor data. This data includes atmosphere, land, ocean, solar, and cryosphere (the polar “frozen” regions).
- The datasets on this site are very comprehensive, but not all of them are free to download.
- The following datasets are examples of those that can be found here: ASTER, Landsat 1-5 and 7 (MSS and TM), MODIS (Aqua and Terra), AVHRR, MISR, SEAWIFS, SEASAT, SAR, and others.



## NRCS Web Soil Survey

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

- The NRCS has taken all of their soil surveys and made them available on the web in an easy-to-use spatial interface.
- The soil series are mapped on top of imagery (similar to the series books) and can be either viewed online or printed.
- The data is also available for download as a SSURGO database file (MS Access 2002) and as an ArcView shapefile.
- This is very beneficial for those in the agriculture industry. They also come in handy for those who have had county soil surveys misplaced or destroyed.



## Stennis Landsat Mosaic

<https://zulu.ssc.nasa.gov/mrsid/>

- NASA has made worldwide Landsat 4/5 and 7 imagery available through this website. The data is a worldwide mosaic with individual scenes taken around 1990 (Landsat 4 and 5) and 2000 (Landsat 7).
- The imagery is free and covers almost the entire globe. It is downloadable in MrSID format only.



## TerraServer-USA

<http://terraserver-usa.com/>

- TerraServer is a joint project by the USGS and Microsoft. It serves up USGS digital orthophoto quadrangle (DOQ) imagery as well as USGS digital raster graphics (DRG).
- The site is easy to navigate and fast.
- All downloaded images have a world file associated with them that can also be downloaded. This allows the imagery to be used in a GIS.
- This service is now part of the MSN Virtual Earth project and its functionality will eventually be incorporated into Virtual Earth (if you believe Microsoft).



## USDA Geospatial Data Gateway

<http://datagateway.nrcs.usda.gov/>

- The USDA, in conjunction with NRCS, FSA, and RD, has developed a 'one-stop' data gateway for all USDA GIS data.
- The data from this site can either be downloaded or ordered on CD/DVD.
- The following datasets are available: NAIP, Hydrology maps, TIGER, DRG, DOQQ, DEM, soil surveys, and precipitation maps.
- Downloading data is free, but the CD and DVD options cost money.



## USGS Earth Explorer

<http://edcns17.cr.usgs.gov/EarthExplorer/>

- The USGS has a very large collection of imagery that it makes available through this website.
- The imagery on this site is NOT free. However, it contains several datasets that are not available from other sources.
- The following datasets are available: AVHRR, DEM, DLG, DOQ, DRG, EO-1, Landsat (MSS, TM, ETM+), High resolution aerial photos, SIR-C, Declassified Satellite Imagery, Space Aquired Photography, and others.



## USGS Global Visualization Viewer (GLOVIS)

<http://glovis.usgs.gov/>

- GLOVIS is an interactive map similar to the National Map above. It allows you to view and order data for almost any area on the globe.
- The data on this site is not free, but with world wide coverage and several sensors available, it may be worth looking at.
- The following datasets are available: Landsat (MSS, TM, ETM+), ASTER, EO-1, MODIS, and others.



## USGS National Map

<http://nationalmap.gov/>

- The USGS National Map is an online interactive viewing map that allows you to view different data layers together and also download them.
- The map is a bit slow as it tries to download all of the selected data from the left column and view it.
- The following datasets are examples of those that can be found here: Orthoimagery (DOQ, Landsat7), MODIS, land cover/land use, road layers, federal land boundaries, hydrology maps, geology maps, DEM, climate and weather maps, and other data.



## Utah Automated Geographic Reference Center (AGRC)

<https://agrc.its.state.ut.us/>

- The AGRC is Utah's geographic information database which focuses on data that the state has either purchased or has access to. Any Utah farmer or researcher should look here first for GIS data that is limited to Utah.
- The following datasets can be found: DRG, DEM, DOQ, UAO, NAIP, color DOQ, historical DOQ, boundaries, roads, waterways, NRCS Soil data, and others.



## WebGIS

<http://www.webgis.com>

- This is a site that allows you to access USGS terrain and land use datasets.
- The following datasets can be found: DEM, land use (LULC) shapefiles, and DLGs.
- This site is a bit sporadic and may not work at times. But it is a good place to find simple GIS layers quickly and easily.



## Commercial Imagery Vendors

<http://www.orbimage.com>

<http://www.digitalglobe.com>

<http://www.spaceimaging.com>

- These three sites are from commercial vendors that have private satellites (OrbView, Ikonos and Quickbird) as well as purchased imagery from other sources, including India's IRS satellites.
- Some of these satellites can be tasked to take a high resolution image of a particular area around a given time. However, tasking a multi-million dollar satellite isn't cheap. You may want to find archived imagery from the same sensor, if it will work.

There are many more sites that have GIS data and imagery available for download. However, these should be a good starting point for anyone looking for imagery and GIS data layer sources. Every state has its own repository of data as well. To find your state's geographic information web portal, you can either go to Google or Yahoo to search for it, or you can go to the following website and find your state's site linked from there:



## Sources for state remote sensing and GIS data layers

<http://extnasa.usu.edu/state-gis.htm>