

Lab Project Topic Ideas

Potential topics

- Interpretation of ground cover and cultural features.
- Vegetation or land use census for an entire area.
- Changes in vegetation/land use over time.
- Tracking tree/forest or crop disease, eg. Dutch elm, oak wilt, wheat rust, etc.
- Forest damage, e.g. fire, BWCA blowdown.
- Siting new development, e.g. recreational areas, trails (hiking, biking, horse riding), urban, etc.
- Siting flora preservation or fauna habitat management areas.
- River erosion, course changes, sinuosity.
- Lake/wetland growth or reduction over time.
- Wetland reclamation areas.

Example past project titles

- "Using Aerial Photographs to Identify Suitable Habitat for Reintroduction of the Eastern Wild Turkey in Minnesota"
- "Superior Hiking Trail Completion"
- "Analysis of the Flooding of Devil's Lake in North Dakota"
- "Aerial Photo Interpretation of the Deer Creek Sub-basin in the Nemadji Watershed"
- "Stream Sinuosity in the Nemadji River Watershed"
- "Wetland Delineation and Comparison"
- "Root River Recreational Area: A Proposal"
- "Vegetation Census Using Remote Sensing"
- "An Analysis of Riparian Buffers along Elm Creek, Hennepin County, Minnesota"
- "Remote Sensing and GIS Analysis of Riparian Zone Vegetation over Time"
- "Urban Sprawl: A Growing Concern"
- "Urban Change Detection near Deephaven and Excelsior, Minnesota"
- "Impact of Human Activity on the Edge of a Wilderness Area: Ely, Minnesota and the Boundary Water Canoe Area Wilderness"

Projects can be "fictional" (e.g., pretend you've been hired as a project consultant) or real-life (e.g., something for your current job). They must answer a resource analysis, mapping or monitoring question using information acquired by remote sensing. GIS can be used to good advantage in projects, but the emphasis of the project needs to be remote... with either aerial or satellite imagery.

Remote sensing data sources

Prints of aerial photography are at the Borchert Map Library. Scanned/rectified aerial photos (Digital Orthophoto Quadrangles, DOQs) are at the Borchert and the MacGrath libraries. Other data sources might include:

- Printed topographic maps (current or historical) (Borchert Map Library).
- Printed plat books (Borchert Map Library).
- Printed soil/wetland/flood zone/other maps - start with UMN library search or ask at Borchert, you may be referred to an off-campus source.
- Digital GIS data layers that are downloadable from the web: <http://deli.dnr.state.mn.us/> and <http://www.datafinder.org>
- Depending on your topic, contact a relevant federal, state, county or city office and ask what data they have. Be sure to mention that you are a student working on a class project (sometimes, although not always, you'll get nicer treatment).