

## RS&GIS History in Land Cover/Land Use Issues

Remote Sensing & Geographic Information Science Research and Outreach Services (RS&GIS) has a long and distinguished history of involvement in land cover/land use issues throughout the State of Michigan. The MSU Remote Sensing Project (the precursor to RS&GIS) began as a NASA-funded research project – *Project for the Use of Remote Sensing in Land Use Policy Formulation*. The Remote Sensing Project (RSP) published its *Proposed Land Use Classification System* in July, 1973 (prepared for the Western Michigan Planning and Development Region). One of the first large-area (c. 1,000 mi<sup>2</sup>), airphoto-based, land use inventories in the state, the *Upper Kalamazoo Watershed Land Cover Inventory*, was completed by RSP in October, 1973. RSP staff were members of the Michigan Land Use Classification and Referencing Committee (MDNR) and helped to develop the *Michigan Land Cover/Use Classification System* (the “Green Book”, first published in July, 1975) that was used in the 1978 State of Michigan Current Use Inventory. In June, 1976, RSP completed its *Land Cover/Use Inventory of Clinton, Eaton and Ingham Counties, Michigan*. In a partnership with the Bendix Corporation, RSP completed a land cover inventory of Genesee, Lapeer and Shiawassee counties (Region V Planning) in July, 1977.

In 1983 the Center for Remote Sensing and Geographic Information Science was established by the MSU Board of Trustees with the objective of advancing the application of remote sensing in the fields of agriculture and natural resources. That same year, W.R. Enslin, W.D. Hudson and D.P. Lusch published the *Photo Interpretation Key To Michigan Land Cover/Use*, which remains the only such guide available. The following year (1984), W.D. Hudson published *Interpreting Michigan Forest Cover Types from Color Infrared Aerial Photographs*, another unique contribution to land cover mapping in Michigan. In 1986, the Center released the first-ever, digital, statewide, land cover map of Michigan based on satellite remote sensing (1 km<sup>2</sup> raster GIS file).

In July, 2003, the Center for Remote Sensing and Geographic Information Science was reorganized and renamed, once more, to become Remote Sensing & GIS Research and Outreach Services (RS&GIS). The expert staff and commitment to the advancement of geospatial technologies in the primary areas of agriculture and natural resources remains the same.

At present, RS&GIS is leading the IMAGIN (Improving Michigan’s Access to Geographic Information Networks) Land Cover/Use Classification Committee, authoring a Working White Paper addressing modifications to the Michigan Land Cover/Use classification system and a standardized methodology for updating land cover/land use data. RS&GIS developed the MIRIS 2000 classification system in conjunction with this IMAGIN committee and at this time, is solely responsible for amendments and updates to this classification system. Please see the RS&GIS Land Cover/Land Use website for further documentation regarding these endeavors (<http://www.rsgis.msu.edu/lclu>).

RS&GIS recently completed the land cover/land use update for the 117 survey townships within the Muskegon River Watershed. This project stretches from Muskegon County to

Kalkaska County and crosses a diverse economic, social, and ecological, landscape. In addition to this endeavor, RS&GIS has completed land cover/land use updates for Wexford County, the US 31 highway corridor in Berrien County, and over 75 additional survey townships throughout the state of Michigan.

The standardized land cover/land use update procedures developed by RS&GIS are now being employed by other organizations performing land cover/land use updates. RS&GIS teaches biannual workshops on aerial image interpretation and its application to land cover/land use updating. The 7 counties within the Southeast Michigan planning region (SEMCOG - Southeast Michigan Council of Governments) have adopted the RS&GIS update protocols, including the RS&GIS customized program scripts and interpretation manual.