



## Using Landsat ETM+ Data to Support Conservation Provisions of the US Farm Bill

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The Environmental Quality Incentives Program (EQIP), reauthorized as part of the 2002 Farm Bill, is a voluntary conservation program that promotes agricultural production and environmental quality. EQIP provides technical and financial help to solve conservation management problems through multiyear contracts with private landowners. Critical to EQIP is identification of priority areas, such as watersheds, that impact water quality.

The USDA Natural Resources Conservation Service (NRCS), which administers EQIP, is working with the Kansas Applied Remote Sensing Program (KARS) to use Landsat ETM+ data to assist in the assessment and prioritization process.

### Project Objective

The objective of this application is to provide NRCS with cost effective, reliable, and unbiased depiction of current land cover. The goal is to help NRCS conservation planners identify priority areas for inclusion in EQIP.

### Use of Remote Sensing

KARS image analysts use Landsat 7 Enhanced Thematic Mapper imagery to produce maps of Kansas showing crop categories that are relevant to the EQIP program (i.e., row crops and small grains) and grassland types (i.e., cool season and warm season). This differentiation is important because management practices, and thus environmental impacts, differ depending on the crop category or grassland type.

The crop/grassland maps are analyzed with additional information, such as maps of soil erodibility, in a geographic information system (GIS) to identify and rank geographic areas that have priority resource concerns.

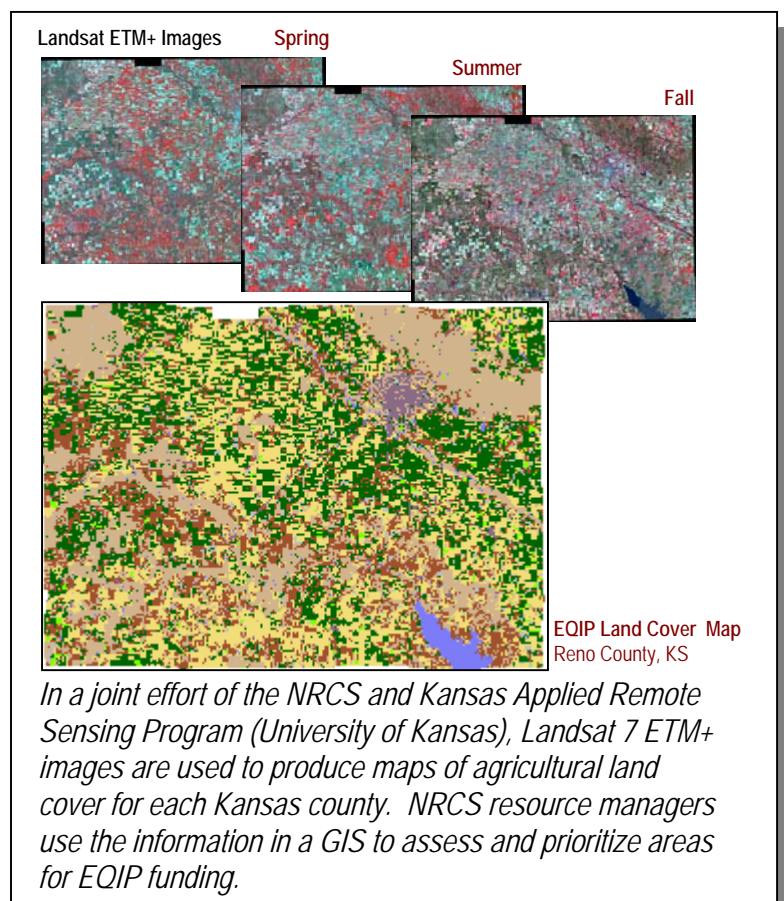
NRCS conservation planners use this information, along with their knowledge of how various crop and rangeland management practices affect local soil and water conditions to develop conservation plans and set EQIP priorities.

### Benefits

Remote sensing techniques provide state level information quickly and cost-effectively, providing NRCS with significant savings in terms of both money and time.

Remote sensing-derived land cover information also assists NRCS in developing cost-effective EQIP management plans and proscribing specific management conservation practices with landowners.

NRCS conservation planners also use this information to ensure that funded projects are targeted to areas that



will have the greatest relative impact on achieving EQIP conservation and management goals for the least cost.

Finally, NRCS and KARS have worked together on this project by leveraging the resources of the **Kansas Satellite Image Archive**. The archive, funded through the Kansas GIS Policy Board and the USGS AmericaView Program, provides Kansas with the state's first publicly available statewide image archive.