



Land Cover and Land Use Change at CSREES



Overview of CSREES Involvement:

- CSREES has funded research, education and extension activities in this area concerned with the evaluation of how changes in land use, management and cover may affect local, regional and regional environmental and socioeconomic conditions in terms of short- and long-term consequences. Changes in land use in response to population growth, urban and suburban growth, recreational needs, and other factors affecting the fixed supply of land are important themes.
- Extension activities are aimed at integrating scientific and educational resources into clear and effective decision support systems and communicating this information in a timely and user-friendly manner to those who utilize it.



CSREES research funding 1999-2003



Year	Total funds in thousands of \$\$
1999	968
2000	1329
2001	5929
2002	1385
2003	2824



Emerging Priorities and Objectives:

- Societal demands for land in residential, commercial, and industrial uses are expected to increase with growing populations and rising incomes
- Research will continue to develop and evaluate methods for analyzing associated implications for wildlife habitat, timber supplies, carbon sequestration for climate change mitigation, biodiversity, and other ecological and economic impacts.
- Spatial econometric studies will be conducted of forest-cover changes, with expanded use of ecological and economic theories to guide model development and enhance robustness of projected changes.



- A combination of satellite-based land-cover data and ground-based agricultural census data will be used to derive global, spatially explicit data sets of agricultural land cover and land-use practices
- These data sets will be critically important for the study of the ecosystem consequences of global agricultural land-cover change, including the trade-offs between various ecosystem goods and services.
- An innovative approach is needed to quantify, understand, model, and project natural and human drivers of land-use and land-cover change
- Research is needed to understand and project the interactions of economic, social, and environmental choices on land use and management policies and decisions.
- New techniques and tools that integrate understanding of human behavior, opportunities, consequences, and alternatives are needed for improved decision making and policy making



Programs that address Land use/Land Cover Change:

- National Research Initiative:
 - Air Quality
 - Managed Ecosystems
 - Weedy and Invasive Plant Species
 - Watershed Processes & Water Resources
 - Geospatial Extension Specialists
 - Soil Processes
 - Rural Development
- Water Quality
- Sustainable Agriculture Research and Extension
- McIntire-Stennis
- Hatch



Project Title	Funding	Institution
Effects Of Changing Social Values, Demographics, And Land Use On Rangeland Management	Hatch	Texas A&M
Forest Tenure Dynamics At The Public/Private Lands Interface	MCINTIRE-STENNIS	UNIV OF WISCONSIN
Grassland Ecosystem Response To The Experimental Manipulation Of Precipitation	NRI	KANSAS STATE UNIV
Impervious Surface Mapping For Improved Landuse Planning For The Urbanizing Northeast	HATCH	UNIV OF CONNECTICUT
Impacts Of Amenity Values On Agricultural Lands Conservation In The Rocky Mountain Region	NRI	UNIV OF MARYLAND COLLEGE PARK



Project Title	Funding	Institution
Managing Forest Fragmentation: Integrating Landscape Ecology and Economics	McIntire-Stennis	Rutgers University
Response Of Biogeochemical Controls And Stable Isotopic Composition Of N2O To Land Usage Change	NRI	COLORADO SCHOOL OF MINES
Spectral Balance, Spectral Weighting Functions And The Ozone Reduction Problem	NRI	UTAH STATE UNIVERSITY
Regional Scale Modeling Of Spatially Heterogeneous Ecosystems In Response To Global Climate Change	HATCH	UNIV OF CONNECTICUT
Land Transformation In The Rural-Urban Interface	HATCH	MICHIGAN STATE UNIV