

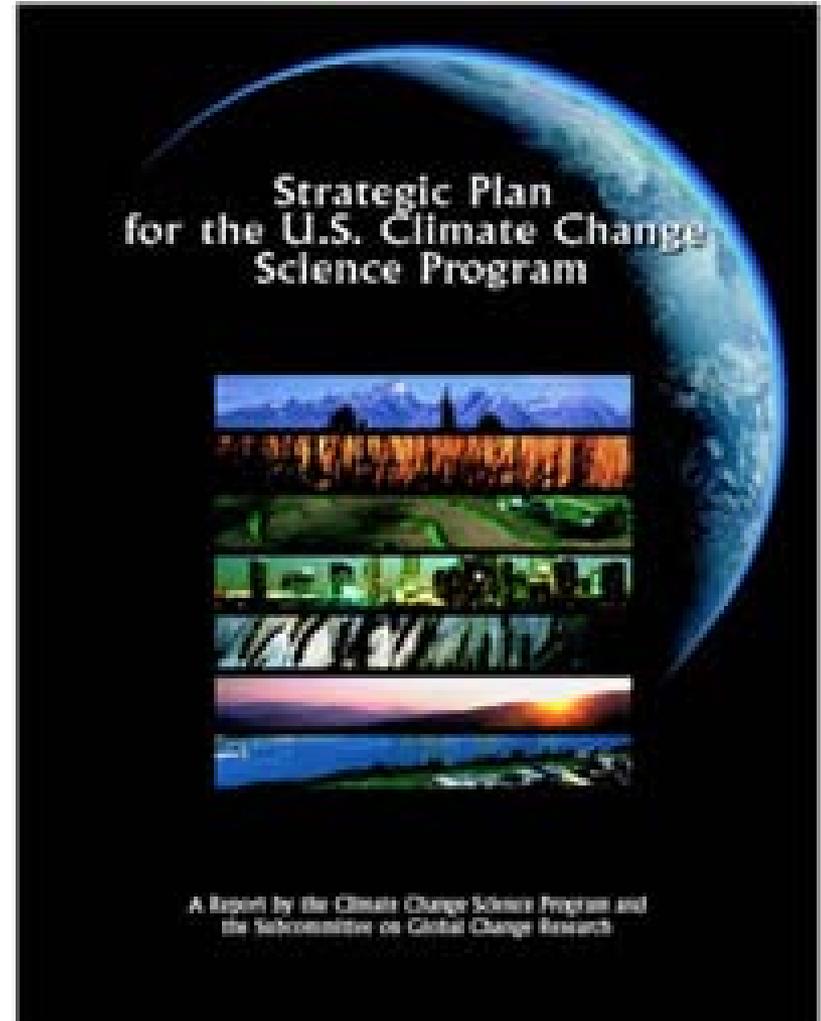
Climate Change Science Program Land Use and Land Cover Change Research Initiative

NASA Land Cover Land Use Change Science Meeting

January 20, 2004
College Park, MD

CCSP Strategic Plan Science Elements

- Atmospheric Composition
- Climate Variability and Change
- Water Cycle
- **Land Use/Land Cover Change**
- Carbon Cycle
- Ecosystems
- Human Contributions and Responses to Environmental Change



LULCC Interagency Working Group

- Garik Gutman (NASA) and Tom Loveland (USGS) – co-chairs
- Keya Chatterjee (NASA) – coordinator
- Chris Justice (UMd) – science advisor
- Contributing federal agencies and participants
 - NASA
 - DOI – USGS, NPS (Julie Thomas)
 - NSF (Richard Aspinall)
 - USDA – USFS (Bryce Stokes, Marilyn Buford)
 - EPA (Catriona Rogers)
 - Smithsonian (Dan Cole)

LULCC Planning Process

- Draft LULCC strategic plan prepared Fall 2002.
- Public meeting and review; NRC review December 2002-April 2003.
- LULCC strategic plan modified to reflect review comments
- CCSP strategic plan published summer 2003
- Workshop to prepare science strategy held in November 2003

CCSP LULCC Science Continuum

- Overarching Core Issues:
 - What processes determine the temporal and spatial distributions of LULC at local, regional, and global scales, and how well can LULC be projected over time scales of 5-50 years?
 - How may changes in land use, management, and cover affect local, regional, and global environmental and socioeconomic conditions?

CCSP LULCC Science Continuum

- The LULCC research scope:
 - **Mapping and Monitoring:** What tools and data are needed to characterize LULCC?
 - **Driving Forces:** What are the primary drivers of LULCC?
 - **Future Change:** What will LULC patterns be in 10-50 years?
 - **Climate Impacts and Feedbacks:** How does climate variability change LULC, and what are the feedbacks of LULC to climate?
 - **Overall Consequences:** What are the social, economic, and environmental consequences of LULCC?

Strategic Plan Research Element Structure

- For each of the five research questions, there are:
 - Illustrative research questions
 - Deliverables, milestones, and payoffs that are the expected outcomes needed to answer the illustrative and overall research questions.
- Each deliverable or outcome includes:
 - Brief summary of expected results
 - Timing for completion, i.e., when it is needed
 - Relationship to other research topics, e.g., ecosystems, carbon cycle, etc.

Question 6.1: What tools or methods are needed to better characterize historic and current land use and land cover attributes and dynamics?

- What improvements need to be made to current observing systems and what programs need to be put in place to provide the necessary long-term data and information to support the study of LULCC at the global, regional, and national scales?
 - Continued acquisition of global calibrated coarse-, moderate-, and high-resolution remotely sensed data (ongoing).
 - Global high-resolution satellite remotely sensed and LC databases with attributes required for national to global scale applications (> 4 years).

Next Steps

- Complete and publish CCSP LULCC science strategy
- LULCC IWG will prepare implementation plan
- LULCC Steering Committee will be established to guide implementation
- CCSP agencies will sponsor LULCC science investigations